

Mitigation Monitoring & Reporting Program
for the
Van Ness Avenue BRT Project

Exhibit 1

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Exhibit 1

Mitigation Monitoring & Reporting Program for the Van Ness Avenue BRT Project

City and County of San Francisco, California

By the

San Francisco County Transportation Authority and San Francisco
Municipal Transportation Agency

July 2013

Introduction

This Mitigation Monitoring and Reporting Program (MMRP) is for the Van Ness Bus Rapid Transit (BRT) Project. The California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) regulations require an enforceable mitigation monitoring program for projects. CEQA Section 21081.6 and CEQA Guideline 15097(a), require public agencies to adopt a program for monitoring and reporting on the measures required to mitigate or avoid significant environmental impacts identified in the Final Environmental Impact Report (EIR). Under NEPA regulations, a monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation (40 CFR Section 1505.2(c) and 23 CFR 771.27A). Under CEQA, the MMRP must be adopted when a public agency makes its findings pursuant to CEQA so that the mitigation requirements can be made conditions of project approval. Consistent with these requirements, this MMRP ensures compliance with all mitigation requirements set forth in the Final EIS/EIR that have been determined to be feasible under the CEQA Findings. These measures include, but are not limited to, elements that would be designed into the new facility and implementation of best management practices during construction. This MMRP will be kept on file in the offices of the San Francisco County Transportation Authority (Authority), 1455 Market Street, 22nd Floor, San Francisco, CA 94103.

Mitigation Monitoring & Reporting Program

Analysis of each environmental factor in Chapters 3 through 7 of the Final EIS/EIR includes discussion of the affected environment, environmental consequences (including permanent/project operational impacts, construction impacts, and cumulative impacts), and avoidance, minimization, and compensation measures for each project alternative, including the LPA. This MMRP includes all feasible mitigation measures that are applicable to the adopted project, the LPA. The avoidance, minimization, and compensation measures are identified in the following two categories: “mitigation measures” and “improvement measures.” Mitigation measures are contained in Table A and are measures required to address a potentially significant impact. Improvement measures are contained in Table B. Improvement measures identified in the Final EIS/EIR are not needed to avoid or reduce significant impacts, but either embody regulatory requirements or are standard construction procedures or best practices that are recommended to reduce or avoid impacts that are less than

significant... The purpose of the MMRP is to list all mitigation and improvement measures adopted for the Van Ness Avenue BRT Project, and the milestones at which measures must be implemented. It also identifies the implementing, enforcing, and monitoring entities. The Authority, as the lead agency under CEQA, will oversee the implementation of the mitigation and monitoring program through project implementation, including construction, testing and initial operations. The Authority will designate a Mitigation Monitoring Manager at the Authority to oversee the monitoring and reporting of all mitigation and improvement measures. The San Francisco Municipal Transportation Agency (SFMTA), as a responsible agency under CEQA, will be the entity that will construct and operate the project and will be responsible for carrying out mitigation measures that must be implemented as part of project design, construction and operation. The SFMTA shall designate a mitigation and monitoring coordinator to oversee the implementation of all relevant mitigation measures.

To ensure compliance with the MMRP, further agreements between the Authority and SFMTA will require SFMTA to implement or, through contracts, ensure implementation of, the mitigation measures and improvement measures. The Authority (or its Consultant) will conduct periodic audits of the construction site, and through the agreements will have authority to resolve with SFMTA any issues that arise concerning compliance with mitigation requirements on the part of SFMTA or its contractor. Through its CEQA Findings, the Authority will also urge other agencies that will issue permits for the work, including the Department of Public Works and Caltrans to require compliance with the mitigation measures through their permits.

Table A (Mitigation Measures) and Table B (Improvement Measures) are organized by environmental discipline, or affected resource. They provide a summary of the mitigation measures or improvement measures identified in the Final EIS/EIR. Table A and Table B include a summary of the following information:

- **Affected Resource:** Provides a broad title of the impact or effect that is to be mitigated or improved.
- **Contractor:** Refers to any contractor hired by SFMTA to implement the project.
- **Mitigation or Improvement Measures:** Provides a brief description of the mitigation or improvement measures. The MMRP includes all mitigation measures and improvement measures identified in the Final EIS/EIR that the Authority and the SFMTA found feasible and adopted as part of the CEQA Findings for the Project. The Authority will ensure that these measures are fully enforceable, in most cases by SFMTA, by making them conditions of project funding. Through agreements with SFMTA, the Authority will require SFMTA to incorporate the measures into design documents, construction specifications and project operational procedures. Other agencies may assist Authority in monitoring compliance with mitigation measures, such as the FTA, Department of Public Works, or Caltrans through their permitting and funding authority.
- **Implementation Procedure:** Describes by whom and when the mitigation and/or improvement measures must be implemented.
- **Implementation Responsibility:** Describes who is responsible for implementing the mitigation and/or improvement measures. In most cases it is the SFMTA or the Contractor.
- **Implementation Schedule:** Identifies the project phase or milestone at which the mitigation and/or improvement measures must be implemented. The Mitigation Monitoring Manager must approve that the mitigation measure is adequately addressed at each phase of project development.
- **Monitoring Responsibility:** Identifies the agency responsible for ensuring that mitigation measures are implemented. In most cases it is the SFMTA.
- **Report Recipient:** Identifies the agencies who will be notified that the mitigation measures have been implemented adequately. The Authority and the FTA are always reporting recipients.

Table A. Mitigation Monitoring & Reporting Program for the Van Ness Avenue BRT Project (Mitigation Measures)

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
1(M)	Aesthetics/Visual Resources	M-AE-1: Design sidewalk lighting to minimize glare and nighttime light intrusion on adjacent residential properties and other properties that would be sensitive to increased sidewalk lighting.	SFMTA, in coordination with SFPDW and SFPUC, with approval by SF Arts Commission	SFMTA, SFPDW, SFPUC	Final Design	SFMTA to oversee approval from SF Arts Commission	Authority FTA

¹ The number coding is as follows: improvement (IM) or mitigation (M) measure – environmental resource – construction period includes (C) – numerical order within environmental resource.

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2(M)	Aesthetics/Visual Resources & Cultural Resources	<p><u>M-AE-2</u>: Design and install a replacement OCS support pole/streetlight network that (1) retains the aesthetic function of the existing network as a consistent infrastructural element along Van Ness Avenue, (2) has a uniform aesthetic throughout the corridor and (3) carries visual character that is of similar caliber to the architectural style of the original OCS support pole/streetlight network.</p> <p>Within the Civic Center Historic District, design the OCS support pole/streetlight network to comply with the Secretary of Interior’s Standards for the Treatment of Historic Properties and be compatible with the character of the historic district as described in the Civic Center Historic District designating ordinance as called for by the San Francisco Planning Code.</p>	<p>SFMTA in coordination with SFDPW and SFPUC with approval by SF Arts Commission and, in Civic Center Historic District, HPC</p> <p>- Caltrans will review and approve final design of electrical plans (prior to issuing encroachment permit).</p>	SFMTA, SFDPW, SFPUC	Final Design	<p>SFMTA to oversee approvals by:</p> <p>-SFAC</p> <p>-SF HPC (within the Civic Center Historic District)</p>	<p>Authority</p> <p>FTA</p> <p>City Planning</p>
3(M)	Aesthetics/Visual Resources & Cultural Resources	<p><u>M-AE-3</u>: To the extent that the project alters sidewalk and median landscaping, design and implement a project landscape design plan, including tree type and planting scheme for median BRT stations and sidewalk plantings that replaces removed landscaping and re-establishes high-quality</p>	<p>The project landscape design plan will require review and approval by the San Francisco Arts Commission, as well as review and approval by</p>	SFMTA, SFDPW	Final Design	<p>SFMTA to oversee approvals by:</p> <p>- SFAC</p> <p>- SFDPW</p> <p>-SFHPC (within the Civic Center Historic District)</p>	<p>Authority</p> <p>FTA</p>

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		landscaped medians and a tree-lined corridor. To the extent feasible, use single species street trees and overall design that provides a sense of identity and cohesiveness for the corridor. Place new trees close to corners, if feasible, for visibility.	the SFDPW as part of their permitting of work in the street ROW, which ensures consistency with the San Francisco Better Streets Plan. The median landscape design plan within the Civic Center Historic District will be reviewed by the San Francisco HPC and the City Hall Preservation Advisory Commission. A Certificate of Appropriateness must be obtained from the HPC for the landscape plans within the Civic Center Historic District.				
4(M)	Aesthetics/Visual Resources & Biological Resources	<u>M-AE-4</u> : Design and landscape medians with consistent tree plantings to promote a unified, visual concept for the Van Ness Avenue corridor consistent with policies in the Van Ness Area Plan, Civic Center Area Plan, and San	See M-AE-3	SFMTA, SFDPW	Final Design	SFMTA to oversee approvals by: - SFAC -SFHPC	Authority FTA SFAC SFHPC

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		<p>Francisco Better Streets Plan. This design goal for a unified, visual concept will be balanced with the goal of preserving existing trees; thus, new tree plantings would be in-filled around preserved trees.</p>					SFDPW
5(M)	Aesthetics/Visual Resources & Cultural Resources	<p>M-AE-5: Design and install a project BRT station and transitway design plan (including station canopies, wind turbines, and other features) that is consistent with applicable City design policies in the San Francisco General Plan and San Francisco Better Streets Plan; and for project features located in the Civic Center Historic District, apply the Secretary of Interior's Standards for the Treatment of Historic Properties, Planning Code Article 10, Appendix J pertaining to the Civic Center Historic District, and other applicable guidelines, local interpretations and bulletins concerning historic resources.</p>	<p>Review and approval processes supporting this measure include: (1) The San Francisco Art Commission approval of the station and transitway design plan as part of its review of public structures; (2) The SFDPW approval of the station and transitway design plan as part of its permitting of work in the street right-of-way, which it will include review for consistency with the San Francisco Better Streets Plan; (3) the HPC approval of the portion of the station and</p>	SFMTA, SFDPW	Final Design	<p>SFMTA to oversee approvals by: -SFDPW -SFAC -SFHPC</p>	<p>Authority FTA</p>

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			transitway design plan located within the Civic Center Historic District as part of granting a Certificate of Appropriateness; and (4) the City Hall Preservation Advisory Commission and City Planning Department advise on design to HPC.				
6(M)	Aesthetics/Visual Resources & Cultural Resources	<p>M-AE-6: Context-sensitive design of BRT station features will be balanced with the project objective to provide a branded, cohesive identity for the proposed BRT service. The following design objectives that support planning policies described in Section 4.4.1 will be incorporated in the BRT station design and landscaping plans:</p> <ul style="list-style-type: none"> Architectural integration of BRT stations with adjacent Significant and Contributory Buildings through station canopy placement, materials, color, lighting, and texture, as well as the presence of modern solar paneling and wind turbine 	See M-AE-3	SFMTA, SFDPW	Final Design	<p>SFMTA to oversee approvals by:</p> <p>-SFAC -SF HPC</p>	<p>Authority</p> <p>FTA</p>

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		<p>features to harmonize project features with adjacent Significant and Contributory Buildings.</p> <ul style="list-style-type: none"> • Integration of BRT stations and landscaping with existing and proposed streetscape design themes within the Civic Center Historic District, in conformance with the Secretary of Interior’s Standards for the Treatment of Historic Properties and compatible with the character of the historic district as described in the Civic Center Historic District designating ordinance as called for by the San Francisco Planning Code. • Marking the intersection of Van Ness Avenue and Market Street as a visual landmark and gateway to the city in design of the Market Street BRT station. 					
7(M)	Air Quality	<p><u>M-AQ-C1</u>: Require construction contractors to implement the BAAQMD <i>Basic Construction Mitigation Measures</i> listed in Table 4.15-7 and the applicable measures in the <i>Additional Construction Mitigation Measures</i>. This includes Measure 10 in the <i>Additional Construction Mitigation Measures</i>, which requires implementation of an off-road equipment emission reduction plan.</p>	Contractors shall implement daily during project construction, per contract specifications.	Contractor	Construction	SFMTA to conduct weekly monitoring to ensure implementation of measure. SFMTA to prepare weekly report throughout project construction duration.	Authority

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8(M)	Air Quality	<u>M-AQ-C2</u> : Require construction contractors to comply with BAAQMD Regulation 11 (Hazardous Pollutants) Rule 2 (Asbestos Demolition, Renovation, and Manufacturing), which for project demolition activities requires removal standards, reporting requirements, and mandatory monitoring and record keeping.	Contractors shall implement daily during project construction, per contract specifications.	Contractor	Construction	SFMTA to conduct weekly monitoring to ensure implementation of measure. SFMTA to prepare weekly report throughout project construction duration.	Authority
9(M)	Biological Environment	<u>M-BI-C1</u> : Have a certified arborist conduct a preconstruction tree survey to evaluate trees already identified for preservation during the design phase. Employ Best Management Practices (BMPs) identified in tree protection plans and tree removal permits required by SFDPW that will be implemented to preserve the health of those identified trees during project construction.	Per contract specifications, a qualified arborist will implement tree preservation BMPs leading up to/during project construction, including all tree relocations, per contract specifications.	Contractor will provide a qualified arborist to implement.	Preconstruction/ Construction	SFMTA to oversee approvals from SFDPW SFMTA to provide weekly report throughout project construction duration.	Authority FTA SFDPW
10 (M)	Biological Environment	<u>M-BI-C2</u> : To comply with the Migratory Bird Treaty Act, avoid disturbance of nesting migratory birds during the breeding season by implementing the following procedures: (1) If feasible, schedule tree and shrub removal during the nonbreeding season (i.e. September 1 through January 31); (2) if tree and shrub removal is	Per contract specifications, a qualified wildlife biologist will implement pre-construction survey and exclusion structures and buffers as needed	Contractor will provide a qualified wildlife biologist to implement.	Preconstruction/ Construction	SFMTA to provide weekly report throughout project construction duration.	Authority FTA

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		<p>required during breeding season (i.e. February 1 through August 31), follow these measures:</p> <ul style="list-style-type: none"> • Have a qualified wildlife biologist conduct preconstruction surveys of all potential nesting habitat within 500 feet of construction activities where access is available. Exclusion structures (e.g. netting or plastic sheeting) may be used to discourage the construction of nests by birds within the project construction zone. A preconstruction survey of all accessible nesting habitat within 500 feet of construction activities is required to occur no more than 2 weeks prior to construction. • If preconstruction surveys conducted no more than 2 weeks prior to construction identify that protected nests are inactive or potential habitat is unoccupied during the construction period, then no further mitigation is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by protected birds or that are located outside the no-disturbance buffer for active nests may be removed. • If active protected nests are found during preconstruction 	<p>prior to construction and monitor as needed during construction.</p>				

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		<p>surveys, then create a no-disturbance buffer (acceptable in size to CDFW) around active protected bird and/or raptor nests during the breeding season, or until the qualified wildlife biologist determines that all young have fledged. Typical buffers include 500 feet for raptors and 50 feet for passerine nesting birds. The size of these buffer zones and types of construction activities restricted in these areas may be further modified during consultation with CDFG, and will be based on existing noise and human disturbance levels at the project site. Nests initiated during construction are presumed to be unaffected, and no buffer will be necessary; however, the "take" (e.g., mortality, severe disturbance to) of any individual protected birds will be prohibited. Monitoring of active nests when construction activities encroach upon established buffers may be required by CDFG.</p>					
11(M)	Cultural Resources	<p><u>M-CP-C1</u> Focused archival research will identify specific areas within the APE that are likely to contain potentially significant remains. Methods and findings will be documented as an addendum to</p>	<p>Qualified archaeologist to conduct research during final design to inform construction</p>	<p>Authority to provide qualified archaeologist to implement</p>	<p>Final Design</p>	<p>FTA to provide Addendum Survey Report to SHPO as part of ongoing Section 106</p>	<p>Authority FTA SHPO</p>

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		<p>the 2009 survey and sensitivity assessment. Research will be initiated once the project's APE map is finalized identifying the major Areas of Direct Impact (the stations and sewer relocation). Many documents, maps, and drawings cover long stretches of Van Ness, while other locations may be researched if documents indicate potential sensitivity in adjacent areas.</p> <p>The Addendum Survey Report will include the following:</p> <ul style="list-style-type: none"> • A contextual section that addresses the development of urban infrastructure along Van Ness Avenue as well as widening and grading activities along the thoroughfare. This overview will provide a basis for evaluating potential resources as they relate to the history of San Francisco and to its infrastructure. • Documentary research that identifies the types of documents available for the identified station locations: street profiles for grading, street widening maps showing demolished building sites, utility work plans, and others as appropriate. This will include researching various archives and 	<p>planning and further consultation between FTA and SHPO.</p>			<p>consultation. SFMTA to provide final design and oversee archaeology approvals from the Planning Department.</p>	<p>Planning Department</p>

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		<p>records of public agencies in both San Francisco and Oakland (Caltrans).</p> <ul style="list-style-type: none"> • Locations apt to have historic remains present within select areas of the APE (i.e., not removed by later grading or construction). • A cut-and-fill reconstruction of the entire APE corridor, comparing the modern versus mid-1800s ground surface elevations, to fine-tune the initial prehistoric sensitivity assessment, and refine the location of high-sensitivity locations where prehistoric remains may be preserved. • Relevant profiles and plan views of specific blocks to illustrate the methods used in analyzing available documentation. • Summary and conclusions to provide detailed information on locations that have the potential to contain extant prehistoric archaeological and historic-era remains that might be evaluated as significant resources, if any. • Two results are possible based on documentary research: • No or Low Potential for Sensitive Locations – major Areas of Direct Impact have no 					

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		<p>potential to retain extant archaeological remains that could be evaluated as significant resources. No further work would be recommended, beyond adherence to the Inadvertent Discovery Plan (M-CP-3).</p> <ul style="list-style-type: none"> • Potentially Sensitive Locations – If the major Areas of Direct Impact contain locations with a moderate to high potential to retain extant historic or prehistoric archaeological remains that could be evaluated as significant resources, further work would be carried out, detailed in a Testing and Treatment Plan (see M-CP-2). <p>The Phase I addendum report will be submitted to the SHPO for review and concurrence prior to initiation of construction.</p>					
12(M)	Cultural Resources	<p><u>M-CP-C2</u>: The Testing/Treatment plan, if required, would provide archaeological protocols to be employed immediately prior to project construction to test areas identified as potentially significant or having the potential to contain buried cultural resources. In case such areas might be unavoidable, mitigation measures would be proposed.</p> <p>For historic-era resources, work</p>	Per contract specifications, qualified archaeologist to instruct construction crews on this procedure prior to start of construction and throughout construction, as	<p>Authority to provide qualified archaeologist to prepare Testing/Treatment Plan if required.</p> <p>Contractor or SFMTA to provide qualified archaeologist to implement</p>	Construction	<p>FTA to consult with SHPO on a Testing/Treatment Plan to complete the Section 106 Process.</p> <p>SFMTA to monitor instruction and to provide</p>	<p>Authority</p> <p>FTA</p> <p>SHPO</p> <p>Planning Department</p>

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		<p>would initially entail detailed, focused documentary research to evaluate the potential significance of any archaeological material identified during initial research that might be preserved. Significance would be based on the data-potential of possible remains applied to accepted research designs. Two results could ensue:</p> <ul style="list-style-type: none"> • No Potentially Significant Remains. If no locations demonstrate the potential for significant remains, no further archaeological testing would be recommended. • Potentially Significant Remains. If any locations have the potential to contain significant remains, then appropriate field methods will be proposed, including compressed testing and data-recovery efforts. Testing will be initiated immediately prior to construction, when there is access to historic ground levels. Should a site or site feature be found and evaluated as potentially significant, mitigation in the form of data recovery will take place immediately upon discovery should avoidance of the site not be possible. 	<p>needed. Construction crew members to implement if needed during project construction.</p>	<p>Testing/ Treatment Plan if required.</p>		<p>weekly reports of archaeological findings and procedures throughout project construction duration as well as verification of training of all relevant construction crew staff working on job site.</p>	

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		<p>If required for prehistoric resources, a Treatment Plan would identify relevant research issues for resource evaluation, and pragmatic field methods to identify, evaluate, and conduct data recovery if needed. This could include a pre-construction geoarchaeological coring program or a compressed three-phase field effort occurring prior to construction, when the ground surface is accessible.</p> <p>The procedures detailed in the Treatment Plan would be finalized in consultation with the SHPO.</p> <p>A Phase 2 Test/Phase 3 Mitigation report will document all testing and data-recovery excavation methods and findings.</p>					
13(M)	Cultural Resources	<p>M-CP-C3: In the event buried cultural resources are encountered during construction activities, pursuant to 36 CFR 800.13, construction would be halted and the discovery area isolated and secured until a qualified professional archaeologist assesses the nature and significance of the find. Unusual, rare, or unique finds—particularly artifacts or features not found during data recovery—could require additional study. Examples of these would include the following:</p>	<p>Per contract specifications, construction crews to be instructed on this policy prior to start of construction and throughout construction, and to implement if needed during project construction.</p>	<p>Contractor to provide qualified archaeologist to implement</p>	<p>Construction</p>	<p>SFMTA to monitor instruction and to provide weekly reports of archaeological findings and procedures throughout project construction duration.</p>	<p>Authority FTA SHPO Planning Department</p>

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		<ul style="list-style-type: none"> • Any bone that cannot immediately be identified as non-human • Any types of intact features (hearths, house floors, cache pits, structural foundations, etc.) • Artifact caches or concentrations • Rare or unique items (engraved or incised stone or bone, beads or ornaments, mission-era artifacts) • Archaeological remains which are redundant with materials collected during testing or data recovery and which have minimal data potential need not be formally investigated. This could include debitage; most flaked or ground tools, with the exception of diagnostic or unique items (e.g., projectile points, crescents) shell; non-human bone; charcoal and other plant remains. • Diagnostic and unique artifacts unearthed during construction would be collected and their proveniences noted. Artifact concentrations and other features would be photographed, flotation/soils/radiocarbon samples taken (as appropriate), 					

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		<p>and locations mapped using a GPS device.</p> <p>Upon discovery of deposits which may constitute a site, the agency official shall notify the State Historic Preservation Officer (SHPO) and any Indian tribe that might attach religious and cultural significance to the affected property. The notification shall describe the agency official's assessment of National Register eligibility of the property and proposed actions to resolve the adverse effects (if any). The SHPO, Indian tribe, and Advisory Council on Historic Preservation (the Council) shall respond within 48 hours of the notification. The agency official shall take into account their recommendations regarding National Register eligibility and proposed actions, and then carry out appropriate actions. The agency official shall provide the SHPO, Indian tribe, and the Council a report of the actions when they are completed.</p> <p>The above activities could be carried out quickly and efficiently, with as little delay as possible to construction work.</p> <p>The methods and results of any excavations would be documented, with photographs, in an Addendum</p>					

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		<p>Report. Any artifacts collected would be curated along with the main collection. Samples would be processed in a lab and analyzed, or curated with the collection for future studies, at the discretion of the project proponent.</p> <p>If major adjustments are made to the final project design, a qualified professional archaeologist should be consulted before work begins, to determine whether additional survey, research, and/or geoarchaeological assessments are needed.</p>					
14(M)	Cultural Resources	<p><u>M-CP-C4</u>: If humans are discovered during project construction, the stipulations provided under Section 7050.5 of the State Health and Safety Code will be followed. The San Francisco County coroner would be notified as soon as is reasonably possible (CEQA Section 15064.5). There would be no further site disturbance where the remains were found and all construction work would be halted within 100 feet of the discovery. If the remains are determined to be Native American, the coroner is responsible for contacting the California Native American Heritage Commission within 24 hours. The Commission, pursuant</p>	<p>Per contract specifications, construction crews to be instructed on this policy prior to start of construction and throughout construction, and to implement if needed during project construction.</p>	<p>Contractor to provide qualified archaeologist to implement</p>	<p>Construction</p>	<p>SFMTA to monitor instruction and to provide weekly reports of archaeological findings and procedures throughout project construction duration.</p>	<p>Authority County Coroner NAHC Planning Department</p>

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		<p>to California Public Resources Code Section 5097.98 would notify those persons it believes to be the most likely descendants (MLD). Treatment of the remains would be dependent on the views of the MLD.</p>					
15(M)	Geology/Soils /Seismicity/T opography	<p><u>M-GE-C1</u>: Shore all cuts deeper than 5 feet (AGS, 2009a). Consider surcharge load from nearby structures in shoring design of open excavations including an examination of the potential for lateral movement of the excavation walls as a result. Implement the following construction BMPs related to shoring and slope stability:</p> <ul style="list-style-type: none"> • Keep heavy construction equipment, building materials, excavated soil, and vehicle traffic away from the edge of excavations, generally a distance equal to or greater than the depth of the excavation. • During wet weather, prevent storm runoff from entering the excavation. Excavation sidewalls can be covered with plastic sheeting, and berms can be placed around the perimeter of the excavated areas. • Adequately support sidewalks, slabs, pavement, and utilities adjacent to proposed excavations during construction. 	Per contract specifications, contractor to implement during construction.	Contractor	Construction	SFMTA to oversee cuts and provide weekly reports describing the shoring technique used on all cuts deeper than 5 feet throughout project construction duration.	Authority FTA

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16(M)	Hazardous Waste/Materials	<p><u>M-HZ-C1</u>: Create a Worker Site Health and Safety Plan with the following components, in response to potential Recognized Environmental Conditions identified in the Phase II review or other follow-up investigations, and results from preconstruction lead-based paint (LBP) and aerially deposited lead (ADL) surveys specified in Sections 4.8.3 and 4.8.4:</p> <ul style="list-style-type: none"> • A safety and health risk/hazards analysis for each site task and operation in the work plan; • Employee training assignments; • Personal protective equipment requirements; • Medical surveillance requirements; • Air monitoring, environmental sampling techniques, and instrumentation; • Safe storage and disposal measures for encountered contaminated soil, groundwater, or debris, including temporary storage locations, labeling, and containment procedures. • Emergency response plan; and • Spill containment program. 	Per contract specifications, plan (including special provisions) to be written by Contractor as part of construction planning phase.	Contractor	Construction (planning phase)	<p>SFMTA to oversee approval from Caltrans.</p> <p>SFMTA to provide weekly reports on adherence to plan throughout construction duration.</p>	<p>Authority</p> <p>FTA</p> <p>Caltrans</p>
17(M)	Hazardous Waste/Materials	<p><u>M-HZ-C2, IM-HY-C1 and IM-HY-5</u>: Coordinate preparation of a Storm Water Pollution Prevention Plan</p>	Per contract specifications, plan to be written	Contractor	Permitting & Construction (planning phase)	SFMTA to oversee approvals from	<p>Authority</p> <p>FTA</p>

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		<p>(SWPPP) required to comply with the National Pollutant Discharge Elimination System (NPDES) General Permit requirements with San Francisco Public Utilities Commission (SFPUC) and conform construction activities with SFPUC’s “Keep it on site” guide. Include in the project SWPPP the following measures to contain any possible contamination, including protection of storm drains, and to prevent any contaminated runoff or leakage either into or onto exposed ground surfaces:</p> <ul style="list-style-type: none"> • Use of stormwater BMPs, including inlet protection devices, temporary silt fencing, soil stabilization measures, street sweeping, stabilized construction entrances, and temporary check dams. • Conducting drilling/piling operations in accordance with guidelines set forth by the City, including the Department of Public Health Local Oversight Program and Caltrans Construction Site BMP Manual. • Lining storage areas. • Proper and expeditious disposal of items to be removed, such as landscaping, curb bulb waste, existing bus stop shelters, and demolished OCS and signal 	<p>by contractor as part of construction planning phase.</p>			<p>Caltrans and RWQCB</p> <p>SFMTA to provide weekly reports outlining adherence to SWPPP throughout construction duration.</p>	<p>Caltrans</p> <p>RWQCB</p>

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		<p>poles.</p> <p>In accordance with NPDES General Permit requirements the SWPPP will address water quality impacts associated with construction activities, including identification of all drainage facilities onsite, placement of appropriate stormwater and non-stormwater pollution controls, erosion and sediment control, spill response and containment plans, inspection scheduling, maintenance, and training of all construction personnel onsite..</p>					
18(M)	Hazardous Waste/Materials	<p><u>M-HZ-C3</u>: Implement public health and safety measures contained in Worker Health and Safety Plan (M-HZ-C1) during construction.</p>	<p>Per contract specifications, measures will be identified as part of M-HZ-C1 above, and will be implemented throughout construction specifications.</p>	Contractor	Construction	<p>SFMTA to provide weekly reports throughout construction duration.</p>	<p>Authority FTA Caltrans</p>
19(M)	Hazardous Waste/Materials	<p><u>M-HZ-1</u>: Prior to construction, review Phase II study and conduct a follow-up investigation, if appropriate, for identified recognized environmental conditions (RECS). Required actions are:</p> <ul style="list-style-type: none"> Field survey identified RECs to verify the physical locations of the REC sites with respect to the 	<p>SFMTA shall implement M-HZ-1 following final design.</p>	SFMTA	Final Design/Construction Planning	<p>SFMTA to provide a report with findings.</p>	<p>Authority FTA Caltrans</p>

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		<p>preferred build alternative project components and proposed construction earthwork, and observe the current conditions of the sites.</p> <ul style="list-style-type: none"> • Conduct a regulatory file review for each identified REC to determine the current status of the sites and, if possible, the extent of the contamination. • If the aforementioned field survey and file review reveal a likelihood of encountering contaminated soil or groundwater during project construction, then conduct a subsurface exploration within the areas proposed for construction earthwork activities. Conduct the subsurface investigation within the project limits, adjacent to, or downgradient from the REC sites. If soil profiling reveals contaminant concentrations that meet the definition of hazardous materials, prepare and implement Construction Implementation Plan that addresses management of hazardous materials and hazardous waste that is consistent with the federal and state of California requirements pertaining to hazardous 					

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		materials and wastes management.					
20(M)	Hazardous Waste/Materials	<p><u>M-HZ-2</u>: Test soils in landscaped medians that will be disturbed by project activities for aerially deposited lead according to applicable hazardous material testing guidelines. If the soil contains extractible lead concentrations that meet the definition of hazardous materials, obtain Caltrans approval of a Lead Compliance Plan prior to the start of construction or soil-disturbance activities. If lead levels present in surface soils reach concentrations in excess of the hazardous waste threshold, stabilize onsite or dispose at a Class 1 landfill such soils as specified in the Lead Compliance Plan.</p>	<p>SFMTA shall implement soil testing for ADL prior to construction to inform construction planning.</p> <p>Per contract specifications, Contractor shall adhere to Lead Compliance Plan, if necessary.</p>	SFMTA	Final Design/Construction Planning	<p>SFMTA to provide a report with findings and, if necessary, a Lead Compliance Plan.</p> <p>If necessary, SFMTA shall provide weekly reports on Contractor compliance with Lead Compliance Plan throughout construction duration.</p>	<p>Authority</p> <p>FTA</p> <p>Caltrans</p>
21(M)	Hazardous Waste/Materials	<p><u>M-HZ-3</u>: Test for lead in paint used for traffic lane striping and on streetscape features, including the OCS support poles/streetlights, prior to demolition/removal to determine proper handling and disposal methods during project construction. If lead is detected, include appropriate procedures in the Construction Implementation Plan to avoid worker or public contact with these materials or</p>	<p>SFMTA shall implement LBP testing of structures to be demolished, prior to construction to inform construction planning.</p> <p>Per contract specifications,</p>	SFMTA	Final Design/Construction Planning	<p>SFMTA to provide report outlining LBP and shall include procedures in Construction Implementation Plan</p> <p>SFMTA to provide weekly</p>	<p>Authority</p> <p>FTA</p> <p>Caltrans</p>

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		generation of dust or vapors.	Contractor shall adhere to Construction Implementation Plan.			reports on adherence to Construction Implementation Plan throughout construction duration.	
22(M)	Community Impacts/ Public Services & Land Use, Transportation & Circulation	<u>M-CI-C1</u> : During the design phase, with participation from local agencies, other major project proposers in the area (e.g., the California Pacific Medical Center [CPMC] Cathedral Hill Campus, the Better Market Street Project, and the Geary Corridor BRT projects), local communities, businesses associations, and affected drivers develop a Transportation Management Plan (TMP) that includes traffic rerouting, a detour plan, and public information procedures. Implement early and well-publicized announcements and outreach to help minimize confusion, inconvenience, and traffic congestion at the start of and during construction.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA – planning Contractor - construction	Construction Planning Phase, Construction Phase	SFMTA to oversee approvals from Caltrans and SFDPW SFMTA to provide weekly reports on adherence to TMP throughout construction duration.	Authority FTA Caltrans SFDPW
23(M)	Community Impacts/ Public Services & Land Use, Transportation &	M-CI-C2: As part of the TMP, construction planning will minimize nighttime construction in residential areas and minimize daytime construction impacts on retail and commercial areas.	SFMTA to implement as part of construction planning phase. Per contract specifications,	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to oversee project approvals from Caltrans and SFDPW SFMTA to	

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
	Circulation		Contractor to implement during construction.			provide weekly reports on adherence to TMP in Civic Center area throughout construction duration.	
24(M)	Community Impacts/ Public Services & Land Use, Transportation & Circulation	<u>M-CI-C3</u> : Incorporate in the TMP applicable in the Civic Center area, consideration of major civic and performing arts events.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to oversee project approvals from Caltrans and SFDPW SFMTA to provide weekly reports on adherence to TMP in Civic Center area throughout construction duration.	Authority FTA Caltrans SFDPW
25(M)	Community Impacts/ Public Services & Land Use, Transportation & Circulation	<u>M-CI-C4</u> : ² As part of the TMP public information program, coordinate with adjacent properties along Van Ness Avenue to determine the need for colored parking spaces (for freight and passenger and disabled loading) for these uses and work to identify locations for replacement spaces or plan construction activities to minimize the loss of these spaces.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to oversee approvals from Caltrans and SFDPW. SFMTA to provide weekly reports on adherence to TMP	Authority FTA Caltrans SFDPW

² M-CI-2 constitutes a mitigation measure under NEPA and an improvement measure under CEQA.

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
						throughout construction duration.	
26(M)	Community Impacts/ Public Services & Land Use, Transportation & Circulation	M-CI-C5: As part of the TMP public information program, coordinate with adjacent properties along Van Ness Avenue to ensure that pedestrian access to these properties is maintained at all times.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to oversee approvals from Caltrans and SFDPW. SFMTA to provide weekly reports on adherence to TMP throughout construction duration	Authority FTA Caltrans SFDPW
27(M)	Community Impacts/ Public Services & Land Use, Transportation & Circulation	M-CI-C6: As part of the TMP, SFMTA's process for accepting and addressing complaints will be implemented. This includes provision of contact information for the Project Manager, Resident Engineer, and Contractor on project signage with direction to call if there are any concerns. Complaints are logged and tracked to ensure they are addressed.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to oversee approvals from Caltrans and SFDPW SFMTA to provide weekly reports on adherence to TMP throughout construction duration.	Authority FTA Caltrans SFDPW
28(M)	Community Impacts/ Public Services & Land Use,	M-CI-C7. As part of the TMP, adequate passenger and truck loading zones will be maintained for adjacent land uses, including maintaining access to driveways	SFMTA to implement as part of construction planning phase.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to oversee approvals from Caltrans and SFDPW.	Authority FTA Caltrans

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
	Transportation & Circulation	and providing adequate loading zones on the same or adjoining street block face.	Per contract specifications, Contractor to implement during construction.			SFMTA to provide weekly reports on adherence to TMP throughout construction duration.	SFDPW
29(M)	Transportation and Circulation	<u>M-TR-C1</u> : Temporarily convert parking lanes to mixed-flow traffic lanes to generally maintain two open traffic lanes in each direction and minimize traffic impacts.	SFMTA to implement as part of construction planning phase. Per contract specification, Contractor to implement during construction.	SFMTA, Contractor	Construction Planning Phase, Construction Phase	SFMTA to oversee approvals from Caltrans and SFDPW. SFMTA to provide weekly reports on adherence to TMP throughout construction.	Authority FTA Caltrans SFDPW
	Transportation and Circulation	<u>M-TR-C3</u> : Plan required closures of a second mixed-flow traffic lane and detours for nighttime or off-peak traffic hours and as in conformance with approved noise requirements.	SFMTA to implement as part of construction planning phase. Per contract specification, Contractor to implement during construction	SFMTA, Contractor	Construction Planning Phase, Construction Phase	SFMTA to oversee approvals from Caltrans and SFDPW SFMTA to provide weekly reports on adherence to TMP throughout construction duration.	Authority FTA Caltrans SFDPW

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
30(M)	Transportation and Circulation	<u>M-TR-C4</u> : Maintain one east-west and north-south crosswalk leg open at all times at all intersections.	SFMTA to implement as part of construction planning phase. Per contract specification, Contractor to implement during construction	SFMTA, Contractor	Construction Planning Phase, Construction Phase	SFMTA to oversee approvals from Caltrans and SFDPW SFMTA to provide weekly reports on adherence to TMP throughout construction duration.	Authority FTA Caltrans
31(M)	Transportation and Circulation	<u>M-TR-C5</u> : Install sufficient barricading, signage, and temporary walkways as needed to minimize impacts to pedestrians.	SFMTA to implement as part of construction planning phase. Per contract specification, Contractor to implement during construction	SFMTA, Contractor	Construction Planning Phase, Construction Phase	SFMTA to oversee approvals from Caltrans and SFDPW SFMTA to provide weekly reports on adherence to TMP throughout construction duration.	Authority FTA Caltrans SFDPW
32(M)	Transportation and Circulation	<u>M-TR-C6</u> : Coordinate with the Golden Gate Bridge & Highway Transportation District (GGT) as part of the TMP to plan temporarily relocated transit stops as needed, and minimize impacts to GGT service.	SFMTA to implement as part of construction planning phase through coordination with GGT.	SFMTA, Contractor	Construction Planning Phase & Construction	SFMTA to oversee approvals from Caltrans and concurrence from GGT. SFMTA to	Authority FTA Caltrans GGT

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
			Per contract specification, Contractor to implement during construction.			provide weekly reports on adherence to TMP throughout construction duration.	
33(M)	Transportation and Circulation	<u>M-TR-C7</u> : Develop and coordinate with other major projects in the area a Transportation Management Plan (TMP) outlining methods and strategies to minimize construction activity-related traffic delay and inconvenience to the traveling public. The TMP will include a public information program and wayfinding to provide local businesses and residents with information related to the construction activities and durations, temporary traffic closures and detours, parking restrictions, and bus stop relocations. The public information program will be coordinated with regional agencies, such as Caltrans and Golden Gate Transit.	SFMTA to implement as part of construction planning phase. Per contract specification, Contractor to implement during construction.	SFMTA	Construction Planning Phase & Construction; TMP to be developed during the 30 percent project design phase	SFMTA to oversee approvals from Caltrans and SFDPW SFMTA to provide weekly reports on adherence to TMP throughout construction duration.	Authority FTA Caltrans SFDPW
34(M)	Transportation and Circulation	<u>M-TR-1</u> : Add an additional vehicle to the fleet on Routes 47 and 49 if needed to decrease headways for each route sufficiently to bring the	SFMTA Transit Operations to implement as needed during	SFMTA	Operation	SFMTA to provide quarterly reports on	Authority FTA

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		load factors below SFMTA's maximum vehicle load standard of 0.85.	project operation.			crowding for first 2 years of operation, annual reports for subsequent 5 years.	
35(M)	Transportation and Circulation	<p><u>M-Traffic Management Toolbox:</u> <u>Develop and implement a traffic management toolbox</u> to raise public awareness of circulation changes; advise drivers of alternate routes; and provide pedestrian improvements. Toolbox actions will include:</p> <ul style="list-style-type: none"> • <u>Provide driver wayfinding and signage</u>, especially to assist infrequent drivers of the corridor who may not be aware of alternate routes, such as along the Larkin/Hyde and Franklin/Gough corridors. Coordinate with Caltrans to develop the driver wayfinding and signage strategy as part of mitigation measure and M-TR-C5. Continue to monitor traffic after construction and during project operation. If the above mentioned construction measures prove to be helpful in minimizing traffic delay impacts, consider implementing similar strategies on an as-needed basis during project operation. 	SFMTA to implement during and after construction.	SFMTA	Construction and Operation	<p>SFMTA to provide weekly reports on adherence to TMP throughout construction duration.</p> <p>SFMTA to prepare monthly monitoring reports for the first two years of project operation.</p>	<p>Authority</p> <p>FTA</p> <p>Caltrans</p> <p>Golden Gate Transit</p>

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		<ul style="list-style-type: none"> <li data-bbox="485 264 863 1003">• <u>Public Awareness Campaign and Transportation Management Plan (TMP) during and after Project Construction.</u> As discussed as part of mitigation measure M-TR-C7, the TMP will implement a public awareness program of wayfinding during construction and will coordinate the public information program with regional agencies, including Caltrans and GGT. Continue to monitor traffic after construction and during project operation. If the above mentioned construction measures prove to be helpful in minimizing traffic delay impacts, the SFMTA may choose to implement similar strategies on an as-needed basis during project operation. <li data-bbox="485 1011 863 1412">• <u>Pedestrian Amenities at Additional Corridor Locations.</u> After construction, during project operation, monitor travel in the corridor to identify additional locations for pedestrian improvements based on a combination of pedestrian and vehicle volumes, infrastructure capabilities, and collision history. Consider the potential for long- 					

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		term, pedestrian amenities, such as countdown signals and pedestrian curb bulbs, to help reduce the severity of automobile traffic delays through mode shift .					
36(M)	Utilities and Service Systems	<u>M-UT-1</u> : Closely coordinate BRT construction with concurrent utility projects planned within the Van Ness Avenue corridor.	SFMTA, SFPUC, and SFDPW to implement as part of construction planning phase, including coordination with the Committee for Utility Liaison on Construction and Other Projects (CULCOP) and the San Francisco Street Construction Coordination Center.	SFMTA, SFPUC and contractor	Permitting & Construction (planning phase)	SFMTA to oversee approvals from SFDPW.	Authority FTA
37(M)	Utilities and Service Systems	<u>M-UT-2</u> : During the design phase, inspect and evaluate the sewer pipeline within the project limits to assess the condition of the pipeline and need for replacement. If repair or relocation is needed, during project construction, continue to coordinate such work with SFPUC and SFDPW working with the City's Committee for Utility Liaison on Construction and Other Projects (CULCOP).	SFMTA and SFPUC to conduct needed sewer inspections during final design.	SFMTA, SFPUC	Final Design & Construction (planning phase)	SFMTA to oversee approvals from SFDPW.	Authority FTA

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
38(M)	Utilities and Service Systems	<p><u>M-UT-3</u>: Design the project to ensure that the proposed BRT transitway and station facilities do not prevent access to the underground auxiliary water supply service (AWSS) lines. Ensure that the design provides adequate access for specialized trucks to park next to gate valves for maintenance and that gate valves are not located beneath medians or station platforms.</p>	<p>SFMTA, SFPDW, SFPUC, and the San Francisco Fire Department to coordinate and plan during final design, and again for construction planning.</p> <p>Per contract specifications, Contractor to implement during construction.</p>	SFMTA, SFPUC, and the San Francisco Fire Department	Final Design & Construction	<p>SFMTA to oversee approvals from SFPUC and San Francisco Fire Department</p> <p>SFMTA to provide weekly reports on accessibility of AWSS lines and gate valves throughout construction duration.</p>	<p>Authority</p> <p>FTA</p>
39(M)	Utilities and Service Systems	<p><u>M-UT-4</u>: In situations where utility facilities cannot be relocated, create an operations plan to accommodate temporary closure of the transitway and/or stations in coordination with utility providers to allow utility providers to perform maintenance, emergency repair, and upgrade/replacement of underground facilities that may be located beneath project features such as the BRT transitway, station platforms, or curb bulbs. Integrate into the plan signage for BRT patrons and safety protocols for Muni operators and utility providers.</p>	<p>SFMTA to coordinate with utility providers, SFPDW, the SFPUC and SF Fire Department during final design to ensure project design considers utility maintenance programs, including those overlapping with project construction.</p>	SFMTA	Final Design, Construction	<p>SFMTA to oversee approvals from SFPUC, SF Fire Department, and SFPDW.</p>	<p>Authority</p> <p>FTA</p>

No.	Affected Resource/s	Mitigation & Improvement Measures ¹	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
40(M)	Community Impacts	<u>M-CI-IM-1</u> ³ : Prior to construction, coordinate with all businesses that would be affected by removal of colored parking spaces, including short-term parking, to confirm the need for truck and/or passenger loading spaces and to identify and implement appropriate replacement parking locations to minimize the impacts to these businesses.	SFMTA to implement as part of design phase Per contract specifications, Contractor to implement relocated parking	SFMTA	Design and Construction	SFMTA to oversee approvals from Caltrans and SFDPW. SFMTA to provide weekly report on adherence to parking designs throughout construction duration.	Authority FTA Caltrans SFDPW
41(M)	Community Impacts	<u>M-CI-IM-2</u> ⁴ : Apply parking management tools as needed to offset any substantial impacts from the loss of on-street parking, which may include adjustment of residential parking permits in the residential community north of Broadway, or use of SFpark, which is a package of real-time tools to manage parking occupancy and turnover through pricing (appropriate in areas of high-density commercial uses that rely on high parking turnover).	SFMTA to implement as part of post-construction project monitoring phase.	SFMTA	Post-Construction Monitoring Phase	SFMTA to provide quarterly parking assessment for first 2 years of project operation.	Authority FTA

³ M-CI-IM-1 and M-CI-IM-2 constitutes a mitigation measure under NEPA and an improvement measure under CEQA

⁴ M-CI-IM-1 and M-CI-IM-2 constitutes a mitigation measure under NEPA and an improvement measure under CEQA

Table B. Mitigation Monitoring & Reporting Program for the Van Ness Avenue BRT Project (Improvement Measures)

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
1 (IM)	Aesthetics/Visual Resources	<u>IM-AE-C1</u> : During construction, require the contractor to maintain the site in an orderly manner, removing trash and waste, and securing equipment at the close of each day's operation.	Contractor to implement daily during project construction.	Contractor	Construction	SFMTA to conduct daily visual scans and prepare weekly report throughout project construction duration.	Authority FTA
2 (IM)	Aesthetics/Visual Resources	<u>IM-AE-C2</u> : To reduce glare and light used during nighttime construction activities, require the contractor to direct lighting onto the immediate area under construction only and to avoid shining lights toward residences, nighttime commercial properties, and traffic lanes.	Contractor to implement nightly during project construction.	Contractor	Construction	SFMTA to conduct nightly visual scans and prepare weekly report throughout project construction duration.	Authority FTA
3 (IM)	Biological Environment	<u>IM-BI-1</u> : In compliance with local tree protection policies codified in the San Francisco Public Works Code, preserve mature trees and incorporate them into the project landscape plan as feasible. Incorporate the planting of replacement trees and landscaping into the landscape plan as feasible.	A qualified arborist will be on the landscape design team to work with SFMTA and SFDPW staff to identify preservation opportunities for mature trees.	Qualified arborist, SFMTA, SFDPW	30% design through final design	SFMTA to provide CER, final design and oversee project approvals from SFDPW Bureau of Urban Forestry.	Authority FTA
4	Biological	<u>IM-BI-2</u> : Have a certified arborist	A qualified arborist	Qualified Arborist,	30% design	SFMTA to	Authority

⁵ The number coding is as follows: improvement (IM) or mitigation (M) measure – environmental resource – construction period includes (C) – numerical order within environmental resource.

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
(IM)	Environment	complete a preconstruction tree survey to identify protected trees that will be potentially impacted by the proposed project, and to determine the need for tree removal permits and tree protection plans under San Francisco Public Works Code requirements.	will conduct tree survey during 30% design, and then again during final design as needed.	SFMTA	through final design	provide CER, final design and oversee project approvals from SFDPW Bureau of Urban Forestry.	FTA
5 (IM)	Biological Environment	<u>IM-BI-3</u> : In compliance with the Executive Order on Invasive Species, E.O. 13112, design and implement landscaping that does not use species listed as noxious weeds.	Qualified landscape architect will exclude noxious weeds from landscape plan.	Qualified Landscape Architect provided by SFMTA	Final Design	SFMTA to provide final design and oversee project approvals from SFDPW Bureau of Urban Forestry	Authority FTA
6 (IM)	Geology/Soils/Seismicity/Topography	<u>IM-GE-1</u> : Perform localized soil modification treatments as needed at locations where station platforms would be located in areas of fill or areas mapped as a liquefaction area. Such soil modification may include soil vibro-compaction or permeation grouting.	Per contract specifications, Contractor to implement during design and construction phase, in preparation of construction of station platforms.	Contractor	Final Design/Permitting/Construction	SFMTA to provide weekly report on soil modification treatments throughout project construction duration.	Authority FTA
7 (IM)	Geology/Soils/Seismicity/Topography	<u>IM-GE-2</u> : Over-excavate fill soils and replace them with engineered fill as needed in areas where proposed project structures would be located in areas of fill or in liquefaction zones.	Per contract specifications, Contractor to implement during design and construction phase, in preparation of construction of station platforms.	Contractor	Final Design/Permitting/Construction	SFMTA to provide weekly report on fill soils in areas of fill or liquefaction zones throughout project construction	Authority FTA

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
8 (IM)	Geology/Soils/Seismicity/Topography	IM-GE-3: As needed; in areas of fill or areas mapped as a liquefaction area, design and construct deeper foundations for station platforms and canopies.	SFMTA to perform assessment during final design. Per contract specifications, Contractor to implement during permitting and construction phase, in preparation of construction of station platforms.	Contractor	Final Design/Permitting /Construction	duration. SFMTA will oversee permit approval from SFDPW and Caltrans SFMTA to provide weekly reports on compliance with foundational requirements throughout construction of foundations, then monthly reports on subsidence through the remainder of project construction	Authority FTA Caltrans SFDPW
9 (IM)	Water Quality and Hydrology	IM-HY-C1. See M-HZ-C2.	Per contract specifications, SWPPP to be written by contractor as part of construction planning phase.	Contractor	Permitting & Construction (planning phase)	SFMTA to oversee approvals by: SFPUC and RWQCB SFMTA to provide weekly reports outlining adherence to SWPPP	Authority FTA RWQCB

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
10 (IM)	Water Quality and Hydrology	<u>IM-HY-C2</u> : Coordinate with and obtain any needed permit approval from the SFPUC for any construction work that impacts the combined sewer system (CSS)	SFMTA shall obtain any needed approval from SFPUC.	SFMTA, SFPUC and contractor	Permitting & Construction (planning phase)	SFMTA to oversee approvals from SFPUC SFMTA to provide weekly reports on adherence to "Keep it on Site" guidelines throughout construction duration.	Authority FTA RWQCB
11 (IM)	Water Quality and Hydrology	<u>IM-HY-C3</u> : If groundwater is encountered during project excavation activities, pump the water from the excavated area, contain and treated it in accordance with all applicable State and federal regulations before discharging it to the existing local CSS. Obtain a batch discharge permit from SFPUC prior to commencement of discharge to the CSS.	SFMTA and SFPUC to implement as part of construction planning phase. Per contract specifications, contractor shall implement during construction if groundwater is encountered.	SFMTA, SFPUC and contractor	Permitting & Construction (planning phase)	SFMTA to oversee approvals from SFPUC and RWQCB	Authority FTA RWQCB
12 (IM)	Water Quality and Hydrology	<u>IM-HY-1</u> : Design landscape areas provided by the project to minimize and reduce total runoff. Avoid the overuse of water and/or fertilizers on landscaped areas.	SFMTA and landscape architects to implement during landscape design. SFPDW to implement water and fertilizer usage during project operation	SFMTA, SFPDW	Final Design & Operation	SFMTA to oversee approvals from SF Arts Commission, HPC, and Planning Department	Authority FTA

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
			<p>Contractor will implement landscape plan and follow watering/fertilizing guidelines during construction, as needed, and per contract specifications.</p>			<p>SFDPW to provide quarterly reports on fertilizer usage for first 5 years of operation.</p> <p>SFMTA to submit weekly reports on Contractor implementation of landscape plan and watering/fertilizing guideline adherence, as needed throughout construction duration.</p>	
13 (IM)	Water Quality and Hydrology	<p><u>IM-HY-2</u>: As project design progresses, investigate and as feasible incorporate in the design and implement stormwater management tools, such as permeable paving, infiltration planters, swales, and rain gardens, as set forth in the <i>San Francisco Better Streets Plan</i>. In determining the feasibility of implementing stormwater management tools, consider streetscape geometry, topography, soil type and compaction, groundwater depth,</p>	<p>SFMTA, SFPUC and SFDPW landscape architects to include in landscape design, and consult with SFDPW on maintenance aspects.</p> <p>Contractor to implement stormwater management tools, per contract</p>	SFMTA, SFPUC, SFDPW, and Contractor	Final Design & Operation	<p>SFMTA to oversee approvals from: SFAC, HPC, Planning Department, SFDPW, and SFPUC for final design.</p> <p>SFMTA to provide weekly reports on implementation</p>	<p>Authority</p> <p>FTA</p>

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		subsurface utility locations, building laterals, maintenance costs and safety, and pedestrian accessibility.	specifications.			of stormwater elements throughout construction duration.	
14 (IM)	Water Quality and Hydrology	<u>IM-HY-3</u> : In compliance with the City Integrated Pest Management Policy (City Municipal Code, Section 300), employ prevention and non-chemical control methods in maintaining landscaping in the Van Ness Avenue corridor, including monitoring for pests before treating, and using the least-hazardous chemical pesticides, herbicides, and fertilizers only when needed and as a last resort.	SFMTA and landscape architects to consider pest management requirements in landscape design, and the contractor to implement throughout the plant establishment period. SFDPW to implement during project operation Contractor to implement during construction, as needed and per contract specifications and City guidelines.	Contractor, SFMTA, SFDPW	Final Design & Operation	SFMTA to oversee approvals from: SFAC, HPC, and Planning Department, for final design. SFMTA to provide weekly reports on pest control elements throughout construction duration. SFDPW to provide quarterly reports on pest control management for the first 5 years of operation.	Authority FTA SFDPW
15 (IM)	Water Quality and Hydrology	<u>IM-HY-4</u> : Equip proposed BRT stations with trash receptacles to minimize the miscellaneous waste that may enter the storm drain system and clog storm drains or	SFMTA to implement during final design.	SFMTA	Final Design	SFMTA	Authority FTA

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		release pollutants.					
16 (IM)	Water Quality and Hydrology	<u>IM-HY-5</u> : See-M-HZ-C2.	Per contract specifications, SWPPP to be written by contractor as part of construction planning phase. SWPPP will be implemented by Contractor.	Contractor	Permitting & Construction (planning phase)	SFMTA to oversee approvals from SFPUC and RWQCB SFMTA to provide weekly reports on implementation of SWPPP throughout construction duration.	Authority FTA RWQCB
17 (IM)	Noise and Vibration	<u>IM-NO-C1</u> : During construction, implement the following best practices in equipment noise and vibration control, as feasible: <ul style="list-style-type: none"> Use newer equipment with improved noise muffling and ensure that all equipment items have the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators intact and operational. Newer equipment will generally be quieter in operation than older equipment. All construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., 	Per contract specifications, Contractor to implement during construction.	Contractor	Construction	SFMTA to provide weekly reports outlining adherence to standards throughout construction duration.	Authority FTA

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		<p>mufflers and shrouding).</p> <ul style="list-style-type: none"> • Perform all construction in a manner that minimizes noise and vibration. Utilize construction methods or equipment that will provide the lowest level of noise and ground vibration impact. • Turn off idling equipment. • When possible, limit the use of construction equipment that creates high vibration levels, such as vibratory rollers and hammers. When such equipment must be used within 25 feet of any existing building, select equipment models that generate lower vibration levels. • Restrict the hours of vibration-intensive equipment or activities, such as vibratory rollers, so that annoyance to residents is minimal (e.g., limit to daytime hours as defined in the noise ordinance). 					
18 (IM)	Noise and Vibration	<p><u>IM-NO-C2</u>: During project construction, conduct project truck loading, unloading, and hauling operations so that noise and vibration are kept to a minimum by carefully selecting routes to avoid passing through residential neighborhoods to the greatest possible extent.</p>	Per Contract specifications, Contractor to implement daily during project construction, per contract specifications.	Contractor	Construction	SFMTA to provide weekly reports on adherence to noise and vibration minimization practices throughout construction duration.	Authority FTA

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
19 (IM)	Noise and Vibration	<u>IM-NO-C3</u> : Perform independent noise and vibration monitoring in sensitive areas as needed to demonstrate compliance with applicable noise limits. Require contractors to modify and/or reschedule their construction activities if monitoring determines that maximum limits are exceeded at residential land uses per the City Noise Ordinance.	SFMTA to perform independent noise and vibration monitoring. Contractor to implement modifications as needed during project construction, per contract specifications.	Contractor	Construction	SFMTA to provide weekly reports on noise and vibration monitoring throughout construction duration.	Authority FTA SFDPH
20 (IM)	Noise and Vibration	<u>IM-NO-C4</u> : During construction, comply with the City noise ordinances and obtain all necessary permits, particularly in relation to nighttime construction work.	Per contract specifications. Contractor to implement throughout project construction.	Contractor	Construction	SFMTA to provide weekly reports on compliance with City noise ordinance throughout construction duration.	Authority FTA
21 (IM)	Noise and Vibration	<u>IM-NO-1</u> : Throughout project operation, maintain roadway surface to avoid increases in BRT noise and vibration levels.	SFMTA to ensure regular maintenance of roadway surface through Caltrans maintenance agreement.	SFMTA/SFDPW	Operation	SFMTA to provide final maintenance agreement with Caltrans and identify maintenance funding source for local contribution to BRT runningway maintenance.	Authority FTA

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
22 (IM)	Traffic and Circulation	<u>IM-NMT-1</u> : Include comprehensive wayfinding, allowing all users to navigate to and from the correct platform.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to prepare weekly report throughout duration of project construction.	Authority FTA
23 (IM)	Traffic and Circulation	<u>IM-NMT-2</u> : For Build Alternative 4, bus vehicle design should incorporate an intuitive seating space for users requiring level boarding that is easily accessible to both the front door on the right side and the door behind the operator on the left side.	SFMTA to incorporate in vehicle procurement	SFMTA	Operation	SFMTA to provide periodic report on vehicle procurement	Authority FTA
24 (IM)	Traffic and Circulation	<u>IM-NMT-3</u> : For Build Alternative 4, bus vehicle design should incorporate audible cues, such as stop announcements, of which door will open to avoid any confusion for passengers.	SFMTA to incorporate in vehicle procurement	SFMTA	Operation	SFMTA to provide report on vehicle procurement	Authority FTA
25 (IM)	Traffic and Circulation	<u>IM-NMT-4</u> : Provide sufficient information to educate less-ambulatory passengers that board at BRT stations that they would need to exit through the front, right doors for stops outside the Van Ness Avenue corridor.	SFMTA to incorporate in vehicle procurement	SFMTA	Operation	SFMTA to provide report on vehicle procurement	Authority FTA

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
26 (IM)	Traffic and Circulation	IM-TR-1: On-street parking will be created where bus stops are consolidated or moved to the center of the street.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to prepare weekly report during applicable phase of project construction.	Authority FTA
27 (IM)	Traffic and Circulation	IM-TR-2: Additional on-street parking will be provided where feasible by lane striping.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to prepare weekly report during applicable phase of project construction.	Authority FTA
28 (IM)	Traffic and Circulation	IM-TR-3: Infill on-street parking spaces will be provided where they do not exist today as feasible.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to prepare weekly report during applicable phase of project construction.	Authority FTA

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
29 (IM)	Traffic and Circulation	<u>IM-TR-4</u> : SFMTA will give priority to retaining color-painted on-street parking spaces, such as yellow freight zones white passenger loading zones, green short-term parking, and blue disabled parking.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to prepare weekly report during applicable phase of project construction.	Authority FTA
30 (IM)	Traffic and Circulation	<u>IM-TR-5</u> : Blue handicapped parking spaces will be designed to provide a curb ramp behind each space.	SFMTA to implement as part of construction planning phase. Per contract specifications, Contractor to implement during construction.	SFMTA	Construction Planning Phase, Construction Phase	SFMTA to prepare weekly report during applicable phase of project construction.	Authority FTA
31 (IM)	Utilities and Service Systems	<u>IM-UT-C1</u> : For construction work involving utilities follow these requirements: <ul style="list-style-type: none"> Obtain authorization from utility provider before initiating work Contact Underground Service Alert in advance of excavation work to mark-out underground utilities Conduct investigations, including exploratory borings if needed, to confirm the location and type of 	SFMTA, SFPUC, and SFPDW to implement as part of construction planning phase, including coordination with utility providers, the Committee for Utility Liaison on Construction and Other Projects	SFMTA, SFPUC and contractor	Permitting & Construction (planning phase)	SFMTA to oversee approvals from SFPDW and Caltrans. SFMTA to provide weekly reports on adherence to permitting requirements	Authority FTA Caltrans SFPDW

No.	Affected Resource/s ⁵	Mitigation & Improvement Measures	Implementation Procedure	Implementation Responsibility	Implementation Schedule	Monitoring Responsibility	Reporting Recipient
		underground utilities and service connections <ul style="list-style-type: none"> • Prepare a support plan for each utility crossing detailing the intended support method • Take appropriate precautions for the protection of unforeseen utility lines encountered during construction • Restore or replace each utility as close as planned and work with providers to ensure its location is as good or better than found prior to removal 	(CULCOP) and the San Francisco Street Construction Coordination Center. Per contract specifications and as outlined in approval permits, Contractor to implement planned approach to utilities.			with respect to utilities throughout construction duration.	