# Final

# **Mitigation Monitoring and Reporting Plan**

# BART Transit Operations Facility and Lake Merritt Plaza Redesign

San Francisco Bay Area Rapid Transit District

November 29, 2017

Adopted December 7, 2017

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# BART Transit Operations Facility and Lake Merritt Plaza Redesign

Prepared for

### San Francisco Bay Area Rapid Transit District

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## 1. INTRODUCTION

#### 1.1 Purpose and Need for Monitoring

Pursuant to the California Environmental Quality Act (CEQA), an Initial Study/Mitigated Negative Declaration (IS/MND) was prepared by the San Francisco Bay Area Rapid Transit District (BART) to address the potential environmental effects of the BART Transit Operations Facility and Lake Merritt Plaza Redesign Project (proposed project). The Draft IS/MND was issued for a public review period that began on September 22, 2017 and ended on October 22, 2017. A Final IS/MND has been prepared that provides all comments on the proposed project and responds to those comments. The environmental analyses for the proposed project identified potential impacts and measures to mitigate those impacts wherever feasible. Potential impacts and mitigation measures were identified in the following areas:

- Air Quality
- Biological Resources
- Hazards and Hazardous Materials
- Noise and Vibration

This Mitigation Monitoring and Reporting Plan (MMRP) identifies the mitigation actions that will be performed by BART to compensate for, reduce, minimize, or eliminate the effect of impacts resulting from construction and operation of the proposed project. This MMRP identifies and clarifies the mitigation measures to be implemented by BART for the proposed project and identifies the parties responsible for implementation and monitoring. This MMRP incorporates all mitigation measures identified in the IS/MND.

#### 1.2 Project Description

BART currently houses much of its transit system management facilities in the Lake Merritt Complex, near the Lake Merritt Plaza at the Lake Merritt BART Station in Oakland. The existing facilities require increased physical space and state of good repair improvements to achieve state-of-the art functionality, support improved BART operations, and accommodate operation of planned BART extension projects over the next 40 years, including the extension to Silicon Valley.

The current facilities cannot be expanded because of physical constraints at the current location. Therefore, BART is proposing to design and construct a new Transit Operations Facility (TOF) at the Lake Merritt Plaza, to modernize its operations infrastructure and support system expansion. As part of the project, BART also will redesign the Lake Merritt Plaza to create an enhanced multimodal transportation hub and transit plaza that better serves the neighborhood.

#### 1.3 Mitigation Monitoring Program

This MMRP has been prepared for the BART TOF and Lake Merritt Plaza Redesign Project in accordance with the California Public Resources Code Section 21081.6, which specifies that when a public agency makes findings required by paragraph (1) of subdivision (a) of Section 21081, it "...shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." Such findings have been made by the BART Board of Directors. Public Resources Code 21081.6 further specifies that the MMRP will "...ensure compliance during project implementation."

This MMRP is intended to ensure the effective implementation of mitigation measures that are within the authority of BART to implement, including monitoring where identified, throughout all phases of development and operation of the project. The MMRP may be modified by BART during Project implementation, as necessary, in response to changing conditions or other refinements. The mitigation monitoring plan table has been prepared to assist the responsible parties in implementing the MMRP. The table identifies individual mitigation measures, monitoring and reporting procedures or actions, monitoring/mitigation timing, responsible person/agency for implementing the measures, and space to confirm implementation of the mitigation measures.

#### 1.4 Roles and Responsibilities

The BART Project Manager (PM) will be responsible for oversight of mitigation actions and reporting on compliance with the measures in the MMRP. BART staff, consultants to BART, and/or contractors to BART will perform mitigation actions. The PM will have the following responsibilities:

- Be knowledgeable in the mitigation that is to be monitored.
- Verify implementation of the mitigation by:
  - ensuring before advertisement for contract bids that bid documents, contracts, and other plans and specifications include requirements to implement identified mitigation measures; and
  - conducting site visits in the field to ensure that required implementation has been properly executed during and after construction.

# 2. PROJECT MITIGATION MEASURES

#### 2.1 Introduction

This section describes the mitigation measures for each of the impacts identified in the BART Transit Operations Facility and Lake Merritt Plaza Redesign IS/MND and identifies the parties responsible for implementation and monitoring of each measure. Mitigation measures are numbered using a prefix to link them with the impact they address. ("Mitigation Measure AQ-1" refers to the first mitigation measure identified in the Air Quality section.) For ease of reference, the impacts and mitigation measures in this MMRP are numbered as they were described in the environmental analysis. The resource topics are discussed in the same order as presented in the IS/MND.

### 2.2 Project Mitigation Measures and Monitoring Actions

The mitigation measures and monitoring actions presented in the table starting on the next page apply to the proposed project.

The columns in the MMRP table are described below:

- Mitigation Number the mitigation measure descriptor/number from the IS/MND.
- Mitigation Measure the text of the mitigation measure from the IS/MND.
- Timing/Monitoring Action the time frame or Project phase when the mitigation measure will be implemented, and the monitoring action or reporting procedure required as evidence of mitigation measure implementation.
- Implementation Responsibility the entity responsible for complying with the requirements of the mitigation measure. In most cases, the construction contractor will be responsible for implementing the mitigation measure; however, as noted previously under the BART PM's roles and responsibilities, the PM is to ensure that the mitigation measure is included in the bid documents, contracts, and other plans and specifications for construction and operation of the Project and that mitigation measures are implemented in compliance with this plan.
- Verification of Implementation evidence that the mitigation measure has been implemented. This column is to be dated and initialed by the PM, or his/her designee, based on the documentation provided by the construction contractor and onsite monitoring.

#### BART TOF and Lake Merritt Plaza Redesign Project Mitigation Monitoring and Reporting Activities

Mitigation Measure Timing/Monitoring Action		Implementation Responsibility	Verification of Implementation
AIR QUALITY			
Mitigation Measure AQ-1: Basic Air Quality Construction C	ontrol Measures.		
The following measures will be implemented by the BART construction contractor during all phases of construction on the project site:	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
<ul> <li>All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day.</li> </ul>	<ol> <li>During construction, water exposed areas as necessary to minimize air emissions according to the plans and specifications</li> </ol>	2) Contractor	
,	<ol> <li>Document watering on stormwater pollution prevention plan (SWPPP) inspection form</li> </ol>	3) Contractor	
	4) Verify implementation of Items 2 and 3	4) BART	
<ul> <li>All haul trucks transporting soil, sand, or other loose material off site will be covered.</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	<ol> <li>During construction, cover haul trucks transporting loose materials off site</li> </ol>	2) Contractor	
	3) Verify implementation of Item 2	3) BART	
• All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
power sweeping is prohibited.	2) During construction, use wet power vacuum street sweepers to remove mud or dirt from adjacent public roads, in accordance with the requirements of this measure	2) Contractor	
	<ol> <li>Document removal of mud or dirt track out on SWPPP inspection forms</li> </ol>	3) Contractor	
	4) Verify implementation of Items 2 and 3	4) BART	

Mitigation Measure	Timing/Monitoring Action	Implementation Responsibility	Verification of Implementation
<ul> <li>All vehicle speeds on unpaved roads will be limited to 15 miles per hour.</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	<ol> <li>During construction, ensure vehicles traveling on unpaved roads comply with speed restrictions</li> </ol>	2) Contractor	
	3) Verify implementation of Item 2	3) BART	
<ul> <li>All roadways, driveways, and sidewalks to be paved will be completed as soon as possible.</li> <li>Building pads will be laid as soon as possible after</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
grading unless seeding or soil binders are used.	2) During construction, complete the paving and building pads as soon as possible, unless other provisions as noted are implemented	2) Contractor	
	3) Verify implementation of Item 2	3) BART	
<ul> <li>Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
the California airborne toxics control measure Title 13, Section 2485 of the California Code of Regulations). Clear signage will be provided for	<ol> <li>During construction, minimize idling times as specified in this measure</li> </ol>	2) Contractor	
construction workers at all access points.	3) During construction, provide clear signage at all access points	3) Contractor	
	4) Verify implementation of Items 2 and 3	4) BART	

Mitigation Measure	Timing/Monitoring Action	Implementation Responsibility	Verification of Implementatior
<ul> <li>All construction equipment will be maintained and property tuned in accordance with manufacture's specifications. All equipment will be checked by a</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
certified mechanic and determined to be running in proper condition prior to operation.	<ol> <li>During construction, ensure construction equipment is maintained and properly tuned per the manufacturer's instructions</li> </ol>	2) Contractor, certified visible emissions evaluator	
	3) Verify implementation of Item 2	3) BART	
<ul> <li>A publicly visible sign will be posted at the project site with the telephone number and person to contact regarding dust complaints. This person will</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
respond and take corrective action within 48 hours. The BAAQMD's phone number also will be visibly posted, for compliance with applicable regulations.	2) Before construction, designate contact person to receive dust complaints	2) BART, Contractor	
	<ol> <li>During construction, ensure that information to contact BART and the BAAQMD is posted and visible</li> </ol>	3) Contractor	
	4) Following the filing of a complaint, verify that contact person has taken corrective action within specified time frame	4) BART, Contractor	
BIOLOGICAL RESOURCES			
Mitigation Measure BIO-1: Tree Removal or Pruning.			
Tree or shrub removal or pruning will be avoided	1) Before construction of the Project, ensure and verify that bid	1) BART	

<ul> <li>Tree or shrub removal or pruning will be avoided</li> </ul>
from February 1 through August 31, the bird
nesting period, to the extent feasible. If no tree or
shrub removal or pruning is proposed during the
nesting period, no surveys or further mitigation
measures are required.
-

1)	Before construction of the Project, ensure and verify that bid	1
-	documents and contracts, and other plans and specifications	
	include this measure	

2) If tree removal or pruning would occur during this period, implement 2) BART, Contractor Mitigation Measure BIO-2

Mitigation Measure Timing/Monitoring Action			Implementation Responsibility	Verification of Implementation
Mitigation Measure BIO-2: Nesting Bird Survey.				
If any Project construction activities occur during the active nesting period (February 1 through August 31), a pre- construction survey for nesting birds (e.g., swallows) will	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>		BART	
be conducted by a qualified biologist. Nesting bird surveys will be conducted within 1 week before initiation of construction activities. If no active nests are found, no	<ol> <li>Prior to pre-construction bird survey, submit biologist resume for approval by BART</li> </ol>	2)	Contractor	
further surveys will be required.	3) Prior to pre-construction bird survey, notify BART of date and time of survey	3)	Contractor	
	<ol> <li>Within 1 week before initiation of construction activities, conduct survey for active nests</li> </ol>	4)	Contractor, Qualified Biologist	
	5) Provide letter memo to BART of survey results within 7 days	5)	Qualified Biologist	
If two weeks lapse during construction within the active nesting period (i.e., if no work takes place on site for two continuous weeks between February 1 and August 31), then the survey should be repeated to ensure that any	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure.</li> </ol>	1)	BART	
nests have not been occupied or created during the work stoppage. The survey would be required each year prior to any project construction activities occurring during the	<ol> <li>Prior to bird survey during active nesting period, notify BART of date and time of survey</li> </ol>	2)	Contractor	
active nesting period. The survey would not be required if construction only occurred outside of the active nesting period.	3) Conduct survey for active nests	3)	Contractor, Qualified Biologist	
	4) Provide letter memo to BART of survey results within 7 days	4)	Qualified Biologist	

Mitigation Measure	Timing/Monitoring Action	Implementation Verification of Responsibility Implementation
If active nests are found in any areas that would be directly affected by construction activities, a qualified biologist will assess the potential impacts of Project construction noise levels to ensure an appropriate buffer is established to protect the active nests. The extent of these buffers will be determined by the biologist based on the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. The California Department of Fish and	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART
	<ol> <li>If active nests are identified during pre-construction bird surveys, notify BART and assess situation</li> </ol>	2) BART, Contractor, Qualified Biologist
	3) Contact CDFW as necessary for concurrence of buffers	3) BART, Qualified Biologist
Wildlife (CDFW) will be consulted if any listed species are found to nest in the Proposed Project area.	<ol> <li>During construction, ensure construction staff adhere to buffer distances</li> </ol>	4) Contractor
	5) Verify implementation of Item 4	5) BART

#### Mitigation Measure BIO-3: Replacement for Tree Removal.

For any tree with a trunk diameter in excess of 9 inches measured at 4.5 feet above ground level that is removed	1) Identify the trees that need to be replaced prior to final design	1) Contractor, Qualified Biologist
because of construction, BART will plant replacement trees at or near the locations of removal after construction activities are completed. At a minimum, each removed tree that meets the 9-inch size standard will be replaced with either (i) one replacement tree of 24-inch box size, or	2) Before construction of the Project, ensure and verify that bid 2 documents and contracts, and other plans and specifications include replacement of trees identified under Item 1 as specified in this	2) BART
(ii) three replacement trees of 15-gallon size.	<ol> <li>During construction, ensure replacement trees are planted as specified in this measure</li> </ol>	3) Contractor, Qualified Biologist
	4) Verify implementation of Item 2	4) BART
Replacement trees need to be drought tolerant, require little maintenance, and conform to BART's approved species list.	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART
	<ol> <li>During construction, ensure replacement trees are selected as specified in this measure</li> </ol>	2) Contractor
	3) Verify implementation of Item 2	3) BART

Mitigation Measure	Timing/Monitoring Action	Implementation Responsibility	Verification of Implementation
Newly planted trees will be monitored by a qualified biologist at least once a year for 5 years. Each year, any trees that do not survive will be replaced. Any trees planted as remediation for failed plantings will be planted	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
as stipulated here for original plantings, and will be monitored for a period of 5 years following installation.	<ol> <li>For 5 years, following completion of construction, annually monitor the planted trees for their condition and identify if any of the planted trees have failed to survive</li> </ol>	2) Qualified Biologist	
	3) Provide memo to BART of monitoring results within 14 days	3) Qualified Biologist	_
	4) Plant new trees to replace those that fail to survive within 5 years of planting	4) BART	
	5) For 5 years, following planting of new trees per Item 4, annually monitor the planted trees for their condition and identify if any of the planted trees have failed to survive. Repeat Items 3-5, until planted trees have survived 5 years.	5) BART, Qualified Biologist	

HAZARDOUS MATERIALS

Mitigation Measure HAZ-1: Encountering Environmental Contamination.

If at any point during construction, stained or odoriferous soils are encountered, these soils will be stockpiled separately on plastic sheeting. The stained or odoriferous soils encountered will be tested for environmental contaminants, including: petroleum hydrocarbons, trichloroethylene, benzene, ethylbenzene, and naphthalene. Soil and/or groundwater found to have environmental contaminants above the San Francisco Bay Regional Water Quality Control Board's environmental screening levels for commercial land use and construction worker safety will be properly characterized and disposed at an appropriate facility per applicable regulations. Material moved or removed may require individual or specific testing to verify that concentrations are below any regulatory action limits.

1)	Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure	1)	BART
2)	During construction, ensure any soils that are stained or odiferous, are properly stockpiled and tested as specified in this measure	2)	Contractor; Qualified Laboratory
3)	If soils or groundwater contain levels of contaminants above regulatory action limits, ensure that these soils and groundwater are properly characterized and disposed at an appropriate facility	3)	Contractor
4)	Verify implementation of Items 2 and 3	4)	BART

Mitigation Measure	Timing/Monitoring Action	Responsibility	Implementation
NOISE			
Mitigation Measure NOI-1: Construction Noise Controls	and Best Management Practices.		
BART will incorporate the following practices into the construction documents to be implemented by the project contractor. A construction supervisor or other entity	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
<ul> <li>appointed by BART will measure noise levels at nearest sensitive receptors before beginning construction and periodically thereafter to ensure the performance threshold for construction noise levels is not exceeded. Measurements will be taken during periods when noisy, heavy equipment is operating.</li> <li>Where feasible, BART will require that the contractor complies with a performance standard of 90 dBA 8-hour Leq during the daytime (7 a.m. to 10 p.m.) at the property line of the sensitive receptor.</li> </ul>	<ol> <li>During construction, ensure attainment of the noise levels specified in this measure</li> </ol>	2) Contractor	
	3) Verify implementation of Item 2	3) BART	
<ul> <li>Prior to construction, BART will ensure that a Noise Control and Monitoring Report is prepared. The report will include expected construction noise</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
levels, noise control measures, and explain how the contractor intends to monitor and document construction noise and complaints.	<ol> <li>Ensure preparation of a Noise Control and Monitoring Report as specified in this measure</li> </ol>	2) Contractor; Qualified Acoustician/ Engineer	
	3) Verify implementation of Item 2	3) BART	
<ul> <li>Noisy equipment will be located as far as possible from noise sensitive receptors. In addition, the use of temporary barriers should be employed around the equipment</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
the equipment.	<ol> <li>During construction, site equipment and install noise barriers as specified in this measure</li> </ol>	2) Contractor	
	3) Verify implementation of Item 2	3) BART	

Implementation

Mitigation Measure	Timing/Monitoring Action	Implementation Responsibility	Verification of Implementation
<ul> <li>Noise barriers will be installed between equipment and residential areas.</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	<ol> <li>During construction, install noise barriers as specified in this measure</li> </ol>	2) Contractor	
	3) Verify implementation of Item 2	3) BART	
<ul> <li>All construction equipment powered by internal combustion engines will be properly muffled and maintained.</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	<ol> <li>During construction, ensure construction equipment is properly muffled and maintained</li> </ol>	2) Contractor	
	3) Verify implementation of Item 2	3) BART	
<ul> <li>Unnecessary idling of internal combustion engines is prohibited.</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	<ol> <li>During construction, ensure unnecessary idling of combustion engines is prohibited</li> </ol>	2) Contractor	
	3) Verify implementation of Item 3	3) BART	
<ul> <li>All stationary noise-generating construction equipment such as tree grinders and air compressors are to be located as far as is practical from existing residences.</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	2) During construction, site noise-generating construction equipment as specified in this measure	2) Contractor	
	3) Verify implementation of Item 2	3) BART	

Mitigation Measure	Timing/Monitoring Action	Implementation Responsibility	Verification of Implementation
Quiet construction equipment, particularly air compressors, is to be selected whenever possible.	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	<ol> <li>During construction, ensure selection of stationary construction equipment that has reduced noise levels</li> </ol>	2) Contractor	
	3) Verify implementation of Item 2	3) BART	
<ul> <li>Use of jack hammers will be prohibited on Sundays and holidays, except for emergencies.</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	<ol> <li>During construction, ensure that use of jackhammers is limited as specified in this measure</li> </ol>	2) Contractor	
	3) Verify implementation of Item 2	3) BART	
<ul> <li>Construction-related truck traffic will be routed along roadways that result in the least disturbance to sensitive receptors.</li> </ul>	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	2) During construction, ensure that truck traffic be routed as specified in this measure	2) Contractor	
	3) Verify implementation of Item 2	3) BART	

Mitigation Measure	Timing/Monitoring Action	Implementation Responsibility	Verification of Implementation
Mitigation Measure NOI-2: Emergency Backup Generator	r Testing Controls.		
In order to reduce the noise from the regular testing of the emergency backup generator on the BART plaza, BART shall require the design of the generator to achieve a performance standard of 65 dBA at the exterior of the	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART, Qualified Acoustician/ Engineer	
nearest sensitive receptor. This exterior performance standard would result in interior noise levels of 45 dBA or less, which would satisfy the state's interior standard for multi-unit residential units. This measure can feasibly be	<ol> <li>During the first two tests, ensure attainment of the noise levels at the exterior of the nearest sensitive receptor as specified in this measure.</li> </ol>	2) Contractor, Qualified Acoustician/ Engineer	
achieved by incorporating noise attenuation features into the generator design, including, but not limited to, exhaust silencers, enclosures with sound-absorbent materials, air flow baffles or louvers, and acoustic barriers that obstruct the line-of-sight between generator components and the sensitive receptor. Effective noise control measures will	3) If during either of the monitoring efforts for Item 2, the measured noise level exceeds the performance standard, ensure modifications are made to the backup generators that will enable future testing to attain the	<ol> <li>BART; generator manufacturer</li> </ol>	
be confirmed during final design by a qualified acoustical engineer and included in the design specifications for the equipment.	4) Verify implementation of Items 2 and 3	4) BART	

#### Mitigation Measure NOI-3: Construction Vibration Controls and Best Management Practices.

BART will include the following provisions in its construction contracts to reduce potential annoyance and effects to nearby structures from vibration.	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART
<ul> <li>The contractor will minimize vibration annoyance by maintaining vibration levels at 80 VdB or less at any building at any time.</li> </ul>	<ol> <li>During construction, ensure attainment of the vibration levels as specified in this measure.</li> </ol>	2) Contractor
	3) Verify implementation of Item 2	3) BART

Mitigation Measure	Timing/Monitoring Action	Implementation Responsibility	Verification of Implementation
• Before construction, BART will prepare a Vibration Control and Monitoring Report, in which the contractor will indicate what vibration levels are expected to generate, vibration control measures to be implemented, and how construction vibration and complaints will be monitored and documented.	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	<ol> <li>Ensure preparation of a Vibration Control and Monitoring Report as specified in this measure</li> </ol>	2) Contractor; Qualified Acoustician/ Engineer	
	3) Verify implementation of Item 2	3) BART	
• The contractor will monitor vibration during construction to ensure compliance with the criterion for building damage for buildings within 6 feet from construction activities. The contractor will conduct a preconstruction crack survey at these structures.	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	<ol> <li>Before construction of the Project, undertake a structural assessment of nearby buildings as specified in this measure</li> </ol>	2) Contractor	
	<ol> <li>During construction, ensure compliance with the vibration criterion as specified in this measure by performing periodic spot checks</li> </ol>	3) Contractor	
	4) Verify implementation of Items 2 and 3	4) BART	
• The contractor will plan routes for hauling material out of the project site to cause the least effect (annoyance).	<ol> <li>Before construction of the Project, ensure and verify that bid documents and contracts, and other plans and specifications include this measure</li> </ol>	1) BART	
	2) During construction, ensure that truck traffic be routed as specified in this measure	2) Contractor	
	3) Verify implementation of Item 2	3) BART	