

MITIGATION MONITORING AND REPORTING PROGRAM



RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

STATE CLEARINGHOUSE NO. 2013011001

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Mitigation Monitoring and Reporting Program

Purpose

The purpose of this Mitigation Monitoring and Reporting Program (MMRP) is to ensure that the Restoration of Historic Streetcar Service in Downtown Los Angeles Project implements environmental mitigation, as required by the Final Environmental Impact Report (EIR) for the proposed Project. Those mitigation measures have been integrated into this MMRP. The MMRP provides a mechanism for monitoring the mitigation measures in compliance with the EIR, and general guidelines for the use and implementation of the monitoring program are described below.

This MMRP is written in accordance with California Public Resources Code 21081.6 and Section 15097 of the California Environmental Quality Act (CEQA) Guidelines. California Public Resources Code Section 21081.6 requires the Lead Agency, for each project that is subject to CEQA, to adopt a reporting or monitoring program for changes made to the project, or conditions of approval, adopted in order to mitigate or avoid significant effects on the environment and to monitor performance of the mitigation measures included in any environmental document to ensure that implementation takes place. The City of Los Angeles, Department of Public Works, Bureau of Engineering is the designated Lead Agency for the MMRP. The Lead Agency is responsible for review of all monitoring reports, enforcement actions, and document disposition. The Lead Agency will rely on information provided by a monitor as accurate and up to date and will field check mitigation measure status as required.

The City may modify how it will implement a mitigation measure, as long as the alternative means of implementing the mitigation still achieve the same or greater impact reduction. Copies of the measures shall be distributed to the participants of the monitoring effort to ensure that all parties involved have a clear understanding of the mitigation monitoring measures adopted.

Format

Mitigation measures applicable to the Project include avoiding certain impacts altogether, minimizing impacts by limiting the degree or magnitude of the action and its implementation, and/or requiring supplemental structural controls. Within this document, approved mitigation measures are organized and referenced by subject category. Each of the mitigation measures has a numerical reference. The following items are identified for each mitigation measure.

- Mitigation Language and Numbering
- Mitigation Timing
- Methods for Monitoring and Reporting
- Responsible Parties

Mitigation Language and Numbering

Provides the language of the mitigation measure in its entirety.

Mitigation Timing

The mitigation measures required for the Project will be implemented at various times before construction, during construction, prior to Project completion, or during Project operation.

Methods for Monitoring and Reporting

The MMRP includes the procedures for documenting and reporting mitigation implementation efforts. The project proponent is responsible for implementation of all mitigation measures.

Responsible Parties

For each mitigation measure, the party responsible for implementation, monitoring and reporting, and verifying successful completion of the mitigation measure is identified.

Table 1. Mitigation Monitoring and Reporting Program

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
Aesthetics				
<p>MM-AES-C1: Construction Staging/Stockpiled Materials and Equipment. Under the direction of the LABOE, the construction contractor shall be the responsible party for providing temporary construction fencing along the periphery of active construction areas to screen as much of the construction activity as possible from view at the street level.</p> <p>To minimize views of stockpiled materials and idled construction equipment in staging areas and to reduce visual clutter and disorder, consistent with Bureau of Engineering Master Specification Environmental Control Measures, project construction staging areas shall be enclosed or screened from view at the street level with appropriate screening materials. The contractor shall provide daily visual inspections to ensure that the immediate surroundings of construction staging areas are free from construction-related clutter and graffiti and maintain the areas in a clean and orderly manner throughout the construction period. Graffiti shall be promptly painted over, masked out, or cleaned off. Routine sidewalk and window washing to remove dust generated by construction shall be scheduled weekly. LABOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contract Administration Bureau Construction Inspector.</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	<p>Continuous and ongoing during construction</p> <p>Spot check monitoring</p>
<p>MM-AES-C2: Nighttime Construction Activities. Should construction activities with associated lighting occur during nighttime, the City shall ensure that lighting will be directed away from surrounding sensitive land uses and toward the specific location intended for illumination. Lighting associated with construction activities and security purposes shall be</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	<p>Continuous and ongoing during construction</p> <p>Spot check monitoring</p>

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
shielded to minimize the production of glare and spill light around sensitive land uses in the surrounding area. LABOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.				
<p>MM-AES-C3: Tree Removal/Relocation. Should mature trees, as well as younger trees (with trunk diameters of 5 inches at breast height or less) be trimmed or removed, the proposed Project would comply with the <i>City of Los Angeles Tree Preservation Ordinance</i> and <i>Tree Preservation Policy</i>. City policy requires all tree removals be replaced on a 2:1 basis for street trees and 4:1 basis for protected private property trees. No protected trees were identified throughout the proposed alignment and at the potential MSF siting locations. Replacement trees would be placed as near their original locations as possible. Alternative methods and options to removal, such as trimming, would be explored prior to considering potential tree removal. The Project's compliance with the <i>City of Los Angeles Tree Preservation Ordinance</i> and <i>Tree Preservation Policy</i> would ensure that any street trees slated for removal would be planted at or near their original locations at 2:1 ratios. Removal or relocation of protected trees, under the City's <i>Tree Preservation Ordinance</i>, requires a permit from the Board of Public Works. A protected tree report must be submitted to the Board of Public Works to apply for a tree removal permit. Before a Special Habitat Value tree, as defined by the City's <i>Tree Preservation Policy</i>, is pruned, damaged, relocated, or removed, recommendations from the Department of Public Works, Bureau of Street Services, Urban Forestry Division must be obtained. The Urban Forestry Division makes a recommendation to the Board of Public Works for removal. The Board of Public Works must make the final approval before the trees(s) can be removed.</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Bureau of Engineering Qualified Biologist/ Arborist	<p>Once prior to tree removal</p> <p>Once after tree replanting or replacement</p>
<p>MM-AES-O1: Design of Traction Power Substation Structures. The City of Los Angeles shall ensure that all TPSS</p>	Design	Design: Project Designer	Department of Public Works Contracts	60% design 90% design

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
<p>structures would be designed to minimize their visual presence. Where site and design allow, the TPSS structures shall incorporate design and location features, such as the minimization of the size of the structures, setbacks from adjoining street frontages, screening, and/or architectural treatments that are appropriate to the design setting where visible from the public right-of-way at street level. All TPSS structures shall be designed and built to satisfy the established final design requirements and in compliance with all applicable design guidelines, policies, and development standards, including required Public Benefit performance measures, if necessary. Should a TPSS be located within the public right-of-way, it shall be designed in conformance with the Los Angeles Above-Ground Facility regulations contained in Section 62.08 of the LAMC. LABOE shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>		<p>Review: Bureau of Engineering Contractor</p>	<p>Administration</p>	
<p>MM-AES-02: Maintenance Storage Facility Design and Operational Lighting. The City of Los Angeles shall ensure that the MSF site plan, building treatments and architecture would be appropriate in scale, proportion, and detail with appropriate use of material, texture, articulation, and color in consideration of the surrounding design context. The aesthetic treatment shall be designed and built in compliance with all applicable design guidelines, policies, and development standards. Light associated with the MSF shall be properly controlled and directed on site in a manner that would minimize the potential for spill light. The Project would adhere to the requirements of LAMC Section 14.00 in all respects and will follow all applicable procedures. All applicable performance standards or alternative compliance measures will be addressed and all procedures for review and approval will be followed. LABOE shall ensure the carrying out of the mitigation measure.</p>	<p>Design/Operation</p>	<p>Design: Project Designer Design review: Bureau of Engineering Operation: MSF Operator</p>	<p>Design: Department of Public Works Contracts Administration Operation: LADOT</p>	<p>Design review at 60% & 90% design Installation review once operational</p>
<p>MM-AES-03: Overhead Contact System Poles. The City of Los Angeles shall ensure that design and installation of the</p>	<p>Design</p>	<p>Design: Project Designer</p>	<p>Department of Public Works Contracts</p>	<p>Design review at 60% & 90% design</p>

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
<p>OCS poles will be consistent with the surrounding design context. OCS poles shall be designed and installed in compliance with all applicable design guidelines, policies, and development standards. LABOE shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>	<p>Construction</p>	<p>Design review: Bureau of Engineering</p> <p>Installation: Contractor</p>	<p>Administration Bureau</p> <p>Construction Inspector</p>	<p>Verify installation at project acceptance</p>
<p>Air Quality</p>				
<p>MM-AQ-C1: Use cleaner-burning off-road construction equipment per the following schedule: The contractor shall ensure that all off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet the Tier 4 emission standards. In addition, all construction equipment shall be outfitted with best available control technology (BACT) devices certified by ARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by ARB regulations. The City of Los Angeles Department of Public Works, Bureau of Engineering, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the Department of Public Works Contracts Administration Bureau Construction Inspector.</p>	<p>Construction</p>	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	<p>Department of Public Works Contracts Administration Bureau Construction Inspector</p>	<p>Continuous and ongoing during construction</p> <p>Spot check monitoring</p>
<p>Cultural Resources</p>				
<p>MM-CUL-C1: As part of final design, a detailed field survey shall be conducted to identify historic sidewalk features that need to be avoided, protected during construction, or altered in conformance with the Secretary’s Standards. Conditions to protect the historic sidewalk features and preserve the material in place during construction will be required.</p>	<p>Design</p>	<p>Design: Project Designer</p> <p>Design review: Bureau of</p>	<p>Bureau of Engineering</p>	<p>Design review at 60% & 90% design</p>

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
<p>Historic sidewalk features should be covered with a protective material to avoid scratches and staining from adjacent construction work. OCS poles will not be installed in terrazzo installations or vault lights. Sidewalk ramps will be designed or located to avoid physical damage or alteration of historic sidewalk features. The existing concrete curb will not be removed at bump out areas in order to protect the historic sidewalk feature from being saw cut or from cracking. These measures will reduce the potential to alter or cause physical damage to the historic sidewalk features, and therefore ensure no substantial adverse change to the historic district or individually significant resources. Should incidental damage occur during construction occur, the historic sidewalk feature will be repaired or replaced in kind by a qualified contractor in a manner consistent with the Secretary’s Standards. In the unlikely event that the sidewalk feature cannot be treated in accordance with the Secretary’s Standards, there would still be a less-than-significant impact on the historic building that fronts the sidewalk, and there would be no substantial adverse change in the overall significance of the historical resource because enough contributing features would remain that the historical resource would retain its designation.</p>	Construction	<p>Engineering</p> <p>Installation: Contractor</p>		Verify installation at project acceptance
<p>MM-CUL-C2: If discovery is made of items of paleontological interest, the Contractor shall immediately cease excavation in the area of discovery and shall not continue until ordered by the Engineer. When resumed, excavation operations within the area of discovery shall be as directed by the Engineer. Discoveries which may be encountered may include, but not be limited to, dwelling sites, stone implements or other artifacts, animal bones, human bones, and fossils.</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Bureau of Engineering	Ongoing during excavation activity
<p>MM-CUL-O1: The City of Los Angeles shall ensure that design and installation of all project facilities and elements that are adjacent to or abutting historical resources or within a historic district will be consistent with the surrounding design context. The appropriateness of the design will be achieved through</p>	Design	<p>Design: Project Designer</p> <p>Design review: Bureau of</p>	Department of Public Works Contracts Administration	Design review at 60% & 90% design

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<p>consultation with and approval by the City of Los Angeles Office of Historic Resources, applying the Secretary’s Standards. Project facilities and elements shall be designed for consistency and installed to the satisfaction of the City Engineer and will be in compliance with the <i>Historic Downtown Los Angeles Design Guidelines</i> and the <i>Broadway Streetscape Master Plan</i>, as applicable. LABOE shall be the responsible party. LABOE shall consult on the design with the City of Los Angeles Office of Historic Resources. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>		<p>Engineering Installation: Contractor</p>	<p>Bureau Construction Inspector</p>	<p>Verify installation at project acceptance</p>
Geology				
<p>RCM-GEO-C1: In order to ensure that utility relocation, track-laying activities, and MSF construction do not result in a substantially increased risk of soil instability, temporary shoring shall be used for lateral support, and properly compacted fill soils or cement slurry shall be used for excavation backfill. A geotechnical report shall be prepared during the design phase, subject to approval by the City, that will address the following topics, and will also recommend specific design specifications, which may include, but are not limited to:</p> <ul style="list-style-type: none"> • <i>Liquefaction and Lateral Spreading:</i> Methods for construction in areas with a potential liquefaction hazard may include in situ ground modification, removal of liquefiable layers and replacement with compacted fill, or support of project improvements on piles at depths designed specifically for liquefaction. Pile foundations can be designed for a liquefaction hazard by supporting the piles on dense soil or bedrock located below the liquefiable zone or employing other appropriate methods, as evaluated during the site-specific evaluation. Additional recommendations for mitigation pertaining to liquefaction may include densification by installation of stone columns, vibration, deep dynamic compaction, and/or 	<p>Construction</p>	<p>Specifications: Bureau of Engineering Execution: Contractor</p>	<p>Department of Public Works Contracts Administration Bureau Construction Inspector</p>	<p>Ongoing during construction Spot check monitoring</p>

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<p>compaction grouting.</p> <ul style="list-style-type: none"> • <i>Structural Support:</i> Recommendations will be made related to the methods of construction of the MSF in proximity to existing buildings, such as buffer distances to maintain from existing buildings or structural supports for these buildings during the construction period. <p>The construction contractor shall implement all recommendations from this report into the work plan. The City of Los Angeles Department of Public Works, Bureau of Engineering, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the Department of Public Works Contracts Administration Bureau Construction Inspector.</p>				
Hazards and Hazardous Materials				
<p>MM-HM-C1: During construction, a focused PSI shall be conducted at specified locations adjacent to the identified sites of concern with moderate, high, and indeterminate risks as well as the proposed locations for the MSF and TPSSs. A PSI in these areas shall include a soil boring and laboratory analytical program to address contaminants of concern specific to each site. Soils that have visible staining or an odor shall first be tested in the field by the contractor or qualified environmental subcontractor with an organic vapor analyzer (OVA) or other field equipment for volatile components, which require additional considerations in their handling. Soil with OVA readings exceeding 50 ppm for VOCs (probe held 3 inches from the excavated soil face), or that is visibly stained or has a detectable petrochemical odor, shall be stockpiled by the contractor separately from non-contaminated soils. The stockpiles shall be barricaded near the excavation area, away from drainage areas or catch basins, on an impermeable plastic liner (6-millimeter nominal thickness and tested at 100 pounds per square inch). Caution must be taken to separate any contaminated soil from the remainder of the excavated material. If only a small amount of contaminated</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	<p>Ongoing during construction</p> <p>Spot check monitoring</p>

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soil is encountered, it may be drummed in 55-gallon steel drums with sealing lids. The DPW Bureau of Engineering (BOE), through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.				
MM-HM-C2: Soil shall be sampled in a random and representative manner. To establish waste classification, samples shall be analyzed for total recoverable petroleum hydrocarbons (TRPH), VOCs, and total petroleum hydrocarbons (TPH) as gasoline or diesel if these fuels are found in the area, Title 22 heavy metals, reactivity (pH), corrosivity, and toxicity. The number of samples shall depend on the volume of material removed, with one sample for approximately every ton of soil. Storage space available at the site and neighborhood sensitivity shall determine the amount of soil that can be stockpiled. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring
MM-HM-C3: If VOCs are present at concentrations exceeding 50 ppm, a permit from the South Coast Air Quality Management District shall be required, which most likely shall require control of vapor, such as covering the stockpiles with plastic sheeting or wetting with water or a soap solution. The contractor shall obtain all necessary permits. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector SCAQMD Inspector	Ongoing during construction Spot check monitoring
MM-HM-C4: During construction, suspected contaminated soil samples shall be taken to a state-certified environmental laboratory or tested in the field with a mobile lab and technician using infrared spectrometry in accordance with appropriate testing methods. Materials with elevated levels of	Construction	Specifications: Bureau of Engineering Execution:	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
<p>TRPH, metals, or other regulated contaminants shall require handling by workers who have been adequately trained for health and safety aspects of hazardous material handling. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>		Contractor		
<p>MM-HM-C5: Any contaminated material (soil, asphalt, railroad ballast, concrete, or debris) that is to be hauled off-site and is considered a “waste product” shall be classified as hazardous or nonhazardous waste under all criteria by both state and federal codes prior to disposal. If the waste soil or other material is determined hazardous, a hazardous waste manifest shall be prepared by the contractor or its qualified representative and the material transported to an appropriate class of facility for recycling or landfill disposal by a registered hazardous material transporter. If the soil is nonhazardous but still exceeds levels that preclude its return to the excavation, a less-costly nonhazardous transporter and soil recycling facility shall be used if no hazardous constituents are present above their respective action levels. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	<p>Ongoing during construction</p> <p>Spot check monitoring</p>
<p>MM-HM-C6: At the start of construction, all construction contractors shall be instructed to immediately stop all subsurface activities in the event that potentially hazardous materials are encountered, an odor is identified, or significantly stained soil is visible. Contractors shall be instructed to follow all applicable regulations regarding discovery and response for hazardous materials encountered during the construction process. Furthermore, hazardous waste generated by the contractor at the site shall be disposed of in accordance with the City’s Notification of Hazardous Substances General Conditions in the construction</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	<p>Ongoing during construction</p> <p>Spot check monitoring</p>

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
contract. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.				
MM-HM-C7: In the event groundwater is encountered during construction, dewatering shall be minimized to that required for removing interior or nuisance water from structures. Sampling ports shall be provided in the dewatering system. The produced water shall be required to be temporarily stored in large Baker-type tanks and analyzed by a state-certified environmental laboratory selected by the contractor. If the groundwater quality falls within guidelines established by the DPW, Bureau of Sanitation, a permit shall be obtained to discharge the water into a nearby sewer. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring
MM-HM-C8: During construction, if hydrocarbon or other water contamination precludes the measures in MM-HM-C7, the contaminated groundwater shall be treated on site (such as in an oil-water separator) or hauled off site for treatment and disposal in accordance with applicable regulations by a licensed professional. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring
Land Use				
RCM-LU-C1: Business Access and Signage. The construction contractor shall provide signs for businesses whose frontage is obstructed by construction work indicating that the business is open during construction, and provide information regarding access to the business.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau of Engineering	Ongoing during construction Spot check monitoring

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
RCM-LU-C2: Business Displacement. Proposed displacement of the Guadalupe Wedding Chapel and any other businesses subject to displacement as a result of the Project would occur in accordance with applicable laws and regulations, including the <i>Uniform Business Relocation Assistance and Real Property Acquisition Policies Act of 1970</i> , as mentioned. If MSF1 were to be chosen, the business would also be displaced. Compensation to the property owner and business operators and relocation assistance would be provided.	Design	Bureau of Engineering	Department of General Services -Asset Management Division	Once at completion of real estate agreements Once at completion of business relocation
RCM-LU-O1: Downtown Design Guidelines. Design of the Project would comply with all applicable guidelines and requirements included in the <i>Downtown Design Guidelines</i> and Public Benefit projects performance measures, if necessary	Design	Design: Project Designer Review: Bureau of Engineering	Department of Public Works Contracts Administration	Design review at 60% & 90% design
MM-LU-O1: LAMC Public Benefits Projects Conformity. The Project shall adhere to the requirements of LAMC Section 14.00 in all respects and shall follow all applicable procedures. All applicable performance standards or alternative compliance measures shall be addressed and all procedures for review and approval shall be followed. The City of Los Angeles BOE shall ensure the carrying out of the mitigation measure.	Operation	Bureau of Engineering Department of City Planning	Department of Public Works Contracts Administration	Design review at 60% & 90% design Verify completion at project acceptance
Noise and Vibration				
MM-NV-C1: The contractor shall limit nighttime construction activities (during the hours from 10 p.m. to 7 a.m.) to generate lower noise levels, which may include, but not be limited to, concrete pouring, field welding, and underground utility work. The City of Los Angeles Department of Public Works (DPW), Bureau of Engineering (BOE), through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector LAPD Commission	Ongoing during construction Spot check monitoring
MM-NV-C2: The contractor shall use specialty equipment with enclosed engines and/or high-performance mufflers.	Construction	Specifications: Bureau of	Department of Public Works Contracts	Ongoing during construction

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.		Engineering Execution: Contractor	Administration Bureau Construction Inspector	Spot check monitoring
MM-NV-C3: The contractor shall locate equipment and staging areas as far from noise-sensitive receivers as practicable. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring
MM-NV-C4: The contractor shall limit unnecessary idling of equipment. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring
MM-NV-C5: The contractor shall install temporary noise barriers to enclose stationary noise sources, such as compressors, generators, laydown and staging areas, and other noisy equipment. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring
MM-NV-C6: The contractor shall reroute construction-related truck traffic away from residential buildings to the extent practicable. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring
MM-NV-C7: The contractor shall sequence the use of equipment so that simultaneous use of the loudest pieces of equipment is avoided as much as practicable. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved	Construction	Specifications: Bureau of Engineering Execution:	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
through the DPW Contracts Administration Bureau Construction Inspector.		Contractor		
MM-NV-C8: The contractor shall avoid the use of impact equipment and, where practicable, use non-impact equipment. Non-impact equipment could include electric or hydraulic-powered equipment rather than diesel and gasoline-powered equipment where feasible. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring
MM-NV-C9: The contractor shall use portable noise control enclosures for welding in the construction staging area. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring
MM-NV-C10: If a noise variance from Section 41.40(a) of the <i>Los Angeles Municipal Code</i> is sought, a noise limit shall be specified. The contractor shall employ a combination of the above-listed noise-reducing approaches to meet the noise limit. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Ongoing during construction Spot check monitoring
MM-NV-C11: Specific measures to be employed to mitigate construction noise impacts shall be developed by the contractor and presented in the form of a Noise Control Plan. The Noise Control Plan shall be submitted for review and approval before the beginning of construction activities. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	Construction	Specifications & Noise Control Plan review: Bureau of Engineering Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	Once at Draft Plan submittal Once at Final Plan submittal Spot check monitoring during construction

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<p>MM-NV-C12: A preconstruction survey shall be conducted, including an inspection of building foundations and photographs of pre-existing conditions. The survey can be limited to (a) the first row of buildings along the selected alignment and will include the locations of the glass blocks and associated subterranean vaults and (b) buildings within approximately 200 feet of the construction zone that are deemed to be extremely susceptible to vibration, as determined by local authorities. These will be included in the survey.</p> <p>The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	Once at completion of pre-construction survey
<p>MM-NV-C13: Per the <i>FTA Guidance Manual</i>, construction vibration shall be limited to the PPV, ranging from 0.12 inch per second for “buildings identifiable as being extremely susceptible to vibration damage” to 0.5 inch per second for “reinforced concrete, steel, or timber” buildings. The contract specifications shall establish appropriate damage risk vibration limits for historic properties within 200 feet of construction. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	Periodic reporting during construction; frequency to be determined based on number and sensitivity of affected properties and recommendation of Noise & Vibration Mitigation Coordinator (see MM-NV-C16)
<p>MM-NV-C14: The contractor shall be required to monitor vibration at any building where the lower vibration limit is applicable and at any location where complaints about vibration are received from building occupants. This shall include “special” land uses, such as the Disney Concert Hall and the Colburn School. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	Periodic reporting during construction; frequency to be determined based on recommendation of Noise & Vibration Mitigation Coordinator (see MM-NV-C16)

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
<p>MM-NV-C15: If the contractor’s plan calls for high-vibration construction activities being performed close to structures, the contractor may be required to use alternative procedures that produce lower vibration levels. Examples of high-vibration construction activities include the use of pavement breakers, vibratory compaction, and hoe rams next to sensitive buildings. Alternative procedures shall include the use of non-vibratory compaction in limited areas and concrete saws in place of jackhammers or pavement breakers for demolition. To avoid potential interference with “special” land uses caused by construction vibration, the contractor shall be required to coordinate with building owners to limit high-vibration construction activities to times when sensitive activities are not occurring inside the buildings. For example, the contractor could avoid the use of high-vibration construction equipment during a scheduled performance or recording at the Disney Concert Hall. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	<p>Once upon determining need for high-vibration construction activities</p> <p>Once upon receipt and approval of specifications for alternative procedures</p> <p>Once during execution of alternative procedures</p> <p>Once upon receiving final report documenting completion of alternative procedures</p>
<p>MM-NV-C16: The Contractor shall hire a Noise and Vibration Mitigation Coordinator to provide notice to venues and sound-sensitive land uses along the corridor at least two weeks in advance of construction activities. The role of the Mitigation Coordinator (N&VMC) will be to respond to concerns related to implementation of construction-related mitigation measures. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>	Construction	<p>Specifications: Bureau of Engineering</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	Approval of N&VMC: two weeks prior to initiating construction
<p>MM-NV-O1: At vicinity of Disney Concert Hall; the contractor shall install a “low impact” frog, such as a “well designed”</p>	Design & Operation	Specifications: Bureau of	Department of Public Works Contracts	Review design at 60% & 90% design

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
<p>flange bearing frog with a ramp angle between 1:20 and 1:100, for special trackwork as well as wheel dampers if wheel squeal occurs. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>		<p>Engineering</p> <p>Design: Project Designer</p> <p>Execution: Contractor</p>	<p>Administration Bureau Construction Inspector</p>	<p>Review installation at project acceptance</p> <p>Review performance at project revenue testing</p>
<p>MM-NV-02: The contractor shall use a “low impact” frog, such as a “well designed” flange bearing frog with a ramp angle between 1:20 and 1:100, for all special trackwork within the MSF. Rail lubricators shall be installed at all tight radius curves within the MSF to reduce and control wheel squeal. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>	<p>Design & Operation</p>	<p>Specifications: Bureau of Engineering</p> <p>Design: Project Designer</p> <p>Execution: Contractor</p>	<p>Department of Public Works Contracts Administration Bureau Construction Inspector</p>	<p>Review design at 60% & 90% design</p> <p>Review installation at project acceptance</p> <p>Review performance at project revenue testing</p>
<p>MM-NV-03: During pre-revenue testing, noise measurements shall be taken at the TPSS units to confirm compliance with the Contract Specification noise level limit of 50 dBA at 50 feet from any side of the TPSS unit. Should exceedances of the noise level limit be found to occur, mitigation options shall be identified and considered, including housing shielding or other suitable methods.</p>	<p>Design & Operation</p>	<p>Specifications: Bureau of Engineering</p> <p>Design: Project Designer</p> <p>Execution: Contractor</p>	<p>Bureau of Engineering</p>	<p>Review design at 60% & 90% design</p> <p>Review installation at project acceptance</p> <p>Review performance at project revenue testing</p>
<p>MM-NV-04: If the track would be less than 1 foot from any part of a building foundation, mitigation measures, such as a resilient mat installed under the trackbed or comparable design measure, would be used. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.</p>	<p>Design & Operation</p>	<p>Specifications: Bureau of Engineering</p> <p>Design: Project Designer</p> <p>Execution: Contractor</p>	<p>Department of Public Works Contracts Administration Bureau Construction Inspector</p>	<p>Review design at 60% & 90% design</p> <p>Review installation at project acceptance</p> <p>Review performance at project revenue testing</p>

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
Transportation and Traffic				
<p>MM-TRAF-C1: Develop a Construction Traffic Management Plan. The Los Angeles Department of Transportation (LADOT) shall develop and implement a Traffic Management Plan (TMP) to reduce construction-related traffic impacts on public services, community facilities, utilities, bicycle circulation, and pedestrian circulation. The TMP shall be prepared during final design for implementation during construction to mitigate the traffic impacts caused by construction of the Project. The TMP shall identify potential measures such as public awareness and changeable message signs. The TMP shall be developed in consultation with emergency service providers (i.e., local police and fire departments).</p> <p>The TMP shall address construction duration and activities and include measures such as a temporary traffic signal, bicycle lane detours, or flagmen adjacent to construction activities. The TMP shall also coordinate review of construction activities along cross and parallel streets accordingly. A community affairs entity shall be established to administer a construction impact mitigation program for the benefit of the community. This program shall keep the community informed of all construction activities, with special emphasis on activities that affect the public. The program shall also set up a hotline number with a direct connection to staff familiar with the community and the Project. This entity shall offer individual consultation for residents, facilities, and businesses for remedies appropriate to the impacts encountered. The program shall identify community/business needs prior to and during the construction period through the use of surveys and community meetings. LADOT and the City of Los Angeles Department of Public Works, Bureau of Engineering (LABOE), through the construction contractor per bid specifications, shall be the responsible party. Access to businesses will be maintained during construction. Enforcement shall be achieved</p>	Design & Construction	Specifications: LADOT Execution: Contractor	Department of Public Works Contracts Administration Bureau Construction Inspector	<p>Once upon submittal of Draft TMP</p> <p>Once at acceptance of Final TMP</p> <p>Ongoing regarding community liaison during construction period</p> <p>Periodic reporting of TMP effectiveness; frequency to be determined by LADOT</p>

Mitigation Measures	Implementation Phase	Responsible Party	Monitoring Party	Monitoring Period/Frequency
through the City of Los Angeles Department of Public Works Contracts Administration Bureau Construction Inspector.				
<p>MM-TRAF-C2: Construction Mitigation Monitoring. A construction mitigation program shall be established with participation of City of Los Angeles Department of Public Works, Bureau of Engineering (LABOE), Bureau of Contracts Administration, and the construction contractor. All mitigation measures shall be monitored and reported to LABOE on a quarterly basis. The Los Angeles Department of Transportation and LABOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the City of Los Angeles Department of Public Works Contracts Administration Bureau Construction Inspector.</p>	Construction	<p>Specifications: LADOT</p> <p>Execution: Contractor</p>	Department of Public Works Contracts Administration Bureau Construction Inspector	<p>Ongoing during construction period</p> <p>Spot check monitoring</p>
<p>MM-TRAF-O1: Mitigation to be considered would include:</p> <ul style="list-style-type: none"> • Signage and pavement markings to alert bicyclists to the presence of streetcar tracks. • Instruct cyclists to cross tracks perpendicular to the direction of the rails. For left-turning cyclists, pavement markings shall be provided to encourage perpendicular bicycle turning movements, such as “Copenhagen Left” turns.¹ The signage and/or pavement markings would also clearly identify the presence of the flangeway to cyclists traveling parallel to the fixed guideway. • Alert bicyclists to use parallel bike routes (or Class II bike facilities) where available, such as Spring Street as an alternative to southbound Broadway. • Recommend alternate routes. 	Design, Construction & Operation	<p>Specifications: LADOT</p> <p>Execution: Contractor</p> <p>Ongoing Maintenance: LADOT</p>	LADOT	<p>Design: 60% & 90% design review</p> <p>Once at acceptance of installation</p> <p>Ongoing periodic monitoring during operation</p>

¹ A Copenhagen Left turn is a two-staged left turn wherein the bicyclist crosses the intersection ahead, stops on the opposite side in the direction he/she wishes to turn, awaits a green light, and crosses the intersection to complete the left turn.