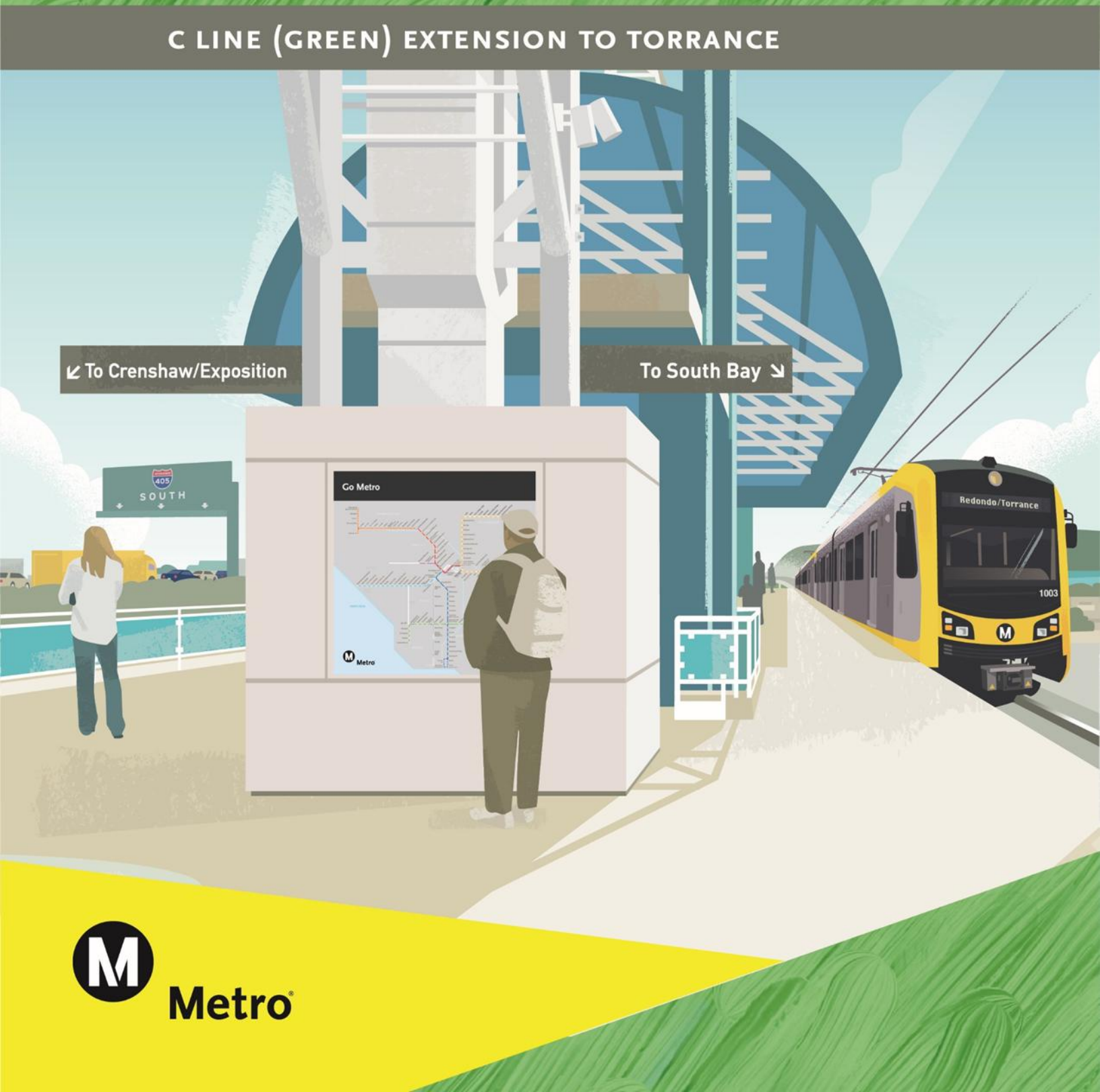
Los Angeles County
Metropolitan Transportation Authority

Mitigation Monitoring and Reporting Program

December 2025



Metro

1. INTRODUCTION

Public Resources Code, under Section 21081.6, requires the lead agency to 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."

As lead agency, Metro is responsible for administering and implementing a Mitigation Monitoring and Reporting Report (MMRP) for the Project. A Draft and Final Environmental Impact Report (EIR) has been prepared to evaluate potential environmental impacts of the Project and recommend mitigation measures adopted for the Project are implemented in compliance with Public Resources Code section 21081.6 and CEQA Guidelines (14 Cal. Code Regs.) section 15097. The purpose of the MMRP is to ensure implementation of the mitigation measures identified in the Final EIR and approved for the Project. The MMRP provides a means for monitoring and documenting the implementation of mitigation measures, thereby ensuring that the measures are completed in a timely and effective manner. Mitigation measures apply to all alignments unless otherwise noted. Table 1 provides the following information for each adopted mitigation measure:

- Compliance Action/Deliverable – The specific action(s) or documentation that has been identified to demonstrate compliance with the mitigation measure.
- Responsible Party – Metro is ultimately responsible for ensuring implementation of all mitigation measures. In many cases, Metro will rely on its contractors, consultants, or qualified specialists (e.g., a qualified biologist, archaeologist, or paleontologist) to carry out specific actions or deliverables. Table A identifies these entities for clarity, but Metro retains overall responsibility for implementation.
- Enforcement Agency – Metro is generally responsible for monitoring and verifying compliance. Where another agency has permitting or statutory authority, that agency is identified. Listing another agency in this column does not expand Metro's legal authority or reduce Metro's responsibility under CEQA to ensure implementation to the extent feasible.
- Monitoring/Compliance Schedule – The timing of implementation, including the applicable phase(s) of the project.
- Verification of Compliance – Confirmation that the mitigation measure has been implemented, as documented by initialing, dating, and signing.

In addition to mitigation measures, the Project includes project features, which are integral components of the Project design rather than measures to reduce environmental impacts. These features reflect Metro's standard design practices, commitments to regulatory compliance, and the application of best practices in transit construction and operation. Because they are part of the Project itself, project features are not mitigation measures under CEQA; however, they are included in this MMRP to ensure clarity regarding implementation and verification. The project features are presented as an attachment to this MMRP, as well as in Appendix 2-C, Project Features, of the Draft EIR and Chapter 4, Corrections and Additions, of the Final EIR.

Table 1 Mitigation Monitoring and Reporting Program

Mitigation Measure		Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
						Initial	Date
Land Use							
Hawthorne Option Only	MM-LU-1: Temporary Crossings Where construction requires the closure of crosswalks or other pedestrian roadway crossings and an alternate crossing route does not exist within 1,000 feet of the closed crossing, the contractor shall provide a temporary alternate crossing nearby. These temporary crossings shall be identified in the construction traffic management plans for the cities of Lawndale, Redondo Beach, and Torrance, described in Project Feature T-1, which would be completed prior to the issuance of a building permit for the Hawthorne Option and the initiation of major roadway work. The plan shall identify the placement of temporary pedestrian crossings to ensure safe pedestrian crossings near all closed roadway crossings where an alternate crossing is not available within 1,000 feet.	Incorporate temporary crossing requirements into the construction traffic management plans.	Metro	Metro	Final Design (prior to permit issuance and initiation of major roadway work)		
		Install and maintain temporary pedestrian crossings as specified in the approved construction traffic management plans.	Contractor	Metro	Construction (as roadway crossings are closed)		
Visual & Aesthetics							
MM-AES-1: Construction Lighting During nighttime construction activities lighting, including “down lighting,” shall be directed toward the interior of the construction staging area and shall be shielded so that it would not spill over into adjacent light-sensitive areas.		Incorporate lighting requirements into applicable construction contract documents.	Metro	Metro	Final Design		
		Install and maintain nighttime construction lighting directed toward the interior of the construction staging areas, with shielding if needed to prevent spillover into adjacent light-sensitive areas.	Contractor	Metro	Construction (all nighttime activities)		
Air Quality							
Trench Option Only	MM-AQ-1: Zero or Near Zero Emissions Haul Trucks Metro shall require Zero Emissions (ZE) or NZE Near Zero Emissions (NZE) on-road haul trucks such as heavy-duty trucks with natural gas engines that meet or exceed the CARB’s adopted optional NOx emissions standard at 0.02 grams/brake-horsepower hour (g/bhp-hr), if and when feasible. Operators shall maintain records of all trucks associated with project construction to document that each truck used meets these emission standards and make the records available for inspection. Metro shall conduct regular inspections to the maximum extent feasible to ensure compliance.	Incorporate ZE/NZE truck requirements into applicable construction contract documents.	Metro	Metro	Final Design		
		Maintain records and other related documents of all trucks used in construction to demonstrate compliance with emission standards.	Contractor	Metro	Construction		
		Conduct regular inspections.	Contractor	Metro	Construction		
		Use on-road haul and heavy-duty trucks that meet CARBS optional NOx emissions standard of 0.02 g/bhp-hr (or better).	Contractor	Metro	Construction		
Noise & Vibration							
MM-NOI-1: Noise Control Plan Metro’s contractor shall develop a Noise Control Plan demonstrating how the Federal Transit Administration (FTA) 1-hour Leq noise criteria would be achieved during construction. The Noise Control Plan shall be prepared by a board-certified acoustical engineer. The FTA 1-hour Leq construction noise standards are as follows: Residential daytime standard of 90 A-weighted decibels (dBA) Equivalent Continuous Sound Level		Develop a Noise Control Plan (by a board-certified acoustic engineer) demonstrating compliance with FTA 1-hour Leq construction noise criteria and local noise ordnance/variances.	Metro	Metro	Final Design		
		Incorporate noise control requirements into applicable construction contract documents.	Metro	Metro	Final Design		

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(Leq) and nighttime standard of 80 dBA Leq, and Commercial and Industrial daytime standard of 100 dBA Leq and nighttime standard of 100 dBA Leq. The Noise Control Plan shall be designed to follow Metro requirements, and shall include measurements of existing noise, a list of the major pieces of construction equipment that would be used, predictions of the noise levels at the closest noise-sensitive receivers (residences, hotels, schools, churches, temples, and similar facilities), and noise mitigation measures to be implemented to achieve compliance with applicable noise thresholds. The Noise Control Plans must be approved by Metro prior to initiating noise-generating construction activities. The contractor shall conduct continuous noise monitoring to demonstrate compliance with the FTA 1-hour Leq noise limits. If the FTA 1-hour Leq criteria are exceeded, the contractor shall implement alternative construction measures to reduce construction noise as much as feasible. The contractor shall establish a public information and complaint system. The contractor shall respond to and provide corrective action for complaints filed within a time period of 24-hours. In addition, Metro shall comply with local noise ordinances when applicable, including by obtaining a variance(s) from the applicable local jurisdiction when nighttime work is required. Noise-reducing methods that may be implemented by the contractor include: > Construction activities shall be limited to daytime hours, except when nighttime work is necessary due to utility coordination, safety considerations, traffic minimization, or other conditions requiring a nighttime variance. In such cases, the contractor shall obtain a variance from the applicable jurisdiction and demonstrate that noise control measures will maintain noise levels below FTA and local standards. > Where construction occurs near noise sensitive land uses, specialty equipment with enclosed engines, acoustically attenuating shields, and/or high-performance mufflers may be used. > Limit unnecessary idling of equipment. > Install temporary/movable noise barriers or noise-control curtains, where feasible and as required by the Noise Control Plan. > Reroute construction-related truck traffic away from local residential streets and/or sensitive receivers. > Limit impact pile driving where feasible and effective. > Use electric instead of diesel-powered equipment and hydraulic instead of pneumatic tools where feasible. > Minimize the use of impact devices such as jackhammers and hoe rams, using concrete crushers and pavement saws instead.	Implement noise reduction measures identified in the approved Noise Control Plan, including complaint response procedures; Maintain documentation of compliance.	Contractor	Metro	Construction		
	Conduct continuous noise monitoring during construction and implement corrective actions if thresholds are exceeded; Maintain documentation of monitoring and corrective actions.	Contractor	Metro	Construction		
MM-NOI-2: Soundwalls Where feasible, soundwalls shall be placed at the edge of the near light rail track with appropriate setback distance from the tracks or at the edge of elevated structures to reduce noise related to light rail vehicles as required to meet FTA criteria. Height,	Incorporate soundwall design requirements (location, height, length, materials, treatments) into final design plans to ensure compliance with FTA noise criteria.	Metro	Metro	Final Design		
	Incorporate soundwall construction requirements into contract documents.	Metro	Metro	Final Design		

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length, and need for absorptive noise-reducing materials will be finalized during final design as necessary to reduce noise from light rail trains to below the FTA moderate impact criteria, as feasible. Materials, color, landscaping, and/or other aesthetic treatments would also be integrated into the design of the soundwall to minimize dominance and scale.[1] --- [1] The applicability of the term "feasible" applies only to the Elevated/At-Grade Alignment (the "Proposed Project" in the Draft EIR). Specifically, as explained on page 36-100 of the Draft EIR, with respect to the Elevated/At-Grade Alignment, soundwalls would not be feasible at the 170th Street and 182nd Street at-grade crossing because vehicle travel must be maintained. The "where feasible" and "as feasible" text in MM-NOI-2 was included in MM-NOI-2 to address this specific physical constraint for the Elevated/At-Grade Alignment. This qualifying language does not apply to the LPA, the Trench Option, or the Hawthorne Option, which do not have at-grade crossings or other physical constraints that would prevent construction of the soundwalls as necessary to reduce operational noise impacts of the light rail to below the FTA significance thresholds with mitigation		Construct soundwalls consistent with approved design plans, integrating aesthetic treatments where specified.	Contractor	Metro	Construction		
MM-NOI-3: Low Impact Frogs Low impact frogs (crossing point of two rails) shall be installed to reduce crossover impact noise where necessary to reduce noise from light rail trains to below the FTA moderate impact criteria. Locations shall be verified during final design as necessary to reduce noise from light rail trains to below the FTA moderate impact criteria.		Verify locations where low impact frogs are required during final design to ensure compliance with FTA noise criteria.	Contractor	Metro	Final Design		
		Install low impact frogs.	Contractor	Metro	Construction		
Elevated/At-Grade Alignment, Trench Option, and LPA Only	MM-NOI-4: Quiet Zone Establishment (Elevated/At-Grade Alignment, Trench Option, and Hybrid Alternative/Locally Preferred Alternative) Metro shall cooperate with the City of Lawndale, City of Redondo Beach, and City of Torrance to provide support and guidance during the quiet zone establishment process. The cities shall comply with Federal Railroad Administration (FRA) requirements (49 CFR Section 222.35 to Section 222.57) to establish a quiet zone(s) from north of Inglewood Avenue to south of 182nd Street, including by providing written notice to BNSF Railway (BNSF), Metro, and the California Public Utilities Commission (CPUC) on its intent to establish a quiet zone(s) for the listed freight crossings: >Inglewood Avenue >Manhattan Beach Boulevard >159th Street >160th Street	Metro to coordinate with the Cities of Lawndale, Redondo Beach, and Torrance by providing technical documentation of quiet zone ready design and construction (see PF-NV-1).	Metro	Metro	Final Design		
		Cities of Lawndale, Redondo Beach, and Torrance to comply with FRA requirements (49 CFR §§ 222.35–222.57) by submitting a Notice of Intent and subsequent Notice of Establishment to FRA, BNSF, CPUC, and Metro to establish the quiet zone(s).	City of Lawndale, City of Redondo Beach, City of Torrance	CPUC	Prior to commencement of rail operations (*if Cities do not act, the noise impact would remain significant and unavoidable, as explained in the CEQA Findings*)		

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	>161st Street >162nd Street >170th Street >182nd Street	Metro to maintain records of coordination and communications with the Cities.	Metro	Metro	Prior to commencement of rail operations (*if Cities do not act, the noise impact would remain significant and unavoidable, as explained in the CEQA Findings*)		
Hawthorne Option Only	MM-NOI-5: Wheel Squeal Noise Monitoring Metro shall conduct wheel squeal noise monitoring prior to the start of revenue operations to determine if wheel squeal is occurring at the listed curves with a radius less than 1,000 feet located near sensitive receptors. If wheel squeal occurs, Metro shall use wayside rail lubrication as necessary to ensure wheel squeal does not occur and to reduce noise from light rail trains to below the FTA moderate impact criteria. >Curve between Santa Fe Avenue and Inglewood Avenue >Curve between 161st Street and 163rd Street	Conduct wheel squeal monitoring at designated curves (Santa Fe Ave–Inglewood Ave and 161st–163rd Street) prior to revenue operation; if monitoring finds wheel squeal, implement wayside rail lubrication to reduce noise below FTA moderate impact criteria; Maintain documentation of monitoring and corrective actions.	Contractor	Metro	Prior to commencing revenue operations		
	MM-VIB-1: Vibration Control Plan Prior to construction, the contractor would prepare a Vibration Control Plan demonstrating how the FTA building damage risk criteria and the FTA vibration annoyance criteria would be achieved. The Vibration Control Plan must be approved by Metro prior to initiating vibration-generating construction activities and include the requirement that the contractor, in coordination with Metro and the City of Torrance Public Works Department, shall notify nearby receptors, including businesses near Del Amo Bridge, of pile-driving activities at least 72 hours in advance. The Vibration Control Plan would include a list of the major pieces of construction equipment that would be used, and the predictions of the vibration levels at the closest sensitive receivers. The contractor would conduct continuous vibration monitoring to demonstrate compliance with the vibration limits. Where the construction cannot be performed to meet the vibration criteria, the contractor would investigate alternative means and methods of construction measures to reduce vibration levels as much as feasible.	Incorporate vibration control requirements into applicable construction contract documents to ensure contractor responsibilities for plan preparation, notification, monitoring, and corrective actions.	Metro	Metro	Final Design		
		Prepare a Vibration Control Plan demonstrating compliance with FTA building damage risk criteria and vibration annoyance criteria; submit for Metro approval prior to vibration-generating construction activities.	Contractor	Metro	Prior to Construction		
		Contractor, in coordination with Metro and City of Torrance Public Works Department, to notify nearby receptors of pile-driving activities at least 72 hours in advance.	Contractor	Metro	Prior to Construction (at least 72 hours before pile driving);		
		Implement measures identified in the approved Vibration Control Plan during construction; Conduct continuous vibration monitoring during vibration-generating activities and implement alternative means/methods if criteria are exceeded.	Contractor	Metro	During Construction		
		Maintain records of notice, monitoring and corrective actions.	Contractor	Metro	During Construction		
	MM-VIB-2: Construction Equipment Location To address potential building damage, the following measures would be implemented.	Incorporate vibration control requirements into construction contract documents, including restrictions on vibratory rollers and pile driving.	Metro	Metro	Final Design		
		Limit vibratory pile driving to no closer than 22 feet from the nearest sensitive structure; where closer pile driving is unavoidable, use alternative technology (e.g., CIDH);	Contractor	Metro	Construction		

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>Where a vibratory roller would be operated within 26 feet of a building structure, the vibratory roller shall be operated in static mode only. >Where pile driving is needed, the use of vibratory pile driving would be limited to be no closer than 22 feet of the nearest sensitive structure. In areas adjacent to sensitive structures where the distance cannot be limited to 22 feet or greater, pile driving will use alternative technology such as cast-in-drilled hole (CIDH). >Limit the location of impact pile driving to the extent feasible.	Limit impact pile driving near sensitive structures to the extent feasible.					
	Install vibratory roller and operate vibratory rollers in static mode within 26 feet of a building.	Contractor	Metro	Construction		
MM-VIB-3: Pre- and Post-Construction Surveys In the areas where impact pile driving is required, where MM-VIB-1 and MM-VIB-2 cannot reduce vibration levels to below the damage threshold of 0.2 inch/sec PPV, the contractor would conduct a pre- and post-construction survey of buildings by a qualified structural engineer to document pre-existing damage (such as cracked plaster, damaged windows, etc.) and any such damage that may have resulted because of construction activity. Based on the post-construction surveys, Metro's contractor shall repair damage where caused by construction.	Incorporate survey and repair requirements into construction contract documents.	Metro	Metro	Final Design		
	Retain a qualified structural engineer.	Contractor	Metro	Prior to Construction and Post-Construction		
	Conduct pre-construction surveys to document existing conditions (e.g., plaster cracks, window damage)	Contractor	Metro	Prior to Construction		
	Conduct post-construction surveys to identify any construction-related damage; Repair construction-related damage identified in post-construction surveys; Maintain documentation of surveys and repairs.	Contractor	Metro	Post-Construction		
MM-VIB-4: Low Impact Frogs Frogs with spring-loaded mechanisms shall be installed to close the gaps between running rails such that a 10 dB vibration reduction is achieved, and the impact is reduced to below FTA criteria (80 VdB for freight and 72 VdB for light rail). The locations of the frogs shall be verified during final design using a site-specific Detailed Vibration Assessment, including transfer mobility measurements, for the preferred alignment option (as per FTA Transit Noise and Vibration Impact Assessment Manual ("FTA guidance"), Section 6.5).	Conduct a site-specific Detailed Vibration Assessment during final design, including transfer mobility measurements, to verify locations where low impact frogs are required (per FTA Section 6.5 guidance).	Contractor	Metro	Final Design		
	Install low impact frogs at identified locations to achieve a 10 dB vibration reduction and ensure vibration levels are below FTA criteria (80 VdB for freight; 72 VdB for light rail).	Contractor	Metro	Construction		
MM-VIB-5: Resilient Fasteners Resilient fasteners shall be installed to fasten the rail to concrete track slabs or ties such that a minimum 5 dB vibration is achieved, and the impact is reduced to below FTA criteria (80 VdB for freight and 72 VdB for light rail). The locations of the resilient fasteners shall be verified during final design using a site-specific Detailed Vibration Assessment, including transfer mobility measurements, for the preferred alignment option (as per FTA guidance, Section 6.5).	Conduct a site-specific Detailed Vibration Assessment, including transfer mobility requirements, to verify locations where resilient fasteners are required (per FTA Section 6.5 guidance).	Contractor	Metro	Final Design		
	Install resilient fasteners at identified locations to achieve a minimum 5 dB vibration reduction and ensure vibration levels are below FTA criteria (80 VdB for freight; 72 VdB for light rail).	Contractor	Metro	Construction		
MM-VIB-6: Ballast Mats Ballast mats consist of a rubber or other type of elastomer pad that is placed under the track ballast. Ballast mats shall be installed such that a minimum 10 dB vibration	Conduct a site-specific Detailed Vibration Assessment during final design, including transfer mobility measurements to verify location where ballasts mats are required (per FTA Section 6.5 guidance).	Contractor	Metro	Final Design		

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reduction is achieved, and the impact is reduced to below FTA criteria (80 VdB for freight and 72 VdB for light rail). The locations of the ballast mats shall be verified during final design using a site-specific Detailed Vibration Assessment, including transfer mobility measurements, for the preferred alignment option (as per FTA guidance, Section 6.5).	Install ballast mats at identified locations to achieve a minimum 10 dB vibration reduction and ensure vibration levels are below FTA criteria (80 VdB for freight; 72 VdB for light rail).	Contractor	Metro	Construction		
Biological Resources						
MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources	Retain a qualified biologist (approved by Metro) to oversee implementation of avoidance measures.	Contractor	Metro	Prior to Construction		
	Clearly identify, stake and fence construction work limits.	Contractor	Metro	Prior to Construction		

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Prior to the initiation of construction activities, construction work limits shall be defined and marked (i.e., by caution tape, temporary fencing, etc.). All temporary fencing or other markers must be clearly visible to construction personnel. Prior to and during construction, a qualified Biologist, selected by Metro, shall confirm that the outer perimeter of the construction work limits, fencing, and erosion control measures are properly installed and shall monitor compliance with these measures within and adjacent to the Open Space Preserve. No native vegetation removal or grading shall occur within any remaining areas of the Open Space Preserve. Fenced impact limits shall include erosion control measures to minimize erosion and siltation during initial vegetation clearing/removal and construction through the use of silt fencing, siltation basins, gravel bags, or other controls necessary to stabilize the soil in cleared or graded areas. Erosion control measures would be installed prior to the onset of vegetation clearing/removal. These measures would be maintained in good repair until the completion of construction. Vegetation clearing/removal during routine maintenance shall also include similar erosion control measures. Specific work areas within the Torrance TC Station site adjacent to portions of the Open Space Preserve that remain in place, if the City of Torrance does not relocate the Preserve to a different site prior to construction, shall include specific erosion and run-off control measures necessary to ensure no contaminants enter the fenced impact limits of the Open Space Preserve and consequently degrade any remaining habitat for the southern tarplant. These erosion and run-off control measures shall be implemented long-term per Regional Water Quality Control Board requirements to ensure the continued protection of the Open Space Preserve and quality of habitat within. These measures are in addition to, and not in lieu of, the compensatory mitigation requirements of MM-BIO-5, which shall be implemented prior to any ground-disturbing activities within the Southern Tarplant Open Space Preserve.	Install erosion and sediment control measures (e.g., silt fencing, basins, gravel bags) and maintain in good repair through construction.	Contractor	Metro	Prior to and During Construction		
MM-BIO-2: Nesting Bird Season Restrictions and Pre-Construction Surveys The clearance of vegetation or demolition of nesting substrate (i.e., bridge features) during construction shall occur outside of the nesting bird season (nesting bird season defined herein as February 1 through September 15), if feasible. If vegetation removal and/or demolition outside this time period is not feasible, the following additional	Incorporate nesting bird requirements into applicable construction documents.	Metro	Metro	Final Design		
	Retain a qualified biologist (familiar with southern California bird species) to conduct surveys and monitoring.	Metro (retain biologist) Qualified Biologist (surveys and monitoring)	Metro	Prior to Construction		

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measures shall be employed to avoid impacts to nesting birds protected under the MBTA and CFGC. A pre-construction nesting bird survey shall be conducted by a qualified biologist (i.e., a biologist familiar and experienced with the identification and life histories of wildlife and plant species in southern California) within 72 hours, or as determined by the qualified biologist, prior to the start of construction activities to determine whether active nests are present within or directly adjacent to the construction zone. Nests found shall be recorded. If construction activities must occur within 150 feet of an active nest of any passerine bird or within 300 feet of an active nest of any raptor, a qualified biologist shall monitor the nest on a bi-weekly (twice a week) basis, or at a frequency necessary to determine potential project impacts, and the construction activity shall be postponed until the biologist determines that the nest is no longer active. If the recommended nest avoidance zone is not feasible, the qualified biologist shall provide justification on a case-by-case basis if a buffer reduction is possible, taking into consideration the location of work and type of activity, distance of nest from work area, surrounding vegetation, and line-of-sight between the nest and work areas, tolerance of species to disturbance, and observations of the nesting bird's reaction to construction activities (including light, noise, dust, and human presence). If the biologist determines nesting activities may fail as a result of work activities, work activities shall be modified or shall temporarily cease (except access along established roadways) within the recommended no-disturbance buffer until the biologist determines the adults and young are no longer reliant on the nest site. Buffers shall be delineated (by or under the supervision of the qualified biologist) on-site with bright flagging, for easy identification by staff and the construction team. The perimeter of the buffer (150 feet to 300 feet depending on the species) shall be flagged so as not to draw predator attention to the direct location of the nest itself and flagging will be minimized where feasible. The on-site construction supervisor and operator staff shall be notified of the nest and the buffer limits to ensure it is maintained. The indirect impacts of night-time construction lighting on nesting birds outside the construction limits shall be reduced by shielding or directing construction lighting to avoid light encroachment into adjacent habitats. A summary of preconstruction surveys, monitoring efforts, and any no-disturbance buffers that were installed shall be documented in a report by the qualified biologist at the conclusion of each nesting season.	Conduct pre-construction bird surveys within 72 hours prior to vegetation clearance, demolition, or other disturbance during nesting season (February 1 – September 15).	Qualified Biologist	Metro	Prior to Construction		
	If active nests are found, establish no-disturbance buffers (150 feet for passerines; 300 feet for raptors), delineated with flagging. If a full buffer is not feasible, biologist to document justification and determine case-specific reduced buffer with monitoring. Biologist is to monitor active nests on a bi-weekly basis (as needed) until nests are no longer active.	Qualified Biologist	Metro	Prior to and During Construction		
	Contractor to modify or temporarily cease work if construction could cause nest failure.	Contractor (compliance with buffers and restrictions) Metro (compliance oversight)	Metro	Prior to and During Construction		
	Shield or direct construction lighting to avoid light spillover into adjacent nesting habitat.	Contractor	Metro	Prior to and During Construction		
	Prepare end-of-season report summarizing survey results, monitoring, buffers, and outcomes.	Metro (compliance oversight) Qualified Biologist (reporting)	Metro	End of nesting season		
MM-BIO-3: Roosting Bat Restrictions and Survey Requirements Prior to demolition permit issuance and in preparation for activities at the Del Amo Boulevard bridge and for other bridge modifications, a bat roost habitat assessment shall be performed by a qualified biologist (i.e., a biologist familiar with bat	Incorporate bat protection requirements into applicable construction contract documents.	Metro	Metro	Final Design		
	Retain a qualified bat biologist (familiar with bat ecology in Southern California).	Metro	Metro	Construction; Prior to demolition permit or bridge modification		

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identification and ecology in southern California) at each location in order to identify both potential day time and nighttime roosting activity and maternity roosts, for bat species with potential to occur. The bat roost habitat assessment shall be conducted during the spring/summer months between April 1 through August 31 to most effectively identify maternity roost activity. Signs indicating active use by bat species may include guano, urine staining, and audible vocalizations; and shall be recorded upon observation for inclusion in a summary report. If active maternity roosts are identified, consultation shall occur with CDFW and a bat mitigation plan shall be prepared in advance of construction that shall include measures to avoid, minimize, and mitigate project impacts to bat species per conversations with, and recommendations from, CDFW. The bat mitigation plan may include bat exclusion measures to be implemented outside the California maternity season (the maternity season is defined as April 1 through August 31 in southern California) in order to prevent potential direct impacts to individuals. During the maternity season, a recommended buffer shall be implemented around any active maternity roosts, and no project related activities shall occur within the buffer until a biologist has determined that the roost is no longer in use. In addition, the bat mitigation plan shall require the replacement of lost habitat associated with demolition of the bridges and shall include mitigation addressing loss of roosts; this replacement should be on site when feasible and off site only when on site replacement is not feasible. The mitigation plan shall include required monitoring of mitigation to ensure the success of the proposed mitigation measures.	Conduct bat roost assessments at bridges prior to demolition permit issuance or other bridge modification work, during summer months (April 1 – August 31), to identify potential roosting activity and maternity roosts.	Metro (compliance oversight) Qualified Biologist (conduct assessment)	Metro	Construction; Prior to demolition permit or bridge modification		
	If an active roost nest is identified: consult with CDFW; Prepare a bat mitigation plan in advance of construction, including measures for avoidance, exclusion (outside maternity season), buffers around active roots, and replacement of lost roosting habitat (on-site where feasible); Record signs of bat activity (guano, staining, vocalizations) and include findings in a summary report.	Contractor (comply with restrictions and buffers; habitat replacement) Metro (compliance oversight) Qualified Biologist (prepare mitigation plan; monitoring; reporting)	Metro	Construction; Prior to demolition permit or bridge modification		
MM-BIO-4: Pre-construction Rare Plant Survey Prior to construction, if the Open Space Preserve has not been fully relocated and portions of the Preserve remain, suitable habitat in the portion of the RSA immediately	Incorporate rare plant protection requirements into applicable construction contract documents.	Metro	Metro	Final Design		
	Retain a qualified botanist (familiar with southern tarplant identification).	Metro	Metro	Prior to Construction		

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adjacent to the Open Space Preserve shall be visually surveyed on foot by a qualified botanist (i.e., a botanist familiar with southern tarplant identification) in order to identify potential southern tarplant presence. Surveys should be conducted during the appropriate blooming period for optimal identification (defined as May – November). If individuals are detected, individuals shall be flagged, and this area shall be clearly marked for avoidance through visible signage and fencing. A buffer zone shall be established of at least 50 feet from the outermost perimeter of the population in order to sufficiently eliminate potential disturbance to the plants from human activity and any other potential sources of disturbance including trampling, erosion, and dust. No vegetation removal, grading, or other earthwork shall occur within areas designated for avoidance. These avoidance requirements apply to southern tarplant individuals outside the permanent impact footprint of the Project within the Open Space Preserve. Impacts to individuals within the permanent Project footprint shall instead be addressed through the compensatory mitigation requirements of MM-BIO-5. A qualified botanist shall perform bi-weekly (twice per week) site visits, or at a frequency necessary to ensure protection of any remaining areas of the Open Space Preserve, during all construction activities occurring immediately adjacent to any remaining areas of the Open Space Preserve to ensure construction activities remain within the designated, and delineated, approved construction area; and that construction fencing, and other boundary demarcations remain in the appropriate condition	Conduct a pre-construction rare plant survey in suitable habitat adjacent to the Open Space Preserve during the blooming period (May – November) to identify potential southern tarplant individuals.	Metro	Metro	Prior to Construction (during May–Nov blooming period)		
	If individuals are detected, implement a buffer zone by flagging and fencing the area; establish a minimum 50-foot avoidance buffer; Install visible signage to restrict access.	Contractor (compliance with fencing/signage requirements) Metro (compliance oversight) Qualified Botanist (conduct survey; establish buffer; monitoring)	Metro	Prior to and During Construction		
	Qualified botanist to perform bi-weekly site visits (or more frequently if needed) during construction to verify fencing, buffers, and compliance.	Metro (compliance oversight) Qualified Botanist (visit site/ verify fencing, buffers, and compliance)	Metro	During Construction		
MM-BIO-5. Off-site Mitigation for Southern Tarplant Habitat Prior to construction, Metro shall coordinate with the City of Torrance and CDFW to identify and evaluate one or more suitable off-site mitigation sites for southern tarplant habitat. The goal of this effort is to mitigate the permanent loss of southern tarplant habitat through the establishment, preservation, and long-term management of suitable off-site mitigation habitat. Metro shall ensure that mitigation occurs at a minimum 3:1 ratio for habitat area, or at a higher ratio if required by CDFW. A site-specific biological assessment, prepared by a qualified botanist (i.e., a botanist familiar with identification, survey, and management of southern tarplant), shall demonstrate that the selected mitigation site(s) have appropriate soil, hydrology, and ecological conditions to support self-sustaining, long-term tarplant populations. It is Metro's understanding that the City of Torrance is currently evaluating the relocation and re-establishment of the entire Open Space Preserve to the Elm Water Yard in the City of Torrance. If the City elects to proceed with that relocation, Metro may satisfy its mitigation obligation by entering into an agreement with the City to fund and implement a proportional share of the new preserve area. This agreement must include provisions for a non-wasting endowment or other long-term funding mechanism sufficient to cover Metro's proportional share of perpetual management costs, and must include performance standards equivalent or greater than those described in this mitigation measure for Metro's proportional share.	Retain a qualified botanist (familiar with Southern tarplant identification, survey, and management).	Metro	Metro	Prior to Construction		
	Coordinate with the City of Torrance and CDFW to identify, evaluate, and secure suitable off-site mitigation site(s) that meet required performance standards. If the City of Torrance relocates the Open Space Preserve to the Elm Water Yard, enter into an agreement with the City to fund and implement Metro's proportional share of the new preserve, including the establishment of an endowment or long-term funding mechanism.	Metro (coordination with City and CDFW, securing agreements, funding, implementation of mitigation, documentation) Qualified Botanist (biological assessment)	Metro	Prior to Construction		

Mitigation Measure	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
If the City of Torrance opts not to relocate and re-establish the Open Space Preserve, Metro shall implement an independent off-site mitigation project that achieves the same performance standards for habitat value and long-term viability, including securing a conservation easement, deed restriction, or other legally enforceable land protection instrument; implementing habitat enhancement measures; conducting long-term monitoring, and establishing a non-wasting endowment or other funding mechanism sufficient to cover Metro's proportional share of perpetual management costs. Metro shall make a reasonable, documented effort to implement the off-site mitigation within the City of Torrance. If no appropriate off-site mitigation site can be identified within the City of Torrance, Metro shall identify and evaluate one or more suitable sites outside the City, such as an existing preserve that includes the same species of southern tarplant, that achieve the same habitat value and long-term viability standards as determined by a qualified botanist. A qualified botanist shall also prepare a Southern Tarplant Translocation/Enhancement Plan in consultation with CDFW that includes feasible and achievable performance standards. The plan shall include, but is not limited to, methods and sourcing guidelines for seed collection (to occur for a minimum of two years); best management practices for planting and invasive species control; monitoring protocols, and a schedule of implementation activities. The Translocation/Enhancement Plan shall be finalized prior to any ground-disturbing activities that could affect the Southern Tarplant Open Space Preserve. If, after a reasonable and documented effort, no suitable off-site mitigation site can be identified or implemented within or outside the City of Torrance, Metro shall consult with CDFW to identify an alternative mitigation strategy that achieves equivalent biological value and long-term viability. This may include payment of an in-lieu fee to a CDFW-approved land management entity, provided that the entity commits to establishing, preserving, and managing southern tarplant habitat in perpetuity at a minimum ratio of 3:1 or higher, consistent with the performance standards described above.	If the City does not proceed with relocation, implement an independent off-site mitigation project to meet performance standards, including land rights, habitat enhancement, monitoring, and long-term management funding, prioritizing off-site mitigation within the City of Torrance. If no suitable site is identified after documented effort, consult with CDFW on an alternative mitigation strategy (e.g., in-lieu fee program) that achieves equivalent biological value and long-term viability.					
	Qualified botanist to prepare and implement a Southern Tarplant Translocation/Enhancement Plan in consultation with CDFW, including at least two years of seed collection, planting BMPs, invasive species control, monitoring protocols and implementation schedule.	Metro (compliance oversight) Qualified Botanist (translocation plan preparation, monitoring)	Metro CDFW (review translocation plan)	Prior to Construction		
Geology & Soils						
MM-GEO-1: Engage a Qualified Paleontological Resources Specialist Grading and excavation equating to 1,000 cubic yards or more at depths of 13 feet or greater within highly sensitive Qoa geologic formation shall require monitoring by a qualified paleontologist, including the following measures: > Prior to beginning any work that requires paleontological monitoring: • Metro shall retain the services of a qualified paleontologist meeting the standards of the SVP to compose a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) identifying the steps to be taken in the event of the inadvertent discovery of paleontological resources. • A pre-construction meeting will be held that includes the qualified paleontologist, Construction Manager and/or Grading Contractor, and other	Incorporate paleontological resources requirements into applicable construction contract documents.	Metro	Metro	Final Design		
	Retain a qualified paleontological resources specialist meeting SVP standards.	Metro	Metro	Final Design		
	Prepare a Paleontological Resources Monitoring and Mitigation Plan (PRMMP), including monitoring protocol, discovery procedures, curation requirements, and reporting standards.	Metro (review and approve PRMMP) Qualified Paleontologist (prepare PRMMP)	Metro	Prior to Construction		
	Hold a pre-construction coordination meeting with Metro, contractor(s), and the paleontologist to review the PRMMP.	Metro, Contractor, Qualified Paleontologist	Metro	Prior to Construction		
	Prepare a site/grading plan annotated for monitoring areas.	Qualified Paleontologist (annotate monitoring areas)	Metro	Prior to Construction		

Mitigation Measure	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
appropriate personnel so the qualified paleontologist can make comments and/or suggestions concerning the monitoring program to the Construction Manager and/or Grading Contractor. • The qualified paleontologist will (at that meeting or subsequently) submit to the Project Manager a copy of the site/grading plan (reduced to 11 x 17 inches) that identifies areas to be monitored as well as areas that may require delineation of grading limits. • The qualified paleontologist will also coordinate with the Project Manager on the construction schedule to identify when and where monitoring is to begin and to specify the start date for monitoring.		Contractor/design team (provide site/grading plan for annotation) Metro (review and approve plan)				
> The qualified paleontologist will document monitoring activity on a standardized form. A record of daily activity will be sent to Metro and the Project Manager each month. > The qualified paleontologist will be present initially during all earth-moving activities. After 50 percent of the excavations are complete within the unit, if no significant fossils have been recovered, the level of monitoring may be reduced or suspended entirely at the qualified paleontologist's discretion and in consultation with Metro.	Conduct paleontological monitoring during earth-moving activities (≥1,000 cy at ≥13 feet depth in Qoa formation), document daily activities, and submit monthly summaries to Metro.	Qualified Paleontologist or qualified paleontological monitor (monitoring, daily logs, monthly summaries) Contractor (coordination, access, work stoppage on request) Metro (compliance oversight; receipt of reports)	Metro	Construction (earth moving activities ≥ 1,000 cy at ≥13 feet depth in Qoa formation)		
> At locations where sensitive subsurface soils cannot be observed during ground disturbing activities, such as driving of piles, a subsurface investigation to test for the presence or absence of microfossils should be implemented under the direction of a qualified paleontologist following SVP guidelines. Prior to the start of ground disturbance, mechanical coring, or other methods determined appropriate by the paleontologist, will be used to collect a test sample of 600 lbs (0.4 cubic yards) to be wet screened. In the event fossil remains are identified, two standard samples of 6,000 lbs each (4.0 cubic yards) shall be collected for processing following SVP guidelines for microfossil salvage.	Conduct subsurface investigations for microfossils where sensitive soils cannot be visually observed (e.g., pile driving), per SVP guidelines.	Qualified Paleontologist (direct and oversee subsurface investigations; ensure compliance with SVP guidelines; analyze samples; document results) Contractor (perform coring/boring/ sampling as directed) Metro (compliance oversight)	Metro	Construction		
> Discoveries • Discovery Process – In the event of a discovery, and when requested by the qualified paleontologist, the Project Manager will be contacted and will divert, direct, or temporarily halt ground-disturbing activities in the area of discovery to allow for preliminary evaluation of potentially significant paleontological resources. The paleontologist will also immediately notify Metro of such findings at the time of discovery. • Determination of Significance – The significance of the discovered resources will be determined by the paleontologist in consultation with the Project Manager and Metro, who must concur with the evaluation before grading activities will be allowed to resume. • Documentation and Treatment of Finds – Based on the scientific value and/or uniqueness of the find, the qualified paleontologist may record the find and allow work to continue, or recommend salvage and recovery of the fossil. If treatment and salvage are required, recommendations will be consistent with SVP 2015 guidelines and currently accepted scientific practice. Work in the	Implement discovery protocols.	Qualified Paleontologist (evaluate finds; direct treatment; documentation) Contractor (stop-work/support protocol implementation) Metro (compliance oversight and concurrence)	Metro	Construction		
	If significant fossils are discovered, salvage/prepare/curate specimens consistent with SVP guidelines, and obtain letter of acceptance from a recognized curation institution.	Qualified Paleontologist (salvage; preparation; curation; acceptance letter)	Metro	Post Construction		

Mitigation Measure	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
affected area may resume once the fossil has been assessed and/or salvaged and a paleontological monitor is present. > Notification of Completion – The paleontologist will notify Metro in writing of the end date of monitoring. > Handling and Curation of Significant Paleontological Specimens and Letter of Acceptance – The paleontologist will ensure that all significant fossils collected are appropriately prepared and permanently curated with an appropriate institution, and that a letter of acceptance from the curation institution has been submitted to Metro. > Final Results Reports (Monitoring and Research Design and Recovery Program) – Prior to completion of the project, two copies of the Final Results Report (even if no significant resources were found) and/or evaluation report, if applicable, which describe the results, analysis, and conclusions of the Paleontological Monitoring Program (with appropriate graphics) will be submitted to Metro for approval.		Contractor (support during salvage) Metro (compliance oversight; receipt of acceptance letter)				
	Prepare a Notification of Completion.	Qualified Paleontologist (draft, submit) Contractor (confirm completion of monitoring activities) Metro (compliance oversight, receipt of notification)	Metro	Post Construction		
	Prepare and submit a Final Results Report documenting monitoring methods, discoveries, analyses, and curation.	Qualified Paleontologist (prepare and submit Final Report) Contractor (provide support information as needed) Metro (oversight, review, approval)	Metro	Post Construction		
Cultural Resources						
MM-CUL-1: Cultural Resources Identification Training Prior to the issuance of notice to proceed with construction, all construction personnel involved in ground-disturbing activities shall be provided with appropriate cultural resources training. The training shall instruct the personnel regarding the legal framework protecting cultural resources, typical kinds of cultural resources that may be found during construction, artifacts that would be considered potentially significant, and proper procedures and notifications if cultural resources and/or are inadvertently discovered. The training shall be prepared by a Secretary of the Interior (SOI) professionally qualified archaeologist, in consultation with interested Native American tribes consulting under AB 52, who shall provide information on resources of interest to Native American tribes and include cultural resources and artifacts that would be considered potentially significant to ensure operator recognition of these materials during construction.	Retain a qualified archaeologist.	Metro	Metro	Prior to Construction		
	Provide cultural resources training.	Qualified Archaeologist or Approved Designee (prepare and present training) Contractor (ensure attendance) Metro (compliance oversight)	Metro	Prior to Construction and During Construction as new personnel join the project		

Mitigation Measure	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
MM-CUL-2. Cultural Resources Monitoring and Mitigation Plan Prior to the issuance of notice to proceed with construction, the construction contractor shall prepare, and Metro shall review and approve, a Cultural Resources Monitoring and Mitigation Plan (CRMMP). The CRMMP shall be prepared in consultation with a Secretary of the Interior-qualified archaeologist and interested Native American tribes consulting under AB 52. At a minimum, the CRMMP shall: > Identify the areas where archaeological and Native American monitoring will occur, consistent with MM-CUL-3, and describe monitoring methods and reporting requirements. > Establish the protocol to follow in the event of an unanticipated discovery, requiring that, if an archaeological deposit is identified, the construction contractor shall stop construction within 50 feet of the exposed resource until a Secretary of Interior professionally qualified archaeologist can evaluate the find (see 36 CFR 800.11.1 and California Code of Regulations, Title 14, Section 15064.5[f]). If the resource is determined to be a historical resource (as defined in Public Resources Code Section 21084.1) or a unique archaeological resource (as defined in Public Resources Code Section 21083.2[g]), the CRRMP shall require: • Avoidance of the resource, where feasible, through project redesign, preservation in place, capping or other methods consistent with Title 14, Section 15126.4(b)(3). > Where avoidance is not feasible, as determined by Metro, in light of factors such as the nature of the find, project design, costs, and other considerations, data recovery shall be implemented through excavation and documentation consistent with the Secretary of Interior's Standards for Archaeology and Historic Preservation (48 Fed. Res. 44716) and the State Office of Historic Preservation Standards. > Define performance standards requiring all data recovery efforts to obtain information necessary to address important research questions, that all recovered be cleaned, catalogued, and curated at a qualified repository that meets federal and state curation standards, and that a comprehensive technical report be prepared and filed with the South Central Coastal Information Center of the California Historical Resources Information System (CHRIS). > Incorporate tribal consultation with Native American tribes consulting under AB 52. > Provide documentation and reporting protocols for submitting monitoring logs during construction and a final report documenting all findings to be submitted to Metro, consulting tribes, and CHRIS. The CRMMP shall be implemented throughout all ground-disturbing activities in previously undisturbed areas or areas of deep excavation below the depth of prior disturbance (generally assumed to be five feet unless site-specific studies show a greater or lesser depth of prior disturbance), or as otherwise required by MM-CUL-3.	Retain a SOI-qualified archaeologist.	Metro	Metro	Prior to Construction		
	Develop Cultural Resources Monitoring and Mitigation Plan (CRMMP) in consultation with interested Native American tribes (per AB 52).	Qualified Archaeologist (prepare CRMMP) Contractor (incorporation CRMMP into construction documents) Metro (consult with tribes; review/approve CRMMP)	Metro	Prior to issuance of Notice to Proceed		
	Implement CRMMP.	Qualified Archaeologist (direct monitoring and recovery; ensure curation; prepare reports) Contractor (implement stop-work and access procedures; support monitoring and recovery) Metro (compliance oversight)	Metro	Throughout ground-disturbing activities in previously undisturbed areas or areas of deep excavation below the depth of prior disturbance, or as otherwise required by MM-CUL-3		

Mitigation Measure	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
MM-CUL-3. Unanticipated Discovery of Human Remains Archaeological and Native American monitoring (see MM-CUL-1 and MM-TCR-1) shall be required during all ground- disturbing activities in areas of excavation extending below the depth of prior disturbances, as defined in MM-CUL-2, and in areas adjacent to known cemeteries or other locations where the potential for encountering human remains is elevated, including El Nido Park (located between the Kingsdale Avenue and 186th Street cross section to 182nd Street) and the Pacific Crest Cemetery (2701 182nd Street). Archaeological monitoring shall be conducted in accordance with the Project CRMMP required by MM-CUL-2, which establishes monitoring methods, evaluation procedures, treatment, standards, and reporting requirements. If human remains and/or associated funerary objects are encountered, then work shall be halted within 50 feet of the find and California Health and Safety Code Section 5097.98 and Public Resources Code Section 5097.98 shall be followed, including immediate notification of the County Coroner and consultation with the Most Likely Descendent identified by the Native American Heritage Commissions.	Retain qualified archaeologist.	Metro	Metro	Prior to Construction		
	Conduct archaeological and tribal monitoring during aground disturbing activities in areas deeper than prior disturbance and areas adjacent to known cemeteries (including El Nido Park and Pacific Crest Cemetery).	Qualified Archaeologist and Native American Monitor (monitoring, discovery protocol, documentation)	Metro	Construction		
	If human remains and/or associated funerary objects are encountered, halt work within 50 feet of the find; notify the Los Angeles County Coroner immediately; follow PRC §5097.98 and H&SC §7050.5 procedures, including consultation with the Most Likely Descendant identified by the NAHC; and implement treatment and disposition of remains/funerary objects as directed by the MLD and in accordance with applicable law.	Contractor (comply with stop-work procedures; support discovery protocols) Metro (compliance oversight; comply with legal requirements)	Metro	Construction		

Mitigation Measure	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
Tribal Cultural Resources						
MM-TCR-1: Native American Monitoring Prior to the issuance of notice to proceed with construction, Metro shall document retention of a Native American Monitor from, or approved by, consulting tribes under AB 52. Native American monitoring shall be required during all excavation that extends below the depth of prior disturbance, as defined in MM-CUL-2, and in any areas identified through the cultural resources search or tribal consultation as having higher potential for intact tribal cultural resources. Native American monitoring shall be conducted in coordination with archaeological monitoring required under MM-CUL-3 and consistent with the CRMMP prepared under MM-CUL-2. If, after a good-faith effort, a qualified Native American monitor is not available at the time ground-disturbing activities are scheduled, construction may proceed with archaeological monitoring in accordance with MM-CUL-3, provided that consultation with the tribes continues regarding treatment of any tribal cultural resources identified. For the purposes of this measure, a good-faith effort shall consist of documented outreach to consulting tribes regarding the construction schedule, made at least 15 working days in advance of the ground-disturbance start date, with at least one follow-up attempt by phone or email if no response is received. The Native American Monitor shall prepare monitoring documentation describing the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, locations of monitoring, soil types, and any cultural or tribal resources identified, including but not necessarily limited to, Native American cultural and historical artifacts, remains, places of significance, etc., as well as any discovered Native American (ancestral) human remains and burial goods. The documentation shall be prepared in accordance with the CRMMP and provided to Metro. Metro shall make the documentation available to consulting tribes upon request. Native American monitoring may conclude when Metro determines, in consultation with the project archaeologist and consulting tribes, that all ground-disturbing activities with the potential to affect tribal cultural resources have been completed.	Document retention of a Native American monitor from, or approved by, consulting tribes under AB 52.	Metro	Metro	Prior to Notice to Proceed		
	Verify in the field that a Native American monitor is monitoring the site during ground-disturbing activities per the CRMMP. If a qualified monitor is unavailable despite a documented good-faith effort (as defined in MM-TCR-1), construction may proceed with archaeological monitoring provided consultation with tribes continues.	Contractor (cooperate with monitors; comply with stop-work procedures) Metro (compliance oversight; coordinate with tribes; receipt of documentation)	Metro	Construction		
	Native American monitor to prepare monitoring documentation (construction activities, soils, resource finds, etc.) in accordance with the CRMMP and provide to Metro; Metro to make documentation available to consulting tribes upon request. Metro, in consultation with the project archaeologist and consulting tribes, to determine when monitoring may conclude.	Native American Monitor (conduct monitoring; prepare documentation) Metro (compliance oversight; coordinate with	Metro	Construction		
MM-TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial) In the event that potential cultural material is discovered during ground-disturbing activities, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet). The discovery shall be evaluated promptly	Contractor to halt ground-disturbing activities within 50 feet of discovery.	Contractor	Metro	Construction		
	Archaeological and Native American Monitors to promptly evaluate find in accordance with the CRMMP.	Monitors (evaluation, treatment, recommendations, documentation)	Metro	Construction		

Mitigation Measure	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
by the archaeological and Native American monitors in accordance with the CRMMP required by MM-CUL-2. If the find is determined to be a tribal cultural resource under Public Resources Code Section 21074, Metro, in consultation with the monitors and consulting tribes under AB 52, shall determine appropriate treatment consistent with the protocols and performance standards set forth in MM-CUL-2. Preservation in place, including avoidance or protective measures such as capping, shall be the preferred treatment. If preservation in place is not feasible, mitigation shall be implemented through data recovery and documentation in accordance with the Secretary of the Interior's Standards (SOI) and CEQA Guidelines Section 15126.4(b), with tribal consultation to ensure culturally appropriate treatment.	If the find is determined to be a tribal cultural resource under PRC § 21074, Metro, in consultation with monitors and consulting tribes, to determine appropriate treatment; Implement preservation in place (avoidance, protective capping, etc.) as the preferred treatment; If preservation in place is not feasible, conduct data recovery and documentation consistent with SOI standards and CEQA Guidelines §15126.4(b), with tribal consultation for culturally appropriate treatment.	Contractor (implement treatment as directed by Metro/monitors)	Metro	Construction		
	Archaeological and Native American Monitors to document discovery, evaluation, and treatment actions; provide documentation to Metro.	Metro (compliance oversight; consultation with tribes; approval of treatment)	Metro	Construction		
MM-TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects Native American human remains are defined in Public Resources Code 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute. In the event that human remains or associated funerary objects are encountered during ground-disturbing activities, construction shall halt within 50 feet of the find. The discovery shall be addressed in accordance with the CRMMP required by MM-CUL-2 and the protocols set forth in MM-CUL-3. Consistent with California Health and Safety Code Section 7050.5, the County Coroner shall be notified immediately. If the remains are determined to be Native American, the Native American Heritage Commission shall be contacted, and consultation shall occur with the Most Likely Descendant identified by the Commission, pursuant to Public Resources Code Section 5097.98. Native American human remains and associated funerary or ceremonial objects shall be treated together as a single burial unit under Public Resources Code Section 5097.98(d), with preservation in place as the preferred treatment. If preservation in place is not feasible, the Most Likely Descendant, in consultation with Metro, shall determine culturally appropriate treatment in accordance with Public Resources Code Section 5097.98(d)(2). Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.	Contractor to halt work within 50 feet of discovery and immediately notify Metro.	Contractor	Metro	Construction		
	Notify the Los Angeles County Coroner pursuant to Health & Safety Code § 7050.5.	Metro (compliance oversight; coordination with Coroner/NAHC/MLD; documentation, consultation with MLD) Contractor (implement treatment measures as directed)	Metro NAHC/County Coroner (oversight of statutory process for human remains)	Construction (discovery, evaluation, and treatment, if remains are encountered)		
	If remains are determined to be Native American, notify the Native American Heritage Commission (NAHC) and initiate consultation with the Most Likely Descendant (MLD).	County Coroner	NAHC/County Coroner (oversight of statutory process for human remains)	Construction (discovery, evaluation, and treatment, if remains are encountered)		
	Treat Native American human remains and associated funerary/ceremonial objects together as a single burial unit, consistent with PRC §5097.98(d)(1).	Contractor	Metro NAHC/MLD (consultation and determination of culturally appropriate treatment)	Construction (discovery, evaluation, and treatment, if remains are encountered)		
	Implement preservation in place as the preferred treatment. If not feasible, consult with the MLD (in coordination with Metro) to determine culturally appropriate treatment consistent with PRC §5097.98(d)(2).	Contractor	Metro	Construction (discovery, evaluation, and treatment, if remains are encountered)		

Mitigation Measure	Compliance Action/Deliverable	Responsible Party	Enforcement Agency	Monitoring/Compliance Schedule	Verification of Compliance	
					Initial	Date
	Maintain confidentiality of the discovery location and treatment process to prevent further disturbance.	Contractor	Metro	Construction and Post Construction (documentation)		
	Document notifications, consultations, and treatment measures per CRMMP requirements.	Contractor	Metro	Construction and Post Construction (documentation)		

ATTACHMENT – PROJECT FEATURES

As a part of the project, several project features would be implemented during construction or operations, which would ensure compliance with the laws, guidelines, and best practices of regulatory agencies. These project features consist of design features, best management practices, and other measures that would be required by law and/or permit approvals by federal, state, regional or local agencies or that demonstrate best practices in transit construction and operation. Project features apply to all alignments unless otherwise noted.

TRANSPORTATION PROJECT FEATURES

PF-T-1. Construction Traffic Management Plan (CTMP)

Metro Rail Design Criteria (MRDC) requires that contractors develop a CTMP prior to the initiation of localized construction activities. Per Metro standard practice, this CTMP (inclusive of street closure information, detour plans, haul routes, and a staging plan) shall be prepared and submitted to the Cities of Lawndale, Redondo Beach, and Torrance for review. For the Hawthorne Option, it would also be submitted to Caltrans. Caltrans would also review selected areas of the Elevated/At-Grade Alignment, Trench Option, or LPA, such as bridge construction over Artesia Boulevard. The CTMPs shall be based on the nature and timing of the specific construction activities at each of the construction sites. This coordination will ensure construction activities of the concurrent related projects and associated hauling activities are managed in collaboration with one another and the project. The CTMPs may be updated as construction progresses to reflect progress at the various construction sites. The CTMPs will include, but not be limited to, the following elements, as appropriate:

- As traffic lane, parking lane, sidewalk closures and full road closures are anticipated, worksite traffic control plans, approved by the local jurisdictions and Caltrans, shall be developed and implemented to route vehicular traffic, bicyclists, and pedestrians around any such closures.
- As partial and full street closures are anticipated at various locations during portions of the Project construction, detour plans, approved by the local jurisdictions, shall be developed and implemented to route vehicular traffic, pedestrians and bicyclists to alternative routes during these periods, including maintaining access for these modes across Hawthorne Boulevard during construction.
- Ensure that vehicle and pedestrian access will remain available from at least one entry and egress point for properties in proximity to the alignments and component sites during construction with access to businesses maintained during normal business hours; nighttime closures may be possible and accordingly arranged with property owners.
- Coordinate with the city and emergency service providers to ensure emergency access is provided to the alignments and component sites and neighboring land uses. Emergency access points will be marked accordingly in consultation with local fire departments, as applicable.
- Provide off-site truck staging in a legal area furnished by the construction truck contractor.
- Schedule deliveries and pick-ups of construction materials during non-peak travel periods to the extent possible and coordinate to reduce the potential of trucks waiting to load or unload for protracted periods.

AESTHETICS PROJECT FEATURES

PF-AES-1. Local Zoning Ordinances

All project components located on properties outside of existing Metro-owned right-of-way (Metro ROW) and public ROW would adhere to local zoning ordinances.

PF-AES-2. Metro Design Standards

All project components, including, but not limited to track guideway, auxiliary facilities, and station (public and ancillary) facilities, will be designed per the MRDC and consistent with the objectives of the Metro Art Program Policy, Metro's Transit Service Policies & Standards, Systemwide Station Design Standards Policy, and Standard/Directive Drawings, or equivalent. Landscaping and operational lighting will also be installed consistent with these design standards.

AIR QUALITY PROJECT FEATURES

PF-AQ-1. Metro Green Construction Policy Compliance

Following construction equipment requirements, construction best management practices (BMP) and implementation strategies for all construction projects performed on Metro properties or rights-of-way.

> Construction equipment shall incorporate, where feasible, emissions-reducing technology such as hybrid drives and specific fuel economy standards.

> Maintain equipment according to manufacturer specifications.

> Idling of construction equipment and heavy-duty trucks shall be restricted to a maximum of five minutes when not in use (certain exceptions apply based on California Air Resources Board [CARB] exemptions).

> All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier-4 off-road emission standards at a minimum.

> All on-road heavy-duty trucks with a gross vehicle weight rating greater than or equal to 14,000 pounds must have engines meeting U.S. 2010 on-road emission standards.

> Where applicable and feasible, work with local jurisdictions to improve traffic flow by signal synchronization during construction activities.

> Use electric power in lieu of diesel power where available.

> Generators: every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Where access to the power grid is not available, on-site generators must:

  - Meet a 0.01 gram per brake-horsepower-hour (g/bhp-hr) standard for particulate matter (PM); or,

> Be equipped with Best Available Control Technology (BACT) for PM emissions reductions.

> Inspections: Metro shall conduct inspections of construction sites and affected off-road and on-road equipment and generator as well as compliance with air quality rules.

> Records: Prior to Notice to Proceed (NTP) to commence construction and to be verified afterwards consistent with project contract requirements and through enforcement provisions above, the Contractor shall submit to Metro the following information for all construction equipment to be used on Metro properties or rights-of-way:

- A certified statement that all construction equipment used conform to the requirements specified above;
- A list of all the equipment and vehicles (i.e., off-road equipment, include the CARB-issued Equipment Identification Number) to be used;
- A copy of each Contractor's certified U.S. Environmental Protection Agency (EPA) rating and applicable paperwork issued either by CARB, the South Coast Air Quality Management District (SCAQMD), and any other jurisdiction that has oversight over the equipment.

PF-AQ-2. South Coast Air Quality Management District (SCAQMD) Rule 403 Compliance

Construction of the project would implement the following BMPs in compliance with SCAQMD Rule 403 – Fugitive Dust:

> Backfilling: Backfill material stabilization when actively handling or inactive and stabilize soil at completion of activity.

> Clearing/Grubbing: Maintain stability of soil through watering of site prior to, during, and after all clearing/grubbing activities.

> Cut and Fill: Pre-water soils prior to cut and fill activities using water trucks; stabilize soil during and after activities.

> Debris Hauling: All trucks hauling dirt, sand, soil, or other loose materials are to be tarped with a fabric cover and maintain a freeboard height of 12 inches.

> Demolition Activities: Prohibit demolition activities when wind speeds exceed 25 mph; apply water to disturbed soils after demolition is completed or at the end of each day of cleanup.

> Disturbed Soil: Stabilize disturbed soil throughout the construction site by limiting vehicular traffic and disturbance on soil where possible and applying water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes (Rule 401 – Visible Emissions).

> Disturbed Surface Areas: Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface; apply water at three-hour intervals to at least 80% of the un-stabilized area.

> Earth-Moving Activities: Pre-apply water to depth of proposed cuts and reapply as necessary to maintain soils in a damp condition and to ensure that visible dust plumes do not exceed 100 feet in any direction.

> Importing/Exporting of Bulk Materials: Stabilize material with tarps or other suitable enclosures on trucks while loading/unloading to reduce fugitive dust emissions and maintain at least six inches of freeboard on haul vehicle; provide water during loading/unloading to prevent dust plumes.

> Staging Areas and Unpaved Roads: Stabilize surface areas and limit vehicle speeds to 15 miles per hour.

> Stockpiles/Bulk Material Handling: stabilize stockpiled materials with intermittent watering and limit stockpiles to eight feet in height within 100 yards of off-site occupied buildings.

> Trenching: Stabilize surface soils with pre-watering where trencher or excavator and support equipment will operate; wash mud and soils from equipment at completion of activities.

PF-AQ-3. Metro Moving Beyond Sustainability Strategic Plan Compliance

Construction and operation of the project will adhere to the commitments established by the Metro Moving Beyond Sustainability Strategic Plan 2020, including, but not limited to the application of renewable diesel requirements for contractors and identify opportunities to decarbonize fuel sources at construction sites.

PF-AQ-4. Metro Rail Design Guidelines

The project will be designed in accordance with the Metro Rail Design Criteria and the Metro Systemwide Station Design Standards Policy, which includes the installation of high-efficiency light emitting diode (LED) lighting in all fixtures to reduce electricity consumption.

NOISE AND VIBRATION PROJECT FEATURES

PF-NV-1. Quiet Zone Equipment Installation (Elevated/At-Grade Alignment, Trench Option, and LPA)

The eight at-grade freight crossings between Inglewood Ave and 182nd Street have been designed and would be constructed to include all Federal Railroad Administration (FRA)-required Supplemental Safety Measures and associated improvements and equipment that are needed to qualify for Automatic FRA Approval to establish a quiet zone. In order to establish a quiet zone, local jurisdictions will need to submit a Notice of Intent to the operating railroads (e.g. BNSF), California Public Utilities Commission (CPUC), Metro, and FRA followed by a Notice of Establishment, which would ultimately eliminate the sounding of freight horns within the project limits. Freight crossing signal bells would continue to generate a minimum of noise level of 75 decibels A (dBA) at 10 feet per American Railway Engineering and Maintenance of Way requirements.

PF-NV-2. Crossing Signal Bell Shrouds (Elevated/At-Grade Alignment)

Crossing signal bells at the two at-grade light rail crossings (170th Street and 182nd Street) would be equipped with shrouds to direct bell noise away from sensitive receivers and towards the crossings. Crossing signal bell noise would not exceed 104 dBA sound exposure level at 50 feet. This measure is subject to CPUC authorization.

PF-NV-3. Gate-Down-Bell-Stop Variance (Elevated/At-Grade Alignment)

Metro would apply for a gate-down-bell-stop variance at the two at-grade light-rail crossings (170th Street and 182nd Street) to reduce the duration of bell ringing and therefore reduce impacts at sensitive receivers. Crossing signal noise would not exceed 30 seconds in duration. This measure is subject to CPUC authorization.

BIOLOGICAL RESOURCES PROJECT FEATURES

PF-BIO-1. Metro Tree Policy

The Metro Tree Policy outlines Metro's commitment to protecting trees, when possible, or replacing trees removed as a result of Metro construction and maintenance. For non-heritage trees, the replacement ratio defined was two trees for every tree removed. This policy also prioritizes planting strategies that maximizes the use of native species.

GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES PROJECT FEATURES

PF-GEO-1. Metro Geotechnical Design Standards

Prior to construction, Metro will complete soil investigations, including examination of any potential sinkholes by the geotechnical engineer of record, to inform site-specific design and construction measures.

The project shall be designed and constructed per the MRDC. Key compliance sections of the MRDC relative to geology and soils are Section 5.3, Section 5.4, Section 5.6, and MRDC Section 5 Appendix, Metro Supplemental Seismic Design Criteria (SSDC). Section 5.6 of the MRDC provides detailed requirements for planning and conducting a geotechnical investigation, geotechnical design methodologies, and reporting. In accordance with the MRDC, geotechnical report recommendations shall be incorporated into the project plans and specifications. These recommendations shall be a product of final design and shall address potential subsurface hazards. In addition, Caltrans and the California Building Code (CBC) have independent design criteria for bridges, aerial structures and building structures, which shall be followed.

As noted in Section 3.8-1.2, SSDC outlined in the MRDC Section 5 appendix (Metro, 2017) recommends the seismic stability and potential permanent deformation of sloping ground or embankments supporting aerial guideway and bridges along proposed alignments be investigated. Investigations should include evaluation of the potential for ground liquefaction and related deformations. The evaluations and associated analyses shall be displacement-based leading to the determinations of potential lateral deformations of slopes or embankments and ground settlement. It is recommended that the total settlement and lateral ground deformations under operating design earthquake (ODE) seismic events shall not be allowed to exceed two inches to allow for track re-leveling or re-alignment. Larger deformations may be allowed for maximum design earthquake (MDE) events on a case-by-case basis on approval by Metro.

The MRDC section also provides details on how the stability analysis of the slopes and embankments is to be performed. Two options are provided: (1) seismic coefficient approach for pseudo-static case or (2) slope displacement method. If the factor of safety is less than 1.1, then slope performance shall be evaluated using Method (2) where displacements are computed using Newmark time-history analyses.

Metro Supplemental Seismic Design Criteria outlined in the MRDC Section 5 appendix provides guidance for liquefaction studies. If potentially liquefiable soils are identified along proposed alignments, liquefaction susceptibility shall be determined using the procedures documented in the American Association of State Highway and Transportation Officials-California Load and Resistance Factor Design Bridge Design Specifications. The liquefaction potential assessment should consider the impact of the following effects where liquefaction is judged to occur:

> Loss of strength of liquefied layers (post liquefaction residual strength)

> Flow failures, slope deformations

> Post liquefaction ground settlement

According to the SSDC, the displacement performance of slopes and embankments underlain by liquefied soils may be evaluated in a similar manner to non-liquefiable cases, except residual strengths of liquefied soils are used in analyses. The post-liquefaction settlement of liquefied soil layers may be determined using procedures documented by Tokimatsu and Seed (1987). The bridge and elevated rail

structures located in liquefaction sites should be analyzed for non-liquefiable and liquefiable soil configurations. For the liquefiable condition, residual strengths of liquefied soil layers are used for lateral and axial deep foundation response analyses. For those sites where liquefaction related permanent lateral ground displacements are determined to occur, the effects on pile performance shall be evaluated. Down drag forces on piles due to post liquefaction settlement shall also be evaluated. If the above impact assessments yield unacceptable performance of the structures, appropriate measures shall be incorporated into the design.

As outlined in the MRDC Section 5.6, the geotechnical investigation should evaluate impacts related to potential settlement due to lowering of the groundwater table or excavation instability due to draining of perched groundwater during construction activities. Specific topics to be considered in the geotechnical investigation include the following:

- Selection of appropriate construction methodology that minimizes permanent changes to sub-surface drainage conditions or groundwater pressures.
- Installation of dewatering wells outside trench walls, sump pumps within the trench, deep secant pile walls to minimize excavation base instability, heaving of soils on the upgradient side of the trench, fluidization, and erosion.
- Identification of zones of relatively high permeability strata with high potential to excessive groundwater influx and recommend construction methodology and design technologies such as keying secant pile walls into lower permeability strata.

HAZARDS AND HAZARDOUS MATERIALS PROJECT FEATURES

PF-HHM-1. Handling, Storage, and Transport of Hazardous Materials and Wastes

Prior to the start of construction, the contractor would provide Metro with a hazardous waste and hazardous materials management plan, such as a plan defined in Title 19 California Code of Regulations (CCR), or a Spill Prevention, Control, and Countermeasure Plan. The plan will be completed to Metro contractor specifications and will comply with the State Water Resources Control Board (SWRCB) Construction Clean Water Act (CWA) Section 402 General Permit conditions and requirements for transport, labeling, containment, cover, and storage of hazardous materials during construction and operation. The plan will identify the responsible parties and outline procedures for hazardous waste and hazardous materials handling, storage, and transport. The excavation and transport of soils contaminated by heavy metals (e.g., lead) would be managed according to SCAQMD Rule 1466 (Control of Particulate Emissions from Soils with Toxic Air Contaminants) and SCAQMD Rule 1166 (volatile organic compounds [VOC] emissions from Decontamination of Soil). The plan would also prescribe BMPs to follow to prevent hazardous material releases and for cleanup of any hazardous material releases that may occur. The transportation of hazardous materials and waste shall be conducted in accordance with the applicable regulations codified in 49 CFR Parts 101, 106, 107, and 171 to 180, including, but not limited to, those related to packagings, pre-transportation functions, transportation functions, and functions not subject to the requirements of the federal Hazardous Materials Regulations.

Additionally, the contractor would comply with applicable federal and state regulations regarding hazardous material handling and storage practices, such as the Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act.

PF-HHM-2. Demolition Plans

Prior to the start of construction, the contractor would prepare demolition plans for the safe dismantling and removal of roadways, building components, and debris. The demolition plans would also include plans for testing and abatement procedures for asbestos-containing materials, lead-based paint, and polychlorinated biphenyls, as well as handling and disposal of treated wood waste, such as creosote and arsenic-treated railroad ties, and universal waste in accordance with federal and state regulations, including the 1994 Federal Occupational Exposure to Asbestos Standards, SCAQMD Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities), Title 22 of the California Code of Regulations Division 4.5 (Hazardous Waste), the U.S. Department of Housing and Urban Development Lead- Based Paint Guidelines, and Title 40 of the Code of Federal Regulations Part 761.

PF-HHM-3. Property Acquisition Phase II Site Investigation

Consistent with Metro's standards, a Phase II site investigation would be conducted during the preliminary engineering phase on sites that would be acquired/utilized for the project to determine whether the suspected contamination had resulted in soil, groundwater, or soil vapor contamination exceeding regulatory action levels. Aerially deposited lead testing would be included as part of the Phase II site investigation. If the Phase II site investigation concludes that the site is contaminated, remediation or corrective action (e.g., removal of contamination, in-situ treatment, capping) would be conducted prior to or during construction under the oversight of federal, state, and/or local agencies (e.g., United States Environmental Protection Agency [USEPA], Department of Toxic Substance Control [DTSC], Regional Water Quality Control Boards [RWQCB], Los Angeles County) and in full compliance with current and applicable federal and state laws and regulations. Additionally, Voluntary Cleanup Agreements may be used for parcels where remediation or long-term monitoring is necessary. Generally, recognized environmental conditions (REC), also known as sites of concern as identified in the Phase I Environmental Site Assessment (ESA), would be remediated by the property owner prior to acquisition of the property and construction on the site, depending on the arrangement negotiated during property acquisition.

PF-HHM-4. Soil, Soil Vapor, and Groundwater Management Plans

Prior to the start of construction, the contractor would retain a qualified environmental consultant to prepare a Soil Management Plan, Soil Reuse Management Plan, and/or a Soil, Soil Vapor, and Groundwater Management Plan. These plans would be completed to Metro's contractor specifications and submitted to Metro prior to any ground-disturbing activities for the Project.

The Soil and Soil Vapor Management Plan would establish provisions for the disturbance of contaminated materials (known and undocumented). Proper management and disposition of contaminated soils and gases would be determined in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance (USEPA, DTSC, RWQCB, and other local agencies)]. The Soil Reuse Management Plan would establish provisions for the reuse of contaminated known or undocumented soils. Proper management and disposition of contaminated soils would be determined in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance (USEPA, DTSC, RWQCB, and other local agencies). Contaminated soil shall be disposed of at a permitted landfill per the specifications of DTSC or RWQCB or other agencies overseeing the project construction.

The Groundwater Management Plan would establish provisions for encountering and managing contaminated groundwater (known and undocumented). Proper disposal of contaminated groundwater would be determined in consultation with appropriate regulatory agencies and in accordance with applicable federal and/or state guidance (USEPA, DTSC, RWQCB, and other local agencies).

Where open or closed regulatory release cases are already managed by a regulatory agency (e.g., USEPA, DTSC, RWQCB) and construction involves plans to alter the use of the site and/or disturb contaminated soil and/or groundwater onsite, Metro would notify the regulatory agency of the planned land use changes prior to ground-disturbing activities at the location of the open or closed regulatory release site. The regulatory agency would determine the level of investigation and/or remediation (performance standards) necessary on a case-by-case basis. A closure or no further action determination letter from the regulatory agency would be obtained when investigation and/or remediation is complete.

PF-HHM-5. Disposal of Groundwater

If disposal of contaminated groundwater is required during construction, Metro would consult with the RWQCB, and the Project would comply with permits required by the RWQCB. The RWQCB may require a National Pollutant Discharge Elimination System permit and/or Water Discharge Requirement (WDR) permit for dewatering and discharge activities. The County of Los Angeles Department of Public Works (LACDPW) would be contacted prior to discharging groundwater into their sewer or stormwater systems. The groundwater discharge and disposal requirements vary by agency, location, concentration, and contaminants of concern and are therefore developed in consultation with the agencies.

PF-HHM-6. Oil and Gas Wells

Prior to ground-disturbing activities, all oil wells (including abandoned or suspected wells) within 200 feet of the project would be identified, inspected, and addressed in accordance with the California Department of Conservation, California Geologic Energy Management Division (CalGEM) standards and in coordination with the well owners. Where the alignment cannot be adjusted to avoid well casings, CalGEM and a re-abandonment specialty contractor would be contacted to determine the appropriate method of re-abandoning the well. Oil well abandonment must proceed in accordance with California Laws for Conservation of Petroleum and Gas (1997), Division 3. Oil and Gas, Chapter 1. Oil and Gas Conservation, Article 4, Sections 3228, 3229, 3230, and 3232. The requirements include written notification to CalGEM, protection of adjacent property, and before commencing any work to abandon any well, obtaining approval by CalGEM. Abandonment work, including sealing off oil and gas bearing units, pressure grouting, etc., must be performed by a state-licensed contractor under the regulatory oversight and approval of CalGEM. If an unknown well is encountered during Project construction, the contractor will notify Metro, California OSHA, and CalGEM and proceed in accordance with state requirements.

HYDROLOGY AND WATER QUALITY PROJECT FEATURES

PF-HWQ-1. Stormwater Pollution Prevention Plan (SWPPP) Implementation per Construction General Permit and MS4 Permit

Construction of the project would disturb greater than one acre of ground surface and are thus subject to the Construction General Permit SWPPP requirements. The SWPPP would include BMPs designed to prevent impacts to water quality from occurring during construction. BMPs included would be the minimum BMPs required by the MS4 Permit for all construction sites and additional BMPs determined

necessary by the SWPPP developer. BMPs designed to prevent the introduction of chemicals, trash, and/or hazardous substances into waters may include but are not limited to fueling equipment offsite, secondary containment, drip pans, spill response plans, and designed waste receptacles on site. BMPs designed to prevent erosion, prevent sedimentation, and slow and capture runoff on the construction site may include but are not limited to stabilized construction entrances/exits, fiber rolls, silt fences, sandbags, water application for dust control, check dams, drainage inlet protections, infiltration basins, and hydroseeding. BMPs would be implemented before, during, and/or immediately after construction.

PF-HWQ-2. Groundwater Treatment and Discharge per RWQCB Waste Discharge Requirements (WDR) for Construction Dewatering

Per the requirements of the RWQCB WDR for Construction Dewatering, dewatered groundwater would be treated if necessary and then discharged in a pre-approved location specified by said requirements.

PF-HWQ-3. Trench Construction Groundwater Pressure Control (Trench Option)

During trench construction for the Trench Option, BMPs would be implemented that include but are not limited to installing wall drains and appropriate drainage at the top of the trench to help relieve groundwater pressure buildup along the trench walls (Metro 2022b). BMPs used for groundwater pressure control would minimize the potential for the introduction of pollutants into groundwater and surface flows, as well as the potential for erosion, siltation, and flooding to occur on or offsite.

PF-HWQ-4. Trench Construction Runoff Collection and Treatment (Trench Option and LPA)

During trench construction for the Trench Option or LPA, surface runoff flowing within the trench would be collected, pumped out of the trench, treated (if necessary), and discharged to a pervious area on site for infiltration into the soil. BMPs used for surface runoff collection, treatment, and discharge would minimize the potential for introduction of pollutants into surface runoff, as well as the potential for erosion, siltation, flooding, and exceedance of existing storm drain system capacities on or offsite. Surface runoff treatment and discharge would comply with RWQCB Basin Plan water quality requirements.

PF-HWQ-5. Temporary Storm Drain Inflow Rerouting (Trench Option, Hawthorne Option, and LPA)

Although no existing storm drain rerouting is proposed under the Trench Option or LPA, runoff from the Trench Option or LPA footprint may be directed to different discharge points than existing points to avoid adverse hydrology and water quality impacts. Hawthorne Option construction would involve the permanent rerouting of two major storm drains running parallel to the alignment and one minor storm drain crossing the alignment. While these new permanent storm drain routes are constructed, temporary rerouting of inflows would be necessary during Hawthorne Option construction.

For the Trench Option, Hawthorne Option, or LPA, stormwater inflows would be captured, treated (if necessary), rerouted around the construction site, and discharged into the existing storm drain system. Treatment and discharge of storm drain inflows to the existing storm drain system would be conducted per RWQCB Basin Plan water quality requirements.

PF-HWQ-6. Low Impact Development (LID) BMPs per Regional Requirements

The operational design of the project would include LID BMPs designed to retain the Stormwater Quality Design Volume (SWQDv) on site per regional LID requirements. Examples of potential LID BMPs that may be implemented include but are not limited to increasing runoff's flow path length of travel and providing on-site detention basins for retainment and infiltration. Additional runoff (beyond the SWQDv) would continue to be discharged via new or existing tie-ins to the existing stormwater drainage system. In elevated portions of the alignment, runoff would be collected by down drains. Discharge locations of underdrains installed along the project would be the same as existing discharge locations. Although no existing storm drain rerouting is proposed under the Trench Option or LPA, runoff from the Trench Option or LPA footprint may be directed to different existing discharge points. Rerouted storm drains under the Hawthorne Option would be discharged to the same or similar discharge points as existing conditions. Existing catch basins on adjacent storm drains would be retained during operation to prevent debris and trash from entering the stormwater drainage system.

PF-HWQ-7. Trench Operation Runoff Collection and Treatment (Trench Option and LPA)

During Trench Option and LPA operation, runoff that exceeds the SWQDv in the trench would be collected via a sump drainage system (two sumps in the vicinity of Manhattan Beach Boulevard for the Trench Option only and 182nd Street for both) at the low point along the trenched alignment. Runoff collected in the sump would be treated as needed, and then would either be pumped or flow via gravity from the sump to the existing storm drain system in compliance with RWQCB Basin Plan water quality requirements.

PF-HWQ-8. City of Torrance Flood Zone Requirements

A small portion of the project temporary footprint would be located within the 100-year flood zone, where a temporary construction easement would be needed for removal of an existing spur track. Construction in this area would be required to comply with Division 7, Chapter 9 of the Torrance City Code, titled "Flood Hazard Insurance." This section establishes a development permit process for flood hazard areas, designates a floodplain administrator for the City, and establishes standards for construction within flood hazard areas.

UTILITIES AND SERVICE SYSTEMS PROJECT FEATURES

PF-US-1. Utility Identification and Coordination

Per Metro standard practice, as design progresses, Metro will continue to verify the locations of existing utilities potentially affected by construction activities. This will include coordinating with all existing utility providers for wet and dry utilities (water, sewer, gas, electric, and telecommunications) and with private utility owners to obtain documentation of existing utility locations. Field verification (i.e., potholing and other methods as appropriate) shall be conducted throughout the preliminary engineering and final design phases to document the locations of all utilities within proximity to the guideway and station foundations of the guideway and station foundations, and other project elements that may affect utilities. Based on the information from the field investigations, the final designer will develop layouts of pipe separations based on coordination with the appropriate utility owners/operators to determine specific setback requirements for each utility line and the need for any stabilization for protection in place or relocation measures. During the construction and prior to digging, the contractor will conduct additional field verifications, which include requirements such as contacting

a utility location service to verify the position of existing pipes, and conducting additional potholing so that the final design layouts can be confirmed or adjusted as needed.

PF-US-2. Service Interruption Notification

Per Metro standard practice, prior to the start of any demolition or construction activities, Metro will be responsible for coordinating with utility and service providers regarding potential utilities service interruptions due to relocation of existing utilities. Metro will develop a construction plan in coordination with utilities and service providers to minimize interruptions of utilities systems to the greatest extent feasible, including providing temporary connection for services that must be disconnected for extended periods of time. Further, Metro will develop a contingency plan in cooperation with the utility providers for emergency repairs of any utilities unexpectedly found or that disintegrated because of age during excavations. The public would be notified of areas where temporary utilities service interruptions are anticipated.

PUBLIC FACILITIES PROJECT FEATURES

PF-PS-1. Coordination with Torrance Refining Company and Emergency Responders

Before construction of the project and during the advanced design stages, Metro would work with the Torrance Refining Company and Torrance Logistics Company, BNSF Railway, the City of Torrance, and other City entities responsible for emergency response to coordinate emergency communication systems so that, in the event of an emergency relating to flaring or other refinery operations-related hazards, Metro could hold or detour trains to avoid traveling near the refinery.