Initial Study/Mitigated Negative Declaration (IS/MND) for Metro Red/Purple Line Core Capacity Improvements Project

Prepared For:
The Los Angeles County Metropolitan Transportation Authority (Metro)

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1. Introduction

1.1 Purpose of the Initial Study

The Los Angeles County Metropolitan Transportation Authority (Metro) is preparing this Initial Study/Mitigated Negative Declaration (IS/MND) to evaluate the potential environmental impacts that would result from the Red/Purple Line Core Capacity Improvements Project (Project) that includes widening the existing tunnel portal southeast of Union Station and constructing new tracks and switches that will allow trains to turn around quickly at Union Station. This IS/MND has been prepared in accordance with the requirements of California Environmental Quality Act ("CEQA") and the Guidelines for Implementation of the California Environmental Quality Act (State CEQA Guidelines), for the purpose of analyzing the direct, indirect, and cumulative environmental effects of the proposed Project.

The State CEQA Guidelines are codified as Section 15000 et seq. of the California Code of Regulations (CCR). This IS/MND provides decision-makers, other public agencies, private groups, and/or individuals with an objective assessment of whether significant environmental impacts may result from implementing the proposed Project. Additional information that explains this document is provided below.

1.2 Project Background and Overview

Metro is proposing to widen the tunnel portal currently located in the Metro Red/Purple Line Maintenance Yard (Division 20 or Santa Fe Yard). Figure 1 below shows the regional location of the Project, and Figure 2 shows an aerial view of the Project site. A widened portal southeast of Union Station and new tracks and switches will allow trains to turn around quickly at Union Station so that subway trains could potentially run every four minutes on each line (and every two minutes between Union Station and Wilshire/Vermont, where the lines split).

Currently, the Metro Red/Purple Line trains “turn-back” at Union Station, reversing direction from east bound to west bound. The current minimum headway that can be achieved at Union Station is approximately eight minute service on each line (or four minutes between Union Station and Wilshire/Vermont, where the lines split).

At present, non-revenue Metro Red/Purple Line trains proceed underground south of Union Station and emerge at-grade through the portal just south of the US 101 Freeway before entering a complex set of switches in the main rail yard. Widening the portal serves three important objectives: 1) It services the new turn-back facility; 2) It will allow for an increase in train speeds and ensure the reliability of operations; and 3) The portal widening will ensure that Metro can operate safe and reliable service to meet anticipated ridership and provide sufficient capacity to serve future passengers.

Figure 1: Regional Location

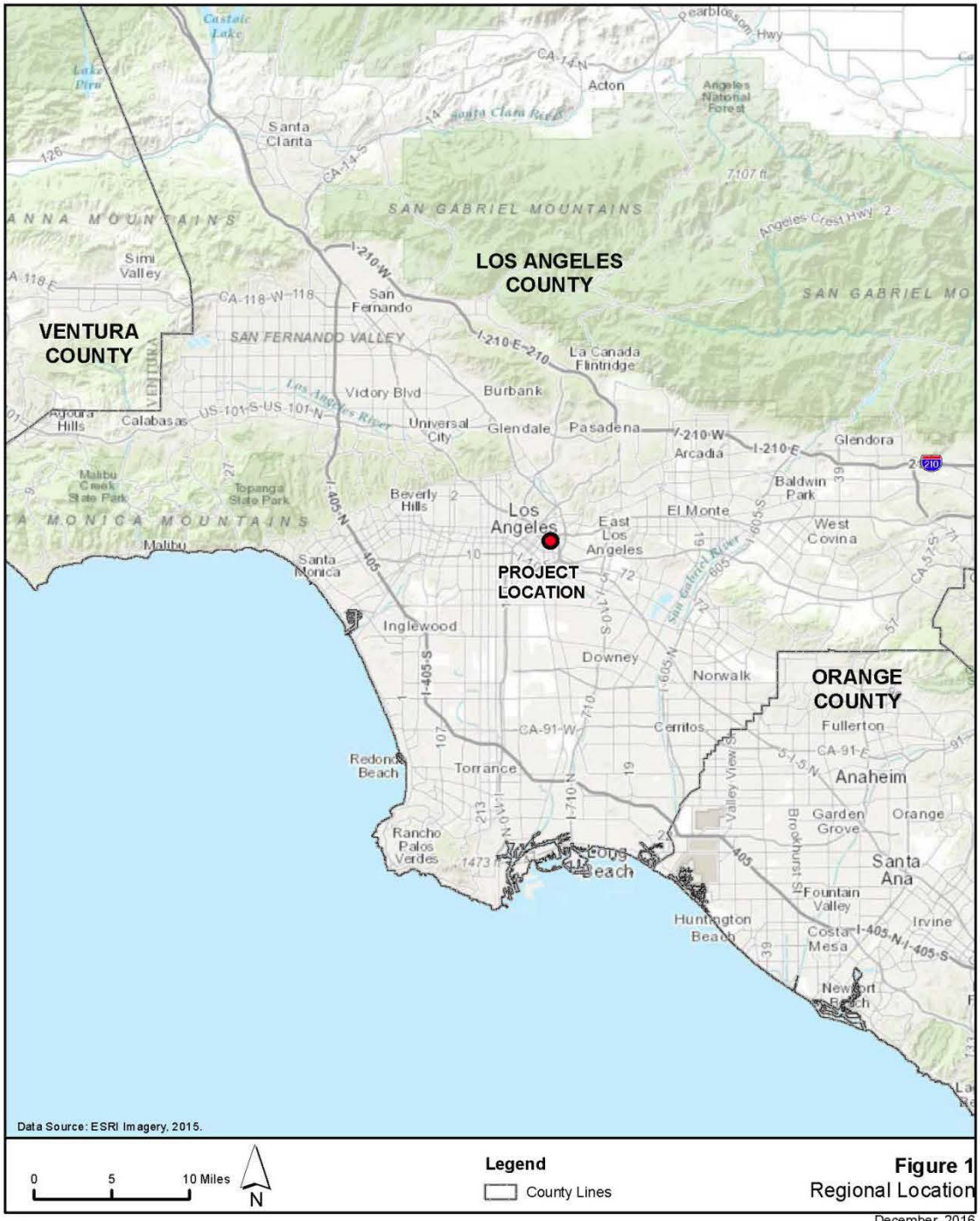
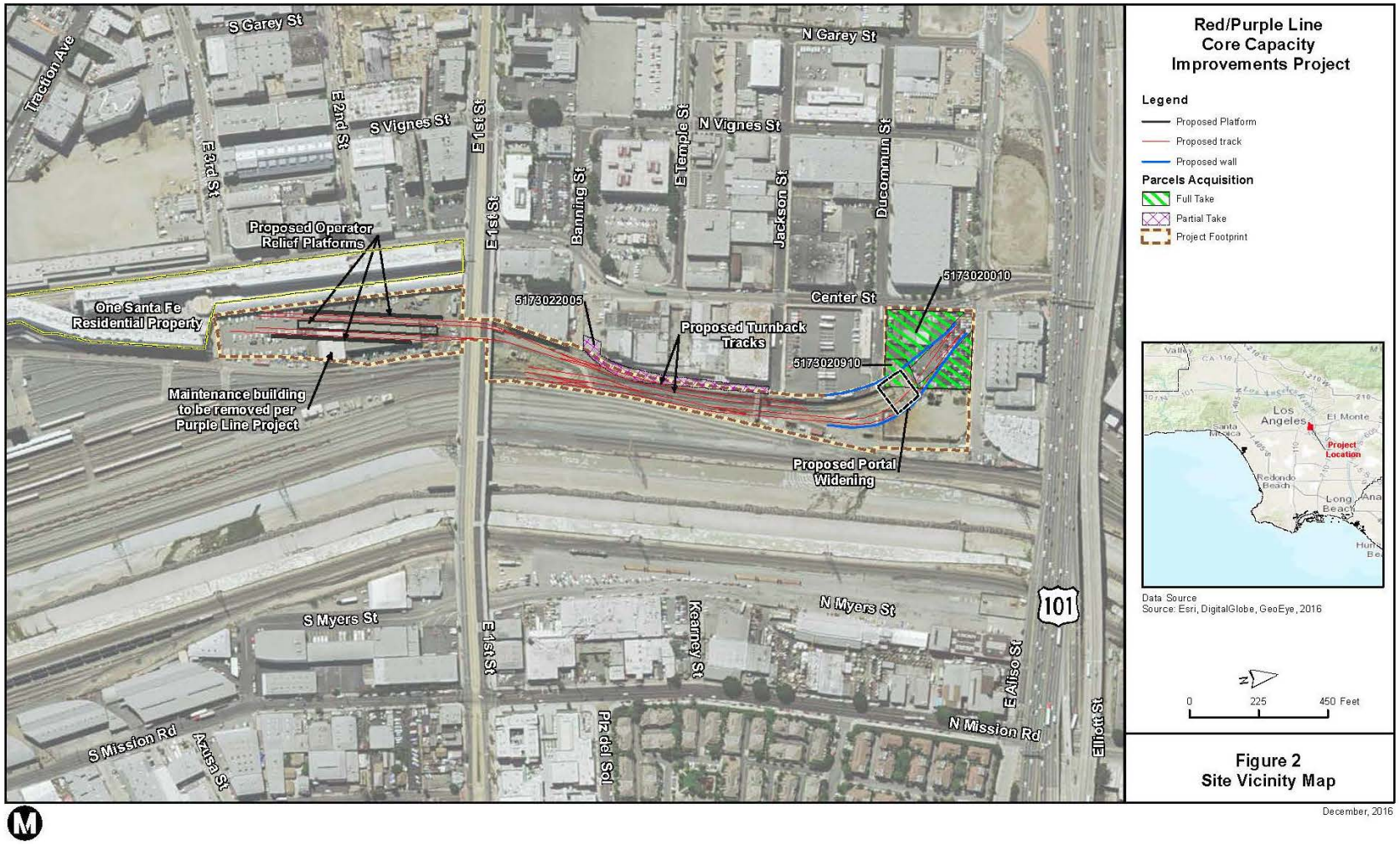


Figure 2: Site Map



1.3 Statutory Authority

According to Section 15063 of the State CEQA Guidelines following preliminary review, the Lead Agency shall conduct an IS to determine if the project may have a significant effect on the environment.

If, as a result of the IS, the Lead Agency concludes that there is evidence that any aspect of the proposed project, without mitigation, may cause a significant environmental effect, the Lead Agency shall further find that an Environmental Impact Report (EIR) must be prepared to analyze environmental impacts. However, if the Lead Agency finds that the proposed project will not cause a significant effect on the environment, either as proposed or as modified to include mitigation measures identified in the IS, a Negative Declaration or Mitigated Negative Declaration shall be prepared for the project. The significant effects to be considered in the IS include the direct, reasonably foreseeable indirect, cumulative, and growth-inducing impacts of said project.

Under the State CEQA Guidelines Section 15063(d) identifies specific disclosure requirements for inclusion in an IS, including the following:

- A description, including location, of the project;
- An identification of the environmental setting;
- An identification of environmental effects by use of a checklist, matrix, or sample form tailored to satisfy individual agencies' needs and project circumstances, so long as the entries are briefly explained to indicate that substantial evidence exists to support the entries. The brief explanation may be either through a narrative or a reference to another information source such as an attached map, photographs, or an earlier EIR or negative declaration. A reference to another document should include, a citation to the page or pages where the information is found;
- A discussion of mitigation measures for significant effects identified, if any;
- A discussion of compatibility with existing zoning, plans and other applicable land use controls; and
- The name of preparers of the IS.

1.4 Incorporation By Reference

Pursuant to Section 15063(d)(3) of the State CEQA Guidelines this IS incorporates by reference all or portions of other technical documents that are a matter of public record. Those documents either relate to the proposed Project or provide additional information concerning the environmental setting in which the Project is proposed. The information contained in this IS is based, in part, on the following related technical memorandum:

- Noise and Vibration Technical Memorandum (Appendix A)

1.5 Regulatory Permits

Metro is exempt from City of Los Angeles permits, however it is Metro's policy to coordinate with relevant City departments (for example Building, Planning, Transportation) to ensure that Metro's projects are consistent with City goals, policies, and requirements. The Metro Board will use this IS/MND to inform decision making about this Project as required by CEQA.

1.6 Agency and Public Comment Period

The agency and public comment period is December 19, 2016 to January 19, 2017. Pursuant to Section 15073 of the State CEQA Guidelines, a lead agency shall provide an IS/MND public review period of not less than 20 days. However, when an IS/MND is submitted to the State Clearinghouse (as is intended for this proposed project) for review by state agencies, the public review period shall not be less than 30 days. In light of the multiple holidays commonly observed within this review period, Metro has extended the comment period to a total of 32 days in order to allow agencies and the public additional time to comment on the proposed project.

1.7 Conclusion

Sections 3 and 4 of this IS/MND present a summary of the analysis of the potential environmental impact of the Project, in addition to specific mitigation measures. The IS/MND is supported by detailed technical analysis which can be found in Appendix A. Appendix B is the proposed Mitigation Monitoring and Reporting Program (MMRP). In accordance with Section 21O80(c) of CEQA, this IS/MND supports the conclusion that the proposed Project does not have a significant adverse impact on the environment, after mitigations.

2. Project Description

2.1 Project Location

The proposed Project would be located within the existing Division 20 rail yard. The Division 20 rail yard is an approximately forty-five (45) acre site and is home to the Metro Red/Purple Line train storage and maintenance facilities. It is located primarily between the 1st and 4th Street bridges, running parallel to the Los Angeles River Channel and east of Santa Fe Avenue.

The Metro Red/Purple Line tunnel portal is situated between Commercial Street to the north; Ducommun Street to the south; Center Street to the west; and the Los Angeles River Channel to the east. Construction of the portal widening will require the acquisition of an existing industrial use (tow service storage yard) and partial acquisition of a vacant parcel for the turnback tracks (see Figure 3).

The General Plan Land Use designation for the Project site and vicinity is cited in the City's zoning database (www.zimas.lacity.org) as Heavy/Light Manufacturing, as well as being identified as a transit priority area. There is one residential land use (One Santa Fe) located adjacent to the southwest corner of the proposed project. There are no other residential/housing, educational centers, institutional, or public open space uses in the immediate area (within 1,000 feet).

2.2 Project Objectives

The Project serves three important objectives: 1) It services the new turn-back facility; 2) It will allow for an increase in train speeds and ensure the reliability of operations; and 3) The portal widening will ensure that Metro can operate safe and reliable service to meet the anticipated ridership and provide sufficient capacity to serve future passengers.

2.3 Environmental Setting

The Project site is located in the north east edge of downtown Los Angeles, in Los Angeles County, as shown in Figure 1. The area is typically referred to as Central City North with surrounding land uses being industrial and manufacturing in nature. The site is near the 101 freeway to the north and the Los Angeles River to the east and experiences a moderate level of background noise due to its close proximity to the freeway as well as numerous rail connections/corridors within and adjacent to the Division 20 rail yard. Per the Los Angeles Zoning code, the Project site is located within both the M3 and PF zones, and is designated Heavy Manufacturing and Public Facilities in the General Plan. A majority of the Project site falls within the PF zone. Presently, the Project site serves as the storage and maintenance facility for the Red/Purple Line train cars. The current uses are consistent with the zoning designation.

The Project footprint (see Figure 2) consists of East Commercial Street to the north and the existing Division 20 rail yard to the east, with the community of Boyle Heights, across the Los Angeles River. The Boyle Heights community, located approximately 0.25 miles from the project site, is comprised of largely residential uses with single family homes. The southern site boundary is within the Division 20 rail yard and is parallel to East 3rd Street, which comes to a T intersection with South Santa Fe Avenue. Immediately to the south of the project site is the Arts District which is comprised of industrial and commercial uses, art galleries and exhibition warehouse spaces, and housing. The western boundary consists of the existing commercial/industrial property lines along Center Street, as well as the One Santa Fe residential property immediately south of the 1st Street bridge.

2.4 Project Components and Operations

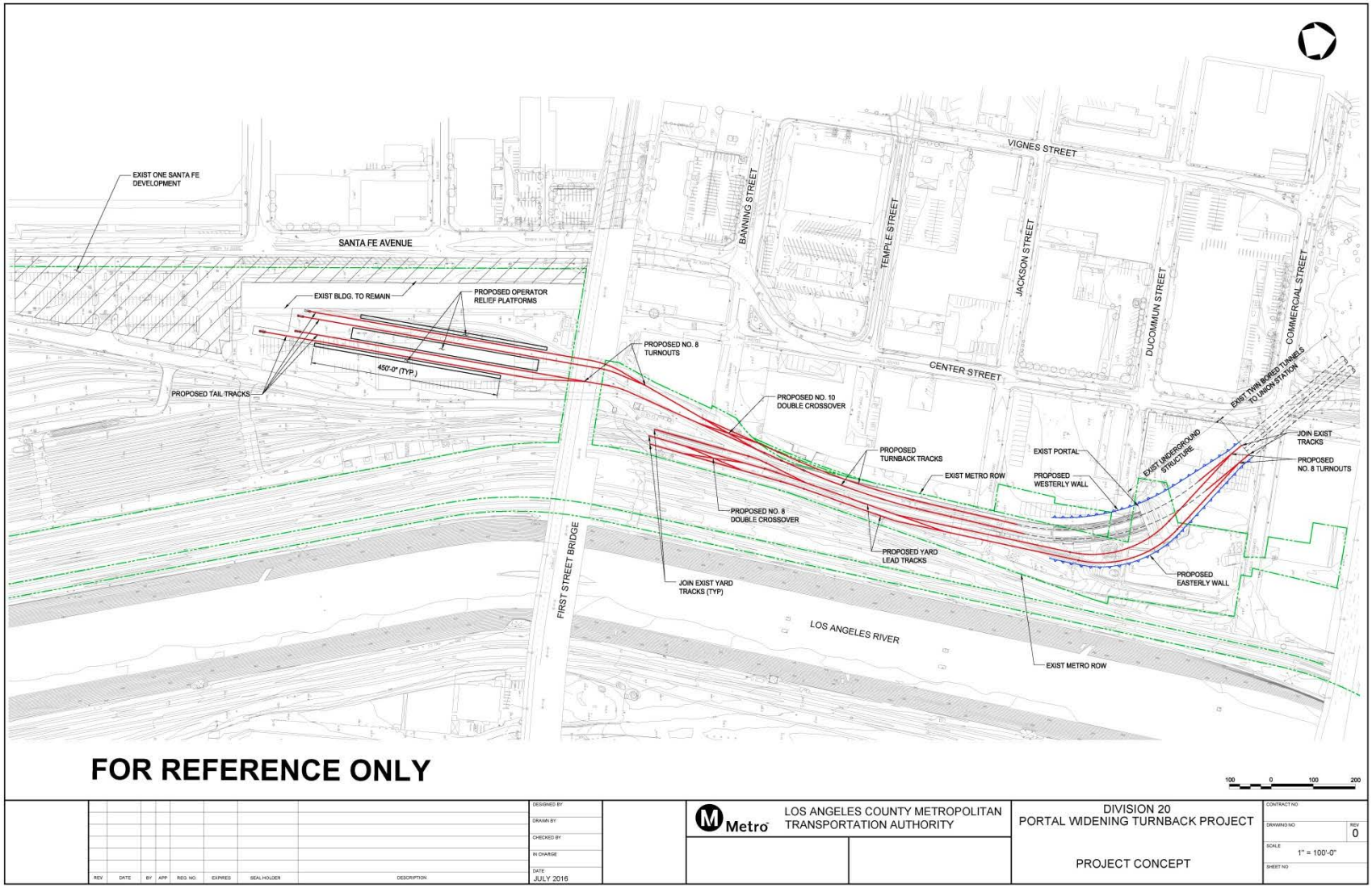
The proposed Project will consist of a total of four (4) turnback tracks aligning with three (3) proposed operations platforms, all located in the Division 20 yard immediately east of the One Santa Fe apartment complex (see Figure 3). Trains would enter the Project area heading southbound from Union Station. After a period of dwell time, the trains will re-enter service, heading northbound to Union Station. This operational procedure will require the rail cars to pass through a double-crossover switch north of the 1st Street bridge.

For the purposes of this environmental analysis, train operations are assumed to reach their theoretical maximum capacity, as indicated by the operational schedule in Table 1 below. Please note that a “train movement” consists of one-directional travel (e.g., southbound).

Table 1: Operational Schedule

Time of Day	Train Movements (per hour)
6:00am – 9:00am (peak period)	60
3:00pm – 7:30pm (peak period)	
9:00am – 3:00pm	40
7:30pm – 6:00am	Up to 4

Figure 3: Conceptual Engineering Site Plan



3. Environmental Evaluation

3.1 Introduction

The environmental assessment discussion below briefly describes the affected environment, potential environmental effects, and cumulative impacts related to:

- Aesthetics
- Agriculture & Forestry Resources
- Air Quality & Greenhouse Gas Emissions
- Biological Resources
- Cultural Resources
- Geology & Soils
- Hazards & Hazardous Materials
- Hydrology & Water Quality
- Land Use & Planning
- Mineral Resources
- Noise
- Population & Housing
- Public Services
- Recreation
- Transportation & Traffic
- Utilities & Service Systems
- Mandatory Findings of Significance

Where potential effects are identified, mitigation measures are provided to minimize or avoid environmental impacts.

3.2 Environmental Assessment

3.2.1 Aesthetics

Less than Significant. The proposed Project is located in an industrial area mainly within an existing rail maintenance yard. Surrounding uses include heavy manufacturing and one residential property. The proposed Project will consist of the same operational components that exist onsite currently, such as, train tracks, switches, and maintenance/operation platforms.

The proposed changes would be consistent with surrounding land uses. While the proposed industrial use in the industrially used and zoned area is not consistent with the adjoining residential use, this IS/MND evaluates impacts to the residential use and concludes there would be no significant adverse impacts compared to the existing setting. There are no scenic vistas or resources in the Project area that would be impacted. Existing views of the Downtown Los Angeles skyline looking southwest from the project site will not be obstructed. The Project would not substantially degrade the existing visual character of the Project site and it surroundings.

All lighting associated with the proposed Project would be installed in compliance with all applicable lighting standards to contribute minimally to the visual contrast of the proposed Project with surrounding land uses during the nighttime hours. As this will be a 24-hour working facility, external light will be provided, however this lighting would be consistent with existing lighting at the Division 20 rail yard. Therefore, no adverse effects related to visual quality are anticipated and no mitigation measures are required.

3.2.2 Agriculture and Forestry Resources

No Impact. The proposed Project is not located within areas designated as having Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, according to the California Department of Conservation Important Farmland Finder Geographic Information System (GIS) database. Rather, the Project area is located within urbanized areas and is characterized primarily by industrial use. Furthermore, the Project is not located within land zoned for

agricultural use, forestry use, or Williamson Act contract zone. Therefore, no adverse effects related to agricultural or forestry resources are anticipated and no mitigation measures are required.

3.2.3 Air Quality and Greenhouse Gas Emissions

Less than Significant with Mitigation Incorporated. Metro has policies in place, such as the Green Construction Policy which limits criteria air pollutant and greenhouse gas (GHG) emissions of construction equipment during construction. This falls under Metro's overall Sustainability Plan to further limit environmental impacts and reduce unnecessary use of limited resources in projects.

With adherence to these policies, short-term air quality impacts generated during construction of the proposed project would not conflict with the Air Quality Management Plan (AQMP) attainment goals and would result in less than significant regional and localized impacts. In addition, construction of the proposed project would not expose sensitive receptors to substantial concentrations of air contaminants or odors and would not result in cumulatively considerable air quality impacts. The One Santa Fe residential property adjacent to the southwest of the Project site contains an air conditioning system that provides the residents with clean indoor air.

The air quality impact determination for operational activities would be less than significant, similar to the impact determination for construction-related impacts. In addition, operation of the proposed Project would result in an indirect air quality benefit due to enhanced capacity of the rail transit system, which would allow for and attract more riders and reduce regional vehicle miles travelled (VMT) and associated air quality impacts.

GHG emissions generated during construction and operational activities would not result in a significant impact on the environment, nor would the estimated GHG emission levels conflict with applicable plans, policies or regulations geared towards reducing GHG emissions and climate change impacts. Additionally, operation of the proposed Project would result in an indirect reduction in regional GHG emissions due to increased ridership (and reduced regional VMT) resulting from the enhanced rail transit system.

With implementation of the mitigation measure below, there would be no adverse effects related to air quality or greenhouse gas emissions.

Mitigation Measure

AQ-1 - The project shall be designed and constructed in a manner consistent with Metro's sustainability policies (such as Metro's Green Construction Policy, Energy and Sustainability Policy and Metro's Sustainability Implementation Plan) and implement Best Management Practices for emissions.

3.2.4 Biological Resources

No Impact. The Project site is located in a highly urbanized, heavy industrial area in downtown Los Angeles. The fully channelized Los Angeles River is approximately 200 feet to the east, however, there are no natural streams or waterways in the Project vicinity that would be considered ecologically sensitive or potentially harbor/support threatened or endangered species. Therefore, no adverse effects related to biological resources are anticipated and no mitigation measures are required.

3.2.5 Cultural Resources

Less than Significant with Mitigation Incorporated. This section addresses historic and archaeological resources, as well as paleontological resources. The Project site has been extensively studied in other recent environmental documents, such as the Cultural Resources Assessment for the Metro Emergency Security Operations Center[1]. This environmental document found no built-environment resources were present in the near-by Project area.

No paleontological resources have been discovered in the immediate Project area, however, significant vertebrate fossils have been recovered from Pleistocene-age older Quaternary alluvial deposits like those that underlie the Project vicinity at varying depths below the current ground surface. Paleontologically sensitive deposits could likely be anticipated at 5 to 15 feet below the surface, although depths may vary.

Additionally, no previously documented archaeological resources were discovered in the near-by Project area, however, undocumented buried archaeological resources may be present. The Project area is underlain by deep alluvial deposits dating to the last 10,000 years, and such deposits have the potential to contain significant archaeological resources.

To reduce any potential impacts to cultural and paleontological resources to less than significant under CEQA, cultural and paleontological monitoring of ground-disturbing activities in previously undisturbed soils during construction is proposed. Ground-disturbing activities from the surface to at least the base of younger Quaternary alluvium would be monitored for possible buried cultural resources. This monitoring is most likely to take place at the tunnel portal, as this project feature will require the deepest construction activities. Additionally, Metro has engaged in Native American consultation per Assembly Bill 52.

Ground-disturbing activities from the contact between younger and older Quaternary alluvium down to final depth would be monitored for possible buried paleontological resources. To ensure that these deposits are monitored, all ground-disturbing activities deeper than approximately 10 feet in depth, and to previously undisturbed soils, would be spot-checked for paleontological resources, unless a determination is made otherwise by a qualified paleontologist. Ground-disturbing activities include geotechnical boring, boring, trenching, grading, excavating, and demolishing building foundations. To guide monitoring for the Project, a Cultural Resources Monitoring and Mitigation Plan should be developed by an archaeologist who meets the standards of the Secretary of the Interior for Archaeology, and a Paleontological Resources Monitoring and Mitigation Plan would be developed by a qualified professional paleontologist. Each of these plans would be developed in consultation with Native American representatives as needed.

With implementation of the mitigation measures below, there would be no adverse effects related to cultural resources.

Mitigation Measures

Archeological Resources
CR-1 - The Project is expected to occur in previously disturbed soils, however, a qualified archaeologist shall be retained to monitor all project-related, ground-disturbing construction activities (i.e., grading, excavation, etc.) that are in previously undisturbed soils only if

[1] https://media.metro.net/projects_studies/capital_projects/images/reports_capitalprojects_appendixc.pdf, accessed December 2016.

encountered. In the event that cultural resources are exposed during construction, the qualified monitor will temporarily halt construction in the immediate vicinity of the discovery (if safe) while the potential resource is evaluated for significance. Construction activities could continue in other areas. If the discovery proves to be significant, additional work, such as data recovery excavation, shall be required. A Cultural Resources Monitoring and Mitigation Plan (CRMMP) will be developed prior to the start of ground disturbing activities outlining monitor procedures.

CR-2 - Because of the potential for Tribal Cultural Resources, a Native American monitor shall be retained on an as-needed basis to monitor alongside the archaeological/paleontological monitor. Monitoring procedures will be outlined in the project CRMMP. In the event the Native American monitor identifies cultural or archeological resources, the monitor shall be given the authority to temporarily halt construction in the immediate vicinity of the discovery to investigate the find and contact the project archaeologist/paleontologist.

CR-3 - In the event that human remains are encountered at the project site, all work in the immediate vicinity of the burial must cease, and any necessary steps to ensure the integrity of the immediate area shall be taken. The Los Angeles County Coroner will be immediately notified. The Coroner must then determine whether the remains are Native American. Should the Coroner determine the remains are Native American, the Coroner has 24 hours to notify the Native American Heritage Commission (NAHC), who shall in turn, notify the person they identify as the most likely descendent (MLD) of any human remains. Further actions shall be determined in part by the recommendations of the MLD. The MLD has 24 hours following notification from the NAHC to make recommendations regarding the disposition of the remains of the discovery. If the MLD does not make recommendations within 24 hours, the owner shall, with appropriate dignity, re-inter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC. Procedures of conduct following the discovery of human remains have been mandated by Health and Safety Code §7050.5, Public Resources Code §5097.98, and the California Code of Regulations §15064.5(e) (CEQA).

Paleontological Resources

CR-4 - The Project is expected to occur in previously disturbed soils, however a qualified paleontological monitor shall be retained to monitor project-related excavation activities on a full-time basis on previously undisturbed soils. Project-related excavation activities of less than ten feet depth shall be monitored on a part-time basis on previously undisturbed soils to ensure that underlying paleontologically sensitive sediments are not being impacted. In addition, the monitor shall ensure the proper differentiation between paleontological and archaeological resources.

CR-5 - The Project is expected to occur in previously disturbed soils. A Paleontological Monitoring and Mitigation Plan will be developed prior to the start of ground disturbing activities by a qualified paleontologist. If undisturbed soil is discovered (see also CR-1) a qualified paleontologist shall be retained to supervise the monitoring of construction. Paleontological resource monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments, as defined by the PMMP and as needed. The monitor shall have authority to temporarily divert grading away from exposed fossils in order to efficiently recover the fossil specimens and collect associated data. The qualified archaeologist/paleontologist shall prepare monthly progress reports to be filed with Metro, and the Natural History Museum of Los Angeles County. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Matrix sampling shall be conducted to test for the presence of microfossils.

CR-6 - Recovered fossils shall be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility. The most likely repository would be the Natural History Museum of Los Angeles County.

3.2.6 Geology and Soils

Less than Significant with Mitigation Incorporated. The Project site is located adjacent to the Los Angeles River. The Project site is not located within an Alquist-Priolo earthquake fault zone, nor designated a landslide area. The nearest fault is located to the northeast, the Upper Elysian Park Fault. According to the City of Los Angeles General Plan, the Project site is located in an area that is susceptible to liquefaction.

While soil liquefaction cannot necessarily be avoided, implementation of standard engineering design measures (such as support in structure foundation) is required by state and local codes to minimize potential earthquake impacts. Adherence to existing regulations and implementation of standard construction practices would ensure that impacts associated with liquefiable soils would be reduced to a less-than-significant level.

With implementation of the mitigation measures below, there would be no adverse effects related to geology and soils.

Mitigation Measures

GS-1 - Metro shall conduct a geotechnical report that is consistent with Metro criteria and/or design guidelines, as well as City of Los Angeles building specification guidelines.

GS-2 - Implementation of Best Management Practices such as scheduling excavation and grading activities during dry weather as feasible, and covering stockpiles of excavated soils with tarps or plastic sheeting would help reduce soil erosion due to grading and excavation activities.

3.2.7 Hazards and Hazardous Materials

Less than Significant with Mitigation Incorporated. The Project site and surrounding area have a history of industrial and manufacturing uses. Soil contamination is likely within the Project site. Soils would be excavated only from within the Project footprint and not from any adjacent area or property. Groundwater is historically found at depths of around 30 feet in this area, and groundwater contains historical contaminants which would be accounted for during construction. Mitigation measures would reduce environmental effects by ensuring that potentially contaminated soils are identified and removed before the construction of the proposed project.

Demolition of two existing buildings on the Viertel's Central Division property would be required. As a result, there is potential to encounter asbestos or lead-based paint. Mitigation measures would reduce environmental effects by ensuring that proper testing would take place prior to construction.

No adverse environmental effects related to the handling and emitting of hazardous materials are anticipated.

With implementation of the mitigation measures below, there would be no adverse effects related to hazards and hazardous materials.

Mitigation Measures

HM-1: Once detailed engineering plans are prepared, a Contaminated Soil/Groundwater Management Plan shall be prepared and implemented during construction to establish procedures to follow if contamination is encountered. This will minimize associated risks and assure that applicable statutory and regulatory standards and requirements are satisfied. The plan shall include procedures for the implementation of mitigation measures HAZ-2 through HAZ-6. The Contaminated Soil/Groundwater Management Plan shall abide by the Land Use Covenants for each parcel, as applicable.

HM-2: Appropriate regulatory agencies, identified in the Contaminated Soil/Groundwater Management Plan, shall be contacted if contaminated soil or groundwater is encountered.

HM-3: Sampling and analysis of soil and/or groundwater known or suspected to be impacted by hazardous materials shall be conducted in accordance with the procedures detailed in the Contaminated Soil/Groundwater Management Plan.

HM-4: Procedures for the legal and proper handling, storage, treatment, transport, and disposal of contaminated soil and/or groundwater shall be delineated and conducted in consultation with regulatory agencies and in accordance with established statutory and regulatory requirements as explained in the Contaminated Soil/Groundwater Management Plan.

HM-5: Dust control measures such as soil wetting, wind screens, etc. shall be implemented for contaminated soil.

HM-6: Worker Health and Safety Plan shall be implemented prior to the start of construction activities. All workers shall be required to review the plan, receive training if necessary, and sign the plan prior to starting work. The plan shall identify properties of concern, the nature and extent of contaminants that could be encountered during excavation activities, appropriate health and environmental protection procedures and equipment, and emergency response procedures including the most direct route to a hospital, and contact information for the Site Safety Officer.

HM-7: The project shall be consistent with the City's Methane Mitigation Standards, which include provisions to protect workers and the public.

HM-8: Prior to building demolition, surveys for asbestos containing materials and lead-based paint shall be conducted. If necessary, destructive sampling shall be used. All asbestos containing materials and lead-based paint would be removed or otherwise abated prior to demolition.

3.2.8 Hydrology and Water Quality

Less than Significant with Mitigation Incorporated. The construction phase of the proposed Project would potentially cause soil erosion and run-off into the storm drains due to grading and excavation activities. Project construction and operations would comply with applicable federal, State, and local regulations, as well as other code requirements and permit provisions that would minimize the potential for violations of water quality standards and waste discharge requirements, and would limit activities that could otherwise substantially degrade water quality.

The nearest waterway to the project site is the channelized Los Angeles River, adjacent to the east; however the proposed Project would not cause any streams or the river to be altered or impacted.

The Project site is not located within or near an area that would be considered a wetland as defined by Section 404 of the Clean Water Act, according to the California Wetlands Information System. According to the Federal Emergency Management Agency (FEMA) the site is not located in a flood zone or floodplain.

With implementation of the mitigation measure below, there would be no adverse effects related to hydrology and water quality.

Mitigation Measure

WQ-1 - Metro shall employ standard Best Management Practices for project construction and applicable specifications for runoff or discharge.

3.2.9 Land Use and Planning

Less than Significant with Mitigation Incorporated. According to the City of Los Angeles Department of Planning, the Project site is within both the M3 and PF zones. M3, Heavy Industrial, allows for the construction and operation of various types of manufacturing uses, including service facilities and maintenance yards. PF, Public Facilities, allows for the use and development of publically owned land and includes the use of government buildings, structures, offices, and service facilities including maintenance yards. A majority of the property within the Project site consists of the PF zone.

The Project site is surrounded by industrial, manufacturing and transportation related uses. The Project site is also located in two overlay zones: the River Improvement Overlay District (RIO) and East Los Angeles Enterprise Zone (EZ).

The purpose of the RIO district is to support the goals of the Los Angeles River Revitalization Master Plan and establish a positive interface between river adjacent property and river ways, among others. The EZ is an area that has been provided economic incentives to stimulate investment and employment through tax and regulation relief and improvement of public services.

Metro currently owns a majority of the Project site, however, acquisition of several parcels is required. The largest acquisition is Viertel's Central Division, a private tow yard business, located at 500 North Center Street, Los Angeles, CA 90012. The property consists of two parcels, 5173-020-010 (1.4 acres) and 5173-020-910 (0.2 acres). Both parcels will require full acquisition by Metro. Viertel's Central Division is an Official Police Garage (OPG) service provider. OPGs are overseen by the Los Angeles Police Commission and its Commission Investigation Division. Currently, OPGs consist of 18 service providers (of which Viertel's is one), operating over 200 tow trucks and offering 90 acres of storage facilities.[2] With a total of 1.6 acres, Viertel's Central Division represents a small percentage of the storage capacity of OPGs. Additionally, the City of Los Angeles Department has determined that there are 19,000 acres of industrial zoned land within Los Angeles.[3] Viertel's Central Division would need to be acquired, displacing the business, and would be relocated. To offset the displacement and

[2] http://www.opgla.com/aboutus/OPGHistory.aspx, accessed December 2016.
[3] http://planning.lacity.org/Code_Studies/LanduseProj/Industrial_Files/Attachment%20B.pdf, accessed December 2016.

relocation, Metro will provide relocation assistance and compensation as required by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. With the combination of Viertel's Central Division representing a small percentage of OPG storage capacity, and the availability of 19,000 acres of industrially zoned land within Los Angeles, the impacts of acquiring, displacing, and relocating this business would be less than significant.

Additionally, one other parcel would require a partial acquisition along its eastern property boundary. The parcel is zoned for heavy manufacturing and is classified as vacant per the Los Angeles County Assessor's Office. The acquisition is anticipated to be less than 10 feet into the property and will provide the necessary clearance for the new turnback tracks. No buildings would be impacted or acquired and no property operations would be impacted from this partial take. The parcel is 5173-022-005 and can be seen in Figure 3. Due to the small size of the partial acquisition, which would result in no loss of operations to the existing property, impacts would be less than significant.

As described above, implementation of the proposed Project would require two full-take acquisitions, and one partial-take acquisition. With implementation of Metro's relocation assistance, the impact of displacing and relocating Viertel's Central Division tow yard would be less than significant. The partial acquisition of the vacant parcel would also be less than significant.

With implementation of the mitigation measure below, the proposed Project would not cause significant impacts related to land use, planning, acquisition, displacement, or relocation. Therefore, no adverse effects related to land use and planning are anticipated.

Mitigation Measure

LU-1 - Metro shall provide relocation assistance and compensation as required by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

3.2.10 Mineral Resources

Less than Significant. The Project site is located within the Mineral Resources Zone-2 (MRZ-2) per the City of Los Angeles Conservation Element of the General Plan.[4] MRZ-2 is defined as areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present or where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists. The City of Los Angeles classifies MRZ-2 land as significant due to its potential for sand and gravel extraction. However, the proposed Project would not introduce land use changes and would not restrict the extraction of mineral resources more than the existing conditions. Therefore, no adverse effects related to mineral resources are anticipated and no mitigation measures are required.

3.2.11 Noise

Less than Significant. The City of Los Angeles has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise sensitive land uses. This project is in an industrial zone with one surrounding sensitive use, the One Santa Fe residential property.

[4] *http://planning.lacity.org/cwd/gnlpln/consvelt.pdf*, accessed December 2016.

Metro undertook a noise and vibration analysis including monitoring existing levels and modeling future levels after Project implementation (see Appendix A, for detailed information on noise and vibration analysis). There would be no impacts to the ambient noise levels that currently exist around the Project site. The existing use is the Division 20 rail yard as indicated in Appendix A, Noise and Vibration Technical Memorandum. Due to the nature of the existing Division 20 rail yard and surrounding industrial uses, no noise impacts are anticipated. Construction noise will be temporary during build-out of the Project. Therefore, no adverse effects related to noise are anticipated and no mitigation measures are required.

3.2.12 Population and Housing

No Impact. While the proposed Project would allow for safe and reliable service to meet the anticipated ridership and provide sufficient capacity to serve future passengers, it does not include new housing or businesses and would not displace housing. Therefore, no adverse effects related to population and housing are anticipated and no mitigation measures are required.

3.2.13 Public Services

No Impact. As the proposed Project involves widening the portal southeast of Union Station and adding new tracks and switches to allow trains to turn around quickly at Union Station, it would not introduce new government facilities or impact existing government facilities. Additionally, response times and service ratios for fire and police protection, schools, and parks would not be impacted. Therefore, no adverse effects related to public services are anticipated and no mitigation measures are required.

3.2.14 Recreation

No Impact. There are no public parks or recreation areas within a quarter mile of the Project site. Therefore, no adverse effects related to recreation are anticipated and no mitigation measures are required.

3.2.15 Transportation and Traffic

Less than Significant. The Project site is located in a developed and urban section of Los Angeles. Construction of the Project will be short-term and construction trucks and equipment will utilize areas within the Project site for construction laydown and staging, therefore, eliminating any on-street queuing that could interfere with existing traffic. Operation of the Project will not increase traffic in the surrounding area. Therefore, no adverse effects related to traffic are anticipated and no mitigation measures are required.

3.2.16 Utilities and Service Systems

Less than Significant. The proposed Project will not introduce changes to wastewater generation, storm drain facilities, or water supply compared to the existing Division 20 rail yard. A relatively small amount of landfill material will be generated from construction of the proposed Project. The Sunshine Canyon Landfill, which accepts waste from the Los Angeles area, has enough capacity to operate until 2037.[5] Therefore, no adverse effects related to utilities and service systems are anticipated and no mitigation measures are required.

[5] *http://sunshinecanyonlandfill.com/faq/*, accessed December 2016.

3.2.17 Mandatory Findings of Significance

Less than Significant with Mitigation Incorporated. Due to the proposed Project's location in a highly developed urban area and its consistency with zoning and existing land uses, there are no anticipated adverse impacts to the habitat of wildlife species, or to important examples of the major periods of California history or prehistory.

Additionally, all environmental impacts that could occur as a result of the proposed Project would be reduced to a less than significant level with implementation of the mitigation measures recommended above. Therefore, when viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, the proposed Project would not be significant.

As described above, implementation of the proposed Project could result in air quality, cultural resources, geology and soils, and hazards and hazardous materials impacts. However, implementation of the mitigation measures above would ensure that the proposed Project would not result in adverse effects that would cause impacts to human beings.

4. Initial Study Checklist

CEQA Appendix G: Environmental Checklist form

1. Project title: Los Angeles Metro Red/Purple Line Core Capacity Improvements Project

2. Lead agency name and address: Los Angeles Metropolitan Transportation Authority (Metro) One Gateway Plaza, Los Angeles, CA 90012-2932

3. Contact person and phone number: Dr. Cris B. Liban, 213-922-2471

4. Project location: Primarily between the 1st and 4th Street bridges, running parallel to the Los Angeles River Channel and east of Santa Fe Avenue in the existing Metro Division 20 rail yard.

5. Project sponsor's name and address: Los Angeles Metropolitan Transportation Authority (Metro) One Gateway Plaza, Los Angeles, CA 90012-2932

6. General plan designation: Heavy Manufacturing and Public Facilities

7. Zoning: M3-1 and PF

8. Description of project: See Section 1.2 Project Background and Overview of this IS/MND.

9. Surrounding land uses and setting: See Section 2.3 Environmental Setting of this IS/MND.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.) None

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project.

☐	Aesthetics	☐	Agriculture and Forestry Resources	☒	Air Quality
☐	Biological Resources	☒	Cultural Resources	☒	Geology /Soils
☐	GreenhouseGas Emissions	☒	Hazards&Hazardous Materials	☒	Hydrology/Water Quality
☒	Land Use/Planning	☐	Mineral Resources	☒	Noise
☐	Population/Housing	☐	Public Services	☐	Recreation
☐	Transportation/Traffic	☐	Utilities/Service Systems	☒	Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature Date

Signature Date

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. Where there is a need for clarifying discussion, the discussion is included within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts.

AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
I. Aesthetics. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

AGRICULTURE AND FOREST RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
II. Agriculture and Forest Resources.				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined in Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
III. Air Quality.				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
IV. Biological Resources. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
V. Cultural Resources. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
VI. Geology and Soils. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the	☐	☒	☐	☐

	project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?				
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

GREENHOUSE GAS EMISSIONS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
VII.	**Greenhouse Gas Emissions. Would the project:**				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐
b)	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

HAZARDS AND HAZARDOUS MATERIALS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
VIII.	**Hazards and Hazardous Materials. Would the project:**				
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c)	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g)	Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h)	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

HYDROLOGY AND WATER QUALITY

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
IX.	**Hydrology and Water Quality. Would the project:**				
a)	Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on site or off site?	☐	☐	☒	☐

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site?	☐	☐	☒	☐
e)	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f)	Otherwise substantially degrade water quality?	☐	☐	☒	☐
g)	Place housing within a 100-year flood hazard area as mapped on a Federal flood hazard boundary or flood insurance rate map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j)	Contribute to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

LAND USE AND PLANNING

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
X.	**Land Use and Planning. Would the Project:**				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

MINERAL RESOURCES

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
XI.	**Mineral Resources. Would the project:**				
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☒	☐
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☒	☐

NOISE

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
XII.	**Noise. Would the project result in:**				
a)	Exposure of persons to, or generate, noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	☐	☐	☒	☐
b)	Exposure of persons to or generate excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
XIII. Population and Housing. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
XIV. Public Services. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
XV. Recreation. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

TRANSPORTATION/TRAFFIC

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
XVI. Transportation/Traffic. Would the project:				
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
XVII. Utilities and Service Systems. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with Federal, State, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
XVIII. Mandatory Findings of Significance.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☒

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Note: Authority cited: Sections 21083 and 21083.05, Public Resources Code. Reference: Section 65088.4, Gov. Code; Sections 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21093, 21094, 21095, and 21151, Public Resources Code; *Sundstrom v. County of Mendocino*,(1988) 202 Cal.App.3d 296; *Leonoff v. Monterey Board of Supervisors*, (1990) 222 Cal.App.3d 1337; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

Appendix A
Noise and Vibration Technical Memorandum

AECOM
401 West A Street
Suite 120
San Diego
CA 92101
USA
aecom.com

Project name:
Metro Red/Purple Line Core Capacity Improvements Project

To:
Andrina Dominguez, LA Metro

From:
Chris Kaiser, INCE; Paul Burge INCE Bd. Cert, AECOM

Date:
December 8, 2016

Technical Memorandum

Subject: LA Metro, Metro Red/Purple Line Core Capacity Improvements Project, Noise and Vibration Analysis

1 Introduction

This document summarizes the results of a noise and vibration impact assessment analysis associated with a planned rapid transit line core capacity improvement project at the existing Division 20 rail yard south of Union Station in Los Angeles CA. This analysis follows the noise and vibration general assessment procedures as outlined by the Federal Transit Administration's Transit Noise and Vibration Impact Assessment Manual (FTA-VA-90-1003-06), May, 2006. The analysis includes measurement of ambient noise levels at nearby noise sensitive land uses, identification of appropriate noise and vibration impact criteria, prediction of project related noise and vibration levels, assessment of operational noise and vibration impacts, assessment of potential construction noise and vibration criteria and impacts, and as required, noise and vibration mitigation recommendations.

1.1 Project Description

As a part of the Los Angeles County Metropolitan Transportation Authority Metro Red/Purple Line Core Capacity Improvements Project (Project), a proposed turn-back facility utilized by LA Metro Red and Purple Line trains is proposed within the Division 20 maintenance and storage yard to support increased service levels and accommodate the required headways. Tracks at this location will divide into a total of four (4) turnback tracks aligning with three (3) proposed operations platforms, all located in the Division 20 yard immediately east of the One Santa Fe (OSF) apartment complex. After a period of time, trains will re-enter service in the opposite direction from which they arrived, this procedure will require the rail cars to pass through a double-crossover switch north of the proposed turnback site. The proposed turnback facility layout, along with noise measurement locations and noise and vibration prediction locations are shown in Figure 1.

1.2 Technical Approach

This noise and vibration analysis adheres to the guidance provided by the Department of Transportation Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment guidance document, which presents procedures for predicting and assessing noise and vibration impacts of proposed mass transit projects. For both noise and vibration impact assessment, the General Assessment procedures were used for the analysis.

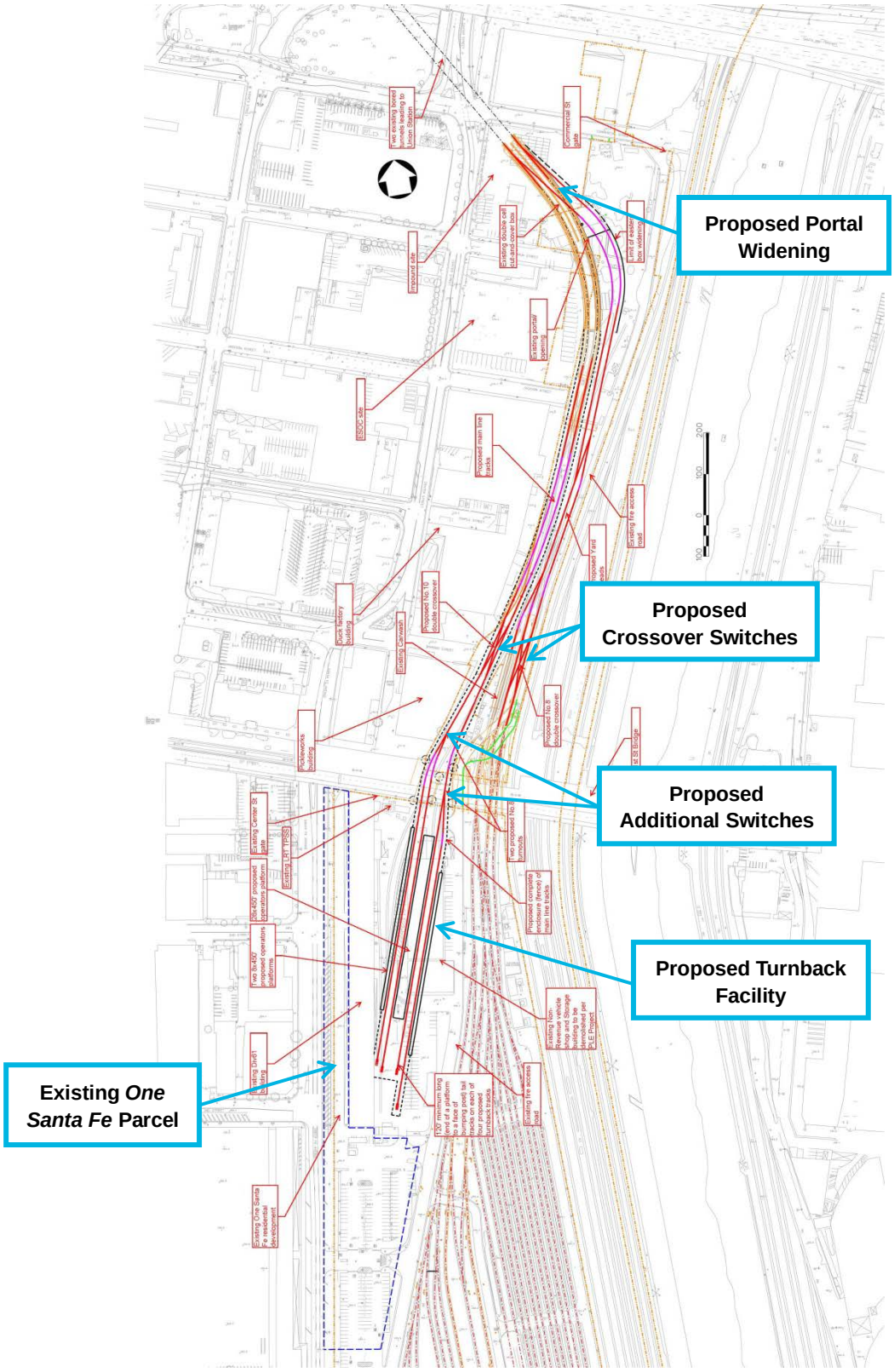


Figure 1. Project Overview

1.3 Background Information

The following Table 1 presents a glossary of general acoustical terminology used in this analysis.

Table 1. Definition of Acoustical Terms

Term	Definition
Noise	Whether something is perceived as a noise event is influenced by the type of sound, the perceived importance of the sound, and its appropriateness in the setting, the time of day and the type of activity during which the noise occurs and the sensitivity of the listener.
Sound	For purposes of this analysis, sound is a physical phenomenon generated by vibrations that result in waves that travel through a medium, such as air, and result in auditory perception by the human brain.
Frequency	Sound frequency is measured in Hertz (Hz), which is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a number of times per second. When the drum skin vibrates 100 times per second it generates a sound pressure wave that is oscillating at 100 Hz, and this pressure oscillation is perceived by the ear/brain as a tonal pitch of 100 Hz. Sound frequencies between 20 and 20,000 Hz are within the range of sensitivity of the best human ear.
Amplitude or Level	Is measured in decibels (dB) using a logarithmic scale. A sound level of zero dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above approximately 110 dB begin to be felt inside the human ear as discomfort and eventually pain at 120 dB and higher levels. The minimum change in the sound level of individual events that an average human ear can detect is about one to two dB. A three to five dB change is readily perceived. A change in sound level of about 10 dB is usually perceived by the average person as a doubling (or if decreasing by 10 dB, halving) of the sound's loudness.
Sound pressure	Sound level is usually expressed by reference to a known standard. This report refers to sound pressure level (SPL or L_p). In expressing sound pressure on a logarithmic scale, the sound pressure is compared to a reference value of 20 micropascals (µPa). L_p depends not only on the power of the source, but also on the distance from the source and on the acoustical characteristics of the space surrounding the source.
A-weighting	Sound from a tuning fork contains a single frequency (a pure tone), but most sounds one hears in the environment do not consist of a single frequency and instead are composed of a broad band of frequencies differing in sound level. The method commonly used to quantify environmental sounds consists of evaluating all frequencies of a sound according to a weighting system that reflects the typical frequency-dependent sensitivity of average healthy human hearing. This is called "A-weighting," and the decibel level measured is referred to as dBA. In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA "curve" of decibel adjustment per octave band center frequency (OBCF) from a "flat" or unweighted SPL.
Equivalent sound level	Although sound level value may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a mixture of noise from distant sources that creates a relatively steady background noise in which no particular source is identifiable. A single descriptor, L_{eq}, may be used to describe sound that is changing in level. L_{eq} is the energy-average dBA during a measured time interval. It is the "equivalent" constant sound level that would have to be produced by a given source to equal the acoustic energy contained in the fluctuating sound level measured.

L_{max} and L_{min}	Additionally, it is often desirable to know the range of amplitudes for the noise source(s) under study. This is typically accomplished by reporting the L_{max} and L_{min} indicators that represent the root mean square (RMS) maximum and minimum noise levels during a given monitoring interval. The L_{min} value obtained for a particular monitoring location is often called the "noise floor."
Statistical sound values	To describe the time-varying character of environmental noise, the statistical noise descriptors L_{10}, L_{50}, and L_{90} are commonly used. These are the noise levels exceeded during 10, 50, and 90 percent of a stated time interval, respectively. Sound levels associated with L_{10} typically describe transient or short-term events, while levels associated with L_{90} describe the "steady state" (or most prevalent) background noise conditions.
Day-night sound level	Average sound exposure over a 24-hour period is often presented as a day-night average, or time-weighted, sound level (L_{dn}). L_{dn} values are calculated from hourly L_{eq} values, with the L_{eq} values for the nighttime period (10 p.m. to 7 a.m.) increased by 10 dB to reflect the greater disturbance potential from nighttime sounds.

2 Site Visit and Noise Measurements

A site visit and noise measurements were conducted on November 2nd and 3rd, 2016, in order to identify noise sensitive land uses and document the existing noise environment, as described in the following subsections.

2.1 Site Visit Observations

The Project vicinity is surrounded by commercial and industrial land uses. In accordance with FTA guidance, the surrounding parcels were screened for residential and other noise sensitive land uses; the result of this screening resulted in OSF being the sole residential land use in notable proximity to the proposed Project site (See Figure 1).

Sounds perceived during the site visit and noise measurements included the following source types that characterize the existing outdoor ambient sound environment: traffic noise on Santa Fe Avenue and other local streets, HVAC noise from adjacent Metro facilities, occasional commuter rail pass-bys (LA Metro Light Rail and Rapid Transit, Amtrak, and Metrolink) and heavy freight rail pass-bys (Union Pacific/BNSF), and frequent aircraft overflights.

A Kestrel Model 3500 (SN 2058303) handheld anemometer was used during noise measurements to determine average wind speed, temperature, barometric pressure, and relative humidity. During mid-day periods the outdoor temperature was measured at 77 degrees Fahrenheit, with relative humidity measured at 46 percent. Wind speeds during setup were calm, traveling less than 1 mile per hour. Skies were clear, and no precipitation occurred throughout the measurement period.

During the site visit it was confirmed that the One Santa Fe (OSF) mixed-use apartment complex was the only unshielded noise sensitive land use in proximity to the proposed project. The northern portion of OSF features single row of elevated noise sensitive receivers with balconies which directly overlook the Division 61 building and the proposed turnback facility location. Figure 2 below illustrates their elevated line of sight toward the proposed facility.

2.2 Noise Measurement Procedures

Measurement Instrumentation
A fleet of Larson-Davis (LD) sound level meters (SLM) were used for the survey, including a Type-1 Model 820 SLM with Serial Numbers (SN) 1414 and 1324, a Type-2 Model 720 SLM (SN 0436), and a Class-1 Model LxT SLM (SN 4486). As photographed in Attachment A, these SLMs were all outfitted with a 3.5" diameter open-cell microphone windscreen and were attached to a standard camera tripod, allowing the microphone position to be

roughly 4 to 5 feet above grade. SLM calibration was field-checked before and after the measurement period with an acoustic calibrator (LD Model CAL200, SN 3704)

Figure 2. Relationship Between OSF Resident Balconies (Yellow Polygon) and Approximate Proposed Turnback Facility Site (Red Polygon)

Personnel
The field survey was performed by AECOM Principal Engineer Mr. Paul Burge, a board-certified member of the Institute of Noise Control Engineering (INCE Bd. Cert.) and Senior Environmental Noise Specialist Mr. Christopher Kaiser, an INCE Member. Mr. Kaiser is an experienced field noise investigator, having participated in or led similar outdoor sound measurement assessments on several projects across the U.S.

Procedures
To the extent practical, LT and ST measurements were conducted in accordance with appropriate industry standards and guidance. The SLMs recorded data to onboard memory from 1 to 10-minute duration A-weighted intervals and were set to a slow response time.

Measurement Locations
Long-term (LT) measurements of outdoor ambient sound pressure levels were monitored with unattended sound level meters over a 24-hour period at a total of two (2) representative OSF outdoor use areas. Short-term (ST) measurements (i.e., 20-30-minutes) were conducted at a total of two (2) additional representative OSF outdoor use areas on both days of the measurement period with AECOM investigators making simultaneous documentation of observations (e.g., perceived sound sources and environmental conditions) as shown in the collected field notes (available upon request). LT measurements (LT-1 and LT-2) were located on OSF apartment unit balconies and patios, while ST measurements (ST-1 and ST-2) were located at common-use amenities such as barbecue and pool/spa areas. All measurements were taken on the east-facing façade of the building which overlooks the proposed Project site. Figure 3 below illustrates the four measurement locations, as well as 3 additional noise and vibration prediction locations in other sections of OSF (OSF represented as solid grey polygon only). Measurements were conducted at these positions to collect noise level data that quantitatively characterize the existing ambient outdoor sound environment. The following subsections detail the instrumentation, involved staff, and procedures used to conduct this survey.

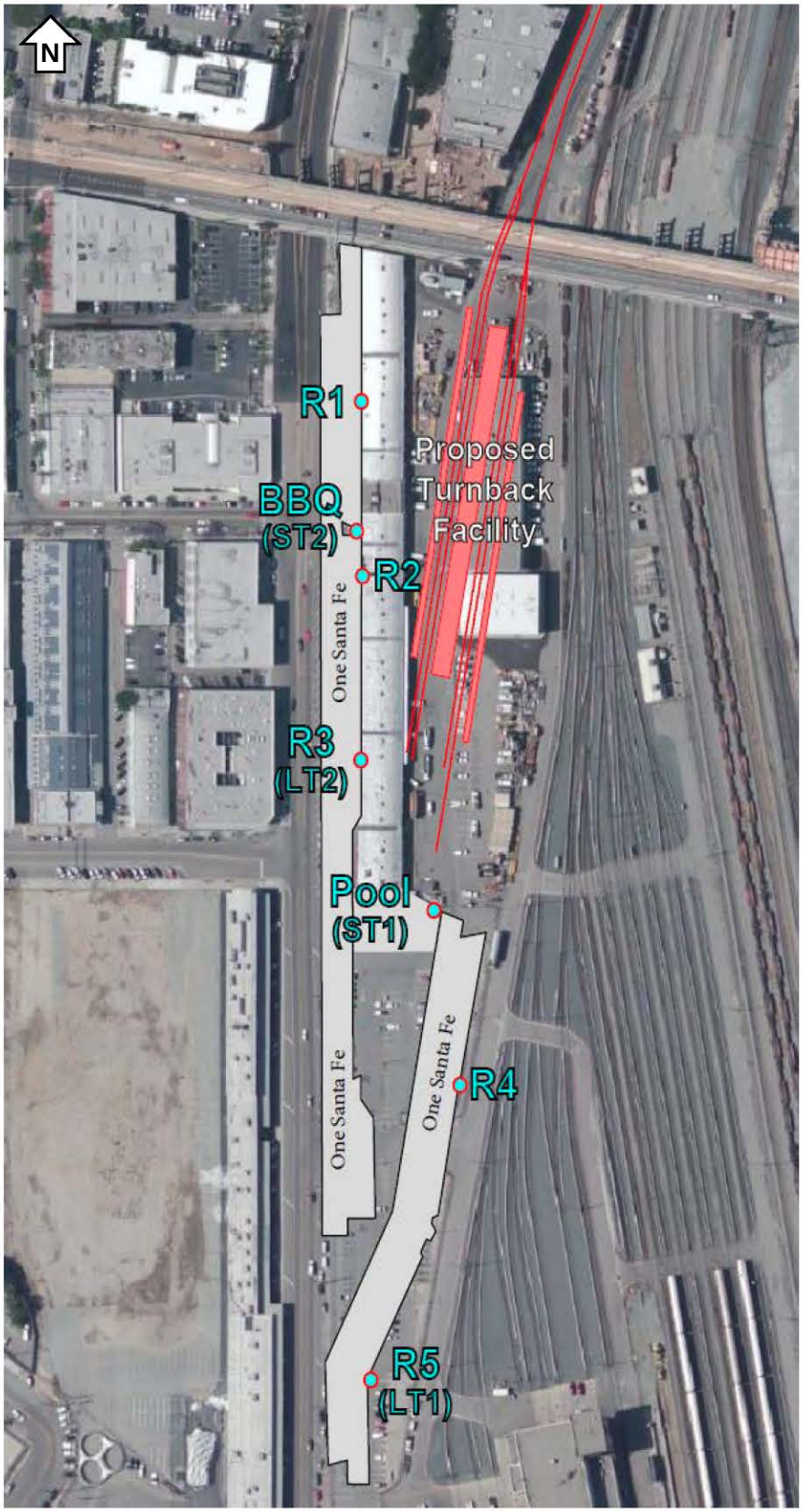


Figure 3. Project Overview - Measurement and Prediction Locations

2.3 Noise Measurement Results

Table 2 presents the SPL measurement data from both LT and ST measurements showing measured A-weighted Leq, as well as calculated or predicted Lday, Lnight, and Ldn metrics. Short-term measurements were conducted at various common-use areas, and although LT measurements were deemed unnecessary at these locations, the data collected can be further extrapolated to predict 24-hour metrics. ST data, compared alongside the long-term data with identical time-period noise levels at the nearest LT monitor (in this case, LT-2 for each ST measurement location), provides a reliable approach to extrapolating daytime, nighttime, and day-night noise levels throughout the 24-hour measurement period. Calculating the difference between the two levels at the same period, a delta can be ascertained, which can then be applied to LT measurement metrics to provide an estimate of concurrent daytime, evening, and nighttime noise levels at the ST location of interest. Detailed measurement and prediction data can be found in Attachment B.

Table 2. Summary of Outdoor Ambient Sound Level Monitoring Results

Meas. ID	Location	Duration	L_{eq}	L_{day}	L_{night}	L_{dn}
LT-1	Unit 284 Patio	24 Hours	58	57	59	65
LT-2	Unit 444 Balcony	24 Hours	61	61	62	68
ST-1	Pool/Spa Area	45 Minutes (Cumulative)	58	60[1]	61[1]	67[1]
ST-2	5th Floor Barbecue Nook	50 Minutes (Cumulative)	59	59[1]	60[1]	67[1]

1. *Extrapolated metrics predicted from LT-2 measurement data using approach explained in preceding paragraph*

Figure 4 below display 24-hour L_{eq} plots recorded at the four measurement locations. Existing noise exposure appears to be at its peak operation between the hours of 7 p.m. and 8 a.m. where the L_{eq} exhibits sustained elevated dBA. At other time periods during the 24 continuous hours of sound level monitoring, ambient L_{eq} values appear to vary between the low 50's and low 60's.

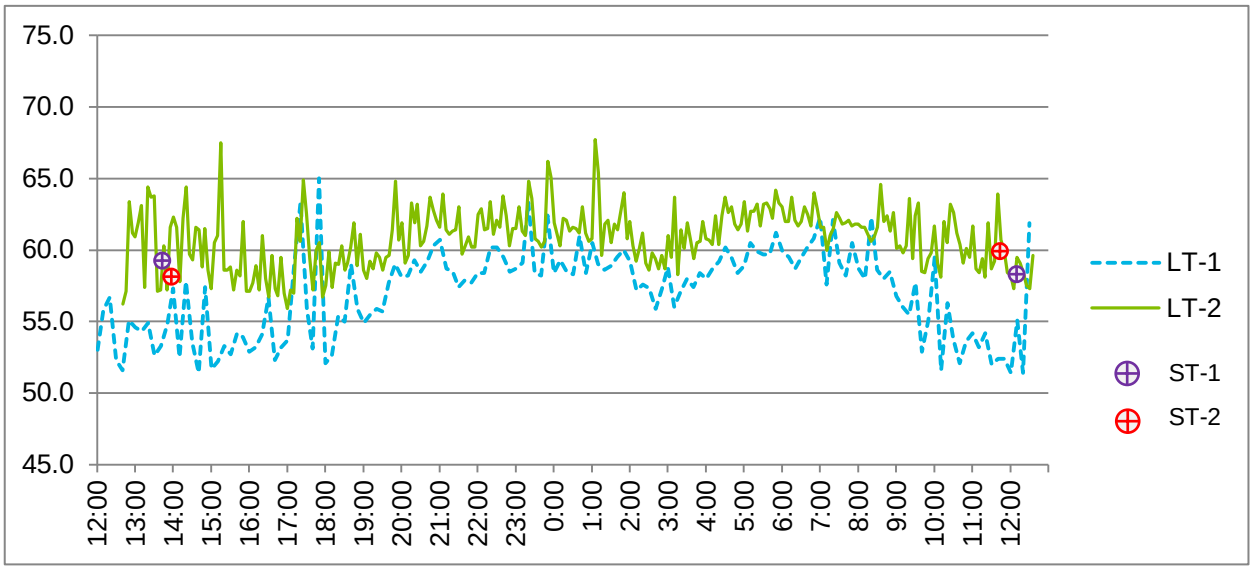


Figure 4. Plot of LT and ST Measurement Sound Pressure Levels – (dBA vs. time)

3 Predicted Noise Levels and Impacts

3.1 Noise Impact Criteria

The FTA impact criterion relies on both land use type and measured baseline noise levels at receiver chosen for prediction. Table 3 describes the three land use types, each of which determine the specific noise metric to be used when assessing transit noise impacts.

Table 3. FTA Land Use Categories for Transit Noise Impacts

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor $L_{eq}(h)$*	Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor L_{dn}	Residences and buildings where people normally sleep. This category includes homes, hospitals and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor $L_{eq}(h)$*	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

* L_{eq} for the noisiest hour of transit-related activity during hours of noise sensitivity.
Source: FTA Noise and Vibration Impact Assessment, Table 8-2

Figure 5 below illustrates the impact criteria for transit projects. This chart represents a sliding scale wherein impact thresholds for predicted Project noise are influenced by the existing noise exposure at the receiver location. There are two degrees of impacts: Moderate, or the point in which people will generally begin considering the Project noise as an annoyance, and Severe, which would cause a significant number of people to consider the Project noise as an annoyance.

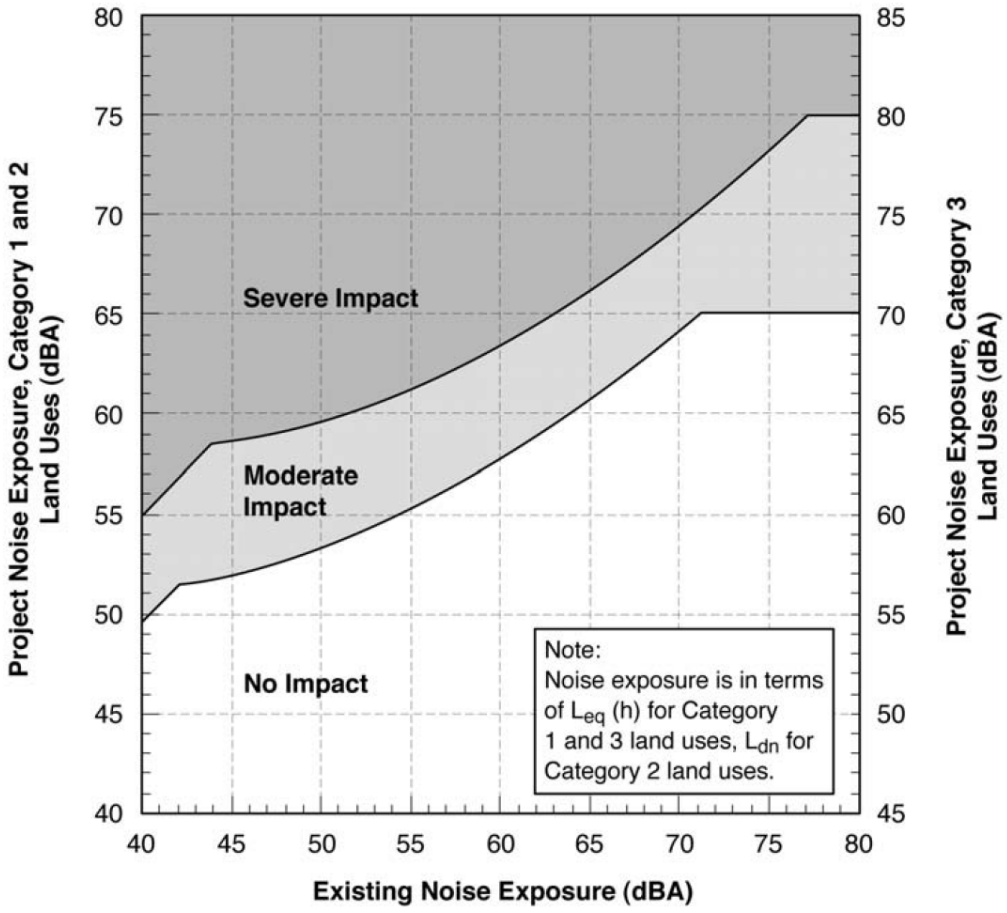


Figure 5. FTA Noise Impact Criteria for Transit Projects

Source: FTA Noise and Vibration Impact Assessment, Figure 3-1

3.2 Predicted Project Noise Levels

Future noise levels were predicted using the Federal Transit Authority (FTA) Noise Impact Assessment Spreadsheet, which incorporates procedures for the General Noise Assessment as outlined in Chapter 5 of the FTA guidance manual, "Transit Noise and Vibration Impact Assessment." The General Noise Assessment assesses noise impact criteria on a sliding scale, which varies according to the measured existing noise exposure at the selected prediction locations.

The following values are worst-case (peak) operation capacities for the turnback facility operation:

- 6 a.m. to 9 a.m. – 60 movements per hour (30 trains roundtrip)
- 9 a.m. to 3 p.m. – 40 movements per hour (20 trains roundtrip)
- 3 p.m. to 7:30 p.m. – 60 movements per hour (30 trains roundtrip)
- 7:30 p.m. – 6 a.m. – 4 movements total (2 trains roundtrip)

The prediction of Project noise levels was conducted using the FTA Noise Impact Assessment Spreadsheet which relies on the input of anticipated hourly average daytime and nighttime operations. The result of splitting the bullet list above into average hourly values for daytime in nighttime events resulted in the following input parameters:

- Daytime (7AM-10PM) average hourly traffic of 42 movements per hour (21 trains roundtrip), 6 railcars long, traveling 10MPH
- Nighttime (10PM-7AM) average hourly traffic of 7 movements per hour (3.5 trains roundtrip), 6 railcars long, traveling 10MPH
- Pair of crossover switches north of turnback facility to be used by all rail traffic entering and exiting turn-back facility (using average hourly daytime and nighttime train traffic volumes above).

Redline vehicles are also equipped with warning horns, and these are frequently used during train movement to warn nearby pedestrians and workers. However, due to the project's location near an apartment complex, alternative methods other than sounding of the horn will be used to announce arrival or departure of trains at the turn back facility. This does not preclude the operator's discretion to occasionally use the horn to avoid or minimize conflicts and hazards, but the noise prediction for this analysis assumes that horn soundings will not occur on a routine basis in the turnback facility. The project design will incorporate features isolating the area from unnecessary human traffic to minimize horn use, and is subject to the approval of the California Public Utilities Commision (CPUC) and other safety considerations, as applicable.

3.3 Noise Impacts

The following predicted impact results presented in Table 4 were calculated using the existing L_{dn} values at associated long-term locations, along with the above-mentioned input parameters with regard to future Project operations.

Table 4. Predicted Noise Levels and Impact Determination

		Noise Exposure, dBA, L_{dn}				
Location	**FTA Land Use Category**	**Existing Noise Exposure**	**Moderate Impact Criterion**	**Severe Impact Criterion**	**Project Noise Exposure**	**Noise Impact**
R1	2	68	63	68	49	None
R2	2	68	63	68	48	None
R3 / LT2	2	68	63	68	44	None
R4	2	65	61	66	40	None
R5 / LT1	2	65	61	66	37	None
R-BBQ / ST2	3	67	62	67	49	None
R-Pool / ST1	3	67	62	67	41	None

As shown above, none of the studied receptors are predicted to experience operational noise impacts.

4 Predicted Vibration Levels and Impacts

4.1 Vibration Impact Criteria

FTA general vibration impact assessment relies on criteria assigned to specific receiver types (Categories) depending on the use of the space, and frequency of vibration and/or ground borne noise events. Impact criteria used in this impact assessment focuses on Category 2 receivers (OSF residences). Table 6 below shows the FTA vibration impact assessment criteria for each receiver type and source event frequency.

Table 5. FTA Vibration Impact Criteria

Land Use Category	GBV Impact Levels (VdB re 1 micro-inch /sec)			GBN Impact Levels (dB re 20 micro Pascals)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations.	65 VdB[4]	65 VdB[4]	65 VdB[4]	N/A[4]	N/A[4]	N/A[4]
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

1. “Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.
2. “Occasional Events” is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
3. "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.
4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
5. Vibration-sensitive equipment is generally not sensitive to ground-borne noise

Source: FTA Noise and Vibration Impact Assessment, Table 8-1

4.2 Vibration Level Prediction Procedure

FTA vibration level predictions are carried out utilizing a generalized ground surface vibration curve, which operates through a function of receiver distance and train speed. Figure 6 below displays this plot, which shows the prediction curve for rapid transit vehicles traveling 50 mph as the centered dashed line (FTA Figure 10-1).

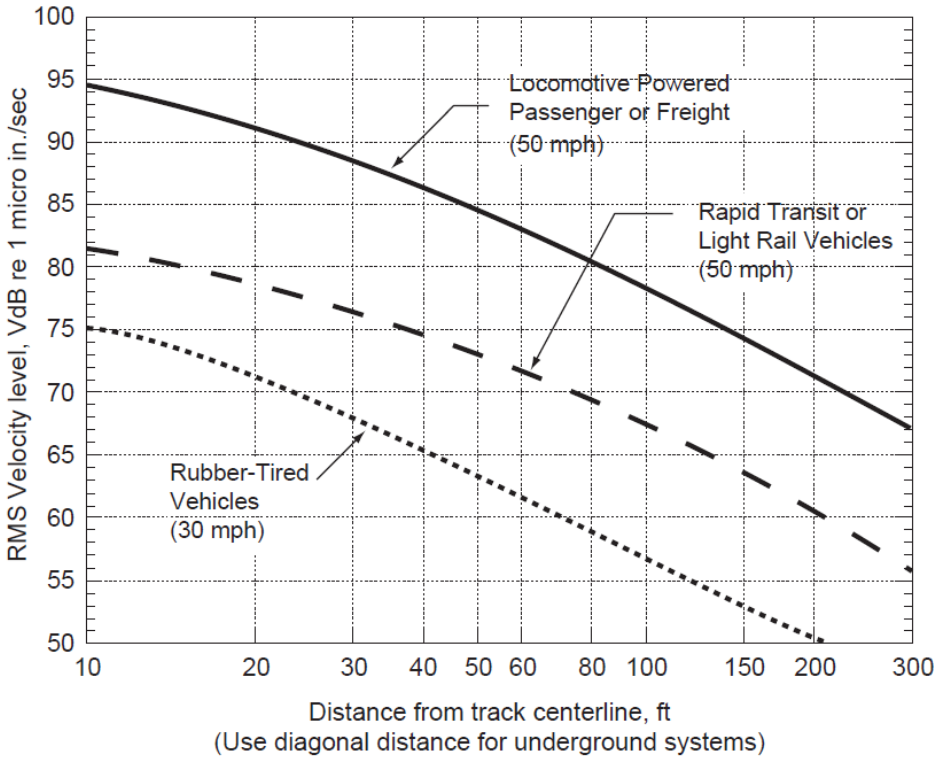


Figure 6. FTA Generalized Ground Surface Vibration Curves

Source: FTA Noise and Vibration Impact Assessment, Figure 10-1

After concluding the RMS velocity level on the Y-axis of Figure 6 for each receiver distance, an adjustment factor is applied to adjust for the difference in train speed from the plots assumed 50 mph to this assessment's anticipated 10 mph speed. This adjustment, represented in the equation $20*log(Speed/Speed_{ref})$, or $20*log(10/50)$, equates to approximately a -14dB adjustment to the levels on the Y-axis of Figure 6.

4.3 Vibration Prediction Impact Results

Table 6 below shows the predicted vibration levels and impact assessment results.

Table 6. Predicted Vibration Levels and Impact Assessment

Receiver ID	Distance From Nearest Track (Feet)	Predicted Vibration Level[1] VdB	Vibration Impact Limit VdB (Cat 2, Frequent)	Identified Impact
R1	141	50	72	None
R2	102	54	72	None
R3	154	50	72	None
R4	438	41	72	None
R5	821	41	72	None
BBQ	117	53	72	None
Pool	218	45	72	None

Vibration levels at all sensitive receptors are well-beneath the FTA vibration impact criteria and thus, vibration impacts from Project operations are not expected.

4.4 Ground Borne Noise Assessment

Ground borne noise will be significantly less than air borne noise. FTA guidance indicates that for typical soil conditions the ground borne noise level would be approximately 35 dBA less than the ground borne vibration velocity level (in VdB). From the range of predicted vibration velocity levels in Table 6, ranging from 41-54 VdB, associated predicted ground borne noise levels would be approximately 6-19 dBA, far below the impact criterion of 35 dBA for Category 2 receivers as given in Table 5. Therefore no Ground Borne Noise impacts are predicted.

5 Recommended Noise and Vibration Mitigation

No operational noise or vibration impacts were identified in this analysis; therefore, no mitigation is recommended for this Project. It is assumed that during construction, methods and timing consistent with the City of Los Angeles noise ordinance will be applied as feasible.

6 Construction Noise and Vibration

Construction operations would abide by City of Los Angeles noise control ordinances where practical. The following summarizes the specific noise restrictions for construction activities:

City of Los Angeles Municipal Code – Chapter IV - Section 41.40

Noise Due to Construction, Excavation Work – When Prohibited

(a) No person shall, between the hours of 9:00 P.M. and 7:00 A.M. of the following day, perform any construction or repair work of any kind upon, or any excavating for, any building or structure, where any of the foregoing entails the use of any power driven drill, riveting machine excavator or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited during the hours herein specified. Any person who knowingly and willfully violates the foregoing provision shall be deemed guilty of a misdemeanor punishable as elsewhere provided in this Code.

(b) The provisions of Subsection (a) shall not apply to any person who performs the construction, repair or excavation work involved pursuant to the express written permission of the Board of Police Commissioners through its Executive Director. The Executive Director, on behalf of the Board, may grant this permission, upon application in writing, where the work proposed to be done is in the public interest, or where hardship or injustice, or unreasonable delay would result from its interruption during the hours mentioned above, or where the building or structure involved is devoted or intended to be devoted to a use immediately related to public defense. The provisions of this section shall not in any event apply to construction, repair or excavation work done within any district zoned for manufacturing or industrial uses under the provisions of Chapter I of this Code, nor to emergency work necessitated by any flood, fire or other catastrophe.

(c) No person, other than an individual homeowner engaged in the repair or construction of his single-family dwelling shall perform any construction or repair work of any kind upon, or any earth grading for, any building or structure located on land developed with residential buildings under the provisions of Chapter I of this Code, or perform such work within 500 feet of land so occupied, before 8:00 a.m. or after 6:00 p.m. on any Saturday or national holiday nor at any time on any Sunday. In addition, the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited on Saturdays and on Sundays during the hours herein specified. The provisions of this subsection shall not apply to persons engaged in the emergency repair of:

1. *Any building or structure.*
2. *Earth supporting or endangering any building or structure.*
3. *Any public utility.*
4. *Any public way or adjacent earth.*

(j) *As determined by the Executive Director of the Board, the provisions of Subsection (c) shall not apply to major public works construction by the City of Los Angeles and its proprietary Departments, including all structures and operations necessary to regulate or direct traffic due to construction activities. The Board, through its Executive Director, pursuant to Subsection (b) will grant a variance for this work and construction activities will be subject to all conditions of the variance as granted. Concurrent with the request for a variance, the City Department that will conduct the construction work will notify each affected Council district office and established Neighborhood Council of projects where proposed Sunday and/or Holiday work will occur.*

In summary, typical-weekday construction activities are prohibited before 7 a.m. and after 9 p.m. Construction activities on holidays and Saturdays (when occurring with 500-feet of OSF) are prohibited before 8 a.m. and after 6 p.m., and fully prohibited at any time on Sundays. If construction is required outside of the allowable time periods, a variant must be requested by the Executive Director of the Board of Police Commissioners.

7 Conclusions and Recommendations

No operational noise or vibration impacts are predicted for the Project. All predicted levels are well below identified impact criteria. Construction activities would be consistent with City of Los Angeles ordinance requirements as feasible..

8 References

Federal Transit Administration, Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06), https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/fta-noise-and-vibration-impact-assessment, May 2006.

County of Los Angeles, Code of Ordinances, Chapter 12 – Environmental Protection, https://www.municode.com /library/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT12ENPR_CH12.08NOCO, November 2016

9 Statement of Limitations

This report is for the sole use and benefit of the Los Angeles County Metropolitan Transportation Authority and its authorized representatives. The scope of services performed in execution of this effort may not be appropriate to satisfy the needs of other users, and any use or reuse of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user. No expressed or implied representation or warranty is included or intended in this report except that the work was performed within the limits prescribed by LA Metro with the customary thoroughness and competence of professionals working in the same area on similar projects.

10 List of Attachments

The following attachments are included for reference.

Attachment A: Noise Measurement Photo Log

Attachment B: Tabulated Measurement Data

Appendix B
Mitigation Monitoring and Reporting Plan

This Mitigation Monitoring and Reporting Program (MMRP) contains mitigation measures for the Red/Purple Line Core Capacity Improvements Project, which will be approved by the Los Angeles County Metropolitan Transportation Authority (Metro) Board of Directors upon certification of the Final IS/MND.

Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure(s)	Monitoring Action(s)	Responsible Party	Timeframe
Air Quality and Greenhouse Gas Emissions				
Short-term air quality impacts generated during construction	AQ-1 - The project shall be designed and constructed in a manner consistent with Metro's sustainability policies (such as Metro's Green Construction Policy, Energy and Sustainability Policy and Metro's Sustainability Implementation Plan) and implement Best Management Practices for emissions.	Check design contract documents and construction specifications for compliance.	Metro	Final Design
		Monitor construction activities for compliance.		Construction
Cultural Resources - Archaeology				
Unknown archaeological resources could be disturbed during construction.	CR-1 - The Project is expected to occur in previously disturbed soils, however, a qualified archaeologist shall be retained to monitor all project-related, ground-disturbing construction activities (i.e., grading, excavation, etc.) that are in previously undisturbed soils only if encountered. In the event	Verify qualifications of archaeological monitor.	Metro	Pre-Construction

Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure(s)	Monitoring Action(s)	Responsible Party	Timeframe
	that cultural resources are exposed during construction, the qualified monitor will temporarily halt construction in the immediate vicinity of the discovery (if safe) while the potential resource is evaluated for significance. Construction activities could continue in other areas. If the discovery proves to be significant, additional work, such as data recovery excavation, shall be required. A Cultural Resources Monitoring and Mitigation Plan (CRMMP) will be developed prior to the start of ground disturbing activities outlining monitor procedures.	Monitor construction activities for compliance.		Construction
Unknown archaeological resources could be disturbed during construction.	CR-2 - Because of the potential for Tribal Cultural Resources, a Native American monitor shall be retained on an as-needed basis to monitor alongside the archaeological/paleontological monitor. Monitoring procedures will be outlined in the project CRMMP. In the event the Native American monitor identifies cultural or archeological resources, the monitor shall be given the authority to temporarily halt construction in the immediate vicinity of the discovery to investigate the find and contact the project archaeologist/paleontologist.	Identify a qualified Native American cultural resources consultant.	Metro, Native American Monitor	Construction
		Monitor construction activities for compliance.		Construction

Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure(s)	Monitoring Action(s)	Responsible Party	Timeframe
Unknown archaeological resources could be disturbed during construction.	CR-3 - In the event that human remains are encountered at the project site, all work in the immediate vicinity of the burial must cease, and any necessary steps to ensure the integrity of the immediate area shall be taken. The Los Angeles County Coroner will be immediately notified. The Coroner must then determine whether the remains are Native American. Should the Coroner determine the remains are Native American, the Coroner has 24 hours to notify the Native American Heritage Commission (NAHC), who shall in turn, notify the person they identify as the most likely descendent (MLD). Further actions shall be determined in part by the recommendations of the MLD. The MLD has 24 hours following notification from the NAHC to make recommendations regarding the disposition of the remains of the discovery. If the MLD does not make recommendations within 24 hours, the owner shall, with appropriate dignity, re-inter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by	Monitor construction activities for compliance. Identify MLD and ensure timely inspection occurs.	Metro NAHC	Construction

Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure(s)	Monitoring Action(s)	Responsible Party	Timeframe
	the NAHC. Procedures of conduct following the discovery of human remains have been mandated by Health and Safety Code §7050.5, Public Resources Code §5097.98, and the California Code of Regulations §15064.5(e) (CEQA).			
Cultural Resources - Paleontology				
Previously undiscovered paleontological resources may be disturbed during construction.	CR-4 - The Project is expected to occur in previously disturbed soils, however a qualified paleontological monitor shall be retained to monitor project-related excavation activities on a full-time basis on previously undisturbed soils. Project-related excavation activities of less than ten feet depth shall be monitored on a part-time basis on previously undisturbed soils to ensure that underlying paleontologically sensitive sediments are not being impacted. In addition, the monitor shall ensure the proper differentiation between paleontological and archaeological resources.	Verify qualifications of paleontologist.	Metro, Paleontological Monitor	Pre-Construction
		Monitor construction activities for compliance.		Construction
Previously undiscovered paleontological resources may be disturbed during construction.	CR-5 - The Project is expected to occur in previously disturbed soils. A Paleontological Monitoring and Mitigation Plan will be developed prior to the start of ground disturbing activities by a qualified paleontologist.	Verify qualifications of paleontologist.	Metro	Pre-Construction

Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure(s)	Monitoring Action(s)	Responsible Party	Timeframe
	If undisturbed soil is discovered (see also CR-1) a qualified paleontologist shall be retained to supervise the monitoring of construction. Paleontological resource monitoring shall include inspection of exposed rock units during active excavations within sensitive geologic sediments, as defined by the PMMP and as needed. The monitor shall have authority to temporarily divert grading away from exposed fossils in order to efficiently recover the fossil specimens and collect associated data. The qualified paleontologist shall prepare monthly progress reports to be filed with Metro, and the Natural History Museum of Los Angeles County. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis. Matrix sampling shall be conducted to test for the presence of microfossils.	Verify that an adequate Paleontological Monitoring and Mitigation Plan has been prepared.	Metro, Paleontological Monitor	Pre-Construction
		Monitor construction activities for compliance and verify that adequate monthly progress reports are filed	Metro, Paleontological Monitor	Construction

Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure(s)	Monitoring Action(s)	Responsible Party	Timeframe
Previously undiscovered paleontological resources may be disturbed during construction.	CR-6 - Recovered fossils shall be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility. The most likely repository would be the Natural History Museum of Los Angeles County.	Verify that a suitable repository has been identified and recovered fossils are reposited appropriately.	Metro	Construction
Geology and Soils				
Liquefaction and seismic settlement	GS-1 - Metro shall conduct a geotechnical report that is consistent with Metro criteria and/or design guidelines, as well as City of Los Angeles building specification guidelines.	Verify that an adequate report is filed.	Metro	Pre-Construction
Potential exists for excess erosion to occur during construction.	GS-2 - Implementation of Best Management Practices such as scheduling excavation and grading activities during dry weather as feasible, and covering stockpiles of excavated soils with tarps or plastic sheeting would help reduce soil erosion due to grading and excavation activities.	Monitor construction activities for compliance.	Metro	Construction

Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure(s)	Monitoring Action(s)	Responsible Party	Timeframe
Hazards and Hazardous Materials				
Potential exists for contaminated soil/groundwater	HM-1 - Once detailed engineering plans are prepared, a Contaminated Soil/Groundwater Management Plan shall be prepared and implemented during construction to establish procedures to follow if contamination is encountered. This will minimize associated risks and assure that applicable statutory and regulatory standards and requirements are satisfied. The plan shall include procedures for the implementation of mitigation measures HAZ-2 through HAZ-6. The Contaminated Soil/Groundwater Management Plan shall abide by the Land Use Covenants for each parcel, as applicable.	Verify that an adequate plan is filed.	Metro	Pre-Construction
Potential exists for contaminated soil/groundwater	HM-2 - Appropriate regulatory agencies, identified in the Contaminated Soil/Groundwater Management Plan, shall be contacted if contaminated soil or groundwater is encountered.	Verify compliance	Metro	Construction

Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure(s)	Monitoring Action(s)	Responsible Party	Timeframe
Potential exists for contaminated soil/groundwater	HM-3 - Sampling and analysis of soil and/or groundwater known or suspected to be impacted by hazardous materials shall be conducted in accordance with the procedures detailed in the Contaminated Soil/Groundwater Management Plan.	Verify that adequate sampling and analysis have been completed.	Metro	Construction
Potential exists for contaminated soil/groundwater	HM-4: Procedures for the legal and proper handling, storage, treatment, transport, and disposal of contaminated soil and/or groundwater shall be delineated and conducted in consultation with regulatory agencies and in accordance with established statutory and regulatory requirements as explained in the Contaminated Soil/Groundwater Management Plan.	Verify that adequate procedures have been completed.	Metro	Construction

Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure(s)	Monitoring Action(s)	Responsible Party	Timeframe
Potential exists for contaminated soil	HM-5**:** Dust control measures such as soil wetting, wind screens, etc. shall be implemented for contaminated soil.	Monitor construction activities for compliance.	Metro	Construction
Potential exists for health and safety concerns of workers	HM-6**:** Worker Health and Safety Plan shall be implemented prior to the start of construction activities. All workers shall be required to review the plan, receive training if necessary, and sign the plan prior to starting work. The plan shall identify properties of concern, the nature and extent of contaminants that could be encountered during excavation activities, appropriate health and environmental protection procedures and equipment, and emergency response procedures including the most direct route to a hospital, and contact information for the Site Safety Officer.	Verify that adequate procedures have been completed.	Metro	Pre-Construction
Potential exists to encounter methane	HM-7: The project shall be consistent with the City's Methane Mitigation Standards, which include provisions to protect workers and the public.	Verify that adequate provisions have been completed.	Metro	Pre-Construction
		Monitor construction activities for compliance.	Metro	Construction

Mitigation Monitoring and Reporting Program

Impact	Mitigation Measure(s)	Monitoring Action(s)	Responsible Party	Timeframe
Asbestos and lead may be encountered during building demolition.	HM-8: Prior to building demolition, surveys for asbestos containing materials and lead-based paint shall be conducted. If necessary, destructive sampling shall be used. All asbestos containing materials and lead-based paint would be removed or otherwise abated prior to demolition.	Monitor construction activities for compliance and verify that any necessary abatement has been completed before demolition begins.	Metro	Construction
Hydrology and Water Quality				
Potential exists for excess erosion to occur during construction.	WQ-1 - Metro shall employ standard Best Management Practices for project construction and applicable specifications for runoff or discharge.	Monitor construction activities for compliance.	Metro	Construction
Land Use and Planning				
Displacement and relocation of business would be necessary.	LU-1 - Metro shall provide relocation assistance and compensation as required by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.	Verify qualifications of property appraiser.	Metro	Pre-Construction
		Ensure provision of relocation assistance and payment of affected owners just compensation not less than the appraised market value for their property.	Metro	Pre-Construction