



**Item 13**  
**Attachment D**

## **WESTSIDE SUBWAY EXTENSION PROJECT**

# **Findings of Fact and Statement of Overriding Considerations**

**April 2012**



# **Finding of Facts and Statement of Overriding Considerations**

**Pursuant to Sections 15091 and 15093 of the State CEQA  
Guidelines and Section 21081 of the Public Resources Code**

**Westside Subway Extension Project**

**April 2012**





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## 1.0 INTRODUCTION

These Findings have been prepared in accordance with the California Environmental Quality Act (“CEQA”) and the CEQA Guidelines (California Code Regulation, Title 14, Section 15000 et seq.). The Los Angeles County Metropolitan Transportation Authority (Metro) is the lead agency for the environmental review of the Project under CEQA and has the principal responsibility for its approval. The Project covered by these findings and relevant CEQA documents is the Westside Subway Extension Project.

## 2.0 ORGANIZATION

- Section 3: Contains a brief description of the Project goals and objectives.
- Section 4: Contains the statutory requirements of the Findings and a record of proceedings.
- Section 5: Identifies the potentially significant impacts which were determined to be mitigated to a less than significant level.
- Section 6: Identifies the potentially significant impacts that cannot be mitigated to a less than significant level even though all feasible mitigation measures have been identified and incorporated.
- Section 7: Identifies the Project’s potential environmental impacts that were determined not to be significant or less than significant, and, therefore, no mitigation is required.
- Section 8: Cumulative impacts regarding the Project are discussed.
- Section 9: Describes the alternatives analyzed in the evaluation of the Project and the Findings for each alternative, which explains the reasoning behind eliminating alternatives other than the Project from further consideration. This section also includes Findings on mitigation measures.
- Section 10: Includes the Metro Board of Director’s Statement of Overriding Considerations.
- Section 11: Contains the Mitigation Monitoring and Reporting Plan as adopted by the Metro Board of Directors.

## 3.0 PROJECT DESCRIPTION, GOALS, AND OBJECTIVES

The Westside Subway Extension Project (the Project) is a heavy rail transit subway that would operate as an extension of the Metro Purple Line heavy rail transit subway system from its current western terminus at Wilshire/Western Station to a new western terminus near the West Los Angeles Veterans Affairs (VA) Hospital. The extension will be nearly nine miles and will include a total of seven new stations. The Project will improve mobility and provide fast, reliable, high-capacity, and environmentally sound transportation solutions in the Westside of Los Angeles. The Project results from nearly 30 years of planning and environmental review. The Westside Subway Extension Project is included in Metro’s Long Range Transportation Plan and is part of the Regional Transportation Plan adopted in 2008 by the Southern California Association of Governments, the designated Metropolitan Planning Organization.

### 3.1 Purpose and Need of the Project

The purpose of this Project is to improve transit travel time and provide more reliable transit service to the 286,250 transit riders who travel through the highly congested Study Area today, as well as to future riders who will be attracted to the system. More specifically, the Project's purpose is as follows:

- Improve Study Area mobility and travel reliability
- Improve transit services within the Study Area
- Improve access to major activity and employment centers in the Study Area
- Improve opportunities for transit-supportive land use policies and conditions
- Improve transportation equity
- Provide a fast, reliable, and environmentally sound transit alternative
- Meet Regional Transit Objectives through the Southern California Association of Governments' (SCAG's) Performance Indicators of mobility, accessibility, reliability, and safety

The need for the Project is based on population and employment growth, the high number of major activity centers served by the Project, high existing transit usage, and severe traffic congestion. The Study Area has 12 large population and employment centers located along the corridor, which are served by extremely congested road networks that will deteriorate further with the projected increase in population and jobs. This anticipated growth will further affect transit travel speeds and reliability, even with a dedicated lane for express bus service on Wilshire Boulevard. The improved capacity that will result from the subway extension is the best solution to improve travel times and reliability and to provide a high-capacity, environmentally sound transit alternative.

Seven goals were established in the Alternatives Analysis (AA) phase of planning and were used to both screen out alternatives and identify those alternatives to be carried forward into the Draft EIS/EIR. These same goals were used to evaluate alternatives in the Draft EIS/EIR, leading to the selection of the LPA, and recommendations for further refinement to the LPA in the Final EIS/EIR.

- **Goal A: Mobility Improvement**—The primary purpose of the Project is to improve public transit service and mobility in the Westside Extension Transit Corridor. To compare the alternatives in terms of mobility improvement, the evaluation examines how well each alternative improves the ability of residents and employees to reach desired destinations through the provision of high quality, convenient, and reliable east-west transit service.
- **Goal B: Transit-supportive Land Use Policies and Conditions**—A major aspect of this goal is to locate transit alignments and stations in areas with existing land uses conducive to transit use or in those areas that have the greatest potential to develop transit-supportive land uses.
- **Goal C: Cost-effectiveness**—This goal ensures that both the capital and operating costs of the Project are commensurate with its benefits.
- **Goal D: Project Feasibility**—The fourth goal is that the Project be financially feasible. Specifically, this goal helps ensure that funds for the construction and operation will be readily available and will not place undue burdens on the sources of those funds. The goal also includes minimizing risks associated with project construction.

- **Goal E: Equity**—This goal evaluates project solutions based on how fairly the costs and benefits are distributed across different population groups with particular emphasis on serving transit-dependent communities.
- **Goal F: Environmental Considerations**—The sixth goal is to develop solutions that minimize impacts to environmental resources and communities within the Study Area.
- **Goal G: Public Acceptance**—This goal aims to develop solutions that are supported by the public with special emphasis on residents and businesses within the Study Area.

### 3.2 Project Description

The Project being approved by the Metro Board of Directors in these findings is based upon a refined definition of the Locally Preferred Alternative (LPA). The refinement of the LPA and the LPA elements are further described in Section 10.0. The environmental analysis in the Final EIS/EIR presents a complete analysis of the LPA. The separate Federal Record of Decision will be based upon the adopted Project Definition, which is described in this section.

The Project's tunnel alignment would be 8.8 miles in length from the Wilshire/Western Station to the Westwood/VA Hospital Station and includes seven new stations in approximately one mile intervals. The separated right-of-way is all in a tunnel, with the top of the tunnel at least 30 to 70 feet below the ground surface. This alignment would serve numerous activity centers across the Westside of Los Angeles. The seven new stations would each serving major activity and employment centers on the Westside of Los Angeles:

- **Wilshire/La Brea Station** would be located in a commercial and residential area and would serve as a key transit connection. The LPA included an entrance on either the northwest or the southwest corner of the Wilshire Boulevard and La Brea Avenue intersection. The entrance location selected as part of the Project is the northwest corner of the Wilshire Boulevard and La Brea Avenue intersection.
- **Wilshire/Fairfax Station** would offer access to a major cultural and tourism hub, and provide access to the nearby Farmer's Market, shops along West 3rd Street and Beverly Boulevard, and The Grove. The LPA included an entrance either immediately west of Johnie's Coffee Shop on the northwest corner of Wilshire Boulevard and Fairfax Avenue, in LACMA West (the former May Company Building) on the northeast corner of Wilshire Boulevard and Fairfax Avenue, or on the south side of Wilshire Boulevard, between Ogden Drive and Orange Grove Avenue. The entrance location selected for inclusion in the Project is immediately west of Johnie's Coffee Shop on the northwest corner of Wilshire Boulevard and Fairfax Avenue.
- **Wilshire/La Cienega Station** would provide access to a mixture of commercial, residential, and restaurant uses. The LPA included an entrance located on the northeast corner of the Wilshire Boulevard and La Cienega Boulevard intersection at the current site of the CitiBank building. This is the entrance location selected for inclusion in the Project.
- **Wilshire/Rodeo Station** would serve the Beverly Hills "Golden Triangle," a local and regional shopping destination as well as a hub for tourists visiting the famous Rodeo Drive and shops along Wilshire Boulevard, Beverly Drive, and other streets. The LPA included an entrance at either the southwest corner of Wilshire Boulevard and Reeves Drive at the current site of the Ace Gallery, on the northwest corner of Wilshire Boulevard and Beverly Drive (adjacent to the Bank

of America Building), or on the southeast corner of the Wilshire Boulevard and El Camino Drive intersection at the current site of the Union Bank Building. The entrance location selected for inclusion in the Project is on the southwest corner of Wilshire Boulevard and Reeves Drive at the current site of the Ace Gallery.

- **Century City Station** would serve a high-density commercial, employment, and residential center. The LPA included one of two station location options in Century City (Santa Monica Boulevard or Constellation Boulevard). The location of the Century City Station would affect the tunnel alignment to the east and west of the station. The Century City Constellation Station was selected for inclusion in the Project, while the Century City Santa Monica Station was dropped from further consideration as part of the Project.
  - **Century City Santa Monica** would be a modified version of the Century City Santa Monica Station that was in the Draft EIS/EIR. Based on the results of the further studies of the Santa Monica Fault, the Century City Santa Monica Station was shifted to the east to the Century Park East intersection to avoid locating the station box on the Santa Monica Fault. The entrance would be located on the southwest corner of Santa Monica Boulevard and Century Park East. This station location was not selected for inclusion in the Project.
  - **Century City Constellation** would be located underneath Constellation Boulevard from west of Avenue of the Stars to just west of Century Park East. The entrance would be located either at the northeast corner of Constellation Boulevard and Avenue of the Stars or at the southwest corner of Constellation Boulevard and Avenue of the Stars near the Century Plaza Hotel. This station location was selected for inclusion in the Project. The station entrance location on the northeast corner of Constellation Boulevard and Avenue of the Stars was selected for inclusion in the Project.
- **Westwood/UCLA Station** would serve as a major hub station for tourists, UCLA and medical center users, students, professors, and employees. The LPA included one of two station location options at Westwood/UCLA (Off-Street or On-Street). Two entrances would be constructed given the high ridership projections at this station.
  - **Westwood/UCLA Off-Street** would be located underneath UCLA Lot 36, north of Wilshire Boulevard between Gayley Avenue and Veteran Avenue. The entrances would be on the northwest corner of the Wilshire Boulevard and Gayley Avenue intersection and the northeast corner of the Wilshire Boulevard and Veteran Avenue intersection. This station location was not selected for inclusion in the Project.
  - **Westwood/UCLA On-Street** would be located under Wilshire Boulevard, extending just west of Westwood Boulevard to west of Gayley Avenue, almost to Veteran Avenue. Either both station portals would be located on the north side of Wilshire Boulevard (the northwest corner of Wilshire Boulevard and Gayley Avenue and the northwest corner of Wilshire Boulevard and Westwood Boulevard) or the entrance at the Wilshire Boulevard and Westwood Boulevard intersection would be split between the north and south sides of Wilshire Boulevard. This station location was selected for inclusion in the Project. The station entrance locations selected for inclusion in the Project are on the northwest corner of Wilshire Boulevard and Gayley Avenue, and split between the northwest and southwest corners of Wilshire Boulevard and Westwood Boulevard.



- **Westwood/VA Hospital Station** would serve veterans, visitors and workers using the VA campus and provide connections to the West LA, Brentwood, and Santa Monica communities. The LPA included one of two station location options at Westwood/VA Hospital (either South or North of Wilshire Boulevard).
  - **Westwood/VA Hospital South** would be located at the northern edge of the VA Hospital parking lot, adjacent to Wilshire Boulevard. The entrance would be located on the Bonsall level, beneath the bus drop-off area to the north of the VA Hospital parking lot. To accommodate the grade separation at this site, additional stairs, escalators, and elevators connecting the Wilshire level and the Bonsall level would be located on both the north and south sides of Wilshire Boulevard. A parking structure providing both permanent and temporary replacement parking would be located in the existing physician's parking lot, east of the VA Hospital. This station location was selected for inclusion in the Project.
  - **Westwood/VA Hospital North** would locate the Westwood/VA Hospital Station on the north side of Wilshire Boulevard. The entrance would be located along the north side of Wilshire Boulevard, just west of Bonsall Avenue and south of the station box on the Bonsall level. As with the South station, to accommodate the grade separation at this site, stairs, escalators, and elevators connecting the Wilshire level and the Bonsall level would be located on both the north and south sides of Wilshire Boulevard. This station location was not selected for inclusion in the Project.

The estimated one-way running time would be approximately 14 minutes, 44 seconds from the Wilshire/Western Station to the Westwood/VA Hospital Station. The Project is expected to operate seven days per week, 365 days per year, with hours of operation from 4:30 a.m. to 1:30 a.m. Peak-period headways of 4 minutes would be in effect during weekday non-holidays, from 6:00 a.m. to 9:00 a.m. and from 3:00 p.m. to 7:00 p.m. Off-peak headways of 10 minutes would be in effect during the remaining weekday hours of operation and on weekends.

Construction staging and laydown areas would be necessary for station, tunnel, portal, crossover structures and traction power substations (TPSS) excavation as well as the launch and retrieval of the tunnel boring machines (TBMs) and would be located at each station area. Additional construction staging and laydown sites would be located at in the vicinity of the Wilshire/Western and Wilshire/Crenshaw intersections.

Metro is planning several enhancements to the Division 20 Maintenance and Storage Facility, including new storage tracks, new turnback platforms and turnback tracks and increased capacity at Division 20 for major repairs, wheel truing, service and inspection, and blow down operations, in addition to other associated facilities such as storage, offices, and amenities. Metro also plans to develop a new combined Bus Operations Center and Rail Operations Center (BOC/ROC), which would accommodate the Project as well as several other planned Metro bus and rail projects.

The construction schedule for the Project is partially dependent on the timing of Federal funding availability. Two LPA construction scenarios are considered. Both scenarios will contain the same elements with differences only in the timing of when they are built and operational. The first construction scenario assumes that under the America Fast Forward (30/10) Scenario (Concurrent Construction), the LPA would open in its entirety to the Westwood/VA Hospital Station in 2022 with

the three construction segments built concurrently (Wilshire/Western to Wilshire/La Cienega, Wilshire/La Cienega to Century City and Century City to Westwood/VA Hospital). The second construction scenario assumes that under the Metro Long Range Transportation Plan (LRTP) Scenario (Phased Construction), the LPA would open in three consecutive phases (Phase 1 to Wilshire/La Cienega, Phase 2 to Century City, and Phase 3 to Westwood/VA Hospital), with the entire Project operational to the Westwood/VA Hospital Station in 2036.

Implementation of the proposed project will result in certain significant environmental impacts, as disclosed and discussed in the Draft and Final EIS/EIR. However, the Los Angeles County Metropolitan Transportation Authority Board (Metro Board) finds that the inclusion of certain mitigation measures as part of project approval will reduce most of those potential significant impacts to a less than significant level. For those impacts that remain significant and unavoidable, even with mitigation, the Metro Board finds that specific economic, legal, social, technological, or other benefits of the project outweigh the unavoidable adverse environmental impacts. As required by CEQA, the Metro Board, in adopting these Findings of Fact and Statement of Overriding Considerations (“Findings”), also adopts a Mitigation Monitoring and Reporting Program (MMRP) for the Project. The Metro Board finds that the MMRP, which is made a part of these Findings as Section 12 meets the requirements of Public Resources Code Section 21081.6 by providing for the implementation and monitoring of measures to mitigate potentially significant impacts of the project.

In accordance with CEQA and the CEQA Guidelines, the Metro Board adopts these Findings as part of the approval of the Project. Pursuant to Public Resources Code Section 21082.1(c) (3), and CEQA Guidelines Section 15090, the Metro Board also finds that the Final EIS/EIR reflects the Metro Board’s independent judgment and analysis as the lead agency for the Westside Subway Extension, was completed in compliance with CEQA, and was presented to and considered by the Board before it approved the Project.

## 4.0 STATUTORY REQUIREMENTS

CEQA (Public Resources Code Section 21081), and particularly the CEQA Guidelines (the Guidelines) (14 Cal. Code Regulations, Section 15091) require that:

“No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.

Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

Specific economic, legal, social, technological, or other considerations, including provisions of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.”

In short, CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to avoid or mitigate significant environmental impacts that would otherwise occur with implementation of the Project. Project mitigation or alternatives are not required where they are infeasible or where the responsibility for modifying the Project lies with another agency. (CEQA Guidelines, Section 15091 (a), (b).)

For those significant effects that cannot be mitigated to a less than significant level, the public agency may still approve the Project, but is required to find that specific overriding economic, legal, social, technological, or other benefits of the Project would outweigh the significant effects on the environment (see, Pub. Res. Code Section 21081 (b)). The Guidelines state in Section 15093 that:

“If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered ‘acceptable.’”

#### **4.1 Record of Proceedings**

For purposes of CEQA and the Findings set forth herein, the record of proceedings for the Metro Board’s decision on the PROJECT consists of: (a) matters of common knowledge to the Metro Board, including, but not limited to, federal, state and local laws and regulations and (b) the following documents which are in custody of the Los Angeles County Metropolitan Transportation Authority, One Gateway Plaza, Records Management, MS 99-PL-5, Los Angeles CA 90012:

- Notice of Preparation and other public notices issued by Metro in conjunction with the proposed Project;
- The Draft EIS/EIR, dated September 2010;
- All staff reports and related documents prepared by Metro for the Project;
- All testimony, documentary evidence, and all correspondence submitted in response to the Notice of Preparation or the Notice of Intent or during scoping or by agencies or members of the public during the public comment period on the Draft EIS/EIR and responses to those comments (Appendix H of the Final EIS/EIR);
- The Final EIS/EIR dated March 2012 including all appendices thereto and those documents that were incorporated therein by reference;
- The Mitigation Monitoring and Reporting Plan
- All proposed findings, statements of overriding consideration, and resolutions prepared by staff and submitted to the Metro Board in connection with the proposed Project, and all documents cited or referred to therein;
- All findings, statements of overriding considerations, and resolutions adopted by the Metro Board in connection with the proposed Project, and all documents cited or referred to therein;
- All final technical reports and addenda, studies, memoranda, maps, correspondence, and all planning documents prepared by the Metro Board, Metro staff, or the consultants to each, relating to the Project;

- All documents submitted to the Metro Board by agencies or members of the public in connection with development of the proposed Project; All actions of the Metro Board with respect to the Westside Subway Extension; and
- Any other materials required to be in the record of proceedings by Public Resources Code Section 21167.6, subdivision (e).



## **5.0 ENVIRONMENTAL IMPACTS FOUND LESS THAN SIGNIFICANT WITH IMPLEMENTATION OF MITIGATION MEASURES**

Below are the determinations of the Metro Board regarding the environmental impacts, significant impacts, and corresponding mitigation measures of the Westside Subway Extension Project organized by topic area. These determinations or Findings address the impacts of the Project (refer to Section 3.0 in this document for descriptions of these elements).

This section is arranged by topic areas consistent with the format in the Final EIS/EIR. Unless otherwise stated, the narrative of the impact applies to the Project. Each impact discussion is followed by numbered mitigation measures. Determination of Findings by the Metro Board follows the list of mitigation measures for each impact described.

### **5.1 Transportation**

The transportation impacts of the Project were evaluated in Chapter 3 of the Final EIS/EIR. For the Westside Subway Extension Project, evaluation of potential transportation impacts included public transit, streets and highways, parking, pedestrian, bicycle, and bus networks, and construction-related transportation impacts.

#### **5.1.1 Pedestrian, Bicycle, and Bus Networks**

Some pedestrian, Bicycle, and Bus Network related impacts were observed to be significant but mitigable. The Final EIS/EIR evaluated impacts based on the following two criteria:

- Criterion 1—Would the Project substantially increase hazards due to a design feature or incompatible uses (CEQA Guidelines Appendix G Checklist item XVI.d)?
- Criterion 2—Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities (CEQA Guidelines Appendix G Checklist item XVI.f)?

##### **5.1.1.1 Impact**

The operation of the LPA will result in impacts related to the safety of the pedestrian and bicycle networks and bus stops under Criterion 1 at the following 5 locations:

- Wilshire/Fairfax Station—South entrance option (Phase 1)
- Wilshire/Rodeo Station—Union Bank entrance (Phase 2)
- Wilshire/Rodeo Station—Ace Gallery entrance option (Phase 2)
- Westwood/VA Hospital—South Entrance option (Phase 3)
- Westwood/VA Hospital—North Entrance (Phase 3)

The operation of the LPA will result in impacts related to consistency with policies or plans under Criterion 2 at all seven LPA stations (Phase 1, Phase 2, and Phase 3).

### 5.1.1.2 Reference

Final EIS/EIR Section 3.1, Pg. 3-10 – 3-11, Section 3.7, Pg. 3-75 – 3-92

### 5.1.1.3 Mitigation Measures

To mitigate the impacts related to the safety of the pedestrian and bicycle networks and bus stops under Criterion 1:

#### T-5 Install Crossing Deterrents

Install appropriate signage and deterrents to prohibit crossing Wilshire Boulevard at Orange Grove Avenue. This mitigation measure would be implemented for the following Project station entrance option:

- Wilshire/Fairfax Station—South entrance option

#### T-6 Install High-Visibility Crosswalk/Crossing Deterrents

Stripe a high-visibility crosswalk on the east leg of the intersection of El Camino Drive and Wilshire Boulevard. If a crosswalk is not feasible, install appropriate signage and deterrents to prohibit crossing Wilshire Boulevard on the east side of El Camino Drive. This mitigation measure would be implemented for the following Project station entrance option:

- Wilshire/Rodeo Station—Union Bank entrance option

#### T-7 Install High-Visibility Crosswalk

Stripe a high-visibility crosswalk treatment appropriate for unsignalized intersections on the south leg of the intersection of Reeves Drive and Wilshire Boulevard. This mitigation measure would be implemented for the following Project station entrance option:

- Wilshire/Rodeo Station—Ace Gallery entrance option

#### T-8 Install High-Visibility Crosswalk

Stripe a high-visibility crosswalk treatment appropriate for unsignalized intersections on all four legs of Bonsall Avenue where it intersects with both the eastbound and westbound Wilshire Boulevard access ramps. Curb ramps fully compliant with ADA should be installed on all four corners. This mitigation measure would be implemented for the following Project station entrance options:

- Westwood/VA Hospital—South

In addition to ADA, the CA MUTCD, and other measures required for compliance with Federal, State, and local requirements, the following mitigation measures will be implemented to further ensure that there will be no Criterion 2 impacts to the pedestrian, bicycle, and bus network at Project stations:



**T-9 Provide Consistency with General Plan Designation Sidewalk Width Adjacent to Metro-Controlled Parcels**

The Project will be designed to ensure a minimum sidewalk/parkway width is provided on the portions of streets fronting parcels controlled by Metro, as required by General Plan street classification designation for each jurisdiction where a Project station is located. For example, the Street Designations and Standards of the Transportation Element of the City of Los Angeles General Plan require a 12-foot-wide sidewalk/parkway on a Major Highway Class II, and a 10-foot-wide sidewalk/parkway on a Secondary. Thus, sidewalks on the portions of streets designated as Major Highway Class II that front parcels controlled by Metro will need a 12-foot-wide sidewalk/parkway. This mitigation measure will be implemented for all Project station entrance options and will apply to all phases of implementation.

**T-10 Provide Consistency with General Plan Designation Sidewalk Width Coordination with Jurisdictions**

Metro will coordinate with local jurisdictions to identify sidewalks in station areas that do not meet this minimum and will encourage local agencies to widen them. Sidewalks adjacent to parcels not controlled by Metro may be less than the required minimum per General Plan designation. Because sidewalks are the responsibility of local jurisdictions, Metro does not have the authority to widen them directly but will encourage local jurisdictions to do so. This mitigation measure will be implemented for all Project station entrances and all phases of implementation.

**T-11 Provide High Visibility Crosswalk Treatments**

Metro will provide highly visible crosswalk treatments at intersections affected by Project construction, following the Metro Rail Design Criteria. This mitigation measure will be implemented for all Project station entrances and all phases of implementation.

**T-12 Meet Federal, State, and Local Standards for Crossing**

Metro will coordinate with local jurisdictions to identify crossings that do not meet current ADA, CA MUTCD, and other relevant Federal, State, and local standards and will encourage local jurisdictions to upgrade them accordingly. Beyond those directly affected by Project construction activities, which Metro is responsible for upgrading on restoration of all streets and crossings affected by Project construction activities, crossings that do not meet standards are the responsibility of local jurisdictions. Metro does not have the authority to upgrade them directly but will encourage local jurisdictions to do so. This mitigation measure will be implemented for all Project station entrances and all phases of implementation.

**T-13 Meet Metro Rail Design Criteria Minimums for Bicycle Parking**

The Project will provide bicycle parking to meet the minimum required number of bicycle parking spaces per the Metro Rail Design Criteria. This mitigation measure will occur at all Project station entrances where it is feasible to implement, which is expected to be the following stations:

- Wilshire/La Brea
- Wilshire/Fairfax
- Wilshire/La Cienega
- Wilshire/Rodeo
- Westwood/UCLA On-Street (Lot 36 entrance)
- Westwood/VA Hospital—South

At the Project station entrance options where this mitigation measure is not feasible to implement, an alternative mitigation measure, T 15, is proposed below.

**T-14 Study Bicycle Parking Demand and Footprint Configuration**

Metro will continue to assess bicycle parking demand as the project progresses through the design and construction process and size the bicycle facilities at each station accordingly. Bicycle parking demand can vary station-to-station, and the footprint required to meet that demand will vary. For example, bicycle lockers are more space intensive, while secured bicycle rooms can accommodate bicycle parking in a more compact footprint. The appropriate configuration and ultimate footprint reserved for bicycle parking at each station will vary by demand levels and space constraints. The *Westside Subway Extension Station Circulation Report* (Metro 2011am) details footprint ranges for each station area based on configuration of bicycle parking. This mitigation measure will be implemented for all Project station entrances and will apply to all phases of implementation.

**T-15 Determine Alternative Sites for Bicycle Parking**

At Project station entrances that are physically constrained, Metro shall look for space for bicycle parking at an alternative site, which could include provision of secured bicycle parking in an adjacent storefront or other development, install signage to direct subway riders to bicycle parking already provided at buildings or on streets near station entrances, or provide enhanced bicycle parking facilities at an adjacent station on the Project to meet any unsatisfied demand from this station. This mitigation measure will be implemented for the following Project station entrances:

- Century City Constellation Station
- Westwood/UCLA On-Street Station—Wilshire/Westwood North and South station entrances





**T-16 Study Bus-Rail Interface**

Metro will continue to assess bus-rail interface. As a result of further study Metro, working with affected jurisdictions, will relocate bus stops at some Project stations to minimize the number of streets riders must cross to transfer between the Project and interfacing bus lines. This mitigation measure will be implemented for all Project station entrances and will apply to all phases of implementation.

**5.1.1.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impact. (CEQA Guidelines section 15091, subdivision (a)(1).)

The following station entrance options which resulted in impacts related to the safety of the pedestrian and bicycle networks and bus stops under Criterion 1 were not selected as part of the approved Project:

- Wilshire/Fairfax Station—South entrance option (Phase 1)
- Wilshire/Rodeo Station—Union Bank entrance (Phase 2)
- Westwood/VA Hospital—North Entrance (Phase 3)

Therefore, changes or alternations have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect as identified in the Final EIS/EIR (CEQA Guidelines section 15091, subdivision (a)(1)) and mitigation measures T-5 and T-6 would not be required.

Mitigation measures T-5 through T-16 will be enforced by Metro as described in the MMRP. The interface between the Project and other transportation modes, including bus transit and pedestrian and bicycle facilities, is important because no trip begins or ends directly at a station. Subway riders will walk, bicycle, take a bus, or be picked up or dropped off in private vehicles to continue or complete their trips. The Project will affect pedestrians (including bus riders transferring to/from the subway) and bicyclists in and at intersection crossings that access station entrances or connecting bus lines, and increase demand for bicycle parking in each station area.

Implementation of mitigation measures will ensure efficient and safe connections between stations and other transportation modes, meeting the transportation goals estimated in the Purpose and Need for the Project. With the implementation of the mitigation measures, impacts of the Project to the safety of pedestrians, bicyclists, and bus riders will be reduced to a less than significant level.

Under the Phased Construction Scenario, the impacts to pedestrian, bicycle, and bus networks will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for impacts to pedestrian, bicycle, and bus networks and the implementation of the mitigation measures. The timing for mitigation under a phased scenario is set out in Table 3-1 of the Final EIS/EIR.

For this reason, the Metro Board finds that this long-term impact to pedestrians and bicyclists would be reduced to a less than significant level.

## 5.2 Noise and Vibration

The Noise and Vibration Impacts of the project were evaluated in Sections 4.6 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant noise and vibration impact if:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- 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, exposure of people residing or working in the project area to excessive noise levels
  - For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels

### 5.2.1 Impact

Three locations along the Project are expected to exceed the FTA-ground-borne noise criteria due to train operations along tangent track or through crossovers. These three locations are the Wilshire Ebell Theatre, apartments on Wilshire Boulevard and South Orange Drive, and the Saban Theatre. If the Project is constructed in Phases, impacts would only occur along Phase 1.

### 5.2.2 Reference

Final EIS/EIR Executive Summary, Pg. S-45 – S-46, Section 4.6.3, Pg. 4-155 – 4-159

### 5.2.3 Mitigation Measures

#### VIB-1 Use of High Compliance Direct Fixation Resilient Rail Fasteners

High compliance direct fixation resilient rail fasteners will be incorporated into the design of the trackwork at the locations listed below, which will reduce ground-borne noise by 5 to 7 dBA:

- Wilshire Ebell Theatre at Site V8 (Figure 4-38 of the Final EIS/EIR)
- Saban Theatre at Site V25 (Figure 4-38 of the Final EIS/EIR)

#### VIB-2 Use of a Low Impact Crossover

A low impact crossover, such as a moveable point frog or a spring-loaded frog, will be used in the design of the following crossover, which will reduce ground-borne noise by 5 to 6 dBA:



- Wilshire/La Brea No. 10 Double Crossover for the apartments at Site V16 (Figure 4-38 in the Final EIS/EIR)

#### **5.2.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines Section 15091, subdivision (a)(1).)

Noise from operation of the Project from sources such as station ventilation system fans, emergency ventilation fans, TPSSs, and emergency generators will be designed to meet the noise-level limits specified in Metro's Design Criteria and will not result in any noise impacts during operations and therefore, no mitigation measures are required to reduce noise levels during operations.

Mitigation measures VIB-1 and VIB-2 will be enforced by Metro as described in the MMRP. VIB-1 will reduce ground-borne noise by 5 to 7 dBA during operation at the Wilshire Ebell Theatre and the Saban Theatre. VIB-2 will reduce ground-borne noise by 5 to 6 dBA during operation at the apartment on Wilshire Boulevard and South Orange Drive.

Under the Phased Construction Scenario, the potential for noise and vibration impacts during operation will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for operational noise and vibration impacts and implementation of mitigation measures.

For these reasons, the Metro Board finds that impacts related to noise and vibration during operation would be reduced to less than significant.

### **5.3 Geologic Hazards**

The Geologic Hazards of the Project were evaluated in Section 4.8 of the Final EIS/EIR. Geologic hazards evaluated include seismic ground shaking, Fault rupture, liquefaction and seismic settlement and hazardous subsurface gas. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in significant geologic hazards impacts if:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 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
  - Strong seismic ground shaking
  - Seismic-related ground failure, including liquefaction
  - Landslides
- Result in substantial soil erosion or the loss of topsoil.
- Be located on a geologic unit or soil that is unstable or that will become unstable as a result of the Project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

- Be located on expansive soil, creating substantial risks to life or property.
- 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.

### **5.3.1 Seismic Ground Shaking**

#### **5.3.1.1 Impact**

The Project and maintenance yard, as with most sites in Southern California is susceptible to strong ground shaking generated during earthquakes by nearby faults.

#### **5.3.1.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-47, Section 4.8.3, Pg. 4-191 – 4-192

#### **5.3.1.3 Mitigation Measures**

##### **GEO-1 Seismic Ground Shaking**

Metro design criteria require probabilistic seismic hazard analyses (PSHA) to estimate earthquake loads on structures. These analyses take into account the combined effects of all nearby faults to estimate ground shaking. A site-specific PSHA will be used as the basis for evaluating the ground motion levels along the Project. The structural elements of the Project will be designed and constructed to resist or accommodate appropriate site-specific estimates of ground loads and distortions imposed by the design earthquakes and conform to Metro's Design Standards for the Operating and Maximum Design Earthquakes. The concrete structures are designed according to the Building Code Requirements for Structural Concrete by the American Concrete Institute (ACI 318).

##### **GEO-3 Operational Procedures during Earthquake**

In addition to design measures, As Metro has implemented on the existing Red line, it will implement Standard Operating Procedures in seismic areas to detect earthquakes and will provide back-up power, lighting, and ventilation systems to increase safety during tunnel or station evacuations in the event of loss of power due to an earthquake. For example, seismographs are located in 11 of the existing Metro Red/Purple Line stations to detect ground motions and trigger Standard Operating Procedures (SOP #8 – Earthquake) by the train operators and controllers. Operating procedures are dependent on the level of earthquake and include stopping or holding trains, gas monitoring, informing passengers, communications with Metro's Central Control, and inspecting for damage.

##### **GEO-7 Tunnel Advisory Panel Design Review**

The Metro Tunnel Advisory Panel (TAP) will review designs with respect to geologic hazards in areas of identified higher risk. These include the Century City area (seismic risk) and the Fairfax area (gassy ground risk). The TAP will be supplemented, as necessary, by qualified experts in seismic design, gas intrusion



and ground contaminant effects on underground structures.

#### **5.3.1.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes alterations have been required in, or incorporated into, the project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures GEO-1, GEO-3, and GEO-7 will be enforced by Metro as described in the MMRP.

Experience in California and worldwide shows that tunnels perform well during earthquake ground shaking, exhibiting no significant damage or collapse. Since they are embedded in the ground, they move with the ground, and thus, their motion is not magnified by the pendulum effect that occurs when an above-ground structure is shaken by an earthquake. With implementation of mitigation measures GEO-1, GEO-3, and GEO-7 described above, the Project would be designed to meet specific criteria and thoroughly reviewed by experts to ensure safe performance during an earthquake. Additionally, operating procedures during an earthquake would be put in place similar to those used on other Metro projects.

Under the Phased Construction Scenario, the potential for impacts related to seismic ground shaking will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for impacts related to seismic ground shaking and implementation of mitigation measures.

For the reasons stated above the Metro Board finds that impacts related to seismic ground shaking would be reduced to a less than significant level.

### **5.3.2 Fault Rupture: Tunnel Crossing**

#### **5.3.2.1 Impact**

At least one segment of the Santa Monica Fault and the West Beverly Hills Lineament, a northern extension of the Newport-Inglewood Fault, crosses the Project tunnel in the vicinity of Century City. If the Project is constructed in Phases, impacts would only occur along Phase 2 and Phase 3.

#### **5.3.2.2 Reference**

Final EIS/EIR Section 4.8.3, Pg. 4-192 – 4-194

#### **5.3.2.3 Mitigation Measures**

##### **GEO-2 Fault Crossing Tunnel, Fault Rupture, Tunnel Crossing**

Design will allow for the tunnels to cross the faults nearly perpendicular to limit the area of potential damage and will use Metro's two level approach to assess fault offsets and the associated structural design required to accommodate the offset. During Final Design, fault crossings will be designed for the ground conditions at the crossing location and incorporate the methods used to excavate and support the tunnel. Metro design criteria require use of a probabilistic approach to determine the Maximum Design Earthquake and Operating Design Earthquake.



Design must include the following:

- Prevent collapse of the tunnel to ensure tunnel safety
- Maintaining structural continuity of tunnel ring
- Preventing flow of water and soil
- Establishing the tunnel size to maintain tunnel clearances and provide a guideway for derailed trains to decelerate without impact
- Several preliminary design approaches or combinations have been considered and will be further developed in Final Design:
- Steel tunnel rings with compressible material between the ring and soil to accommodate movement of the fault
- Flexible steel linings
- Articulated joints between tunnel segments for added flexibility
- Oversized tunnel to allow additional movement and to some extent, more rapid repair after a seismic event. This could also be accomplished using cut and cover methods.

#### **GEO-7 Tunnel Advisory Panel Design Review**

The Metro Tunnel Advisory Panel (TAP) will review designs with respect to geologic hazards in areas of identified higher risk. These include the Century City area (seismic risk) and the Fairfax area (gassy ground risk). The TAP will be supplemented, as necessary, by qualified experts in seismic design, gas intrusion and ground contaminant effects on underground structures.

#### **5.3.2.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes alterations have been required in, or incorporated into, the project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures GEO-2 and GEO-7 will be enforced by Metro as described in the MMRP.

For linear facilities such as tunnels, avoidance of faults may not be possible. Thus, the preferred designs for tunnels are to cross the faults at an angle to the fault lines to limit the area of potential damage of the fault ruptures as, depending on the predicted fault off-set and area over which the movement is distributed, some distortion can be accommodated by the tunnel structure.

The approach for design of tunnels traversing active faults is documented in Metro Seismic Design Criteria and has a well-established precedent. As discussed in the *Westside Subway Extension Century City Area Tunnel Safety Report* (Metro 2011x), potential tunnel damage is also repairable. A similar philosophy is adopted for transportation infrastructure in general, such as highways, bridges, and pipelines. These structures of necessity have to cross faults, and design approaches minimize damage and allow for repair (Mitigation Measures GEO-2 and GEO-7).



In some cases, such as in the rock tunnel crossing the Hollywood fault zone, the tunnels are built larger through a fault zone to accommodate future fault displacement. This is not always practical, particularly when tunnel boring machines with segmental linings are used. For potentially large anticipated tunnel deformations in fault zones, articulated joint designs have been developed as a means to satisfactorily and economically mitigate the seismic risk, providing that sufficient elasticity can be provided in the tunnel lining at the fault (Russo 2002). Other solutions include placing a stiff but crushable material behind the tunnel lining to allow movement. These types of solutions were used for other tunnels in Los Angeles crossing the Newport-Inglewood fault zone. Where fault rupture displacement may be distributed over a longer distance, more flexible tunnel lining, such as steel tunnel lining segments that can accommodate some strain, can be considered (Mitigation Measures GEO-2 and GEO-7).

Under the Phased Construction Scenario, the potential for impacts related to fault rupture will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for impacts related to fault rupture and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that impacts related to fault rupture at tunnel crossing would be reduced to a less than significant level.

### **5.3.3 Liquefaction and Seismic Settlement**

#### **5.3.3.1 Impact**

Due to the presence of shallow groundwater and young surficial alluvial deposits, there may be potential liquefaction adjacent to the upper portions of some station walls at the Wilshire/La Cienega, Westwood/UCLA, and Westwood/VA Hospital Stations. If the Project is constructed in phases, impacts would occur along Phase 1 and Phase 3.

#### **5.3.3.2 Reference**

Final EIS/EIR Section Executive Summary, Pg. S-48, Section 4.8.3, Pg. 4-195 – 4-196

#### **5.3.3.3 Mitigation Measures**

##### **GEO-4 Liquefaction and Seismic Settlement**

At liquefaction or seismic settlement prone areas, evaluations by geotechnical engineers will be performed to provide estimates of the magnitude of the anticipated liquefaction or settlement. Based on the magnitude of evaluated liquefaction, a suitable mitigation will be selected, either structural design, or ground improvement (such as deep soil mixing) or deep foundations to non-liquefiable soil (such as drilled piles). Site specific design will be selected based upon the State of California Guidelines design criteria set forth in the Metro Seismic Design Criteria.

##### **GEO-7 Tunnel Advisory Panel Design Review**

The Metro Tunnel Advisory Panel (TAP) will review designs with respect to geologic hazards in areas of identified higher risk. These include the Century City area (seismic risk) and the Fairfax area (gassy ground risk). The TAP will be

supplemented, as necessary, by qualified experts in seismic design, gas intrusion and ground contaminant effects on underground structures.

#### 5.3.3.4 Finding

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes alterations have been required in, or incorporated into, the project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures GEO-4 and GEO-7 will be enforced by Metro as described in the MMRP.

Based on the geotechnical investigations for the Project, some of the soils in those areas are potentially liquefiable in the event of a moderate or large earthquake. However, soils beneath the level of tunnels and station boxes are not prone to liquefaction or the associated lateral spreading. Nevertheless, some areas beneath shallow station entrance structures or other shallow ancillary structures could be prone to liquefaction; the Wilshire/La Cienega, Westwood/UCLA, and Westwood VA Hospital Stations have some portions susceptible to liquefaction.

At those locations, liquefaction evaluations will be performed to calculate estimates of the magnitude of the potential liquefaction. Evaluations performed indicate that lateral spreading is not anticipated in the vicinity of the Project, but other consequences of liquefaction could be experienced for those shallow structures. Based on the magnitude of evaluated liquefaction, either structural design or ground improvement techniques (such as deep soil mixing) or deep foundations (such as piles) to minimize these hazards will be selected. The State of California has issued Guidelines for Evaluating and Mitigating Seismic Hazard in California (CGS 1997). Site-specific design will be selected based upon the state recommendations and design criteria set forth in the Metro Seismic Design Criteria (Mitigation Measures GEO-4 and GEO-7).

Geotechnical investigations for the Project have also identified that the soils beneath the level of tunnels and station boxes are not prone to seismic densification and hence not susceptible to seismic settlement. However, some areas beneath shallow station entrance structures or other shallow ancillary structures could be prone to seismic settlement; the Wilshire/La Cienega, Westwood/UCLA, and Westwood/VA Hospital Stations have some portions susceptible to seismic settlement.

At those locations, a seismic settlement evaluation will be used to select either structural design (for seismic settlements of less than about 1 inch) or ground improvement (such as deep soil mixing) or deep foundations (such as piles) (Mitigation Measures GEO-4 and GEO-7). With the use of the selected techniques, the potential settlement hazard will be minimized.

Under the Phased Construction Scenario, the potential for liquefaction and seismic settlement impacts will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for liquefaction and seismic settlement impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that impacts related to liquefaction and seismic settlement would be reduced to a less than significant level.



**5.3.4 Hazardous Subsurface Gas****5.3.4.1 Impact**

Hazardous subsurface gases (methane and hydrogen sulfide) pose a hazard during construction and operation of the Project and are particularly high in the vicinity of Wilshire Boulevard and Fairfax Avenue, near the La Brea Tar Pits.

**5.3.4.2 Reference**

Final EIS/EIR Executive Summary, PG. S-48 – S-49, Section 4.8.3, Pg. 4-198 – 4-199

**5.3.4.3 Mitigation Measures****GEO-5 Hazardous Subsurface Gas Operations**

As with the existing Metro Red and Purple Lines and the Metro Gold Line Eastside Extension, Metro will install gas monitoring and detection systems with alarms, as well as ventilation equipment to dissipate gas to safe levels according to Metro's current Design Criteria and Cal/OSHA standards for a safe work environment. Measures will include, but are not limited to, the following for both tunnel and station operation:

- High volume ventilation systems with back-up power sources
- Gas detection systems with alarms
- Emergency ventilation triggered by the gas detection systems
- Automatic equipment shut-off
- Maintenance and operations personnel training.
- Gas detection instrumentation is set to send alarms to activate ventilation systems and evacuate the structures as follows: Methane gas—Minor alarm at 10 percent of LEL (activate ventilation) and major alarms at 20 percent of LEL (evacuation of area)
- Hydrogen sulfide—Minor alarm at 8 ppm and major alarm at 10 ppm.

**GEO-6 Hazardous Subsurface Gas Structural Design**

Tunnels and stations will be designed to provide a redundant protection system against gas intrusion hazard. The primary protection from hazardous gases during operations is provided by the physical barriers (tunnel and station liner membranes) that keep gas out of tunnels and stations. As with the existing Metro Red and Purple Lines and the Metro Gold Line Eastside Extension, tunnels and stations will be designed to exclude gas to below alarm levels (GEO-5) and include gas monitoring and detection systems with alarms, as well as ventilation equipment to dissipate gas.

At stations in elevated gassy ground (e.g., Wilshire/Fairfax, construction will be accomplished using slurry walls—or similar methods such as continuous drilled piles—to provide a reduction of gas inflow both during and after construction than

would occur with conventional soldier piles and lagging.

Other station design concepts to reduce gas and water leakage will use additional barriers, compartmentalized barriers to facilitate leak sealing, and use of flexible sealants, such as poly-rubber gels, along with the high-density polyethylene-type materials that are used on Metro's underground stations.

Consideration of secondary station walls to provide additional barriers or an active system (low or high pressure barrier) will also be studied further to determine if they will be incorporated into the Project.

The evaluations will include laboratory testing programs such as those conducted for the Metro Gold Line Eastside Extension during development of the double gasket system and material testing for long term exposure to the ground conditions for materials such as rubber gaskets used for tunnel segment linings. Testing programs will examine:

Segment leakage—gasket seal under pressure before, during, and after seismic movements. This will include various gasket materials and profiles (height and width).

Gasket material properties—effective life and resistance to deterioration when subjected to man-made and natural contaminants, including methane, asphaltic materials, and hydrogen sulfide.

Alternative products to High Density Polyethylene products such as poly-rubber gels, now in use in ground containing methane in other cities.

Methods for field testing high-density polyethylene joints. These are now being used for landfill liners and water tunnels under internal water pressure.

#### **GEO-7 Tunnel Advisory Panel Design Review**

The Metro Tunnel Advisory Panel (TAP) will review designs with respect to geologic hazards in areas of identified higher risk. These include the Century City area (seismic risk) and the Fairfax area (gassy ground risk). The TAP will be supplemented, as necessary, by qualified experts in seismic design, gas intrusion and ground contaminant effects on underground structures.

#### **5.3.4.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes alterations have been required in, or incorporated into, the project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures GEO-5 through GEO-7 will be enforced by Metro as described in the MMRP.

Methane and hydrogen sulfide are present in concentrations higher than those encountered during Metro Red Line construction for about 1.1 mile along Wilshire Boulevard, from about South Burnside Avenue on the east end to about South La Jolla Avenue on the west. The entire alignment



passes through an area characterized by oil and gas fields; thus the possibility of encountering gaseous conditions cannot be completely eliminated for any portion of the alignment.

Tunnels and stations will be designed to provide a redundant protection system against gas intrusion hazard, such as those described in the City of Los Angeles Municipal Code, Chapter IX, Building Regulations, Article 1, Division 71, Methane Seepage Regulations. In compliance with these regulations, specific requirements are determined according to the actual methane levels and pressures detected on a site, and the identified specific requirements will be incorporated into the design and construction. Therefore, hazardous subsurface gasses impacts will be minimized (Mitigation Measure GEO-6 and GEO-7).

Additionally as part of GEO-5, Metro will install gas monitoring and detection systems with alarms, as well as ventilation equipment to dissipate gas to safe levels according to Metro's current Design Criteria and Cal/OSHA standards for a safe work environment.

Under the Phased Construction Scenario, the potential for hazardous subsurface gas impacts will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for hazardous subsurface gas impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that impacts related to hazardous subsurface gas would be reduced to a less than significant level.

## **5.4 Safety and Security**

The Safety and Security Impacts of the Project were evaluated in Section 4.12 of the Final EIS/EIR. The Final EIS/EIR evaluated potential effects of the project during construction and operation. Appendix G of the California State CEQA Guidelines requires analysis of a project's potential impacts related to public health hazards or interference with emergency response plans or emergency evacuation plans. A significant safety and security impact would occur if the Westside Subway Extension Project would:

- Create the potential for increased pedestrian or bicycle safety risks
- Create substantial adverse safety conditions, including station, boarding, and disembarking accidents, right-of-way accidents, collisions, fires, and major structural failures
- Substantially limit the delivery of community safety services, such as police, fire, or emergency services, to locations along the proposed alignment
- Create the potential for adverse security conditions, including incidents, offenses, and crimes

### **5.4.1 Impact**

The Project could affect the pedestrian environment, passenger safety, worker safety, and emergency response times for emergency service providers during either construction or operation.

### **5.4.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-50, Section 4.12.3, Pg. 4-244 – 4-251

### 5.4.3 Mitigation Measures

#### SS-1 Passenger Safety I

Implement public safety awareness and employee training program.

#### SS-2 Passenger Safety II

Develop and implement a project-specific safety certification plan that will result in safety certification of all certifiable project elements.

#### SS-3 Construction Safety

Implement a Construction Safety and Security Plan which includes safety rules, procedures, and policies to protect workers and work sites during construction, such as warning and notification signs, detours, and barriers, and includes compliance with OSHA standards.

#### SS-4 Fire Protection and Safety

Design in accordance with Metro fire/life safety criteria, CBC, and other applicable federal, state, and local rules and regulations.

#### SS-5 Methane and Hydrogen Sulfide Gas Leak Protection

Design in accordance with Metro fire/life safety criteria, Metro ventilation criteria, findings in the *Westside Subway Extension Geotechnical and Hazardous Materials Report* (Metro 2010i) and with special design, construction, and operational attention to the gassy ground tunnels and stations.

#### SS-6 Security Preventing Criminal Activity

Incorporate security features, including lighting, communication devices (e.g., passenger telephones), closed circuit television, signs and other design features, and law enforcement officers to reduce criminal activities.

#### SS-7 Security Preventing Terrorist Attacks

Implement security features, including security education and employee training specific to terrorism awareness, lighting, communication devices (e.g., passenger telephones), closed circuit television, signs, and other design features to reduce terrorism activities.

#### SS-8 Emergency Response

Develop and implement a comprehensive emergency preparedness plan, employee and emergency responders training, and system design features.



#### **5.4.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures SS-1 through SS-8 will be enforced by Metro as described in the MMRP.

Once the passengers enter the underground HRT system, they may be exposed to safety hazards that can be divided into the following areas: (1) Fire/Life Safety (hazards resulting in accidents involving injuries, fatalities, or property damage due to fire, smoke, explosion, or toxics due to these causes and (2) System Safety (hazards resulting in accidents involving injuries, fatalities, or property damage due to system design, equipment operations and maintenance, testing, and material selection). Mitigation measures SS-1 through SS-5 above would ensure the implementation of a well-designed system safety and fire/life safety program. With the implementation of mitigation measures SS-1 through SS-5, impacts related to safety would be reduced to a less than significant level.

A significant impact to security conditions could occur if there is a rise in criminal activity due to the increase in pedestrian circulation in areas near station entrances and below ground stations. In addition, a significant security impact could occur from a potential terrorist threat targeting the increase in pedestrian circulation and critical infrastructures at or near station entrances and below-ground station platforms. The implementation of mitigation measure SS-6 and SS-7 above would ensure the implementation of security features, which would reduce impacts related to security to a less than significant level.

The Project has a potential of resulting in a significant impact to local community safety services due to increased demands on fire, medical emergency response, and police services. The implementation of mitigation measure SS-8 will reduce impacts to community safety services to a less than significant level.

Under the Phased Construction Scenario, the potential for impacts related to safety and security will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for impacts related to safety and security and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that impacts related to safety and security would be reduced to a less than significant level.

### **5.5 Historic, Archaeological, and Paleontological Resources**

The Historic, Archaeological, and Paleontological Resources Impacts of the Project were evaluated in Section 4.14 of the Final EIS/EIR. The Final EIS/EIR evaluated potential effects to historic, archaeological, and paleontological resources during construction and operation of the proposed project. As explained in the Final EIS/EIR, a significant impact to historic, archaeological, and paleontological resources during operations and construction would occur if the Westside Subway Extension Project would:

- Causes a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5

- Causes a substantial adverse change in the significance of a historical resource as defined in Section 15064.5
- Directly or indirectly destroys a unique paleontological resource or site or unique geologic feature
- Disturbs any human remains, including those interred outside of formal cemeteries
- Demolish or materially alter a significant archaeological, historic, or paleontological resource.

## 5.5.1 Paleontological Resources (Operations)

### 5.5.1.1 Impact

The Project may encounter fossil localities at all stations, but fossil localities are most likely to be encountered at the Wilshire/La Brea and Wilshire/Fairfax Stations.

### 5.5.1.2 Reference

Final EIS/EIR Executive Summary, Pg. S-53 – S-54, Section 4.14.5, Pg. 4-315 – 4-317.

### 5.5.1.3 Mitigation Measures

#### PA-1 Memorandum of Understanding

Metro will implement the Memorandum of Understanding with the George C. Page Museum of La Brea Discoveries regarding treatment of paleontological resources from asphaltic deposits.

### 5.5.1.4 Finding

The Board hereby adopts and incorporates this mitigation measure as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measure PA-1 will be enforced by Metro as described in the MMRP.

The Project is expected to encounter paleontological resources, including asphaltic and non-asphaltic deposits of Pleistocene fossils in Older Alluvium, and may encounter underlying marine fossils of Miocene to Pleistocene age in the San Pedro, Fernando, or Puente Formations. All excavations may have a significant impact on paleontological resources. Implementation of mitigation measure PA-1 will substantially reduce the impact as it preserves the materials until further study and curation can be accomplished.

Under the Phased Construction Scenario, the potential for impacts related to paleontological resources will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for impacts related to paleontological resources and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that impacts related to paleontological resources would be reduced to a less than significant level.



## **5.5.2 Paleontological Resources (Construction)**

### **5.5.2.1 Impact**

Construction of the Project is expected to encounter paleontological resources in asphaltic matrix in and around Hancock Park (Rancho La Brea Tar Pits) in an area extending from the existing Wilshire/Western Station to the Wilshire/Fairfax Station. Fossils from non-asphaltic deposits may be recovered along the remainder of the Project alignment based on known paleontological resources along La Cienega Boulevard near Beverly Drive, near Century City, and at Wilshire Boulevard and Thayer Avenue.

The areas surrounding the Wilshire/Fairfax and Wilshire/La Brea Stations are known to have tar deposits and/or tar sands and possibly paleontological features that may have to be removed under special conditions.

### **5.5.2.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-53 – S-54, Section 4.14.7, Pg. 4-323 – 4-325.

### **5.5.2.3 Mitigation Measures**

#### **PA-2 Early Fossil Recovery**

Metro will seek early approval to begin fossil recovery in advance of construction if feasible.

#### **PA-3 Retain the Services of a Qualified Principal Paleontologist**

Metro will retain the services of a qualified principal paleontologist (minimum of graduate degree, 10 years of experience as a principal investigator and specialty in vertebrate paleontology) to oversee execution of mitigation measures.

#### **PA-4 Development of a Paleontological Resources Monitoring and Mitigation Plan (PRMMP)**

Metro's qualified principal paleontologist will develop a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) acceptable to the collections manager of the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County and the collection manager of the Page Museum of La Brea Discoveries. Metro will implement the PRMMP during construction. The plan will clearly demarcate the areas to be monitored and specify criteria. At the completion of paleontological monitoring for the Project, a paleontological resources monitoring report will be prepared and submitted to the Page Museum of La Brea Discoveries and the Natural History Museum of Los Angeles County to document the results of the monitoring activities and summarize the results of any paleontological resources encountered.

**PA-5 Required Activities for Recovered Fossils in the PRMMP**

The PRMMP will include specifications for processing, stabilizing, identifying, and cataloging any fossils recovered on the Project. For any tar pit deposits encountered, this will include chemical removal of asphalt from matrix and specimens. Cleaned matrix will require microscopic examination for small fossils, including invertebrates and plants, by a qualified paleontologist.

**PA-6 Preparation of a Report on Paleontological Resources Recovered**

Metro's qualified principal paleontologist will prepare a report detailing the paleontological resources recovered, their significance, and arrangements made for their curation at the conclusion of the monitoring effort.

**PA-7 Curation of Identified and Prepared Fossils**

Metro will provide the resources necessary to curate the identified and prepared fossils as specified in the Memorandum of Understanding between Metro, FTA, and the George C. Page Museum of Rancho La Brea Discoveries. Those fossils recovered from asphaltic deposits will be curated at the George C. Page Museum. All other fossils will be curated at the Natural History Museum of Los Angeles County.

**5.5.2.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures PA-2 through PA-7 will be enforced by Metro as described in the MMRP.

The Project is expected to encounter paleontological resources during construction, including asphaltic and non-asphaltic deposits of Pleistocene fossils in Older Alluvium, and may encounter underlying marine fossils of Miocene to Pleistocene age in the San Pedro, Fernando, or Puente Formations. All excavations may have a significant impact on paleontological resources. In advance of and during construction, implementation of mitigation measures PA-2 through PA-7 will reduce impacts to paleontological resources to a less than significant level.

Under the Phased Construction Scenario, the potential for impacts related to paleontological resources during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for impacts related to paleontological resources and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that impacts related to paleontological resources during construction would be reduced to a less than significant level.

**5.6 Land Use (Construction)**

The construction related Land Use Impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, land use impacts during construction will be





considered significant if the construction of the Westside Subway Extension Project results in the following:

- Physical division of an established community
- Inconsistency with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect
- Incompatibility with adjacent and surrounding land uses caused by degradation or disturbances that diminish the quality of a particular land use

### **5.6.1 Impact**

During construction, access to land uses will be periodically affected due to temporary street and sidewalk closures in the vicinity of the temporary cut-and-cover excavation areas around stations. Pedestrian and vehicle mobility between communities and neighborhoods along the Project alignment will be reduced during construction due to these closures and traffic detours; however, these impacts will end with the completion of construction.

### **5.6.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-61, Section 4.15.3, Pg. 4-340 – 4-344.

### **5.6.3 Mitigation Measures**

#### **TCON-1 Traffic Control Plans**

Site-specific traffic-control plans will be developed to minimize construction impacts for each work zone location. These locations will include, but not be limited to, utility relocations, stations, crossovers, laydown areas, TBM launch and removal locations, emergency exit shafts, station entrances, drop pipes, and grout injection. Traffic-control plans will follow State and local jurisdiction guidelines and standards. Traffic-control plans will be developed for Wilshire, Santa Monica, and Constellation Boulevards and north-south streets, including, but not limited to, La Brea Avenue, Fairfax Avenue, La Cienega Boulevard, Rodeo Drive, Beverly Drive, Canon Drive, Century Park East, Avenue of the Stars, Westwood Boulevard, Veteran Avenue, Sepulveda Boulevard, I-405 ramps to/from eastbound Wilshire Boulevard, and Bonsall Avenue. Traffic control plans will encompass the following:

- Minimum lane widths
- Number of available travel lanes (two lanes minimum in each direction during peak periods)
- Number, length, and location of temporary right and left-turn lanes
- Temporary street closures and detour routes
- Traffic-control devices (signing and striping)
- Temporary traffic signals and street lighting

- Temporary pedestrian access and routes
- Temporary bicycle routes
- Temporary driveway access
- Temporary business access
- Construction site phasing

To facilitate traffic flow and mitigate major disruption and bottlenecks due to construction, advanced traffic control will extend beyond one arterial street on each side of each station construction location. This will help disperse peak-hour traffic flows onto the adjacent arterial street network. Business owners will be interviewed to identify the type of business, delivery and shipping schedules, and critical days/times of years for the business. Traffic-control plans will incorporate this information. Specific street closures will be developed in close coordination with the local jurisdictions during the Final Design phase.

#### **TCON-10 Pedestrian Routes and Access**

Safe pedestrian routes and access will be provided through and/or adjacent to construction work areas. Pedestrian routes and access, including temporary pedestrian facilities, will comply with the requirements of the ADA and must be properly signed and lighted. Special facilities, such as handrails, fences, and walkways, will be provided for pedestrian safety. Temporary pedestrian routes and access concerns will be addressed with, but not limited to, local residents, the VA Hospital, schools, and businesses and approved by the local jurisdiction. Pedestrian routes and access will be monitored and maintained throughout construction.

#### **TCON-11 Bicycle Paths and Access**

Bicycle traffic (e.g., paths, lanes, and routes) will be maintained safely through and adjacent to construction work areas. If bicycle traffic cannot be maintained, then alternative temporary bicycle routes will be identified, signed, and lighted. These alternative routes should be on adjacent streets that can safely accommodate bicycle traffic. Development of these routes will be coordinated with bicycle groups and local jurisdictions. Temporary routes will require approval by the local jurisdiction. Bicycle access will be monitored and maintained throughout construction.

### **5.6.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures TCON-1, TCON-10, and TCON-11 will be enforced by Metro as described in the MMRP.



Construction staging and construction activities for the Project will be concentrated primarily in the station areas with the addition of construction staging sites at the existing Wilshire/Western Station site and in the Wilshire/Crenshaw vicinity. The location of these construction staging sites are identified in Chapter 2 and in Appendix C, Acquisitions, of the Final EIS/EIR.

During construction, access to land uses will be periodically affected due to temporary street and sidewalk closures in the vicinity of the temporary cut-and-cover excavation areas around stations. Pedestrian and vehicle mobility between communities and neighborhoods along the Project alignment will be reduced during construction due to these closures and traffic detours. These impacts could result in the temporary physical division of established communities; however, these impacts will end with the completion of construction. With the implementation of mitigation measures TCON-1, TCON-10 and TCON-11, impacts related to the physical division of established communities will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for impacts related to land use during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for impacts related to land use and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that impacts related to land use during construction would be reduced to a less than significant level.

## **5.7 Communities and Neighborhoods (Construction)**

The construction related community and neighborhood impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, impacts to communities and neighborhoods during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- Physical, social, or psychological division of an established community
- Disruption of access to community assets
- Displacement of community assets or institutions

### **5.7.1 Impact**

Construction of the Project could affect neighborhoods for limited durations due to street and sidewalk closures and traffic detours, especially in areas of station construction. Construction and traffic detours will temporarily reduce access to businesses and communities. In addition, noise and emissions from the haul trucks and construction equipment could disrupt community activities.

### **5.7.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-62, Section 4.15.3, Pg. 4-344 – 4-345.



### 5.7.3 Mitigation Measures

#### CON-1 Signage

Signage to indicate accessibility to businesses will be used in the vicinity of construction activity.

#### TCON-1 Traffic Control Plans

Site-specific traffic-control plans will be developed to minimize construction impacts for each work zone location. These locations will include, but not be limited to, utility relocations, stations, crossovers, laydown areas, TBM launch and removal locations, emergency exit shafts, station entrances, drop pipes, and grout injection. Traffic-control plans will follow State and local jurisdiction guidelines and standards. Traffic-control plans will be developed for Wilshire, Santa Monica, and Constellation Boulevards and north-south streets, including, but not limited to, La Brea Avenue, Fairfax Avenue, La Cienega Boulevard, Rodeo Drive, Beverly Drive, Canon Drive, Century Park East, Avenue of the Stars, Westwood Boulevard, Veteran Avenue, Sepulveda Boulevard, I-405 ramps to/from eastbound Wilshire Boulevard, and Bonsall Avenue. Traffic control plans will encompass the following:

- Minimum lane widths
- Number of available travel lanes (two lanes minimum in each direction during peak periods)
- Number, length, and location of temporary right and left-turn lanes
- Temporary street closures and detour routes
- Traffic-control devices (signing and striping)
- Temporary traffic signals and street lighting
- Temporary pedestrian access and routes
- Temporary bicycle routes
- Temporary driveway access
- Temporary business access
- Construction site phasing

To facilitate traffic flow and mitigate major disruption and bottlenecks due to construction, advanced traffic control will extend beyond one arterial street on each side of each station construction location. This will help disperse peak-hour traffic flows onto the adjacent arterial street network. Business owners will be interviewed to identify the type of business, delivery and shipping schedules, and critical days/times of years for the business. Traffic-control plans will incorporate this information. Specific street closures will be developed in close coordination with the local jurisdictions during the Final Design phase.



**T-CON-2 Designated Haul Routes**

Designated truck haul routes using arterial streets are intended to minimize noise, vibration, and other possible impacts to adjacent businesses, schools, major commercial developments, and residential neighborhoods. Metro will incorporate the following objectives into its truck haul route plans:

Establish nighttime truck haul operations times/days for each route. Truck haul operations will not be allowed in the AM and PM peak hours, in residential neighborhoods (where feasible), during noise restriction hours and special events, holiday season restrictions, and as restricted by State and local jurisdictional mandates.

Establish truck haul headways to avoid platoons of trucks upon local arterial streets and freeways. Establish a vehicle dispatching system at construction laydown areas and off-site locations to monitor and address truck headway issues as they arise.

Develop truck haul routes for each site in coordination with and approved by State and local jurisdictions.

Incorporate comments and issues from State and local jurisdictions into the final approved truck haul routes and truck haul operation schedules.

**TCON-3 Emergency Vehicle Access**

Emergency vehicle access will be maintained at all times to the construction work site, adjacent businesses, and residential neighborhoods. In addition, emergency vehicle access will be maintained at all times to and from fire stations, hospitals, and medical facilities near the construction sites and along the haul routes. Project construction activities and haul route operations will be coordinated with local law enforcement representatives and fire department officials during the Final Design phase.

**TCON-4 Transportation Management Plan**

Once subway construction sequencing/phasing and the truck haul routes have been concurred upon by Metro and reviewed by local jurisdictions and Caltrans, an overall Project Transportation Management Plan (TMP) will be developed with and approved by Metro and other appropriate agencies. The TMP will include the following:

- Public information (e.g., media alerts, website)
- Traveler information (e.g., traffic advisory radio, changeable message signs (CMS))
- Incident management (e.g., TMP coordination, tow truck services)
- Construction (e.g., detour routes, haul routes, mitigation, construction times)
- Demand management (e.g., carpooling, express bus service, variable work

hours, parking management)

- Coordination with concurrent Projects

The TMP will also address individual and overlapping haul route impacts and will impacts resulting from concurrent and overlapping station(s) and tunnel excavation work.

#### **TCON-7 Parking Management**

A parking management program will be developed to minimize impacts due to temporary removal of on- and off-street parking within the construction work zone. The program will incorporate appropriate parking control measures, replacement parking within a reasonable distance from the affected parking locations, if available, or other transportation demand management (TDM) strategies. Development of the parking management program will be coordinated with the appropriate local jurisdictions and affected communities or property owners and be incorporated into the TMP.

#### **TCON-8 Parking Monitoring and Community Outreach**

In addition, a parking monitoring and community outreach program will be established during the construction phase of the Project to monitor on-street parking activity. If a parking shortage is identified during construction, Metro will work with the appropriate local jurisdiction and affected communities or property owners to assess the shortage level and implement mitigation as part of the parking management program.

#### **TCON-10 Pedestrian Routes and Access**

Safe pedestrian routes and access will be provided through and/or adjacent to construction work areas. Pedestrian routes and access, including temporary pedestrian facilities, will comply with the requirements of the ADA and must be properly signed and lighted. Special facilities, such as handrails, fences, and walkways, will be provided for pedestrian safety. Temporary pedestrian routes and access concerns will be addressed with, but not limited to, local residents, the VA Hospital, schools, and businesses and approved by the local jurisdiction. Pedestrian routes and access will be monitored and maintained throughout construction.

#### **TCON-11 Bicycle Paths and Access**

Bicycle traffic (e.g., paths, lanes, and routes) will be maintained safely through and adjacent to construction work areas. If bicycle traffic cannot be maintained, then alternative temporary bicycle routes will be identified, signed, and lighted. These alternative routes should be on adjacent streets that can safely accommodate bicycle traffic. Development of these routes will be coordinated with bicycle groups and local jurisdictions. Temporary routes will require approval by the local jurisdiction. Bicycle access will be monitored and maintained throughout construction.



#### **5.7.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-1, TCON-1 through TCON-4, TCON-7, TCON-8, TCON-10, and TCON-11 will be enforced by Metro as described in the MMRP.

During construction, access to land uses will be periodically affected due to temporary street and sidewalk closures in the vicinity of the temporary cut-and-cover excavation areas around stations. Pedestrian and vehicle mobility between communities and neighborhoods along the Project alignment will be reduced during construction due to these closures and traffic detours. These impacts could result in the temporary physical division of established communities and disruption to access to community assets; however, these impacts will end with the completion of construction. In addition, noise and emissions from the haul trucks and construction equipment could disrupt community activities. With the implementation of mitigation measures CON-1, TCON-1 through TCON-4, TCON-7, TCON-8, TCON-10, and TCON-11, construction-related impacts to the communities and neighborhoods will be reduced to a less than significant level.

The displacement of and impacts to community assets or institutions during construction is discussed below in Section 5.15. With implementation of mitigations measures CON-82 through CON-87, impacts to community assets and institutions during construction will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for impacts to communities and neighborhoods during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for impacts to communities and neighborhood and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that impacts related to communities and neighborhoods during construction would be reduced to a less than significant level.

### **5.8 Visual and Aesthetics (Construction)**

The construction related Visual and Aesthetics Impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, visual and aesthetics impacts during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- Conflicts with or complements the existing visual character
- Changes in visual quality
- Effects on viewers (considers viewer sensitivity)
- Intrudes on or blocks sensitive views (emphasizes views protected by local jurisdictions)
- Creates shadows
- Creates new light or glare source

### 5.8.1 Impact

The introduction of heavy construction equipment, stockpiled construction-related materials, erosion devices, excavated materials, and the removal of trees in these primarily commercial and residential areas will conflict with existing visual character and will change visual quality. Additionally, the raised decking at the Wilshire/Fairfax and Wilshire/La Brea Stations (approximately 2 feet above grade) will temporarily increase the visual impacts to adjacent properties at these stations.

The lighting of the construction staging areas at night will result in the creation of a new light source. If not mitigated, this will be a temporary significant impact.

### 5.8.2 Reference

Final EIS/EIR Executive Summary, Pg. S-62, Section 4.15.3, Pg. 4-345 – 4-348.

### 5.8.3 Mitigation Measures

#### CON-2 Timely Removal of Erosion-Control Devices

Visually obtrusive erosion-control devices, such as silt fences, plastic ground cover, and straw bales, will be removed as soon as the area is stabilized.

#### CON-3 Location of Construction Materials

Stockpile areas will be located in less visibly sensitive areas and, whenever possible, not be visible from the road or to residents and businesses. Limits on heights of excavated materials will be developed during design based on the specific area available for storage of material and visual impact.

#### CON-4 Construction Lighting

Lighting will be directed toward the interior of the construction staging area and be shielded so that it will not spill over into adjacent residential areas. In addition, temporary sound walls of Metro approved design will be installed at station and work areas. These will block direct light and views of the construction areas from residences.

#### CON-5 Screening of Construction Staging Areas

Construction staging areas will be screened where possible, to reduce visual effects on adjacent viewers

### 5.8.4 Finding

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-2 through CON-5 will be enforced by Metro as described in the MMRP.

The construction of the Project will introduce heavy construction equipment, stockpiled construction-related materials, erosion devices, excavated materials, and the removal of trees in





primarily commercial and residential areas that will conflict with existing visual character and will change visual quality. The lighting of the construction staging areas at night will result in the creation of a new light source. During the construction period, these visual elements will temporarily degrade the physical character of the station and staging areas and will result in a significant impact without mitigation. With the implementation of mitigation measures CON-2 through CON-5, construction-related visual impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for visual impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for visual impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that visual impacts during construction would be reduced to a less than significant level.

## **5.9 Air Quality (Construction)**

The construction related Air Quality impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR air quality impacts during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)
- Expose sensitive receptors to substantial pollutant concentrations
  - Create objectionable odors affecting a substantial number of people

Construction-related air quality impacts related to particulate matter, gas, and odor are discussed in the following sections. Construction-related emissions impacts are discussed in Section 6 as impacts would remain significant after mitigation.

### **5.9.1 Particulate Matter**

#### **5.9.1.1 Impact**

Demolition, grading, stockpiling, and hauling soil will contribute to particulate matter emissions affecting the local environment.

At locations with TBM entry and exit sites due to dirt handling, the SCAQMD thresholds for PM<sub>10</sub> will be exceeded, if not mitigated, resulting in a significant impact.

#### **5.9.1.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-64, Section 4.15.3, Pg. 4-352 – 4-354.



### 5.9.1.3 Mitigation Measures

#### CON-14 Measures to Reduce the Predicted PM10 Levels

Mitigation measures such as watering, the use of soil stabilizers, etc. will be applied to reduce the predicted PM10 levels to below the SCAQMD daily construction threshold levels. A watering schedule will be established to prevent soil stockpiles from drying out.

#### CON-15 Reduce Street Debris

At truck exit areas, wheel washing equipment will be installed to prevent soil from being tracked onto city streets, and followed by street sweeping as required to clean streets.

#### CON-16 Dust Control During Transport

Trucks will be covered to control dust during transport of spoils.

#### CON-17 Fugitive Dust Control

To control fugitive dust, wind fencing and phase grading operations, where appropriate, will be implemented along with the use of water trucks for stabilization of surfaces under windy conditions.

#### CON-18 Street Watering

Surrounding streets at construction sites will be watered by trucks as needed to eliminate air-borne dust. In keeping with Metro's prior policy on the Eastside Gold Line, the contractor will water streets in the station area impacted by dust not less than once a day and more often if needed.

#### CON-19 Spillage Prevention for Non-Earthmoving Equipment

Provisions will be made to prevent spillage when hauling materials and operating non-earthmoving equipment. Additionally, speed will be limited to 15 mph for these activities at construction sites.

#### CON-20 Spillage Prevention for Earthmoving Equipment

Provisions will be made to prevent spillage when hauling materials and operating earth-moving equipment. Additionally, speed will be limited to 10 mph for these activities at construction sites.

#### CON-21 Additional Controls to Reduce Emissions

EPA-registered particulate traps and other appropriate controls will be used where suitable to reduce emissions of particulate matter and other pollutants at the construction site.



**5.9.1.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-14 through CON-21 will be enforced by Metro as described in the MMRP.

During construction of the Project, demolition, grading, stockpiling, and hauling soil will contribute to particulate matter emissions affecting the local environment. Excavated soil stockpiles will be subject to local wind conditions and will generate dust if allowed to dry out. At locations with TBM entry and exit sites due to dirt handling, the SCAQMD thresholds for PM10 will be exceeded, if not mitigated, resulting in a significant impact. With the implementation of mitigation measures CON-14 through CON-21, construction-related air quality particulate matter impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for air quality particulate matter impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for air quality particulate matter impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that air quality particulate matter impacts during construction would be reduced to a less than significant level.

**5.9.2 Gas**

**5.9.2.1 Impact**

Disturbance of the ground at the Wilshire/Fairfax and Wilshire La Brea Stations will generate varying degrees of toxic or dangerous gases during construction.

**5.9.2.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-64, Section 4.15.3, Pg. 4-354 – 4-355.

**5.9.2.3 Mitigation Measures**

**CON-8 Monitoring and Recording of Air Quality at Worksites**

Monitoring and recording of air quality at the worksites will be conducted. In areas of gassy soil conditions (Wilshire/La Brea and Wilshire/Fairfax work sites), air quality will be continuously monitored and recorded. Construction will be altered as required to maintain a safe working atmosphere. The working environment will be kept in compliance with Federal, State, and local regulations, including SCAQMD and Cal/OSHA standards.

**Con-51 Techniques to Lower the Risk of Exposure to Hydrogen Sulfide**

In areas where hydrogen sulfide is encountered, several techniques could be used to lower the risk of exposure. The primary measures to prevent exposure to hydrogen sulfide gas are separation of materials from the tunnel environment, and increased ventilation capacity to dilute gases to safe levels as defined by Cal/OSHA. Secondary measures could include pre-treatment of groundwater containing hydrogen sulfide by displacing and oxidation of the hydrogen sulfide by injecting water (possibly containing dilute hydrogen peroxide) into the ground and groundwater in advance of the tunnel excavation. This “in-situ oxidation” method reduces hydrogen sulfide levels even before the ground is excavated. This pre-treatment method is unlikely to be necessary where a slurry-face TBM is used, but may be implemented at tunnel-to-station connections or at cross-passage excavation areas and where open excavation and limited dewatering may be conducted such as emergency exit shafts and low-point sump excavations.

When needed to reduce hydrogen sulfide to safe levels for slurry treatment; additives could be mixed with the bentonite (clay) slurry during the tunneling and/or prior to discharge into the slurry separation plant. For example, zinc oxide could be added to the slurry as a “scavenger” to precipitate dissolved hydrogen sulfide when slurry hydrogen sulfide levels get too high. Gas levels will be maintained in accordance with Cal/OSHA requirements for safe working environments.

**Con-52 Measures to Reduce Gas Inflows**

For the stations in elevated gas zones, the use of relatively impermeable lagging, use of diaphragm or slurry walls or equivalent will be implemented to reduce of gas inflows both during and after construction. The slurry wall provides a thick (typically 3 to 4 feet) concrete barrier against water and gas intrusion, and significantly reduces the need for dewatering the station during construction. Grout tubes can be pre-placed within slurry wall panels to be used in the event leakage occurs. Slurry walls present a challenge in accommodating existing utilities, and typically more utility relocation is required for slurry wall systems. Additional ventilation, continuous monitoring, and worker training for exposure to hazardous gases will also be required during station construction. In extreme cases, some work may require temporary use of personal protective equipment, such as fitted breathing apparatus.

**5.9.2.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-8, CON-51 and CON-52 will be enforced by Metro as described in the MMRP.



The construction of the Project will result in the disturbance of the ground at the Wilshire/Fairfax and Wilshire La/Brea Stations, where there are known hydrocarbon deposits that can generate toxic or explosive gases at higher concentrations than the other portions of the Project. It is essential that construction workers be sufficiently protected from the risks associated with these gases. Detection and monitoring equipment will be required to warn of the presence of unsafe gas conditions. Gases emanating from the slurry treatment plan, if not properly handled, could become an issue requiring modification of equipment and/or procedure. Once above ground, methane rises and dissipates rapidly in the atmosphere and will not be a public health hazard. With the implementation of mitigation measures CON-8, CON-51 and CON-52, construction-related gas impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for gas impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for gas impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that gas impacts during construction would be reduced to a less than significant level.

### **5.9.3 Odor**

#### **5.9.3.1 Impact**

There is known hydrogen sulfide gas located in the vicinity of the Wilshire/La Brea, Wilshire/Fairfax, and Wilshire/La Cienega Stations. Hydrogen sulfide also could be released from groundwater containing hydrogen sulfide. As a result, aside from odors from vehicle exhaust, the Project could result in odors from hydrogen sulfide.

#### **5.9.3.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-65, Section 4.15.3, Pg. 4-355 – 4-355.

#### **5.9.3.3 Mitigation Measures**

##### **CON-8 Monitoring and Recording of Air Quality at Worksites**

Monitoring and recording of air quality at the worksites will be conducted. In areas of gassy soil conditions (Wilshire/La Brea and Wilshire/Fairfax work sites), air quality will be continuously monitored and recorded. Construction will be altered as required to maintain a safe working atmosphere. The working environment will be kept in compliance with Federal, State, and local regulations, including SCAQMD and Cal/OSHA standards.

##### **CON-51 Techniques to Lower the Risk of Exposure to Hydrogen Sulfide**

In areas where hydrogen sulfide is encountered, several techniques could be used to lower the risk of exposure. The primary measures to prevent exposure to hydrogen sulfide gas are separation of materials from the tunnel environment, and increased ventilation capacity to dilute gases to safe levels as defined by Cal/OSHA. Secondary measures could include pre-treatment of groundwater containing hydrogen sulfide by displacing and oxidation of the hydrogen sulfide by injecting water (possibly containing dilute hydrogen peroxide) into the ground and groundwater in advance



of the tunnel excavation. This “in-situ oxidation” method reduces hydrogen sulfide levels even before the ground is excavated. This pre-treatment method is unlikely to be necessary where a slurry-face TBM is used, but may be implemented at tunnel-to-station connections or at cross-passage excavation areas and where open excavation and limited dewatering may be conducted such as emergency exit shafts and low-point sump excavations.

When needed to reduce hydrogen sulfide to safe levels for slurry treatment; additives could be mixed with the bentonite (clay) slurry during the tunneling and/or prior to discharge into the slurry separation plant. For example, zinc oxide could be added to the slurry as a “scavenger” to precipitate dissolved hydrogen sulfide when slurry hydrogen sulfide levels get too high. Gas levels will be maintained in accordance with Cal/OSHA requirements for safe working environments.

#### **CON-52 Measures to Reduce Gas Inflows**

For the stations in elevated gas zones, the use of relatively impermeable lagging, use of diaphragm or slurry walls or equivalent will be implemented to reduce of gas inflows both during and after construction. The slurry wall provides a thick (typically 3 to 4 feet) concrete barrier against water and gas intrusion, and significantly reduces the need for dewatering the station during construction. Grout tubes can be pre-placed within slurry wall panels to be used in the event leakage occurs. Slurry walls present a challenge in accommodating existing utilities, and typically more utility relocation is required for slurry wall systems. Additional ventilation, continuous monitoring, and worker training for exposure to hazardous gases will also be required during station construction. In extreme cases, some work may require temporary use of personal protective equipment, such as fitted breathing apparatus.

#### **5.9.3.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-8, CON-51 and CON-52 will be enforced by Metro as described in the MMRP.

Hydrogen sulfide gas is known to be located in the vicinity of the Wilshire/La Brea, Wilshire/Fairfax, and Wilshire/La Cienega Stations. Hydrogen sulfide has a distinct “rotten-egg” smell and continuous inhalation of hydrogen sulfide can cause deadening of the sense of smell, dizziness, headache, nausea, and respiratory tract irritation. Hydrogen sulfide also could be released from groundwater containing hydrogen sulfide. As a result, aside from odors from vehicle exhaust, the Project could result in odors from hydrogen sulfide. With the implementation of mitigation measures CON-8, CON-51 and CON-52, construction-related odor impacts will be reduced to a less than significant level.



Under the Phased Construction Scenario, the potential for odor impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for odor impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that odor impacts during construction would be reduced to a less than significant level.

## **5.10 Noise and Vibration (Construction)**

### **5.10.1 Vibration**

The construction related vibration impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, vibration impacts during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following criteria:

- For structural building damage – 2.0 PPV or 12- RMS
- For architectural building damage - .5 PPV or 108 RMS
- For damage risk to historic building and cultural resource structures - .12 to .20 PPV or 95 to 100 RMS

#### **5.10.1.1 Impact**

During construction of the Project, impact pile driving at the station boxes will result in adverse vibration impacts. Perceptible vibration levels could be experienced within 200 feet of pile driving operations.

Equipment used for underground construction, such as the TBM and mine trains, could generate vibration levels that could result in audible groundborne noise levels in buildings at the surface, depending on the depth of the tunnel and soil conditions. Operation of the mine trains could contribute to underground construction vibration since they will operate continuously during the excavation, mining, and finishing of the tunnel. TBMs would be below the surface of a structure for no more than a day or two.

#### **5.10.1.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-66 – S-67, Section 4.15.3, Pg. 4-363 – 4-366.

#### **5.10.1.3 Mitigation Measures**

##### **CON-42 Phasing Ground Impacting Operations**

Demolition, earth moving, and ground impacting operations will be phased so as not to occur in the same time period.

##### **CON-43 Alternatives to Impact Pile Driving**

Impact pile driving will be avoided. Drill piles or sonic or vibratory drivers will be used where the geological conditions permit their use and where ground vibration damage risk criteria are satisfied.

**CON-44 Alternative Demolition Methods**

Demolition methods will be selected to minimize noise and vibration impact where possible.

**CON-45 Restriction on Use of Vibratory Rollers and Packers**

Use of vibratory rollers and packers will be avoided near vibration sensitive areas.

**CON-46 Metro Ground-Born Noise and Ground-Born Vibration Limits**

If the Metro ground-borne noise limits or ground-borne vibration limits are exceeded, the contractor will be required to take action to reduce vibrations to acceptable levels. Such action could include reducing the muck train speed, additional rail and tie isolation, and more frequent rail and wheel maintenance.

**5.10.1.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-42 through CON-46 will be enforced by Metro as described in the MMRP.

During construction of the Project, impact pile driving at the station boxes will result in adverse vibration impacts. Perceptible vibration levels could be experienced within 200 feet of pile driving operations. Equipment used for underground construction, such as the TBM and mine trains, could generate vibration levels that could result in audible groundborne noise levels in buildings at the surface, depending on the depth of the tunnel and soil conditions. Operation of the mine trains could contribute to underground construction vibration since they will operate continuously during the excavation, mining, and finishing of the tunnel. TBMs would be below the surface of a structure for no more than a day or two. With the implementation of mitigation measures CON-42 through CON-46, construction-related odor impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for vibration impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for vibration impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that vibration impacts during construction would be reduced to a less than significant level.

**5.11 Geological Hazards (Construction)**

The construction related Geological Hazards Impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, Geological Hazards impacts during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:





- 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
  - Strong seismic ground shaking
  - Seismic-related ground failure, including liquefaction
  - Landslides
- Result in substantial soil erosion or the loss of topsoil.
  - Be located on a geologic unit or soil that is unstable or that will become unstable as a result of the Project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
  - Be located on expansive soil, creating substantial risks to life or property.
  - 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.
  - Construction impacts related to subsidence and settlement and hazardous subsurface gases are discussed in the following sections. Construction impacts related to seismic and liquefaction are discussed in Section 7.0 since impacts are less than significant.

### **5.11.1 Subsidence and Settlement due to Tunneling**

#### **5.11.1.1 Impact**

Tunneling and construction dewatering-induced subsidence poses a potentially significant impact.

Dewatering of the excavations made during construction could result in potentially damaging subsidence adjacent to the construction area.

#### **5.11.1.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-68 – S-69, Section 4.15.3, Pg. 4-369 – 4-370.

#### **5.11.1.3 Mitigation Measures**

##### **CON-47 Use of Pressurized-Face TBMs for Tunnel Construction**

To optimize control of the ground overlying and surrounding the tunnels and limit ground settlement to acceptable levels, pressurized-face TBMs will be used for tunnel construction, which will allow the tunnel lining to be installed and grout to be injected into the annulus between the lining and the ground immediately behind the TBM concurrently and without having to lower groundwater levels by dewatering.

**CON-48 Preconstruction Survey, Instrumentation, and Monitoring**

Preconstruction Survey, Instrumentation, and Monitoring: As added protection to detect tunneling-induced settlement and settlement induced by other excavation activities, pre-construction surveys will be performed to document the existing conditions of buildings along the alignment before tunneling begins, and instrumentation will be installed to monitor structures. During construction, instrumentation (e.g., ground surface and building monitoring programs) will be in place to measure movements and provide information to the resident engineer and contractor on tunneling performance, as well as to document that the settlement specifications are met. If measurements indicate settlement limits could be exceeded, the contractor will be required to change or add methods and/or procedures to comply with those limits. Construction work will be reassessed if settlements exceed action (warning) levels.

**CON-49 Additional Geotechnical Exploration**

During the design phases, additional geotechnical exploration and analysis will be undertaken to confirm areas where dewatering will be required and if it will cause significant subsidence. If these conditions are found, methods to prevent lowering of the groundwater outside of the excavation will be employed. These methods could include use of slurry walls, secant pile walls, or other methods for the construction of the station walls to reduce the settlement impacts due to groundwater lowering.

**CON-50 Additional Methods to Reduce Settlement**

Where conditions warrant (for example, more shallow tunnels directly below sensitive structures or at cross-passages), additional methods to reduce settlement will be specified. Such methods could include the following:

- Permeation grouting to improve the ground prior to tunneling
- Compaction grouting to consolidate the ground above the tunnel
- Compensation grouting as the tunnel is excavated
- Underpinning the structure's foundation

**5.11.1.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-47 through CON-50 will be enforced by Metro as described in the MMRP.

No current significant subsidence problems related to petroleum or groundwater extraction have been identified in the vicinity of the Project alignment. Therefore, the subsidence related to extraction of petroleum and groundwater is not considered a significant hazard to the Project.



Ground settlement may occur from construction activities such as tunneling and dewatering at station areas along the full lengths of the Project. Dewatering is usually not necessary when tunneling with pressure-face TBMs. However, station and cross-passage excavations will encounter the groundwater table and/or perched groundwater, and dewatering may be required to complete the construction in some areas. Dewatering of the excavations made during construction could result in damaging subsidence adjacent to the construction area. However, experience in much of the corridor is that the soils have previously undergone numerous cycles of ground-water fluctuation, and have therefore previously experienced the settlements associated with lowering of the ground water.

No current significant subsidence problems related to oil or groundwater pumping have been identified in the vicinity of the maintenance yard site. Therefore, the subsidence related to extraction of petroleum and groundwater is not considered a significant hazard at any of the yards.

With the implementation of mitigation measures CON-47 through CON-50, construction-related subsidence and settlement impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for subsidence and settlement impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for subsidence and settlement impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that subsidence and settlement impacts during construction would be reduced to a less than significant level.

## **5.11.2 Hazardous Subsurface Gas**

### **5.11.2.1 Impact**

The entire Project alignment passes through an area characterized by oil and gas fields and lies within the City's Methane Zone. Methane and hydrogen sulfide are present in high concentrations along a 1.1-mile stretch of Wilshire Boulevard from about Burnside Avenue on the east to about La Jolla Avenue on the west. Therefore, the possibility of encountering gaseous subsurface conditions can be expected for any portion of the alignment, and hazardous subsurface gases pose a significant hazard for construction of the Project.

### **5.11.2.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-69, Section 4.15.3, Pg. 4-370 – 4-374.



### 5.11.2.3 Mitigation Measures

#### CON-51 Techniques to Lower the Risk of Exposure to Hydrogen Sulfide

In areas where hydrogen sulfide is encountered, several techniques could be used to lower the risk of exposure. The primary measures to prevent exposure to hydrogen sulfide gas are separation of materials from the tunnel environment, and increased ventilation capacity to dilute gases to safe levels as defined by Cal/OSHA. Secondary measures could include pre-treatment of groundwater containing hydrogen sulfide by displacing and oxidation of the hydrogen sulfide by injecting water (possibly containing dilute hydrogen peroxide) into the ground and groundwater in advance of the tunnel excavation. This “in-situ oxidation” method reduces hydrogen sulfide levels even before the ground is excavated. This pre-treatment method is unlikely to be necessary where a slurry-face TBM is used, but may be implemented at tunnel-to-station connections or at cross-passage excavation areas and where open excavation and limited dewatering may be conducted such as emergency exit shafts and low-point sump excavations.

When needed to reduce hydrogen sulfide to safe levels for slurry treatment; additives could be mixed with the bentonite (clay) slurry during the tunneling and/or prior to discharge into the slurry separation plant. For example, zinc oxide could be added to the slurry as a “scavenger” to precipitate dissolved hydrogen sulfide when slurry hydrogen sulfide levels get too high. Gas levels will be maintained in accordance with Cal/OSHA requirements for safe working environments.

#### CON-52 Measures to Reduce Gas Inflows

For the stations in elevated gas zones, the use of relatively impermeable lagging, use of diaphragm or slurry walls or equivalent will be implemented to reduce of gas inflows both during and after construction. The slurry wall provides a thick (typically 3 to 4 feet) concrete barrier against water and gas intrusion, and significantly reduces the need for dewatering the station during construction. Grout tubes can be pre-placed within slurry wall panels to be used in the event leakage occurs. Slurry walls present a challenge in accommodating existing utilities, and typically more utility relocation is required for slurry wall systems. Additional ventilation, continuous monitoring, and worker training for exposure to hazardous gases will also be required during station construction. In extreme cases, some work may require temporary use of personal protective equipment, such as fitted breathing apparatus.

**CON-53 Further Research on Oil Well Locations**

Prior to construction, more detailed research on oil well locations will be conducted. Detection of oil wells will include use of magnetic devices to sense oil well casings within the tunnel alignment. Where the tunnel alignment cannot be adjusted to avoid well casings, the California Department of Conservation (Department of Oil, Gas and Geothermal Resources) will be contacted to determine the appropriate method to re-abandon the well. Oil Well abandonment must proceed in accordance with California Laws for Conservation of Petroleum and Gas (1997), Division 3. Oil and gas, Chapter 1. Oil and Gas Conservation, Article 4, Sections 3228, 3229, 3230, and 3232. The requirements include written notification of the State Department of Oil, Gas and Geothermal Resources (DOGGR), protection of adjacent property, and before commencing any work to abandon any well, obtaining approval by the DOGGR. Abandonment work including sealing off oil/gas bearing units, pressure grouting etc, must be performed by a state-licensed contractor under the regulatory oversight and approval of DOGGR. Similarly, during construction if an unknown well is encountered, the contractor will notify Metro, Cal/OSHA, and the Gas and Geothermal Resources for well abandonment, and proceed in accordance with state requirements.

**CON-54 Worker Safety for Gassy Tunnels**

Although not specifically required for gassy tunnels, workers will be supplied with oxygen-supply-type self-rescuers (breathing apparatus required for safety during evacuation during fires).

**5.11.2.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-51 through CON-54 will be enforced by Metro as described in the MMRP.

Methane and hydrogen sulfide are present in concentrations higher than those encountered in Metro's Red Line Construction, along about a 1.1 mile stretch along Wilshire Boulevard from about Burnside Avenue on the east to about La Jolla Avenue on the west. The entire alignment passes through an area characterized by oil and gas fields and is within the City's Methane Zone. Therefore, the possibility of encountering gaseous subsurface conditions can be expected for any portion of the alignment, and hazardous subsurface gases pose a significant hazard for construction of the Project.

A fully enclosed tunnel mining system, such as a slurry-face TBM (a type of pressurized-face TBM) is expected to be used for tunneling in elevated gassy areas. This area coincides with a reach along Wilshire Boulevard between Burnside Avenue and east of La Jolla Avenue and includes the La Brea Tar Pits area. This technology is considered a considerable improvement over the methods used during construction of Metro's initial Red Line operating segments, and some of this technology was used successfully on Metro's Gold Line Eastside Extension. Slurry-face TBMs minimize exposure of workers to elevated gas concentrations underground, since the excavated soil is removed in a fully enclosed slurry pipeline to an above-ground, enclosed treatment plant. Another type of pressurized-

face TBM is the earth pressure balance (EPB) TBM. If the EPB TBM can operate similarly to a slurry-face TBM—with an enclosed spoil transport system, it will afford similar benefits and will be acceptable for use. New technologies developed over the course of the design phases also will be considered.

For underground construction classified “Gassy” by Cal/OSHA (California Code of Regulations, Title 8, Tunnel Safety Orders), specific requirements will include compliance with the Tunnel Safety Orders as described in Section 4.15 of the Final EIS/EIR. With the implementation of mitigation measures CON-51 through CON-54, construction-related hazardous subsurface gas impacts will be reduced to a less than significant level.

The Project’s maintenance yard will expand the existing Division 20 Maintenance and Storage Facility located adjacent to the Union Station oil field. As such, methane and hydrogen sulfide may be encountered in this area. However, it is not anticipated that the maintenance yard would require construction of any subterranean structures. Therefore, hazardous subsurface gases will not be considered to pose a significant hazard to construction of the maintenance yard.

Under the Phased Construction Scenario, the potential for hazardous subsurface gas impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for hazardous subsurface gas impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that hazardous subsurface gas impacts during construction would be reduced to a less than significant level.

## 5.12 Hazardous Waste and Materials (Construction)

The construction related Hazardous Waste and Materials impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, Hazardous Waste and Materials impacts during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- Creates 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
- Is located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (CGC 1992) and, as a result, creates a significant hazard to the public or the environment.
- Emits hazardous emissions or handles hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
- Results in a safety hazard for people residing or working in the Project area (applies to a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport)
- For a project within the vicinity of a private airstrip, results in a safety hazard for people residing or working in the project area



- Impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan

Exposes people or structures to a significant risk of loss, injury, or death involving wild-land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands.

### **5.12.1 Impact**

The Project is close to areas where underground storage tanks, volatile organic compounds, and oil exploration sites occur. The subway tunnel is expected to be under the lowest point of contaminated soils.

Contaminated groundwater may be encountered during construction. Any contaminated groundwater will be treated in accordance with applicable permits prior to discharge or disposal.

Preparation of construction staging areas will require demolition of structures. In locations where buildings may be demolished or modified, asbestos and/or lead may be present and will be handled by licensed contractors in accordance with applicable regulations.

### **5.12.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-70, Section 4.15.3, Pg. 4-378 – 4-380.

### **5.12.3 Mitigation Measures**

#### **CON-55 Site Assessments**

As detailed design-level plans are prepared, and precise Project excavation limits defined, a more detailed Environmental Site Assessment (Phase II) will be conducted prior to construction in areas of impacted soil. A base line soil sampling protocol will be established with special attention to those areas of environmental concern. The soil will be assessed for constituents likely to be present in the subsurface including, but not limited to, total petroleum hydrocarbons, volatile and semi-volatile organic compounds, polychlorinated biphenyls, polynuclear aromatic hydrocarbons, pesticides, lead arsenates, and Title 22 metals. The depth of the sampling will be based on the depth of excavation or type of construction activities. In addition, in areas where groundwater will be encountered, samples will also be analyzed for suspected contaminants prior to dewatering to ensure that National Pollutant Discharge Elimination System discharge requirements are satisfied.

**CON-56 Soil Reuse**

As detailed design-level plans are prepared, and precise Project excavation dimensions defined, a soil mitigation plan will be prepared showing the extent of soil excavation during construction. The soil mitigation plan will use Metro's Standard Specifications for soil reuse criteria, which include a sampling plan for stockpiled materials, and the disposition of materials that do not satisfy the reuse criteria. It will specify guidelines for imported materials. The plan will include provisions for soil screening for contamination during grading or excavation activities.

**CON-57 Sampling During Construction**

Metro will sample soil suspected of contamination and analyze the excavated soil for the purpose of classifying material and determining disposal requirements. If excavated soil is suspected or known to be contaminated, the contractor to perform the following operations:

Segregate and stockpile the material in a way that will facilitate measurement of the stockpile volume.

Spray the stockpile with water or an SCAQMD-approved vapor suppressant and cover the stockpile with a heavy-duty plastic (e.g., Visqueen) to prevent soil volatilization to the atmosphere or exposure to nearby workers.

**CON-58 Soil Testing**

Soil samples that are suspected of contamination will be analyzed for suspected chemicals by a California certified laboratory. If contaminated soil is found, it will be removed, transported to an approved disposal location and remediated or disposed according to state and federal laws. Where contaminated levels can be diluted to acceptable levels soils may be re-used on-site.

**CON-59 Personal Protection**

The contractor will provide qualified and trained personnel and personal protective equipment (PPE) to perform operations that require the disturbance of contaminated substances including excavation of stations, slurry/tunnel material processing, segregation, stockpiling, loading and hauling.



**CON-60 Contaminated Groundwater**

Groundwater contamination encountered during subsurface construction activities may be treated on-site to acceptable local and state criteria and then discharged into the sanitary sewer. If on-site treatment is not feasible due to the type and severity of the contamination identified, the contaminated ground water may need to be disposed of by recycling in a permitted facility. If unanticipated contaminated groundwater (not included in the health and safety plan) is encountered during construction, the contractor will stop work in the vicinity, cordon off the area, and contact Metro and the appropriate hazardous waste coordinator and maintenance hazardous spill coordinator at Metro and will immediately notify the Certified Unified Program Agencies (City of Los Angeles Fire Department, County of Los Angeles Fire Department, and Los Angeles Regional Water Quality Control Board [LARWQCB]) responsible for hazardous materials and wastes. In coordination with the LARWQCB, an investigation and remediation plan will be developed in order to protect public health and the environment. Any hazardous or toxic materials will be disposed according to local, state, and federal regulations.

**CON-61 Health and Safety Plan**

A health and safety plan will be required by Project specifications. The plan will include response to exposure of personnel to constituents of concern identified in the Phase II Environmental Site Assessment.

**CON-62 Storage of Contaminated Materials**

Hazardous or contaminated materials will be properly stored to prevent contact with precipitation and runoff.

**CON-63 Monitoring the Environment**

An effective monitoring and cleanup program will be developed and implemented for spills and leaks of hazardous materials.

**CON-64 Equipment Repair and Maintenance**

Equipment to be repaired or maintained will be placed in covered areas on a pad of absorbent material to contain leaks, spills, or small discharges.

**CON-65 Removal of Chemical Residue**

Any significant chemical residue on the construction sites will be removed.

**5.12.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-55 through CON-65 will be enforced by Metro as described in the MMRP.



A number of gas stations, dry cleaners and other hazardous waste generators are located in the vicinity of the Project. Contaminated soils could be disturbed by construction activities. Underground storage tanks, volatile organic compounds and oil exploration sites also occur in the Project area. Regulations for handling hazardous materials and suspected contaminated material locations are presented in Section 4.9 of the Final EIS/EIR. The tunnel is expected to be under the lowest point of contaminated soils from gas stations, dry cleaners, and the like; there will still be risks generated by hazardous materials extracted by the TBMs in gassy and tar impacted ground (see Section 4.8, Geologic Hazards, of the Final EIS/EIR). In areas of station excavation, contaminated soils are more likely to be encountered as near surface soils are excavated. During construction, the Project will have a high likelihood of encountering groundwater, which may contain contamination. Based on current and former use, petroleum hydrocarbons, metals, herbicides, and polynuclear aromatic hydrocarbons are likely to present in the soils within the maintenance yard. Areas with unidentified soil and/or groundwater impacts may be present in the Project area.

Construction activity will involve routine transport, use, or disposal of hazardous materials, namely contaminated soils and groundwater; however, these materials are not expected to be acutely hazardous. Construction activities will be unlikely to create accident conditions involving the release of hazardous materials or waste. All hazardous materials, soils, drums, trash, and debris will be removed and disposed of in accordance with State and Federal regulatory guidelines at a licensed Class I, II, or III disposal facility depending on the amount and type of material encountered.

Preparation of construction staging areas will require demolition of structures. In locations where buildings may be demolished or modified, asbestos and/or lead may be present and will be handled by licensed contractors in accordance with applicable regulations. Prior to demolition, the properties will be evaluated for hazardous materials and removal requirements.

With the implementation of mitigation measures CON-55 through CON-65, construction-related hazardous materials impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for hazardous materials impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for hazardous materials impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that hazardous materials impacts during construction would be reduced to a less than significant level.

### **5.13 Ecosystems/Biological Resources (Construction)**

The construction related Ecosystems/Biological Resources impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, Ecosystems/Biological Resources impacts during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- The loss of individuals, or the reduction of existing habitat, of a State- or Federally listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern, or Federally-listed critical habitat
- The loss of individuals, the reduction of existing habitat or plant community



- Interfere with habitat such that normal species behaviors are disturbed (e.g., from introducing noise, light) to a degree that may diminish the chances for the long-term survival of a sensitive species

### **5.13.1 Impact**

Construction of the Project may require the removal or disturbance (including trimming) of mature trees located at the construction sites. A significant impact could occur if an active migratory bird nest located in any of these trees is disturbed during construction. Because the majority of the Study Area provides only low quality habitat for migratory birds, indirect impacts are not expected to be substantial, as only a small number of migratory birds will be displaced, if any.

### **5.13.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-70 – S-71, Section 4.15.3, Pg. 4-378 – 4-380.

### **5.13.3 Mitigation Measures**

#### **CON-66 Biological Survey**

Two biological surveys will be conducted, one 15 days prior and a second 72 hours prior to construction that will remove or disturb suitable nesting habitat. The surveys will be performed by a biologist with experience conducting breeding bird surveys. The biologist will prepare survey reports documenting the presence or absence of any protected native bird in the habitat to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors). If a protected native bird is found, surveys will be continued in order to locate any nests. If an active nest is located, construction within 300 feet of the nest (500 feet for raptor nests) will be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting.

#### **CON-67 Compliance with City Regulations**

If construction or operation of the Project requires removal or pruning of a protected tree, a removal permit will be required in accordance with applicable municipal codes and ordinances of the city in which the affected tree is located. Within the City of Los Angeles, compliance with the Native Tree Protection Ordinance will require a tree removal permit from the Los Angeles Board of Public Works. Similarly, within the City of Beverly Hills, applicable tree protection requirements, such as tree removal permits, will be followed. Tree removal permits may require replanting of protected trees within the Study Area or at another location to mitigate for the removal of these trees.

#### **CON-68 Tree Pruning**

If construction or operation will entail pruning of any protected tree, the pruning will be performed in a manner that does not cause permanent damage or adversely affect the health of the trees.

**CON-69 Avoidance of Migratory Bird Nesting Season**

Construction activities that involve tree removal or trimming will be timed to occur outside the migratory bird nesting season, which occurs generally from March 1st through August 31st and as early as February 1st for raptors.

**5.13.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-66 through CON-69 will be enforced by Metro as described in the MMRP.

All stations will employ the cut-and-cover construction method, whereby all surface conditions within the footprint of the station will be completely disturbed (i.e., all structures, concrete and other surfaces will be demolished and all trees and vegetation removed). Similarly, construction at Division 20 Maintenance Facility could require the removal or disturbance (including trimming) of mature trees located at the site.

Tree removal will require compliance with all applicable tree local tree protection codes, including the City of Los Angeles's Native Tree Protection Ordinance, to ensure impacts will be reduced. Following construction of each underground station, surface conditions will be restored to previous conditions.

A significant impact could occur if an active migratory bird nest located in any of these trees is disturbed during construction. Trees within 100 feet of the construction footprint will not be directly impacted through removal or pruning, but there could still be disturbance of nesting birds due to increased noise and vibration during construction activities. Because the majority of the Study Area provides only low quality habitat for migratory birds, indirect impacts are not expected to be substantial, as only a small number of migratory birds will be displaced, if any.

With the implementation of mitigation measures CON-66 through CON-69, construction-related ecosystems/biological resources impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for ecosystems/biological resources impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for ecosystems/biological resources impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that ecosystems/biological resources impacts during construction would be reduced to a less than significant level.



## **5.14 Hydrology and Water Resources (Construction)**

### **5.14.1 Groundwater**

The construction related groundwater impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, groundwater impacts during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- Substantially deplete groundwater supplies or interfere substantially with 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

#### **5.14.1.1 Impact**

Constructing the Project will involve tunneling that will likely occur at or below groundwater levels. Since dewatering is anticipated, a dewatering permit from the Los Angeles Regional Water Quality Control Board (LARWQCB) is required. Uncontaminated groundwater collected during dewatering will be treated and pumped back into groundwater basins, pumped to the sewer or storm drain system, or used for dust control. If contaminated groundwater is encountered, it will be managed in compliance with applicable permits and regulations. The LARWQCB will have to grant permission to pump groundwater back into the groundwater basins or discharge it into the storm drain system.

#### **5.14.1.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-71 – S-72, Section 4.15.3, Pg. 4-381 – 4-382.

#### **5.14.1.3 Mitigation Measures**

In addition to the mitigation measures identified for geological hazards and hazardous wastes and materials, the following measures are adopted to further avoid and minimize impacts to water resources and water quality as they relate to groundwater:

##### **CON-70 Methods to Control Contaminated Groundwater**

In the event contaminated groundwater is encountered in test borings and it is determined that contamination is likely to spread, this concern will be mitigated during design and engineering. For example, perched contaminated groundwater in upper levels of the excavation could be allowed to contaminate groundwater in lower levels of an excavation. Methods to control this could include isolation of dewatering systems or/and use of groundwater barriers.

##### **CON-71 Plan if Contaminated Groundwater is Encountered**

If contaminated groundwater is encountered during construction, the contractor will stop work in the vicinity, cordon off the area, and contact the appropriate hazardous waste coordinator and maintenance hazardous spill coordinator at Metro and immediately notify the Certified Unified Program Agencies (City of Los Angeles Fire Department, County of Los Angeles Fire Department, and Los Angeles RWQCB) responsible for hazardous materials and wastes. Through coordination with the Los Angeles RWQCB, an investigation and remediation plan will be

developed to protect public health and the environment. The contractor will treat or dispose of any hazardous or toxic materials according to local, State, and Federal regulations.

#### 5.14.1.4 Finding

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-70 through CON-71 will be enforced by Metro as described in the MMRP.

Constructing the Project will involve tunneling which will likely occur at or below groundwater levels. Since dewatering is anticipated, a LARWQCB dewatering permit is required. Uncontaminated groundwater collected during dewatering will be treated and pumped back into groundwater basins, pumped to the sewer or storm drain system, or used for dust control.

Because the Study Area is within an urban area, the likelihood of encountering contaminated groundwater is high. Contaminated groundwater cannot be discharged to the storm drain system. If contaminated groundwater is encountered, it will be managed in compliance with applicable permits and regulations. The LARWQCB will have to grant permission to pump groundwater back into the groundwater basins or discharge it into the storm drain system.

With the implementation of mitigation measures CON-70 through CON-71, construction-related groundwater impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for groundwater impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for groundwater impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that groundwater impacts during construction would be reduced to a less than significant level.

#### 5.14.2 Drainage

The construction related drainage impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, drainage impacts during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- 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
- Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site

##### 5.14.2.1 Impact

The construction of seven stations will affect existing drainage structures. The affected drainage structures will be resized or relocated to maintain drainage requirements and prevent flooding or ponding.



**5.14.2.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-72, Section 4.15.3, Pg. 4-382 – 4-384.

**5.14.2.3 Mitigation Measures**

**CON-72 Erosion and Sediment Control Plan**

An erosion and sediment control plan will be established prior to construction. The plan will include the following BMPs as appropriate:

- Use of natural drainage, detention ponds, sediment ponds, or infiltration pits to allow runoff to collect and to reduce or prevent erosion
- Use of barriers to direct and slow the rate of runoff and to filter out large-sized sediments
- Use of down drains or chutes to carry runoff from the top of a slope to the bottom;
- Control of the use of water for irrigation so as to avoid off-site runoff

**CON-73 Landscape and Construction Debris**

Landscape and construction debris will be periodically and consistently removed.

**CON-74 Use of Non-Toxic Herbicides or Fertilizers**

Non-toxic alternatives will be employed for any necessary applications of herbicides or fertilizers.

**CON-75 Use of Temporary Detention Basins**

Temporary detention basins will be installed to remove suspended solids by settlement.

**CON-76 Water Quality Monitoring**

Water quality of runoff will be periodically monitored before discharge from the site and into the storm drainage system

**CON-77 Use of Stormwater Runoff BMPs**

Construction sites will have BMPs to divert stormwater runoff from entering the construction area. Containment around the site will include use of temporary measures such as fiber rolls to surround the construction areas to prevent any spills of slurry discharge or spoils recovered during the separation process. Downstream drainage inlets will also be temporarily covered to prevent discharge from entering the storm drain system.

**CON-78 Measures to Reduce the Tracking of Sediment and Debris**

Construction entrances/exits will be properly set up so as to reduce or eliminate the tracking of sediment and debris offsite. Appropriate measures will include measures such as grading to prevent runoff from leaving the site, and establishing “rumble racks” or wheel water points at the exit to remove sediment from construction vehicles.

**CON-79 Cleaning of Equipment**

Onsite rinsing or cleaning of any equipment will be performed in contained areas and rinse water will be collected for appropriate disposal.

**CON-80 Construction Site Water Collection**

A tank will be required on work sites to collect the water for periodic offsite disposal. Since the slurry production is a closed-loop system in which the water separated from the discharge slurry is continually recycled, minimal and infrequent water discharges are anticipated. These discharges could be accommodated in a tank onsite to collect the water and disposed of periodically.

**CON-81 Soil and Building Material Storage**

Soil and other building materials (e.g., gravel) stored onsite must be contained and covered to prevent contact with stormwater and offsite discharge.

**5.14.2.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-72 through CON-81 will be enforced by Metro as described in the MMRP.

Although tunnel construction will occur from between 40 and 110 feet below the ground surface, which is deep enough to avoid impacts to existing drainage structures, constructing seven stations will affect existing drainage structures. The affected drainage structures will be resized or relocated to maintain drainage requirements and prevent flooding or ponding.

With the implementation of mitigation measures CON-72 through CON-81, construction-related drainage impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for drainage impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for drainage impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that drainage impacts during construction would be reduced to a less than significant level.





### **5.14.3 Water Quality**

The construction related water quality impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, water quality impacts during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- Violate any applicable water quality standard or waste discharge requirement, including those defined in Section 13050 of the Clean Water Act

#### **5.14.3.1 Impact**

The Project does not cross any surface water and is not near surface water. Construction will be conducted in accordance with applicable regulatory requirements and permits. No significant impacts to surface-water hydrology are anticipated.

Disposal will be in compliance with applicable municipal National Pollution Discharge Elimination System permits and waste discharge requirements. As a result, the handling and disposal of wastewater will not result in significant impacts to water quality.

Trenching and tunneling could expose contaminated groundwater and create preferential pathways for the underground spread of contaminated groundwater. Using impermeable material for underground structures will reduce contaminant migration.

#### **5.14.3.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-73, Section 4.15.3, Pg. 4-384 – 4-386.

#### **5.14.3.3 Mitigation Measures**

##### **CON-72 Erosion and Sediment Control Plan**

An erosion and sediment control plan will be established prior to construction. The plan will include the following BMPs as appropriate:

- Use of natural drainage, detention ponds, sediment ponds, or infiltration pits to allow runoff to collect and to reduce or prevent erosion
- Use of barriers to direct and slow the rate of runoff and to filter out large-sized sediments
- Use of down drains or chutes to carry runoff from the top of a slope to the bottom;
- Control of the use of water for irrigation so as to avoid off-site runoff

##### **CON-73 Landscape and Construction Debris**

Landscape and construction debris will be periodically and consistently removed.

**CON-74 Use of Non-Toxic Herbicides or Fertilizers**

Non-toxic alternatives will be employed for any necessary applications of herbicides or fertilizers.

**CON-75 Use of Temporary Detention Basins**

Temporary detention basins will be installed to remove suspended solids by settlement.

**CON-76 Water Quality Monitoring**

Water quality of runoff will be periodically monitored before discharge from the site and into the storm drainage system

**CON-77 Use of Stormwater Runoff BMPs**

Construction sites will have BMPs to divert stormwater runoff from entering the construction area. Containment around the site will include use of temporary measures such as fiber rolls to surround the construction areas to prevent any spills of slurry discharge or spoils recovered during the separation process. Downstream drainage inlets will also be temporarily covered to prevent discharge from entering the storm drain system.

**CON-78 Measures to Reduce the Tracking of Sediment and Debris**

Construction entrances/exits will be properly set up so as to reduce or eliminate the tracking of sediment and debris offsite. Appropriate measures will include measures such as grading to prevent runoff from leaving the site, and establishing “rumble racks” or wheel water points at the exit to remove sediment from construction vehicles.

**CON-79 Cleaning of Equipment**

Onsite rinsing or cleaning of any equipment will be performed in contained areas and rinse water will be collected for appropriate disposal.

**CON-80 Construction Site Water Collection**

A tank will be required on work sites to collect the water for periodic offsite disposal. Since the slurry production is a closed-loop system in which the water separated from the discharge slurry is continually recycled, minimal and infrequent water discharges are anticipated. These discharges could be accommodated in a tank onsite to collect the water and disposed of periodically.

**CON-81 Soil and Building Material Storage**

Soil and other building materials (e.g., gravel) stored onsite must be contained and covered to prevent contact with stormwater and offsite discharge.



#### **5.14.3.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-72 through CON-81 will be enforced by Metro as described in the MMRP.

The Project does not cross any surface water and is not near surface water. Construction will be conducted in accordance with applicable regulatory requirements and permits. No adverse effects to surface water hydrology are anticipated.

Surface construction, such as grading and excavation, could result in water quality impacts from increases in erosion and sedimentation. Tunneling creates the opportunity for excavated materials to come into contact with stormwater or to be discharged to stormwater drainage. Runoff during construction will be routed to existing storm drain systems and/or lined channels, thereby avoiding offsite erosion. Best Management Practices (BMPs) in the Storm Water Pollution Prevention Plan (SWPPP) will also minimize construction impacts to water quality.

The water used in tunneling slurry and for cooling is also where pollutants may be found. While much of the cooling water will be recycled and reused, the cooling process will create wastewater that will be contained onsite and disposed of as permitted. Disposal will be in compliance with applicable municipal National Pollution Discharge Elimination System permits and waste discharge requirements. As a result, the handling and disposal of wastewater will not result in adverse impacts to water quality.

Trenching and tunneling could expose contaminated groundwater and create preferential pathways for the underground spread of contaminated groundwater. Using impermeable material for underground structures will reduce contaminant migration.

With the implementation of mitigation measures CON-72 through CON-81, construction-related water quality impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for water quality impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for water quality impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that water quality impacts during construction would be reduced to a less than significant level.

### **5.15 Parklands and Community Facilities (Construction)**

The construction related parklands and community facilities impacts of the Project were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, parklands and community facilities impacts during construction will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- Result in substantial adverse physical impacts associated with the provision of 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 public services

### 5.15.1 Impact

Construction of the Project could affect parklands and community facilities for limited durations due to street and sidewalk closures and traffic detours, especially in areas of station construction. Construction and traffic detours will temporarily reduce access to businesses and communities. In addition, noise and emissions from haul trucks and construction equipment could disrupt community activities. Access to parks, recreation centers, and museums will be maintained during construction.

Police and fire emergency response routes to businesses and residences could be disrupted within the vicinity of construction areas. However, to minimize disruptions, the Beverly Hills Police Department (BHPD) and the Los Angeles Police Department (LAPD) will be informed of all lane closures and detours prior to construction so that emergency routes can be adjusted accordingly.

### 5.15.2 Reference

Final EIS/EIR Executive Summary, Pg. S-74, Section 4.15.3, Pg. 4-386 – 4-388.

### 5.15.3 Mitigation Measures

#### CON-82 Communication with Schools

School districts and private school institutions along the alignment will be informed of changes to Metro bus routes, school bus routes, and pedestrian crossings prior to construction.

#### CON-83 Work with Transportation, Police, Public Works, and Community Service Departments

Metro will work with transportation, police, public works, and community services departments of jurisdictions along the alignment to implement mutually agreed upon measures, such as posting of clearly marked signs, pavement markings, lighting as well as implementing safety instructional programs, to enhance the safety of pedestrians, particularly in the vicinity of schools and access routes to hospitals. The measures will be developed to conform to Metro Rail Transit Design Criteria and Standards, Fire/Life Safety Criteria, Volume IX.

#### CON-84 Instructional Rail Safety Programs for Schools

Metro will provide at no charge to school districts an instructional rail safety program with materials to all affected elementary middle and high schools.



**CON-85 Informational Program to Enhance Safety**

Metro will provide an on-going informational program to nearby medical facilities, senior centers, and parks if requested by these facilities, to enhance safety. The program will be similar to that described for the schools except the information and materials provided will be geared toward senior citizens.

**CON-86 Traffic Control**

Contractors will be required to control traffic during construction by following the City of Los Angeles Work Area Traffic Control Manual; City of Los Angeles Bureau of Engineering Standard Plan S-610-12 (Notice to Contractors-Comprehensive); and the Bureau of Engineering Standard Specifications for Public Works Construction. Comparable standards will be enforced for work conducted in the other jurisdictions along the alignment.

**CON-87 Designation of Safe Emergency Vehicle Routes**

Safe emergency vehicle routes will be designated around construction sites. The identification of the routes will be coordinated with other agencies.

**5.15.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-82 through CON-87 will be enforced by Metro as described in the MMRP.

Metro's construction policy for the Project is to ensure that streets and alleys remain accessible to residences, businesses, and other uses. Implementation of this policy will ensure that access to parks, recreation centers, and museums are maintained during construction. Lane closures and detours associated with construction and cut-and-cover activities could result in the temporary loss of street parking in the vicinity of construction staging areas. The temporary loss of street parking near the Wilshire/Fairfax Station will not have an adverse effect on LACMA, Hancock Park, the George C. Page Museum, or the Petersen Automotive Museum because these facilities have on-site parking for staff and patrons.

Some community facilities will be temporarily impacted by the loss of on-street parking. However, the loss of parking will be temporary and, therefore, minimal construction impacts to community facilities are anticipated.

Access to police and fire stations will not be affected by construction activities at laydown/staging sites or cut-and-cover activities for stations because none are adjacent to where these activities will occur. Police and fire emergency response routes to businesses and residences could be disrupted within the vicinity of construction areas. However, to minimize disruptions, the LASD, BHPD and the LAPD will be informed of all lane closures and detours prior to construction so that emergency routes can be adjusted accordingly. Access to necessary collector streets, local streets, and alleys will be maintained, thereby ensuring emergency access routes for the LASD, BHPD and LAPD.

Hospitals and medical care facilities located near proposed construction sites that may be impacted due to emissions, noise and vibration include the VA Hospital. Please see the air quality and noise and vibration sections above regarding any temporary construction related impacts and their associated mitigation measures. Access to hospitals and medical care facilities will be maintained during lane closures and detours associated with construction and cut-and-cover activities.

Construction tunneling activities could occur underneath Beverly Hills High School (between Wilshire/Rodeo and Century City Constellation). As discussed in Section 4.15.3 of the Final EIS/EIR, equipment used for tunneling could result in audible ground-borne vibration. Mitigation measures, such as rail isolation materials, will be implemented to minimize impacts to a less than significant level.

Lane closures and detours due to cut-and-cover construction activities could temporarily affect existing vehicular and pedestrian travel routes to school facilities, as well as result in a temporary loss of street parking in the immediate vicinity of construction staging areas. School districts and private schools near construction areas will be informed of changes to Metro bus routes, street closures, and pedestrian crossings prior to construction. Metro will ensure safety by developing measures that increase the safety of pedestrians near schools. The majority of schools within one-quarter mile of the Project are outside of the immediate construction zone and the area where a loss of parking will occur during construction; therefore, they will not be affected by the loss of on-street parking during construction.

With the implementation of mitigation measures CON-82 through CON-87, construction-related parklands and community resources impacts will be reduced to a less than significant level.

Under the Phased Construction Scenario, the potential for parklands and community resources impacts during construction will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for parklands and community resources impacts and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that community resources impacts during construction would be reduced to a less than significant level.

## 5.16 Economic and Fiscal—Construction-related Economic Losses

The construction related impacts of the Project on businesses were evaluated in Section 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, impacts to businesses near or adjacent to construction sites will be considered significant if the construction of the Westside Subway Extension Project results in the following:

- Traffic disruptions
- Increased noise, vibration, and dust
- Modified vehicular and pedestrian traffic patterns
- Utility disruptions



- Reduced business access

### **5.16.1 Impact**

Construction of the Project will have temporary impacts on businesses, particularly those near or adjacent to construction sites. Construction impacts will include: traffic disruption, increased noise, vibration, and dust; modified vehicular and pedestrian traffic patterns; and utility disruptions. Sidewalks could be temporarily obstructed for station and tunnel construction, thereby reducing business access. A temporary loss of parking during construction will occur. Business impacts could also include reduced visibility or commercial signs and business locations.

### **5.16.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-75, Section 4.15.3, Pg. 4-388 – 4-389.

### **5.16.3 Mitigation Measures**

#### **CON-88 Minimize Disruption of Access to Businesses**

Both standard and site-specific mitigation measures will be developed to minimize disruption of pedestrian access to businesses and disruption of general vehicular traffic flow or access to specific businesses.

#### **CON-1 Signage**

Signage to indicate accessibility to businesses will be used in the vicinity of construction activity.

**TCON-1 Traffic Control Plans**

Site-specific traffic-control plans will be developed to minimize construction impacts for each work zone location. These locations will include, but not be limited to, utility relocations, stations, crossovers, laydown areas, TBM launch and removal locations, emergency exit shafts, station entrances, drop pipes, and grout injection. Traffic-control plans will follow State and local jurisdiction guidelines and standards. Traffic-control plans will be developed for Wilshire, Santa Monica, and Constellation Boulevards and north-south streets, including, but not limited to, La Brea Avenue, Fairfax Avenue, La Cienega Boulevard, Rodeo Drive, Beverly Drive, Canon Drive, Century Park East, Avenue of the Stars, Westwood Boulevard, Veteran Avenue, Sepulveda Boulevard, I-405 ramps to/from eastbound Wilshire Boulevard, and Bonsall Avenue. Traffic control plans will encompass the following:

- Minimum lane widths
- Number of available travel lanes (two lanes minimum in each direction during peak periods)
- Number, length, and location of temporary right and left-turn lanes
- Temporary street closures and detour routes
- Traffic-control devices (signing and striping)
- Temporary traffic signals and street lighting
- Temporary pedestrian access and routes
- Temporary bicycle routes
- Temporary driveway access
- Temporary business access
- Construction site phasing

To facilitate traffic flow and mitigate major disruption and bottlenecks due to construction, advanced traffic control will extend beyond one arterial street on each side of each station construction location. This will help disperse peak-hour traffic flows onto the adjacent arterial street network. Business owners will be interviewed to identify the type of business, delivery and shipping schedules, and critical days/times of years for the business. Traffic-control plans will incorporate this information. Specific street closures will be developed in close coordination with the local jurisdictions during the Final Design phase.





**TCON-4 Transportation Management Plan**

Once subway construction sequencing/phasing and the truck haul routes have been concurred upon by Metro and reviewed by local jurisdictions and Caltrans, an overall Project Transportation Management Plan (TMP) will be developed with and approved by Metro and other appropriate agencies. The TMP will include the following:

- Public information (e.g., media alerts, website)
- Traveler information (e.g., traffic advisory radio, changeable message signs (CMS))
- Incident management (e.g., TMP coordination, tow truck services)
- Construction (e.g., detour routes, haul routes, mitigation, construction times)
- Demand management (e.g., carpooling, express bus service, variable work hours, parking management)
- Coordination with concurrent Projects

The TMP will also address individual and overlapping haul route impacts and will impacts resulting from concurrent and overlapping station(s) and tunnel excavation work.

**TCON-7 Parking Management**

A parking management program will be developed to minimize impacts due to temporary removal of on- and off-street parking within the construction work zone. The program will incorporate appropriate parking control measures, replacement parking within a reasonable distance from the affected parking locations, if available, or other transportation demand management (TDM) strategies. Development of the parking management program will be coordinated with the appropriate local jurisdictions and affected communities or property owners and be incorporated into the TMP.

**TCON-8 Parking Monitoring and Community Outreach**

In addition, a parking monitoring and community outreach program will be established during the construction phase of the Project to monitor on-street parking activity. If a parking shortage is identified during construction, Metro will work with the appropriate local jurisdiction and affected communities or property owners to assess the shortage level and implement mitigation as part of the parking management program.

**TCON-10 Pedestrian Routes and Access**

Safe pedestrian routes and access will be provided through and/or adjacent to construction work areas. Pedestrian routes and access, including temporary pedestrian facilities, will comply with the requirements of the ADA and must be properly signed and lighted. Special facilities, such as handrails, fences, and walkways, will be provided for pedestrian safety. Temporary pedestrian routes and access concerns will be addressed with, but not limited to, local residents, the VA Hospital, schools, and businesses and approved by the local jurisdiction. Pedestrian routes and access will be monitored and maintained throughout construction.

**TCON-11 Bicycle Paths and Access**

Bicycle traffic (e.g., paths, lanes, and routes) will be maintained safely through and adjacent to construction work areas. If bicycle traffic cannot be maintained, then alternative temporary bicycle routes will be identified, signed, and lighted. These alternative routes should be on adjacent streets that can safely accommodate bicycle traffic. Development of these routes will be coordinated with bicycle groups and local jurisdictions. Temporary routes will require approval by the local jurisdiction. Bicycle access will be monitored and maintained throughout construction.

**5.16.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Mitigation measures CON-88, CON-1, TCON-1, TCON-4, TCON-7, TCON-8, TCON-10, and TCON-11 will be enforced by Metro as described in the MMRP.

The mitigation measures above will reduce construction-related impacts resulting in economic losses and will ensure at least one access point to businesses will be maintained at all times. With implantation of these measures, construction of the Project will not result in any adverse effects or significant economic impacts to businesses.

Under the Phased Construction Scenario, the potential for construction-related economic losses will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for construction-related economic losses and implementation of mitigation measures.

For the reasons stated above, the Metro Board finds that construction-related economic losses would be reduced to a less than significant level.



## **6.0 ENVIRONMENTAL IMPACTS FOUND SIGNIFICANT AFTER IMPLEMENTATION OF MITIGATION MEASURES**

The Final EIS/EIR identified the following significant or potentially significant impacts that cannot be mitigated to a less than significant level, despite the implementation of mitigation measures. These mitigation measures will be adopted as part of the Project and after implementation, where impacts remain significant, Metro finds that changes or alterations have been required in, or incorporated into, the Project which mitigate the significant impacts on the environment. As stated in CEQA guidelines Section 15091, the Metro Board also finds where measures to mitigate the significant impacts are infeasible, that “Specific economic, legal, social, technological, or other considerations, including provisions of employment opportunities for highly trained workers, make infeasible mitigation measures or Project alternatives” identified in the Final EIS/EIR. The Metro Board further finds that the Project has been designed in a manner that reduces impacts to the maximum extent reasonably feasible, and that the specific economic, legal, social, and technological benefits of the Project are identified in Section 10, Statement of Overriding Considerations, of these Findings.

### **6.1 Transportation (Construction)**

The construction related Transportation Impacts of the Project were evaluated in Chapter 3 of the Final EIS/EIR. For the Westside Subway Extension Project, potential construction related transportation impacts could involve construction detours as well as construction-related obstacles to existing transit, parking, bicycle facilities, and pedestrians.

There are a few applicable quantitative standards of significance related to transit impacts. The measurement and prediction of level of service at potentially affected intersections is a standard that is used to evaluate the significance of potential traffic impacts. Predicted changes in level of service provide indications of how well road-based movements may function under different conditions, which may have implications for vehicular traffic, and certain types of transit and non-motorized transportation. For the Westside Subway Extension Project, the following criteria were used:

#### **Traffic and Circulation**

A substantial increase in traffic delay or degradation in level-of-service for traffic operations or alternative modes.

#### **Public Transit**

- Transit travel times,
- Speed and reliability,
- Transit ridership, and
- Passenger comfort and convenience.

#### **Parking**

- The availability of parking within one-half mile walking distance; and
- The availability of loading zones in relation to the location of commercial enterprises.

## **Pedestrian and Bicycle Access**

- Detours that might lengthen bicycle commutes or pedestrian routes (which would increase travel time); and
- Safety of alternative routes.

### **6.1.1 Traffic and Circulation (Construction)**

#### **6.1.1.1 Impact**

Truck traffic volume will increase during construction of the Project along anticipated haul routes. Table 3-19 in the Final EIS/EIR shows roadways proposed as haul routes and Table 3-21 in the Final EIS/EIR shows the estimated daily haul truck trips. The truck volumes will range from 25 daily trips for the emergency exit shaft at the Westwood/VA Hospital Station and the Wilshire/Crenshaw construction staging area to between 100 and 140 trips for the tunnel boring machine launch activity at Westwood/VA Hospital.

Increased truck traffic volume could cause visual, noise and vibration impacts along haul routes. These impacts would be felt by residential land uses in particular. Section 3.8.1 of the Final EIS/EIR identifies potential streets which may be used for haul routes where clusters of residential units are located.

Traffic impacts associated with Project construction include reduced roadway traffic lanes and temporary street closures which could result in major traffic disruptions and bottlenecks. Additionally, commercial driveways maybe subject to reduced access around construction sites.

Emergency vehicle access (e.g. police, fire and rescue, and ambulance) in and around construction work sites may be affected by lane closures and/or temporary street closures.

#### **6.1.1.2 Reference**

Final EIS/EIR Executive Summary, S-38, Section 3.1, Pg. 3-12 – 3-13, Section 3.8.2, Pg. 3-98 – 3-105, Section 3.8.6, Pg. 3-110 – 3-111.

#### **6.1.1.3 Mitigation Measures**

##### **TCON-1 Traffic Control Plans**

Site-specific traffic-control plans will be developed to minimize construction impacts to the degree possible for each work zone location. These locations will include, but not be limited to, utility relocations, stations, crossovers, laydown areas, TBM launch and removal locations, emergency exit shafts, station entrances, drop pipes, and grout injection. Traffic-control plans will follow State and local jurisdiction guidelines and standards. Traffic-control plans will be developed for Wilshire, Santa Monica, and Constellation Boulevards and north-south streets, including, but not limited to, La Brea Avenue, Fairfax Avenue, La Cienega Boulevard, Rodeo Drive, Beverly Drive, Canon Drive, Century Park East, Avenue of the Stars, Westwood Boulevard, Veteran Avenue, Sepulveda Boulevard, I-405 ramps to/from eastbound Wilshire Boulevard, and Bonsall Avenue. Traffic-control plans



will encompass the following:

- Minimum lane widths
- Number of available travel lanes (two lanes minimum in each direction during peak periods)
- Number, length, and location of temporary right and left-turn lanes
- Temporary street closures and detour routes
- Traffic-control devices (signing and striping)
- Temporary traffic signals and street lighting
- Temporary pedestrian access and routes
- Temporary bicycle routes
- Temporary driveway access
- Temporary business access
- Construction site phasing

To facilitate traffic flow and mitigate major disruption and bottlenecks due to construction, advanced traffic control will extend beyond one arterial street on each side of each station construction location. This will help disperse peak-hour traffic flows onto the adjacent arterial street network. Business owners will be interviewed to identify the type of business, delivery and shipping schedules, and critical days/times of years for the business. Traffic-control plans will incorporate this information. Specific street closures will be developed in close coordination with the local jurisdictions during the final design phase.

**TCON-2 Designated Haul Routes**

Designated truck haul routes using arterial streets are intended to minimize noise, vibration, and other possible impacts to adjacent businesses, schools, major commercial developments, and residential neighborhoods. Metro will incorporate the following objectives into its truck haul route plans:

Establish nighttime truck haul operations times/days for each route. Truck haul operations will not be allowed in the AM and PM peak hours, in residential neighborhoods (where feasible), during noise restriction hours and special events, holiday season restrictions, and as restricted by State and local jurisdictional mandates.

Establish truck haul headways to avoid platoons of trucks upon local arterial streets and freeways. Establish a vehicle dispatching system at construction laydown areas

and off-site locations to monitor and address truck headway issues as they arise.

Develop truck haul routes for each site in coordination with and approved by State and local jurisdictions.

Incorporate comments and issues from State and local jurisdictions into the final approved truck haul routes and truck haul operation schedules.

### **TCON-3 Emergency Vehicle Access**

Emergency vehicle access will be maintained at all times to the construction work site, adjacent businesses, and residential neighborhoods. In addition, emergency vehicle access will be maintained at all times to and from fire stations, hospitals, and medical facilities near the construction sites and along the haul routes. Project construction activities and haul route operations will be coordinated with local law enforcement representatives and fire department officials during the final design phase.

### **TCON-4 Transportation Management Plan**

Once subway construction sequencing/phasing and the truck haul routes have been concurred upon by Metro and reviewed by local jurisdictions and Caltrans, an overall Project Transportation Management Plan (TMP) will be developed with and approved by Metro and other appropriate agencies. The TMP will include the following:

- Public information (e.g., media alerts, website)
- Traveler information (e.g., traffic advisory radio, changeable message signs (CMS))
- Incident management (e.g., TMP coordination, tow truck services)
- Construction (e.g., detour routes, haul routes, mitigation, construction times)
- Demand management (e.g., carpooling, express bus service, variable work hours, parking management)
- Coordination with concurrent Projects

The TMP will also address individual and overlapping haul route impacts and will address impacts resulting from concurrent and overlapping station(s) and tunnel excavation work.

### **TCON-5 Coordination with Planned Roadway Improvements**

Construction of the subway and new station locations will be coordinated with local jurisdictions for future programmed projects, such as the Wilshire Bus Rapid



Transit project.

#### **6.1.1.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Nevertheless, implementation of these mitigation measures would not be sufficient to reduce the impacts to a less than significant level and the impacts remain significant and unavoidable. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

Estimated traffic- and circulation-related impacts resulting from construction are associated with contractor work and storage areas, stations, crossovers, mining entry/exit locations, TBM operations and supporting activities, truck haul routes, transportation of oversized construction materials, station entrances, station appendages, grout injection, and drop holes for the Project.

Haul routes were selected where feasible to avoid residential areas. To minimize peak-period traffic disruptions, haul truck activity is anticipated to take place during off-peak and nighttime periods. Implementation of mitigation measure TCON-2 will reduce anticipated impacts related to haul routes.

Implementation of mitigation measure TCON-2, the establishment of traffic control zones, traffic lane maintenance, limiting street closures, and providing detours will greatly reduce the construction related impacts on traffic and circulation; however, these impacts will remain significant and unavoidable during the construction period. For the reasons stated above, the Metro Board finds that construction impacts related to traffic and circulation set out above would be significant even with mitigation.

Implementation of mitigation measures TCON-1, TCON-3, TCON-4, and TCON-5 would minimize traffic disruptions, and the effect of those disruptions, during the construction period, including emergency vehicle access. These mitigation measures cannot completely eliminate all traffic disruptions during the construction period. Some disruptions and bottlenecks will still result on occasion. These impacts will remain significant and unavoidable during the construction period. For the reasons stated above, the Metro Board finds that construction impacts related to traffic and circulation set out above would be significant even with mitigation. These impacts, however, are temporary in that they would not continue after the construction period.

All of these measures would apply under all construction scenarios as set out in Table 3-1 of the Final EIS/EIR.

### **6.1.2 Public Transit (Construction)**

#### **6.1.2.1 Impact**

Bus service will be impacted by temporary street closures and will require the temporary rerouting of bus lines and bus stop locations. This will result in additional transit travel time for bus riders.

### 6.1.2.2 Reference

Final EIS/EIR Section 3.1, Pg. 3-13, Section 3.8.3, Pg. 3-98 – 3-105, Section 3.8.6, Pg. 3-111 – 3-112.

### 6.1.2.3 Mitigation Measures

#### TCON-6 Temporary Bus Stops and Route Diversions

Construction impacts to local and regional transit operations (e.g., Metro Bus, Santa Monica Big Blue Bus, Culver City Bus, LAX Flyaway, DASH, and UCLA Campus Shuttle) will be mitigated to minimize impacts to the degree possible at each station construction location. Impacts to local and regional transit will be mitigated through, but not be limited to, the use of temporary relocated bus stops and temporary route diversions. Impacts to local and regional transit operations will be coordinated with each transit agency and/or provider. In addition, the Final Design-level mitigation proposals will be approved by the transit agency and/or provider and the local jurisdictions and incorporated into the TMP.

### 6.1.2.4 Finding

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Nevertheless, implementation of these mitigation measures would not be sufficient to reduce the impacts to a less than significant level and the impacts remain significant and unavoidable. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

Temporary street closures will require temporary rerouting of bus lines and additional bus stop locations. The rerouting of bus lines will add transit travel time for bus riders. Implementation of mitigation measure TCON-6 will minimize public transit impacts to the degree possible at each station construction location. Additionally, prior to implementation of any temporary street closures or any changes affecting bus stop locations and operations, the transit providers will be contacted at least 100 days in advance.

Although implementation of mitigation measure TCON-6 will reduce construction related impacts on public transit, these impacts will remain significant and unavoidable during the construction period. For the reasons stated above, the Metro Board finds that construction impacts related to public transit set out above would be significant even with mitigation.

All of these measures would apply under all construction scenarios as set out in Table 3-1 of the Final EIS/EIR.

### 6.1.3 Parking (Construction)

#### 6.1.3.1 Impact.

During construction, existing on-street parking and loading zones will be temporarily removed where traffic lanes are closed or eliminated temporarily. In addition a number of off-street parking





spaces will be removed during construction of the Wilshire/La Cienega, Wilshire/Rodeo, Century City Santa Monica, Westwood/UCLA (On-Street and Off-Street), and Westwood/VA Hospital (North and South) Stations.

**6.1.3.2 Reference.**

Final EIS/EIR Executive Summary, Pg. S-39, Section 3.1, Pg. 3-14, Section 3.8.4, Pg. 3-98 – 3-105, Section 3.8.6, Pg. 3-112.

**6.1.3.3 Mitigation Measures.**

**TCON-7 Parking Management**

A parking management program will be developed to minimize impacts due to temporary removal of on- and off-street parking within the construction work zone. The program will incorporate appropriate parking control measures, replacement parking within a reasonable distance from the affected parking locations, if available, or other transportation demand management (TDM) strategies. Development of the parking management program will be coordinated with the appropriate local jurisdictions and affected communities or property owners and be incorporated into the TMP.

**TCON-8 Parking Monitoring and Community Outreach**

In addition, a parking monitoring and community outreach program will be established during the construction phase of the Project to monitor on-street parking activity. If a parking shortage is identified during construction, Metro will work with the appropriate local jurisdiction and affected communities or property owners to assess the shortage level and implement mitigation as part of the parking management program.

**TCON-9 Construction Worker Parking**

Metro will require that all construction contractors identify adequate off-street parking for construction workers at Metro-approved locations. This will occur for each construction site to minimize additional loss of parking. Metro will work with construction contractors on implementation of adequate off-street parking for construction workers.

**6.1.3.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Nevertheless, implementation of these mitigation measures would not be sufficient to reduce the impacts to a less than significant level and the impacts remain significant and unavoidable. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

The Century City Santa Monica, Westwood/UCLA Off-Street, and Westwood/VA Hospital North Stations were not selected as part of the approved Project; therefore impacts related to these station options will not require any mitigation.

Although implementation of mitigation measure TCON-7 through TCON-9 and will minimize construction related impacts on parking, these impacts will remain significant and unavoidable during the construction period. For the reasons stated above, the Metro Board finds that construction impacts related to parking set out above would be significant even with mitigation.

All of these measures would apply under all construction scenarios as set out in Table 3-1 of the Final EIS/EIR.

#### **6.1.4 Pedestrian and Bicycle Access (Construction)**

##### **6.1.4.1 Impact**

During construction, pedestrian and bicycle access in and around construction work sites will be impacted as a result of street and sidewalk closures and disruptions to bike routes.

##### **6.1.4.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-40, Section 3.1, Pg. 3-14, Section 3.8.5, Pg. 3-98 – 3-105, Section 3.8.6, Pg. 3-113.

##### **6.1.4.3 Mitigation Measures.**

###### **TCON-10 Pedestrian Routes and Access**

Safe pedestrian routes and access will be provided through and/or adjacent to construction work areas. Pedestrian routes and access, including temporary pedestrian facilities, will comply with the requirements of the ADA and must be properly signed and lighted. Special facilities, such as handrails, fences, and walkways, will be provided for pedestrian safety. Temporary pedestrian routes and access concerns will be addressed with, but not limited to, local residents, the VA Hospital, schools, and businesses and approved by the local jurisdiction. Pedestrian routes and access will be monitored and maintained throughout construction.

###### **TCON-11 Bicycle Paths and Access**

Bicycle traffic (e.g., paths, lanes, and routes) will be maintained safely through and adjacent to construction work areas. If bicycle traffic cannot be maintained, then alternative temporary bicycle routes will be identified, signed, and lighted. These alternative routes should be on adjacent streets that can safely accommodate bicycle traffic. Development of these routes will be coordinated with bicycle groups and local jurisdictions. Temporary routes will require approval by the local jurisdiction. Bicycle access will be monitored and maintained throughout construction.

##### **6.1.4.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which

mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Nevertheless, implementation of these mitigation measures would not be sufficient to reduce the impacts to a less than significant level and the impacts remain significant and unavoidable. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

In general, sidewalk access will be maintained on both sides of the street at Metro construction sites throughout the construction period. Pedestrian access to all businesses will be maintained during essential business operating hours without any requirement for the business owners to make such a request. All temporary sidewalk designs shall be submitted to Metro and agencies having jurisdiction for approval prior to installation. During certain circumstances, sidewalk closures may be necessary for limited periods. At these specific locations, limited closures will be implemented after acceptance and approval by the affected agency having jurisdiction. In addition, only one side of the street will be closed at a time (mitigation measure TCON-10).

During construction, bike routes will be maintained past all construction sites, whether via widened sidewalks or signed or striped bike detour routes (mitigation measure TCON-11).

Although implementation of mitigation measure TCON-10 and TCON-11 will reduce construction related impacts on pedestrian and bicycle access, these impacts will remain significant and unavoidable during the construction period. For the reasons stated above, the Metro Board finds that construction impacts related to pedestrian and bicycle access set out above would be significant even with mitigation.

All of these measures would apply under all construction scenarios as set out in Table 3-1 of the Final EIS/EIR.

## **6.2 Historic, Archeological, and Paleontological Resources**

The Historic, Archaeological, and Paleontological Resources Impacts of the Project were evaluated in Section 4.14 of the Final EIS/EIR. The Final EIS/EIR evaluated potential effects to historic, archaeological, and paleontological resources during construction and operation of the proposed project. As explained in the Final EIS/EIR, a significant impact to historic, archaeological, and paleontological resources during operations and construction would occur if the Westside Subway Extension Project would:

- Causes a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5
- Causes a substantial adverse change in the significance of a historical resource as defined in Section 15064.5
- Directly or indirectly destroys a unique paleontological resource or site or unique geologic feature
- Disturbs any human remains, including those interred outside of formal cemeteries
- Demolish or materially alter a significant archaeological, historic, or paleontological resource.

## **6.2.1 Historic Resources**

### **6.2.1.1 Impact.**

One of the 41 historic properties within the Project APE has a determination of Adverse Effect—Ace Gallery, which would be demolished for a station entrance and for construction staging. If the Project is constructed in phases, the Ace Gallery will be demolished during the implementation of Phase 2.

Four historic properties with a determination of No Adverse Effect will be altered by either the LPA construction staging activities or station entrance options. These properties include the May Company Wilshire/LACMA West, Union Bank Building, Linde Medical Plaza and the VA Center Historic District Landscape. If the Project is constructed in phases, both of these historic properties would be located in Phase 3.

### **6.2.1.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-51, Section 4.14.5, Pg. 4-305 – 4-316.



### **6.2.1.3 Mitigation Measures**

For the properties that have a determination of No Adverse Effect, May Company Wilshire/LACMA West, Union Bank Building, Linde Medical Plaza and the VA Center Historic District Landscape, implementation of the following mitigation measure will further ensure avoidance of adverse effects to historic properties.

#### **HR-1 Treatment to Avoid Adverse Effects**

Design Phase Planning. The project would be designed in adherence to the Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Rehabilitating Historic Buildings and the Guidelines for the Treatment of Cultural Landscapes at the following two historic properties that will be altered by either construction staging activities or station entrances to ensure there is no adverse effect to these properties:

- LACMA West May Company—WSE 24 (6067 Wilshire Boulevard)
- Union Bank Building—WSE 14 (9460 Wilshire Boulevard)
- Linde (Westwood) Medical Plaza - WSE 10 (10921 Wilshire Boulevard)
- VA Medical Center Historic District—WSE 41 (11301 Wilshire Boulevard) including the Wadsworth Theater and Contributing Landscape Elements

Designs will ensure the preservation of the character-defining features of the historic properties, and would avoid damaging or destroying materials, features, or finishes that are important to the property, while also considering economic and technical feasibility. Metro will ensure that the SHPO has opportunity to review the design by the architectural historian.

Design Review and Monitoring. Metro will retain the services of a qualified historic preservation consultant with experience in architectural preservation to review structural designs and construction activities, and will require onsite periodic construction monitoring by a historic preservation consultant to ensure protection of historic fabric and compliance with approved designs and the *Secretary of the Interior’s Standards for the Rehabilitation of Historic Properties*.

For the Adverse Effect on the Ace Gallery, the following mitigation measure will be implemented.

**HR-2      Treatment to Resolve Adverse Effect**

HABS/HAER Documentation—The adverse effects of the Undertaking on the Ace Gallery will be resolved by FTA by requiring Metro to implement and complete National Park Service Historic American Building Survey (HABS) or Historic American Engineering Record (HAER) documentation, pursuant to Section 110(b) of the National Historic Preservation Act for the adversely-affected property. Prior to any action, the photo-recording and documentation consistent with the standards of the National Park Service HABS or HAER will be prepared by a Secretary of Interior qualified professional architectural historian or historic architect. Whenever possible, HABS/HAER documentation Level 2 would be employed whenever measured drawings for a property are available. If measured drawings are not available, HABS/HAER documentation Level 1 would be employed.

The HABS/HAER documentation will be forwarded by the Metro to the FTA and SHPO for review. The FTA, in consultation with Metro and SHPO, will approve the materials and permit Metro to proceed with demolition of the adversely-affected property.

Following approval of the HABS/HAER documentation, Metro will ensure that the materials are placed on file with Metro and Responsible Agencies, historical societies and preservation groups, local university and community libraries, and other appropriate national and local repositories and archives, as identified by Metro.

Public Website Development—In connection with HABS/HAER documentation, Metro will develop a public website linked to Metro's website concerning the history of the Ace Gallery. The website would be based on the photographs produced as part of the HABS/HAER documentation, and historic archival research previously prepared as part of the Undertaking and historic documentation. A public website, which provides historic and documentary information regarding historic properties that would be substantially altered or demolished as a result of the Undertaking, will be prepared and maintained for a ten-year period.



For properties within the APE, if construction would start beyond 2019, the following mitigation measure will be implemented.

**HR-3 Construction Starting Beyond 2019**

For those portions of the APE in which construction would start beyond 2019, Metro would retain the services of a Secretary of Interior professional qualified architectural historian to complete an updated historic property survey and evaluation to ensure that construction of the Project would have no effect on eligible historic properties built after 1968 not previously inventoried during preparation of the Draft EIS/EIR or the Final EIS/EIR for the Project. A draft and final report on the results of the survey and evaluation would be submitted to Metro, FTA, SHPO, and other signatories to the Memorandum of Agreement for review and approval prior to initiation of any beyond-2019 ground-disturbing activities within the APE for the Project. The final report would be placed on file with Metro and Responsible Agencies, the South Central Coastal Information Center, and other appropriate local repositories identified by Metro within three months after the work has been completed.

If any of the newly inventoried built resources are determined to be eligible historic resources and may be adversely affected by the Project, the FTA, with the assistance of Metro, shall review and approve appropriate mitigation measures, which shall be devised by Metro in concert with a qualified architectural historian. To the extent feasible, treatment to avoid and minimize adverse effects shall follow Mitigation Measure HR-1. In the event activities associated with the Project cannot be implemented in a manner which meets adherence to Secretary of the Interior's Standards under HR-1, then the treatment described in Mitigation Measures HR-2 or other treatment appropriate to the specific resource(s) would be implemented.

**6.2.1.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Nevertheless, implementation of these mitigation measures would not be sufficient to reduce the impacts to a less than significant level and the impacts remain significant and unavoidable. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

FTA, in consultation with SHPO, has determined that the Project will have an adverse effect on the Ace Gallery (see Appendix D of the Final EIS/EIR for correspondence). Demolition of the Ace Gallery would be required for the Wilshire/Rodeo Station entrance on the south side of Wilshire Boulevard and for construction staging. Documentation of the property in accordance with the Section 106 MOA (see Appendix D, Memorandum of Agreement and Section 106 Correspondence) (Mitigation Measure HR-2) will treat the adverse effect.

The May Company Wilshire/LACMA West and Union Bank Building will no longer be impacted by the Project as station entrance options at these locations were not selected as part of the approved Project.

On the Linde Medical Building property the Project would require removal of a section of meeting wall between the attached, integrated garage and the rear of the main structure for the Westwood/UCLA Station entrance. It was determined that this impact would result in a No Adverse Effect. Implementation of Mitigation Measure HR-1 will further ensure avoidance of adverse effects to historic properties.

In the VA Medical Center Historic District, the Project will require the temporary removal of trees in order to construct the Westwood/VA Hospital Station entrance. Upon completion any removed trees will be returned to their original site and the historic landscape will be returned to its original condition. It was determined that this impact would result in a No Adverse Effect. Implementation of Mitigation Measure HR-1 will further ensure avoidance of adverse effects to historic properties.

For the reasons stated above, the Metro Board finds that impacts related to historic resources set out above would be significant even with mitigation.

## **6.2.2 Historic Resources (Construction)**

### **6.2.2.1 Impact.**

The construction of the Project will result in an Adverse Effect on one historic property at the Wilshire/Rodeo Station, the Ace Gallery, which will be demolished. If the Project is constructed in phases, the Ace Gallery will be demolished during the implementation of Phase 2.

Subsurface easements will be required for up to nine historic properties with a determination of No Adverse Effect. If the project is constructed in phases, subsurface easements will be required for up to 3 historic properties during Phase 2 and up to six historic properties during Phase 3.

Construction will occur in the vicinity of the contributing landscape elements of the VA Medical Center Historic District. If the Project is constructed in phases, this would occur during Phase 3.

### **6.2.2.2 Reference**

Final EIS/EIR Section 4.14.7, Pg. 4-324 – 4-324.

### **6.2.2.3 Mitigation Measures.**

#### **HR-4 Geotechnical Pre-Construction Survey and Historic Land-scape Protection**

Geotechnical Investigations. For historic properties, further geotechnical investigations will be undertaken to evaluate soil, groundwater, seismic, and environmental conditions along the alignment. This analysis will assist in the development of appropriate support mechanisms and measures for cut and fill construction areas. The subsurface investigation will also identify areas that could cause differential settlement as a result of using a tunnel boring machine (TBM) in close proximity to historic properties. An architectural historian or historical architect who meets the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) will provide input and review of final design documents





prior to implementation of the mechanisms and measures. The review will evaluate whether the geotechnical investigations and support measures for cut and fill, and measures to prevent differential settlement meet the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The evaluation of measures will be forwarded by Metro to the FTA and SHPO for review. Then FTA, in consultation with SHPO, upon the SHPO's concurrence, shall approve the evaluation and permit Metro to proceed with construction.

Historic District Contributing Historic Landscape Element Pre-Construction Survey. Metro will develop a survey of the contributing landscape elements of the VA Medical Center Historic District located within 20 feet of the Westwood/VA Hospital North and South Station portal-related cut-and-cover and construction staging areas during Final Design. The survey will be prepared by a qualified architectural historian and historic landscape architect and/or qualified arborist with the assistance of a technician/surveyor using high-resolution GPS equipment. The survey will establish an inventory of each mature historic tree species and the precise location of each individual tree in the survey area. The inventory survey will also assess the feasibility of temporarily removing and then replanting the extant trees in their original location, including how the trees should be moved and temporarily stored.

A report on the results of the inventory will be submitted to FTA, Metro, and SHPO for review and will be placed on file with Metro.

Historic District Contributing Historic Landscape Element Landscape Protection Measures. The results of the pre-construction survey will be used for marking trees to be avoided during construction, for implementation of relocation recommendations as necessary if avoidance of any of the trees is infeasible, and for onsite use during construction activities to ensure the historic trees remaining in place are protected.

Should any trees that are temporarily removed not survive a reasonable period after they are replanted, as determined by a qualified arborist, Metro will obtain and plant adult-aged replacement trees of the same species to rehabilitate the historic landscape.

Historic District Contributing Historic Landscape Element Construction Monitoring. Metro will retain the services of a qualified historic preservation consultant with experience in the preservation of historic landscapes. The consultant will review the existing landscape designs and proposed construction activities, and develop a plan for onsite periodic construction monitoring to ensure protection of historic fabric and compliance with the *Guidelines for the Treatment of Cultural Landscapes*.

Implementation of the following mitigation measure will reduce impacts to the Ace Gallery.

## **HR-2 Treatment to Resolve Adverse Effect**

HABS/HAER Documentation—The adverse effects of the Undertaking on the Ace Gallery will be resolved by FTA by requiring Metro to implement and complete National Park Service Historic American Building Survey (HABS) or Historic American Engineering Record (HAER) documentation, pursuant to Section 110(b) of the National Historic Preservation Act for the adversely-affected property. Prior to any action, the photo-recording and documentation consistent with the standards of the National Park Service HABS or HAER will be prepared by a Secretary of Interior qualified professional architectural historian or historic architect. Whenever possible, HABS/HAER documentation Level 2 would be employed whenever measured drawings for a property are available. If measured drawings are not available, HABS/HAER documentation Level 1 would be employed.

The HABS/HAER documentation will be forwarded by the Metro to the FTA and SHPO for review. The FTA, in consultation with Metro and SHPO, will approve the materials and permit Metro to proceed with demolition of the adversely-affected property.

Following approval of the HABS/HAER documentation, Metro will ensure that the materials are placed on file with Metro and Responsible Agencies, historical societies and preservation groups, local university and community libraries, and other appropriate national and local repositories and archives, as identified by Metro.

Public Website Development—In connection with HABS/HAER documentation, Metro will develop a public website linked to Metro's website concerning the history of the Ace Gallery. The website would be based on the photographs produced as part of the HABS/HAER documentation, and historic archival research previously prepared as part of the Undertaking and historic documentation. A public website, which provides historic and documentary information regarding historic properties that would be substantially altered or demolished as a result of the Undertaking, will be prepared and maintained for a ten-year period

### **6.2.2.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Nevertheless, implementation of these mitigation measures would not be sufficient to reduce the impacts to a less than significant level and the impacts remain significant and unavoidable. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)



FTA, in consultation with SHPO, has determined that the Project will have an adverse effect on the Ace Gallery (see Appendix D of the Final EIS/EIR for correspondence). Demolition of the Ace Gallery would be required for the Wilshire/Rodeo Station entrance on the south side of Wilshire Boulevard and for construction staging. Documentation of the property in accordance with the Section 106 MOA (see Appendix D, Memorandum of Agreement and Section 106 Correspondence) (Mitigation Measure HR-2) will treat the adverse effect. Construction of the approved Project will only require tunneling under four of the nine historic resources. These including the Perpetual Savings Building, AAA Building, Beverly Hills High School, and a portion of the VA Center Historic District. Ground-borne noise and vibration from construction activity will not adversely affect these historic resources. Implementation of mitigation measure HR-4 will further minimize any geotechnical related effects of construction to historic resources.

In the VA Medical Center Historic District, the Project will require the temporary removal of trees in order to construct the Westwood/VA Hospital Station entrance. Upon completion any removed trees will be returned to their original site and the historic landscape will be returned to its original condition. It was determined that this impact would result in a No Adverse Effect.

For the reasons stated above, the Metro Board finds that impacts related to historic resources during construction set out above would be significant even with mitigation.

### **6.3 Air Quality (Construction)**

The construction related Air Quality Impacts of the Project were evaluated in Section 4.15 of the Final EIS/EIR. The Final EIS/EIR evaluated potential effects to air quality during construction with regards to emissions, particulate matter, gas, and odor. As explained in the Final EIS/EIR, a significant impact to air quality during construction would occur if the Westside Subway Extension Project would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people.

#### **6.3.1 Emissions**

##### **6.3.1.1 Impact.**

SCAQMD thresholds will be exceeded for all pollutants when the total project emissions over the duration of the construction period are accounted for. In addition, nitrous oxides (NO<sub>x</sub>) thresholds will be exceeded for all construction elements. NO<sub>x</sub> levels will be elevated due partially to the proposed use of diesel locomotives to extract soil during the tunnel-boring process. If the Project is constructed in phases, SCAQMD thresholds will be exceeded for all pollutants, except for CO in

Phase 1, when the total project emissions over the duration of the construction period are accounted for.

### **6.3.1.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-63, Section 4.15.3, Pg. 4-350 – 4-353.

### **6.3.1.3 Mitigation Measures.**

#### **CON-6 Meet Mine Safety (MSHA) Standards**

Tunnel locomotives (hauling spoils and other equipment to the tunnel heading) will be approved by Metro to meet mine safety (MSHA) standards.

#### **CON-7 Meet SCAQMD Standards**

Metro and its contractors will set and maintain work equipment and standards to meet SCAQMD standards, including NOx.

#### **CON-8 Monitoring and Recording of Air Quality at Worksites**

Monitoring and recording of air quality at the worksites will be conducted. In areas of gassy soil conditions (Wilshire/La Brea and Wilshire/Fairfax work sites), air quality will be continuously monitored and recorded. Construction will be altered as required to maintain a safe working atmosphere. The working environment will be kept in compliance with Federal, State, and local regulations, including SCAQMD and Cal/OSHA standards.

#### **CON-9 No Idling of Heavy Equipment**

Metro specifications will require that contractors not unnecessarily idle heavy equipment.

#### **CON-10 Maintenance of Construction Equipment**

Metro will require its contractors to maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies. Metro will also require periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.

#### **CON-11 Prohibit Tampering of Equipment**

Metro will prohibit its contractors from tampering with engines and require continuing adherence to manufacturer's recommendations.



**CON-12 Use of Best Available Emissions Control Technologies**

Metro will encourage its contractors to lease new, clean equipment meeting the most stringent of applicable Federal or State standards (e.g., Tier 3 or greater engine standards) or best available emissions control technologies on all equipment.

**CON-13 Placement of Construction Equipment**

Construction equipment and staging zones will be located away from sensitive receptors and fresh air intakes to buildings and air conditioners.

**6.3.1.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Nevertheless, implementation of these mitigation measures would not be sufficient to reduce the impacts to a less than significant level and the impacts remain significant and unavoidable. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

The majority of emissions will occur as a result of removal and transport of soils for disposal from tunneling and excavation activity. The TBMs use electric power, will be connected to the electric grid, and thus will not generate air emissions. Diesel trains (mine trains) will be used in the tunnel to transport workers, pre-cast concrete tunnel liner segments, and other materials to the TBM. The trains also remove spoils if not removed through a slurry transport system. The soil spoils generated by the tunnel will be hauled to a landfill or other disposal area using trucks. Approximately 80 to 120 haul truck trips will be generated to remove the excavated material each day per station.

The travel emissions from the commute trips of construction workers will be a function of vehicle emission rates and commute distances. The travel emissions will contribute emissions to a lesser extent than the haul trucks.

SCAQMD thresholds will be exceeded for all pollutants when the total Project emissions over the duration of the construction period are accounted for. This is due to the accelerated schedule that has been developed to minimize the disturbances that construction can bring to the residents and businesses within the Project area. Implementation of mitigation measures CON-6 through CON-13 will help to reduce air quality emissions impacts, but it is unlikely—given the current construction plan—that these levels, especially NO<sub>x</sub>, will be below the SCAQMD threshold during construction.

For the reasons stated above, the Metro Board finds that air quality impacts related to emissions during construction set out above would be significant even with mitigation.

## 6.4 Noise and Vibration (Construction)

The construction related Noise and Vibration Impacts of the Project were evaluated in Section 4.15 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant noise and vibration impact if:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- 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, exposure of people residing or working in the project area to excessive noise levels
- For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels

### 6.4.1 Noise

#### 6.4.1.1 Impact.

The greatest noise impacts will occur near stations, tunnel access portals, and construction laydown areas where construction activities at the surface are concentrated. The slurry plant, if used, will be located at the Wilshire/La Brea, Century City, and Westwood/VA Hospital Stations. With the exception of these areas, all other construction will occur completely below-grade.

#### 6.4.1.2 Reference

Final EIS/EIR Executive Summary, Pg. S-66, Section 4.15.3, Pg. 4-359 – 4-362.

#### 6.4.1.3 Mitigation Measures.

##### CON-22 Hire or Retain the Services of an Acoustical Engineer

Hire or retain the services of an Acoustical Engineer to be responsible for preparing and overseeing the implementation of the Noise Control and Monitoring Plans. Noise Control and Monitoring Plan will ensure that noise levels are at or below criteria levels in Metro Baseline Specifications Section 01565, Construction Noise and Vibration Control.

**CON-23 Prepare a Noise Control Plan**

Prepare a Noise Control Plan that includes an inventory of construction equipment used during daytime and nighttime hours, an estimate of projected construction noise levels, and locations and types of noise abatement measures that may be required to meet the noise limits specified in the Noise Control and Monitoring Plan.

**CON-24 Comply with the Provisions of the Nighttime Noise Variance**

In the case of nighttime construction, the contractor will comply with the provisions of the nighttime noise variance issued by local jurisdictions. The variance processes for the Cities of Los Angeles and Beverly Hills and the County of Los Angeles require the applicant to provide a noise mitigation plan and to hold additional public meetings before granting the variance to allow work that would be performed outside of the permitted working hours.

**CON-25 Noise Monitoring**

Conduct periodic noise measurement in accordance with an approved Noise Monitoring Plan, specifying monitoring locations, equipment, procedures, and schedule of measurements and reporting methods to be used.

**CON-26 Use of Specific Construction Equipment**

At night, use only construction equipment operating at the surface of the construction site under full load, are certified to meet specified lower noise level limits set in the Noise Control Plan, and specified in the noise variance application.

**CON-27 Noise Barrier Walls for Nighttime Construction**

Where nighttime construction activities are expected to occur, erect Metro-designed noise barrier walls at each construction site prior to the start of construction activities. Barriers should be designed to reduce construction site noise levels by at least 5 dBA.

**CON-28 Comply with Local Noise Ordinances**

The Project will comply as applicable with the City of Los Angeles, City of Beverly Hills, and County of Los Angeles noise ordinances during construction hours. Compliance with City of Los Angeles, City of Beverly Hills, and County of Los Angeles standards for short-term operation of mobile equipment and long-term construction operations of stationary equipment, including noise levels and hours of operation, also will occur. Hours of construction activity will be varied to meet special circumstances and restrictions. Municipal and building codes of each city in the Study Area include restrictions on construction hours. The City of Los Angeles limits construction activity to 8 a.m. to 6 p.m. on Monday through Friday and 9 a.m. to 5 p.m. on Saturdays, with no construction on Sundays and Federal holidays. The City of Beverly Hills identifies general construction hours of 8:00 a.m. to 6:00 p.m. from Monday through Saturday. For all the cities in the Study Area, construction is prohibited on Sundays and city holidays. Construction outside of these working periods will require a variance from the applicable city. The variance processes for the Cities of Los Angeles and Beverly Hills and the County of Los Angeles require the applicant to provide a noise mitigation plan and hold additional public meeting.

**CON-29 Signage**

Readily visible signs indicating “Noise Control Zone” will be prepared and posted on or near construction equipment operating close to sensitive noise sites.

**CON-30 Use of Noise Control Devices**

Noise-control devices that meet original specifications and performance will be used.

**CON-31 Use of Fixed Noise-Producing Equipment for Compliance**

Fixed noise-producing equipment will be used to comply with regulations in the course of Project-related construction activity.

**CON-32 Use of Mobile or Fixed Noise-Producing Equipment**

Mobile or fixed noise-producing construction equipment that are equipped to operate within noise levels will be used to the extent practical.

**CON-33 Use of Electrically Powered Equipment**

Electrically powered equipment will be used to the extent practical.

**CON-34 Use of Temporary Noise Barriers and Sound-Control Curtains**

Temporary noise barriers and sound-control curtains will be erected where Project-related construction activity is unavoidably close to noise-sensitive receivers.





**CON-35 Distance from Noise-Sensitive Receivers**

Within each construction area, earth-moving equipment, fixed noise-generating equipment, stockpiles, staging areas, and other noise-producing operations will be located as far as practicable from noise-sensitive receivers.

**CON-36 Limited Use of Horns, Whistles, Alarms, and Bells**

Use of horns, whistles, alarms, and bells will be limited for use as warning devices, as required for safety.

**CON-37 Requirements on Project Equipment**

All noise-producing project equipment, including vehicles that use internal combustion engines, will be required to be equipped with mufflers and air-inlet silencers, where appropriate, and kept in good operating condition that meets or exceeds original factory specifications. Mobile or fixed “package” equipment (e.g., arc-welders, air compressors) will be equipped with shrouds and noise-control features that are readily available for that type of equipment.

**CON-38 Limited Audibility of Project Related Public Addresses or Music**

Any Project-related public address or music system will not be audible at any adjacent sensitive receiver.

**CON-39 Use of Haul Routes with the Least Overall Noise Impact**

To the extent practical, based on traffic flow, designated haul routes for construction-related traffic will be used based on the least overall noise impact. For example, heavily loaded trucks will be routed away from residential streets if possible. Where no alternatives are available, haul routes will take into consideration streets with the fewest noise-sensitive receivers.

**CON-40 Designated Parking Areas for Construction-Related Traffic**

Non-noise-sensitive designated parking areas for Project-related traffic will be used.

**CON-41 Enclosures for Fixed Equipment**

Enclosures for fixed equipment, such as TBM slurry processing plants, will be required to reduce noise.



## TCON-2 Designated Haul Routes

Designated truck haul routes using arterial streets are intended to minimize noise, vibration, and other possible impacts to adjacent businesses, schools, major commercial developments, and residential neighborhoods. Metro will incorporate the following objectives into its truck haul route plans:

Establish nighttime truck haul operations times/days for each route. Truck haul operations will not be allowed in the AM and PM peak hours, in residential neighborhoods (where feasible), during noise restriction hours and special events, holiday season restrictions, and as restricted by State and local jurisdictional mandates.

Establish truck haul headways to avoid platoons of trucks upon local arterial streets and freeways. Establish a vehicle dispatching system at construction laydown areas and off-site locations to monitor and address truck headway issues as they arise.

Develop truck haul routes for each site in coordination with and approved by State and local jurisdictions.

Incorporate comments and issues from State and local jurisdictions into the final approved truck haul routes and truck haul operation schedules.

### 6.4.1.4 Finding

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Nevertheless, implementation of these mitigation measures would not be sufficient to reduce the impacts to a less than significant level and the impacts remain significant and unavoidable. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

Noise impacts from construction will differ for the at-grade and the underground sections of the Project. Noise from the at-grade construction of the stations will be generated by heavy equipment (such as bulldozers, backhoes, haul trucks, scrapers, loaders, cranes, and paving machines) used during major construction periods as close as 25 feet to existing structures along the alignment. Noise levels from point source stationary noise sources, such as construction equipment, decrease at a rate of 6 dB per doubling of distance. A distance of 250 feet from the construction area will be 14 dB less than the values at 50 feet, and noise levels at 500 feet from the source will be 20 dB less than the values at 250 feet. At 50 feet from the construction area, use of construction equipment will exceed existing presumed ambient noise levels in the City of Los Angeles and will introduce a new source of noise to the immediate vicinity of the construction sites.

With the anticipated use of the cut-and-cover construction method for underground stations and for crossover track structures, level of construction noise will vary at different stages of construction. When the construction site for the station box is open, noise from construction equipment will be audible at street level and result in an adverse effect. This time period will produce the highest levels



of construction noise with unmitigated noise levels above the criteria found in the Construction and Mitigation Technical Report (Metro 2010r). As the excavation continues below street level, the noise of construction will be reduced because the sides of the excavated opening will act as a sound barrier. Eventually when the surface opening is covered with temporary decking, construction noise at the surface will no longer be noticeable above the traffic noise.

Mitigation measures CON-22 through CON-41, and TCON-2 will be implemented to meet the Los Angeles CEQA noise thresholds, the Metro specified limits, and the noise ordinances for Los Angeles County and the cities of Los Angeles and Beverly Hills. The measures will be required for all construction activities under both the Concurrent Construction Scenario and the Phased Construction Scenario. Impacts under either scenario will be similar, although the impacts will occur in phases as explained in the FEIR if phased construction is undertaken. Even with implementation of these mitigation measures there will be temporary adverse noise effects during the time the station box is excavated.

For the reasons stated above, the Metro Board finds that noise impacts during construction set out above would be significant even with mitigation.



## 7.0 ENVIRONMENTAL IMPACTS FOUND LESS THAN SIGNIFICANT

The Metro Board finds that, based upon substantial evidence in the record, as discussed below, the following impacts associated with the Project are less than significant and not mitigation is required.

### 7.1 Transportation

The Transportation Impacts of the Project were evaluated in Chapter 3 of the Final EIS/EIR. For the Westside Subway Extension Project, evaluation of potential transportation impacts included public transit, streets and highways, parking, pedestrian, bicycle, and bus networks, and construction-related transportation impacts.

There are a few applicable quantitative standards of significance related to transit impacts. The measurement and prediction of level of service at potentially affected intersections is a standard that is used to evaluate the significance of potential traffic impacts. Predicted changes in level of service provide indications of how well road-based movements may function under different conditions, which may have implications for vehicular traffic, and certain types of transit and non-motorized transportation. For the Westside Subway Extension Project, the following criteria were used:

#### Streets and Highways

A substantial increase in traffic delay or degradation in level-of-service for traffic operations or alternative modes.

#### Public Transit

- Transit travel times,
- Speed and reliability,
- Transit ridership,
- Impacts on local bus service,
- Expandability, and
- Passenger comfort and convenience.

##### 7.1.1 Public Transit—Travel Times

#### Impact

No significant impacts related to public transit travel times would occur.

#### Reference

Final EIS/EIR Section 3.4.2, Pg. 3-24 – 3-31

#### Mitigation Measures

None required.

**Finding**

The Project will reduce transit travel times to the Westside from various locations around Los Angeles County. Estimated transit travel times from the Wilshire/Western Purple Line Station to the Westwood/UCLA Station, for example, will be approximately 14 minutes under the Project as compared to 46 minutes under the No Build Alternative. If the Project is constructed in phases, the potential for benefits related to transit travel times during Phase 2 and Phase 3 will occur later. For the reasons stated above, the Metro Board finds no significant impacts related to public transit travel times.

**7.1.2 Public Transit—Speed and Reliability****Impact**

No significant impacts related to public transit speed and reliability would occur.

**Reference**

Final EIS/EIR Section 3.4.2, Pg. 3-32 – 3-34

**Mitigation Measures**

None required.

**Finding**

The number of passenger miles in exclusive fixed guideway operations will be substantially greater under the Projected than the No Build Alternative. The share of passenger miles in exclusive fixed guideway service in the study area under the Project will be approximately 40 percent compared to about 5 percent under the No Build Alternative. Due to the greater extent of exclusive fixed guideway and congestion-free service, transit reliability and transit speeds in the Study Area will improve. If the Project is constructed in phases, the potential for benefits related to transit speed and reliability during Phase 2 and Phase 3 will occur later.

For the reasons stated above, the Metro Board finds no significant impacts related to public transit speed and reliability.

**7.1.3 Public Transit—Transit Ridership****Impact**

No significant impacts related to public transit ridership would occur.

**Reference**

Final EIS/EIR Section 3.4.2, Pg. 3-34 – 3-38

**Mitigation Measures**

None required.



**Finding**

Due to the improved transit travel times and reliability, the Project will increase transit ridership on the Metro rail system. Under the Project, total boarding's at new Purple Line stations west of the existing Wilshire/Western Station are estimated to range from approximately 46,000 to 49,300 passengers per day, and by 2035, approximately 27,200 to 30,100 net additional riders will be attracted to public transportation in Los Angeles. If the Project is constructed in phases, the potential for benefits related to transit ridership during Phase 2 and Phase 3 will occur later.

For the reasons stated above, the Metro Board finds no significant impacts related to public transit ridership.

**7.1.4 Public Transit—Impacts on Local Bus Service**

**Impact**

No significant impacts on local bus service would occur.

**Reference**

Final EIS/EIR Section 3.4.2, Pg. 3-38 – 3-40

**Mitigation Measures**

None required.

**Finding**

The Project will increase rail passenger demand, shifting some bus riders to rail service and decreasing overall bus ridership. The total daily bus ridership in 2035 ranges from 265,000 to 271,000 boardings per day under the Project, compared to 282,300 boardings per day under the No Build.

Possible service changes could affect Metro Lines 20 and 720. These routes most closely parallel the service that would be provided by the Project. However, the travel forecasting estimates for the Project assumed that transit lines for both rail and bus service will provide the same service as defined under the No Build Alternative.

For the reasons stated above, the Metro Board finds no significant impacts related to local bus service.

**7.1.5 Public Transit—Expandability**

**Impact**

No significant impacts on local bus service would occur.

**Reference**

Final EIS/EIR Section 3.4.2, Pg. 3-41 – 3-41

**Mitigation Measures**

None required.

**Finding**

With the Project, expandability will involve added train consists (cars per train) and added frequency of train service. In addition, HRT service could be extended farther west in the study corridor in the future. Any approach to expanded service for the Project will occur within exclusive fixed guideway operations. External factors, such as roadway conditions of surface streets, will not interfere with the possibility for expansion.

For the reasons stated above, the Metro Board finds no significant impacts related to expandability.

**7.1.6 Public Transit—Passenger Comfort and Convenience****Impact**

No significant impacts on public transit passenger comfort and convenience would occur.

**Reference**

Final EIS/EIR Section 3.4.2, Pg. 3-42 – 3-43

**Mitigation Measures**

None required.

**Finding**

Under the Project, subway service will provide frequent and reliable service. This will occur regardless of the traffic conditions on streets in the Study Area. For riders who need to stand, subway service will provide increased safety compared to frequent stop-and-go travel that occurs on buses operating in mixed traffic and on sometimes uneven road surfaces. Because station platforms will be at the same level as subway vehicles, they will accommodate quick and easy boarding for all passengers, especially those in wheelchairs or with strollers.

In addition, the Project will lead to a major reduction in transfers. Purple Line service from Downtown Los Angeles and the Wilshire Center areas will offer one-seat service to Westside destinations, thereby avoiding current transfers from Metro Rail to buses.

For the reasons stated above, the Metro Board finds no significant impacts related to public transit passenger comfort and convenience.

**7.1.7 Streets and Highways—Regional and Study Area Transportation Performance****Impact**

No significant impacts on regional and study area transportation performance would occur.

**Reference**

Final EIS/EIR Section 3.4.2, Pg. 3-50 – 3-52

**Mitigation Measures**

None required.





**Finding**

The Project will have a beneficial effect on the regional transportation network by reducing VMT, VHT, and peak-hour trips in comparison to both future year and existing conditions. If the Project is constructed in phases, the potential for benefits on the regional transportation network during Phase 2 and Phase 3 will occur later.

By 2035, significant increases in travel are expected and no major new highways or arterial widenings are planned. Without the subway extension, traffic congestion will be worse in the future. The Project will provide significant new capacity to accommodate increases in travel demand but it will not, by itself, be sufficient to significantly reduce surface traffic congestion on the Westside.

For the reasons stated above, the Metro Board finds no significant impacts related to regional and study area transportation performance.

**7.1.8 Streets and Highways—Reduction in Peak-Period Auto Trips**

**Impact**

No significant impacts on peak-period auto trips would occur.

**Reference**

Final EIS/EIR Section 3.4.2, Pg. 3-52 – 3-54

**Mitigation Measures**

None required.

**Finding**

With the Project, some reductions in county-wide traffic will occur as reflected in VMT, VHT, and AM/PM vehicle trips. A more detailed examination of model results for 2035 provides further insight relating to impacts of the Project, specifically in terms of reduced auto trips during the seven-hour peak period. With the Project, approximately 12,000 auto trips occurring in the seven-hour peak period will be reduced. These represent trips that would have taken place under the No Build Alternative but will instead be shifted to transit under the Project. If the Project is constructed in phases, the potential for reduction in peak-period auto trips during Phase 2 and Phase 3 will occur later.

For the reasons stated above, the Metro Board finds no significant impacts related to peak-period auto trips.

**7.1.9 Streets and Highways—Transit Mode Share Changes**

**Impact**

No significant impacts on transit mode share changes would occur.

**Reference**

Final EIS/EIR Section 3.4.2, Pg. 3-54 – 3-55

## **Mitigation Measures**

None required.

## **Finding**

Due to improved transit times, speed, and reliability, the Project will result in increases in transit mode shares during peak periods, which represents a beneficial effect since a higher transit mode share indicates less traffic on the regional road network. For example, under the Project, travel between Pasadena and Century City would have a 22 percent transit mode share as compared to 18 percent under the No Build Alternative. If the Project is constructed in phases, the potential for transit mode share changes during Phase 2 and Phase 3 will occur later.

For the reasons stated above, the Metro Board finds no significant impacts related to transit mode share changes.

### **7.1.10 Streets and Highways—Traffic Due to Parking Spillover**

#### **Impact**

No significant impacts to traffic due to parking spillover would occur.

#### **Reference**

Final EIS/EIR Section 3.1, p. 3-8, Section 3.4.2, Pg. 3-58 – 3-59, Section 3.8.6, Pg. 3-110 – 3-111

**Mitigation Measures****T-2 Parking Monitoring and Community Outreach**

In the one-half mile area surrounding each station where unrestricted parking is located, a program will be established to monitor on-street parking activity in the area prior to the opening of service and monitor the availability of parking monthly for six months following the opening of service. Based on the available supply in each station area before the opening of service, Metro will set a performance standard that would identify a demand exceeding 100 percent of supply after opening as an impact due to the parking activity of Project patrons. If the performance standard is met, Project Metro will work with the appropriate local jurisdiction (City of Los Angeles and City of Beverly Hills) and affected communities to assess the need for specific elements of a residential permit parking (RPP) program for the affected neighborhoods.

For station areas at high risk of spillover Metro will conduct outreach meetings for the affected communities to gauge the interest of residents participating in an RPP program (prior to the opening of the subway), regardless of whether parking shortages have been identified.

For the Westwood/VA Hospital Station, the majority of station-area parking supply is for the exclusive use of VA patients, visitors, doctors, and staff. Development of an RPP program for the VA is not applicable. At this station, Metro will monitor spillover parking at VA lots controlled only by decals and/or signage (i.e., no gates or other controlled access). Once the subway has opened, an assessment of the spillover parking magnitude will be made, and if the spillover parking is determined to be unmanageable by VA security, a parking management plan for the VA campus will be developed and implemented.

**T-3 Residential Permit Parking Program**

In general, RPP districts are created to ensure that neighborhood residents have access to on-street parking. These programs are in effect across the United States, including Los Angeles County. They are commonly used to address spillover parking concerns, such as those that arise when residential neighborhoods are in close proximity to commercial districts that do not provide sufficient parking. Patrons of the commercial districts, who are non-residents, tend to spill over into adjacent residential neighborhoods to find parking. The impact that spillover parking causes is adverse, and restricting parking to residents only, or limiting the time non-residents can park, is one way to mitigate these adverse impacts.

If the need for an RPP district has been determined through Mitigation Measure T-2, RPP programs will be implemented according to guidelines established by each local jurisdiction. Metro will reimburse local jurisdictions for costs associated with developing both the RPP programs and installing parking restriction signs in neighborhoods within a one-half mile walking distance of each affected station. Metro will not be responsible for the costs of permits for residents desiring to park on streets in RPP districts. For locations where spillover parking cannot be

addressed through a RPP program, alternative mitigation options will include the implementation of parking time restrictions for non-residents. Metro will work with local jurisdictions to determine which option(s) will be preferable.

#### **T-4 Consideration of Shared Parking Program**

Metro will consider developing a shared parking program with operators of off-street parking facilities to accommodate the Project's parking demand, thereby allowing subway riders to use excess capacity in these facilities. The revised off-street parking analysis conducted for the Final EIS/EIR determined that more than 100,000 off-street parking spaces serve commercial land uses within a one-half mile walking distance of the seven Project station locations. As part of the analysis, a sampling of parking facility operators for each station location was contacted to determine availability of public parking in their facility on weekdays and weekends, daily parking rate, facility occupancy, and interest in partnering with Metro to make parking available to riders of the Westside Subway Extension. Based on a sample of operators at each station area, some shared parking potential for subway riders exists. However, this potential may be limited at individual facilities because many are near their capacity during weekdays.

For six months following the opening of service, Metro will monitor off-street parking activity in station areas through communication with parking operators by quantitatively assessing through surveys the effects on parking demand as a result of the Project and revisit their interest in participating in a shared parking program. It is anticipated that the Project will reduce parking demand in station areas, as some employees will use the subway to commute to work rather than driving. Because the development of a shared parking program will be contingent on the willingness of parking facility operators to participate, as well as the availability of parking supply at their facilities, it may be infeasible to implement this measure at some or all station areas where spillover parking impacts have been identified.

#### **Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project.

The parking impact assessment for the Project considered the potential for parking spillover to occur in residential neighborhoods surrounding station locations. Without park-and-ride facilities, parking demand will be reduced, as more riders are picked-up or dropped-off, walk, bike, or take a bus to access the subway. However, some riders with access to automobiles could still seek available unrestricted parking on neighborhood streets within one-half mile of stations. The number of riders who elect to park in station areas that contain unrestricted parking could be significant given the travel time, convenience, and reliability of grade-separated rail service to major employment areas. This contrasts with less reliable and congested traffic conditions in the Study Area along with parking charges at the destination end of the commute trip.

As identified in Section 3.6 of the Final EIS/EIR, the parking assessment evaluated impacts related to spillover and recommended feasible mitigation measures. None of these impacts were deemed significant. Nevertheless, certain measures (T2 through T-4) were proposed to further minimize the



impact and those measures include the creation of residential permit parking districts to prevent parking spillover and reduce impacts to below significant levels. With parking mitigation measures in place, Project-related peak-hour traffic entering neighborhoods will be nominal and no impacts are expected to occur.

For the reasons stated above, the Metro Board finds no significant impacts to traffic due to parking spillover.

## **7.2 Land Use**

The Land Use Impacts of the Project were evaluated in Section 4.1 of the Final EIS/EIR. Land use impacts would be considered significant if the Westside Subway Extension Project results in the following:

- Physical division of an established community
- Inconsistency with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project
- Incompatibility with adjacent and surrounding land uses caused by degradation or disturbances that diminish the quality of a particular land use

### **7.2.1 Impact**

No significant land use impacts will result from the Project. The Project will not conflict with applicable land use plans and policies.

### **7.2.2 Reference**

Final EIS/EIR Section 4.1.3, Pg. 4-10 – 4-19

### **7.2.3 Mitigation Measures**

None required.

### **7.2.4 Finding**

The Project rail system will be fully underground and will not introduce any physical barriers that could divide a community. Planned development and redevelopment near station entrances will adhere to local zoning ordinances and will not introduce barriers that will alter or divide the existing community.

Table 4-4 in Final EIS/EIR summarizes the consistency of the Project with applicable land use plans and policies. The Project will reduce automobile usage, provide opportunities for joint development and cooperation, enhance regional connectivity, minimize environmental impacts, and maximize ridership. Therefore, the Project will be consistent with applicable local land use policies.

The Project requires land acquisition for construction laydown areas to construct stations and the siting of station entrances, which will provide vertical circulation to the system. Location of these station entrances will occur in or adjacent to commercial development along a major transportation corridor and will not conflict with local land use compatibility. Therefore, the Project will be compatible with adjacent and surrounding land uses.

For the reasons stated above, the Metro Board finds no significant impacts to land use.

### 7.3 Socioeconomic Characteristics

The Socioeconomic Impacts of the Project were evaluated in Section 4.2 of the Final EIS/EIR. Socioeconomic impacts would be considered significant if the Westside Subway Extension Project results in the following:

- Displacement of a substantial number of existing housing units, particularly affordable housing units, necessitating the construction of replacement housing elsewhere
- Displacement of substantial numbers of people, necessitating the construction of replacement housing elsewhere

#### 7.3.1 Impact

**7.3.2 The LPA will result in 35 to 57 full acquisitions, 3 to 10 permanent easements, 6 to 12 temporary construction easements, and 93 to 137 permanent underground easements. Of the acquisitions, four residential properties and one mixed use building with two residences will be acquired. Reference**

#### 7.3.3 Mitigation Measures

##### CN-1 Relocation Assistance and Compensation

Metro will provide relocation assistance and compensation for all displaced businesses and residences, as required by both the Uniform Relocation Assistance and Real Property Acquisition Act and the California Relocation Assistance Act. All real property acquired by Metro will be appraised to determine its fair market value. Just compensation, which will not be less than the approved appraisal, will be made to each displaced property owner. Each business and residence displaced as a result of the Project will be given advance written notice and will be informed of their eligibility for relocation assistance and payments under the Uniform Relocation Assistance and Property Acquisition Act. It is anticipated that most businesses will relocate and, as such, most jobs will be relocated and will not be permanently displaced. However, there are permanent job losses anticipated. Metro shall coordinate with the appropriate jurisdictions regarding business relocations.

##### CN-2 Propose Joint-use Agreements

While employment loss as a result of property acquisitions will not result in an adverse effect, Metro will propose where feasible joint-use agreements for the land it will take for station entrances and construction staging to induce job creation in areas to further reduce the affect any job loss.



**CN-3 Compensation for Easements**

For easements, Metro will appraise each property to determine the fair market value of the portion that will be used either temporarily during construction or permanently above and below ground. Just compensation, which will not be less than the approved appraisal, will be made to each displaced property owner.

**7.3.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project.

The approved Project will result in 37 full acquisitions, 6 permanent easements, 12 temporary construction easements, and 125 underground easements. Of the acquisitions, four residential properties and one mixed-use building with two residences will be acquired.

The Project will displace one two-unit multi-family residence at the Wilshire/Crenshaw construction staging and laydown site, one mixed-use building containing two residential units at the Wilshire/LaBrea Station site, two four-unit multi-family residences near the Wilshire/Fairfax Station, and one six-unit multi-family residence near the Wilshire/La Cienega Station. Although the residents will be displaced and relocated, due to the size and scope of the Project, this impact is not considered substantial. Residential displacements will be the same if the Project is constructed in phases.

In addition, the residents will be compensated under the Uniform Act. Furthermore, the acquisition will provide future opportunities for housing, should Metro decide to develop them. Under the Project no substantial displacement of housing or people is anticipated; therefore, less-than-significant impacts are expected.

For the reasons stated above, the Metro Board finds impacts related to socioeconomics to be less than significant.

**7.4 Visual and Aesthetics**

The Visual and Aesthetics Impacts of the Project were evaluated in Section 4.3 of the Final EIS/EIR. Visual and Aesthetics impacts would be considered significant if the Westside Subway Extension Project results in the following:

- Have a substantial adverse effect on a scenic vista
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway
- Substantially degrade the existing visual character or quality of the site and its surroundings
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

**7.4.1 Impact**

No significant visual and aesthetics impacts will result from the Project.

#### 7.4.2 Reference

Final EIS/EIR Section 4.3.3, Pg. 4-92 – 4-108

#### 7.4.3 Mitigation Measures.

While there are no significant impacts, the mitigation measures as listed below, are incorporated into the Project and will ensure that impacts related to conflicts between scale and visual character, building removal and right-of-way acquisition, removal of mature vegetation, location of ancillary facilities, and introduction of new sources of light and glare are avoided or minimized.

##### VIS-1 Minimize Visual Clutter

To minimize visual clutter, system components should be integrated and the potential for conflicts reduced between the transit system and adjacent communities; design of the system stations and components will follow the recommendations and guidance developed in the urban design analysis conducted for the Project (Metro 2009d). These guidelines include the following: (1) preserve and enhance the unique cultural identity of each station area and its surrounding community by implementing art and landscaping; and (2) promote a sense of place, safety, and walkability by providing street trees, walkways or sidewalks, lighting, awnings, public art, and/or street furniture.

##### VIS-2 Replacement for Tree Removal

Where mature trees are removed, replacement with landscape amenities of equal value will be incorporated into final designs, where feasible, to enhance visual integrity of the station area.

##### VIS-3 Source Shielding in Exterior Lighting

Source shielding in exterior lighting at the maintenance and storage facility will be used to limit spillover light and glare.

##### VIS-4 Integrate Station Designs with Area Redevelopment Plans

Station designs will be integrated with area redevelopment plans. The objective is to create a unified visual setting where the station components such as entrances, complement redevelopment plans.

#### 7.4.4 Finding

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project.

In the visual environment, effects are related to the visibility of station components and tunnel ventilation structures. Typical station components include signage; lighting; streetscape amenities, such as benches, landscaping, special paving, and art; and bicycle facilities, such as racks or lockers. The below-ground station components visible to viewers will include escalators, elevators, stairs, and station waiting area platforms. Other support facilities, such as traction power substations (TPSS),



will be located within the stations. The location of these support facilities will be noticeable when located at the surface but will not result in dramatic effects to the visual environment.

Emergency generators will be visible facilities on the surface near the Wilshire/La Brea and Westwood/VA Hospital Stations. These emergency generators will be completely enclosed in small metal buildings, about 20 feet by 60 feet in size, and sited on property of about 50 feet by 100 feet. Although they will be noticeable in views, the buildings will be screened from public view with a wall or fence. In addition, exterior landscaping will be installed around the site per the local plans and zoning ordinances of the cities of Los Angeles and Beverly Hills, respectively.

Buildings will be removed at several station areas to accommodate construction staging. Removal of existing buildings can improve or detract from visual settings depending on a building's condition, style, scale, and color. However, it is not expected that removal of buildings will substantially reduce the visual character or quality of any station area because vacant lots are a common feature of the existing visual setting in most station areas and along the Project alignment.

The station components and other elements of the Project will be visible to varying degrees. However, none of these elements is expected to significantly change the visual character of the area where they would be located.

Based on the urban design analysis conducted, it was determined that stations may contribute to improved visual quality within the neighborhoods where they will be located (Metro 2009d). This determination was based on the implementation of design guidelines that include, but are not limited to, the following:

- Preserve and enhance the unique cultural identity of each station area and its surrounding community by implementing art and landscaping
- Promote a sense of place, safety, and walkability by providing street trees, walkways or sidewalks, lighting, awnings, public areas, and street furniture

Design of the station entrances will complement the cultural, historic, geographic, and aesthetic character of the surrounding areas. Where practicable, entrances will be integrated into existing buildings or could be integrated into future development.

By combining landscaping and design elements already included in the Project and implementing mitigation measures VIS-1 through VIS-4, visual and aesthetics impacts of the Project would be less-than-significant.

For the reasons stated above, the Metro Board finds impacts related to visual and aesthetics to be less than significant.

## **7.5 Air Quality**

The Air Quality Impacts of the Project were evaluated in Section 4.4 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant air quality impact if:

- Conflicts with or obstructs implementation of the applicable air quality plan

- Violates any air quality standard or contributes substantially to an existing or projected air quality violation
- Results in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)
- Exposes sensitive receptors to substantial pollutant concentrations
- Creates objectionable odors affecting a substantial number of people

### 7.5.1 Impact

No significant impact from air quality would occur.

### 7.5.2 Reference

Final EIS/EIR Section 4.4.3, Pg. 4-114 – 4-127

### 7.5.3 Mitigation Measures

None required.

### 7.5.4 Finding

The Project under the existing year as compared to the existing year without the Project will not exceed the NAAQSs, CAAQSs, or SCAQMD significance thresholds. The opening of the Project as a single phase or in three sequential phases will not result in differing impacts related to NAAQSs, CAAQSs, or SCAQMD significance thresholds.

The existing year with the Project is predicted to have lower regional pollutant burden levels on both the regional and Study Area levels as compared to the existing year without the Project.

The Project does not conflict with local air quality plans, violate air quality standards, or contribute to existing or projected air quality violations. No sensitive receptors are predicted to experience substantial pollutant concentrations as a result of the operation of the Project.

For these reasons, the Metro Board finds impacts related to air quality to be less than significant.

## 7.6 Climate Change

The Climate Change impacts of the Project were evaluated in Section 4.5 of the Final EIS/EIR. The Westside Subway Extension Project would result in a significant climate change impact if it would:

- Generates GHG emissions, either directly or indirectly, that may have a significant impact on the environment
- Conflicts with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs

### 7.6.1 Impact

No significant impact to climate change would occur.

## 7.6.2 Reference

Final EIS/EIR Section 4.5.3, Pg. 4-133 – 4-136

## 7.6.3 Mitigation Measures.

While there are no impacts to Climate Change as a result of the Project. The following measures will be implemented to further ensure beneficial effects.

### CC-1 Implement Pedestrian and Transit-Oriented Development at Stations

Metro will continue to promote and support implementation of pedestrian-oriented and transit-oriented development at stations.

### CC-2 Energy Conservation

Energy conservation will be implemented throughout design and construction.

### CC-3 Promote Transit Ridership

Metro will continue to promote transit ridership through marketing and educational programs.

### CC-4 Green Power

Metro will use green power when/where available and priced competitively with other energy sources.

## 7.6.4 Finding

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project.

The overall impact of the Project with regard to GHGs can be determined by combining the various elements analyzed. The Project elements analyzed include roadway VMT and the power requirements of the Project. The Project under existing conditions is predicted to reduce roadway VMT and, therefore, the GHGs associated with roadway VMT, as compared to existing year conditions. The Project is predicted to increase power requirements and, therefore, the GHGs associated with the increased power usage, as compared to existing year conditions. By combining the emission reductions from reduced roadway VMT with the emission increases due to power usage, the existing year with the Project is predicted to slightly increase the regional CO<sub>2</sub>e emission burden as compared to existing year conditions. This increase is very slight, however, and can be considered less than significant. If the Project is constructed as a single phase or in three sequential phases it would not result in differing effects related to GHG emissions compared to existing year conditions.

It is expected that the Project would aid the region in achieving its goal of compliance and consistency with the Global Warming Solution Act of 2006 (AB 2006), with regard to the regional GHG reduction targets and potential sustainable communities strategies in the RTP and with SB 97 (2007 Statutes, Ch.18) (SB 2007) and the resultant new CEQA Guidelines addressing GHG emissions.

For these reasons, the Metro Board finds impacts related to climate change would be less than significant.

## 7.7 Energy

The Energy Impacts of the Project were evaluated in Section 4.7 of the Final EIS/EIR. The Westside Extension Project would result in a significant impact to energy if it would:

- Require new (off-site) energy supply facilities and distribution infrastructure or capacity enhancing alterations to existing facilities.
- Conflict with adopted energy conservation plans
- Use of nonrenewable resources in a wasteful and inefficient manner
- Result in a need for new systems or substantial alterations to power or natural gas

### 7.7.1 Impact

No significant impacts to energy would occur.

### 7.7.2 Reference

Final EIS/EIR Section 4.7.3, Pg. 4-167 – 4-170

### 7.7.3 Mitigation Measures

None required.

### 7.7.4 Finding

The Project will decrease per capita energy consumption by removing automobile VMT and increasing transit ridership. Energy analysis took into account that transit activity uses more BTUs per vehicle mile than automobiles but consumes considerably less per passenger mile.

Existing plus Project conditions includes decreased system-wide VMT, which results in less energy consumption as compared to the existing conditions. Existing plus Project conditions will decrease automobile VMT by 276,000 but will not change bus VMT. Rail VMT are expected to increase by between approximately 15,600 and 16,000.

It is assumed that existing plus Project conditions will include seven stations and associated stationary energy consumption. Each of the seven stations will use approximately 175 million BTUs per year during operational activity (FTA's Technical Guidance Section 5309 New Starts Criteria, July 1999 (FTA 1999)). The total energy consumption associated with all seven stations will be approximately 1.2 billion BTUs per year. Based on the BTU per VMT, mobile source BTU consumption (i.e., rail, automobile, and bus sources) will decrease by approximately 196 billion BTUs per year compared to existing conditions. As such, the existing plus Project conditions will result in a beneficial energy impact. The opening of the Project as a single phase or in three sequential phases will not result in significantly different impacts related to energy consumption compared to existing conditions.



The regional shift from automobiles to transit will also shift fuel use from gasoline for on-road vehicles to electricity for powering rail movements. Gasoline and the majority of electricity are created from fossil fuels. It is important to note that renewable energy can be used to create electricity but not gasoline. The Project will assist in the regional goal of decreasing fossil fuel reliance by decreasing per capita energy consumption. In addition, development of the Project will not preclude regional electricity suppliers from obtaining a higher percentage of electricity from renewable sources. The Project will increase peak-hour electricity demand but it will not lead to wasteful, inefficient, or unnecessary usage of fuel or energy.

For these reasons, the Metro Board finds impacts related to energy would be less than significant.

## **7.8 Hazardous Wastes and Materials**

The impacts of the Project to hazardous wastes and materials were evaluated in Sections 4.9 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant impact to hazardous wastes and materials if operation of the Project results in the following:

- Creates a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- Creates 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
- Is located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (CGC 1992) and, as a result, creates a significant hazard to the public or the environment.
- Emits hazardous emissions or handles hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
- Results in a safety hazard for people residing or working in the Project area (applies to a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport)
- For a project within the vicinity of a private airstrip, results in a safety hazard for people residing or working in the project area
- Impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan

Exposes people or structures to a significant risk of loss, injury, or death involving wild-land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands.

### **7.8.1 Impact**

No significant impacts to hazardous waste and materials would occur during operation of the Project.

### 7.8.2 Reference

Final EIS/EIR Section 4.10, Pg. 4-208 – 4-224.

### 7.8.3 Mitigation Measures.

In addition to mitigation measures outlined for geologic hazards, the following measures will be implanted to further ensure that any impacts are avoided or minimized.

#### HAZ-1 Disposal of Groundwater

Disposal of groundwater from underground structures will comply with the City of Los Angeles Industrial Wastewater Permit if there is any contaminated groundwater leakage into final structure.

#### HAZ-2 Emergency Response Procedure

In the unlikely event of a major hazardous materials release close to or in the vicinity of the Project, Metro will develop emergency response procedures in conformance with Federal, State, and local regulations.

### 7.8.4 Finding.

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impact. (CEQA Guidelines section 15091, subdivision (a)(1).)

Operations and maintenance will require routine transport, use, or disposal of hazardous materials. These materials will typically include fuel, oil, solvents, cleansers, and other materials, which are not considered acutely hazardous. Operation of the Project is not anticipated to result in exposure to acutely hazardous materials. The Project is not located within 2 miles of an airport or airstrip and will not result in a safety hazard for people working in the area.

Removal of soil and groundwater during construction of the Project (refer to Section 4.15 in the Final EIS/EIR) will be limited to the station, crossover, and access shaft areas. While there are schools within the one-quarter-mile distance from these access points, the impact on schools is not expected as transported soil will be in covered trucks to prevent loss of materials in the surrounding area. Materials stockpiled at the worksites will be sprayed with water or an SCAQMD-approved vapor suppressant and covered with plastic to prevent exposure to the soil.

Operation of the Project will not impair implementation of or physically interfere with adopted emergency response or evacuation plans. The Project will not expose people or structures to a significant risk of loss, injury, or death involving wild-land fires since the Project is in an urban area. The Project will be implemented in accordance with all federal and state requirements. Therefore, a less-than-significant impact is anticipated for exposure to hazardous materials.

Impacts from hazardous materials associated with facilities along the alignment and maintenance yard will be less than significant with the implementation of HAZ-1 and HAZ-2.

Under the Phased Construction Scenario, the potential for impacts to hazardous wastes and materials resulting from operation of the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

For these reasons, the Metro Board finds impacts to hazardous wastes and materials resulting from operation of the Project would be less than significant.

## **7.9 Ecosystems/Biological Resources**

The impacts of the Project to ecosystems/biological resources were evaluated in Sections 4.10 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant impact to ecosystems/biological resources if operation of the Project results in the following:

- Loss of individuals, or the reduction of existing habitat, of a state- or federally listed endangered, threatened, rare, protected, or candidate species or a species of special concern or a federally listed critical habitat
- Loss of individuals, the reduction of existing habitat of a locally designated species, or a reduction in a locally designated natural habitat or plant community
- Interference with habitat such that normal species behaviors are disturbed (e.g., from introducing noise, light) to a degree that may diminish the chances for long-term survival of a sensitive species

### **7.9.1 Impact**

No significant impacts to ecosystems/biological resources would occur during operation of the Project.

### **7.9.2 Reference**

Final EIS/EIR Section 4.10, Pg. 4-224 – 4-229.

### **7.9.3 Mitigation Measures**

None required.

### **7.9.4 Finding.**

Some removal or pruning of California sycamore trees may occur at the Wilshire/La Brea Station area. As these trees are protected under native tree protection ordinance or municipal code, a tree removal permit will be required. Removal and replacement of these trees, if necessary, would be conducted in compliance with applicable regulations and tree protection ordinances of the City of Los Angeles. The tree removal permit may require replanting of native trees within the project area or at another location within the City of Los Angeles to mitigate for the removal of these trees.

Replacement of protected trees could be required at a 2:1 ratio and other trees at a 1:1 ratio. Although the ordinance does not require a permit for the pruning of protected trees, the City of Los Angeles recommends consultation with a certified arborist to ensure that the pruning of protected trees is performed carefully. During operation, no direct or indirect impacts to ecosystems/biological resources will occur under operation of the Project.

Under the Phased Construction Scenario, the potential for impacts to ecosystems/biological resources resulting from operation of the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

For these reasons, the Metro Board finds impacts to ecosystems/biological resources resulting from operation of the Project would be less than significant.

## 7.10 Water Resources

The hydrology and water resource impacts of the Project were evaluated in Sections 4.11 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant impact to hydrology and water resources if operation of the Project results in the following:

- Violate any applicable water quality standards or waste discharge requirements, including those defined in Section 13050 of the Clean Water Act
- Affect the rate or change the direction of movement of existing groundwater contaminants or expand the area affected by contaminants
- 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
- Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site
- 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
- Otherwise substantially degrade water quality
- Place structures that would impede or redirect flood flows within a 100-year flood hazard area
- Expose people to a significant risk of loss, injury, or death involving flooding

### 7.10.1 Impact

No significant impacts to hydrology or water resources would occur during operation of the Project.

### 7.10.2 Reference

Final EIS/EIR Executive Summary, Pg. S-50, Section 4.11, Pg. 4-230 – 4-242.





**7.10.3 Mitigation Measures.**

Although no significant impacts were identified, several measures were adopted to very conservatively assure no impacts to water quality or water resources would result from the Project. In addition to the standard Best Management Practices and other measures required for compliance with Federal, State, and local requirements, the following measures will be implemented to ensure that there will be no adverse water quality or hydrology impacts.

**WQ-1      Drainage Control Plan**

A drainage control plan will be developed to properly convey drainage from the Study Area and to avoid ponding on adjacent properties. The plan will be developed to assure that the flood capacity of existing drainage or water conveyance features will not be reduced in a way that will cause ponding or flooding during storms.

**WQ-2 Runoff Treatment**

During operation runoff will be treated using the most appropriate BMP as listed below to further ensure compliance Title III and Title IV of the Clean Water Act and NPDES standards as overseen by the local jurisdictions:

**BMP1: Infiltration basins/trenches**—Infiltration basins are surface ponds that capture first-flush stormwater and treat it by allowing it to percolate into the ground and through permeable soils. Infiltration trenches are excavated trenches that have been lined with filter fabric and backfilled with stone to form an underground basin that allows runoff to infiltrate into the soil. As the water percolates through the ground, physical, chemical, and biological processes occur to remove sediments and soluble pollutants. Pollutants are trapped in the upper soil layers and the water is released to groundwater. Infiltration basins are generally dry except immediately following storms, but a low-flow channel may be necessary if a constant base flow is present.

**BMP2: Porous pavement**—Porous pavement can be either asphalt-based pavement or pre-casted permeable concrete pavers. The permeable concrete paver is a preferred feature of the City of Los Angeles' Green Street Policy. Both concrete pavers and asphalt-based paving material allows stormwater to quickly infiltrate the surface pavement layer to enter into a high-void aggregate sub-base layer. The captured runoff is stored in this "reservoir" layer until it either infiltrates into the underlying soil strata or is routed through an under drain system to a conventional stormwater conveyance system. Porous pavement is typically applicable only in low-traffic areas.

**BMP3: Vegetated Filter Planters**—These are newly adopted bio-parkway or flow-through planters engineered in accordance to the City of Los Angeles' Green Street Policy. They are planters with selected vegetations and engineered soils to treat and filter storm-water from street and / or roof runoff. The design storm First-Flush polluted storm-water will be treated and filtered. At large storm events, clean storm-water will be by-passed to normal drainage facilities. These devices are most suitable to urban environment such as the current Project corridor.

**7.10.4 Finding**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project.

Operation of the Project will not result in any significant impacts to water quality based on the CEQA significance criteria discussed above. The Study Area is already densely urbanized with extensive impervious surfaces, and any added runoff would be minor. The Project will not substantially alter drainage patterns. The Project will comply with NPDES permit requirements as well as measures described in greater detail in WQ1 and WQ2 to further ensure that any potential impacts remain at a less-than-significant level.



Operation of the maintenance facility will not result in significant adverse water resources impacts. Compliance with applicable permits and regulations and implementation of measures WQ1 and WQ2 will further ensure that potential impacts remain at less-than-significant levels.

Under the Phased Construction Scenario, the potential for impacts to hydrology and water resources resulting from operation of the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

For these reasons, the Metro Board finds impacts to hydrology and water resources resulting from operation of the Project would be less than significant.

## **7.11 Parklands and Community Facilities**

The parklands and community facility impacts of the Project were evaluated in Sections 4.13 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant impact to parklands and community facilities if operation of the Project results in substantial adverse physical impacts associated with the provision of 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 public services. The list of public services includes fire and police protection, schools, parks, and other public facilities.

### **7.11.1 Impact**

No significant impacts to parklands or community facilities would occur during operation of the Project.

### **7.11.2 Reference**

Final EIS/EIR Section 4.14, Pg. 4-254 – 4-283.

### 7.11.3 Mitigation Measures.

The following measure will be incorporated into the Project to ensure impacts related to displacements and acquisitions are avoided or minimized.

#### CN-1 Relocation Assistance and Compensation

Metro will provide relocation assistance and compensation for all displaced businesses and residences, as required by both the Uniform Relocation Assistance and Real Property Acquisition Act and the California Relocation Assistance Act. All real property acquired by Metro will be appraised to determine its fair market value. Just compensation, which will not be less than the approved appraisal, will be made to each displaced property owner. Each business and residence displaced as a result of the Project will be given advance written notice and will be informed of their eligibility for relocation assistance and payments under the Uniform Relocation Assistance and Property Acquisition Act. It is anticipated that most businesses will relocate and, as such, most jobs will be relocated and will not be permanently displaced. However, there are permanent job losses anticipated. Metro shall coordinate with the appropriate jurisdictions regarding business relocations.

### 7.11.4 Finding.

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impact. (CEQA Guidelines section 15091, subdivision (a)(1).)

The operation of the Project will not increase regional population or result in the need for BHFD, LAFD, and the LACoFD to expand their fire protection and paramedic services. The increased demand for fire protection services will not burden existing fire protection services or cause the construction and expansion of existing facilities to maintain their level of service. Therefore, impacts to fire protection and emergency services will be less than significant under operation of the Project.

The operation of the Project will increase the demand for police protection services, which will be met by the LASD. Currently, the LASD provides contract law enforcement for Metro on a site-specific basis and as necessary. For this reason, operation of the Project will not cause the construction and expansion of existing facilities to maintain their level of service. Therefore, impacts to police services will be less than significant under operation of the Project.

The Marinello School of Beauty will be displaced as part of the Project. Students attending this specific location of the school could be accommodated at other nearby Marinello School of Beauty locations. If the Project is constructed under the Phased Construction Scenario, the acquisition of the Marinello School of Beauty will occur during the construction of Phase 1. Mitigation would include relocation assistance and compensation as required by both the Uniform Act (USC 1995b) and the California Relocation Assistance Act (CCR 2011). Additionally, the Project does not include residential uses or other components that could increase the demand for schools. Therefore, with mitigation, impacts to schools will be less than significant under operation of the Project.

The Project will increase accessibility to parks near the alignment, which is expected to result in a nominal increase in their use. The Project is not expected to overburden parks or result in their

physical deterioration or cause the cities of Los Angeles and Beverly Hills to construct new or expand existing park facilities. Therefore, impacts to public parks will be less than significant under operation of the Project.

The Architecture and Design Museum will be displaced as part of the Project. If the Project is constructed under the Phased Construction Scenario, the acquisition of the Architecture and Design Museum will occur during the construction of Phase 1. Mitigation will include relocation assistance and compensation as required by both the Uniform Act (USC 1995b) and the California Relocation Assistance Act (CCR 2011). In addition, Metro will assist the Architecture and Design Museum in relocation efforts to minimize adverse impacts. Therefore, with mitigation, impacts to other public facilities will be less than significant under operation of the Project.

Under the Phased Construction Scenario, the potential for impacts to parklands and community facilities resulting from operation of the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

For these reasons, the Metro Board finds impacts to parklands and community resources resulting from operation of the Project would be less than significant.

## **7.12 Historic, Archeological, and Paleontological Resources**

The historic, archeological, and paleontological impacts of the Project were evaluated in Sections 4.14 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant historic, archeological, and paleontological impact if construction of the Project results in the following:

- Demolish or materially alter a significant archaeological, historic, or paleontological resource.

Impacts to historic resources are discussed in Section 6.0 as impacts to historic resources will be significant. Impacts to paleontological resources are discussed in Section 5.0 as impacts to paleontological resources will be reduced to less than significant with implementation of mitigation measures. Impacts related to archeological resources are discussed below since these impacts are less than significant.

### **7.12.1 Archaeological Resources Operations**

#### **7.12.1.1 Impact**

No significant impacts to archaeological resources would occur during operation of the Project.

#### **7.12.1.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-53, Section 4.14, Pg. 4-313 – 4-315.

### 7.12.1.3 Mitigation Measures.

Although no significant impacts are anticipated, implementation of the following measure will ensure no adverse impacts to unknown and undocumented archaeological resources, including human remains.

#### AR-1 Unanticipated Discoveries and Consultation with Native American Individuals, Tribes and Organizations and Treatment of Cultural Remains and Artifacts

If previous unidentified cultural resources, including human remains, are encountered during construction or earth-disturbing activities, all activities at that location shall be halted until a qualified archaeologist can examine the resources and assess their significance. If the resources are determined to be significant, Metro will notify FTA and SHPO within 48 hours of the discovery to determine the appropriate course of action.

For resources determined eligible or assumed to be eligible for the NRHP by FTA, Metro will notify the FTA, ACHP, and SHPO of those actions that it proposes to avoid, minimize, or mitigate adverse effects. Consulting parties will have 48 hours to provide their views on the proposed actions. The FTA will ensure that timely-filed recommendations of consulting parties are taken into account prior to granting approval of the measures that the Metro will implement to resolve adverse effects. Metro will carry out the approved measures prior to resuming construction activities in the location of the discovery.

Metro will ensure that the expressed wishes of Native American individuals, tribes, and organizations are taken into consideration when decisions are made regarding the disposition of other Native American archaeological materials and records relating to Indian tribes.

Should Indian burials and related items be discovered during construction of the project, Metro will consult with the affected Native American individuals, tribes and organization regarding the treatment of cultural remains and artifacts. These will be treated in accordance with the requirements of the California Health and Safety Code. If the county coroner/medical examiner determines that the human remains are or may be of Native American origin, then the discovery shall be treated in accordance with the provisions of §§ 5097.98 (a) - (d) of the California Public Resources Code which provides for the notification of discovery of Native American human remains, descendants; disposition of human remains and associated grave goods.

### 7.12.1.4 Finding.

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impact. (CEQA Guidelines section 15091, subdivision (a)(1).)

No archaeological resources have been identified within the APE for the alignment of the Project. The Project may affect undocumented cultural resources, including intact archaeological deposits.

Given that the Project right-of-way is generally within the street right-of-way, which often did not disturb more than a few feet of topsoil during its construction, construction activities may encounter subsurface prehistoric and/or historic archaeological deposits. Based on the density of standing historic-period buildings and structures, the sensitivity for the discovery of historic-era archaeological sites is higher near the Wilshire/La Cienega Station and between the Westwood/UCLA and Century City Stations. Implementation of mitigation measure AR-1 will reduce construction impacts to undocumented archaeological resources, including human remains.

Four historic-period archaeological sites and one historic isolated find have been identified in the APE at the Division 20 maintenance yard. Three of the archaeological sites (CA-LAN-2563, CA-LAN-4192, and CA-LAN-4193) are considered not eligible for listing in the NRHP or CRHR and do not qualify as historic properties or historical resources. The isolated find (P-19-100887) does not qualify for listing on either the NRHP or CRHR. The remaining archaeological site (CA-LAN-2610) is eligible for listing in the NRHP and CRHR. It will be avoided and will not be affected by construction for the Project at the Division 20 maintenance yard.

The construction of proposed improvements at the maintenance yard may affect undocumented cultural resources, including intact archaeological deposits. Given the historic-period nature of the built environment, which often did not disturb more than a few feet of topsoil, construction activities may encounter subsurface prehistoric and/or historic archaeological deposits. Based on the location of the Division 20 facility at the former La Grande Railroad Station built in 1893 and the prior discovery of archaeological resources beneath the modern surface within or immediately adjacent to the yard, the sensitivity for the discovery of historic-era archaeological sites during ground disturbance for yard improvements is considered high. Implementation of mitigation measure AR-1 will reduce construction impacts to undocumented archaeological resources, including human remains.

Under the Phased Construction Scenario, the potential for impacts to archaeological resources resulting from operation of the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

For these reasons, the Metro Board finds impacts to archaeological resources resulting from operation of the Project would be less than significant.

## **7.12.2 Archaeological Resources (Construction)**

### **7.12.2.1 Impact**

No significant impacts to archaeological resources would occur during construction of the Project.

### **7.12.2.2 Reference**

Final EIS/EIR Executive Summary, Pg. S-53, Section 4.14, Pg. 4-319 – 4-321.

### **7.12.2.3 Mitigation Measures**

Although no significant impacts are anticipated, implementation of the following measure will ensure no adverse impacts to unknown and undocumented archaeological resources, including human remains.

**AR-1 Unanticipated Discoveries and Consultation with Native American Individuals, Tribes and Organizations and Treatment of Cultural Remains and Artifacts**

If previous unidentified cultural resources, including human remains, are encountered during construction or earth-disturbing activities, all activities at that location shall be halted until a qualified archaeologist can examine the resources and assess their significance. If the resources are determined to be significant, Metro will notify FTA and SHPO within 48 hours of the discovery to determine the appropriate course of action.

For resources determined eligible or assumed to be eligible for the NRHP by FTA, Metro will notify the FTA, ACHP, and SHPO of those actions that it proposes to avoid, minimize, or mitigate adverse effects. Consulting parties will have 48 hours to provide their views on the proposed actions. The FTA will ensure that timely-filed recommendations of consulting parties are taken into account prior to granting approval of the measures that the Metro will implement to resolve adverse effects. Metro will carry out the approved measures prior to resuming construction activities in the location of the discovery.

Metro will ensure that the expressed wishes of Native American individuals, tribes, and organizations are taken into consideration when decisions are made regarding the disposition of other Native American archaeological materials and records relating to Indian tribes.

Should Indian burials and related items be discovered during construction of the project, Metro will consult with the affected Native American individuals, tribes and organization regarding the treatment of cultural remains and artifacts. These will be treated in accordance with the requirements of the California Health and Safety Code. If the county coroner/medical examiner determines that the human remains are or may be of Native American origin, then the discovery shall be treated in accordance with the provisions of §§ 5097.98 (a) - (d) of the California Public Resources Code which provides for the notification of discovery of Native American human remains, descendants; disposition of human remains and associated grave goods.

**7.12.2.4 Finding.**

The Board hereby adopts and incorporates these mitigation measures as part of the approved Project. There is the potential to encounter subsurface prehistoric and/or historic archaeological deposits during the construction of the Project given the historic period nature of the built environment, which often did not disturb more than a few feet of topsoil. Implementation of mitigation measure AR-1 will reduce construction impacts to undocumented archaeological resources, including human remains. As noted in AR-1 and the MOA, “Metro will notify the FTA, ACHP, and SHPO of those actions that it proposes to avoid, minimize, or mitigate adverse effects” should unanticipated archaeological resources be discovered. The proposed actions will consider preservation in place as



the preferred manner of mitigation impacts to archaeological sites. According to the CEQA Guidelines, preservation in place may be accomplished by, but not limited to the following:

- Planning construction to avoid archaeological sites
- Incorporation of sites within parks, greenspace, or other open space
- Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site
- Deeding the site into a permanent conservation easement

Due to the location and nature of the project, excavation is likely to be the only feasible mitigation. Due to the nature of the subway line, it's not possible to realign the Project in the event that archaeological resources are discovered. Similarly, almost all of the areas to be excavated are the areas proposed for tunnels, stations, or related facilities, which will remain underground. And the excavated areas are under existing development (roads and structures), so that simply capping the site is not feasible. Thus, if unique archaeological resources are uncovered during construction, a data recovery plan would be prepared and reviewed under provision of the MOA.

Under the Phased Construction Scenario, the potential for impacts to archaeological resources resulting from construction of the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

For these reasons, the Metro Board finds impacts to archaeological resources resulting from the construction of the Project would be less than significant.

## **7.13 Growth Inducing**

The growth inducing impacts of the Project were evaluated in Sections 4.16 of the Final EIS/EIR. As explained in the Final EIS/EIR, according to CEQA, growth-inducing impact may be considered to be significant if the proposed project has the potential to 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) and if the resulting growth results in significant impacts.

### **7.13.1 Impact**

No significant growth inducing impacts would occur during construction of the Project.

### **7.13.2 Reference**

Final EIS/EIR Section 4.16, Pg. 4-391 – 4-398.

### **7.13.3 Mitigation Measures**

None required.

#### 7.13.4 Finding.

The Project will be located within a densely developed urban area and will not extend into previously undeveloped areas.

Potential indirect growth inducing effects may result from opportunities the Project provides for micro-scale growth or development near stations. Such growth may occur from implementation of local and state land use policies or local planning objectives, which may encourage transit-oriented development, station area planning, or housing-density bonuses adjacent to transit corridors (see Section 4.1 of the Final EIS/EIR). With opportunities for such development, future growth in these station areas may occur sooner rather than later. All such future development (including mixed-use, residential, and commercial) within the city of Los Angeles, Westside Cities Council of Governments subregions, and the entire SCAG region will be consistent with applicable land use and community plans and subject to all applicable requirements and regulations of local jurisdictions where the stations will be located.

The Project will not induce growth beyond that already anticipated in the regional plans and projections for the SCAG region or in local land and community plans. Future development will also significantly contribute to general economic growth, including employment growth within the Study Area and SCAG region. This is considered a significant beneficial effect since this new employment is anticipated to help alleviate effects of more than a quarter-million (228,000) jobs lost within Los Angeles County during the current recession. This new employment will help alleviate current unemployment and help generate future employment. This is considered a significant beneficial effect; no adverse impacts are anticipated related to growth inducement.

Under the Phased Construction Scenario, the potential for growth inducing impacts resulting from the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

For these reasons, the Metro Board finds growth inducing impacts of the Project would be less than significant.

### 7.14 Climate Change (Construction)

The construction related climate change impacts of the Project were evaluated in Sections 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, under CEQA guidelines (Appendix G, VII), a project would result in a significant impact if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment and/or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases

#### 7.14.1 Impact

No significant climate change impacts would occur during construction of the Project.

#### 7.14.2 Reference

Final EIS/EIR Executive Summary, Pg. S-65, Section 4.15.3, Pg. 4-356 – 4-357.



**7.14.3 Mitigation Measures.**

**CON-6 Meet Mine Safety (MSHA) Standards**

Tunnel locomotives (hauling spoils and other equipment to the tunnel heading) will be approved by Metro to meet mine safety (MSHA) standards.

**CON-7 Meet SCAQMD Standards**

Metro and its contractors will set and maintain work equipment and standards to meet SCAQMD standards, including NOx.

**CON-8 Monitoring and Recording of Air Quality at Worksites**

Monitoring and recording of air quality at the worksites will be conducted. In areas of gassy soil conditions (Wilshire/La Brea and Wilshire/Fairfax work sites), air quality will be continuously monitored and recorded. Construction will be altered as required to maintain a safe working atmosphere. The working environment will be kept in compliance with Federal, State, and local regulations, including SCAQMD and Cal/OSHA standards.

**CON-9 No Idling of Heavy Equipment**

Metro specifications will require that contractors not unnecessarily idle heavy equipment.

**CON-10 Maintenance of Construction Equipment**

Metro will require its contractors to maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies. Metro will also require periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.

**CON-11 Prohibit Tampering of Equipment**

Metro will prohibit its contractors from tampering with engines and require continuing adherence to manufacturer's recommendations.

**CON-12 – Use of Best Available Emissions Control Technologies**

Metro will encourage its contractors to lease new, clean equipment meeting the most stringent of applicable Federal or State standards (e.g., Tier 3 or greater engine standards) or best available emissions control technologies on all equipment.

**CON-13 Placement of Construction Equipment**

Construction equipment and staging zones will be located away from sensitive receptors and fresh air intakes to buildings and air conditioners.

**7.14.4 Finding.**

Although no significant impacts are anticipated, the Board hereby adopts and incorporates these mitigation measures as part of the approved Project to conservatively ensure no impacts will result.

It is estimated that construction of the Project under the Concurrent Construction Scenario will generate approximately 164 metric tons of CO<sub>2</sub>e per day, which is approximately 180,000 metric tons of CO<sub>2</sub>e over the full 10-year construction duration. This estimate includes the CO<sub>2</sub>e generated due to the use of construction equipment, worker trips, delivery trips, and hauling of material. In comparison, under existing conditions (without the Project), regional CO<sub>2</sub>e emission is estimated to be 178,000 metric tons per day. Therefore, compared to existing regional CO<sub>2</sub>e emissions, the construction of the Concurrent Construction Scenario will increase daily CO<sub>2</sub>e emissions by less than 0.1 percent, which is not considered an adverse effect. Over the course of 10 years, construction of the Concurrent Construction Scenario will result in emissions that are roughly equivalent to the present-day regional CO<sub>2</sub>e emissions in a single day.

In the long-run, the Concurrent Construction Scenario will reduce regional CO<sub>2</sub>e emissions, off-setting the short-term increase in emissions during construction and complying with policies to reduce emissions of greenhouse gases. It is estimated that once operational, the Concurrent Construction Scenario will reduce regional CO<sub>2</sub>e emissions by 35,000 metric tons a year compared to the No Build Alternative in 2035. Therefore, within approximately five years of operation, the regional CO<sub>2</sub>e emissions will be reduced by nearly 180,000 metric tons, off-setting the short-term CO<sub>2</sub>e emissions during construction.

It is estimated that construction of each phase of the Phased Construction Scenario (Phase 1, Phase 2, and Phase 3) will generate approximately 102 metric tons of CO<sub>2</sub>e per day. This results in approximately 65,000 metric tons of CO<sub>2</sub>e over the construction duration for Phase 1, 114,000 metric tons of CO<sub>2</sub>e over the construction duration for Phase 2 and approximately 180,000 metric tons of CO<sub>2</sub>e over the full construction duration. This estimate includes the CO<sub>2</sub>e generated due to the use of construction equipment, worker trips, delivery trips, and hauling of material. In comparison, under existing conditions (without the Project), regional CO<sub>2</sub>e emission is estimated to be 178,000 metric tons per day. Therefore, compared to existing regional CO<sub>2</sub>e emissions, the construction of the Phased Construction Scenario will increase daily CO<sub>2</sub>e emissions by less than 0.1 percent, which is not considered an adverse effect. In addition, in the long-run, the Phased Construction Scenario will reduce regional CO<sub>2</sub>e emissions, off-setting the short-term increase in emissions during construction and complying with policies to reduce emissions of greenhouse gases. It is estimated that Phase 1 will reduce regional CO<sub>2</sub>e emissions by approximately 61,000 metric tons a year compared to the No Build Alternative in 2035. Phase 2 will reduce regional CO<sub>2</sub>e emissions by 74,000 metric tons a year compared to the No Build Alternative in 2035. Phase 2 will reduce regional CO<sub>2</sub>e emissions by 74,000 metric tons a year compared to the No Build Alternative in 2035. Once fully operational, the Phased Construction Scenario will reduce regional CO<sub>2</sub>e emissions by 95,000 metric tons a year compared to the No Build Alternative in 2035. Therefore, within approximately five years of operation, the

regional CO<sub>2</sub>e emissions will be off-setting the short-term CO<sub>2</sub>e emissions generated during construction.

The mitigation measures presented above to reduce air quality emission impacts related to construction activities will further reduce any climate change effects during construction, resulting in no adverse impact during construction. For these reasons, the Metro Board finds construction impacts related to climate change would be less than significant.

## 7.15 Energy (Construction)

The construction related energy impacts of the Project were evaluated in Sections 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, Appendix F (Energy Conservation) of the CEQA Guidelines states that the goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include decreasing overall per capita energy consumption, decreasing reliance on fossil fuels, and increasing reliance on renewable energy sources. The analysis considered:

- The effects of the Project on existing energy resources
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives

### 7.15.1 Impact

No significant energy impacts would occur during construction of the Project.

### 7.15.2 Reference

Final EIS/EIR Section 4.15.3, Pg. 4-366 – 4-368.

### 7.15.3 Mitigation Measures

None required.

### 7.15.4 Finding

Energy consumption required to construct the Project's tunnels, stations, and ancillary facilities will be 2,309 billion British thermal units (BTUs), which is 0.03 percent of the total energy consumed per year in the State of California. Approximately 5.1 billion BTUs will be used to construct the maintenance facility, which is 0.0001 of the total energy consumption of the State of California.

In addition, in the long-run, the Project will reduce regional mobile source energy consumption, off-setting the short-term increase in energy consumption during construction. It is estimated that once operational, the Project will reduce regional mobile source BTU consumption by 921 billion BTUs per year compared to the No Build Alternative in 2035. Therefore, the energy required during construction activity will be off-set in approximately 2.5 years. The energy consumption required for construction of the Project should be considered a "wise and efficient use of energy" to reduce long-term energy consumption in the region.

During construction, Metro will require the construction contractor to implement energy conserving BMPs in accordance with Metro's Energy and Sustainability Policy. BMPs include, but are not limited to, the following:

- Implementing a construction energy conservation plan
- Using energy-efficient equipment
- Consolidating material delivery to ensure efficient vehicle utilization
- Scheduling delivery of materials during non-rush hours to maximize vehicle fuel efficiency
- Encouraging construction workers to carpool
- Maintaining equipment and machinery in good working condition.

With implementation of these BMPs, the Project will not lead to a wasteful, inefficient, or unnecessary usage of fuel or energy during construction, and therefore will not result in a significant energy impact in the short or long term.

Under the Phased Construction Scenario, the potential for energy impacts due to the construction of the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the construction and energy use.

For these reasons, the Metro Board finds construction impacts related to energy would be less than significant.

## 7.16 Geologic Hazards—Seismic and Liquefaction (Construction)

The construction related seismic and liquefaction impacts of the Project were evaluated in Sections 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant seismic or liquefaction impact if construction of the Project results in the following:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 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
  - Strong seismic ground shaking
  - Seismic-related ground failure, including liquefaction
  - Landslides
- Result in substantial soil erosion or the loss of topsoil.
- Be located on a geologic unit or soil that is unstable or that will become unstable as a result of the Project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- Be located on expansive soil, creating substantial risks to life or property.



- 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.

Construction impacts related to subsidence and settlement and hazardous subsurface gases are discussed in Section 5.0 as impacts are reduced to less than significant with implementation of mitigation measures. Construction impacts related to seismic and liquefaction are discussed below since impacts are less than significant.

#### **7.16.1 Impact**

No significant seismic or liquefaction impacts would occur during construction of the Project.

#### **7.16.2 Reference**

Final EIS/EIR Section 4.15.3, Pg. 4-368 – 4-369.

#### **7.16.3 Mitigation Measures**

None required.

#### **7.16.4 Finding.**

Construction within the Project Study Area will be susceptible to surface fault rupture and seismic ground shaking. Metro Standards for design of temporary shoring systems include earthquake loading. Earth pressures for earthquake loads are determined by the geotechnical consultant on a site-specific basis considering the site location and ground conditions. Construction will be performed in accordance with Metro Design Criteria that includes national standards and codes to protect the workers and work under construction considering seismic conditions.

Designs to minimize risk of liquefaction related damage to the excavation support system include increasing the depth of soldier piles to reach non-liquefiable zones, or ground improvement to densify the soil may be provided prior to the installation of the excavation support system. Therefore, the construction of the Project will not result in a significant liquefaction impact.

Under the Phased Construction Scenario, the potential for seismic and liquefaction impacts due to the construction of the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the construction activities.

For these reasons, the Metro Board finds construction impacts related to seismic and liquefaction would be less than significant.

### **7.17 Hydrology and Water Resources—Water Supply (Construction)**

The construction related water supply impacts of the Project were evaluated in Sections 4.15.3 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant water supply impact if construction of the Project results in the following:

- Substantially deplete water resources

#### **7.17.1 Impact**

No significant water supply impacts would occur during construction of the Project.

### 7.17.2 Reference

Final EIS/EIR Section 4.15.3, Pg. 4-380 – 4-381.

### 7.17.3 Mitigation Measures

None required.

### 7.17.4 Finding

During construction of the Project, field offices, the TBM and associated cooling towers will require water use. Water is also required to mix concrete and other construction materials, for dust control, for personnel use, etc., but this will not adversely affect the water supply. The slurry used in the TBM will be water and bentonite, and the discharged water will be recycled for preparing additional slurry. The water used by cooling towers near the tunnel access shafts will be recycled and used again. With the use of the recycled water, the TBM and related equipment will not affect the municipal water supply, even accounting for evaporation. It is anticipated that construction water use will be approved during design and that Los Angeles Department of Water and Power has the capacity to supply the water. Therefore, the construction of the Project will not significantly impact the municipal water supply.

In addition, dewatering during tunnel excavation could overdraw groundwater resources. However, potable groundwater underlying the alignment alternatives is from the San Pedro Formation aquifers, which are deeper than the tunnels for the Project. Therefore, dewatering will not affect water supply.

Under the Phased Construction Scenario, the potential for water supply impacts due to the construction of the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the construction activities.

For these reasons, the Metro Board finds construction impacts related to water supply would be less than significant.



## 8.0 ENVIRONMENTAL IMPACTS AVOIDED BY ELIMINATION OF OPTIONS

The Final EIS/EIR identified potentially significant impacts associated with the LPA that are no longer expected to result because the options that would cause these impacts are no longer proposed as part of the approved Project.

### 8.1 Transportation

The Transportation Impacts of the Project were evaluated in Chapter 3 of the Final EIS/EIR. For the Westside Subway Extension Project, evaluation of potential transportation impacts included public transit, streets and highways, parking, pedestrian, bicycle, and bus networks, and construction-related transportation impacts.

There are a few applicable quantitative standards of significance related to transit impacts. The measurement and prediction of level of service at potentially affected intersections is a standard that is used to evaluate the significance of potential traffic impacts. Predicted changes in level of service provide indications of how well road-based movements may function under different conditions, which may have implications for vehicular traffic, and certain types of transit and non-motorized transportation. For the Westside Subway Extension Project, the following criteria were used:

#### Streets and Highways

A substantial increase in traffic delay or degradation in level-of-service for traffic operations or alternative modes.

##### 8.1.1 Streets and Highways—Intersection Analysis

#### Impact

The intersection level-of-service results indicate that the LPA will not adversely impact any analyzed Study Area intersections compared to existing and future No Build Alternative conditions. The exception is the Bank of America entrance at the Wilshire/Rodeo Station, which would result in a significant impact at the intersection of Wilshire Boulevard and Beverly Drive under future conditions.

#### Reference

Final EIS/EIR Section 3.4.2, Pg. 3-55 – 3-58

#### Mitigation Measures

No mitigation measures will be required for all stations with the exception of the Bank of America entrance at the Wilshire/Rodeo Station. The traffic impact resulting from the Bank of America station entrance at the Wilshire/Rodeo Station cannot be mitigated.

#### Finding

The Metro Board adopts the Ace Gallery site, southwest corner of Wilshire Boulevard and Reeves Drive, as the station entrance for the Wilshire/Rodeo Station. Therefore, changes or alternations have

been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR. (CEQA Guidelines, Section 15091, subd. (a)(1)).

The Project will result in improved level-of-service at several Study Area intersections. In the future (year 2035), the Project is expected to improve level-of-service at 12 locations in the AM peak-hour and at 8 locations in the PM peak-hour. Under existing with Project conditions, the Project is expected to improve level-of-service at 9 locations in the AM peak-hour and 13 locations in the PM peak-hour.

In general, the intersection level-of-service results indicate that the Project will not negatively impact any analyzed Study Area intersections compared to existing as well as future No Build Alternative conditions. If the Project is constructed in phases, the potential for improved level-of-service at Study Area intersections during Phase 2 and Phase 3 will occur later.

For the reasons stated above, the Metro Board finds no significant impacts on streets and highways related to intersection analysis.

## 8.2 Geological Hazards—Fault Rupture: Station Location

The operation impacts of the Project related to geologic hazards were evaluated in Sections 4.8 of the Final EIS/EIR. As explained in the Final EIS/EIR, the Westside Subway Extension Project would result in a significant impact related to geologic hazards if operation of the Project results in the following:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 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
  - Strong seismic ground shaking
  - Seismic-related ground failure, including liquefaction
  - Landslides
- Result in substantial soil erosion or the loss of topsoil.
- Be located on a geologic unit or soil that is unstable or that will become unstable as a result of the Project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- Be located on expansive soil, creating substantial risks to life or property.
- 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.

Operation impacts related to seismic ground shaking, fault rupture along the tunnel alignment, liquefaction and seismic settlement, and hazardous subsurface gases are discussed in Section 5.0 as impacts are reduced to less than significant with implementation of mitigation measures.

Operational impacts related to fault rupture at station locations are discussed below since impacts are less than significant.

### 8.2.1 Impact

The West Beverly Hills Lineament, a northern extension of the Newport-Inglewood Fault, crosses the LPA in the vicinity of Moreno Drive in the Century City area. If the Century City Station is located along Santa Monica Boulevard, the West Beverly Hills Lineament will cross the station box. Surface fault rupture poses a substantial hazard for this station. However, if the Century City Station is located along Constellation Boulevard, no known faults will cross the station box.

### 8.2.2 Reference

Final EIS/EIR Executive Summary, Pg. S-47, Section 4.10, Pg. 4-170 – 4-208.

### 8.2.3 Mitigation Measures

Surface fault rupture poses a substantial hazard for the Century City Station at the Santa Monica location that cannot be mitigated with available techniques and measures. If the Century City Station is located along Constellation Boulevard no mitigation would be required.

### 8.2.4 Finding.

Known faults crossing the Project alignment options include the Santa Monica fault zone and the West Beverly Hills Lineament, which is now thought to be the northern extension of the Newport-Inglewood fault zone. The area along Santa Monica Boulevard between several hundred feet east of South Moreno Drive in Beverly Hills and Century Park West, and continuing to the west, is geologically complex due to this faulting.

The State of California identifies the Santa Monica fault zone as an active fault within the most recent geologic epoch (the Holocene, which extends from about 11,000 years ago until the present). The State of California bases this conclusion on the most thorough scientific research published to date on the fault zone. This information and the recent fault investigations performed as part of the Project are used as the primary sources for scientific information about the fault zone.

The Santa Monica fault zone is an oblique-left-lateral reverse fault that would displace in an east-west and vertical direction. The concept of displacement during an earthquake. The Santa Monica fault zone could have a maximum credible earthquake magnitude ( $M_w$ ) of 6.6 based on estimates from the State of California (CGS 2003).

Extensive additional studies were conducted as part of the Final EIS/EIR evaluation of the Project to provide more data on the Santa Monica fault zone in the vicinity of the Century City Station options. These studies provided additional scientific/technical analysis that confirmed, and in some cases amplified, the geotechnical and geological information existing in the environmental review record (see information in Section 4.8 of the Draft EIS/EIR).

Findings to date have located the fault zone in three locations related to the Project options:

- South of Santa Monica Boulevard in zones crossing Century Park West Boulevard
- Crossing of Avenue of the Stars running subparallel (in an east-west direction)
- Crossing Santa Monica Boulevard at about Avenue of the Stars

The investigation also concluded that the fault zones, several hundred feet wide, would be subject to both vertical distortion and shearing horizontally during large earthquakes. In other words, there is a broad zone along Santa Monica Boulevard in Century City in which there could be both vertical and horizontal ground rupture movement.

In addition to the Santa Monica fault zone, the Metro investigations confirmed that the West Beverly Hills Lineament is a north-northwest trending fault that will cross the alignment in the vicinity of South Moreno Drive in the Century City area—either at the Century City Santa Monica Station location or about where tunnels would run under the Beverly Hills High School lacrosse fields, depending on the alignment option. Prior to the Final EIS/EIR studies, the West Beverly Hills Lineament had been delineated by discontinuous east-facing scarps (sharp topographic changes), but not through subsurface geologic investigations. Since the Draft EIS/EIR, the West Beverly Hills Lineament and its potential impact on the Project were further evaluated through subsurface geologic investigation along Santa Monica Boulevard and Durant Drive. Geophysical seismic reflection results and bore hole and cone penetrometer test (CPT) data indicate that faulting and folding have occurred in the vicinity of South Moreno Drive. This provides further evidence that the West Beverly Hills Lineament is the surface expression of an active fault.

These investigations also conclude that the West Beverly Hills Lineament is the northern extension of the active Newport-Inglewood fault zone. The Newport-Inglewood fault zone is a primarily right lateral strike slip fault zone. Right lateral means that if one is standing facing the fault, the other side will move toward the right during a major earthquake.

Subway stations, because they are habitable structures for human occupancy, may not be built on active fault zones due to regulatory codes and the practical difficulty of designing a safe and repairable structure required by Metro's design criteria. For Maximum Design Earthquake events on the Santa Monica or Newport-Inglewood fault zones, fault displacements could be on the order of 3 to 6 feet. Design of Metro's underground stations—which are complex two-story structures up to 1,000 feet long and include systems and ventilation equipment—to withstand such displacements without significant damage and potential loss of life would be impractical and without precedent. Damage levels would require a complete rebuild of the stations and associated tunnel sections, with a construction time frame of several years.

An area susceptible to surface fault rupture can range from tens to several hundred feet wide, depending on the fault characteristics. Avoidance is the recommended means of mitigating surface fault rupture hazards for facilities such as stations. Based on Metro's geologic studies undertaken during the Final EIS/EIR, the Century City Santa Monica Station option was shifted east to avoid locating the station box in the Santa Monica fault zone. However, additional investigations found that this new location places the station on the West Beverly Hills Lineament. Thus, surface fault rupture poses a substantial hazard for this station location that cannot be mitigated with the available techniques and measures.

More detailed information about the geotechnical and fault investigations is available in the *Westside Subway Extension Century City Area Fault Investigation Report*, including the detailed locations and subsurface geometries of major strands of the Santa Monica and West Beverly Hills/Newport-Inglewood fault zones. As along most major fault systems, additional secondary fault strands and zones of possible distributed near-surface deformation are also likely to occur in association with these faults. The methods of investigation used in the fault investigation study may not detect such

smaller features. Thus, a buffer zone extending approximately 100 feet beyond the detected main traces of the faults was established to include areas that may be subject to ground rupture, folding, secondary faulting, and off-fault, distributed deformation expected during an earthquake. Such features are likely to be found within the structurally complex zone of the intersection of the Santa Monica and West Beverly Hills Lineament/Newport-Inglewood fault zones near or just north of the intersection of Santa Monica Boulevard and South Moreno Drive.

These investigations and studies provide fully sufficient data (1) to support a reasonable conclusion that the adverse environmental impacts and safety risks of the Century City Santa Monica Station render that alternative infeasible, and (2) to influence, if not determine, the selection of the Century City Constellation Station. As a result, the Century City Santa Monica Station is not included in the Project. The Century City Constellation Station is included in the Project and is not located in a fault zone or a fault buffer zone, and thus fault rupture is not a hazard for this station location. Therefore, changes or alterations have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR. (CEQA Guidelines, Section 15091, subd. (a)(1).)

Under the Phased Construction Scenario, the potential for impacts related to fault rupture at station locations during operation of the Project will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

For these reasons, the Metro Board finds impacts related to fault rupture at station locations during operation of the Project would be less than significant.

## 9.0 CUMULATIVE IMPACTS

The cumulative impacts of the project were evaluated in Section 4.17 of the Draft EIS/EIR and in Section 4.17 of the Final EIS/EIR.

All known existing highway and transit services and facilities, and the committed highway and transit projects in the 2009 Metro Long Range Transportation Plan (LRTP) and the 2008 SCAG RTP are included in the cumulative impacts analysis. No new infrastructure would be built within the study area, except for projects currently under construction or projects funded for construction, environmentally cleared, planned to be operating by 2035, and identified in the Metro LRTP. The following are known large projects that will be completed by 2035:

- Exposition Boulevard Light Rail Phase 1 (Expo 1)
- Exposition Boulevard Light Rail Phase 2 (Expo 2)
- Gold Line Foothill Extension
- Eastside Transit Corridor Phase 2
- Crenshaw Transit Corridor Project
- Green Line Extension to Los Angeles Airport (LAX)
- South Bay Green Line Extension to Torrance Transit Center
- The LAX automated people mover (APM)
- The LAX automated people mover (APM)

Cumulative impacts also includes all the existing bus service provided by LA Metro and other transit agencies and incorporates the following three planned projects: the Metro Orange Line Extension; Wilshire Bus Rapid Transit, and the 910 El Monte Station–Artesia Transit Center via Downtown.

The region-wide impact analysis conducted in the PEIR (SCH No. 2007061126, May 2008) identified considerable cumulative effects associated with the 2008 RTP, which is included.

Section 4.17 Cumulative Impacts of the Final EIS/EIR indicates the potential cumulative impacts in the areas construction and parking. With incorporation of possible mitigation measures, construction of the Project could still result in a considerable contribution to cumulative construction impacts associated with traffic, hazardous materials transport, water quality, and community and neighborhood effects during construction. All remaining cumulative environmental resources were either found to not be cumulatively significant or that the project's contribution was not cumulatively considerable.

### 9.1 Cumulative Impacts for Operations

#### 9.1.1 Transit

The Project, including all station, alignment, and station entrance options still under consideration, will provide additional fixed- guideway transit capacity under a congested corridor; thus, the incremental effect of the Project on the transit network will be beneficial. Even allowing time spent for accessing subway service (including vertical movement to platforms) under the Project, it will

result in substantial increases in transit speeds and reduced travel times versus the No Build Alternative. When combined with other planned transit projects and improvements pursuant to the 2008 RTP, the Project's beneficial cumulative effect will accrue to the entire SCAG region and, in particular, to the Los Angeles County subregion. Under the Phased Construction Scenario, the beneficial cumulative effects resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline.

### 9.1.2 Traffic

In general, the Project is projected to result in fewer vehicle trips and Vehicle Miles Traveled as compared to the 2035 No Build Alternative; thus, the incremental effect of the Project on the combined traffic impacts at the analyzed study intersections will not be cumulatively considerable. The exception involves an optional Bank of America entrance at the Wilshire/Rodeo Station location. The traffic impact at Wilshire Boulevard and Beverly Drive would be significant if the Wilshire/Rodeo Station entrance is located at the Bank of America along Beverly Boulevard. This option was not selected as part of the Project, though. Even if it had, however, the cumulative traffic impact of this station entrance is not cumulatively considerable. The Wilshire/Rodeo Station entrance at Ace Gallery, which was selected as part of the Project will not result in significant traffic impacts. Therefore, the Project will not contribute to the projected 2035 cumulative traffic increase. The only difference between the two scenarios is the timing of these cumulative traffic effects.

### 9.1.3 Parking

The Project is expected to result in on-street parking impacts due to residential neighborhood spillover (refer to Section 3.6.2 for a specific discussion of impacts). The projected increase in population within a one-quarter mile walking distance of station location options will also increase parking demand. Therefore, the Project's parking impact will be cumulatively considerable when considered together with the increased parking demand that could result from a higher population density in Project station areas, as well as stations for other transit projects and improvements. The mitigation recommendations contained in the *Westside Subway Extension Parking Policy Plan* for the Project or similar measures developed for each individual future transit project were developed to help reduce the magnitude of this impact. Nonetheless, even with such a reduction, the cumulative impact will remain as a result of the projected regional and localized population growth and density, and the associated higher parking demand.

The Project could result in the loss of private, off-street, and non-required parking at two station locations, Westwood/UCLA Off-Street and Westwood/VA Hospital (north and south options). UCLA and the Department of Veterans Affairs, respectively, own these locations and are working with Metro on station development. At these two station locations the Westwood/UCLA Off-Street and Westwood/VA Hospital North station options were not selected as part of the Project. The parking analysis indicates that impacts at the Westwood/VA Hospital South Station will be minimized since the parking will be replaced by a new parking structure east of the VA Hospital building. In addition, the Project could result in the loss of private off-street parking due to the station entrances. Station entrances, including the corridor to connect the station entrance from the platform to the street level, may impact underground parking facilities at the Century City, Wilshire/Rodeo, Westwood/UCLA, and Westwood/VA Hospital Stations. At many of these locations, the underground parking exceeds the levels required by local parking ratios. In general, no mitigation measures are required since no adverse impacts are expected under the Project.

Under the Phased Construction Scenario, the cumulative parking effects are the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the cumulative parking effects.

#### **9.1.4 Air Quality**

The Project is expected to reduce regional Vehicle Miles Traveled and regional air pollutant emissions burden levels, and thus will not contribute to cumulative air quality impacts during the operational period. The Project is included in the Draft Amendment #08-34 to the 2008 RTIP as Project ID #UT101, #1TR1002 and #1TR1003 (refer to page 5 of Draft Amendment). The Project is also included in Metro's 2009 LRTP under Candidates for Private Sector Financial Participation–Transit Projects (refer to Figure K on page 25). The RTIP includes a transportation air quality conformity determination for the entire region, as it accounts for future emissions from all mobile sources such as the Westside Subway Extension so that the Regions' can meet its air quality goals. The Project will have a beneficial impact on air quality; therefore, there will not be cumulatively considerable adverse impact on air quality.

Under the Phased Construction Scenario, the beneficial cumulative air quality impacts are the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the beneficial cumulative air quality impacts.

#### **9.1.5 Climate Change**

Climate change impacts for the Project were analyzed using traffic projections that consider existing considerations and the foreseeable future. Although a greenhouse gas conformity analysis was not done at this time, the Project is included in the Draft Amendment #08-34 to the 2008 RTIP as Project ID #UT101, #1TR1002 and #1TR1003 (refer to page 5 of Draft Amendment). The Project is also included in Metro's 2009 LRTP under Candidates for Private Sector Financial Participation–Transit Projects (refer to Figure K on page 25). Given the Westside Subway Extensions' inclusion in these regional programs to improve air quality and reduce greenhouse gases, the Project contributes to the region's ability to meet these goals.

Furthermore, when considering the combined effect of reduced roadway VMT and increased power usage for the rail system, the Project shows no measurable change in greenhouse gas emissions. The Project will have a beneficial impact on climate change; therefore, there will not be cumulatively considerable adverse impact on greenhouse gas emissions.

Under the Phased Construction Scenario, the beneficial cumulative effect on climate change will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the beneficial cumulative climate change effects.

#### **9.1.6 Noise and Vibration**

Noise impacts to the environment from introducing transit system noise generally result from operations of at grade and elevated transit systems. The Project will operate heavy rail trains up to 70 feet below the ground surface. Noise from subway rail transit operations, including the interaction of wheels on track, motive power, signaling, and warning systems, will occur well below ground, and airborne noise from these components will not be audible at ground level and above. Thus, the Project will not contribute to a cumulative airborne noise impact from these components.



The Project will use the existing road and sidewalk network for passenger access to underground stations. While noise could be generated in the above-ground portion of stations from pedestrians, bicyclists, and passenger drop off activities, these activities are not significant noise generators. Any such noise will be brief and minimal, and will not result in long-term noise impacts. Each operational component will be typical of all stations and communities and will not result in direct or indirect impacts, or make a considerable contribution to cumulative operational noise impacts.

The vibration analysis indicated that no adverse impacts associated with subway operation are anticipated. The Project will be designed and built in compliance with FTA noise and vibration standards to eliminate noise and vibration impact. Any groundborne noise or vibration impacts will be minimized to levels that comply with Federal noise and vibration impact criteria. Operational noise and vibration emissions from the Project will occur only at very specific locations (e.g., TPSSs, emergency electrical power generators, subway tunnel vent discharge/emergency egress locations) and do not result in area-wide impacts. Therefore, the Project will not make a considerable contribution to cumulative operational vibration impacts.

Under the Phased Construction Scenario, the potential for cumulative noise and vibration effects will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for noise and vibration effects.

### **9.1.7 Land Use and Development**

The Project will provide opportunities for implementing local and state land use policies or local planning objectives, which may encourage transit-oriented development. This may include station area planning and/or housing density bonuses adjacent to transit alignments and station options. All such future development (including mixed-use, residential, and commercial) within the County and City of Los Angeles, Westside Cities Council of Governments subregions, and the entire SCAG region will be consistent with applicable land use and community plans and subject to all applicable requirements and regulations of local jurisdictions where the stations will be located. Therefore, the Project is not anticipated to indirectly facilitate development either inconsistent with applicable local land use and community plans or beyond that already anticipated in the regional plans and SCAG regional projections.

When the Project is combined with other transportation projects and improvements pursuant to the 2008 RTP that will provide similar development opportunities around the station areas, the indirect cumulative effect will result in a considerable regional impact to land use and will change land use intensity and patterns in some areas. This change will facilitate and encourage more compact and pedestrian-oriented growth and discourage urban sprawl.

Under the Phased Construction Scenario, the potential for cumulative direct or indirect land use impacts will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### **9.1.8 Community and Neighborhood Impacts**

The Project extends through or near numerous neighborhoods and local jurisdictions. However, it will not introduce any new barriers that could divide the community. Metro will acquire several parcels during construction for the storage of equipment and materials and other construction-related activities. Parcels used for construction staging will be left vacant and will be available for

development after construction is complete. The vacant parcels may present a future opportunity for transit-oriented development.

The Project, together with other future transit and transportation improvements projects, will provide opportunities for future stations and station area development in those neighborhoods and communities. This development is anticipated to enhance circulation and connectivity within the greater region, which in turn may help enhance the character and cohesion of these communities and neighborhoods. In addition, the new and expanded transit services will provide enhanced access directly to those neighborhoods, and by upgrading service throughout the day, they will improve access to and support of employment opportunities and job retention, as well as the use of community, institutional, education, and recreational facilities in those areas. No adverse cumulative impact is anticipated under the Project.

Under the Phased Construction Scenario, the potential for cumulative impacts to communities and neighborhoods will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### **9.1.9 Parklands and Other Community Facilities**

The Project will not reduce the amount of existing parkland or require full acquisition of community facilities in the Study Area. It has a beneficial impact in providing additional access to these facilities.

Indirectly, the Project will provide opportunities for transit-oriented development around some station areas, which includes a residential use component. Residential uses may increase demand for local parks and other community facilities, and influence a demand for additional recreational and other facilities. When combined with similar opportunities provided by other transit and transportation improvement projects pursuant to the 2008 RTP which indicated a significant impact for the combination of regional projects, the indirect impact will not be cumulatively considerable.

Under the Phased Construction Scenario, the potential for cumulative impacts to parklands and other community facilities will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### **9.1.10 Visual Effects**

The Project will not directly result in adverse impacts on scenic highways and vistas, visual character, or light and glare. The Project is one of the regional projects that is in a highly developed urbanized setting. While the 2008 RTP indicates an overall significant cumulative impact of the combined projects to the visual environment, the Project will not contribute to significant cumulative effects and result in a cumulatively considerable impact.

Under the Phased Construction Scenario, the potential for cumulative impacts to visual resources will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### **9.1.11 Cultural and Historic Resources**

The Project will remove one building, Ace Gallery, at the Wilshire/Rodeo Station. Removal of historic resources is considered an adverse effect. (See discussion below as well for construction period impacts.) However, this impact is not expected to combined with other similar impacts and thus this

individual contribution will not be cumulatively considerable contribution to a significant cumulative impact.

Under the Phased Construction Scenario, the potential for cumulative impacts to cultural and historic resources will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the removal of the Ace Gallery, which is considered an adverse effect, will occur during construction of Phase 2. This adverse impact to a historic resource resulting from Phase 2 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. However, when combined with the significant impact of other transit and transportation improvement projects in the RTP, this individual contribution will not be cumulatively considerable. No adverse effects to cultural or historic resources are anticipated during Phase 1 or Phase 3.

### **9.1.12 Archaeological Resources**

No archaeological resources have been identified within the APE for the Project stations, alignment, or laydown areas. The Project may affect undocumented cultural resources, including intact archaeological deposits. Given that the Project right-of-way is generally within the street right-of-way, which often did not disturb more than a few feet of topsoil during its construction, construction activities may encounter subsurface prehistoric and/or historic archaeological deposits. Based on the density of standing historic-period buildings and structures, the sensitivity for the discovery of historic-era archaeological sites is higher near the Wilshire/La Cienega Station and between the Westwood/UCLA and Century City Stations. Therefore, when combined with potential effects of other transit and transportation improvement projects pursuant to the 2008 RTP on archeological resources, this impact will be cumulatively considerable.

Under the Phased Construction Scenario, the potential for cumulative impacts to archaeological resources will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts. Based on the density of standing historic-period buildings and structures, the sensitivity for the discovery of historic-era archaeological sites is higher near the Wilshire/La Cienega Station, which will be constructed as part of Phase 1, and between the Westwood/UCLA and Century City Stations, which will be constructed as part of Phase 2 and Phase 3. Therefore, when combined with potential effects of other transit and transportation improvement projects pursuant to the 2008 RTP on archeological resources, Phase 1, Phase 2, and Phase 3 will result in an impact to archaeological resources that are cumulatively considerable.

### **9.1.13 Paleontological Resources**

The Project will involve tunneling in soils in the general area of the La Brea Tar Pits, which has yielded the heaviest concentration of known fossil deposits and has provided the most prolific record of Late Pleistocene vertebrate animal life discovered anywhere in the world. Best known paleontological and curation practices will be followed. Recovered fossils will be donated to a public museum such as the George C. Page Museum at the La Brea Tar Pits. Overall, with an increased likelihood of encountering important paleontological resources in these soils, it is likely that the Project will encounter previously unknown fossils as well. Preliminary preparation and excavation will then be conducted early on to methodically and carefully remove the resources and prepare the ground for the coming excavations. The construction approach will minimize the potential for

impacts. Therefore, given the less than significant impact of the Project, when combined with potential effects of other transit and transportation improvement projects pursuant to the 2008 RTP on paleontological resources, this impact will not be cumulatively considerable.

Under the Phased Construction Scenario, the potential for cumulative impacts to paleontological resources will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts. The La Brea Tar Pits, which has yielded the heaviest concentration of known fossil deposits, is located along the Phase 1 alignment. Phase 2 and Phase 3 of the alignment do not contain known fossil deposits. The construction approach for Phase 1, Phase 2 and Phase 3 will minimize the potential for impacts. Therefore, Phase 1, Phase 2 and Phase 3 will not result in cumulatively considerable impacts to paleontological resources.

#### **9.1.14 Energy**

The Project will use energy during operations. However, the Project is expected to reduce automobile passenger-miles of travel and associated fossil-fuel-based energy consumption. Reducing automobile travel also reduces vehicle congestion, which reduces energy consumption associated with vehicle idling and vehicle travel at slower speeds. Compared to the Existing conditions, the Project is expected to remove passenger cars from the regional roadway network, easing the increase in regional vehicle miles traveled and reducing mobile source energy consumption.

The Project will decrease regional energy consumption resulting in a beneficial energy impact. The energy consumption associated with the Project will not make a cumulatively considerable contribution to a significant cumulative impact when combined with energy use associated with other transit and transportation projects pursuant to the 2008 RTP.

Under the Phased Construction Scenario, the beneficial cumulative effects to energy consumption are the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of these beneficial cumulative effects to energy consumption.

#### **9.1.15 Water Quality**

The Project will not result in either an increase in impervious surfaces, siltation, or changes in the existing amount or runoff patterns within the watershed. With full compliance with existing regulations, including developing and implementing site-specific Standard Urban Storm Water Mitigation Plans that contain design features and appropriate BMPs to reduce post-construction pollutants in stormwater discharges, as well as implementation of identified mitigation measures, the Project will not result in significant water quality impacts. While the RTP's combination of regional projects had a cumulatively significant impact on water quality, the nature of this individual project would not contribute to a cumulatively considerable impact.

Under the Phased Construction Scenario, the potential for cumulative impacts to water quality will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

#### **9.1.16 Geologic Hazards**

As with any transportation and other development projects within the seismically active Southern California region, the Project components will be subject to hazard from fault rupture. The tunnel

alignment will cross the Santa Monica fault zone west of the Century City Station (both Century City Constellation and Century City Santa Monica). In addition to the Santa Monica fault zone, the station box for the Century City Santa Monica Station and the tunnel alignment for the Century City Constellation Station will cross the West Beverly Hills Lineament/Newport-Inglewood fault zone. While the impact from fault rupture hazard will be reduced through implementation of specialized construction techniques, it cannot be completely eliminated. Therefore, the Project will contribute to the significant regional cumulative effect associated with geologic hazards. The impacts from seismic ground shaking, hazardous gases, liquefaction, expansive soils, subsidence, and collapse will not be significant with implementation of the identified mitigation measures. The overall contribution of the Project to the significant cumulative regional geotechnical effects associated with implementation of the 2008 RTP transportation projects and improvements will be limited.

Under the Phased Construction Scenario, the potential for cumulative impacts related to geologic hazards will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts. The West Beverly Hills Lineament, considered to be the northern extension of the Newport Inglewood fault zone, crosses Phase 2 of the Project in the Century City vicinity. The Santa Monica fault zone crosses Phase 3 of the Project in the Century City vicinity. While the impact from fault rupture hazard will be reduced through implementation of specialized construction techniques, it cannot be completely eliminated. Therefore, Phase 2 and Phase 3 of the Project will contribute to the significant regional cumulative effect associated with geologic hazards. The impacts from seismic ground shaking, hazardous gases, liquefaction, expansive soils, subsidence, and collapse associated with Phase 1, Phase 2, and Phase 3 will not be significant with implementation of the identified mitigation measures. The overall contribution of Phase 1, Phase 2, and Phase 3 of the Project to the significant cumulative regional geotechnical effects associated with implementation of the 2008 RTP transportation projects and improvements will be limited.

### **9.1.17 Hazardous Materials**

Several facilities included on hazardous materials site lists were identified along the Project, including the expanded Division 20 maintenance yard. Implementation of the identified mitigation measures, such as evaluating whether soils and/or groundwater require sampling to develop a soil management/groundwater management or contingency plan and implementation of this plan as needed, will reduce this impact to a less than significant level.

Operations and maintenance will require routine transport, use, or disposal of hazardous materials. These materials will typically include fuel, oil, solvents, cleansers, and other materials, which are not considered acutely hazardous. Operation of the Project is not anticipated to result in exposure to acutely hazardous materials and will not contribute to cumulatively considerable impacts regarding hazardous materials.

Under the Phased Construction Scenario, the potential for cumulative impacts related to hazardous materials will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

## 9.2 Cumulative Impacts for Construction

The construction impacts assessment indicates that the Project under both the Concurrent Construction Scenario and the Phased Construction Scenario will result in similar cumulative impacts described in the following paragraphs.

### 9.2.1 Traffic

Constructing the Project will result in the temporary disruption and rerouting of traffic, including buses, which will contribute to the cumulative increases in congestion within the Study Area. Although the majority of the construction impacts on traffic circulation, parking, transit, and other modes (pedestrians and bicycles) identified will be temporary, impacts and/or residual impacts will remain significant and unavoidable during the construction period and would be a cumulatively considerable contribution to cumulative impacts. As explained above, the Board has adopted and incorporated all feasible mitigation measures for this impact, including TCON-1, TCON-2, TCON-3, TCON-4, TCON-5, as part of the approved Project. As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Nevertheless, implementation of these mitigation measures would not be sufficient to reduce the impacts to a less than significant level. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to traffic will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### 9.2.2 Parking

The Study Area is densely developed and built out with limited opportunities for off-street parking. On- and off-street parking closed or eliminated by construction activities or within the construction work zone will be replaced as needed. Replacement parking will be replaced as needed and will be located within a reasonable distance from the affected parking locations. Although the majority of the construction impacts on parking will be temporary, impacts and/or residual impacts will remain significant and unavoidable during the construction period. Nonetheless, this impact is not expected to combine with any other parking effects and is localized in nature and thus, will not be cumulatively considerable.

Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to parking will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### 9.2.3 Pedestrian and Bicycle Circulation

Pedestrian routes and access will be monitored and maintained throughout construction. Pedestrian routes and access will be provided through and/or adjacent to construction work areas. Pedestrian routes and access, including temporary pedestrian facilities, will comply with the requirements of the ADA and must be properly signed and lighted.

Bicycle traffic (e.g., paths, lanes, and routes) will be maintained safely through and adjacent to construction work areas. If bicycle traffic cannot be maintained, then alternative temporary bicycle routes will be identified, signed, and lighted. Temporary routes will require approval by the local jurisdiction. Bicycle access will be monitored and maintained throughout construction.

Although the majority of the construction impacts on pedestrians and bicycles will be temporary, impacts and/or residual impacts will remain significant and unavoidable during the construction period. Nonetheless, given the localized nature of this impact it is not expected to act cumulatively with other impacts of other projects and the pedestrian and bicycle impacts will not be cumulatively considerable.

Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to pedestrian and bicycle circulation will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

#### **9.2.4 Air Quality**

Constructing the Project will result in emissions from construction equipment and dust from excavations. Except for nitrous oxides (NO<sub>x</sub>), construction emissions of criteria pollutants will be below SCAQMD thresholds. The Project will contribute to a cumulative effect of NO<sub>x</sub> emissions during construction. With implementation of mitigation measures, emissions of PM<sub>10</sub> and PM<sub>2.5</sub> for the Project will be below SCAQMD thresholds. However, because the Study Area is in a nonattainment area for these pollutants, the Project will contribute to cumulative effects in regard to PM<sub>10</sub> and PM<sub>2.5</sub>. When combined with construction-related emissions generated by other transit and transportation projects, the cumulative air quality impact for NO<sub>x</sub> and particulate matter will be significant, although temporary and limited to the duration of construction. Nonetheless, when combined with similar air quality impacts associated with other transit and transportation projects pursuant to the 2008 RTP and the localized nature of this impact, the air quality impacts will not be cumulatively considerable.

Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to air quality will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts. Construction of Phase 1, Phase 2, and Phase 3 of the Project when combined with construction-related emissions generated by other transit and transportation projects will result in a significant cumulative air quality impact for NO<sub>x</sub> and particulate matter, which will be temporary and limited to the duration of construction. Nonetheless, when combined with similar air quality impacts associated with other transit and transportation projects pursuant to the 2008 RTP and the localized nature of this impact, the air quality impacts will not be cumulatively considerable.

#### **9.2.5 Noise and Vibration**

Noise and vibration from construction will comply with the City of Los Angeles CEQA Thresholds Guide, City of Los Angeles noise ordinance, City of Beverly Hills noise ordinance, County of Los Angeles noise ordinance, and the Metro Baseline Specifications Section 01565, Construction Noise and Vibration Control. Therefore significant construction noise and vibration impacts as defined under CEQA are not expected to occur. Nonetheless, when combined with potential concurrent

construction of other projects associated with other transit and transportation projects pursuant to the 2008 RTP and given the localized intermediate nature of this impact, the noise and vibration impacts will not be cumulatively considerable.

Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to noise and vibration will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### **9.2.6 Community and Neighborhood Effects**

Construction of the Project will be disruptive to communities and neighborhoods in the immediate vicinity of construction activities. If construction of the Project occurs at the same time as other projects in a particular community, cumulative effects associated with noise and vibration, street closures and traffic, parking, aesthetics, access to businesses, parks and public facilities, and other construction-related effects will be significant during construction. The Board hereby adopts and incorporates mitigation measures T-1, T-2, T-3, and T-4 as part of the approved Project to address this impact. (See, e.g., Final EIS/EIR, Executive Summary, S-55.) As a result, changes or alterations have been required in, or incorporated into, the Project which mitigate or avoid the significant impacts. (CEQA Guidelines section 15091, subdivision (a)(1).) Nevertheless, implementation of these mitigation measures would not be sufficient to reduce the impacts to a less than significant level. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

Under the Phased Construction Scenario, the potential for cumulative impacts for construction on communities and neighborhoods associated with noise and vibration, street closures and traffic, parking, aesthetics, access to businesses, parks and public facilities, and other construction-related effects will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### **9.2.7 Geologic Hazards**

The Project will likely encounter methane gas during construction. Previous projects in the Methane Risk Zone have been successfully and safely excavated. Multiple underground parking garages, such as the Los Angeles County Museum of Art parking facility, have been constructed in this area. The Project will apply similar construction measures, and there will be no impact on public health and safety. Therefore, the Project will not contribute to a significant cumulative impact and will not result in cumulatively considerable geologic hazards.

### **9.2.8 Hazardous Materials**

Construction of the Project will involve excavating and transporting soils affected by hazardous materials (spoils) for disposal. While contaminated groundwater may be encountered during tunneling and other excavations, groundwater treatment during excavation and/or tunneling activities will ensure that no contaminated water enters the waterways.

Spoils will be disposed of off-site at licensed disposal facilities. However, because all tunneling will be performed with pressure-face tunnel boring machines, spoils will undergo partial treatment (drying of spoils or de-sanding and other processing of slurry spoils) on-site before being loaded on trucks for off-site disposal. After treatment, those spoils will be disposed of at appropriate licensed



facilities. Since there is only a limited number of disposal facilities within the SCAG region, when combined with disposal associated with the construction of other transit and transportation projects pursuant to 2008 RTP, the cumulative effect of transporting hazardous materials outside the SCAG region will be cumulatively considerable. No mitigation has been identified to reduce this impact. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to hazardous materials will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### 9.2.9 Water Quality

Constructing the Project will proceed in strict compliance with existing regulations and requirements, including NPDES permit requirements, incorporating BMPs, and implementing a Standard Urban Stormwater Management Plan. Construction will not result in a conversion of pervious land to impervious land or in a substantial alteration of the existing amount or pattern of runoff. As such, no substantial increases in erosion, siltation, flooding, or exceedance of the stormwater drainage system's capacity will occur. As a result, no significant impact to water quality is anticipated. However, the contribution of the Project to cumulative impacts on water quality from other projects under construction, given the cumulative considerable water quality impacts from the combined projects in the 2008 RTP, will be cumulatively considerable. No mitigation has been identified to reduce this impact. As explained elsewhere, specific economic, legal, social, technological, and other considerations, make infeasible additional mitigation or alternatives identified in the EIR. (CEQA Guidelines section 15091, subdivision (a)(3).)

Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to water quality will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### 9.2.10 Visual Effects

Temporary impacts during construction, including increased dust, stockpiling of construction-related materials, the presence of heavy equipment (e.g., cooling towers for the tunnel boring machines, cranes, bulldozers, graders, scrapers, and trucks), temporary barriers, and enclosures, will result in an adverse and locally significant impact on the visual environment. Combined with similar effects associated with construction of other transit and transportation projects pursuant to the 2008 RTP, but given the local nature of the impacts, the combined impact will not be cumulatively considerable.

Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to visual quality will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

### 9.2.11 Biological Resources

The Study Area is a densely developed urban area with limited biological resources. However, construction within such an area could result in the removal of locally protected trees, and tree removal permits will be required to replace or otherwise mitigate the loss of these resources. However, mitigation measures will reduce impacts to a less than significant level. Since the Project is

within a densely built-out urban environment, it will not affect undisturbed natural areas. The potential to contribute to significant cumulative effects on biological resources—including wetlands, sensitive habitats, and wildlife movement corridors—is limited and the contribution of the Project to cumulative impacts is therefore less than cumulatively considerable.

Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to biological resources will be the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the potential for these impacts.

## 10.0 ALTERNATIVES AND MITIGATION MEASURES

The potential project Alternatives were evaluated in Chapters 2 and 7 of the Draft EIS/EIR and Chapters 2 and 7 of the Final EIS/EIR.

### 10.1 Prior Analysis of Alternatives

Metro's Westside Subway Extension has been an integral element of local, regional, and Federal transportation planning since the early 1980s. Extending westward from the Los Angeles Central Business District, the Westside Subway Extension has been the subject of in-depth technical studies and extensive community involvement during this period. The transit investment has historically been envisioned to extend toward Beverly Hills, Century City, Westwood (UCLA), West Los Angeles, and Santa Monica.

An Alternatives Analysis (AA) Study was initiated in 2007 for all reasonable fixed-guideway alternative alignments and transit technologies. The evaluation of alternatives in the AA Study resulted in the identification of heavy rail as the preferred technology and the recommendation of two alternative alignments for further consideration in the Draft EIS/EIR. These two alignment alternatives were: (1) Extend the Metro Purple Line Subway via Wilshire Boulevard to Santa Monica, and (2) Extend the Metro Purple Line Subway via Wilshire Boulevard to Santa Monica plus extend a subway from the Metro Red Line Subway Hollywood/Highland Station via Santa Monica Boulevard to connect with the Wilshire line. In January 2009, the Metro Board of Directors approved the AA Study and authorized preparation of the Draft EIS/EIR.

The FTA and Metro prepared the Draft EIS/EIR for the Westside Subway Extension in 2010. The FTA is the lead agency for the National Environmental Policy Act (NEPA), and Metro is the lead agency for the California Environmental Quality Act (CEQA). The Draft EIS/EIR described and evaluated the alternatives, including a No Build Alternative, a relatively low-cost Transportation System Management (TSM) Alternative, and five heavy rail subway alternatives. The Draft EIS/EIR documented the evaluation of the potential transportation and environmental impacts and benefits, mitigation measures, operating and maintenance and capital costs, and potential funding sources for the alternatives. It also included a comparison of alternatives and a discussion of the public and agency outreach. The Draft EIS/EIR was published in September 2010. On October 28, 2010, after careful deliberation of the benefits and impacts of all the alternatives analyzed and the public comments, the Metro Board of Directors approved the Draft EIS/EIR and identified Alternative 2 (Westwood/VA Hospital Extension) as the LPA.

In January 2011, the FTA granted approval for Metro to enter into the Preliminary Engineering (PE) phase. This step in the FTA project development process allowed the Final EIS/EIR to be prepared at the New Starts PE level of engineering

The Final EIS/EIR for the LPA was prepared, with specific direction from the Metro Board of Directors, to further evaluate station and alignment options and rail support facilities. The Final EIS/EIR evaluation includes two station location options for each of the Century City, Westwood/UCLA, and Westwood/VA Hospital Stations, and station entrance options at most of the LPA station locations. The results of these evaluations will be used by the Metro Board of Directors to select the project for implementation.

## 10.2 Findings for Environmentally Superior Alternative

Section 15126.6(e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be identified among the selected alternatives. The following alternatives were evaluated in the EIS/EIR for potential environmental, economic, and social impacts:

- No Build Alternative
- TSM Alternative
- Five Build Alternatives extend the Metro Purple Line subway from Wilshire/Western to:
  - Alternative 1 Westwood/UCLA
  - Alternative 2 Westwood/VA Hospital
  - Alternative 3 Wilshire/4th Street
  - Alternative 4 Westwood/VA Hospital and a West Hollywood branch
  - Alternative 5 Wilshire/4th Street and a West Hollywood branch
- The five Build Alternatives included six station and alignment options:
  - Option 1—Eliminate the Wilshire/Crenshaw Station
  - Option 2—Locate the Wilshire/ Fairfax Station farther east
  - Option 3—Locate the Wilshire/La Cienega Station farther west and design it as a transfer station from the West Hollywood branch to the Wilshire branch
  - Option 4—Locate the Century City Station on Constellation Boulevard. Consider alternative alignment routes between Wilshire/Rodeo and Century City (Santa Monica Boulevard, Constellation North, or Constellation South) and Century City and Westwood/UCLA Stations (East, Central, or West)
  - Option 5—Locate the Westwood/ UCLA Station On-Street under the center on Wilshire Boulevard
  - Option 6—Locate the Westwood/ VA Hospital Station on the north side of Wilshire Boulevard

All five of the build alternatives consist of heavy-rail transit (HRT) tracks in subway, stations, and associated facilities. HRT systems provide high speed (maximum of 70 mph), capacity (high passenger-carrying capacity of up to 1,000 passengers per train and multiple unit trains with up to six cars per train), and reliable service since they operate in an exclusive grade-separated right-of-way. Each of the build alternatives were designed as a double-track system (one track in each direction) to accommodate the anticipated frequency of train traffic. For the Build Alternatives, the separated right-of-way is all in a tunnel, with the top of the tunnel at least 30 to 70 feet below the ground surface. The subway would be powered by electrical power from a third rail adjacent to and parallel with the running rail. Alternatives range in length between 8.60 miles and 17.49 miles in length and considered up to 17 new stations. A goal of Metro is to be the transportation industry leader in maximizing sustainability efforts and its benefits for Los Angeles County's people, economy, and the environment. Westside Subway Extension project would also be designed and constructed in accordance with Metro's sustainability goal.

The alternatives considered in the Draft EIS/EIR were selected on the basis of and further evaluated as against several established project goals and objectives, including:

- **Goal A: Mobility Improvement**—The primary purpose of the project is to improve public transit service and mobility in the Westside Extension Transit Corridor. To compare the alternatives in terms of mobility improvement, the evaluation examines how well each alternative improves the ability of residents and employees to reach desired destinations through the provision of high quality, convenient, and reliable east-west transit service.
- **Goal B: Transit Supportive Land Use Policies and Conditions**—A major aspect of this goal is to locate transit alignments and stations in areas with existing land uses conducive to transit use or in those areas that have the greatest potential to develop transit supportive land uses.
- **Goal C: Cost-Effectiveness**—This goal ensures that both the capital and operating costs of the project are commensurate with its benefits.
- **Goal D: Project Feasibility**—The fourth goal is that the project be financially feasible. Specifically, this goal helps ensure that funds for the construction and operation will be readily available and will not place undue burdens on the sources of those funds. The goal also includes minimizing risks associated with project construction.
- **Goal E: Equity**—This goal evaluates project solutions based on how fairly the costs and benefits are distributed across different population groups with particular emphasis on serving transit-dependent communities.
- **Goal F: Environmental Considerations**—The sixth goal is to develop solutions which minimize impacts to environmental resources and communities within the study area.
- **Goal G: Public Acceptance**—This goal aims to develop solutions that are supported by the public with special emphasis on residents and businesses within the study area.

Most of the impacts of the Project could and would be mitigated by identified mitigation measures or by the appropriate selection of project options. There are, however, impacts that cannot be mitigated to a less than significant level or avoided, including

- Public Transit Impacts (Construction)
- Streets and Highways Impacts (Construction and Operations)
- Parking Impacts (Construction)
- Bicycle and Pedestrian Network Impacts (Construction)
- Air Quality Impacts (Construction)
- Noise and Vibration Impacts (Construction)
- Historic, Archeological, and Paleontological Resources Impacts (Construction and Operations)
- Cumulative Impacts (Construction)

The No Build Alternative would result in the fewest impacts, and would be the environmentally superior alternative to the Project, and would be the environmentally superior

alternative. Aside from the No Build Alternative, the TSM Alternative would likely be the environmentally superior alternative. However, neither the No Build Alternative nor the TSM Alternative meet the purpose and need of the Westside Subway Extension project, and while they would not be associated with some of the impacts of the build alternatives, they would not achieve the benefits of those alternatives either. Of the remaining alternatives, only Alternatives 1 and 2 are affordable within the adopted LRTP. Of these two financially feasible alternatives, Alternative 2 provides significantly higher ridership and somewhat improved cost effectiveness over Alternative 1. Extending one additional station to the Westwood/VA Hospital Station would serve this major regional center and provide an important access point to the regional transit system that is located west of the I-405 Freeway. The additional ridership with Alternative 2 results in greater environmental benefits, including decreased VMT and improved air quality, and, therefore, Alternative 2 is the environmentally superior alternative.

### 10.2.1 Reference

Final EIS/EIR Executive Summary, especially S-27, and Section 5, pages 5-1 – 5-15; Draft EIS/EIR Executive Summary, pages S-34, S-39 – S-60, and Section 7, pages 7-1 – 7-2.

## 10.3 No Build Alternative

The No Build Alternative provides the transportation network in 2035 as a means of understanding what the transportation environment would be like without any improvements beyond those that are currently committed. The No Build Alternative includes all existing highway and transit services and facilities, and the committed highway and transit projects in the LRTP and the Southern California Association of Governments (SCAG) *2008 Regional Transportation Plan (RTP)* (SCAG 2008a).

By 2035, several approved urban rail projects are expected to be in operation and are assumed within the No Build Alternative. These include the following:

- Exposition Light Rail Transit Project Phases 1 and 2 (Expo 1 and Expo 2). Expo 1 is planned to connect Downtown Los Angeles with the Westside at Culver City and have 11 stations. Expo 2 would add 7 miles and 7 stations, terminating in Downtown Santa Monica in the vicinity of 4th Street and Colorado Avenue.
- The Metro Gold Line Foothill Extension is planned to extend the existing Pasadena
- Gold Line from the Sierra Madre Villa Station to the Azusa/Citrus community.
- The Metro Regional Connector is an approximately 2-mile transit link between the Metro Gold and Metro Blue Line through Downtown Los Angeles. The Regional Connector aims to improve access to both local and regional destinations by providing continuous service among Metro Rail lines, including future planned and funded urban rail projects under Measure R, such as the Metro Gold Line Eastside Extension Phase 2 and Expo Line Phase 2.
- The Metro Gold Line Eastside Extension Phase 2 considers LRT alternatives to connect cities east of Los Angeles with the terminus of Phase 1 at the Atlantic Station.
- The Crenshaw/LAX Transit Corridor Project would be a light rail transit line that stretches 8 miles from the I-105 Freeway to the Expo Corridor.

- The South Bay Metro Green Line Extension would extend the existing Metro Green Line from its current terminus at the Redondo Beach Station or Century Aviation to the Torrance Transit Center.
  - Enhancements are planned for the Division 20 Maintenance and Storage Facility.

In addition to the Metro lines, the No Build Alternative includes the proposed Los Angeles World Airports (LAX) Automated People Mover (APM), which is part of the LAX Master Plan and will be built and operated by LAX. The APM will operate between a new Intermodal Transportation Center north of Metro's Green Line Aviation/LAX Station and the LAX terminals, with a connection to the Crenshaw/LAX Line at Aviation/Century.

The No Build Alternative includes all the existing bus service provided by Metro and the other transit agencies; it also reflects Metro's plans to restructure its bus routes systemwide, eliminating duplicate service or reducing service on routes that will be serviced by rail other than the Westside Subway Extension. It also incorporates two planned projects:

- The Metro Orange Line Extension is a 4-mile dedicated busway linking the Metro Orange Line from the Canoga Station to the Chatsworth Metrolink Station. Four new stations will be located at Sherman Way, Roscoe Boulevard, Nordhoff Street, and the Chatsworth Train Depot. The Metro Orange Line Extension is expected to be in service in summer 2012.
  - The Wilshire Bus Rapid Transit Project proposes dedicated curbside bus lanes during the morning and evening rush hours along Wilshire Boulevard to the Santa Monica city line, excluding the City of Beverly Hills. The Final Environmental Impact Report/Environmental Assessment was certified by the Metro Board of Directors in December 2010. The Metro Board of Directors also authorized Metro to enter into contract agreements with the City of Los Angeles to construct the peak period bus lanes.

### 10.3.1 Findings for the No Build Alternative

The Metro Board finds that specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the No-Build Alternative identified in the FEIS/FEIR (CEQA Guidelines Section 15091(a)(3)).

The No Build Alternative would not result in the significant environmental impacts of the Project; however, it would not generate the beneficial impacts either, including mobility improvements, capacity and reliability improvements, and enhanced transit service that the build alternatives would provide. The No Build Alternative would not achieve the reduced Vehicle Miles Traveled as compared to the Project. Under the No Build Alternative, transit travel times will increase since service in the Study Area will still be dominated by buses operating in mixed traffic. The expected growth in general-purpose traffic volumes, particularly along major east-west arterials such as Wilshire Boulevard, will contribute to slower bus operating speeds and result in increased transit travel times. Therefore, the No Build Alternative would not be consistent with the goals and objectives for the Westside Subway Extension project, as identified through the extensive studies and public participation in the area, and documented in the Statement of Purpose and Need.

### 10.3.2 Reference

Final EIS/EIR Executive Summary, especially S-27, Chapter 3 pages 3-24 – 3-43, Draft EIS/EIR Executive Summary, especially page S-34.

## 10.4 Transportation System Management Alternative

The TSM Alternative emphasizes more frequent bus service than the No Build Alternative to reduce delay and enhance mobility. As such, the TSM meets some aspect of the Purpose and Need to provide enhanced transit service and improved mobility in the Study Area. The TSM Alternative contains all elements of the highway, transit, Metro Rail, and bus service described under the No Build Alternative. In addition, the TSM Alternative increases the frequency of service during peak periods for Metro Rapid Bus Line 720 (Santa Monica–Vermont via Wilshire Boulevard).

The service area of the Metro Rapid Bus Line 720 is the same for both the No Build and TSM Alternatives. The existing Metro Rapid Bus Line 720 runs between 4th Street and Colorado Avenue in Santa Monica to Commerce Center in Commerce. However, for both the No Build and the TSM Alternatives, the Metro Rapid Bus Line 720 will operate between 4th Street and Colorado Avenue in Santa Monica and Wilshire Boulevard and Vermont Avenue in Koreatown.

Under the No Build Alternative, during peak periods, the Metro Rapid Bus Line 720 operates at a frequency of five minutes in the peak flow direction and 10 minutes in the nonpeak flow direction. The TSM Alternative increases the frequency of Metro Rapid Bus Line 720 in both directions to 3.3 minutes during the peak period. This means that nonpeak flow buses run roughly twice as often during the peak period compared to the No Build Alternative.

In the TSM Alternative, Metro Purple Line rail service to the Wilshire/Western Station would operate in each direction at 10-minute headways during peak and off-peak periods. The Metro Red Line service to Hollywood/Highland Station would operate in each direction at five-minute headways during peak periods and at 10-minute headways during midday and off-peak periods.

### 10.4.1 Findings for the TSM Alternative

The Metro Board finds that specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the TSM Alternative identified in the Final EIS/EIR (CEQA Guidelines section 15091(a)(3)).

The TSM Alternative is financially feasible, but would not result in the benefits of the Project. The Build Alternatives, operating in an exclusive guideway that is fully separated from roadway traffic, would achieve much higher transit speeds than would be possible with buses, even with the priority treatments assumed in the TSM Alternative, and thus are expected to substantially reduce transit times as compared to the TSM Alternative. Another measure of transit travel time and convenience to passengers is the number of transfers travelers must make to get from their origin to their destination. The TSM Alternative would result in substantially more transfers as compared to the Build Alternatives. Alternatives that attract the highest ridership are those that offer the best service to the greatest number of people. The TSM Alternative is least effective, as compared to the Build Alternatives, attracting no more than 5 to 10 percent of the new riders attracted by the rail alternatives. As a result, TSM Alternative would not achieve the reduced Vehicle Miles Traveled as compared to the Project. The TSM Alternative would not be consistent with the goals and objectives for the Westside Subway Extension project, as identified



through the extensive studies and public participation in the area, and documented in the Statement of Purpose and Need as summarized in Section 3.0.

#### **10.4.2 Reference**

Final EIS/EIR Executive Summary, especially S-27, Chapter 1, Chapter 2 pages 2-38 – 2-42; Draft EIS/EIR Chapter 7 pages 7-2 – 7-10, Executive Summary, especially page S-34, S-39 – S-60.

### **10.5 Alternative 1—Westwood/UCLA Extension**

This alternative extends heavy rail transit (HRT), in subway, from the existing Metro Purple Line Wilshire/Western Station to a Westwood/UCLA Station. The alignment is approximately 8.60 miles in length and includes six new stations plus the optional Wilshire/Crenshaw Station. From the Wilshire/Western Station, Alternative 1 travels westerly beneath Wilshire Boulevard to the Wilshire/Rodeo Station and then southwesterly toward a Century City Station. Alternative 1 then extends from Century City and terminates at a Westwood/UCLA Station.

#### **10.5.1 Findings for Alternative 1 - Westwood/UCLA Extension**

The Metro Board finds that specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for high-trained workers, make infeasible Alternative 1 identified in the Final EIS/EIR (CEQA Guidelines section 15091(a)(3)).

Alternative 1 would meet most of the purpose and need goals of the Project. Alternatives 1 and 2 are expected to be most competitive for New Starts funds and can be built with available Measure R and other identified funds. However, because Alternative 1 would terminate on the east side of I-405, this alternative would not provide substantial mobility benefits to communities on the west side of I-405. Since only the major east-west major arterials cross I-405, the freeway currently acts as a barrier between the communities on either side of the freeway, limiting access and resulting in traffic congestion at these pinch points.

Extending one additional station to the Westwood/VA Hospital Station will provide essential access to communities west of I-405. The one-station extension from Westwood/UCLA (Alternative 1) to the Westwood/VA Hospital (Alternative 2) results in approximately 3,500 new transit trips, an increase of almost 15 percent. Due to this substantial ridership increase for a relatively small capital investment, Alternative 2 is more cost effective than Alternative 1. While Alternative 1 would meet most of the purpose and need goals of the Project, the purpose and goals would be better met by Alternative 2, which would provide greater mobility benefits. As a result, Alternative 1 would not achieve the reduced Vehicle Miles Traveled as compared to the Project.

#### **10.5.2 Reference**

Final EIS/EIR Executive Summary, especially S-27, and Chapter 2 pages 2-38 – 2-42; Draft EIS/EIR Chapter 7 pages 7-2 – 7-10, Executive Summary, especially page S-34, S-39 – S-60.

### **10.6 Alternative 2—Westwood/Veterans Affairs Hospital Extension**

On October 28, 2010, the Metro Board of Directors concurred with staff's recommendation to designate Alternative 2 – Westwood/VA Hospital Station as the LPA. The LPA has since been refined as part of the preliminary engineering phase of the project, as reported in the Final EIS/EIR. The LPA is essentially the same configuration as Alternative 2, except the LPA does not include several of

the station and alignment options presented in the Draft EIS/EIR. The findings regarding these station and alignment options are detailed below in Section 9.10.

This alternative is the same as Alternative 1 from the existing Metro Purple Line Wilshire/Western Station to a Westwood/Westwood/UCLA Station. From this station, Alternative 2 then travels westerly under Veteran Avenue and continues west under the I-405 Freeway, terminating at a Westwood/VA Hospital Station. This alignment is 8.96 miles in length from the Wilshire/Western Station and includes seven new stations.

### **10.6.1 Findings for Alternative 2 - Westwood/Veterans Affairs Hospital Extension**

Alternative 2 would meet the purpose and need goals of the project. All of the five Build Alternatives studied would provide significant countywide benefits as the Project will serve as a primary connector between residential communities throughout the county where people live and the very dense regional job centers on the Westside (Westwood, Century City, and Beverly Hills). However, only Alternatives 1 and 2 are affordable within the adopted LRTP. Additionally, Alternatives 1 and 2 are also expected to be most competitive for New Starts funds. Between these two alternatives, Alternative 2 provides significantly higher ridership, greater mobility benefits, and somewhat improved cost effectiveness as compared to Alternative 1.

Extending one additional station to the Westwood/VA Hospital Station, Alternative 2 will provide essential access to communities west of I-405. The one-station extension from Westwood/UCLA (Alternative 1) to the Westwood/VA Hospital (Alternative 2) results in approximately 3,500 new transit trips, an increase of almost 15 percent. Extending one additional station to the Westwood/VA Hospital Station will provide access to communities west of I-405.

Alternative 2 would have fewer environmental impacts than Alternatives 3, 4, and 5 due in large part to the shorter length and fewer number of stations in Alternative 2. Therefore, the potential for impacts is lower with Alternative 2 than Alternatives 3, 4 or 5. However, Alternative 2 also results in fewer mobility benefits than Alternatives 3, 4, and 5.

### **10.6.2 Reference**

Final EIS/EIR Executive Summary, especially S-27, and Chapter 2 pages 2-38 – 2-42; Draft EIS/EIR Executive Summary, pages S-34, S-39 – S-60, and Chapter 7 pages 7-2 – 7-10

## **10.7 Alternative 3—Santa Monica Extension**

This alternative is the same as Alternative 2, for much of its length from the existing Metro Purple Line Wilshire/Western Station to the Westwood/VA Hospital Station. From this station, Alternative 3 would then continue westerly under Wilshire Boulevard, terminating at the Wilshire/4th Street Station between 4th and 5th Streets. The alignment is 12.38 miles in length from the Wilshire/Western Station and includes eleven new stations plus the optional Wilshire/Crenshaw Station.

### **10.7.1 Findings for Alternative 3 - Santa Monica Extension**

The Metro Board finds that specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for high-trained workers,

make infeasible Alternative 3 - Santa Monica Extension identified in the Final EIS/EIR (CEQA Guidelines section 15091(a)(3)).

Although Alternative 3 would meet the purpose and need goals of the Project, it is not financially feasible with the adopted LRTP. The Santa Monica extension would require the fewest number of transfers to reach destinations and would provide direct connections to north-south bus routes. The Santa Monica extension would increase in transit ridership of about 28 percent. Alternative 3 is second to Alternative 5 in providing the highest increase in transit ridership. Alternative 3 is not financially feasible without a new source of revenues.

Because Alternative 3 is longer than Alternatives 1 and 2, the impacts associated with its construction would be bigger as it would affect a larger area. Thus, for instance, the significant and unavoidable air quality and noise impacts of the Project that would occur during the construction period would be similar but bigger under Alternative 3 than the Project simply by virtue of the alternative's larger size.

### **10.7.2 Reference**

Final EIS/EIR Executive Summary, especially S-27, and Chapter 2 pages 2-38 – 2-42; Draft EIS/EIR aft EIS/EIR Executive Summary, pages S-34, S-39 – S-60, Chapter 7 pages 7-2 – 7-10

## **10.8 Alternative 4—Westwood/VA Hospital Extension plus West Hollywood Extension**

This alternative is similar to Alternative 2 for much of its length, extending from the existing Metro Purple Line Wilshire/Western Station to a Westwood/VA Hospital Station but also adds a West Hollywood Extension. The West Hollywood branch extends from the existing Metro Red Line Hollywood/Highland Station to the track connection structure near Robertson and Wilshire Boulevards. The alignment is 14.06 miles in length and includes 12 new stations plus the optional Wilshire/Crenshaw Station.

From a new station at Hollywood/Highland, the West Hollywood Line generally extends south under Highland Avenue, westerly under Santa Monica Boulevard, southerly on San Vicente Boulevard, then southwesterly toward Wilshire Boulevard to connect into the alignment of Alternative 2 at a track connection structure at Robertson and Wilshire Boulevards.

### **10.8.1 Findings for Alternative 4 - Westwood/VA Hospital Extension plus West Hollywood Extension**

The Metro Board finds that specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for high-trained workers, make infeasible Alternative 4 - Westwood/VA Hospital Extension plus West Hollywood Extension identified in the Final EIS/EIR (CEQA Guidelines section 15091(a)(3)). Although Alternative 3 would meet the purpose and need goals of the Project, it is not financially feasible with the adopted LRTP. The West Hollywood extension would increase in transit ridership of about 13 percent. By providing a direct connection from Century City and Westwood to West Hollywood, Hollywood, and North Hollywood in the San Fernando Valley, the West Hollywood Extension (Alternatives 4 and 5) has the greatest potential to shorten transit travel time, and thus, would be the most competitive with the

automobile. For trips to the San Fernando Valley, Alternative 4 would be 7 minutes faster than the Build Alternatives that do not include the West Hollywood extension.

Although longer Build Alternatives would result in greater mobility and land use benefits, these alternatives would also cost more to construct and operate. Alternative 4 is not financially feasible without a new source of revenues.

Because Alternative 4 is longer than Alternatives 1 and 2, the impacts associated with its construction would be bigger as it would affect a larger area. Thus, for instance, the significant and unavoidable air quality and noise impacts of the Project that would occur during the construction period would be similar but bigger under Alternative 4 than the Project simply by virtue of the alternative's larger size.

### **10.8.2 Reference**

Final EIS/EIR Executive Summary, especially S-27, and Chapter 2 pages 2-38 – 2-42; Draft EIS/EIR Executive Summary, pages S-34, S-39 – S-60 Chapter 7 pages 7-2 – 7-10

## **10.9 Alternative 5— Santa Monica Extension plus West Hollywood Extension**

This alternative is similar to Alternative 3, extending from the existing Metro Purple Line Wilshire/Western Station to the Wilshire/4th Station and adds a West Hollywood Extension similar to the extension described in Alternative 4. The alignment is 17.49 miles in length and includes 16 new stations plus the optional Wilshire/Crenshaw Station.

### **10.9.1 Findings for Alternative 5 the Santa Monica Extension plus West Hollywood Extension**

The Metro Board finds that specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for high-trained workers, make infeasible Alternative 4 - Westwood/VA Hospital Extension plus West Hollywood Extension identified in the Final EIS/EIR (CEQA Guidelines section 15091(a)(3)). Although Alternative 3 would meet the purpose and need goals of the Project, it is not financially feasible with the adopted LRTP.

Alternative 5 would result in the greatest mobility improvements, including the largest increase in transit ridership and the greatest reduction of VMT within the Study Area. By covering the largest area, as well as offering a connection in Hollywood between the Metro Red and Purple Lines, Alternative 5 offers the greatest improvement in transit service.

The Santa Monica extension would increase in transit ridership of about 28 percent. The Santa Monica extension would require the fewest number of transfers to reach destinations and would provide direct connections to north-south bus routes.

The West Hollywood extension would increase in transit ridership of about 13 percent. By providing a direct connection from Century City and Westwood to West Hollywood, Hollywood, and North Hollywood in the San Fernando Valley, the West Hollywood Extension (Alternatives 4 and 5) has the greatest potential to shorten transit travel time, and thus, would be the most competitive with the automobile. For trips to the San Fernando Valley, Alternatives 5 would be 10 minutes faster than the Build Alternatives that do not include the West Hollywood extension.

Although longer Build Alternatives would result in greater mobility and land use benefits, these alternatives would also cost more to construct and operate. Alternative 5 is not financially feasible without a new source of revenues.

Because Alternative 5 is longer than Alternatives 1 and 2, the impacts associated with its construction would be bigger as it would affect a larger area. Thus, for instance, the significant and unavoidable air quality and noise impacts of the Project that would occur during the construction period would be similar but bigger under Alternative 5 than the Project simply by virtue of the alternative's larger size.

### **10.9.2 Reference**

Final EIS/EIR Executive Summary, especially S-27, and Chapter 2 pages 2-38 – 2-42; Draft EIS/EIR Executive Summary, pages S-34, S-39 – S-60, and Chapter 7 pages 7-2 – 7-10

## **10.10 Station and Alignment Options**

In addition to the seven project alternatives, the Draft EIS/EIR considered a number of station and alignment options. Figure S-15 of the Draft EIS/EIR shows the proposed station and alignment options. There are six areas where options are proposed: Option 1) No Wilshire/Crenshaw Station; Option 2) Wilshire/ Fairfax East Station; Option 3) Wilshire/La Cienega West Station with Connection Structure; Option 4) Century City Station and Alignment Options; Option 5) Westwood/UCLA On-Street Station Option; and Option 6) Westwood/ VA Hospital North Station. These are alternative station location options and are not additional stations.

In general, the selection of the station and alignment options present questions of cost and operational efficiencies. Where noted below, however, certain options were selected to avoid environmental impacts that might otherwise occur under the Project.

### **10.10.1 Option 1—Wilshire/Crenshaw Station**

The EIR evaluated a project that includes the station at Wilshire/Crenshaw and an option that removed the station. As part of the Project, the Metro Board of Directors decided to not build the Wilshire/ Crenshaw Station.

#### **10.10.1.1 Findings for the Wilshire/Crenshaw Station**

The Wilshire/Crenshaw Station would have been located in the Park Mile section of Wilshire Boulevard, adjacent to lower density land uses that are not planned for future growth in the adopted Community Plan and Park Mile Specific Plan. This site is only 0.5 mile from the existing Wilshire/Western Station and does not serve a major north south intersection, as Crenshaw Boulevard terminates at Wilshire Boulevard and does not extend to the north. Because this is a comparatively lower ridership station with a cost of \$153 million, deleting the station improves the cost effectiveness of the Project. Furthermore, future connections from the Westside subway stations along Wilshire Boulevard to the planned Crenshaw/LAX Light Rail Transit project to the south have been recommended to take place at La Brea, La Cienega, or San Vicente rather than at Wilshire/Crenshaw.

This option would not have reduced or eliminated any of the significant and avoidable project impacts, and in fact would likely have resulted in an exacerbation of some of those impacts due to the expanded project footprint.

#### **10.10.1.2 Reference**

Final EIS/EIR Chapter 2, page 2-42

#### **10.10.2 Option 2 - Locate the Wilshire/ Fairfax Station Farther East**

Three entrance options were considered for the Wilshire/Fairfax Station:

- Northwest corner of Wilshire Boulevard and Fairfax Avenue (west of Johnie's Coffee Shop)
- Northeast corner of Wilshire Boulevard and Fairfax Avenue (in the interior of the LACMA West, former May Company, building)
- Southeast corner of Wilshire Boulevard and Orange Grove Avenue

The Metro Board of Directors decided to include the Wilshire/Fairfax East Station location as part of the Project in part due to stronger community support as compared to the other Wilshire/Fairfax station locations and its better access and land integration opportunities, including proximity to Museum Row.

##### **10.10.2.1 Findings for the Wilshire/Fairfax Station**

From the perspective of transit service, the first two sites provide the best locations for bus transfers on Fairfax Avenue and offer better connectivity to destinations to the north, including the Farmer's Market/The Grove and higher-density residential communities, such as Park La Brea. FTA, with State History Preservation Office (SHPO) concurrence on Johnie's Coffee Shop, has determined that a subway entrance adjacent to Johnie's Coffee Shop or a station entrance within LACMA West/May Company building would result in a "no adverse effect."

SAAG members expressed a preference for the entrance to be located at the LACMA West site. While this site would offer a direct connection into a significant cultural facility, and the possibility of an iconic entrance, it would involve more complex construction. Metro would face a variety of unknowns, such as seismic upgrading of a historic structure and potential conflicts with other proposals that are under consideration for the adaptive re-use of this structure. It is currently estimated that the LACMA West entrance would cost at least \$9 million more than the entrance near Johnie's Coffee Shop. This amount could increase by up to \$30 million depending on the particular conditions of the historic May Company structure. Furthermore, LACMA has indicated that a recently announced agreement with the Academy of Arts and Sciences to construct a film museum within the former May Company building could preclude the ability to include a subway entrance within this historic building. For this reason, LACMA has requested that Metro no longer consider the West/May Company building as a location for a primary station entrance and instead consider the site at the southeast corner of Wilshire Boulevard and Orange Grove Avenue as the primary station entrance. Metro acknowledges this request. Metro acknowledges this request. Johnie's Coffee Shop is selected as the station entrance for the reasons described below.

The site at the southeast corner of Wilshire Boulevard and Orange Grove Avenue is conveniently located for access to the major cultural institutions serving the station area, including LACMA, Hancock Park/La Brea Tar Pits, Page Museum, Peterson Automotive Museum, Craft and Folk Art Museum, and others. The site is less convenient for rail and bus transit riders who would be required to walk farther to make their transfers at bus stops located closer to the intersection of Wilshire Boulevard and Fairfax Avenue.

Accordingly, as part of this Project, Metro has decided to locate the Wilshire/Fairfax Station entrance on the northwest corner of the intersection, immediately west of Johnie's Coffee Shop, as this location would provide access to destinations on the north side of Wilshire Boulevard and to north-south bus connections as compared to a station entrance at Wilshire Boulevard and Orange Grove Avenue. The selection of the Johnie's site would avoid any conflicts with the proposed plans for a film museum as well as the additional risks and costs associated with construction of an entrance inside the LACMA West/May Company building.

#### **10.10.2.2 Reference**

Final EIS/EIR Executive Summary pages S-18 – S-26, Chapter 2, page 2-42

#### **10.10.3 Option 3 - Locate the Wilshire/La Cienega Station Farther West and Design it as a transfer station from the West Hollywood branch to the Wilshire Branch**

As part of the Project, the Metro Board of Directors selected the Wilshire/La Cienega East Station location without a West Hollywood connection structure. This is the preferred station entrance location for the City of Beverly Hills because it will be located in a denser, more commercial area than the other station location to the west of La Cienega. This entrance location also will provide excellent connections to two major north-south arterials—La Cienega and San Vicente Boulevards.

##### **10.10.3.1 Findings for the Wilshire/La Cienega Station**

This is the preferred station entrance location for the City of Beverly Hills because it will be located in a denser, more commercial area than the other station location to the west of La Cienega. This entrance location also will provide excellent connections to two major north-south arterials—La Cienega and San Vicente Boulevards.

The Board chose not to include a West Hollywood connection structure as part of the LPA due to funding constraints. The cost of the connection structure is not sufficiently justified when there may be alternative, less costly solutions to serve the West Hollywood transit market, such as a light rail line.

##### **10.10.3.2 Reference**

Final EIS/EIR Chapter 2, page 2-42 – 243

#### **10.10.4 Option 4 - Century City Station on Constellation Boulevard**

The Century City Constellation Station will be located underneath Constellation Boulevard from west of Avenue of the Stars to just west of Century Park East. The entrance may be located either at the northeast corner of Constellation Boulevard and Avenue of the Stars.

#### 10.10.4.1 Findings for the Century City Station

The Century City Station will serve a high-density commercial, employment, and residential center. As part of the LPA selection at the end of the Draft EIS/EIR phase in October 2010, the Metro Board of Directors directed the continued study of two station locations in Century City (Santa Monica Boulevard and Constellation Boulevard). The location of the Century City Station will affect the tunnel alignment to the east and west of the station. The location of the Century City Santa Monica Station evaluated in this Final EIS/EIR (at Century Park East) is located farther east than the location in the Draft EIS/EIR (at Avenue of the Stars). As part of the seismic analysis, conducted during the Final EIS/EIR phase, Metro determined that the location of the Century City Santa Monica Station at Avenue of the Stars is directly above the Santa Monica Fault zone and is not a safe location and thus not considered a viable option for the station. As a result, the Century City Santa Monica Station location was shifted approximately one-third of a mile to the east to Century Park East. Subsequent to shifting the station location, further seismic and geotechnical testing were conducted in Century City, which determined that the Century City Santa Monica Station at Century Park East is located above a northern extension of the Newport-Inglewood Fault zone, and also is not a safe location and thus not considered a viable option for the station.

The recommendation is to locate the Century City Station along Constellation Boulevard based on the evaluation of seismic safety as well as higher ridership projections.

The Century City Santa Monica Station would be located underneath Santa Monica Boulevard from just west of Century Park East to Moreno Drive. A separate crossover box would be located east of Moreno Drive. The entrance would be located on the southwest corner of Santa Monica Boulevard and Century Park East (Figure S-10). Construction staging and laydown would be located at the former Robinson May parking garage and along the median between Santa Monica Boulevard and Little Santa Monica Boulevard. Based on the *Westside Subway Extension Century City Fault Investigation Report* (Metro 2011w), this location is not considered a viable option due to seismic safety issues.

If the Century City Station is located on Constellation Boulevard, the ridership model predicts more than 3,000 additional daily boardings at Century City and at the seven new Purple Line stations west of Wilshire/Western. Despite the longer alignment and slight increase in travel time, a station on Constellation Boulevard would be more centrally located within Century City. The cost of the combinations with the Century City Station at Constellation Boulevard would not be significantly different than the combinations with the Century City Station at Santa Monica Boulevard.

The two station location options differ in terms of their proximity to the Santa Monica and Newport-Inglewood Fault zones. The Santa Monica Boulevard between about Moreno Drive and Century Park West Avenue is crossed by multiple faults. A station on Santa Monica Boulevard at Century City Park East would lie within an extension of the Newport-Inglewood Fault zone. Subway stations, because they are structures for human occupancy, should not be built on active fault/deformation zones due to the regulatory code and the difficulty designing such structures to withstand potential ground rupture and associated deformations. The Constellation Station site is in an area showing no evidence of faulting. Tunnels approaching either station location would necessarily cross both faults. However, the alignment associated with a Constellation Station would cross the fault zone at more of a right angle, which is more desirable for safe design.

The two Century City Station location options also differ in terms of the number of property acquisitions. The Century City Santa Monica Station could require more property for station



construction sites than the Century City Constellation Station depending on the location of construction staging.

The two Century City Station options have generated significant public discussion regarding subsurface easements beneath residences in Beverly Hills and Westwood, and Beverly Hills High School. The Santa Monica Boulevard option at Century City would require fewer residential and non-residential subsurface easements than the Constellation Boulevard option. The noise and vibration analysis summarized in Section 4.6 of this Final EIS/EIR concludes that ground-borne noise impacts will not exceed FTA criteria with mitigation for all station and alignment locations under consideration.

Both options would require temporary roadway lane closures during construction. With existing conditions, Constellation Boulevard carries one-fifth the traffic volume of Santa Monica Boulevard and operates at a better level-of-service. Therefore, traffic impacts during construction would be less with the Constellation Boulevard Station option.

#### **10.10.4.2 Reference**

Final EIS/EIR Summary, pages S-18 – S-27, pages S-82 – S-84; Draft EIS/EIR Executive Summary, pages S-34, S-39 – S-60

#### **10.10.5 Option 5 - Westwood/ UCLA Station On-Street Under the Center on Wilshire Boulevard**

The Westwood/UCLA On-Street Station would be located under Wilshire Boulevard, extending just west of Westwood Boulevard to west of Gayley Avenue, almost to Veteran Avenue. The entrance will be split the entrance at the intersection of Wilshire and Westwood Boulevards between the north and south sides of Wilshire Boulevard to improve pedestrian access.

##### **10.10.5.1 Finding for Westwood/ UCLA Station**

The Westwood/UCLA Off-Street Station option would require a deeper station and tunnels in order to clear the underside of foundations for a future hotel on Gayley Avenue. The Off-Street Station would be approximately 40 feet deeper than the On-Street Station. Deeper tunnel and stations are riskier to construct and require more time for transit riders to travel between the platform and the entrance. At the margin, this may affect transit travel times and ridership.

The number of residents and jobs within one-quarter mile of the entrances for both station locations is almost identical. However, the Westwood/UCLA On-Street Station would include an entrance at the Westwood Boulevard intersection, providing better access to bus connections along Westwood Boulevard and would be slightly closer to major office buildings and Westwood Village. Furthermore, one of the station entrance options for the Westwood/ UCLA On-Street Station is a split entrance between the north and south sides of Wilshire Boulevard. This entrance configuration would provide access to both sides of Wilshire Boulevard, which has four traffic lanes in each direction with double left-turn lanes at this location—a significant barrier to easy pedestrian flow across the street.

The Westwood/UCLA On-Street Station option is expected to have more impacts on traffic during construction. Three lanes would be provided in each direction on Wilshire Boulevard between Veteran Avenue and Glendon Avenue, resulting in a 25 percent reduction in roadway capacity in each direction for approximately six weeks. In addition, it is expected that Wilshire Boulevard would be closed to traffic between Veteran Avenue and Westwood Boulevard during 12 to 16 weekends to

install decking and again for decking removal. Even with the planned mitigation, traffic impacts would be significant during some phases of construction.

The Westwood/UCLA On-Street Station option would require approximately 13 fewer residential and non-residential permanent underground easements than the Off-Street Station option, regardless of the location of the Westwood/VA Hospital and Century City Stations.

#### **10.10.5.2 Reference**

Final EIS/EIR Summary, pages S-10 – S-11, S-27, S-85 – S-86; Draft EIS/EIR Executive Summary, pages S-34, S-39 – S-60

#### **10.10.6 Option 6 - Westwood/ VA Hospital Station**

The Westwood/VA Hospital South Station would be located at the northern edge of the VA Hospital parking lot, adjacent to Wilshire Boulevard. The entrance would be located on the Bonsall level, beneath the bus drop-off area, to the north of the VA Hospital parking lot. To accommodate the grade separation at this site, additional stairs, escalators, and elevators connecting the Wilshire level and the Bonsall level would be located on both the north and south sides of Wilshire Boulevard. A parking structure providing both permanent and temporary replacement parking would be located in the existing physicians' parking lot, east of the VA Hospital.

##### **10.10.6.1 Finding for Westwood/ VA Hospital Station**

While both options are within one-quarter mile of the VA Hospital, the Westwood/VA Hospital South Station site is 500 feet from the hospital and on the same side of Wilshire Boulevard, but the Westwood/VA Hospital North Station site is 1,200 feet away and on the other side of Wilshire Boulevard. Thus, the South Option offers better pedestrian access to the VA Hospital for employees, patients, and visitors. The South Option's vertical alignment also would be shallower than the North Option's alignment, reducing the time it takes transit users to reach the platform from the entrance.

The North Option could be problematic in the event of a future extension to Santa Monica due to the tight radius curve that would be required to extend west. A north alignment west of San Vicente Boulevard also would have to pass below a significant number of residential and commercial properties, requiring the acquisition of subsurface rights, which would not be necessary with the South Option.

Construction of the South Option would result in more impacts to traffic circulation during construction, including temporary ramp closures at the I-405 interchange. Mitigation measures will be put in place to manage traffic during these closures. The North Option at Westwood/VA Hospital would require slightly fewer subsurface easements from non-residential properties than the South Option.

##### **10.10.6.2 Reference**

Final EIS/EIR Summary, pages S-11 – S-12, S-27; Draft EIS/EIR Executive Summary, pages S-34, S-39 – S-60



### **10.11 Findings for Mitigation Measures**

The Metro Board has considered all of the mitigation measures recommended in the Final EIS/EIR for the project and other project elements. None of the recommended measures that are within the Metro Board's jurisdiction have been rejected by the Metro Board. To the extent that these Findings conclude that various proposed mitigation measures outlined in the Final EIS/EIR are feasible and have not been modified, superseded or withdrawn, the Metro Board hereby binds itself to implement or, as appropriate, require implementation of these measures. These Findings, in other words, are not merely informational, but rather constitute a binding set of obligations that will come into effect when the Metro Board adopts a resolution approving the project (possibly including additional options). The mitigation measures are referenced in the MMRP adopted concurrently with these Findings and will be effectuated through the process of constructing and implementing the project.





## 11.0 STATEMENT OF OVERRIDING CONSIDERATIONS

CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a project against its unavoidable risks when determining whether to approve a project. If the specific economic, legal, social, technological, or other benefits of the project outweigh the unavoidable adverse environmental effects, those effects may be considered acceptable (CEQA Guidelines Section 15093(a)). CEQA requires the agency to support, in writing, the specific reasons for considering a project acceptable when significant impacts are not avoided or substantially lessened. Those reasons must be based on substantial evidence in the Final EIS/EIR or elsewhere in the administrative records (CEQA Guidelines Section 15093(b)). In accordance with the requirements of CEQA and the CEQA Guidelines, the Metro Board finds that the mitigation measures identified in the Final EIS/EIR and the MMRP, when implemented, avoid or substantially lessen virtually all of the significant impacts identified in the Final EIS/EIR. Nonetheless, certain significant impacts of the project are unavoidable even after incorporation of all feasible mitigation measures. These significant unavoidable impacts are summarized below.

### 11.1 Significant and Unavoidable Impacts of the Project

- Impacts Related to Construction – Transportation

**Traffic.** The proposed project would result in significant traffic impacts during construction. Truck traffic volume will increase during construction of the Project along anticipated haul routes. Roadways proposed as haul routes. Truck volumes will range from 25 daily trips for the emergency exit shaft at the Westwood/VA Hospital Station and the Wilshire/Crenshaw construction staging area to between 100 and 140 trips for the TBM launch activity at the Westwood/VA Hospital Station. Although implementation of mitigation measures would reduce the traffic impacts during construction, they would remain significant and unavoidable.

**Traffic Circulation.** The proposed project would result in significant traffic circulation impacts during construction. Traffic impacts associated with Project construction include reduced roadway traffic lanes and temporary street closures that could result in major traffic disruptions and bottlenecks. Additionally, commercial driveways may be subject to reduced access around construction sites. Emergency vehicle access (e.g., police, fire and rescue, and ambulance) in and around construction work sites may be affected by lane closures and/or temporary street closures. Although implementation of mitigation measures would reduce the traffic circulation impacts during construction, they would remain significant and unavoidable.

**Transit.** The proposed project would result in significant transit impacts during construction. Bus service will be impacted by temporary street closures and will require the temporary rerouting of bus lines and bus stop locations. This will result in additional transit travel time for bus riders. Although implementation of mitigation measures would reduce the transit impacts during construction, they would remain significant and unavoidable.

**Parking.** The proposed project would result in significant parking impacts during construction. During construction, existing on-street parking and loading zones will be temporarily removed where traffic lanes are closed or eliminated temporarily. In addition, a number of off-street parking

spaces will be removed during construction of the Wilshire/La Cienega, Wilshire/Rodeo, Century City Santa Monica, Westwood/UCLA (On-Street and Off-Street), and Westwood/VA Hospital Stations (North and South). Although implementation of mitigation measures would reduce the parking impacts during construction, they would remain significant and unavoidable.

**Pedestrian and Bicycle Access.** The proposed project would result in significant pedestrian and bicycle access impacts during construction. During construction, pedestrian and bicycle access in and around construction work sites will be impacted as a result of street and side walk closures and disruptions to bike routes. Although implementation of mitigation measures would reduce the pedestrian and bicycle impacts during construction, they would remain significant and unavoidable.

- Impacts Related to Construction – Air Quality

**Regional Construction Emissions.** The proposed project would result in significant air-quality impacts during construction. SCAQMD thresholds will be exceeded for all pollutants when the total project emissions over the duration of the construction period are accounted for. In addition, nitrous oxides (NOx) thresholds will be exceeded for all construction elements. NOx levels will be elevated due partially to the proposed use of diesel locomotives to extract soil during the tunnel-boring process. Although implementation of mitigation measures would reduce the air quality impacts during construction, they would remain significant and unavoidable.

- Impacts Related to Construction – Noise and Vibration

**Noise.** The proposed project would result in significant noise impacts during construction. The greatest noise impacts will occur near stations, tunnel access portals, and construction laydown areas where construction activities at the surface are concentrated. The slurry plant, if used, will be located at the Wilshire/La Brea, Century City, and Westwood/VA Hospital Stations. With the exception of these areas, all other construction will occur completely below grade. Although implementation of mitigation measures would reduce the noise impacts during construction, they would remain significant and unavoidable.

- Impacts Related to Construction and Operation – Cultural Resources

**Historic Resources.** The property acquisition and subsequent demolition of the Ace Gallery would constitute a substantial adverse change that would substantially impair the significance of the historic resource. Additionally, should construction begin after 2019 there may be additional impacts to historic resources. Although implementation of mitigation measures would reduce the cultural resources impacts, they would remain significant and unavoidable.

- Cumulative Impacts Related to Construction – Transportation

**Traffic.** Constructing the Project will result in the temporary disruption and rerouting of traffic, including buses, which will contribute to the cumulative increases in congestion within the Study Area. Although the majority of the construction impacts on traffic circulation, parking, transit, and other modes (pedestrians and bicycles) identified will be temporary, impacts and/or residual impacts will remain significant and unavoidable during the construction period. Although implementation of

mitigation measures would reduce the cumulative traffic impacts during construction, they would remain significant and unavoidable.

- Cumulative Impacts Related to Construction – Hazardous Materials Transport

**Hazardous Materials.** Construction of the Project will involve excavating and transporting soils affected by hazardous materials (spoils) for disposal. While contaminated groundwater may be encountered during tunneling and other excavations, groundwater treatment during excavation and/or tunneling activities will ensure that no contaminated water enters the waterways. Spoils will be disposed of off-site at licensed disposal facilities. However, because all tunneling will be performed with pressure-face tunnel boring machines, spoils will undergo partial treatment (drying of spoils or de-sanding and other processing of slurry spoils) on-site before being loaded on trucks for off-site disposal. After treatment, those spoils will be disposed of at appropriate licensed facilities. Since there is only a limited number of disposal facilities within the SCAG region, when combined with disposal associated with the construction of other transit and transportation projects pursuant to 2008 RTP, the cumulative effect of transporting hazardous materials outside the SCAG region will be cumulatively considerable. Although implementation of mitigation measures would reduce the cumulative hazardous materials impacts during construction, they would remain significant and unavoidable.

- Cumulative Impacts Related to Construction – Water Quality

**Water Quality.** Constructing the Project will proceed in strict compliance with existing regulations and requirements, including NPDES permit requirements, incorporating BMPs, and implementing a Standard Urban Stormwater Management Plan. Construction will not result in a conversion of pervious land to impervious land or in a substantial alteration of the existing amount or pattern of runoff. As such, no substantial increases in erosion, siltation, flooding, or exceedance of the stormwater drainage system's capacity will occur. As a result, no significant impact to water quality is anticipated. However, the contribution of the Project to cumulative impacts on water quality from other projects under construction, given the cumulative considerable water quality impacts from the combined projects in the 2008 RTP, will be cumulatively considerable. Although implementation of mitigation measures would reduce the cumulative water quality impacts during construction, they would remain significant and unavoidable.

- Cumulative Impacts Related to Construction – Community and Neighborhood Effects

**Community and Neighborhood Effects.** Construction of the Project will be disruptive to communities and neighborhoods in the immediate vicinity of construction activities. If construction of the Project occurs at the same time as other projects in a particular community, cumulative effects associated with noise and vibration, street closures and traffic, parking, aesthetics, access to businesses, parks and public facilities, and other construction-related effects will be significant during construction. Although implementation of mitigation measures would reduce the cumulative community and neighborhood impacts during construction, they would remain significant and unavoidable.

**Reference.** Final EIS/EIR Transportation 3.8 pages 3-92 – 3-114; Air Quality 4.15 pages 4-347 – 4-355; Noise and Vibration 4.15 pages 4-358 – 4-363; Historic Resources 4.14 pages 4-309 – 4-326; Cumulative Impacts 4.17 pages 4-398 – 4-422

## 11.2 Overriding Considerations

The Metro Board further specifically finds that notwithstanding the disclosure of these significant impacts, there are specific overriding economic, legal, social, technological, and other reasons for approving this project. Those reasons are set out below.

The overriding considerations are best understood in light of the project's purpose and need and objectives. These needs include:

- The Study Area currently has, and is projected to have, large population and employment centers scattered throughout 15 existing major activity centers in the corridor. These activity centers are served by extremely congested road networks that will deteriorate further with the projected increase in population of 51,000 (a 10.1-percent increase) and the 58,000 additional jobs in the corridor (a 12.1-percent increase) by 2035.
- This anticipated growth will further affect transit travel speeds and reliability, even with a dedicated lane for express bus service on Wilshire Boulevard. By 2035, buses will travel at speeds ranging from 8 to 11 miles per hour (mph), and it is projected that a transit trip from Downtown Los Angeles to Westwood would take approximately 54 minutes.
- The Study Area currently has high transit usage—hundreds of thousands of transit riders every day. This high level of transit usage will increase by 29 percent between 2006 and 2035 (from 286,200 to 370,500).

The Westside Subway Extension alternatives were developed to provide more reliable transit service to the 286,200 transit riders who access the Westside of Los Angeles by improved capacity and reliability, eliminating transfers, and allowing for fast efficient transit service throughout the region. The Westside Subway Extension alternatives would enhance and leverage the existing regional rail system investment by making travel easier and attracting ridership systemwide, and by indirectly enhancing development potential at all system stations.

Metro applied the following goals and objectives in evaluating potential alternatives for the Westside Subway Extension Project. These goals and objectives reflect Metro's mission to meet public transportation and mobility needs for transit infrastructure while also being a responsible steward of the environment and being considerate of affected agencies and community members when planning a fiscally responsible project.

- **Goal A: Mobility Improvement**—The primary purpose of the Project is to improve public transit service and mobility in the Westside Extension Transit Corridor. To compare the alternatives in terms of mobility improvement, the evaluation examines how well each alternative improves the ability of



residents and employees to reach desired destinations through the provision of high quality, convenient, and reliable east-west transit service.

- Goal B: Transit-supportive Land Use Policies and Conditions—A major aspect of this goal is to locate transit alignments and stations in areas with existing land uses conducive to transit use or in those areas that have the greatest potential to develop transit-supportive land uses.
- Goal C: Cost-effectiveness—This goal ensures that both the capital and operating costs of the Project are commensurate with its benefits.
- Goal D: Project Feasibility—The fourth goal is that the Project be financially feasible. Specifically, this goal helps ensure that funds for the construction and operation will be readily available and will not place undue burdens on the sources of those funds. The goal also includes minimizing risks associated with project construction.
- Goal E: Equity—This goal evaluates project solutions based on how fairly the costs and benefits are distributed across different population groups with particular emphasis on serving transit-dependent communities.
- Goal F: Environmental Considerations—The sixth goal is to develop solutions that minimize impacts to environmental resources and communities within the Study Area.
- Goal G: Public Acceptance—This goal aims to develop solutions that are supported by the public with special emphasis on residents and businesses within the Study Area.

Based on these goals and objectives, Metro considered a range of project alternatives.

**Reference.** Final EIS/EIR 7.1 page 7-1 – 7-2.

**Regional Connectivity:** The Project, operating in an exclusive guideway that is fully separated from roadway traffic, will achieve much higher speeds than would be possible with buses, even with the bus priority treatments. New links between the Project and other transit lines will improve transit travel time for residents throughout the County.

**Reference.** Final EIS/EIR Section 7.2 pg 7-3 – 7-4.

**Regional Access and Mobility:** With improved transit speeds, the Project will attract more travelers to transit. Daily boardings at the seven new Project stations are expected to range from approximately 46,000 to 49,300 per day. Approximately 27,200 to 30,100 net additional daily riders will be attracted to public transportation with the Project. These are trips that would have been made by another mode. Another 20,000 riders are expected to switch from bus to rail each day to take advantage of the subway's greater speed and reliability. In total, transit riders using the Project will receive more than 38,000 hours of travel time savings per day.

**Reference.** Final EIS/EIR Section 7.2 page 7-4 – 7-5.

**Reliability:** With the Project, transit will operate on its own exclusive guideway and will not be affected by roadway conditions. Arrival times and trip times will be extremely reliable. Subway service will provide frequent and reliable service regardless of traffic conditions on the streets and highways above. Transit reliability in the study area will be affected in a very positive way.

**Reference.** Final EIS/EIR Section 7 page 7-5.

**Comfort and Convenience:** A measure of transit travel time and convenience to passengers is the number of transfers travelers must make to get from their origins to their destinations. Project will significantly reduce the number of transfers. Under the Project, riders from the study area can access Metrolink and Amtrak with just one transfer at Union Station.

**Reference.** Final EIS/EIR Section 7.2 page 7-5.

**Capacity and Expandability:** While the Project offers sufficient capacity to meet the transit demand projected for 2035, it also offers greater ability to expand capacity as growth continues beyond 2035, simply by adding cars to a train or running more frequent trains.

**Reference.** Final EIS/EIR Section 7.2 page 7-5.

**Vehicle Miles Traveled and Greenhouse Gas Reduction:** The Project is expected to decrease regional Vehicle Miles Traveled (VMT), which will reduce energy consumption and lower emissions of some air pollutants, including greenhouse gas emissions and other pollutants that currently contribute to our regional air quality problems, resulting in beneficial air quality and climate change effects.

**Reference.** Final EIS/EIR Section 7.2 page 7-8.

**Construction Employment:** The Project will result in a beneficial direct and indirect employment impacts. New direct jobs (jobs and services purchased to build the Project) could be approximately 35,699 and indirect employment (secondary demand for goods and services) could be approximately 27,567 for the Project.

**Reference.** Final EIS/EIR Section 4.15 page 4-389.

**Equity.** More than one-sixth of residents within one-half mile of the alignment are low income, and nearly half are minority. The Project will provide better mobility to a large number of low-income and minority people. Furthermore, short-term construction impacts will not disproportionately affect low-income and minority residents.

**Reference.** Final EIS/EIR Section 7 page 7-8.

**Compatibility with Transit Oriented Development:** The extent to which the Project meets these land use goals can be measured by the number of high-density, mixed-use activity centers within one-half mile of the alignment and by the number of high-opportunity areas for redevelopment within one-half mile of the alignment. Twelve activity centers—defined as locations with major commercial activity and mixed uses—and two high-opportunity areas were identified in the Draft EIS/EIR (Figure 7-1). The Project will provide subway service to seven of the activity centers and one high-opportunity area.

**Reference.** Final EIS/EIR Section 7 page 7-5 – 7-6.

### **11.3 Conclusions**

On balance, the Metro Board finds that there are specific, economic, legal, social, technological, and other considerations associated with the project that serve to override and outweigh the project's significant impacts and, thus, the significant impacts are considered acceptable. For this reason, the Board approves the project notwithstanding these environmental effects that are significant and unavoidable.

The Board has balanced the project benefits and considerations against the unavoidable and irreversible environmental impacts identified in the EIS/EIR and have concluded that those impacts are outweighed by the project benefits. Upon balancing the environmental risks and countervailing benefits, the Board has concluded that the benefits that the region will derive from the development of the project, as compared to the existing and planned future conditions, outweigh those environmental risks.

In conclusion, the Board finds and concludes that each benefit discussed herein constitutes a separate overriding consideration warranting approval of the project, independent of the other benefits, despite each and every significant and unavoidable impact affecting the environment.



## 12.0 MITIGATION MONITORING AND REPORTING PLAN

The following is the Mitigation Monitoring and Reporting Plan adopted by the Metro Board for the Westside Subway Extension Project.

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	– Enforcement Agency – Monitoring Agency – Timeframe
<p>T-1—Coordination with Property Owners</p> <p>Metro will coordinate with the appropriate property owners and other relevant parties regarding permanent parking losses. All property owners will be compensated under the Uniform Relocation Assistance and Real Property Acquisition Act as described in mitigation measure CN-1 and will receive compensation for easements as described in mitigation measure CN-3.</p>	Verify coordination	Metro	– Metro – Metro – Final Design and Construction
<p>T-2—Parking Monitoring and Community Outreach</p> <p>In the one-half mile area surrounding each station where unrestricted parking is located, a program will be established to monitor on-street parking activity in the area prior to the opening of service and monitor the availability of parking monthly for six months following the opening of service. Based on the available supply in each station area before the opening of service, Metro will set a performance standard that would identify a demand exceeding 100 percent of supply after opening as an impact due to the parking activity of LPA patrons. If the performance standard is met, LPA. Metro will work with the appropriate local jurisdiction (City of Los Angeles and City of Beverly Hills) and affected communities to assess the need for specific elements of a residential permit parking (RPP) program for the affected neighborhoods.</p> <p>For station areas at high risk of spillover Metro will conduct outreach meetings for the affected communities to gauge the interest of residents participating in an RPP program (prior to the opening of the subway), regardless of whether parking shortages have been identified.</p> <p>For the Westwood/VA Hospital Station, the majority of station-area parking supply is for the exclusive use of VA patients, visitors, doctors, and staff. Development of an RPP program for the VA is not applicable. At this station, Metro will monitor spillover parking at VA lots controlled only by decals and/or signage (i.e., no gates or other controlled access). Once the subway has opened, an assessment of the spillover parking magnitude will be made, and if the spillover parking is determined to be unmanageable by VA security, a parking management plan for the VA campus will be developed and implemented.</p>	Report conditions and verify plan.	Metro	– Metro – Metro – Operations

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>T-3—Residential Permit Parking Program</p> <p>In general, RPP districts are created to ensure that neighborhood residents have access to on-street parking. These programs are in effect across the United States, including Los Angeles County. They are commonly used to address spillover parking concerns, such as those that arise when residential neighborhoods are in close proximity to commercial districts that do not provide sufficient parking. Patrons of the commercial districts, who are non-residents, tend to spill over into adjacent residential neighborhoods to find parking. The impact that spillover parking causes is adverse, and restricting parking to residents only, or limiting the time non-residents can park, is one way to mitigate these adverse impacts.</p> <p>If the need for an RPP district has been determined through Mitigation Measure T-2, RPP programs will be implemented according to guidelines established by each local jurisdiction. Metro will reimburse local jurisdictions for costs associated with developing both the RPP programs and installing parking restriction signs in neighborhoods within a one-half mile walking distance of each affected station. Metro will not be responsible for the costs of permits for residents desiring to park on streets in RPP districts. For locations where spillover parking cannot be addressed through a RPP program, alternative mitigation options will include the implementation of parking time restrictions for non-residents. Metro will work with local jurisdictions to determine which option(s) will be preferable.</p>	Verify funding.	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Operations</li> </ul>
<p>T-4—Consideration of Shared Parking Program</p> <p>Metro will consider developing a shared parking program with operators of off-street parking facilities to accommodate the LPA's parking demand, thereby allowing subway riders to use excess capacity in these facilities. The revised off-street parking analysis conducted for the Final EIS/EIR determined that more than 100,000 off-street parking spaces serve commercial land uses within a one-half mile walking distance of the seven LPA station locations. As part of the analysis, a sampling of parking facility operators for each station location was contacted to determine availability of public parking in their facility on weekdays and weekends, daily parking rate, facility occupancy, and interest in partnering with Metro to make parking available to riders of the Westside Subway Extension. Based on a sample of operators at each station area, some shared parking potential for subway riders exists. However, this potential may be limited at individual</p>	Report conditions and verify plan.	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Operations</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>facilities because many are near their capacity during weekdays.</p> <p>For six months following the opening of service, Metro will monitor off-street parking activity in station areas through communication with parking operators by quantitatively assessing through surveys the effects on parking demand as a result of the LPA and revisit their interest in participating in a shared parking program. It is anticipated that the LPA will reduce parking demand in station areas, as some employees will use the subway to commute to work rather than driving. Because the development of a shared parking program will be contingent on the willingness of parking facility operators to participate, as well as the availability of parking supply at their facilities, it may be infeasible to implement this measure at some or all station areas where spillover parking impacts have been identified.</p>			
<p><b>T-5—Install Crossing Deterrents</b> Install appropriate signage and deterrents to prohibit crossing Wilshire Boulevard at Orange Grove Avenue. This mitigation measure would be implemented for the Wilshire/Fairfax Station South Entrance Option.</p>	Review and verify plans.	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>
<p><b>T-6—Install High-Visibility Crosswalk/Crossing Deterrents</b> Stripe a high-visibility crosswalk on the east leg of the intersection of El Camino Drive and Wilshire Boulevard. If a crosswalk is not feasible, install appropriate signage and deterrents to prohibit crossing Wilshire Boulevard on the east side of El Camino Drive. This mitigation measure would be implemented for the Wilshire/Rodeo Station Union Bank Entrance Option.</p>	Review and verify plans.	Metro	<ul style="list-style-type: none"> <li>– Metro</li> </ul>
<p><b>T-7—Install High-Visibility Crosswalk</b> Stripe a high-visibility crosswalk treatment appropriate for unsignalized intersections on the south leg of the intersection of Reeves Drive and Wilshire Boulevard. This mitigation measure would be implemented for Wilshire/Rodeo Station Ace Gallery Entrance Option.</p>	Review and verify plans.	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>
<p><b>T-8—Install High-Visibility Crosswalk</b> Stripe a high-visibility crosswalk treatment appropriate for unsignalized intersections on all four legs of Bonsall Avenue where it intersects with both the eastbound and westbound Wilshire Boulevard access ramps. Curb ramps fully compliant with ADA should be installed on all four corners. This mitigation measure would be implemented for the Westwood/VA</p>	Review and verify plans.	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
Hospital Station South Entrance Option or the Westwood/VA Hospital Station North Entrance Option.			
<p>T-9—Provide consistency with General Plan Designation Sidewalk Width Adjacent to Metro- Controlled Parcels</p> <p>The LPA will be designed to ensure a minimum sidewalk/parkway width is provided on the portions of streets fronting parcels controlled by Metro, as required by General Plan street classification designation for each jurisdiction where an LPA station is located. For example, the Street Designations and Standards of the Transportation Element of the City of Los Angeles General Plan require a 12-foot-wide sidewalk/parkway on a Major Highway Class II, and a 10-foot-wide sidewalk/parkway on a Secondary. Thus, sidewalks on the portions of streets designated as Major Highway Class II that front parcels controlled by Metro will need a 12-foot-wide sidewalk/parkway.</p>	Review and verify consistency	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design</li> </ul>
<p>T-10—Provide consistency with General Plan Designation Sidewalk Width Coordination with Jurisdictions</p> <p>Metro will coordinate with local jurisdictions to identify sidewalks in station areas that do not meet this minimum and will encourage local agencies to widen them. Sidewalks adjacent to parcels not controlled by Metro may be less than the required minimum per general plan designation. Because sidewalks are the responsibility of local jurisdictions, Metro does not have the authority to widen them directly, but will encourage local jurisdictions to do so.</p>	Verify coordination	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Prior to Construction</li> </ul>
<p>T-11—Provide High Visibility Crosswalk Treatments</p> <p>Metro will provide highly visible crosswalk treatments at intersections affected by LPA construction, following the Metro Rail Design Criteria.</p>	Review and verify plans	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>
<p>T-12—Meet Federal, State, Local Standards for Crossing</p> <p>Metro will coordinate with local jurisdictions to identify crossings that do not meet current ADA, CA MUTCD, and other relevant Federal, State, and Local standards and will encourage local jurisdictions to upgrade them accordingly. Beyond those directly affected by LPA construction activities, which Metro is responsible for upgrading on restoration of all streets and crossings affected by LPA construction activities, crossings that do not meet</p>	Verify identification and coordination	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Prior to Construction</li> </ul>



Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
standards are the responsibility of local jurisdictions. Metro does not have the authority to upgrade them directly, but will encourage local jurisdictions to do so.			
<p>T-13—Meet Metro Rail Design Criteria Minimums for Bicycle Parking</p> <p>The LPA will provide bicycle parking to meet the minimum required number of bicycle parking spaces per the Metro Rail Design Criteria. This mitigation measure would be implemented at all LPA station entrance options where it is feasible to implement, which is expected to be at the following stations:</p> <ul style="list-style-type: none"> <li>• Wilshire/La Brea (all entrance options)</li> <li>• Wilshire/Fairfax (all entrance options except the LACMA entrance option)</li> <li>• Wilshire/La Cienega</li> <li>• Wilshire/Rodeo (Ace Gallery Entrance Option)</li> <li>• Westwood/UCLA Off-Street</li> <li>• Westwood/UCLA On-Street (Lot 36 Entrance)</li> <li>• Westwood/VA Hospital South</li> <li>• Westwood/VA Hospital North</li> </ul>	Review and verify plans	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design</li> </ul>
<p>T-14—Study Bicycle Parking Demand &amp; Footprint Configuration</p> <p>Metro will continue to assess bicycle parking demand as the project progresses through the design and construction process and size the bicycle facilities at each station accordingly. Bicycle parking demand can vary station-to-station, and the footprint required to meet that demand will vary. For example, bicycle lockers are more space intensive, while secured bicycle rooms can accommodate bicycle parking in a more compact footprint. The appropriate configuration and ultimate footprint reserved for bicycle parking at each station will vary by demand levels and space constraints. The Westside Subway Extension Station Circulation Report (Metro 2011am) details footprint ranges for each station area based on configuration of bicycle parking.</p>	Monitor bicycle parking demand around stations.	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Operations</li> </ul>
<p>T-15— Determine Alternative Sites for Bicycle Parking</p> <p>At LPA station entrance options that are physically constrained, Metro shall look for space for bicycle parking at an alternative site, which could include provision of secured bicycle parking in an adjacent storefront or other development, install signage to direct subway riders to bicycle parking already provided at buildings or on streets near station entrances,</p>	Review and verify plans	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>or provide enhanced bicycle parking facilities at an adjacent station on the LPA to meet any unsatisfied demand from this station. This mitigation measure would be implemented for the following LPA station entrance options:</p> <ul style="list-style-type: none"> <li>• Wilshire/Fairfax Station–LACMA Entrance Option</li> <li>• Wilshire/Rodeo Station–Union Bank Entrance Option</li> <li>• Wilshire/Rodeo Station–Bank of America Entrance Option</li> <li>• Century City Constellation Station</li> <li>• Century City Santa Monica Boulevard Station</li> <li>• Westwood/UCLA On-Street Station (north and south entrances at Wilshire/Westwood Boulevards)</li> </ul>			
<p>T-16—Study Bus-Rail Interface Metro will continue to assess bus-rail interface. As a result of further study Metro, working with affected jurisdictions, will relocate bus stops at some LPA stations to minimize the number of streets riders must cross to transfer between the LPA and interfacing bus lines.</p>	Verify study completion	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>TCON-1—Traffic Control Plans Site-specific traffic-control plans will be developed to minimize construction impacts for each work zone location. These locations will include, but not be limited to, utility relocations, stations, crossovers, laydown areas, TBM launch and removal locations, emergency exit shafts, station entrances, drop pipes, and grout injection. Traffic-control plans will follow State and local jurisdiction guidelines and standards. Traffic-control plans will be developed for Wilshire, Santa Monica, and Constellation Boulevards and north-south streets, including, but not limited to, La Brea Avenue, Fairfax Avenue, La Cienega Boulevard, Rodeo Drive, Beverly Drive, Canon Drive, Century Park East, Avenue of the Stars, Westwood Boulevard, Veteran Avenue, Sepulveda Boulevard, I-405 ramps to/from eastbound Wilshire Boulevard, and Bonsall Avenue. Traffic control plans will encompass the following:</p> <ul style="list-style-type: none"> <li>• Minimum lane widths</li> <li>• Number of available travel lanes (two lanes minimum in each direction during peak periods)</li> <li>• Number, length, and location of temporary right and left-turn lanes</li> </ul>	Review and verify plans.	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<ul style="list-style-type: none"> <li>• Temporary street closures and detour routes</li> <li>• Traffic-control devices (signing and striping)</li> <li>• Temporary traffic signals and street lighting</li> <li>• Temporary pedestrian access and routes</li> <li>• Temporary bicycle routes</li> <li>• Temporary driveway access</li> <li>• Temporary business access</li> <li>• Construction site phasing</li> </ul> <p>To facilitate traffic flow and mitigate major disruption and bottlenecks due to construction, advanced traffic control will extend beyond one arterial street on each side of each station construction location. This will help disperse peak-hour traffic flows onto the adjacent arterial street network. Business owners will be interviewed to identify the type of business, delivery and shipping schedules, and critical days/times of years for the business. Traffic-control plans will incorporate this information. Specific street closures will be developed in close coordination with the local jurisdictions during the Final Design phase.</p>			
<p><b>TCON-2—Designated Haul Routes</b></p> <p>Designated truck haul routes using arterial streets are intended to minimize noise, vibration, and other possible impacts to adjacent businesses, schools, major commercial developments, and residential neighborhoods. Metro will incorporate the following objectives into its truck haul route plans:</p> <p>Establish nighttime truck haul operations times/days for each route. Truck haul operations will not be allowed in the AM and PM peak hours, in residential neighborhoods (where feasible), during noise restriction hours and special events, holiday season restrictions, and as restricted by State and local jurisdictional mandates.</p> <p>Establish truck haul headways to avoid platoons of trucks upon local arterial streets and freeways. Establish a vehicle dispatching system at construction laydown areas and off-site locations to monitor and address truck headway issues as they arise.</p> <p>Develop truck haul routes for each site in coordination with and approved by State and local jurisdictions.</p> <p>Incorporate comments and issues from State and local jurisdictions into the final approved truck haul routes and truck haul operation schedules.</p>	Review and verify plans.	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>TCO-3—Emergency Vehicle Access</p> <p>Emergency vehicle access will be maintained at all times to the construction work site, adjacent businesses, and residential neighborhoods. In addition, emergency vehicle access will be maintained at all times to and from fire stations, hospitals, and medical facilities near the construction sites and along the haul routes. LPA construction activities and haul route operations will be coordinated with local law enforcement representatives and fire department officials during the Final Design phase.</p>	Review and verify plans.	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>
<p>TCO-4—Transportation Management Plan</p> <p>Once subway construction sequencing/phasing and the truck haul routes have been concurred upon by Metro and reviewed by local jurisdictions and Caltrans, an overall LPA Transportation Management Plan (TMP) will be developed with and approved by Metro and other appropriate agencies. The TMP will include the following:</p> <ul style="list-style-type: none"> <li>• Public information (e.g., media alerts, website)</li> <li>• Traveler information (e.g., traffic advisory radio, changeable message signs (CMS))</li> <li>• Incident management (e.g., TMP coordination, tow truck services)</li> <li>• Construction (e.g., detour routes, haul routes, mitigation, construction times)</li> <li>• Demand management (e.g., carpooling, express bus service, variable work hours, parking management)</li> <li>• Coordination with concurrent LPAs</li> </ul> <p>The TMP will also address individual and overlapping haul route impacts and will impacts resulting from concurrent and overlapping station(s) and tunnel excavation work.</p>	Review and verify plans.	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>
<p>TCO-5—Coordination with Planned Roadway Improvements</p> <p>Construction of the subway and new station locations will be coordinated with local jurisdictions for future programmed projects, such as the Wilshire Bus Rapid Transit Project.</p>	Review and verify plans.	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Planning, Final Design and Construction</li> </ul>
<p>TCO-6—Temporary Bus Stops and Route Diversions</p> <p>Construction impacts to local and regional transit operations (e.g., Metro Bus, Santa Monica Big Blue Bus, Culver City Bus, LAX Flyaway, DASH, and UCLA Campus Shuttle) will be mitigated to minimize impacts to the degree possible at each station construction</p>	Review and verify plans.	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>location. Impacts to local and regional transit will be mitigated through, but not be limited to, the use of temporary relocated bus stops and temporary route diversions. Impacts to local and regional transit operations will be coordinated with each transit agency and/or provider. In addition, the Final Design-level mitigation proposals will be approved by the transit agency and/or provider and the local jurisdictions and incorporated into the TMP.</p>			
<p><b>TCON-7—Parking Management</b>  A parking management program will be developed to minimize impacts due to temporary removal of on- and off-street parking within the construction work zone. The program will incorporate appropriate parking control measures, replacement parking within a reasonable distance from the affected parking locations, if available, or other transportation demand management (TDM) strategies. Development of the parking management program will be coordinated with the appropriate local jurisdictions and affected communities or property owners and be incorporated into the TMP.</p>	Review and verify plans.	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>
<p><b>TCON-8—Parking Monitoring and Community Outreach</b>  In addition, a parking monitoring and community outreach program will be established during the construction phase of the LPA to monitor on-street parking activity. If a parking shortage is identified during construction, Metro will work with the appropriate local jurisdiction and affected communities or property owners to assess the shortage level and implement mitigation as part of the parking management program.</p>	Report conditions and verify plan.	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>
<p><b>TCON-9—Construction Worker Parking</b>  Metro will require that all construction contractors identify adequate off-street parking for construction workers at Metro-approved locations. This will occur for each construction site to minimize additional loss of parking. Metro will work with construction contractors on implementation of adequate off-street parking for construction workers.</p>	Review and verify plans.	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>
<p><b>TCON-10—Pedestrian Routes and Access</b>  Safe pedestrian routes and access will be provided through and/or adjacent to construction work areas. Pedestrian routes and access, including temporary pedestrian facilities, will comply with the requirements of the ADA and must be properly signed and lighted. Special facilities, such as handrails, fences, and walkways, will be provided for pedestrian safety. Temporary pedestrian routes and access concerns will be addressed</p>	Review and verify plans.	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
with, but not limited to, local residents, the VA Hospital, schools, and businesses and approved by the local jurisdiction. Pedestrian routes and access will be monitored and maintained throughout construction.			
<p>TCON-11—Bicycle Paths and Access</p> <p>Bicycle traffic (e.g., paths, lanes, and routes) will be maintained safely through and adjacent to construction work areas. If bicycle traffic cannot be maintained, then alternative temporary bicycle routes will be identified, signed, and lighted. These alternative routes should be on adjacent streets that can safely accommodate bicycle traffic. Development of these routes will be coordinated with bicycle groups and local jurisdictions. Temporary routes will require approval by the local jurisdiction. Bicycle access will be monitored and maintained throughout construction.</p>	Review and verify plans.	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Construction</li> </ul>
<p>CN-1—Relocation Assistance and Compensation</p> <p>Metro will provide relocation assistance and compensation for all displaced businesses and residences, as required by both the Uniform Relocation Assistance and Real Property Acquisition Act and the California Relocation Assistance Act. All real property acquired by Metro will be appraised to determine its fair market value. Just compensation, which will not be less than the approved appraisal, will be made to each displaced property owner. Each business and residence displaced as a result of the LPA will be given advance written notice and will be informed of their eligibility for relocation assistance and payments under the Uniform Relocation Assistance and Property Acquisition Act. It is anticipated that most businesses will relocate and, as such, most jobs will be relocated and will not be permanently displaced. However, there are permanent job losses anticipated. Metro shall coordinate with the appropriate jurisdictions regarding business relocations.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Before Final Design</li> </ul>
<p>CN-2—Propose Joint-use Agreements</p> <p>While employment loss as a result of property acquisitions will not result in an adverse effect, Metro will propose where feasible joint-use agreements for the land it will take for station entrances and construction staging to induce job creation in areas to further reduce the affect any job loss.</p>	Verify coordination with owners	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Before Final Design</li> </ul>
<p>CN-3—Compensation for Easements</p> <p>For easements, Metro will appraise each property to determine the fair market value of the</p>	Verify coordination	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>portion that will be used either temporarily during construction or permanently above and below ground. Just compensation, which will not be less than the approved appraisal, will be made to each displaced property owner.</p>			<ul style="list-style-type: none"> <li>– Before Final Design</li> </ul>
<p><b>VIS-1—Minimize Visual Clutter</b>            To minimize visual clutter, system components should be integrated and the potential for conflicts reduced between the transit system and adjacent communities; design of the system stations and components will follow the recommendations and guidance developed in the urban design analysis conducted for the LPA (Metro 2009d). These guidelines include the following: (1) preserve and enhance the unique cultural identity of each station area and its surrounding community by implementing art and landscaping; and (2) promote a sense of place, safety, and walkability by providing street trees, walkways or sidewalks, lighting, awnings, public art, and/or street furniture.</p>	<p>Review and integrate guidance in system design</p>	<p>Metro/Contractor</p>	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Before Final Design</li> </ul>
<p><b>VIS-2—Replacement for Tree Removal</b>            Where mature trees are removed, replacement with landscape amenities of equal value will be incorporated into final designs, where feasible, to enhance visual integrity of the station area.</p>	<p>Have arborist prepare tree removal plan</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Before Construction</li> </ul>
<p><b>VIS-3—Source Shielding in Exterior Lighting</b>            Source shielding in exterior lighting at the maintenance and storage facility will be used to limit spillover light and glare.</p>	<p>Review and verify Final Design plans</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design</li> </ul>
<p><b>VIS-4—Integrate Station Designs with Area Redevelopment Plans</b>            Station designs will be integrated with area redevelopment plans. The objective is to create a unified visual setting where the station components such as entrances, complement redevelopment plans.</p>	<p>Verify coordination with surrounding communities</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Before Final Design</li> </ul>
<p><b>CC-1—Implement Pedestrian and Transit-Oriented Development at Stations</b>            Metro will continue to promote and support implementation of pedestrian-oriented and transit-oriented development at stations.</p>	<p>Review and integrate where possible into Final Design</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Before Final Design</li> </ul>
<p><b>CC-2—Energy Conservation</b></p>	<p>Review and verify</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– Metro</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	– Enforcement Agency – Monitoring Agency – Timeframe
Energy conservation will be implemented throughout design and construction.	implementation		– Metro – Before and during Final Design
CC-3—Promote Transit Ridership Metro will continue to promote transit ridership through marketing and educational programs.	Verify implementation of Public Outreach Campaign	Metro	– Metro – Metro – Before, during and after Final Design, Construction, and project implementation
CC-4—Green Power Metro will use green power when/where available and priced competitively with other energy sources.	Verify compliance	Metro	– Metro – Metro – Final Design
VIB-1—Use of High Compliance Direct Fixation Resilient Rail Fasteners A high compliance direct fixation resilient rail fasteners will be incorporated into the design of the trackwork at the location listed below, which will reduce ground-borne noise by 5 to 7 dBA: <ul style="list-style-type: none"> <li>• Wilshire Ebell Theatre at Site V8 (Figure 4-38)</li> <li>• Saban Theatre at Site V25 (Figure 4-38)</li> </ul>	Review and verify plans.	Metro	– Metro – Metro – Final Design
VIB-2—Use of a Low Impact Crossover A low impact crossover, such as a moveable point frog or a spring-loaded frog, will be used in the design of the following crossover, which will reduce ground-borne noise by 5 to 6 dBA: <ul style="list-style-type: none"> <li>• Wilshire/La Brea No. 10 Double Crossover for the apartments at Site V16 (Figure 4-38)</li> </ul>	Review and verify plans.	Metro	– Metro – Metro – Final Design
GEO-1—Seismic Ground Shaking Metro design criteria require probabilistic seismic hazard analyses (PSHA) to estimate earthquake loads on structures. These analyses take into account the combined effects of all nearby faults to estimate ground shaking. A site-specific PSHA will be used as the basis	Review and verify plans	Metro	– Metro – Metro – Final Design



Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>for evaluating the ground motion levels along the LPA. The structural elements of the LPA will be designed and constructed to resist or accommodate appropriate site-specific estimates of ground loads and distortions imposed by the design earthquakes and conform to Metro’s Design Standards for the Operating and Maximum Design Earthquakes. The concrete structures are designed according to the Building Code Requirements for Structural Concrete by the American Concrete Institute (ACI 318).</p>			
<p>GEO-2—Fault Crossing Tunnel, Fault Rupture, Tunnel Crossing LPA—Century City Constellation option</p> <p>Design will allow for the tunnels to cross the faults nearly perpendicular to limit the area of potential damage and will use Metro’s two level approach to assess fault offsets and the associated structural design required to accommodate the offset. During Final Design, fault crossings will be designed for the ground conditions at the crossing location and incorporate the methods used to excavate and support the tunnel. Metro design criteria require use of a probabilistic approach to determine the Maximum Design Earthquake and Operating Design Earthquake. Design must include the following:</p> <ul style="list-style-type: none"> <li>• Prevent collapse of the tunnel to ensure tunnel safety</li> <li>• Maintaining structural continuity of tunnel ring</li> <li>• Preventing flow of water and soil</li> <li>• Establishing the tunnel size to maintain tunnel clearances and provide a guideway for derailed trains to decelerate without impact</li> <li>• Several preliminary design approaches or combinations have been considered and will be further developed in Final Design:</li> <li>• Steel tunnel rings with compressible material between the ring and soil to accommodate movement of the fault</li> <li>• Flexible steel linings</li> <li>• Articulated joints between tunnel segments for added flexibility</li> </ul> <p>Oversized tunnel to allow additional movement and to some extent, more rapid repair after a seismic event. This could also be accomplished using cut and cover methods.</p>	<p>Verify completion of studies and incorporation of the recommended design measure into Final Design.</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design</li> </ul>
<p>GEO-3—Operational Procedures during Earthquake</p> <p>In addition to design measures, As Metro has implemented on the existing Red line, it will</p>	<p>Verify safety measures are</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	– Enforcement Agency – Monitoring Agency – Timeframe
implement Standard Operating Procedures in seismic areas to detect earthquakes and will provide back-up power, lighting, and ventilation systems to increase safety during tunnel or station evacuations in the event of loss of power due to an earthquake. For example, seismographs are located in 11 of the existing Metro Red/Purple Line stations to detect ground motions and trigger Standard Operating Procedures (SOP #8 – Earthquake) by the train operators and controllers. Operating procedures are dependent on the level of earthquake and include stopping or holding trains, gas monitoring, informing passengers, communications with Metro’s Central Control, and inspecting for damage.	implemented		– Operations
GEO-4—Liquefaction and Seismic Settlement At liquefaction or seismic settlement prone areas, evaluations by geotechnical engineers will be performed to provide estimates of the magnitude of the anticipated liquefaction or settlement. Based on the magnitude of evaluated liquefaction, a suitable mitigation will be selected, either structural design, or ground improvement (such as deep soil mixing) or deep foundations to non liquefiable soil (such as drilled piles). Site specific design will be selected based upon the State of California Guidelines design criteria set forth in the Metro Seismic Design Criteria.	Review and verify plans	Metro	– Metro – Metro – Final Design
GEO-5— Hazardous Subsurface Gas Operations As with the existing Metro Red and Purple Lines and the Metro Gold Line Eastside Extension, Metro will install gas monitoring and detection systems with alarms, as well as ventilation equipment to dissipate gas to safe levels according to Metro’s current Design Criteria and Cal/OSHA standards for a safe work environment. Measures will include, but are not limited to, the following for both tunnel and station operation: <ul style="list-style-type: none"> <li>• High volume ventilation systems with back-up power sources</li> <li>• Gas detection systems with alarms</li> <li>• Emergency ventilation triggered by the gas detection systems</li> <li>• Automatic equipment shut-off</li> <li>• Maintenance and operations personnel training.</li> <li>• Gas detection instrumentation is set to send alarms to activate ventilation</li> <li>• systems and evacuate the structures as follows: Methane gas—Minor alarm at 10 percent of LEL (activate ventilation) and major alarms at 20 percent of LEL (evacuation of area)</li> </ul>	Review and verify plans	Metro	– Metro – Metro – Final Design

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<ul style="list-style-type: none"> <li>• Hydrogen sulfide—Minor alarm at 8 ppm and major alarm at 10 ppm.</li> </ul>			
<p><b>GEO-6—Hazardous Subsurface Gas Structural Design</b></p> <p>Tunnels and stations will be designed to provide a redundant protection system against gas intrusion hazard. The primary protection from hazardous gases during operations is provided by the physical barriers (tunnel and station liner membranes) that keep gas out of tunnels and stations. As with the existing Metro Red and Purple Lines and the Metro Gold Line Eastside Extension, tunnels and stations will be designed to exclude gas to below alarm levels (GEO-5) and include gas monitoring and detection systems with alarms, as well as ventilation equipment to dissipate gas.</p> <p>At stations in elevated gassy ground (e.g., Wilshire/Fairfax, construction will be accomplished using slurry walls—or similar methods such as continuous drilled piles—to provide a reduction of gas inflow both during and after construction than would occur with conventional soldier piles and lagging.</p> <p>Other station design concepts to reduce gas and water leakage will use additional barriers, compartmentalized barriers to facilitate leak sealing, and use of flexible sealants, such as poly-rubber gels, along with the high-density polyethylene-type materials that are used on Metro’s underground stations.</p> <p>Consideration of secondary station walls to provide additional barriers or an active system (low or high pressure barrier) will also be studied further to determine if they will be incorporated into the LPA.</p> <p>The evaluations will include laboratory testing programs such as those conducted for the Metro Gold Line Eastside Extension during development of the double gasket system and material testing for long term exposure to the ground conditions for materials such as rubber gaskets used for tunnel segment linings. Testing programs will examine:</p> <p>Segment leakage—gasket seal under pressure before, during, and after seismic movements. This will include various gasket materials and profiles (height and width).</p> <p>Gasket material properties—effective life and resistance to deterioration when subjected to man-made and natural contaminants, including methane, asphaltic materials, and hydrogen sulfide.</p> <p>Alternative products to High Density Polyethylene products such as poly-rubber gels, now in use in ground containing methane in other cities.</p>	<p>Review and verify plans</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>Methods for field testing high-density polyethylene joints. These are now being used for landfill liners and water tunnels under internal water pressure.</p>			
<p><b>GEO-7—Tunnel Advisory Panel Design Review</b>                      The Metro Tunnel Advisory Panel (TAP) will review designs with respect to geologic hazards in areas of identified higher risk. These include the Century City area (seismic risk) and the Fairfax area (gassy ground risk). The TAP will be supplemented, as necessary, by qualified experts in seismic design, gas intrusion and ground contaminant effects on underground structures.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p><b>HAZ-1—Disposal of Groundwater</b>                      Disposal of groundwater from underground structures will comply with the City of Los Angeles Industrial Wastewater Permit if there is any contaminated groundwater leakage into final structure.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> <li>–</li> </ul>
<p><b>HAZ-2—Emergency Response Procedure</b>                      In the unlikely event of a major hazardous materials release close to or in the vicinity of the LPA, Metro will develop emergency response procedures in conformance with Federal, State, and local regulations.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Operations</li> <li>–</li> </ul>
<p><b>WQ-1—Drainage Control Plan</b>                      A drainage control plan will be developed to properly convey drainage from the Study Area and to avoid ponding on adjacent properties. The plan will be developed to assure that the flood capacity of existing drainage or water conveyance features will not be reduced in a way that will cause ponding or flooding during storms.</p>	Verify completion of drainage plan	Contractor	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p><b>WQ-2—Runoff Treatment</b>                      During operation runoff will be treated using the most appropriate BMP as listed below to further ensure compliance Title III and Title IV of the Clean Water Act and NPDES standards as overseen by the local jurisdictions:                      BMP1: Infiltration basins/trenches—Infiltration basins are surface ponds that capture first-flush stormwater and treat it by allowing it to percolate into the ground and through permeable soils. Infiltration trenches are excavated trenches that have been lined with filter fabric and backfilled with stone to form an underground basin that allows runoff to</p>	Verify compliance and implementation in final design plans	Metro	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Final Design</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>infiltrate into the soil. As the water percolates through the ground, physical, chemical, and biological processes occur to remove sediments and soluble pollutants. Pollutants are trapped in the upper soil layers and the water is released to groundwater. Infiltration basins are generally dry except immediately following storms, but a low-flow channel may be necessary if a constant base flow is present.</p> <p>BMP2: Porous pavement— Porous pavement can be either asphalt-based pavement or pre-casted permeable concrete pavers. The permeable concrete paver is a preferred feature of the City of Los Angeles’ Green Street Policy. Both concrete pavers and asphalt-based paving material allows stormwater to quickly infiltrate the surface pavement layer to enter into a high-void aggregate sub-base layer. The captured runoff is stored in this “reservoir” layer until it either infiltrates into the underlying soil strata or is routed through an under drain system to a conventional stormwater conveyance system. Porous pavement is typically applicable only in low-traffic areas.</p> <p>BMP3: Vegetated Filter Planters—These are newly adopted bio-parkway or flow-through planters engineered in accordance to the City of Los Angeles’ Green Street Policy. They are planters with selected vegetations and engineered soils to treat and filter storm-water from street and / or roof runoff. The design storm First-Flush polluted storm-water will be treated and filtered. At large storm events, clean storm-water will be by-passed to normal drainage facilities. These devices are most suitable to urban environment such as the current LPA corridor.</p>			
<p>SS-1—Passenger Safety I Implement public safety awareness and employee training program.</p>	Verify coordination and Public Outreach	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Prior operations</li> </ul>
<p>SS-2—Passenger Safety II Develop and implement a project-specific safety certification plan that will result in safety certification of all certifiable project elements</p>	Verify compliance and implementation in Final Design Plans	Metro	<ul style="list-style-type: none"> <li>– City of Los Angeles</li> <li>– Metro</li> <li>– Final Design/Project Implementation</li> </ul>
<p>SS-3—Construction Safety Implement a Construction Safety and Security Plan which includes safety rules, procedures, and policies to protect workers and work sites during construction such as warning and/or</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
notification signs, detours, and barriers and includes compliance with OSHA standards			
<p>SS-4—Fire Protection and Safety</p> <p>Design in accordance with Metro fire/life safety criteria, CBC, and other applicable Federal, State, and local rules and regulations.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design</li> </ul>
<p>SS-5—Methane and Hydrogen Sulfide Gas Leak Protection</p> <p>Design in accordance with Metro Fire/Life safety criteria, Metro ventilation criteria, and according to the findings in the Westside Subway Extension Geotechnical and Hazardous Materials Technical Report (Metro 2010i) and with special design, construction and operational attention to the gassy ground tunnels and stations.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design</li> </ul>
<p>SS-6—Security Preventing Criminal Activity</p> <p>Incorporate security features, including lighting, communication devices (e.g., passenger telephones), closed circuit television, signs and other design features, and law enforcement officers to reduce criminal activities.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design</li> </ul>
<p>SS-7—Security Preventing Terrorist Attacks</p> <p>Implementation of security features, including security education and employee training specific to terrorism awareness, lighting, communication devices (e.g., passenger telephones), closed circuit television, signs and other design features to reduce terrorism activities.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Project Implementation</li> </ul>
<p>SS-8—Emergency Response</p> <p>Development and implementation of a comprehensive emergency preparedness plan, employee and emergency responders training, and system design features.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Final Design and Project Implementation</li> </ul>
<p>HR-1—Treatment to Avoid Adverse Effects</p> <p>Design Phase Planning. The project would be designed in adherence to the Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Rehabilitating Historic Buildings and the Guidelines for the Treatment of Cultural Landscapes at the following four historic properties that will be altered by either</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>construction staging activities or station entrances to ensure there is no adverse effect to these properties:</p> <ul style="list-style-type: none"> <li>• LACMA West May Company – WSE 24 (6067 Wilshire Boulevard)</li> <li>• Union Bank Building—WSE 14 (9460 Wilshire Boulevard)</li> <li>• Linde (Westwood) Medical Plaza - WSE 10 (10921 Wilshire Boulevard)</li> <li>• VA Medical Center Historic District—WSE 41 (11301 Wilshire Boulevard) including the Wadsworth Theater and Contributing Landscape Elements</li> </ul> <p>Designs will ensure the preservation of the character-defining features of the historic properties, and would avoid damaging or destroying materials, features, or finishes that are important to the property, while also considering economic and technical feasibility. Metro will ensure that the SHPO has opportunity to review the design by the architectural historian.</p> <p>Design Review and Monitoring. Metro will retain the services of a qualified historic preservation consultant with experience in architectural preservation to review structural designs and construction activities, and will require onsite periodic construction monitoring by a historic preservation consultant to ensure protection of historic fabric and compliance with approved designs and the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties.</p>			<ul style="list-style-type: none"> <li>– Construction</li> </ul>
<p>HR-2—Treatment to Resolve Adverse Effect</p> <p>HABS/HAER Documentation—The adverse effects of the Undertaking on the Ace Gallery will be resolved by FTA by requiring Metro to implement and complete National Park Service Historic American Building Survey (HABS) or Historic American Engineering Record (HAER) documentation, pursuant to Section 110(b) of the National Historic Preservation Act for the adversely-affected property. Prior to any action, the photo-recording and documentation consistent with the standards of the National Park Service HABS or HAER will be prepared by a Secretary of Interior qualified professional architectural historian or historic architect. Whenever possible, HABS/HAER documentation Level 2 would be employed whenever measured drawings for a property are available. If measured drawings are not available, HABS/HAER documentation Level 1 would be employed.</p> <p>The HABS/HAER documentation will be forwarded by the Metro to the FTA and SHPO for review. The FTA, in consultation with Metro and SHPO, will approve the materials and</p>	Verify Compliance	Metro	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> <li>– Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>permit Metro to proceed with demolition of the adversely-affected property.</p> <p>Following approval of the HABS/HAER documentation, Metro will ensure that the materials are placed on file with Metro and Responsible Agencies, historical societies and preservation groups, local university and community libraries, and other appropriate national and local repositories and archives, as identified by Metro.</p> <p>Public Website Development—In connection with HABS/HAER documentation, Metro will develop a public website linked to Metro’s website concerning the history of the Ace Gallery. The website would be based on the photographs produced as part of the HABS/HAER documentation, and historic archival research previously prepared as part of the Undertaking and historic documentation. A public website, which provides historic and documentary information regarding historic properties that would be substantially altered or demolished as a result of the Undertaking, will be prepared and maintained for a ten-year period.</p>			
<p>HR-3—Construction Starting Beyond 2019</p> <p>For those portions of the APE in which construction would start beyond 2019, Metro would retain the services of a Secretary of Interior professional qualified architectural historian to complete an updated historic property survey and evaluation to ensure that construction of the LPA would have no effect on eligible historic properties built after 1968 not previously inventoried during preparation of the Draft EIS/EIR or the Final EIS/EIR for the LPA. A draft and final report on the results of the survey and evaluation would be submitted to Metro, FTA, SHPO, and other signatories to the Memorandum of Agreement for review and approval prior to initiation of any beyond-2019 ground-disturbing activities within the APE for the LPA. The final report would be placed on file with Metro and Responsible Agencies, the South Central Coastal Information Center, and other appropriate local repositories identified by Metro within three months after the work has been completed.</p> <p>If any of the newly inventoried built resources are determined to be eligible historic resources and may be adversely affected by the LPA, the FTA, with the assistance of Metro, shall review and approve appropriate mitigation measures, which shall be devised by Metro in concert with a qualified architectural historian. To the extent feasible, treatment to avoid and minimize adverse effects shall follow Mitigation Measure HR-1. In the event activities associated with the LPA cannot be implemented in a manner which meets adherence to Secretary of the Interior’s Standards under HR-1, then the treatment</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> <li>– Construction</li> </ul>



Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
described in Mitigation Measures HR-2 or other treatment appropriate to the specific resource(s) would be implemented.			
<p>PA-1—Memorandum of Understanding</p> <p>Metro will implement the Memorandum of Understanding with the George C. Page Museum of La Brea Discoveries regarding treatment of paleontological resources from asphaltic deposits.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> <li>– Final Design</li> </ul>
<p>AR-1—Unanticipated Discoveries and Consultation with Native American Individuals, Tribes and Organizations and Treatment of Cultural Remains and Artifacts</p> <p>If previous unidentified cultural resources, including human remains, are encountered during construction or earth-disturbing activities, all activities at that location shall be halted until a qualified archaeologist can examine the resources and assess their significance. If the resources are determined to be significant, Metro will notify FTA and SHPO within 48 hours of the discovery to determine the appropriate course of action.</p> <p>For resources determined eligible or assumed to be eligible for the NRHP by FTA, Metro will notify the FTA, ACHP, and SHPO of those actions that it proposes to avoid, minimize, or mitigate adverse effects. Consulting parties will have 48 hours to provide their views on the proposed actions. The FTA will ensure that timely-filed recommendations of consulting parties are taken into account prior to granting approval of the measures that the Metro will implement to resolve adverse effects. Metro will carry out the approved measures prior to resuming construction activities in the location of the discovery.</p> <p>Metro will ensure that the expressed wishes of Native American individuals, tribes, and organizations are taken into consideration when decisions are made regarding the disposition of other Native American archaeological materials and records relating to Indian tribes.</p> <p>Should Indian burials and related items be discovered during construction of the project, Metro will consult with the affected Native American individuals, tribes and organization regarding the treatment of cultural remains and artifacts. These will be treated in accordance with the requirements of the California Health and Safety Code. If the county coroner/medical examiner determines that the human remains are or may be of Native</p>	Verify compliance with mitigation monitoring plan	Metro	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> <li>– Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>American origin, then the discovery shall be treated in accordance with the provisions of §§ 5097.98 (a) - (d) of the California Public Resources Code which provides for the notification of discovery of Native American human remains, descendants; disposition of human remains and associated grave goods.</p>			
<p>HR-4—Geotechnical Pre-Construction Survey and Historic Land-scape Protection</p> <p>Geotechnical Investigations. For historic properties, further geotechnical investigations will be undertaken to evaluate soil, groundwater, seismic, and environmental conditions along the alignment. This analysis will assist in the development of appropriate support mechanisms and measures for cut and fill construction areas. The subsurface investigation will also identify areas that could cause differential settlement as a result of using a tunnel boring machine (TBM) in close proximity to historic properties. An architectural historian or historical architect who meets the Secretary of the Interior’s Professional Qualification Standards (36 CFR Part 61) will provide input and review of final design documents prior to implementation of the mechanisms and measures. The review will evaluate whether the geotechnical investigations and support measures for cut and fill, and measures to prevent differential settlement meet the Secretary of the Interior’s Standards for the Treatment of Historic Properties. The evaluation of measures will be forwarded by Metro to the FTA and SHPO for review. Then FTA, in consultation with SHPO, upon the SHPO’s concurrence, shall approve the evaluation and permit Metro to proceed with construction.</p> <p>Historic District Contributing Historic Landscape Element Pre-Construction Survey. Metro will develop a survey of the contributing landscape elements of the VA Medical Center Historic District located within 20 feet of the Westwood/VA Hospital North and South Station portal-related cut-and-cover and construction staging areas during Final Design. The survey will be prepared by a qualified architectural historian and historic landscape architect and/or qualified arborist with the assistance of a technician/surveyor using high-resolution GPS equipment. The survey will establish an inventory of each mature historic tree species and the precise location of each individual tree in the survey area. The inventory survey will also assess the feasibility of temporarily removing and then replanting the extant trees in their original location, including how the trees should be moved and temporarily stored.</p> <p>A report on the results of the inventory will be submitted to FTA, Metro, and SHPO for review and will be placed on file with Metro.</p>	<p>Hire a qualified historic preservation consultant</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> <li>– Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>Historic District Contributing Historic Landscape Element Landscape Protection Measures. The results of the pre-construction survey will be used for marking trees to be avoided during construction, for implementation of relocation recommendations as necessary if avoidance of any of the trees is infeasible, and for onsite use during construction activities to ensure the historic trees remaining in place are protected.</p> <p>Should any trees that are temporarily removed not survive a reasonable period after they are replanted, as determined by a qualified arborist, Metro will obtain and plant adult-aged replacement trees of the same species to rehabilitate the historic landscape.</p> <p>Historic District Contributing Historic Landscape Element Construction Monitoring. Metro will retain the services of a qualified historic preservation consultant with experience in the preservation of historic landscapes. The consultant will review the existing landscape designs and proposed construction activities, and develop a plan for onsite periodic construction monitoring to ensure protection of historic fabric and compliance with the Guidelines for the Treatment of Cultural Landscapes.</p>			
<p>PA-2—Early Fossil Recovery</p> <p>Metro will seek early approval to begin fossil recovery in advance of construction if feasible.</p>	<p>Seek early approval from California Department of Parks and Recreation Office of Historic Preservation</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> <li>– Prior to construction</li> </ul>
<p>PA-3—Retain the Services of a Qualified Principal Paleontologist</p> <p>Metro will retain the services of a qualified principal paleontologist (minimum of graduate degree, 10 years of experience as a principal investigator and specialty in vertebrate paleontology) to oversee execution of mitigation measures.</p>	<p>Verify compliance and completion of monitoring report</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>PA-4—Development of a Paleontological Resources Monitoring and Mitigation Plan (PRMMP)</p> <p>Metro’s qualified principal paleontologist will develop a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) acceptable to the collections manager of the</p>	<p>Verify completion of PRMMP and compliance with PRMMP</p>	<p>Metro</p>	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County and the collection manager of the Page Museum of La Brea Discoveries. Metro will implement the PRMMP during construction. The plan will clearly demarcate the areas to be monitored and specify criteria. At the completion of paleontological monitoring for the LPA, a paleontological resources monitoring report will be prepared and submitted to the Page Museum of La Brea Discoveries and the Natural History Museum of Los Angeles County to document the results of the monitoring activities and summarize the results of any paleontological resources encountered.</p>			<ul style="list-style-type: none"> <li>– Metro</li> <li>– Construction</li> </ul>
<p>PA=5—Required Activities for Recovered Fossils in the PRMMP The PRMMP will include specifications for processing, stabilizing, identifying, and cataloging any fossils recovered on the LPA. For any tar pit deposits encountered, this will include chemical removal of asphalt from matrix and specimens. Cleaned matrix will require microscopic examination for small fossils, including invertebrates and plants, by a qualified paleontologist.</p>	Verify compliance with PRMMP	Metro	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>PA-6—Preparation of a Report on Paleontological Resources Recovered Metro’s qualified principal paleontologist will prepare a report detailing the paleontological resources recovered, their significance, and arrangements made for their curation at the conclusion of the monitoring effort.</p>	Verify report has been prepared	Metro	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>PA-7—Curation of Identified and Prepared Fossils Metro will provide the resources necessary to curate the identified and prepared fossils as specified in the Memorandum of Understanding between Metro, FTA, and the George C. Page Museum of Rancho La Brea Discoveries. Those fossils recovered from asphaltic deposits will be curated at the George C. Page Museum. All other fossils will be curated at the Natural History Museum of Los Angeles County.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– California Department of Parks and Recreation Office of Historic Preservation</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-1—Signage Signage to indicate accessibility to businesses will be used in the vicinity of construction activity. In addition, implementation of mitigation measures TCON-1, TCON-2, TCON-3, T-CON-4,</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
TCON-7, TCON-8, TCON-10 and TCON-11 will reduce construction impacts to communities and neighborhoods.			
<p>CON-2—Timely Removal of Erosion-Control Devices</p> <p>Visually obtrusive erosion-control devices, such as silt fences, plastic ground cover, and straw bales, will be removed as soon as the area is stabilized.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-3—Location of Construction Materials</p> <p>Stockpile areas will be located in less visibly sensitive areas and, whenever possible, not be visible from the road or to residents and businesses. Limits on heights of excavated materials will be developed during design based on the specific area available for storage of material and visual impact.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-4—Construction Lighting</p> <p>Lighting will be directed toward the interior of the construction staging area and be shielded so that it will not spill over into adjacent residential areas. In addition, temporary sound walls of Metro approved design will be installed at station and work areas. These will block direct light and views of the construction areas from residences.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-5—Screening of Construction Staging Areas</p> <p>Construction staging areas will be screened where possible, to reduce visual effects on adjacent viewers</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-6—Meet Mine Safety (MSHA) Standards</p> <p>Tunnel locomotives (hauling spoils and other equipment to the tunnel heading) will be approved by Metro to meet mine safety (MSHA) standards.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-7—Meet SCAQMD Standards</p> <p>Metro and its contractors will set and maintain work equipment and standards to meet SCAQMD standards, including NOx.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-8—Monitoring and Recording of Air Quality at Worksites</p> <p>Monitoring and recording of air quality at the worksites will be conducted. In areas of gassy soil conditions (Wilshire/La Brea and Wilshire/Fairfax work sites), air quality will be</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
continuously monitored and recorded. Construction will be altered as required to maintain a safe working atmosphere. The working environment will be kept in compliance with Federal, State, and local regulations, including SCAQMD and Cal/OSHA standards.			
<p>CON-9—No Idling of Heavy Equipment</p> <p>Metro specifications will require that contractors not unnecessarily idle heavy equipment.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-10—Maintenance of Construction Equipment</p> <p>Metro will require its contractors to maintain and tune engines per manufacturer’s specifications to perform at EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies. Metro will also require periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-11—Prohibit Tampering of Equipment</p> <p>Metro will prohibit its contractors from tampering with engines and require continuing adherence to manufacturer’s recommendations.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-12—Use of Best Available Emissions Control Technologies</p> <p>Metro will encourage its contractors to lease new, clean equipment meeting the most stringent of applicable Federal or State standards (e.g., Tier 3 or greater engine standards) or best available emissions control technologies on all equipment.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-13—Placement of Construction Equipment</p> <p>Construction equipment and staging zones will be located away from sensitive receptors and fresh air intakes to buildings and air conditioners.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-14—Measures to Reduce the Predicted PM10 Levels</p> <p>Mitigation measures such as watering, the use of soil stabilizers, etc. will be applied to reduce the predicted PM10 levels to below the SCAQMD daily construction threshold levels. A watering schedule will be established to prevent soil stockpiles from drying out.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>CON-15—Reduce Street Debris</p> <p>At truck exit areas, wheel washing equipment will be installed to prevent soil from being tracked onto city streets, and followed by street sweeping as required to clean streets.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-16—Dust Control During Transport</p> <p>Trucks will be covered to control dust during transport of spoils.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-17—Fugitive Dust Control</p> <p>To control fugitive dust, wind fencing and phase grading operations, where appropriate, will be implemented along with the use of water trucks for stabilization of surfaces under windy conditions.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-18—Street Watering</p> <p>Surrounding streets at construction sites will be watered by trucks as needed to eliminate air-borne dust. In keeping with Metro’s prior policy on the Eastside Gold Line, the contractor will water streets in the station area impacted by dust not less than once a day and more often if needed.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-19—Spillage Prevention for Non-Earthmoving Equipment</p> <p>Provisions will be made to prevent spillage when hauling materials and operating non-earthmoving equipment. Additionally, speed will be limited to 15 mph for these activities at construction sites.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-20—Spillage Prevention for Earthmoving Equipment</p> <p>Provisions will be made to prevent spillage when hauling materials and operating earth-moving equipment. Additionally, speed will be limited to 10 mph for these activities at construction sites.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-21—Additional Controls to Reduce Emissions</p> <p>EPA-registered particulate traps and other appropriate controls will be used where suitable to reduce emissions of particulate matter and other pollutants at the construction site.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-22—Hire or Retain the Services of an Acoustical Engineer</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
Hire or retain the services of an Acoustical Engineer to be responsible for preparing and overseeing the implementation of the Noise Control and Monitoring Plans. Noise Control and Monitoring Plan will ensure that noise levels are at or below criteria levels in Metro Baseline Specifications Section 01565, Construction Noise and Vibration Control.			<ul style="list-style-type: none"> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-23—Prepare a Noise Control Plan</p> <p>Prepare a Noise Control Plan that includes an inventory of construction equipment used during daytime and nighttime hours, an estimate of projected construction noise levels, and locations and types of noise abatement measures that may be required to meet the noise limits specified in the Noise Control and Monitoring Plan.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-24—Comply with the Provisions of the Nighttime Noise Variance</p> <p>In the case of nighttime construction, the contractor will comply with the provisions of the nighttime noise variance issued by local jurisdictions. The variance processes for the Cities of Los Angeles and Beverly Hills and the County of Los Angeles require the applicant to provide a noise mitigation plan and to hold additional public meetings before granting the variance to allow work that would be performed outside of the permitted working hours.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-25—Noise Monitoring</p> <p>Conduct periodic noise measurement in accordance with an approved Noise Monitoring Plan, specifying monitoring locations, equipment, procedures, and schedule of measurements and reporting methods to be used.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-26—Use of Specific Construction Equipment</p> <p>At night, use only construction equipment operating at the surface of the construction site under full load, are certified to meet specified lower noise level limits set in the Noise Control Plan, and specified in the noise variance application.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-27—Noise Barrier Walls for Nighttime Construction</p> <p>Where nighttime construction activities are expected to occur, erect Metro-designed noise barrier walls at each construction site prior to the start of construction activities. Barriers should be designed to reduce construction site noise levels by at least 5 dBA.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-28—Comply with Local Noise Ordinances	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– City of Los Angeles</li> </ul>



Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>The LPA will comply as applicable with the City of Los Angeles, City of Beverly Hills, and County of Los Angeles noise ordinances during construction hours. Compliance with City of Los Angeles, City of Beverly Hills, and County of Los Angeles standards for short-term operation of mobile equipment and long-term construction operations of stationary equipment, including noise levels and hours of operation, also will occur. Hours of construction activity will be varied to meet special circumstances and restrictions. Municipal and building codes of each city in the Study Area include restrictions on construction hours. The City of Los Angeles limits construction activity to 8 a.m. to 6 p.m. on Monday through Friday and 9 a.m. to 5 p.m. on Saturdays, with no construction on Sundays and Federal holidays. The City of Beverly Hills identifies general construction hours of 8:00 a.m. to 6:00 p.m. from Monday through Saturday. For all the cities in the Study Area, construction is prohibited on Sundays and city holidays. Construction outside of these working periods will require a variance from the applicable city. The variance processes for the Cities of Los Angeles and Beverly Hills and the County of Los Angeles require the applicant to provide a noise mitigation plan and hold additional public meeting,</p>			<ul style="list-style-type: none"> <li>City of Beverly Hills</li> <li>City of Santa Monica</li> <li>City of West Hollywood, and County of Los Angeles</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-29—Signage Readily visible signs indicating “Noise Control Zone” will be prepared and posted on or near construction equipment operating close to sensitive noise sites.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-30—Use of Noise Control Devices Noise-control devices that meet original specifications and performance will be used.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Project implementation</li> </ul>
<p>CON-31—Use of Fixed Noise-Producing Equipment for Compliance Fixed noise-producing equipment will be used to comply with regulations in the course of LPA-related construction activity.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-32—Use of Mobile or Fixed Noise-Producing Equipment Mobile or fixed noise-producing construction equipment that are equipped to operate within noise levels will be used to the extent practical.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-33—Use of Electrically Powered Equipment</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
Electrically powered equipment will be used to the extent practical.			<ul style="list-style-type: none"> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-34—Use of Temporary Noise Barriers and Sound-Control Curtains</p> <p>Temporary noise barriers and sound-control curtains will be erected where LPA-related construction activity is unavoidably close to noise-sensitive receivers.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-35—Distance from Noise-Sensitive Receivers</p> <p>Within each construction area, earth-moving equipment, fixed noise-generating equipment, stockpiles, staging areas, and other noise-producing operations will be located as far as practicable from noise-sensitive receivers.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-36—Limited Use of Horns, Whistles, Alarms, and Bells</p> <p>Use of horns, whistles, alarms, and bells will be limited for use as warning devices, as required for safety.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction/Project Implementation</li> </ul>
<p>CON-37—Requirements on Project Equipment</p> <p>All noise-producing project equipment, including vehicles that use internal combustion engines, will be required to be equipped with mufflers and air-inlet silencers, where appropriate, and kept in good operating condition that meets or exceeds original factory specifications. Mobile or fixed “package” equipment (e.g., arc-welders, air compressors) will be equipped with shrouds and noise-control features that are readily available for that type of equipment.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-38—Limited Audibility of Project Related Public Addresses or Music</p> <p>Any LPA-related public address or music system will not be audible at any adjacent sensitive receiver.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-39—Use of Haul Routes with the Least Overall Noise Impact</p> <p>To the extent practical, based on traffic flow, designated haul routes for construction-related traffic will be used based on the least overall noise impact. For example, heavily loaded trucks will be routed away from residential streets if possible. Where no alternatives are available, haul routes will take into consideration streets with the fewest noise-sensitive</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
receivers.			
CON-40—Designated Parking Areas for Construction-Related Traffic Non-noise-sensitive designated parking areas for LPA-related traffic will be used.	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-41—Enclosures for Fixed Equipment Enclosures for fixed equipment, such as TBM slurry processing plants, will be required to reduce noise.	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-42—Phasing Ground Impacting Operations Demolition, earth moving, and ground impacting operations will be phased so as not to occur in the same time period.	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-43—Alternatives to Impact Pile Driving Impact pile driving will be avoided. Drill piles or sonic or vibratory drivers will be used where the geological conditions permit their use and where ground vibration damage risk criteria are satisfied.	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-44—Alternative Demolition Methods Demolition methods will be selected to minimize noise and vibration impact where possible.	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-45—Restriction on Use of Vibratory Rollers and Packers Use of vibratory rollers and packers will be avoided near vibration sensitive areas.	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-46—Metro Ground-Born Noise and Ground-Born Vibration Limits If the Metro ground-borne noise limits or ground-borne vibration limits are exceeded, the contractor will be required to take action to reduce vibrations to acceptable levels. Such action could include reducing the muck train speed, additional rail and tie isolation, and more frequent rail and wheel maintenance.	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-47—Use of Pressurized-Face TBMs for Tunnel Construction	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	– Enforcement Agency – Monitoring Agency – Timeframe
To optimize control of the ground overlying and surrounding the tunnels and limit ground settlement to acceptable levels, pressurized-face TBMs will be used for tunnel construction, which will allow the tunnel lining to be installed and grout to be injected into the annulus between the lining and the ground immediately behind the TBM concurrently and without having to lower groundwater levels by dewatering.			– Metro – Construction
<b>CON-48—Preconstruction Survey, Instrumentation, and Monitoring</b> Preconstruction Survey, Instrumentation, and Monitoring: As added protection to detect tunneling-induced settlement and settlement induced by other excavation activities, pre-construction surveys will be performed to document the existing conditions of buildings along the alignment before tunneling begins, and instrumentation will be installed to monitor structures. During construction, instrumentation (e.g., ground surface and building monitoring programs) will be in place to measure movements and provide information to the resident engineer and contractor on tunneling performance, as well as to document that the settlement specifications are met. If measurements indicate settlement limits could be exceeded, the contractor will be required to change or add methods and/or procedures to comply with those limits. Construction work will be reassessed if settlements exceed action (warning) levels.	Verify compliance	Contractor	– Metro – Metro – Construction
<b>CON-49—Additional Geotechnical Exploration</b> During the design phases, additional geotechnical exploration and analysis will be undertaken to confirm areas where dewatering will be required and if it will cause significant subsidence. If these conditions are found, methods to prevent lowering of the groundwater outside of the excavation will be employed. These methods could include use of slurry walls, secant pile walls, or other methods for the construction of the station walls to reduce the settlement impacts due to groundwater lowering.	Verify completion of research	Metro	– Metro – Metro – Final Design
<b>CON-50—Additional Methods to Reduce Settlement</b> Where conditions warrant (for example, more shallow tunnels directly below sensitive structures or at cross-passages), additional methods to reduce settlement will be specified. Such methods could include the following: <ul style="list-style-type: none"> <li>• Permeation grouting to improve the ground prior to tunneling</li> <li>• Compaction grouting to consolidate the ground above the tunnel</li> </ul>	Verify compliance	Metro	– Metro – Metro – Construction

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<ul style="list-style-type: none"> <li>• Compensation grouting as the tunnel is excavated</li> <li>• Underpinning the structure's foundation</li> </ul>			
<p><b>CON-51—Techniques to Lower the Risk of Exposure to Hydrogen Sulfide</b></p> <p>In areas where hydrogen sulfide is encountered, several techniques could be used to lower the risk of exposure. The primary measures to prevent exposure to hydrogen sulfide gas are separation of materials from the tunnel environment, and increased ventilation capacity to dilute gases to safe levels as defined by Cal/OSHA. Secondary measures could include pre-treatment of groundwater containing hydrogen sulfide by displacing and oxidation of the hydrogen sulfide by injecting water (possibly containing dilute hydrogen peroxide) into the ground and groundwater in advance of the tunnel excavation. This “in-situ oxidation” method reduces hydrogen sulfide levels even before the ground is excavated. This pre-treatment method is unlikely to be necessary where a slurry-face TBM is used, but may be implemented at tunnel-to-station connections or at cross-passage excavation areas and where open excavation and limited dewatering may be conducted such as emergency exit shafts and low-point sump excavations.</p> <p>When needed to reduce hydrogen sulfide to safe levels for slurry treatment; additives could be mixed with the bentonite (clay) slurry during the tunneling and/or prior to discharge into the slurry separation plant. For example, zinc oxide could be added to the slurry as a “scavenger” to precipitate dissolved hydrogen sulfide when slurry hydrogen sulfide levels get too high. Gas levels will be maintained in accordance with Cal/OSHA requirements for safe working environments.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p><b>CON-52—Measures to Reduce Gas Inflows</b></p> <p>For the stations in elevated gas zones, the use of relatively impermeable lagging, use of diaphragm or slurry walls or equivalent will be implemented to reduce of gas inflows both during and after construction. The slurry wall provides a thick (typically 3 to 4 feet) concrete barrier against water and gas intrusion, and significantly reduces the need for dewatering the station during construction. Grout tubes can be pre-placed within slurry wall panels to be used in the event leakage occurs. Slurry walls present a challenge in accommodating existing utilities, and typically more utility relocation is required for slurry wall systems. Additional ventilation, continuous monitoring, and worker training for exposure to hazardous gases will also be required during station construction. In extreme cases, some work may require temporary use of personal protective equipment, such as</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
fitted breathing apparatus.			
<p>CON-53—Further Research on Oil Well Locations</p> <p>Prior to construction, more detailed research on oil well locations will be conducted. Detection of oil wells will include use of magnetic devices to sense oil well casings within the tunnel alignment. Where the tunnel alignment cannot be adjusted to avoid well casings, the California Department of Conservation (Department of Oil, Gas and Geothermal Resources) will be contacted to determine the appropriate method to re-abandon the well. Oil Well abandonment must proceed in accordance with California Laws for Conservation of Petroleum and Gas (1997), Division 3. Oil and gas, Chapter 1. Oil and Gas Conservation, Article 4, Sections 3228, 3229, 3230, and 3232. The requirements include written notification of the State Department of Oil, Gas and Geothermal Resources (DOGGR), protection of adjacent property, and before commencing any work to abandon any well, obtaining approval by the DOGGR. Abandonment work including sealing off oil/gas bearing units, pressure grouting etc, must be performed by a state-licensed contractor under the regulatory oversight and approval of DOGGR. Similarly, during construction if an unknown well is encountered, the contractor will notify Metro, Cal/OSHA, and the Gas and Geothermal Resources for well abandonment, and proceed in accordance with state requirements.</p>	Verify completion of research on oil locations	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Prior to Construction</li> </ul>
<p>CON-54—Worker Safety for Gassy Tunnels</p> <p>Although not specifically required for gassy tunnels, workers will be supplied with oxygen-supply-type self-rescuers (breathing apparatus required for safety during evacuation during fires).</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-55—Site Assessments</p> <p>As detailed design-level plans are prepared, and precise LPA excavation limits defined, a more detailed Environmental Site Assessment (Phase II) will be conducted prior to construction in areas of impacted soil. A base line soil sampling protocol will be established with special attention to those areas of environmental concern. The soil will be assessed for constituents likely to be present in the subsurface including, but not limited to, total petroleum hydrocarbons, volatile and semi-volatile organic compounds, polychlorinated biphenyls, polynuclear aromatic hydrocarbons, pesticides, lead arsenates, and Title 22 metals. The depth of the sampling will be based on the depth of excavation or</p>	Verify completion of ESA and sampling	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Prior to Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
<p>type of construction activities. In addition, in areas where groundwater will be encountered, samples will also be analyzed for suspected contaminants prior to dewatering to ensure that National Pollutant Discharge Elimination System discharge requirements are satisfied.</p>			
<p><b>CON-56—Soil Reuse</b>            As detailed design-level plans are prepared, and precise LPA excavation dimensions defined, a soil mitigation plan will be prepared showing the extent of soil excavation during construction. The soil mitigation plan will use Metro’s Standard Specifications for soil reuse criteria, which include a sampling plan for stockpiled materials, and the disposition of materials that do not satisfy the reuse criteria. It will specify guidelines for imported materials. The plan will include provisions for soil screening for contamination during grading or excavation activities.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Prior to Construction</li> </ul>
<p><b>CON-57—Sampling During Construction</b>            Metro will sample soil suspected of contamination and analyze the excavated soil for the purpose of classifying material and determining disposal requirements. If excavated soil is suspected or known to be contaminated, the contractor to perform the following operations:            Segregate and stockpile the material in a way that will facilitate measurement of the stockpile volume.            Spray the stockpile with water or an SCAQMD-approved vapor suppressant and cover the stockpile with a heavy-duty plastic (e.g., Visqueen) to prevent soil volatilization to the atmosphere or exposure to nearby workers.</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p><b>CON-58—Soil Testing</b>            Soil samples that are suspected of contamination will be analyzed for suspected chemicals by a California certified laboratory. If contaminated soil is found, it will be removed, transported to an approved disposal location and remediated or disposed according to state and federal laws. Where contaminated levels can be diluted to acceptable levels soils may be re-used on-site.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p><b>CON-59—Personal Protection</b>            The contractor will provide qualified and trained personnel and personal protective equipment (PPE) to perform operations that require the disturbance of contaminated</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
substances including excavation of stations, slurry/tunnel material processing, segregation, stockpiling, loading and hauling.			<ul style="list-style-type: none"> <li>– Construction</li> </ul>
<p>CON-60—Contaminated Groundwater</p> <p>Groundwater contamination encountered during subsurface construction activities may be treated on-site to acceptable local and state criteria and then discharged into the sanitary sewer. If on-site treatment is not feasible due to the type and severity of the contamination identified, the contaminated ground water may need to be disposed of by recycling in a permitted facility. If unanticipated contaminated groundwater (not included in the health and safety plan) is encountered during construction, the contractor will stop work in the vicinity, cordon off the area, and contact Metro and the appropriate hazardous waste coordinator and maintenance hazardous spill coordinator at Metro and will immediately notify the Certified Unified Program Agencies (City of Los Angeles Fire Department, County of Los Angeles Fire Department, and Los Angeles Regional Water Quality Control Board [LARWQCB]) responsible for hazardous materials and wastes. In coordination with the LARWQCB, an investigation and remediation plan will be developed in order to protect public health and the environment. Any hazardous or toxic materials will be disposed according to local, state, and federal regulations.</p>	Verify completion of testing of suspect contaminated groundwater	Metro/Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-61—Health and Safety Plan</p> <p>A health and safety plan will be required by LPA specifications. The plan will include response to exposure of personnel to constituents of concern identified in the Phase II Environmental Site Assessment.</p>	Verify completion of health and safety plan and compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-62—Storage of Contaminated Materials</p> <p>Hazardous or contaminated materials will be properly stored to prevent contact with precipitation and runoff.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-63—Monitoring the Environment</p> <p>An effective monitoring and cleanup program will be developed and implemented for spills and leaks of hazardous materials</p>	Verify compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-64—Equipment Repair and Maintenance</p> <p>Equipment to be repaired or maintained will be placed in covered areas on a pad of</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> </ul>



Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
absorbent material to contain leaks, spills, or small discharges			<ul style="list-style-type: none"> <li>– Construction</li> </ul>
CON-65—Removal of Chemical Residue Any significant chemical residue on the construction sites will be removed.	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– construction</li> </ul>
CON-66—Biological Survey Two biological surveys will be conducted, one 15 days prior and a second 72 hours prior to construction that will remove or disturb suitable nesting habitat. The surveys will be performed by a biologist with experience conducting breeding bird surveys. The biologist will prepare survey reports documenting the presence or absence of any protected native bird in the habitat to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors). If a protected native bird is found, surveys will be continued in order to locate any nests. If an active nest is located, construction within 300 feet of the nest (500 feet for raptor nests) will be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting.	Verify completion of biological surveys	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-67—Compliance with City Regulations If construction or operation of the LPA requires removal or pruning of a protected tree, a removal permit will be required in accordance with applicable municipal codes and ordinances of the city in which the affected tree is located. Within the City of Los Angeles, compliance with the Native Tree Protection Ordinance will require a tree removal permit from the Los Angeles Board of Public Works. Similarly, within the City of Beverly Hills, applicable tree protection requirements, such as tree removal permits, will be followed. Tree removal permits may require replanting of protected trees within the Study Area or at another location to mitigate for the removal of these trees.	Verify compliance	Metro/Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-68—Tree Pruning If construction or operation will entail pruning of any protected tree, the pruning will be performed in a manner that does not cause permanent damage or adversely affect the health of the trees.	Verify compliance	Metro/Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-69—Avoidance of Migratory Bird Nesting Season	Verify compliance	Metro/Contractor	<ul style="list-style-type: none"> <li>– Metro</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
Construction activities that involve tree removal or trimming will be timed to occur outside the migratory bird nesting season, which occurs generally from March 1st through August 31st and as early as February 1st for raptors.			<ul style="list-style-type: none"> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-70—Methods to Control Contaminated Groundwater</p> <p>In the event contaminated groundwater is encountered in test borings and it is determined that contamination is likely to spread, this concern will be mitigated during design and engineering. For example, perched contaminated groundwater in upper levels of the excavation could be allowed to contaminate groundwater in lower levels of an excavation. Methods to control this could include isolation of dewatering systems or/and use of groundwater barriers.</p>	Verify mitigation is completed during project design and engineering.	Metro	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Final Design</li> </ul>
<p>CON-71—Plan if Contaminated Groundwater is Encountered</p> <p>If contaminated groundwater is encountered during construction, the contractor will stop work in the vicinity, cordon off the area, and contact the appropriate hazardous waste coordinator and maintenance hazardous spill coordinator at Metro and immediately notify the Certified Unified Program Agencies (City of Los Angeles Fire Department, County of Los Angeles Fire Department, and Los Angeles RWQCB) responsible for hazardous materials and wastes. Through coordination with the Los Angeles RWQCB, an investigation and remediation plan will be developed to protect public health and the environment. The contractor will treat or dispose of any hazardous or toxic materials according to local, State, and Federal regulations.</p>	Verify compliance	Metro/Contractor	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-72—Erosion and Sediment Control Plan</p> <p>An erosion and sediment control plan will be established prior to construction. The plan will include the following BMPs as appropriate:</p> <p>Use of natural drainage, detention ponds, sediment ponds, or infiltration pits to allow runoff to collect and to reduce or prevent erosion</p> <p>Use of barriers to direct and slow the rate of runoff and to filter out large-sized sediments</p> <p>Use of down drains or chutes to carry runoff from the top of a slope to the bottom;</p> <p>Control of the use of water for irrigation so as to avoid off-site runoff</p>	Monitor compliance	Metro	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-73—Landscape and Construction Debris	Monitor compliance	Metro	<ul style="list-style-type: none"> <li>– California State Water</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
Landscape and construction debris will be periodically and consistently removed.			<ul style="list-style-type: none"> <li>Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Final Design</li> </ul>
CON-74—Use of Non-Toxic Herbicides or Fertilizers Non-toxic alternatives will be employed for any necessary applications of herbicides or fertilizers.	Monitor compliance	Metro	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-75—Use of Temporary Detention Basins Temporary detention basins will be installed to remove suspended solids by settlement.	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-76—Water Quality Monitoring Water quality of runoff will be periodically monitored before discharge from the site and into the storm drainage system	Verify compliance	Metro/Contractor	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-77—Use of Stormwater Runoff BMPs Construction sites will have BMPs to divert stormwater runoff from entering the construction area. Containment around the site will include use of temporary measures such as fiber rolls to surround the construction areas to prevent any spills of slurry discharge or spoils recovered during the separation process. Downstream drainage inlets will also be temporarily covered to prevent discharge from entering the storm drain system.	Verify compliance	Metro/Contractor	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Construction</li> </ul>
CON-78—Measures to Reduce the Tracking of Sediment and Debris Construction entrances/exits will be properly set up so as to reduce or eliminate the tracking of sediment and debris offsite. Appropriate measures will include measures such as grading to prevent runoff from leaving the site, and establishing “rumble racks” or	Verify compliance	Metro/Contractor	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
wheel water points at the exit to remove sediment from construction vehicles.			<ul style="list-style-type: none"> <li>– Construction</li> </ul>
<p>CON-79—Cleaning of Equipment</p> <p>Onsite rinsing or cleaning of any equipment will be performed in contained areas and rinse water will be collected for appropriate disposal.</p>	Verify compliance	Metro/Contractor	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-80—Construction Site Water Collection</p> <p>A tank will be required on work sites to collect the water for periodic offsite disposal. Since the slurry production is a closed-loop system in which the water separated from the discharge slurry is continually recycled, minimal and infrequent water discharges are anticipated. These discharges could be accommodated in a tank onsite to collect the water and disposed of periodically.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-81—Soil and Building Material Storage</p> <p>Soil and other building materials (e.g., gravel) stored onsite must be contained and covered to prevent contact with stormwater and offsite discharge.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– California State Water Resources Control Board (SWRCB)</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-82—Communication with Schools</p> <p>School districts and private school institutions along the alignment will be informed of changes to Metro bus routes, school bus routes, and pedestrian crossings prior to construction.</p>	Verify coordination	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Prior to construction</li> </ul>
<p>CON-83—Work with Transportation, Police, Public Works, and Community Service Departments</p> <p>Metro will work with transportation, police, public works, and community services departments of jurisdictions along the alignment to implement mutually agreed upon measures, such as posting of clearly marked signs, pavement markings, lighting as well as implementing safety instructional programs, to enhance the safety of pedestrians, particularly in the vicinity of schools and access routes to hospitals. The measures will be developed to conform to Metro Rail Transit Design Criteria and Standards, Fire/Life Safety</p>	Verify coordination and compliance	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Prior to Construction</li> </ul>

Mitigation Measures	Monitoring Action	Party Responsible for Implementing Mitigation	<ul style="list-style-type: none"> <li>– Enforcement Agency</li> <li>– Monitoring Agency</li> <li>– Timeframe</li> </ul>
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<p>CON-84—Instructional Rail Safety Programs for Schools</p> <p>Metro will provide at no charge to school districts an instructional rail safety program with materials to all affected elementary middle and high schools.</p>	Verify coordination and implementation of Public Outreach Program	Metro	<ul style="list-style-type: none"> <li>– City of Los Angeles</li> <li>– Metro</li> <li>– Prior to Construction and project implementation</li> </ul>
<p>CON-85—Informational Program to Enhance Safety</p> <p>Metro will provide an on-going informational program to nearby medical facilities, senior centers, and parks if requested by these facilities, to enhance safety. The program will be similar to that described for the schools except the information and materials provided will be geared toward senior citizens.</p>	Verify coordination and implementation of Public Outreach Program	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-86—Traffic Control</p> <p>Contractors will be required to control traffic during construction by following the City of Los Angeles Work Area Traffic Control Manual; City of Los Angeles Bureau of Engineering Standard Plan S-610-12 (Notice to Contractors-Comprehensive); and the Bureau of Engineering Standard Specifications for Public Works Construction. Comparable standards will be enforced for work conducted in the other jurisdictions along the alignment.</p>	Verify compliance	Contractor	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>
<p>CON-87—Designation of Safe Emergency Vehicle Routes</p> <p>Safe emergency vehicle routes will be designated around construction sites. The identification of the routes will be coordinated with other agencies.</p>	Verify coordination	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Prior to Construction</li> </ul>
<p>CON-88—Minimize Disruption of Access to Businesses</p> <p>Both standard and site-specific mitigation measures will be developed to minimize disruption of pedestrian access to businesses and disruption of general vehicular traffic flow or access to specific businesses.</p> <p>Implementation of mitigation measures CON-1, TCON-1, T-CON-4, TCON-7, TCON-8, TCON-10, and TCON-11 will further reduce construction impacts to businesses.</p>	Verify inclusion into project design and implementation	Metro	<ul style="list-style-type: none"> <li>– Metro</li> <li>– Metro</li> <li>– Construction</li> </ul>