



## 4.11 Water Resources

This section has been updated from the Draft EIS/EIR to focus on the analysis of the effects of the LPA on water resources. The analysis results have not changed from the Draft EIS/EIR. The LPA could either be constructed as a single phase under the America Fast Forward (30/10) Scenario (Concurrent Construction) or as three consecutive phases under the Metro Long Range Transportation Plan Scenario (Phased Construction). The opening of the LPA as a single phase or in three sequential phases does not substantially change the analysis of water resources that was presented in the Draft EIS/EIR. The analysis of all the Build and TSM Alternatives in the Draft EIS/EIR is incorporated into this document by reference.

This section presents the potential changes in water quality resulting from the LPA, and measures to avoid, minimize, or mitigate potential water quality impacts are also presented. The information in this section is based on the *Westside Subway Extension Hydrology and Water Quality Technical Report* (Metro 2010j) prepared in support of the Draft EIS/EIR and the *Addendum to the Westside Subway Extension Hydrology and Water Quality Technical Report* (Metro 2011i) prepared in support of the LPA.

### 4.11.1 Regulatory Setting

The following federal, state, and local regulations protect water resources, and this section briefly summarizes key regulations applicable to the LPA. The regulatory settings for the LPA are the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario. Under the Phased Construction Scenario, Phase 1 and Phase 2 will extend through the cities of Los Angeles and Beverly Hills, and Phase 3 will extend through the City of Los Angeles and unincorporated portions of Los Angeles County.

#### Federal

The Clean Water Act of 1977 (USC 1972a) establishes the basic structure for regulating pollutant discharges into U.S. waters. Clean Water Act Section 303(d) requires states, territories, and authorized tribes to develop a list of waterways and waterway segments that have impaired water quality and do not meet water quality standards. Section 401 requires a State Water Quality Certification to show that a proposed project would comply with state water quality standards. The Section 402, National Pollutant Discharge Elimination System (NPDES) permit process controls point-source discharges to surface waters of the U.S. Section 404 regulates the discharge of dredged or fill materials into waters of the U.S. It requires a permit from the U.S. EPA and the USACE.

Under Federal Emergency Management Agency (FEMA) Executive Order 11988 (FEMA 1977), federal agencies must avoid, to the extent possible, adverse impacts associated with modifying floodplains and avoid supporting floodplain development to the extent practicable.

Section 10 of the Rivers and Harbors Act of 1899 (USC 1899) provides for the protection of navigable waters and prohibits the obstruction or alteration of navigable waters of the U.S. Any work performed in, over, or under navigable waters of the U.S. must obtain a Section 10 Permit from the USACE. The Los Angeles River is designated as navigable

water by the U.S. EPA. Section 14 of the Rivers and Harbors Act requires projects that alter bulkhead, jetty, dike, levee, wharf, pier, or other work built by the U.S. be approved by the USACE.

### **State**

In accordance with the Clean Water Act Section 402, the State Water Resources Control Board adopted a General Permit applicable to all stormwater discharges associated with construction activity.

The LPA will require an Industrial General Permit under Category 8, which includes “Transportation facilities that conduct any type of vehicle maintenance...” (Water Quality Order No. 97-03-DWQ).

### **Local**

Los Angeles County Municipal Separate Storm Sewer System Permit (Order No. 01-182, NPDES No. CAS004001) encompasses the Los Angeles County Flood Control District and the 84 incorporated cities within the district, including West Hollywood, Beverly Hills, and Santa Monica, and the County of Los Angeles for their contributions to discharges of stormwater and urban runoff from municipal separate storm sewer systems.

Construction General Permit specifies additional minimum best management practices (BMP). The LPA will disturb more than 1 acre and, therefore, is subject to these permit requirements.

Waste Discharge Requirements for Specified Discharges to Groundwater in Santa Clara and Los Angeles River Basins (Order No. 93-010) requires that wastewater be analyzed prior to being discharged to surface or groundwater to determine if it contains pollutants exceeding the applicable basin plan water quality objectives and to comply with applicable water quality standards. The LPA will include dewatering during construction.

#### **4.11.2 Affected Environment/Existing Conditions**

The affected environment and existing conditions for the LPA are the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario.

### **Municipal Water Supply**

The Los Angeles Department of Water and Power (LADWP) is the primary municipal water supplier in the Study Area. The West Basin Municipal Water District provides water to West Hollywood, Beverly Hills, unincorporated areas of Los Angeles County, and the Metropolitan Water District of Southern California.

### **Surface Water Hydrology**

The Study Area lies within the Santa Monica Bay Watershed and the Los Angeles River Watershed. The LPA is in the Santa Monica Bay Watershed Management Area, which includes the Ballona Creek Watershed, the largest tributary to Santa Monica Bay. Ballona Creek is about 1 to 3 miles southeast of and roughly parallel to the LPA alignments.



The proposed expansion of the Division 20 Vehicle Storage and Maintenance Facility is in the Los Angeles River Watershed, which extends from the Santa Monica Mountains, Simi Hills, and Santa Susana Mountains in the west to the San Gabriel Mountains in the east. Although the upper portion of the watershed is forest and open space, almost one-half of the watershed is densely developed. If the LPA is constructed under the Phased Construction Scenario, the expansion of the Division 20 Vehicle Storage and Maintenance Facility will occur as part of Phase 1.

Santa Monica Bay is considered a significant national and state natural resource and is protected under the Natural Estuary Program. It is a federal navigable water body and is listed under the Clean Water Act as a Section 303d impaired water body.

The Rancho La Brea Tar Pits, known for its paleontological resources, also has a small lake on its grounds. The tar pits are located in Hancock Park, north of Wilshire Boulevard and east of Fairfax Avenue. If the LPA is constructed under the Phased Construction Scenario, the La Brea Tar Pits are located along Phase 1.

### **Groundwater**

Groundwater in the Study Area consists of underground streams and, primarily, the Los Angeles Coastal Plain Groundwater Basins. Groundwater uses include municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, and aquaculture.

Rainfall occurs typically between November and March, averaging from 12.5 inches along the coast to 15.5 inches in Downtown Los Angeles. This rainfall replenishes groundwater supplies by direct percolation through the surface, stream flow, and subsurface flow. Percolation and groundwater replenishment are limited by impervious surfaces resulting from paving and urban development.

Groundwater along Wilshire Boulevard varies in depth and inflow rate. In certain areas, such as Westwood, groundwater appears to be under artesian pressure and major dewatering has been necessary for previous underground construction projects. Since 1980, groundwater has been recorded at various locations along Wilshire Boulevard and varies from 5 to 10 feet below the ground surface to approximately 12 to 40 feet below the ground surface. In the 1970s, water ranged from 40 to 75 feet below the surface. Since then, groundwater pumping has decreased and may have contributed to rising water levels. Refer to Section 4.8 for soils and groundwater data.

Part of the Santa Monica Fault Zone lies under the Study Area and acts as a vertical barrier to groundwater. Along Santa Monica Boulevard, groundwater monitoring in 2009 recorded depths from 1.3 feet to 87.7 feet below the ground surface. In the past, groundwater has ranged from 10 to 150 feet below the ground surface.

### **Drainage**

The urbanized Study Area is covered with impervious surfaces, such as asphalt, concrete, and buildings, so storm runoff is channeled into multiple storm drains and drainages. Almost all local streams and rivers (including the Los Angeles River) are channelized or are culverts and serve primarily as storm runoff channels. The City and the Los Angeles County Flood Control District construct and maintain the City of Los

Angeles storm drains. The city system is designed to accommodate a 10-year storm event, and the county system is designed for a 50-year storm event.

The expansion of the Division 20 Vehicle Storage and Maintenance Facility is near the Los Angeles River Basin, which is comprised primarily of the Los Angeles County coastal areas south of the San Gabriel and Santa Susana Mountains. The City of Los Angeles divides the Los Angeles River Basin into three drainage areas—the Upper Los Angeles River area, the Santa Monica Bay area, and the Central area. Runoff rates and volumes are influenced by urbanization and the associated impervious cover. If the LPA is constructed under the Phased Construction Scenario, the expansion of the Division 20 Vehicle Storage and Maintenance Facility will occur as part of Phase 1.

### **Flooding**

Los Angeles and nearby cities are located in a relatively flat alluvial plain, about 30 miles wide and surrounded by mountain ranges. FEMA has prepared flood zone maps identifying areas that are subject to flooding during 100- and 500-year storm events. Figure 4-49 through Figure 4-50 show the flood maps for the Study Area and maintenance yard.

Most of the LPA is within the FEMA-designated floodplains Zone X and Zone X (shaded). Zone X is defined as areas of minimal flood hazard, usually depicted on FEMA flood zone maps as above the 500-year flood level; Zone X (shaded) is defined as areas of moderate flood hazard, usually depicted on FEMA flood zone maps as above the 500-year flood level. Areas within a 100-year floodplain include North La Cienega Boulevard near Burton Way and an area adjacent to Santa Monica Boulevard south of Wilshire Boulevard.

### **Water Quality**

Urban runoff typically has negative impacts on surface water quality because it carries deposits from vehicles, pet waste, pesticides, and street litter into the storm drain system. The Los Angeles Regional Water Quality Control Board (LARWQCB) develops basin plans to protect and enhance water quality and the beneficial uses of regional waters. The LARWQCB Basin Plan (Basin Plan) that includes the Study Area lists beneficial uses for Ballona Creek as non-contact water recreation and wildlife habitat. However, Ballona Creek in the Study Area does not meet the water quality standard for beneficial uses. Therefore, it is on the Section 303(d) list of Water Quality Limited Segments, and the Basin Plan lists total maximum daily loads for coliform bacteria, copper (dissolved), cyanide, lead, selenium, shellfish harvesting advisory, toxicity, trash, viruses (enteric), and zinc.

The Basin Plan lists beneficial uses for the Los Angeles River as groundwater recharge, water contact recreation, and warm freshwater habitat. In the Study Area, the Los Angeles River does not meet water quality standards for its beneficial uses and is listed as a Section 303(d) impaired water body. Total maximum daily loads have been developed for ammonia, copper, lead, nutrients (algae), and trash.



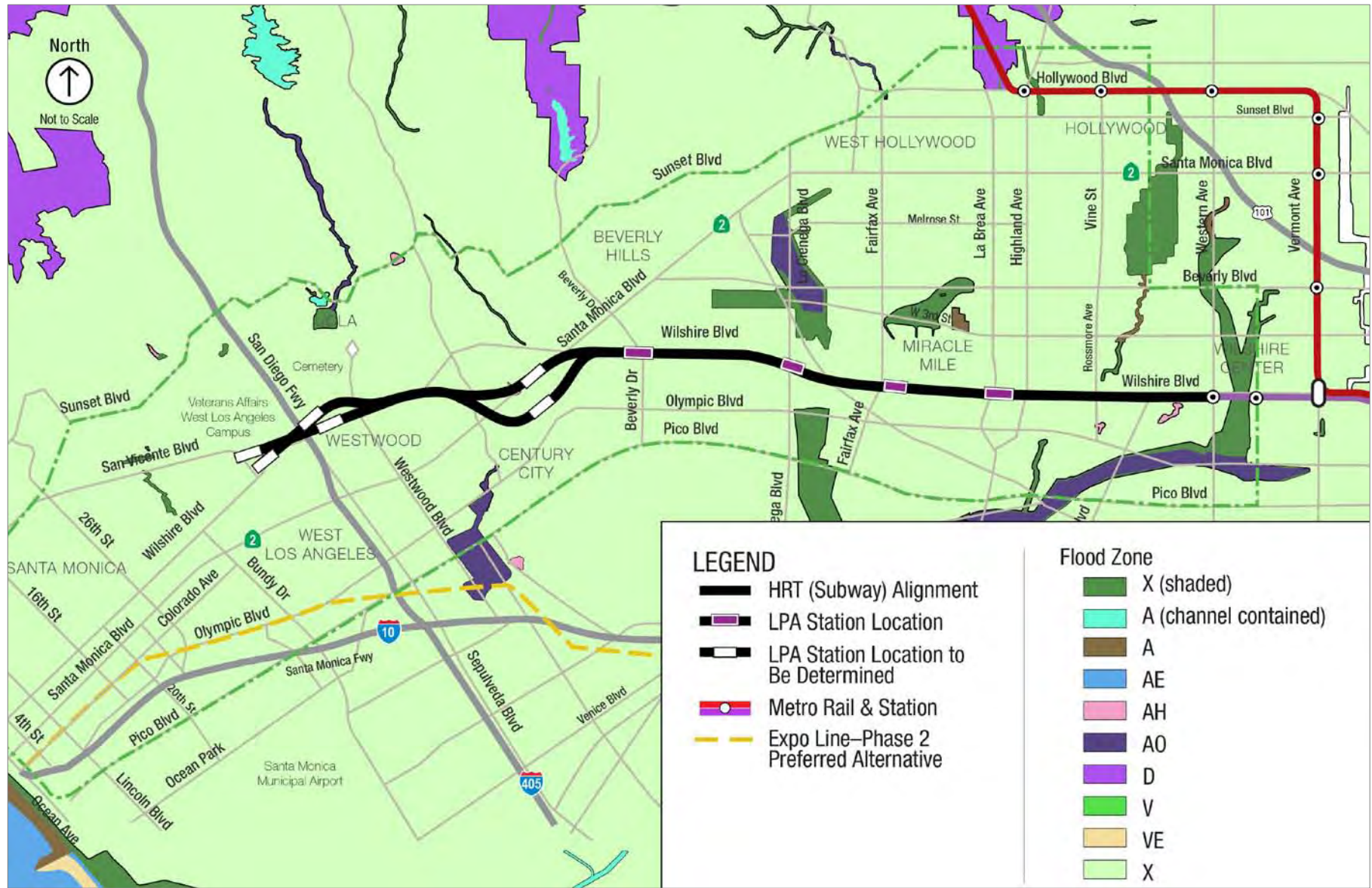


Figure 4-49. Floodplains—Study Area



Figure 4-50. Floodplains—Maintenance Yard

Groundwater quality in the main producing aquifers of the Los Angeles Coastal Plain Groundwater Basins is good. VOCs are present in the Central and West Coast Basins but are at low concentrations and below enforceable regulatory levels.

#### 4.11.3 Environmental Impacts/Environmental Consequences

Mass transportation projects have the potential to affect water quality by increasing runoff or altering surface or sub-surface drainage patterns. Hydrology and water quality impacts potentially resulting from the LPA were evaluated based on hydrology, drainage patterns, water quality, and floodplain data; water quality and beneficial uses in Study Area watersheds; compliance with applicable water quality regulations; and in accordance with NEPA and CEQA significance criteria.

##### No Build Alternative

The No Build Alternative consists of existing and committed highway and transit services that would continue as planned. The No Build Alternative would not include any activities that would result in any adverse effects to water resources.

##### Locally Preferred Alternative

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario.



The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing effects to water resources during operation of the LPA.

### **Water Quality**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Under the Concurrent Construction Scenario, the operation of the LPA, including station, alignment, and station entrance options, will not affect water resources. The LPA will result in negligible increases in typical vehicular runoff contaminants (i.e., oil, grease, and metals) that collect on streets and drain from the Study Area. However, these increased pollutant loadings will not be adverse, and the operation of the LPA, including station, alignment, and station entrance options, will not result in adverse water quality impacts.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for any impacts to water quality is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential effects to water quality. Under the Phased Construction Scenario, the potential for impacts to water quality along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential water quality impacts along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of potential impacts to water quality is discussed in the Concurrent Construction Scenario section above. Operation of Phase 1, Phase 2, and Phase 3 of the LPA under the Phased Construction Scenario will not result in adverse water quality impacts.

### **Municipal Water Supply**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

During operations, stations will use water for routine maintenance and cleaning. Stations will not include public restrooms, so water use will be negligible, and LADWP is expected to have sufficient supply. Water use required for operation of the LPA, including station, alignment, and station entrance options, will be reduced by using standard water conservation measures, such as water-saving devices for faucets and hoses. Therefore, no adverse impact to the municipal water supply is anticipated under operation of the LPA, including station, alignment, and station entrance options.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts related to municipal water supply is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential impacts related to the municipal water supply. Under the Phased Construction Scenario, the potential for impacts to the municipal water supply along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential municipal water supply impacts along Phase 1 of the LPA will



occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of potential impacts to the municipal water supply is discussed in the Concurrent Construction Scenario section above. Operation of Phase 1, Phase 2, and Phase 3 of the LPA under the Phased Construction Scenario will not result in adverse impacts to the municipal water supply.

### **Surface Water Hydrology**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

The LPA, including station, alignment, and station entrance options, does not cross any surface water bodies. The small lake at the Rancho La Brea Tar Pits in Hancock Park at Wilshire Boulevard and South Fairfax Avenue is in the vicinity of the Study Area but will not be directly affected by the LPA, including station, alignment, and station entrance options. No adverse effects to surface water hydrology are anticipated under operation of the LPA, including station, alignment, and station entrance options.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts related to surface water hydrology is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential impacts related to surface-water hydrology. Under the Phased Construction Scenario, the potential for surface-water hydrology impacts along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential surface-water hydrology impacts along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of potential impacts to surface-water hydrology is discussed in the Concurrent Construction Scenario section above. The small lake at the Rancho La Brea Tar Pits in Hancock Park at Wilshire Boulevard and South Fairfax Avenue is in the vicinity of the Study Area and Phase 1 of the LPA, but it will not be directly affected by the operation of Phase 1. Operation of Phase 1, Phase 2, and Phase 3 of the LPA under the Phased Construction Scenario will not result in adverse impacts to surface-water hydrology.

### **Groundwater**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Groundwater is encountered at varying depths throughout the Study Area. In the Study Area, shallow groundwater occurs at depths from 10 feet to more than 40 feet below ground and, in some areas, is as shallow as 5 to 10 feet below ground. Stations will be constructed from 50 to 60 feet below ground, while subway tunnels will be constructed between 40 and 80 feet below ground. Dewatering will not be necessary during operation of the LPA, including station, alignment, and station entrance options. Along alignment areas where stations will extend below groundwater, the foundation system will include a conventional mat-type foundation or spread footings interconnected with a substantial structural slab. The mat-type foundation combined with a high-density





polyethylene membrane will waterproof the station structures where shallow groundwater exists. Therefore, no adverse impacts to groundwater resources are anticipated during operations of the LPA, including station, alignment, and station entrance options.

***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts related to groundwater is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential impacts related to groundwater. Under the Phased Construction Scenario, the potential for groundwater impacts along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential groundwater impacts along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of potential impacts to groundwater is discussed in the Concurrent Construction Scenario section above. Operation of Phase 1, Phase 2, and Phase 3 of the LPA under the Phased Construction Scenario will not result in adverse impacts to groundwater.

***Drainage and Flooding***

***America Fast Forward (30/10) Scenario (Concurrent Construction)***

The LPA is within areas of a 500-year floodplain along Wilshire Boulevard near the Wilton Place intersection and adjacent to areas of a 100-year floodplain. However, the LPA is primarily subterranean and will not affect floodplain elevations. The Study Area is predominately impervious surfaces and has an extensive urban drainage infrastructure. Operation of the LPA, including station, alignment, and station entrance options, will not create or contribute to runoff that will exceed the drainage and flood control capacity of the urban storm drain system. The existing land cover is highly impervious and the LPA, including station, alignment, and station entrance options, will not add a substantial amount of impervious land. Further, as the stations and subway will be located underground, there will not be any major structures that will impede or redirect flood flows. Implementation of measure WQ1 (Section 4.11.4) will further ensure that there are no direct or indirect adverse impacts related to drainage or flooding during operation of the LPA, including station, alignment, and station entrance options.

***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts related to drainage and flooding is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential impacts related to drainage and flooding. Under the Phased Construction Scenario, the potential for drainage and flooding impacts along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential drainage and flooding impacts along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of potential drainage and flooding impacts is discussed in the Concurrent Construction Scenario section above. Operation of Phase 1, Phase 2, and Phase 3 of the LPA under the Phased Construction Scenario will not result in adverse drainage and flooding impacts.

### **Maintenance Facility**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

The site for the expanded Division 20 Vehicle Storage and Maintenance Facility is in a dense, urbanized area comprised primarily of impervious surfaces within the established underground drainage infrastructure. The Division 20 facility is on the west bank of the Los Angeles River between the 1st and 4th Street bridges. The proposed additional property for the Division 20 yard is between the 4th and 6th Street Bridges.

During operations, water use at the maintenance facility will increase as a result of the additional rail cars being stored and maintained there. Water use will also increase as a result of the additional employees for the maintenance facility. The increased water requirements are expected to be within the LADWP's capacity. The additional requirements will be reduced through standard water conservation measures, such as water-saving devices for irrigation, water-flow restrictors for restrooms, and recycling for rail car washes. No adverse impacts are anticipated.

Constructing and operating Division 20 would not involve below-grade structures. Above-ground activities would be implemented in accordance with applicable permits and regulations. Therefore, no adverse impacts would occur to drainage capacity or infrastructure.

The northwestern portion of the Division 20 facility is within the 100-year floodplain. The LPA will not increase impervious cover at the facility or result in runoff that exceeds the current drainage and flood control capacity of the storm drain system. As a result, the LPA will not impede or redirect flood flows. The LPA will convey drainage properly to avoid ponding or flooding on Division 20 or adjacent properties. Implementing measure WQ1 will further ensure there are no adverse impacts related to flooding.

Since the proposed maintenance yard site is primarily covered by impervious surfaces, the proposed improvements at the maintenance facility site will not substantially increase impervious cover at the existing facility or result in runoff that exceeds the current drainage and flood-control capacity of the storm drain system. As a result, the improvement will not impede or redirect flood flows. The adjacent property south of the Division 20 yard is not in a floodplain, so the expansion would have no adverse impact on the floodplain.

Drainage will be properly conveyed to avoid ponding or flooding on the maintenance yards or adjacent properties. Implementation of measure WQ1 will further ensure that there are no adverse impacts related to flooding from improvements to the maintenance yards.

During operation of the maintenance yard, runoff will be treated as described in WQ2. Therefore, no adverse impacts to water quality are anticipated.



### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts on water resources associated with expansion and operation of the Division 20 Vehicle Storage and Maintenance Facility will occur as part of Phase 1. The timing for potential impacts on water resources at the site will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of potential impacts to water resources at the Division 20 Vehicle Storage and Maintenance Facility is discussed in the Concurrent Construction Scenario section above. The Division 20 Vehicle Storage and Maintenance Facility will be expanded as part of Phase 1. Operation of Phase 1, Phase 2, and Phase 3 of the LPA under the Phased Construction Scenario will not result in adverse impacts to water resources associated with the Division 20 Vehicle Storage and Maintenance Facility.

#### **4.11.4 Mitigation Measures**

No adverse water quality or resource-related impacts will result from the LPA, including station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario. Operation of the LPA must comply with Title III and Title IV of the Clean Water Act and NPDES standards. In addition to the standard BMPs and other measures required for compliance with federal, state, and local requirements, the following measures will be implemented to further ensure that there will be no adverse water quality or hydrology impacts.

##### ■ **WQ1—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 ensure 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.

##### ■ **WQ2—Runoff Treatment**

During operation, runoff will be treated using the most appropriate BMP listed below to further ensure compliance of 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 with the City of Los Angeles' Green Street Policy. They are planters with selected vegetations and engineered soils to treat and filter stormwater from street and/or roof runoff. The design storm First-Flush polluted stormwater will be treated and filtered. At large storm events, clean stormwater will be by-passed to normal drainage facilities. These devices are most suitable to urban environment, such as the current LPA corridor.

If the LPA is constructed under the Phased Construction Scenario, WQ1 and WQ2 will be required for all three phases. For a more detailed discussion of impacts during construction and mitigation measures refer to Section 4.15.

### 4.11.5 California Environmental Quality Act Determination

The CEQA determination compares the effects of the LPA under both the Concurrent Construction Scenario and the Phased Construction Scenario with the existing conditions described in the existing conditions/affected environment section. Based on CEQA guidelines, a significant impact to hydrology and water quality will occur if an alternative will result in any of 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





### **No Build Alternative**

The No Build Alternative would have no significant impact on water resources.

### **Locally Preferred Alternative**

Operation of the LPA, including station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario, 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 LPA, including station, alignment, and station entrance options, will not substantially alter drainage patterns. The LPA, including station, alignment, and station entrance options, 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 under both the Concurrent Construction Scenario and the Phased Construction Scenario. 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.

The opening of the LPA as a single phase under the Concurrent Construction Scenario or in three sequential phases under the Phased Construction Scenario will not result in differing impacts to water resources during operation of the LPA, as discussed in Section 0. The only difference between the two scenarios is the timing of potential for operational impacts on water resources. Under the Phased Construction Scenario, the potential for impacts to water resources along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts to water resources along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

## **4.12 Safety and Security**

This section has been updated from the Draft EIS/EIR to focus on the analysis of the effects of the LPA on safety and security. The analysis results have not changed from the Draft EIS/EIR. The LPA could either be constructed as a single phase under the America Fast Forward (30/10) Scenario (Concurrent Construction) or as three consecutive phases under the Metro Long Range Transportation Plan Scenario (Phased Construction). The opening of the LPA as a single phase or in three sequential phases does not substantially change the safety and security analysis that was presented in the Draft EIS/EIR. The analysis of all the Build and TSM Alternatives in the Draft EIS/EIR is incorporated in this document by reference. Information in this section is summarized from the *Westside Subway Extension Safety and Security Hazards and Threat Assessment Technical Report* (Metro 2010q) prepared in support of the Draft EIS/EIR and the *Addendum to the Westside Subway Extension Safety and Security Hazards and Threat Assessment Technical Report* (Metro 2011p) prepared in support of the LPA, where additional detailed information and references are provided.

This section addresses safety and security issues, including an evaluation of accident prevention, crime prevention, and emergency response for the LPA.

System safety refers to the prevention of accidents to the riding public, employees, or others present on Metro transit facilities, which include stations, tracks, pedestrian walkways, and trains. Areas addressed include safety of passengers and pedestrians in locations where they will cross streets or rights-of-way, enter the stations, or encounter other transit facilities.

Security relates to protection of people from intentional acts that could injure or harm them and protection of property from deliberate acts. Topics discussed include crime prevention, law enforcement, and protection against terrorism.

### 4.12.1 Regulatory Setting

Both federal and state regulatory requirements dictate the safety and security aspects of various transit facilities and systems. Federal requirements include those published by the FTA. The FTA created a state-managed oversight program for rail transit safety and security. The program is applicable to all states that have within their boundaries a fixed guideway rail system not regulated by the Federal Railroad Administration. The rule requires that transit agencies address the safety and security of their passengers and employees by preparing a system safety program plan conforming to the state-managed system safety program standard. In California, the state requirements include those contained in state laws administered by the California Public Utilities Commission (CPUC).

Metro has developed safety criteria, and the Metro Board has adopted policies that are to be used in designing elements for the LPA. Industry guidelines are also used in developing the system design features. In addition, a formal threat and vulnerability assessment (TVA) is needed to assess threat types and identify the design and procedural mitigations to reduce the likelihood of criminal activity.

The regulatory settings for the LPA are the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario.

### 4.12.2 Affected Environment/Existing Conditions

Metro oversees the operation of bus and rail transit services throughout Los Angeles County. Metro is also responsible for implementing its own System Safety Program Plan and System Security Plan during operational phases of projects, which help to maintain and improve the safety and security of commuter operations, mitigate accidents, and comply with federal and state regulations.

Metro's Corporate Safety Department is responsible for ensuring that safety procedures are established and implemented and for monitoring safety performance. The Corporate Safety Department is empowered to develop, implement, and administer a comprehensive and coordinated System Safety Program Plan. The program emphasizes preventive activities and responsibilities of each department in an effort to identify, control, and resolve hazards during the design, development, and operation of transit service.



Security, cameras, and law enforcement for Metro facilities is provided 24 hours per day, 7 days per week. Criminal reports or arrests, other than those conducted by special enforcement deputies, remain the jurisdiction of the local law enforcement agency where the activity occurs.

The Study Area encompasses police departments for the cities of Los Angeles, Beverly Hills, and Santa Monica, as well as police departments that cover UCLA and the VA West Los Angeles Campus. The Federal Protective Service is responsible for police patrols of the Federal Building (also known as the Los Angeles General Services Administration [GSA] Building), located east of I-405 and Sepulveda Boulevard and adjacent to the intersection of Wilshire Boulevard and Veteran Avenue. The Los Angeles County Sheriff's Department patrols unincorporated portions of Los Angeles County. In addition, Metro implements security and law enforcement services through a contract with the Los Angeles County Sheriff's Department Transit Services Bureau, which is part of the Homeland Security Division.

The LPA will pass through one or more of the fire department jurisdictions for Los Angeles County and the cities of Los Angeles and Beverly Hills. Local fire departments are the primary responders in the event of fire on the Metro system and will assume overall command of any fire scene in close liaison with the Metro Rail Operations Center (ROC).

The affected environment and existing conditions for the LPA are the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario. Under the Phased Construction Scenario, Phase 1 and Phase 2 will extend through the cities of Los Angeles and Beverly Hills, and Phase 3 will extend through the City of Los Angeles and unincorporated portions of Los Angeles County.

#### **4.12.3 Environmental Impact/Environmental Consequences**

This section analyzes the environmental consequences related to safety and security associated with the No Build Alternative and the LPA under either the Concurrent Construction Scenario or the Phased Construction Scenario.

Potential safety and security impacts related to the LPA under either the Concurrent Construction Scenario or the Phased Construction Scenario are provided by topic area below. Areas discussed include accident prevention, construction safety, seismic safety, fire protection and safety, methane and hydrogen sulfide gas leak protection, suicide prevention at stations, security preventing criminal activity, security preventing terrorist attacks, and emergency response. Mitigation measures to address impacts or further ensure that there are no adverse impacts are discussed in Section 4.12.4.

##### **No Build Alternative**

It is anticipated that under the No Build Alternative, safety and security in the Study Area would remain at current levels or follow current trends. Therefore, no adverse impacts to accident prevention, crime prevention, or emergency response are anticipated for the No Build Alternative.

### **Locally Preferred Alternative**

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing long-term risks associated with safety and security.

### **Accident Prevention**

The LPA is an underground HRT system. Once the passengers enter the 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). While the presence of any of the hazards in these categories can have an adverse impact on passenger safety, the implementation of a well-designed system safety and fire/life safety program will result in no adverse impacts. Such a system will be similar to that already in place by Metro on the Red and Purple Lines. Station and tunnel design will be in accordance with the California Building Code (CBC) and Metro fire/life safety criteria. Each topic area related to accident prevention is discussed below.

### **Employee Safety**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The operation and maintenance of the LPA will be similar to the existing Metro Red and Purple Lines and will be conducted in accordance with the U.S. Department of Labor Occupational Safety and Health Administration (OSHA), California Occupational Safety and Health Administration (Cal/OSHA), CPUC, and Metro policies and practices. Metro's Employee Safety Program includes a wide range of occupational safety and health, injury and illness prevention, hazard communication, industrial hygiene, fire and life safety, emergency preparedness, and operational safety programs. No adverse impacts to employee safety are anticipated under operation of the LPA, including all station, alignment, and station entrance options.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for impacts related to employee safety is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential impacts to employee safety. Under the Phased Construction Scenario, potential impacts related to employee safety along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts related to employee safety along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of impacts to employee safety is discussed in the Concurrent Construction Scenario above. The operation and maintenance of all three phases of the LPA will be similar to the existing Metro Red and Purple Lines and will be conducted in accordance with OSHA, Cal/OSHA, CPUC, and Metro policies and practices. No adverse impacts





are anticipated under operation of Phase 1, Phase 2, and Phase 3 of the LPA, including all station, alignment, and station entrance options.

**Construction Safety**

*America Fast Forward (30/10) Scenario (Concurrent Construction)*

Safety of construction workers and the general public will be a key element of construction activities associated with the LPA. The LPA can result in a risk of pedestrians and bicyclists becoming injured in proximity to construction sites. Construction effects will be temporary and limited in area as construction proceeds along the length of the project alignment. Construction of the LPA, including all station, alignment, and station entrance options, will be conducted in accordance with OSHA, Cal/OSHA, CPUC, and Metro policies and practices. A Construction Safety and Security Plan will be implemented to avoid and minimize impacts related to construction safety. No adverse impacts are anticipated under operation of the LPA, including all station, alignment, and station entrance options. For additional construction impact discussion refer to Section 4.15.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for impacts related to construction safety is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential impacts related to construction safety. Under the Phased Construction Scenario, potential impacts related to construction safety along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for impacts related to construction safety along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of impacts related to construction safety is discussed in the Concurrent Construction Scenario above. Construction effects will be temporary and limited to each phase of the Project. Construction of all three phases of the LPA, including all station, alignment, and station entrance options, will be conducted in accordance with OSHA, Cal/OSHA, CPUC, and Metro policies and practices. A Construction Safety and Security Plan will be implemented for each phase to avoid and minimize impacts related to construction safety. No adverse impacts are anticipated under operation of Phase 1, Phase 2, and Phase 3 of the LPA, including all station, alignment, and station entrance options. For additional discussion regarding impacts related to construction safety, refer to Section 4.15.

**Seismic Safety**

*America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA contains structures, including stations and tunnels that may be susceptible to ground shaking, surface fault rupture, and seismically induced settlement. For an analysis of impacts and proposed mitigation measures, refer to Section 4.8.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for impacts related to seismic safety is the same as under the Concurrent Construction Scenario. The only difference

between the two scenarios is the timing of potential impacts related to seismic safety. Under the Phased Construction Scenario, potential impacts related to seismic safety along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts related to seismic safety along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

Phase 1, Phase 2, and Phase 3 of the LPA contains structures, including stations and tunnels that may be susceptible to ground shaking, surface fault rupture, and seismically induced settlement. For an analysis of impacts and proposed mitigation measures, refer to Section 4.8.

### **Fire Protection Safety**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA is an underground HRT system. Such a system typically consists of major project elements/activities that have a potential risk of fire and related hazards, including station facilities, underground guideway (tunnels), construction, passenger vehicles, maintenance and storage facility, and rail operations centers. While these elements carry electrical equipment and combustible materials and introduce a risk of potential fire and adverse impact on the safety of workers and patrons using the system, the implementation of Metro's system safety and fire/life safety programs will result in no adverse impacts under operation of the LPA, including all station, alignment, and station entrance options.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for impacts related to fire protection safety is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential impacts to fire protection safety. Under the Phased Construction Scenario, potential impacts related to fire protection safety along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts related to fire protection safety along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The impacts related to fire protection safety are discussed in the Concurrent Construction Scenario above. Phase 1, Phase 2, and Phase 3 of the LPA will implement Metro's system safety and fire/life safety programs and will, therefore, result in no adverse impacts under operation.

### **Methane and Hydrogen Sulfide Gas Leak Protection**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA will result in ground disturbances during excavation activities. During construction, subsurface gases can be encountered in areas where tunneling and excavation will occur that may include the release of methane and hydrogen sulfide gas. For a detailed discussion and analysis of impacts related to subsurface gases and proposed mitigation measures, refer to Section 4.8 and Section 4.15.



*Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for impacts related to methane and hydrogen sulfide gas is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of these potential impacts. Under the Phased Construction Scenario, potential impacts related to methane and hydrogen sulfide gas along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts related to methane and hydrogen sulfide gas along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

Phase 1, Phase 2, and Phase 3 of the LPA will result in ground disturbances during excavation activities. During construction, subsurface gases can be encountered in areas where tunneling and excavation will occur, which may include the release of methane and hydrogen sulfide gas. For a detailed discussion and analysis of impacts related to subsurface gases and proposed mitigation measures, refer to Section 4.8 and Section 4.15.

***Pedestrian and Bicycle Safety at Stations***

*America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA stations will be accessed via stairways, escalators, and elevators descending from the ground level to the subway's mezzanine and platform levels. When provided within an existing sidewalk, station entrances reduce the effective sidewalk width available for pedestrians. None of the stations will substantially reduce the effective sidewalk widths since most station entrances will be located away from the sidewalks. Emergency exits will be located away from the main station entrances and may require a sidewalk to accommodate a steel hatch to access the exit. However, the establishment of these exits does not affect pedestrian access on the sidewalks.

The passenger demand at the stations will not cause substantial overcrowding on public sidewalks or create unsafe conditions for pedestrians or bicyclists. All stations will be constructed below grade, so no on-street sidewalks will be permanently removed to accommodate the stations or alignment; therefore, no adverse impacts related to pedestrian or bicyclist safety will occur under operation of the LPA, including all station, alignment, and station entrance options. For a more detailed discussion of pedestrian circulation refer to Chapter 3, Transportation.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential impacts related to pedestrian and bicycle safety at stations are the same as under the Concurrent Construction Scenario and are discussed in the Concurrent Construction Scenario above. The only difference between the two scenarios is the timing of these potential impacts. Under the Phased Construction Scenario, potential impacts related to pedestrian and bicycle safety at stations along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts related to pedestrian and bicycle safety at stations along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The impacts related to pedestrian and bicycle safety are discussed in the Concurrent Construction Scenario above. All three phases of the LPA will contain stations that will be constructed below grade, so no on-street sidewalks will be permanently removed to accommodate the stations or alignment; therefore, no adverse impacts related to pedestrian or bicyclist safety will occur under operation of Phase 1, Phase 2, and Phase 3 of the LPA. For a more detailed discussion of pedestrian circulation, refer to Chapter 3, Transportation.

### ***Suicide Prevention at Stations***

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

Transit systems are by nature open to all of the public without consideration of a passenger's mental health. This creates a situation where transit agencies have limited control of the use of their system and limited ability to prevent any hazardous activity, such as a suicide attempt by a determined person.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the safety and security impacts related to suicide prevention at stations are the same as under the Concurrent Construction Scenario and are discussed in the Concurrent Construction Scenario above.

### **Crime Prevention and Security**

#### ***Security Preventing Criminal Activity***

##### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

An adverse impact to law enforcement services can occur if there is a rise in criminal activity due to an increase in pedestrian circulation in areas near the station entrances and below ground stations. Another adverse impact to law enforcement services can be that criminal activity travels by rail throughout the system from one station to another with peak volumes of circulation during high demand hours. In some cases, however, increased foot traffic around station areas could deter criminal activity.

Metro's facility design requirements provide for natural surveillance, natural access control, and territoriality principles associated with Crime Prevention Through Environmental Design that are implemented in facility designs to monitor and minimize criminal activity. Similar to the Red and Purple Lines, Metro will implement 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. No adverse impacts are anticipated under the operation of the LPA, including all station, alignment, and station entrance options.

##### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for impacts related to criminal activity is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of these potential impacts. Under the Phased Construction Scenario, the potential for impacts related to criminal activity along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts related to criminal activity along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.





The analysis of impacts related to security preventing criminal activity is discussed in the Concurrent Construction Scenario above. Construction effects will be temporary and limited to each phase of the Project. All three phases of the LPA will adhere to Metro's facility design requirements that provide for natural surveillance, natural access control, and territoriality principles associated with Crime Prevention Through Environmental Design that are implemented in facility designs to monitor and minimize criminal activity. Similar to the Red and Purple Lines, Metro will implement security features that include lighting, communication devices (e.g., passenger telephones), closed circuit television, signs and other design features, and law enforcement officers to reduce criminal activities for Phase 1, Phase 2, and Phase 3 of the LPA. Therefore, no adverse impacts are anticipated during operation of Phase 1, Phase 2, and Phase 3 of the LPA under the Phased Construction Scenario.

### **Security Preventing Terrorist Attacks**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

Mass transit systems could be a target for terrorists due to their large ridership and the potential to inflict mass casualties and cause significant damage or disrupt critical infrastructures. An impact to law enforcement agencies could occur from a potential terrorist threat targeting the increase in pedestrian circulation and critical infrastructures at or near the station entrances and below-ground station platforms.

In addition, the LPA may require underground easements and construction easements that are partially on or adjacent to federal facilities at the following locations:

- Federal Building (GSA Building)
- VA West Los Angeles Campus
- U.S. Army Reserve Facility

The station and alignment designs have considered the security needs of these properties and reflect ongoing coordination minimizing any security issues. No adverse impacts are anticipated under the operation of the LPA, including all station, alignment, and station entrance options.

Metro is committed to following risk assessment processes performed by federal agencies of federal sites; the effort and time it may take an agency to complete an assessment; and potential risk security countermeasures that may be recommended by a federal agency to reduce risk at a federal site.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for impacts related to terrorist attacks is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of these potential impacts. Under the Phased Construction Scenario, the potential for impacts related to terrorist attacks along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts related to terrorist attacks along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of impacts related to terrorist attacks is discussed in the Concurrent Construction Scenario above. Phase 3 of the LPA may require underground easements

and construction easements that are partially on or adjacent to federal facilities at the Federal Building (GSA Building), VA West Los Angeles Campus, and the U.S. Army Reserve Facility. The station and alignment designs have considered the security needs of these properties and reflect ongoing coordination to minimize any security issues. No adverse impacts are anticipated under the operation of Phase 1, Phase 2, and Phase 3 of the LPA.

### **Emergency Response**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

An adverse impact on fire and police services would occur if the LPA overtaxes a department's services, emergency response, and major disaster response resources by resulting in unacceptable service ratios, response times, the need for additional personnel or additional training, or a reduction in other performance objectives. The LPA, including all station, alignment, and station entrance options, has a potential of adverse effect on local community safety services due to increased demands on fire, medical emergency response, and police services, which would be mitigated as described below. With implementation of the proposed mitigation measures, no adverse effects to fire or police services are anticipated.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts related to emergency response is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of these potential impacts. Under the Phased Construction Scenario, the potential for impacts related to emergency response along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts related to emergency response along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of impacts related to emergency response is discussed in the Concurrent Construction Scenario above. Phase 1, Phase 2, and Phase 3 of the LPA has a potential adverse effect on local community safety services due to increased demands on fire, medical emergency response, and police services that would be mitigated as described below. With implementation of the proposed mitigation measures, no adverse effects to fire or police services are anticipated.

### **4.12.4 Mitigation Measures**

Mitigation measures are summarized below and are incorporated into the LPA under both the Concurrent Construction Scenario and the Phased Construction Scenario. These measures further describe those Metro currently uses or will implement to further ensure that there are no adverse impacts. Detailed discussion of the measures are contained in the *Westside Subway Extension Safety and Security Hazards and Threat Assessment Technical Report* (Metro 2010q) and the *Addendum to the Westside Subway Extension Safety and Security Hazards and Threat Assessment Technical Report* (Metro 2011p).



## **Accident Prevention**

### **Passenger Safety**

- **SS-1**—Implement public safety awareness and employee training program.
- **SS-2**—Develop and implement a project-specific safety certification plan that will result in safety certification of all certifiable project elements.

With implementation of these measures and those described in Section 4.12.3, no adverse impacts are anticipated under the operation of the LPA, including all station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario. If the LPA is constructed under the Phased Construction Scenario, SS-1 and SS-2 would be required for Phase 1, Phase 2, and Phase 3.

### **Construction Safety**

- **SS-3**—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.

With implementation of these measures, as noted in Section 4.12.3, no adverse impacts are anticipated with construction of the LPA, including all station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario. If the LPA is constructed under the Phased Construction Scenario, SS-3 would be required for Phase 1, Phase 2, and Phase 3.

### **Seismic Safety**

With implementation of additional measures described in Section 4.8 and Section 4.15, no adverse impacts are anticipated under the operation of the LPA, including all station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario.

### **Fire Protection and Safety**

- **SS-4**—Design in accordance with Metro fire/life safety criteria, CBC, and other applicable federal, state, and local rules and regulations.

With implementation of these measures, as noted in Section 4.12.3, no adverse impacts are anticipated under the operation of the LPA, including all station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario. If the LPA is constructed under the Phased Construction Scenario, SS-4 would be required for Phase 1, Phase 2, and Phase 3.

### **Methane and Hydrogen Sulfide Gas Leak Protection**

- **SS-5**—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.

With implementation of these measures, as noted in Section 4.12.3, no adverse impacts are anticipated under the operation of the LPA, including all station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario.

### **Suicide Prevention at Stations**

Since there are few suicide attempts on the existing Metro HRT system, and Metro will continue implementation of existing public safety awareness and employee training programs, as noted in Section 4.12.3, no adverse impacts are anticipated under the operation of the LPA, including all station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario. If the LPA is constructed under the Phased Construction Scenario, SS-5 would be required for Phase 1, Phase 2, and Phase 3.

### **Crime Prevention and Security**

#### **Security Preventing Criminal Activity**

- **SS-6**—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.

With implementation of these measures, as noted in Section 4.12.3, no adverse impacts are anticipated under operation of the LPA, including all station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario. If the LPA is constructed under the Phased Construction Scenario, SS-6 would be required for Phase 1, Phase 2, and Phase 3.

#### **Security Preventing Terrorist Attacks**

- **SS-7**—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.

With implementation of these measures, as noted in Section 4.12.3, no adverse impacts are anticipated under the operation of the LPA, including all station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario. If the LPA is constructed under the Phased Construction Scenario, SS-7 would be required for Phase 1, Phase 2, and Phase 3.

#### **Emergency Response**

- **SS-8**—Develop and implement a comprehensive emergency preparedness plan, employee and emergency responders training, and system design features

With implementation of these measures, as noted in Section 4.12.3, no adverse impacts are anticipated under the operation of the LPA, including all station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario. If the LPA is constructed under the Phased Construction Scenario, SS-8 would be required for Phase 1, Phase 2, and Phase 3.



#### **4.12.5 California Environmental Quality Act Determination**

The CEQA determination compares the effects of the LPA under both the Concurrent Construction Scenario and the Phased Construction Scenario with the existing conditions described in Section 4.12.2. The evaluation of safety and security impacts of the LPA, under both the Concurrent Construction Scenario and the Phased Construction Scenario, are discussed above. Appendix G of the California State CEQA Guidelines draws particular attention to those projects that would “create a potential public health hazard” or “interfere with emergency response plans or emergency evacuation plans.” A significant adverse safety and security impact would occur under CEQA if an alternative 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

The operation of the LPA, including all station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario, will not have a significant effect on safety and security with the incorporation of the measures described in Section 4.12.3 and Section 4.12.4.

The opening of the LPA as a single phase under the Concurrent Construction Scenario or in three sequential phases under the Phased Construction Scenario will not result in the potential for differing safety and security impacts during operation of the LPA, as discussed in Section 4.12.3. The only difference between the two scenarios is the timing of potential operational safety and security impacts. Under the Phased Construction Scenario, the potential for safety and security impacts along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential safety and security impacts along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

#### **4.13 Parklands and Community Services and Facilities**

This section has been updated from the Draft EIS/EIR to focus on the analysis of the effects of the LPA on parklands and community services and facilities. The analysis results have not changed from the Draft EIS/EIR. The LPA could either be constructed as a single phase under the America Fast Forward (30/10) Scenario (Concurrent Construction) or as three consecutive phases under the Metro Long Range Transportation Plan Scenario (Phased Construction). The opening of the LPA as a single phase or in three sequential phases does not substantially change the analysis of parklands and community services and facilities that was presented in the Draft EIS/EIR. The analysis of all the Build and TSM Alternatives in the Draft EIS/EIR is incorporated in this document by reference. Information in this section is summarized



from the *Westside Subway Extension Parklands and Other Community Facilities Technical Report* (Metro 2010n) and the *Westside Subway Extension Real Estate and Acquisitions Technical Report* (Metro 2010c) prepared in support of the Draft EIS/EIR and the *Parklands and Other Community Facilities Supplemental Technical Report* (Metro 2011n) and *Westside Subway Extension Acquisitions and Displacement Supplemental Report* (Metro 2011c) prepared in support of the LPA.

Parklands are protected under federal and state regulations. Similarly, actions affecting community services and facilities are regulated under state and local policies. Parklands include parks and outdoor recreational facilities, and community facilities include police and fire departments, libraries, educational facilities (including daycare centers), religious institutions, cemeteries, museums, recreation centers, medical facilities, and community facilities that provide social or specialized services (e.g., senior centers). This section discusses the effects to parklands and community services and facilities that could occur as a result of LPA operation.

### 4.13.1 Regulatory Setting

The regulatory settings for the LPA are the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario. Under the Phased Construction Scenario, Phase 1 and Phase 2 will extend through the cities of Los Angeles and Beverly Hills, and Phase 3 will extend through the City of Los Angeles and unincorporated portions of Los Angeles County.

#### **Federal**

Section 4(f) of the U.S. Department of Transportation Act of 1966 (USC 1983) provides special protection to public recreational lands and facilities. This includes local parks and school facilities that are open and available to the general public for recreational purposes, as well as significant cultural resources and natural wildlife refuges. Federally funded transportation improvement projects are prohibited from encroaching on Section 4(f) lands unless it can be demonstrated that no prudent or feasible alternative exists. An assessment of project impacts related to Section 4(f) resources is addressed in Chapter 5, Section 4(f) Evaluation, of this document.

#### **State**

The California Public Park Preservation Act of 1971 (PRC 1971) requires a public agency that acquires public parkland for non-park uses to either provide enough compensation to acquire equal replacement parkland or provide replacement parkland of comparable qualities.

#### **Local**

Parklands, public services, and other community facilities are generally regulated by local agencies. Therefore, the LPA is regulated primarily by the policies of local jurisdictions. Public schools are regulated by the policies and procedures of the various school districts. Other community facilities are regulated through land use and zoning policies contained in general plans. The LPA falls within the boundaries of Los Angeles County and the Cities of Los Angeles and Beverly Hills; therefore, policies contained within their respective general plans will regulate uses within those areas. Policies

contained within each city's general plan primarily focus on providing quality services and resources, improving or developing additional resources, and preserving existing facilities and resources.

#### **4.13.2 Affected Environment/Existing Conditions**

The following is a discussion of the existing parklands and community facilities. Parks and community facilities were inventoried within one-quarter mile of the LPA station options, associated structures (e.g., crossover tracks), and maintenance yard. In addition, community facilities, such as police and fire stations that have service areas that include an LPA station option, an associated structure, or maintenance yard, were further assessed to determine if any of the facilities will be directly or indirectly impacted by the LPA (Figure 4-51 through Figure 4-54). The affected environment and existing conditions for the LPA are the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario.

##### **Parks, Recreation Centers, and Museums**

Fifteen parks, recreation centers, and museums are located within one-quarter mile of an LPA station option, structure, maintenance yard, or adjacent to an alignment option. Table 4-50 lists these facilities and indicates their proximity to the nearest station option or structure and whether they will be above the LPA alignment, including all alignment options. The locations of these facilities are depicted in Figure 4-51 through Figure 4-54. If the LPA is constructed under the Phased Construction Scenario, eight of these facilities are located along Phase 1, five along Phase 2, and two along Phase 3.

##### **Police Services**

The LPA station options are within the service areas of four Los Angeles Police Department (LAPD) stations, one County of Los Angeles Sheriff's Department station (LASD), and one City of Beverly Hills Police Department (BHPD) station. A total of six police stations were identified. These station options are listed in Table 4-51, and their locations are depicted in Figure 4-51 through Figure 4-54. None of the police stations are located directly above the LPA alignment, including all alignment options. If the LPA is constructed under the Phased Construction Scenario, four of these stations serve Phase 1 of the LPA, two serve Phase 2 of the LPA, and two serve Phase 3 of the LPA.

##### **Fire Services**

The LPA station options are within the service areas of six Los Angeles Fire Department (LAFD) stations, two Beverly Hills Fire Department (BHFD) stations, and one Los Angeles County Fire Department (LACoFD) station. A total of nine fire stations were identified. These stations are listed in Table 4-52, and their locations are depicted in Figure 4-51 through Figure 4-54. None of the fire stations are located directly above the LPA alignment, including all alignment options; however, LAFD Station 29 will be adjacent to the alignment. If the LPA is constructed under the Phased Construction Scenario, five of these stations serve Phase 1 of the LPA, three serve Phase 2 of the LPA, and two serve Phase 3 of the LPA.

### **Schools (Public and Private, All Levels of Education, including Preschool through Trade and College)**

The ten public schools, fourteen private schools, one non-profit school, and sixteen trade schools/colleges within one-quarter mile of an LPA station option, structure, maintenance yard, or adjacent to an alignment option are listed in Table 4-53. Their locations are depicted in Figure 4-51 through Figure 4-54. The Wilshire/Crenshaw construction staging site is adjacent to Meridian College, and the Wilshire/Fairfax Station entrance will be constructed on the Marinello School of Beauty property. In addition, the Century City Constellation Station option will require tunneling underneath Beverly Hills High School and UCLA Lot 36.

If the LPA is constructed under the Phased Construction Scenario, four of the public schools, thirteen of the private schools, and ten of the trade schools/colleges are located along Phase 1. Four of the public schools and one of the trade schools/colleges are located along Phase 2. Two of the public schools, one of the private schools, one of the non-profit schools, and five of the trade schools/colleges are located along Phase 3.

### **Libraries**

Table 4-54 lists the two public libraries and one private library within one-quarter mile of an LPA station option, structure, or maintenance yard, or adjacent to an LPA alignment option. Their locations are depicted in Figure 4-51 through Figure 4-54. If the LPA is constructed under the Phased Construction Scenario, two libraries are located along Phase 1 and one library is located along Phase 3.

### **Medical Facilities**

Table 4-55 lists the two hospitals, two community medical clinics, and four convalescent homes within one-quarter mile of an LPA station option, structure, maintenance yard, or adjacent to an LPA alignment option. Their locations are depicted in Figure 4-51 through Figure 4-54. The facilities include the VA West Los Angeles Campus, where a station will be located. If the LPA is constructed under the Phased Construction Scenario, five of these facilities are located along Phase 1, two along Phase 2, and one along Phase 3.





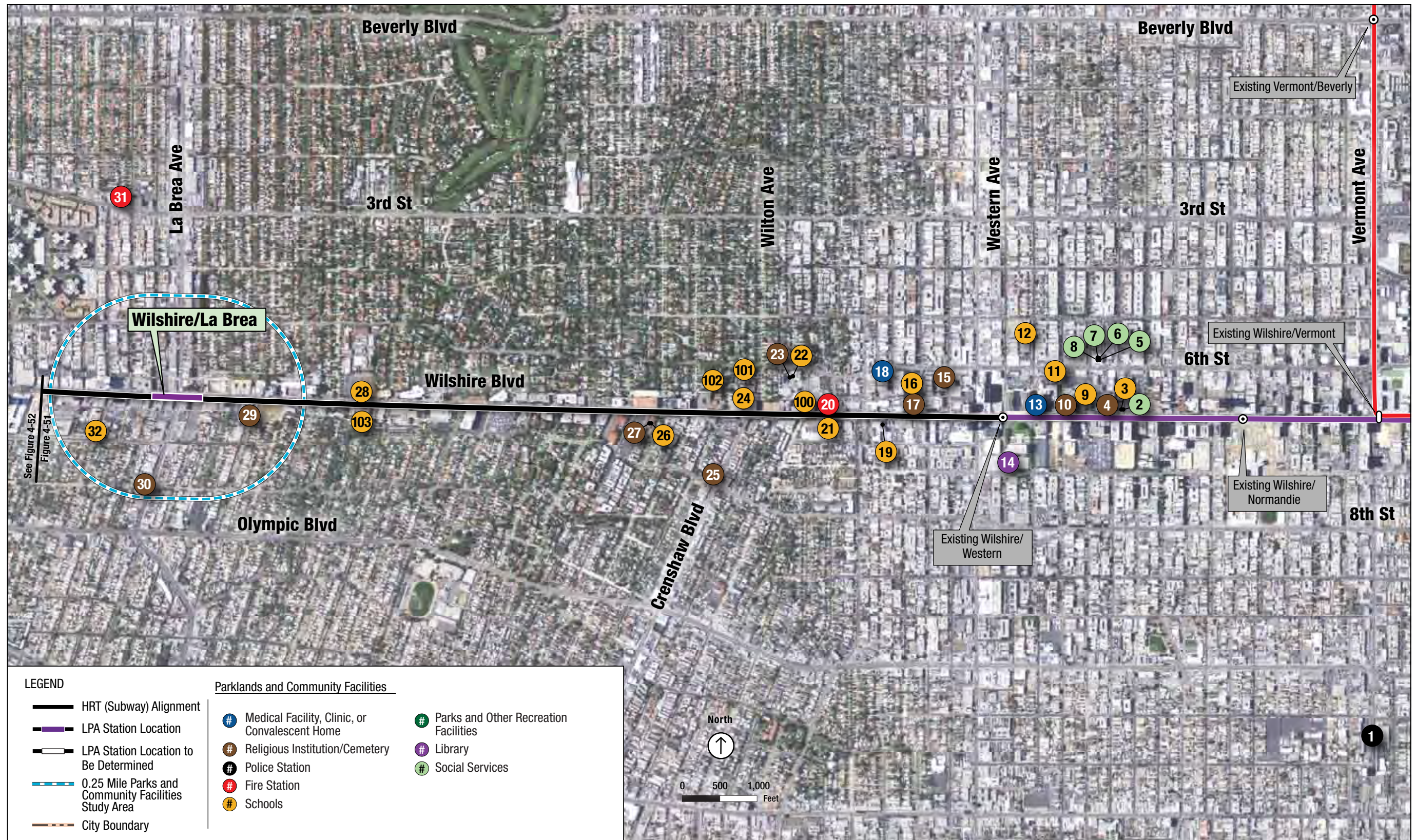


Figure 4-51. Parkland and Communities Facilities (Existing Wilshire/Western Station to Wilshire/La Brea Station)



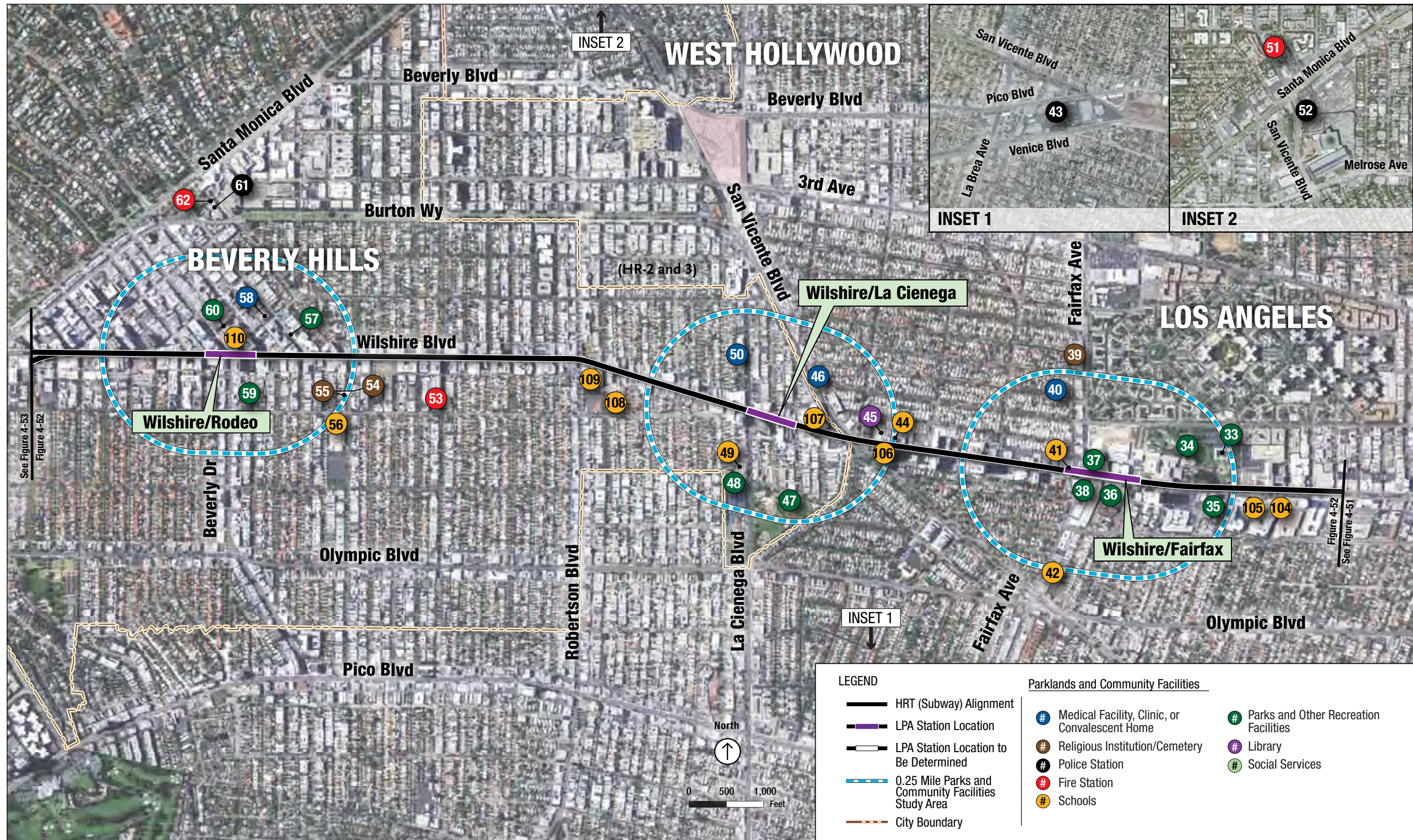


Figure 4-52. Parkland and Communities Facilities (Wilshire/Fairfax Station to Wilshire/Rodeo Station)



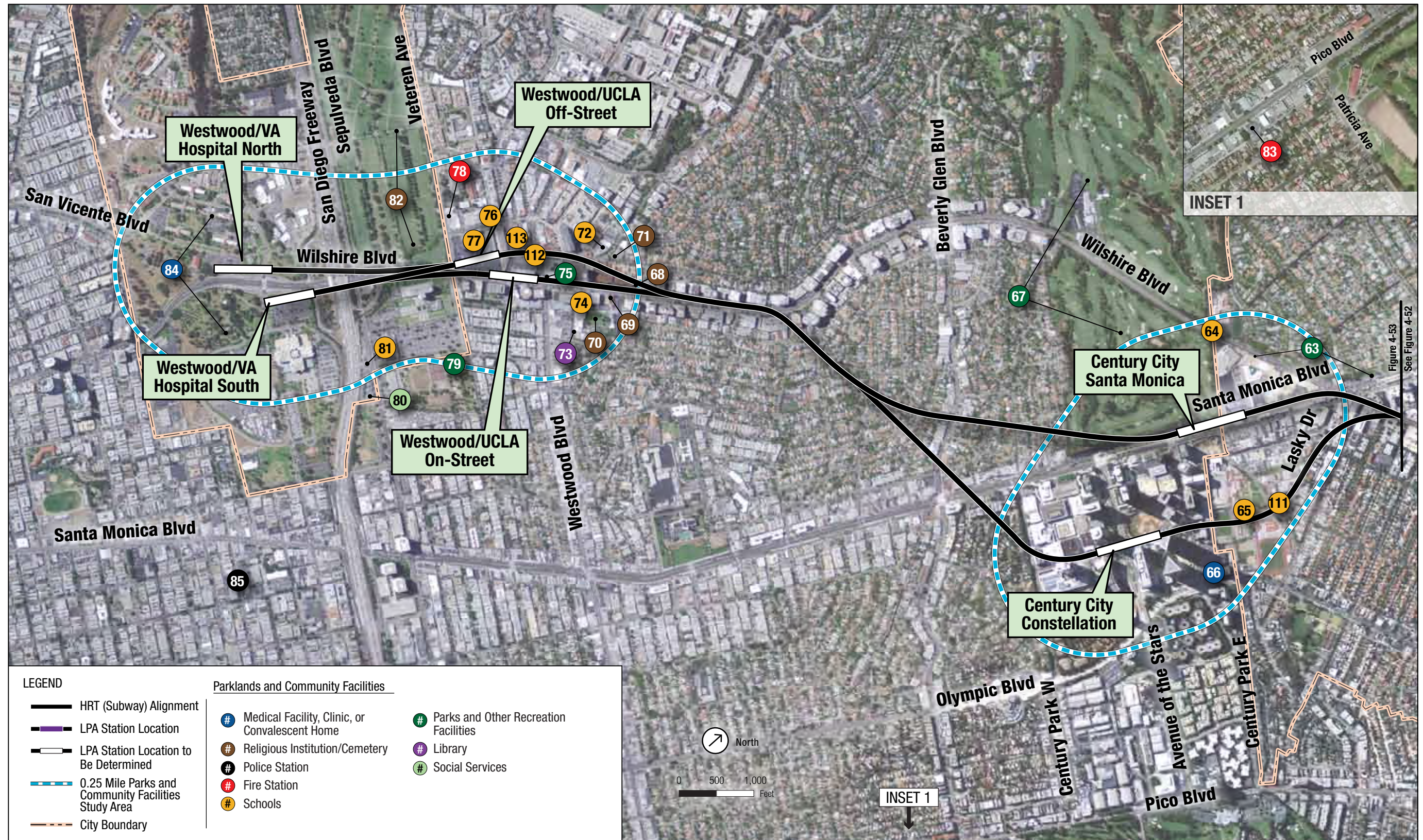


Figure 4-53. Parkland and Communities Facilities (Century City Station to Westwood/VA Hospital Station)





Figure 4 54. Parkland and Community Facilities (Division 20 Maintenance Yard)

## Chapter 4—Environmental Analysis, Consequences, and Mitigation

**Table 4-50. Parks, Recreation Centers, and Museums within One-quarter Mile of LPA Stations, Structures, Maintenance Yard, or Adjacent to the Alignment**

| Phase  | Figure Map # | Facility Name                            | Address                     | Jurisdiction  | Nearest LPA Station/Structure/<br>Maintenance Yard | Proximity to Nearest LPA Station or Structure (miles) | Proximity to LPA Alignment (miles) |
|--|--------------|--|-----------------------------|---------------|--|---|------------------------------------|
| <b>Publicly Owned and Operated Parks, Recreation Centers, and Museums</b>  |              |  |                             |               |  |   |                                    |
| Phase 1  | 33           | George C. Page Museum                    | 5801 Wilshire Boulevard     | Los Angeles   | Wilshire/Fairfax                                   | 0.25  | Adjacent                           |
|  | 34           | Hancock Park                             | 5801 Wilshire Boulevard     | Los Angeles   | Wilshire/Fairfax                                   | 0.22  | Adjacent                           |
|  | 37           | Los Angeles County Museum of Art (LACMA) | 5905 Wilshire Boulevard     | Los Angeles   | Wilshire/Fairfax                                   | Adjacent  | Adjacent                           |
|  | 47           | La Cienega Park                          | 8400 Gregory Way            | Beverly Hills | Wilshire/La Cienega                                | 0.18  | 0.17                               |
|  | 48           | La Cienega Tennis Center                 | 325 S. La Cienega Boulevard | Beverly Hills | Wilshire/La Cienega                                | 0.18  | 0.18                               |
| Phase 2  | 57           | Crescent Park                            | 154 N. Crescent Drive       | Beverly Hills | Wilshire/Rodeo                                     | 0.11  | 0.04                               |
|  | 59           | Reeves Park                              | 125 S. Reeves Drive         | Beverly Hills | Wilshire/Rodeo                                     | Adjacent  | Adjacent                           |
|  | 60           | Beverly Canon Gardens                    | 241 N. Canon Drive          | Beverly Hills | Wilshire/Rodeo                                     | 0.11  | 0.04                               |
|  | 63           | Beverly Hills Garden Park                | Santa Monica Boulevard      | Beverly Hills | Century City Santa Monica                          | 0.25  | 0.02                               |
| Ph 3   | 79           | Westwood Recreation Center               | 1350 S. Sepulveda Boulevard | Los Angeles   | Westwood/UCLA On- and Off-Street                   | 0.22  | 0.20                               |
|  |              |  |                             |               | GSA Double Cross-Over                              | 0.20  | 0.22                               |
| <b>Privately Owned and Operated Parks, Recreation Centers, and Museums</b> |              |  |                             |               |  |   |                                    |
| Phase 1  | 35           | Craft and Folk Art Museum                | 5814 Wilshire Boulevard     | Los Angeles   | Wilshire/Fairfax                                   | 0.20  | Adjacent                           |
|  | 36           | Architecture and Design Museum           | 6032 Wilshire Boulevard     | Los Angeles   | Wilshire/Fairfax                                   | Adjacent  | Adjacent                           |
|  | 38           | Petersen Automotive Museum               | 6060 Wilshire Boulevard     | Los Angeles   | Wilshire/Fairfax                                   | Adjacent  | Adjacent                           |
| Ph 2   | 67           | Los Angeles Country Club                 | 10101 Wilshire Boulevard    | Los Angeles   | Century City Santa Monica                          | 0.04  | Above                              |
| Ph 3   | 75           | Armand Hammer Museum                     | 10899 Wilshire Boulevard    | Los Angeles   | Westwood/UCLA On- and Off-Street                   | 0.02  | Adjacent                           |

**Table 4-51. Police Stations with Service Areas that Include the LPA**

| Phase               | Figure Map # | Police Station                                 | Address                      | Jurisdiction   | LPA Stations/Structures/Maintenance Yards Located Within/Adjacent to Service Area | Police Station Distance to LPA Station, Structure, or Construction Staging Area (miles) | Proximity to LPA Alignment (miles) |
|---------------------|--------------|--|------------------------------|----------------|---|---|------------------------------------|
| Phases 1 and 2      | 1            | LAPD Olympic Community Police Station          | 1130 S. Vermont Avenue       | Los Angeles    | Wilshire/Western  | 1.15  | 1.33                               |
|                     | 43           | LAPD Wilshire Community Police Station         | 4861 W. Venice Boulevard     | Los Angeles    | Wilshire/Fairfax  | 1.08  | 1.03                               |
|                     |              |  |                              |                | Wilshire/La Brea  | 1.20  | 1.03                               |
|                     | 61           | BHPD Headquarters                              | 464 N. Rexford Drive         | Beverly Hills  | Wilshire/Rodeo  | 0.38  | 0.38                               |
| Wilshire/La Cienega |              |  |                              |                | 1.41  | 0.38  |                                    |
| Phases 2 and 3      | 85           | LAPD West Los Angeles Community Police Station | 1663 Butler Avenue           | Los Angeles    | Century City Constellation  | 2.17  | 2.17                               |
|                     |              |  |                              |                | Century City Santa Monica   | 2.26  | 2.35                               |
|                     |              |  |                              |                | Westwood/UCLA On- and Off-Street  | 0.98  | 0.93                               |
| Phase 3             | 52           | LASD West Hollywood Sheriff's Station          | 780 N. San Vicente Boulevard | West Hollywood | Westwood/VA Hospital North  | 4.50  | 1.19                               |
|                     |              |  |                              |                | Westwood/VA Hospital South  | 4.50  | 1.19                               |
| Ph 1                | 98           | LAPD Central Community Police Station          | 251 E. 6th Street            | Los Angeles    | Division 20 Maintenance Yard  | 0.90  | 3.76                               |



**Table 4-52. Fire Stations with Service Areas that Include the LPA**

| Phase          | Figure Map # | Fire Station          | Address                      | Jurisdiction   | LPA Stations/Structures/Maintenance Yards Located Within/Adjacent to Service Area | Fire Station Distance to LPA Station, Structure, or Construction Staging Area (miles) | Proximity to LPA Alignment (miles) |
|----------------|--------------|-----------------------|------------------------------|----------------|---|---|------------------------------------|
| Phase 1        | 20           | LAFD Fire Station 29  | 4029 Wilshire Boulevard      | Los Angeles    | Wilshire/Western  | 0.31  | Adjacent                           |
|                |              |                       |                              |                | Wilshire/Crenshaw Construction Staging Site                                       | 0.23  | Adjacent                           |
|                | 31           | LAFD Fire Station 61  | 5821 W. 3rd Street           | Los Angeles    | Wilshire/La Brea  | 0.56  | 0.48                               |
|                |              |                       |                              |                | Wilshire/Fairfax  | 0.54  | 0.48                               |
| Phases 1 and 2 | 53           | BHFD Fire Station 3   | 180 S. Doheny Drive          | Beverly Hills  | Wilshire/La Cienega   | 0.75  | 0.10                               |
|                |              |                       |                              |                | Wilshire/Rodeo  | 0.47  | 0.10                               |
|                | 62           | BHFD Fire Station 1   | 445 N. Rexford Drive         | Beverly Hills  | Wilshire/Rodeo  | 0.38  | 0.38                               |
|                | 83           | LAFD Fire Station 92  | 10556 Pico Boulevard         | Los Angeles    | Century City Constellation  | 1.3   | 0.98                               |
|                |              |                       |                              |                | Century City Santa Monica   | 1.4   | 1.28                               |
| Phase 3        | 78           | LAFD Fire Station 37  | 1090 Veteran Avenue          | Los Angeles    | Westwood/UCLA On- and Off-Street  | 0.02  | 0.14                               |
|                | 51           | LACoFD Fire Station 7 | 864 N. San Vicente Boulevard | West Hollywood | Westwood/VA Hospital North and South  | 2.3   | 1.31                               |
| Phase 1        | 87           | LAFD Fire Station 4   | 450 E. Temple Street         | Los Angeles    | Division 20 Maintenance Yard  | 0.32  | 4.33                               |
|                | 99           | LAFD Fire Station 17  | 1601 S. Santa Fe Avenue      | Los Angeles    | Division 20 Maintenance Yard  | 1.0   | 5.24                               |

**Table 4-53. Schools within One-quarter Mile of LPA Stations, Structures, Maintenance Yards, or Adjacent to the Alignment**

| Phase                     | Figure Map # | School Name                                  | Address                    | Jurisdiction  | Nearest LPA Station/Structure/<br>Maintenance Yard | Proximity to Nearest LPA Station or Structure (miles) | Proximity to LPA Alignment (miles) |
|---------------------------|--------------|--|----------------------------|---------------|--|---|------------------------------------|
| <b>Public Schools</b>     |              |  |                            |               |  |   |                                    |
| Phase 1                   | 21           | Wilshire Park Elementary School              | 4063 Ingraham Street       | Los Angeles   | Wilshire/Western                                   | 0.30  | Adjacent                           |
|                           |              |  |                            |               | Wilshire/Crenshaw Construction Staging Site        | 0.16  | Adjacent                           |
|                           | 28           | John Burroughs Middle School                 | 600 S. McCadden Place      | Los Angeles   | Wilshire/La Brea                                   | 0.25  | Adjacent                           |
|                           | 108          | Horace Mann Elementary School                | 8701 Charleville Boulevard | Beverly Hills | Wilshire/La Cienega                                | 0.33  | Adjacent                           |
| Phase 2                   | 56           | Beverly Vista Elementary School              | 200 S. Elm Drive           | Beverly Hills | Wilshire/Rodeo                                     | 0.23  | 0.14                               |
|                           | 64           | El Rodeo School                              | 605 N. Whittier Drive      |               | Century City Santa Monica                          | 0.25  | 0.19                               |
|                           | 111          | Beverly Hills Adult School                   | 255 S. Lasky Drive         | Beverly Hills | Century City Constellation                         | 0.26  | Adjacent                           |
|                           | 65           | Beverly Hills High School                    | 241 Moreno Drive           | Beverly Hills | Century City Constellation                         | 0.15  | Above                              |
| Century City Santa Monica |              |  |                            |               | 0.25   | 0.18  |                                    |
| Phase 3                   | 112          | UCLA Extension Lindbrook Center              | 10920 Lindbrook Drive      | Los Angeles   | Westwood/UCLA Off-Street                           | 0.04  | Adjacent                           |
|                           | 77           | UCLA Campus Lot 36, Kinross Building South   | 1100 Veteran Avenue        | Los Angeles   | Westwood/UCLA Off-Street                           | Above   | Above                              |
| Ph 1                      | 90           | Felicitas and Gonzalo Mendez Learning Center | 1200 Plaza del Sol         | Los Angeles   | Division 20 Maintenance Yard                       | 0.20  | 0.23                               |

Chapter 4—Environmental Analysis, Consequences, and Mitigation

**Table 4-53. Schools within One-quarter Mile of LPA Stations, Structures, Maintenance Yards, or Adjacent to the Alignment (continued)**

| Phase                               | Figure Map #        | School Name                                     | Address                         | Jurisdiction        | Nearest LPA Station/Structure/Maintenance Yard | Proximity to Nearest LPA Station or Structure (miles) | Proximity to LPA Alignment (miles) |
|-------------------------------------|---------------------|---|---------------------------------|---------------------|--|---|------------------------------------|
| <b>Private Schools</b>              |                     |   |                                 |                     |  |   |                                    |
| <b>Phase 1</b>                      | 9                   | Camino Nuevo Charter Academy—Harvard K-8 Campus | 635 S. Harvard Boulevard        | Los Angeles         | Wilshire/Western                               | 0.16  | 0.38                               |
|                                     | 11                  | Wilshire Smiling Tree School                    | 611 S. Hobart Boulevard         | Los Angeles         | Wilshire/Western                               | 0.13  | 0.05                               |
|                                     | 12                  | Dreamland Children’s School                     | 545 S. Serrano Avenue           | Los Angeles         | Wilshire/Western                               | 0.21  | 0.20                               |
|                                     | 16                  | St James Episcopal School                       | 625 S. St. Andrews Place        | Los Angeles         | Wilshire/Western                               | 0.11  | 0.05                               |
|                                     | 19                  | Evergreen Childcare (Preschool)                 | 3960 Wilshire Boulevard, #306   | Los Angeles         | Wilshire/Western                               | 0.17  | Adjacent                           |
|                                     | 22                  | St. James Preschool                             | 4270 W. 6th Street              | Los Angeles         | Wilshire/Crenshaw Construction Staging Site    | 0.16  | 0.07                               |
|                                     | 26                  | Wilshire Preschool                              | 711 S. Plymouth Boulevard       | Los Angeles         | Wilshire/Crenshaw Construction Staging Site    | 0.19  | 0.12                               |
|                                     | 32                  | Cathedral Chapel School                         | 755 S. Cochran Avenue           | Los Angeles         | Wilshire/La Brea                               | 0.16  | 0.74                               |
|                                     | 103                 | Wilshire Private School                         | 4900 Wilshire Boulevard         | Los Angeles         | Wilshire/La Brea                               | 0.25  | Adjacent                           |
|                                     | 42                  | Shalhevet School                                | 910 S. Fairfax Avenue           | Los Angeles         | Wilshire/Fairfax                               | 0.21  | 0.28                               |
|                                     | 104                 | Boston University Los Angeles Internship        | 5700 Wilshire Boulevard, #675   | Los Angeles         | Wilshire/Fairfax                               | 0.37  | Adjacent                           |
|                                     | 107                 | Montessori Children’s World                     | 650 South San Vicente Boulevard | Beverly Hills       | Wilshire/La Cienega                            | 0.05  | Adjacent                           |
| 109                                 | Bar-Ilan University | 8730 Wilshire Boulevard, #550                   | Beverly Hills                   | Wilshire/La Cienega | 0.38   | Adjacent  |                                    |
| <b>Ph 3</b>                         | 72                  | Italian Cultural Institute of Los Angeles       | 1023 Hilgard Avenue             | Los Angeles         | Westwood/UCLA On- and Off-Street               | 0.25  | 0.17                               |
| <b>Non-Profit (Private) Schools</b> |                     |   |                                 |                     |  |   |                                    |
| <b>Ph 3</b>                         | 81                  | Bessie Pregerson Child Development Center       | 1341 S. Sepulveda Boulevard     | Los Angeles         | GSA Double Crossover                           | 0.22  | 0.17                               |

**Table 4-53. Schools within One-quarter Mile of LPA Stations, Structures, Maintenance Yards or Adjacent to the Alignment (continued)**

| Phase                                     | Figure Map # | School Name                                     | Address                           | Jurisdiction  | Nearest LPA Station/Structure/Maintenance Yard | Proximity to Nearest LPA Station or Structure (miles) | Proximity to LPA Alignment (miles) |
|---|--------------|---|-----------------------------------|---------------|--|---|------------------------------------|
| <b>Private Trade Schools and Colleges</b> |              |   |                                   |               |  |   |                                    |
| Phase 1                                   | 3            | Bryan College                                   | 3580 Wilshire Boulevard, #400     | Los Angeles   | Wilshire/Western                               | 0.23  | Adjacent                           |
|   | 100          | Calvin Bible College & Seminary                 | 4055 Wilshire Boulevard           | Los Angeles   | Wilshire/Western                               | 0.35  | Adjacent                           |
|   | 24           | Meridian Institute                              | 4201 Wilshire Boulevard, #515     | Los Angeles   | Wilshire/Crenshaw Construction Staging Site    | Adjacent  | Adjacent                           |
|   | 101          | International American University               | 4201 Wilshire Boulevard, #610     | Los Angeles   | Wilshire/Crenshaw Construction Staging Site    | Adjacent  | Adjacent                           |
|   | 102          | Universal Medical College                       | 4201 Wilshire Boulevard, #450     | Los Angeles   | Wilshire/Crenshaw Construction Staging Site    | Adjacent  | Adjacent                           |
|   | 41           | Marinello School of Beauty                      | 6111 Wilshire Boulevard           | Los Angeles   | Wilshire/Fairfax                               | Adjacent  | Adjacent                           |
|   | 105          | JVS West Hollywood Worksource Center            | 5757 Wilshire Boulevard           | Los Angeles   | Wilshire/Fairfax                               | 0.30  | Adjacent                           |
|   | 44           | Los Angeles Art Technical Institute             | 6435 Wilshire Boulevard           | Los Angeles   | Wilshire/La Cienega                            | 0.20  | Adjacent                           |
|   | 49           | West Coast Ultrasound Institute                 | 291 S. La Cienega Boulevard, #500 | Los Angeles   | Wilshire/La Cienega                            | 0.15  | 0.16                               |
|   | 106          | Literacy Network of Greater Los Angeles         | 6505 Wilshire Boulevard, #200     | Los Angeles   | Wilshire/La Cienega                            | 0.15  | Adjacent                           |
| Ph 2                                      | 110          | Super-Learners International Language Schools   | 9454 Wilshire Boulevard, #609     | Beverly Hills | Wilshire/Rodeo                                 | Adjacent  | Adjacent                           |
| Phase 3                                   | 74           | Concord University School of Law                | 10866 Wilshire Boulevard, #1200   | Los Angeles   | Westwood/UCLA On- and Off-Street               | Adjacent  | Adjacent                           |
|   | 76           | Chicago School of Psychology                    | 1145 Gayley Avenue, #322          | Los Angeles   | Westwood/UCLA On- and Off-Street               | 0.06  | 0.06                               |
|   | 113          | California Graduate Institute Counseling Center | 1145 Gayley Avenue, #322          | Los Angeles   | Westwood/UCLA On- and Off-Street               | 0.06  | Adjacent                           |
| Phase 1                                   | 93           | Southern California Institute of Architecture   | 960 E. 3rd Street                 | Los Angeles   | Division 20 Maintenance Yard                   | 0.03  | 4.6                                |
|   | 96           | Sushi Institute of America                      | 843 E. 4th Street                 | Los Angeles   | Division 20 Maintenance Yard                   | 0.23  | 4.42                               |

## Chapter 4—Environmental Analysis, Consequences, and Mitigation

**Table 4-54. Libraries within One-quarter Mile of LPA Stations, Structures, Maintenance Yards, or Adjacent to the Alignment**

| Phase  | Figure Map # | Library Facility                        | Address                 | Jurisdiction | Nearest LPA Station/Structure/Maintenance Yard | Proximity to Nearest LPA Station or Structure (miles) | Proximity to LPA Alignment (miles) |
|--|--------------|---|-------------------------|--------------|--|---|------------------------------------|
| <b>Publicly Owned and Operated Libraries</b>           |              |   |                         |              |  |   |                                    |
| Ph 1   | 14           | Pio Pico Koreatown Branch Library       | 694 S. Oxford Avenue    | Los Angeles  | Wilshire/Western                               | 0.01  | 0.17                               |
| Ph 3   | 73           | Westwood Branch Library                 | 1246 Glendon Avenue     | Los Angeles  | Westwood/UCLA On- and Off-Street               | 0.14  | 0.18                               |
| <b>Non-Profit (Private)-Owned and Operated Library</b> |              |   |                         |              |  |   |                                    |
| Ph 1   | 45           | Jewish Community Library of Los Angeles | 6505 Wilshire Boulevard | Los Angeles  | Wilshire/La Cienega                            | 0.17  | Adjacent                           |

**Table 4-55. Medical Facilities within One One-quarter Mile of LPA Stations, Structures, Maintenance Yards, or Adjacent to the Alignment**

| Phase  | Figure Map # | Medical Facility                           | Address                       | Jurisdiction          | Nearest LPA Station/Structure/Maintenance Yard | Proximity to Nearest LPA Station or Structure (miles) | Proximity to LPA Alignment (miles) |
|--|--------------|--|-------------------------------|-----------------------|--|---|------------------------------------|
| <b>Privately Owned and Operated Hospitals</b>                  |              |  |                               |                       |  |   |                                    |
| Ph 2   | 66           | Century City Doctor's Hospital             | 2070 Century Park East        | Los Angeles           | Century City Constellation                     | 0.13  | 0.11                               |
| <b>Publicly Owned and Operated Hospitals</b>                   |              |  |                               |                       |  |   |                                    |
| Ph 3   | 84           | VA West Los Angeles Campus                 | 11301 Wilshire Boulevard      | County of Los Angeles | Westwood/VA North                              | Adjacent  | Above                              |
|  |              |  |                               |                       | Westwood/VA South                              | Adjacent  | Above                              |
| <b>Non-Profit (Private)-Owned and Operated Medical Clinics</b> |              |  |                               |                       |  |   |                                    |
| Ph 1   | 13           | Aviva Center—Community Mental Health       | 3580 Wilshire Boulevard, #800 | Los Angeles           | Wilshire/Western                               | 0.12  | Adjacent                           |
|  | 50           | AHF Healthcare Center Beverly Hills        | 99 N. La Cienega Boulevard    | Beverly Hills         | Wilshire/La Cienega                            | 0.12  | 0.11                               |
| <b>Privately Owned and Operated Convalescent Homes</b>         |              |  |                               |                       |  |   |                                    |
| Ph 1   | 18           | St. James Manor                            | 615 Gramercy Place            | Los Angeles           | Wilshire/Western                               | 0.20  | 0.10                               |
|  | 40           | Guardian Rehabilitation                    | 533 Fairfax Avenue            | Los Angeles           | Wilshire/Fairfax                               | 0.21  | 0.20                               |
|  | 46           | The Rehabilitation Center of Beverly Hills | 580 San Vicente Boulevard     | Beverly Hills         | Wilshire/La Cienega                            | 0.12  | 0.06                               |
| Ph 2   | 58           | Sunrise Senior Living                      | 201 Crescent Drive            | Beverly Hills         | Wilshire/Rodeo                                 | 0.07  | 0.12                               |



### **Religious Institutions and Cemeteries**

The 19 religious institutions and 2 cemeteries within one-quarter mile of an LPA station option, structure, maintenance yard, or adjacent to an LPA alignment option are listed in Table 4-56. Their locations are depicted in Figure 4-51 through Figure 4-54. The LPA alignment between the Century City Stations and the Westwood/UCLA Off-Street Station will extend underneath University Bible Church. If the LPA is constructed under the Phased Construction Scenario, fourteen of these facilities are located along Phase 1, two along Phase 2, and five along Phase 3.

### **Social Services**

The 10 social service facilities within one-quarter mile of an LPA station option, structure, maintenance yard, or adjacent to an LPA alignment option are listed in Table 4-57. Their locations are depicted in Figure 4-51 through Figure 4-54. None of these facilities are located directly above or adjacent to the LPA alignment, including all alignment options. If the LPA is constructed under the Phased Construction Scenario, nine of these facilities are located along Phase 1 and one along Phase 3.

### **4.13.3 Environmental Impacts/Environmental Consequences**

Impacts to parklands and community services and facilities were assessed by reviewing all facilities within one-quarter mile of an LPA station option, structure, maintenance yard, or adjacent to an LPA alignment option (Figure 4-51 through Figure 4-54). An assessment of the LPA's impacts related to Section 4(f) resources is addressed in Chapter 5, Section 4(f) Evaluation.

Direct impacts include any areas permanently removed from existing parklands or other community facilities as a result of the LPA. Indirect impacts include increased access and use of parklands and community facilities near stations and reduced traffic congestion that could benefit police and fire response times.

Operation of the subway system generally will not impact parklands or other community facilities, with the possible exception of facilities near station entrances or maintenance facilities. The LPA will not require the acquisition of parklands; however, parklands will be used as temporary construction easements and have permanent easements.

Improved access to transit could result in beneficial impacts for the community, particularly for the transit-dependent. Enhanced transit access will reduce travel time and increase local and regional connectivity to community facilities and parks.

### **No Build Alternative**

Because the No Build Alternative would not include new major infrastructure, except for those projects that are currently under construction or committed projects planned to be in operation by 2035 and identified in the SCAG *2008 Regional Transportation Plan* (SCAG 2008a) and Metro's LRTP (Metro 2008a), this alternative is not expected to result in direct or indirect impacts on parklands or community services and facilities.

Chapter 4—Environmental Analysis, Consequences, and Mitigation

**Table 4-56. Religious Institutions and Cemeteries within One-quarter Mile of LPA Stations, Structures, Maintenance Yards, or Adjacent to the Alignment**

| Phase  | Figure Map # | Institution Name                                   | Address                    | Jurisdiction  | Nearest LPA Station Area/ Structure/Maintenance Yard | Proximity to Nearest LPA or Structure (miles) | Proximity to LPA Alignment (miles) |
|--|--------------|--|----------------------------|---------------|--|---|------------------------------------|
| <b>Privately Owned and Operated Religious Institutions</b> |              |  |                            |               |  |   |                                    |
| Phase 1  | 4            | St. Basil Catholic Church                          | 3611 Wilshire Boulevard    | Los Angeles   | Wilshire/Western                                     | 0.21  | Adjacent                           |
|  | 10           | Wilshire Boulevard Temple                          | 3663 Wilshire Boulevard    | Los Angeles   | Wilshire/Western                                     | 0.10  | Adjacent                           |
|  | 15           | Christ Church                                      | 635 S. Manhattan Place     | Los Angeles   | Wilshire/Western                                     | 0.09  | 0.38                               |
|  | 17           | St. James Episcopal Church                         | 3903 Wilshire Boulevard    | Los Angeles   | Wilshire/Western                                     | 0.10  | Adjacent                           |
|  | 23           | Korean Eastern Presbyterian Church                 | 4270 W. 6th Street         | Los Angeles   | Wilshire/Crenshaw Construction Staging Site          | 0.16  | 0.006                              |
|  | 25           | Hungarian Reformed Church                          | 751 Crenshaw Boulevard     | Los Angeles   | Wilshire/Crenshaw Construction Staging Site          | 0.16  | 0.10                               |
|  | 27           | Wilshire United Methodist Church                   | 711 S. Plymouth Boulevard  | Los Angeles   | Wilshire/Crenshaw Construction Staging Site          | 0.19  | 0.003                              |
|  | 29           | Oasis Christian Church                             | 5100 Wilshire Boulevard    | Los Angeles   | Wilshire/La Brea                                     | 0.05  | Adjacent                           |
|  | 30           | West Bethel Presbyterian Church                    | 857 S. La Brea Avenue      | Los Angeles   | Wilshire/La Brea                                     | 0.21  | 0.20                               |
|  | 39           | Yeshiva Ohev Shalom                                | 525 S. Fairfax Avenue      | Los Angeles   | Wilshire/Fairfax                                     | 0.25  | 0.25                               |
| Ph 2   | 54           | Nessah Educational and Cultural Center             | 142 Rexford Drive          | Beverly Hills | Wilshire/Rodeo                                       | 0.24  | 0.07                               |
|  | 55           | First Church of Christ Scientist of Beverly Hills  | 141 Rexford Drive          | Beverly Hills | Wilshire/Rodeo                                       | 0.21  | 0.09                               |
| Phase 3  | 68           | University Bible Church                            | 10801 Wilshire Boulevard   | Los Angeles   | Westwood/UCLA On-Street                              | 0.24  | Above                              |
|  | 69           | Westwood Presbyterian Church                       | 10822 Wilshire Boulevard   | Los Angeles   | Westwood/UCLA On-Street                              | 0.18  | Adjacent                           |
|  | 71           | 28th Church Christ-Scientist                       | 10806 Weyburn Avenue       | Los Angeles   | Westwood/UCLA On-Street                              | 0.19  | 0.07                               |
| Phase 1  | 88           | Zenshuji Soto Mission                              | 123 Hewitt Street          | Los Angeles   | Division 20 Maintenance Yard                         | 0.25  | 4.32                               |
|  | 91           | Japanese Evangelical Missionary Society            | 948 E. 2nd Street          | Los Angeles   | Division 20 Maintenance yard                         | 0.11  | 4.5                                |
|  | 92           | Japanese Catholic Center                           | 222 S. Hewitt Street       | Los Angeles   | Division 20 Maintenance Yard                         | 0.21  | 4.36                               |
|  | 97           | Iglesia De Jesucristo Palabra Miel Sur Los Angeles | 655 S. Santa Fe Avenue     | Los Angeles   | Division 20 Maintenance yard                         | 0.10  | 4.90                               |
| <b>Privately Owned and Operated Cemeteries</b>             |              |  |                            |               |  |   |                                    |
| Ph 3   | 70           | Westwood Memorial Park                             | 1218 Glendon Avenue        | Los Angeles   | Westwood/UCLA On-Street                              | 0.14  | 0.04                               |
| <b>Publicly Owned and Operated Cemeteries</b>              |              |  |                            |               |  |   |                                    |
| Ph 3   | 82           | Los Angeles National Cemetery                      | 950 S. Sepulveda Boulevard | Los Angeles   | Westwood/UCLA On-Street                              | Adjacent                                      | Adjacent                           |

**Table 4-57. Social Services within One-quarter Mile of LPA Stations, Structures, Maintenance Yards or Adjacent to the Alignment**

| Phase  | Figure Map # | Facility Name   | Address                       | Jurisdiction | Nearest LPA Station Area/ Structure/Maintenance Yard | Proximity to LPA Nearest LPA Station or Structure (miles) | Proximity to LPA Alignment |
|--|--------------|---|-------------------------------|--------------|--|---|----------------------------|
| <b>Publicly Owned and Operated Social Services</b> |              |   |                               |              |  |   |                            |
| Phase 1  | 2            | L A City Department of Aging  | 3580 Wilshire Boulevard, #300 | Los Angeles  | Wilshire/Western                                     | 0.23  | Adjacent                   |
|  | 86           | L.A. City Personnel Department  | 700 E. Temple Street, #100    | Los Angeles  | Division 20 Maintenance Yard                         | 0.15  | 4.46                       |
|  | 94           | LA County APS Homeless Demonstration Project                                      | 813 E. 4th Place              | Los Angeles  | Division 20 Maintenance Yard                         | 0.23  | 4.42                       |
|  | 95           | LA County Department of Social Services Bureau of Workforce Services District #14 | 813 E. 4th Place              | Los Angeles  | Division 20 Maintenance Yard                         | 0.23  | 4.42                       |
| <b>Non-Profit (Private) Social Services</b>        |              |   |                               |              |  |   |                            |
| Phase 1  | 5            | Kheir S. Mark Taper Foundation Community Clinic                                   | 3727 W. 6th Street , #200     | Los Angeles  | Wilshire/Western                                     | 0.23  | 0.39                       |
|  | 6            | Korean American Family Service Center, Inc.                                       | 3727 W. 6th Street , #320     | Los Angeles  | Wilshire/Western                                     | 0.23  | 0.39                       |
|  | 7            | Korean Health, Education, Information and Research Center                         | 3727 W. 6th Street, #230      | Los Angeles  | Wilshire/Western                                     | 0.23  | 0.39                       |
|  | 8            | Koreatown Youth and Community Center  | 3727 W. 6th Street, #300      | Los Angeles  | Wilshire/Western                                     | 0.23  | 0.39                       |
| Ph 3   | 80           | Salvation Army Westwood Village   | 1401 S. Sepulveda Boulevard   | Los Angeles  | GSA Crossover  | 0.22  | 0.21                       |
| Ph 1   | 89           | Proyecto Pastoral at Dolores Mission  | 135 N. Mission Road           | Los Angeles  | Division 20 Maintenance Yard                         | 0.6   | 4.79                       |

### **Locally Preferred Alternative**

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing impacts to parklands or community services and facilities during operation of the LPA.

### **Parks, Recreation Centers, and Museums**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Acquisition of property along the LPA alignment will be required for construction staging/laydown activities and will include the Architecture and Design Museum property for construction of the Wilshire/Fairfax Station, thereby displacing the museum, a non-profit private institution. However, the museum will be given advance written notice and will be informed of its eligibility for relocation assistance and payments under the Uniform Relocation Assistance and Real Property Acquisitions Act (USC 1995b). This is discussed further in the *Westside Subway Extension Acquisitions and Displacement Supplemental Report* (Metro 2011c). Additionally, Metro will assist the museum in relocation efforts in order to minimize adverse impacts. Therefore, with mitigation, the operation of the LPA, including all station, alignment, and station entrance options, will not result in direct adverse impacts to parks, recreation centers, or museums.

The operation of the LPA will have beneficial effects on parks, recreation centers, and museums by providing increased public access. Access to LACMA will be greatly improved with a station entrance in the vicinity. Greater accessibility to these community facilities will lead to additional daily usage. Therefore, operation of the LPA will result in beneficial effects to nearby parks, recreation centers, and museums.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts to parks, recreation centers, or museums during operation is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential for impacts related to parks, recreation centers, or museums. Under the Phased Construction Scenario, the potential for impacts to parks, recreation centers, or museums along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts to parks, recreation centers, or museums along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

#### ***Phase 1 to Wilshire/La Cienega***

Acquisition of property along the Phase 1 alignment will be required for construction staging and laydown activities and will include the Architecture and Design Museum property for construction of the Wilshire/Fairfax Station, thereby displacing the museum, a non-profit private institution. However the museum will be given advance written notice and will be informed of its eligibility for relocation assistance and



payments under the Uniform Relocation Assistance and Real Property Acquisitions Act (USC 1995b). This is discussed further in the *Westside Subway Extension Acquisitions and Displacement Supplemental Report* (Metro 2011c). Additionally, Metro will assist the museum in relocation efforts to minimize adverse impacts. Therefore, with mitigation, the operation of Phase 1, including all station, alignment, and station entrance options, will not result in direct adverse impacts to parks, recreation centers, or museums.

The operation of Phase 1 will have beneficial effects on parks, recreation centers, and museums by providing increased public access. Access to LACMA will be greatly improved with a station entrance in the vicinity, which is part of Phase 1. Greater accessibility to these community facilities will lead to additional daily usage. Therefore, operation of Phase 1 will result in beneficial effects to nearby parks, recreation centers, and museums.

*Phase 2 to Century City*

No acquisitions of parks, recreation centers, or museums will occur under Phase 2 of the LPA. Therefore, the operation of Phase 2, including all station, alignment, and station entrance options, will not result in direct adverse impacts to parks, recreation centers, or museums.

The operation of Phase 2 will have beneficial effects on parks, recreation centers, and museums by providing increased public access. Greater accessibility to these community facilities will lead to additional daily usage. Therefore, operation of Phase 2 will result in beneficial effects to nearby parks, recreation centers, and museums.

*Phase 3 to Westwood/VA Hospital*

No acquisitions of parks, recreation centers, or museums will occur under Phase 3 of the LPA. Therefore, the operation of Phase 3, including all station, alignment, and station entrance options, will not result in direct adverse impacts to parks, recreation centers, or museums.

The operation of Phase 3 will have beneficial effects on parks, recreation centers, and museums by providing increased public access. Greater accessibility to these community facilities will lead to additional daily usage. Therefore, operation of Phase 3 will result in beneficial effects to nearby parks, recreation centers, and museums.

**Police**

***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Increased police protection services will be necessary to operate the LPA. This demand for police services will be met by the LASD. Currently, the LASD provides contract law enforcement services to Metro on a site-specific basis and does not pull from existing LASD resources. For this reason, operation of the LPA, including all station, alignment, and station entrance options, will not cause the BHPD or the LAPD to construct new facilities or expand existing facilities to maintain their level of service. During operation, there will be a slight improvement in travel time, particularly along Wilshire Boulevard. This will have a beneficial effect to police emergency response times and routes. For a more detailed discussion of impacts during construction and mitigation measures, refer to Section 4.15.

### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts and benefits to police services during operation is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential for impacts and benefits to police services. Under the Phased Construction Scenario, the potential for impacts and benefits to police services along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts and benefits to police services along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

Operation of Phase 1, Phase 2, or Phase 3, including all station, alignment, and station entrance options, will not cause the BHPD or the LAPD to construct new facilities or expand existing facilities to maintain their level of service, and any demand for police services will be met by the LASD. If the LPA is opened in phases, the LASD contract law enforcement services will expand incrementally to service each phase. During operation of all three phases, there will be a slight improvement in travel time, particularly along Wilshire Boulevard, with travel time incrementally improving as each phase opens. This will have a beneficial effect to police emergency response times and routes, with the greatest travel-time savings resulting from the opening of Phase 3.

### **Fire**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

It is anticipated that there will be an increased demand for fire emergency services at the stations, and Metro will work with all fire emergency service providers to develop emergency response plans. During operation, travel times are expected to improve slightly, particularly along Wilshire Boulevard. This will have a beneficial effect on response times and routes for fire emergency services.

With consultation and implementation of an emergency response plan, operation of the LPA, including all station, alignment, and station entrance options, will not result in adverse impacts to fire services. For a more detailed discussion of impacts during construction and mitigation measures, refer to Section 4.15.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts and benefits to fire services during operation is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential for impacts and benefits to fire services. Under the Phased Construction Scenario, the potential for impacts and benefits to fire services along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts and benefits to fire services along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.





For all three phases, it is anticipated that there will be an increased demand for fire emergency services at the stations, and Metro will work with all fire emergency service providers to develop emergency response plans. For Phase 1, Metro will coordinate with the LAFD. For Phase 2, Metro will coordinate with LAFD and BHFD. For Phase 3, Metro will coordinate with LAFD and LACoFD.

During operation of all three phases, there will be a slight improvement in travel time, particularly along Wilshire Boulevard, with travel time incrementally improving as each phase opens. This will have a beneficial effect to emergency response times and routes with the greatest travel-time savings resulting from the opening of Phase 3.

With consultation and implementation of an emergency response plan, operation of Phase 1, Phase 2, and Phase 3 of the LPA will not result in adverse impacts to fire services.

### **Libraries**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Beneficial effects of the operation of the LPA, including all station, alignment, and station entrance options, will include increased access to libraries, which will also increase daily use based on the estimated daily boardings. This increase will not overburden these facilities, as many of these boardings are expected to be employees and tourists.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the improved access to libraries during operation is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of the improved access to libraries. Under the Phased Construction Scenario, the improved access to libraries along Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for improved access to libraries along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. No libraries are located along Phase 2.

### **Schools (Public and Private, All Levels of Education, including Preschool through Trade and College)**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

With the Wilshire/Fairfax Station, the Marinello School of Beauty will be displaced and the property acquired if the station entrance option selected is adjacent to the west of Johnie's Coffee Shop, which is the recommended location. The property owners and the school will be compensated pursuant to the Uniform Relocation Assistance and Real Property Acquisitions Act (USC 1995b). This is discussed further in the *Westside Subway Extension Acquisitions and Displacement Supplemental Report* (Metro 2011c). Students attending the school could be accommodated at other nearby Marinello School of Beauty locations.

The Westwood/UCLA On-Street Station or Westwood/UCLA Off-Street Station will require acquisition of UCLA Lot 36 for construction staging and laydown activities. Lot 36 is currently owned by the Regents of the University of California as part of the

UCLA campus. During pre- and early construction, Metro would enter into an agreement with the Regents of the University of California for the use of Lot 36 as it would with other property owners within the approved project corridor. Lot 36 is one of several areas used for UCLA campus parking, and it also provides parking for the Kinross Building South. The displaced parking spaces are expected to be accommodated at other nearby parking lots. Prior to construction, the occupants of Kinross Building South will be relocated to another building on the UCLA campus. Parking impacts and mitigation are discussed in Chapter 3, Transportation.

The Century City Constellation Station location would require the tunnel alignment to pass beneath Beverly Hills High School. Additional noise and vibration studies were conducted at this location and are detailed in the *Westside Subway Extension Noise and Vibration Study* (Metro 2011g). The tunnel beneath Beverly Hills High School would be at least 60 feet below the surface, and the predicted operation ground-borne vibration level or ground-borne noise level are not expected to exceed FTA criteria at this location. Therefore, no adverse impacts associated with operation of the LPA, including all station, alignment, and station entrance options, are anticipated.

Beneficial effects of the LPA include increased access to nearby schools by students, parents, and staff. The LPA, including all station, alignment, and station entrance options, does not have a residential component and will not directly result in an increase in the student base for any schools.

### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts and benefits to schools is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential for impacts and benefits to schools. Under the Phased Construction Scenario, the potential for impacts and benefits to schools along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts and benefits to schools along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

#### *Phase 1 to Wilshire/La Cienega*

As part of Phase 1, the Marinello School of Beauty at the Wilshire/Fairfax Station will be displaced and the property acquired if the station entrance option selected is adjacent to the west of Johnie's Coffee Shop, which is the recommended location. The property owners and the school will be compensated pursuant to the Uniform Relocation Assistance and Real Property Acquisitions Act (USC 1995b). This is discussed further in the *Westside Subway Extension Acquisitions and Displacement Supplemental Report* (Metro 2011c). Students attending the school could be accommodated at other nearby Marinello School of Beauty locations.

Beneficial effects of Phase 1 include increased access to nearby schools by students, parents, and staff. Phase 1 will have the least beneficial effects as it provides access to the fewest number of schools of the three phases. Phase 1 does not have a residential component and will not directly result in an increase in the student base for any schools.



*Phase 2 to Century City*

As part of Phase 2, the Century City Constellation Station location, which is the recommended Century City Station location, would require the tunnel alignment to pass beneath Beverly Hills High School. Additional noise and vibration studies were conducted at this location and are detailed in the *Westside Subway Extension Noise and Vibration Study* (Metro 2011g). The tunnel beneath Beverly Hills High School would be at least 60 feet below the surface, and the predicted operation ground-borne vibration level or ground-borne noise level are not expected to exceed FTA criteria at this location. Therefore, no adverse impacts associated with operation of Phase 2 are anticipated.

Beneficial effects of Phase 2 operation include increased access to nearby schools by students, parents, and staff. Phase 2 will have greater beneficial effects than Phase 1 as it will provide access to a greater number of schools. Phase 2 does not have a residential component and will not directly result in an increase in the student base for any schools.

*Phase 3 to Westwood/VA Hospital*

As part of Phase 3, the Westwood/UCLA On-Street Station or Westwood/UCLA Off-Street Station will require acquisition of UCLA Lot 36 for construction staging and laydown activities. Lot 36 is currently owned by the Regents of the University of California as part of the UCLA campus. Metro would enter into an agreement with the Regents of the University of California for the use of Lot 36 as it would with other property owners within the approved project corridor. Metro may obtain an easement for the use of Lot 36 prior to pre- and early construction activities for Phase 3 to secure the integrity of the station box or station entrance location. Lot 36 is one of several areas used for UCLA campus parking and it also provides parking for the Kinross Building South. The displaced parking spaces are expected to be accommodated at other nearby parking lots. Prior to construction, the occupants of Kinross Building South will be relocated to another building on the UCLA campus. Parking impacts and mitigation are discussed in Chapter 3, Transportation.

Beneficial effects of Phase 3 include increased access to nearby schools by students, parents, and staff. The greatest beneficial effects will occur under Phase 3 as it will provide access to the greatest number of schools. Phase 3 does not have a residential component and will not directly result in an increase in the student base for any schools.

**Medical Facilities**

***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Acquisition of property for a permanent easement would occur on the VA West Los Angeles Campus to facilitate an emergency exit shaft for the Westwood/VA Hospital North Station option. This permanent easement would occur on an unused portion of the campus near San Vicente Boulevard (see map in Appendix C, Acquisitions) and will not result in any impacts to current operations of the VA West Los Angeles Campus.

Additionally, if the Westwood/VA Hospital South Station option is selected, a new parking structure would be constructed in the existing physician's parking lot, east of the VA West Los Angeles Campus. This structure would provide both permanent and temporary replacement parking as a result of construction activities planned on the site.

Refer to Section 4.15 for a discussion of construction effects of the Westwood/VA Hospital Station options.

Beneficial effects of the LPA, including all station, alignment, and station entrance options, will include increased access to nearby medical facilities, particularly the VA West Los Angeles Campus.

### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts and benefits to medical facilities is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential for impacts and benefits to medical facilities. Under the Phased Construction Scenario, the potential for impacts and benefits to medical facilities along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts and benefits to medical facilities along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

As part of Phase 3, acquisition of property for a permanent easement would occur on the VA West Los Angeles Campus to facilitate an emergency exit shaft for the Westwood/VA Hospital North Station option. This permanent easement would occur on an unused portion of the campus near San Vicente Boulevard (see map in Appendix C, Acquisitions) and will not result in any impacts to current operations of the VA West Los Angeles Campus.

Additionally, as part of Phase 3, if the Westwood/VA Hospital South Station option is selected, a new parking structure would be constructed in the existing physician's parking lot east of the VA West Los Angeles Campus. This structure would provide both permanent and temporary replacement parking as a result of construction activities planned on the site. Refer to Section 4.15 for a discussion of construction effects of the Westwood/VA Hospital Station options.

Beneficial effects of all three phases of the LPA, including all station, alignment, and station entrance options, will include increased access to nearby medical facilities, particularly the VA West Los Angeles Campus. Phase 3 will result in the greatest beneficial effects as it will provide access to the most medical facilities.

### **Religious Institutions and Cemeteries**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Beneficial effects of the LPA will include increased access to nearby religious institutions and cemeteries. Because religious institutions are primarily accessed by persons affiliated with that religion or set of beliefs, the LPA, including all station, alignment, and station entrance options, is not expected to substantially increase their use.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts and benefits to religious institutions and cemeteries is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential for impacts and benefits to religious institutions and cemeteries. Under the Phased



Construction Scenario, the potential for impacts and benefits to religious institutions and cemeteries along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts and benefits to religious institutions along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. No cemeteries are located along Phase 1 or Phase 2 of the LPA.

Beneficial effects of all three phases of the LPA will include increased access to nearby religious institutions and cemeteries. Phase 3 will result in the greatest beneficial effects as it will provide access to the most religious institutions and cemeteries. Because religious institutions are primarily accessed by persons affiliated with that religion or set of beliefs, none of the three phases of the LPA are expected to substantially increase their use.

### **Social Services**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Beneficial effects of the LPA will include increased access to nearby social service facilities, particularly for low-income constituents. Social service facilities are typically used by existing patrons and people looking for specific services. For this reason, the LPA, including all station, alignment, and station entrance options, is not expected to substantially increase their use.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for impacts and benefits to social service facilities is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential for impacts and benefits to social service facilities. Under the Phased Construction Scenario, the potential for impacts and benefits to social service facilities along Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts and benefits to social service facilities along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. No social service facilities are located along Phase 2.

Beneficial effects of all three phases of the LPA will include increased access to nearby social service facilities, particularly for low-income populations. Phase 3 will result in the greatest beneficial effects as it will provide access to the most social service facilities. Social service facilities are typically used by existing patrons and people looking for specific services. For this reason, none of the three phases of the LPA is expected to substantially increase their use.

### **4.13.4 Mitigation Measures**

Other than displacing the Architecture and Design Museum property and the Marinello School of Beauty at the Wilshire/Fairfax Station entrance location at Johnie's Coffee Shop, which is the recommended entrance location, there will be no adverse impacts to parklands or other community facilities. The following measure will be implemented to ensure impacts related to displacements and acquisitions are avoided or further 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 Acquisitions Act (USC 1995b) and the California Relocation Assistance Act (CCR 2011). All real property acquired by Metro will be appraised to determine its fair market value. Just compensation, which shall 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 owners will be informed of their eligibility for relocation assistance and payments under the Uniform Relocation Assistance and Real Property Acquisitions Act. It is anticipated that most businesses will relocate and, as such, most jobs will be relocated and will not be permanently displaced. However, permanent job losses are anticipated. Metro shall coordinate with the appropriate jurisdictions regarding business relocations.

If the LPA is constructed under the Phased Construction Scenario, the displacement of the Architecture and Design Museum property and the Marinello School of Beauty at the Wilshire/Fairfax Station entrance location at Johnie's Coffee Shop will occur during Phase 1. Therefore, mitigation measure CN-1 will only be required during Phase 1 to minimize impacts to parklands and community facilities. However, CN-1 will be required for all three phases to minimize other acquisition and displacement impacts.

For a more detailed discussion of impacts during construction and mitigation measures, refer to Section 4.15.

#### 4.13.5 California Environmental Quality Act Determination

The CEQA determination compares the effects of the LPA under both the Concurrent Construction Scenario and the Phased Construction Scenario with the existing conditions described in Section 4.13.2. The evaluation of the impacts to parklands and community facilities resulting from operation of the LPA, under both the Concurrent Construction Scenario and the Phased Construction Scenario, are discussed above. A project would normally have a significant impact on parklands and public services if it would 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.<sup>2</sup> The list of public services includes fire and police protection, schools, parks, and other public facilities.

#### No Build Alternative

The No Build Alternative would not result in significant impacts on fire and police protection services, schools, and parks. It will not increase the residential population and will not include new major infrastructure, except for those projects that are currently under construction or committed projects planned to be in operation by 2035 and

---

<sup>2</sup> See L.A. California Environmental Quality Act Thresholds Guide, which addresses impacts to public services under Section K.



identified in the SCAG's RTP and Metro's LRTP. These projects have undergone, or are required to undergo, separate environmental review.

### **Locally Preferred Alternative**

The opening of the LPA as a single phase under the Concurrent Construction Scenario or in three sequential phases under the Phased Construction Scenario will not result in differing impacts to parklands and community facilities during operation of the LPA, as discussed in Section 4.13.3. The only difference between the two scenarios is the timing of potential impacts to parklands and community facilities. Under the Phased Construction Scenario, the potential for impacts to parklands and community facilities along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts to parklands and community facilities along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

### **Fire**

For a more detailed discussion on impacts to fire protection services, refer to *Westside Subway Extension Parklands and Other Community Facilities Supplemental Technical Report* (Metro 2011n). The operation of the LPA, including all station, alignment, and station entrance options, under either the Concurrent Construction Scenario or the Phased Construction Scenario, 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 LPA, including all station, alignment, and station entrance options. The opening of the LPA as a single phase or in three sequential phases will not result in differing operational impacts to fire protection services.

### **Police**

For a more detailed discussion on impacts to police protection services, refer to *Westside Subway Extension Parklands and Other Community Facilities Supplemental Technical Report* (Metro 2011n). The operation of the LPA, including all station, alignment, and station entrance options, under either the Concurrent Construction Scenario or the Phased Construction Scenario, 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 LPA, including all station, alignment, and station entrance options, 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 LPA, including all station, alignment, and station entrance options. The opening of the LPA as a single phase or in three sequential phases will not result in differing operational impacts to police protection services.

### **Schools**

As stated above, the Marinello School of Beauty will be displaced as part of the LPA if the Wilshire/Fairfax Station entrance option at Johnie’s Coffee Shop is selected. Students attending this specific location of the school could be accommodated at other nearby Marinello School of Beauty locations. If the LPA 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 Relocation Assistance and Real Property Acquisitions Act (USC 1995b) and the California Relocation Assistance Act (CCR 2011). Additionally, the LPA, under either the Concurrent Construction Scenario or the Phased Construction Scenario, 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 LPA, including all station, alignment, and station entrance options under either the Concurrent Construction Scenario or the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in differing operational impacts to schools.

### **Parks**

For a more detailed discussion on impacts to parks, refer to the *Westside Subway Extension Parklands and Other Community Facilities Supplemental Technical Report* (Metro 2011n). The LPA under either the Concurrent Construction Scenario or the Phased Construction Scenario will increase accessibility to parks near the alignment, which is expected to result in a nominal increase in their use. The LPA 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 LPA, including all station, alignment, and station entrance options, under either the Concurrent Construction Scenario or the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in differing operational impacts to parks.

### **Other Public Facilities**

For a more detailed discussion on impacts to other public facilities, refer to the *Westside Subway Extension Parklands and Other Community Facilities Supplemental Technical Report* (Metro 2011n). As stated above, the Architecture and Design Museum will be displaced as part of the LPA. If the LPA 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 Relocation Assistance and Real Property Acquisitions 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 LPA, including all station, alignment, and station entrance options, under either the Concurrent Construction Scenario or the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in differing operational impacts to public facilities.



## 4.14 Historic, Archaeological, and Paleontological Resources

This section has been updated from the Draft EIS/EIR to focus on the analysis of the effects of the LPA on historic, archaeological, and paleontological resources. The LPA could either be constructed as a single phase under the America Fast Forward (30/10) Scenario (Concurrent Construction) or as three consecutive phases under the Metro Long Range Transportation Plan Scenario (Phased Construction). The opening of the LPA as a single phase or in three sequential phases does not substantially change the analysis that was presented in the Draft EIS/EIR. The analysis of all the Build and TSM Alternatives in the Draft EIS/EIR is incorporated here by reference.

This section provides the regulatory context that governs archaeological and paleontological resources, as well as historic built (architectural and landscape) resources. It also discusses how the LPA will affect resources and historic properties within the area of potential effects (APE) and proposed mitigation to address those effects. For more information and references, see the *Westside Subway Extension Historic Property Survey Report* (Metro 2010m) and the *Westside Subway Extension Cultural Resources Technical Report* (Metro 2010ad) prepared in support of the Draft EIS/EIR, as well as the *Westside Subway Extension Historic Resources Properties Supplemental Survey Technical Report* (Metro 2012b) and the *Westside Subway Extension Archaeological Resources Supplemental Survey Technical Report* (Metro 2012c) prepared in support of the LPA.

### 4.14.1 Regulatory Setting

The LPA must comply with federal, state, and local historic, archaeological, and paleontological preservation laws and regulations.

#### **Federal**

The LPA is subject to compliance with NEPA (USC 1966). Section 106 requires federal agencies with either direct or indirect jurisdiction over a proposed undertaking to take into account the effect of the undertaking on historic properties (consisting of any prehistoric or historic district, site building, structure, or object) eligible for listing or listed in the National Register of Historic Places (NRHP). The lead federal agency in consultation with the State Historic Preservation Officer (SHPO) is responsible for the determinations of eligibility for listing on the NRHP and for the finding of effect. The federal Advisory Council on Historic Preservation (ACHP) is given the opportunity to participate in the Section 106 consultation process.

Section 4(f) of the U.S. Department of Transportation Act of 1966 (USC 1966) also applies to historic properties and is addressed in Chapter 5, Section 4(f) Evaluation.

The LPA is also subject to compliance with the following federal laws that protect paleontological resources: American Antiquities Act of 1906 (USC 1906) and NEPA (USC 1966). NEPA directs federal agencies to use all practicable means to “Preserve important historic, cultural, and natural aspects of our national heritage...” (Section 101(b)(4)). Paleontological resources are not generally evaluated under the Section 106 process and are not considered historic properties in and of themselves.

### State

According to CEQA (PRC 2009), historical resources include any resource listed, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR). Properties listed in or determined eligible for listing in the NRHP, such as those identified in the Section 106 process, are automatically listed in the CRHR. Therefore, all “historic properties” under federal preservation law are automatically “historical resources” under state preservation law. Historical resources are also presumed to be significant if they are included in a local register of historical resources or identified as significant in a qualified historical resources survey. Section 15064.5 of the CEQA guidelines sets forth the criteria and procedures for determining significant historical resources and the effects of a project on such resources.

CEQA also categorizes paleontological resources as cultural resources and requires an impact evaluation to such resources. Paleontological resources are also protected under PRC 5097.5.

### Local and Regional Regulations

The cities of Los Angeles and Beverly Hills and the County of Los Angeles, in which the LPA is located, as well as the cities of Santa Monica and West Hollywood, were consulted during preparation of the Draft EIS/EIR regarding their plans, policies, and regulations that protect important cultural and historical sites and resources for historical, cultural, research, and community educational purposes. More details of the local and regional plans and regulations can be found in the *Westside Subway Extension Cultural Resources Technical Report* (Metro 2010ad) prepared in support of the Draft EIS/EIR.

#### 4.14.2 Process for Applying Regulations

The Section 106 methodology is adequate to comply with Section 15064.5 of the CEQA guidelines, because the Section 106 guidelines have more rigorous review requirements. The steps of the Section 106 process include

- Identify consulting parties
- Initiate consultation and public involvement
- Identify the APE
- Identify and evaluate the NRHP eligibility of the resources within the APE
- Assess effects on historic properties currently listed or eligible for listing in the NRHP
- Mitigate adverse effects with the SHPO and consulting parties resulting in a Memorandum of Agreement (MOA) or Programmatic Agreement
- Implement provisions of the MOA or Programmatic Agreement

---

The Area of Potential Effects (APE) is the geographical area or areas within which an undertaking may directly or indirectly change the character or use of historic properties.

---

### Area of Potential Effects

An LPA-specific APE was established in accordance with 36 CFR Part 800.16(d) (CFR 2004), which defines an APE as

“the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any



such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.”

The LPA-specific APE was delineated to ensure identification of significant architectural, archaeological, and cultural resources that may be directly or indirectly affected by the proposed project and are listed in or eligible for inclusion in the NRHP and CRHR. The APE for the LPA is the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario. The only difference between the two scenarios is the timing of potential impacts to architectural, archaeological, and cultural resources. Under the Phased Construction Scenario, the potential for impacts along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential impacts along Phase 1 of the LPA will remain the same as the Concurrent Construction Scenario since Phase 1 will open for operation in 2022. (For additional detail, refer to the *Westside Subway Extension Historic Resources Properties Supplemental Survey Technical Report* (Metro 2012b) and the *Westside Subway Extension Archaeological Resources Supplemental Survey Technical Report* (Metro 2012c) and to Figure 4-55 through Figure 4-58.

### **Architectural Resources**

For architectural resources, the APE extends one parcel past the limits of the above-ground project improvements for the stations, service areas, and any above-ground facilities. This includes the areas that are expected to be directly or indirectly affected by either construction or operation of the LPA, areas where property takes are required, and areas that may be affected by noise and vibration from the construction and operation of the LPA. In areas where the LPA will be contained within the right-of-way and below grade (generally the areas between stations), the APE does not consider adjacent properties and is limited to the existing roadway.

The Division 20 maintenance facility is included as part of the LPA and is encompassed within the architectural APE. The maintenance facility is located within the existing railroad yard and service areas, portions of which are currently undeveloped.



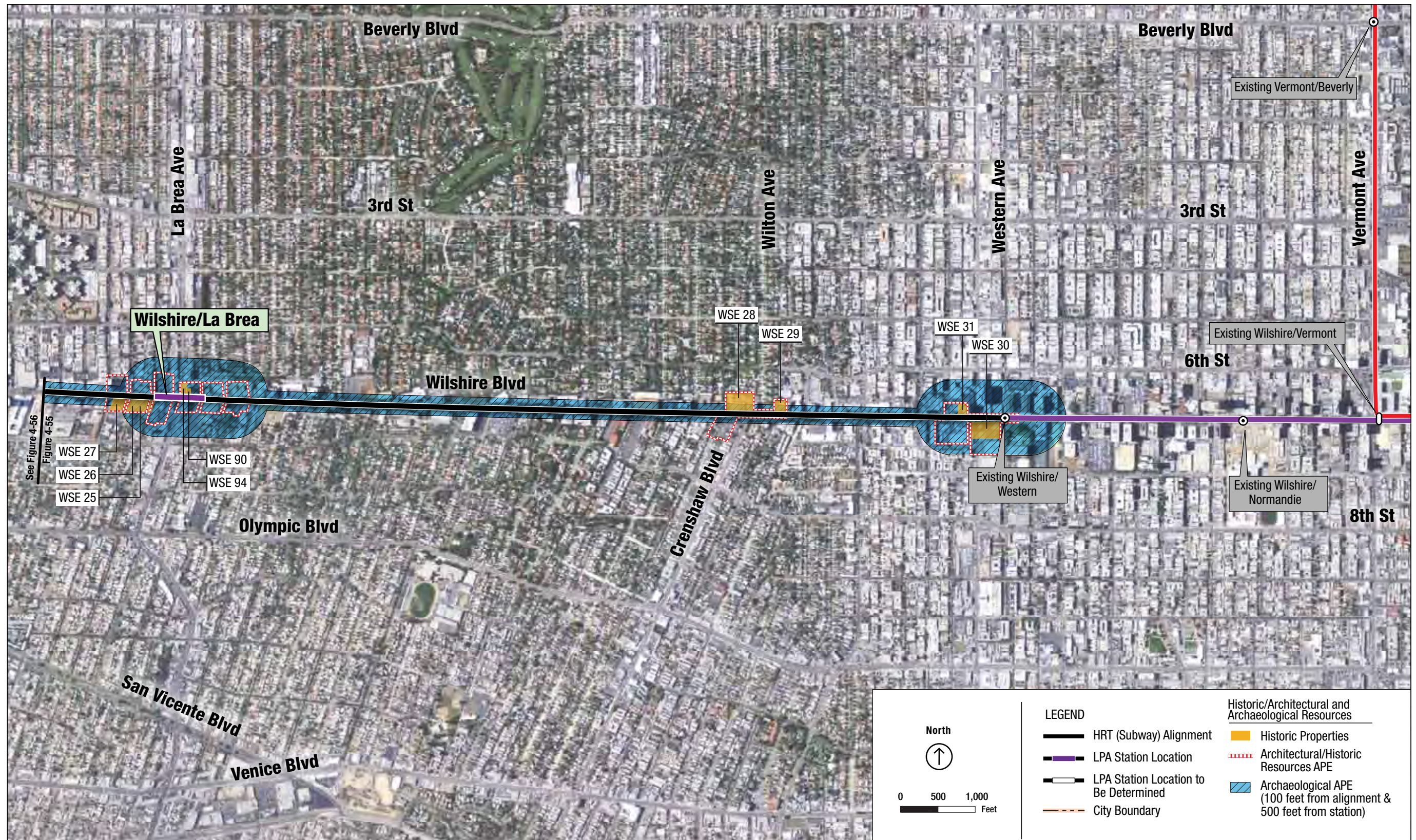


Figure 4-55. Historic, Architectural, and Archaeological Resources (Existing Wilshire/Western Station to Wilshire/La Brea Station)



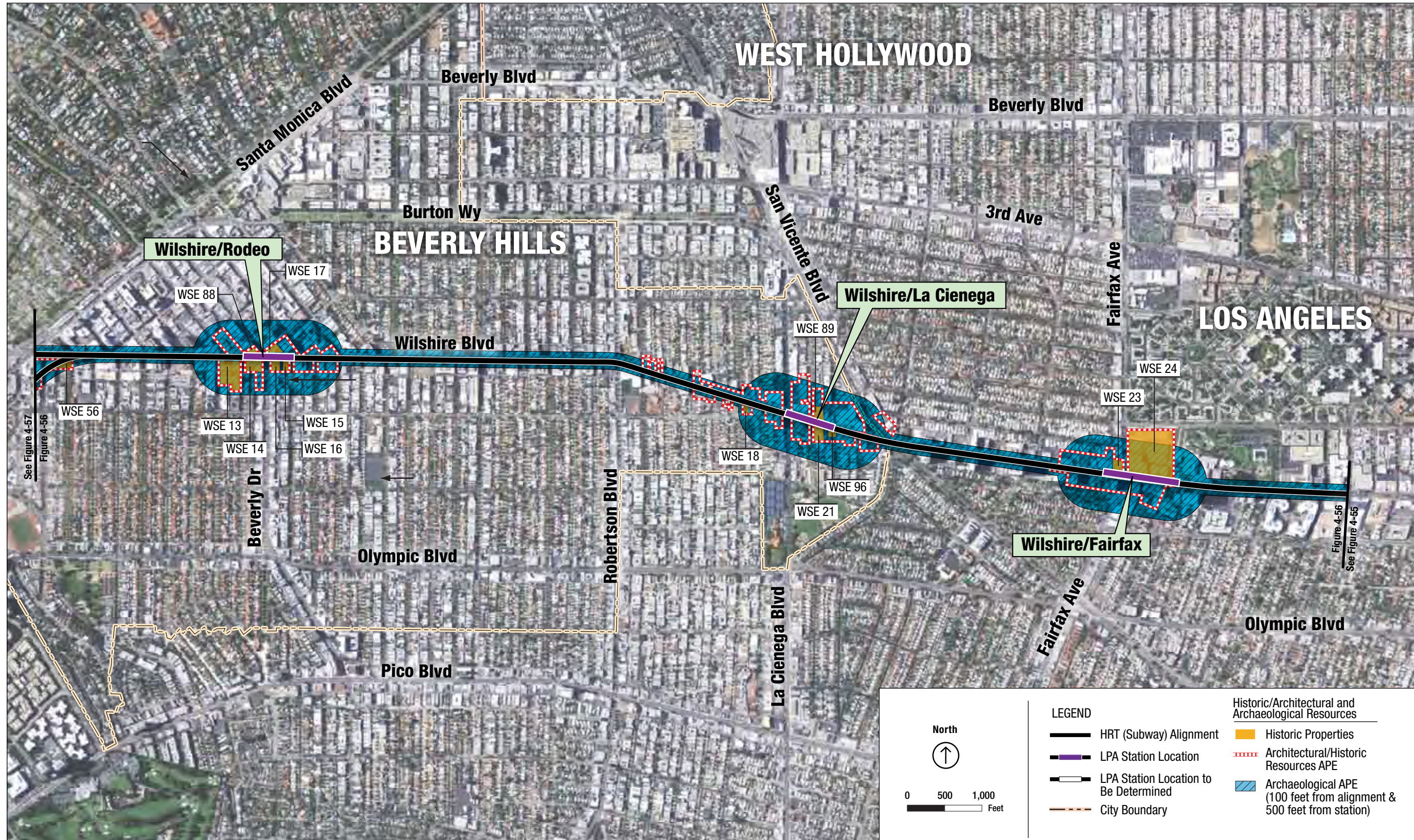


Figure 4-56. Historic, Architectural, and Archaeological Resources (Wilshire/Fairfax Station to Wilshire/Rodeo Station)



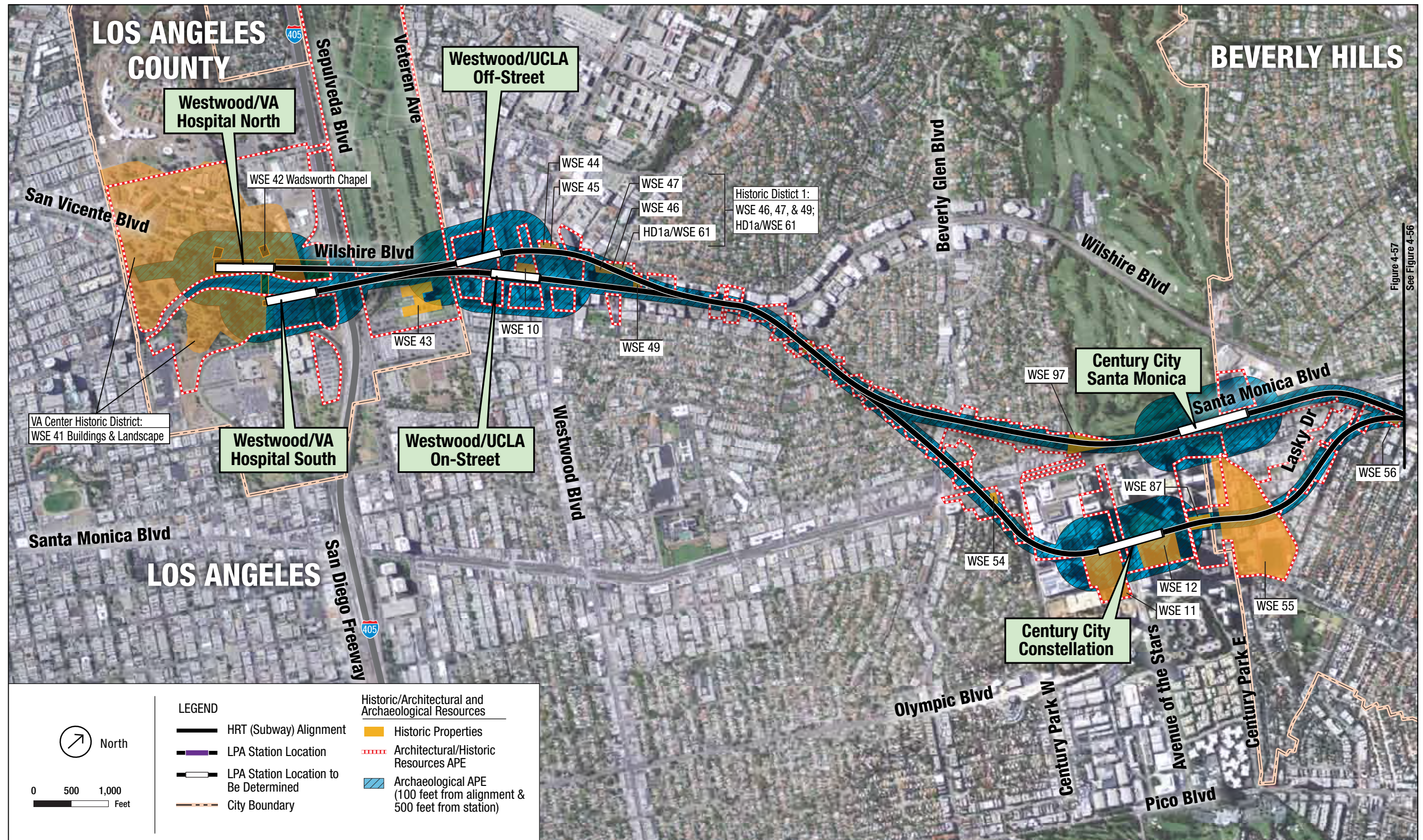


Figure 4-57. Historic, Architectural, and Archaeological Resources (Century City Station to Westwood/VA Hospital Station)



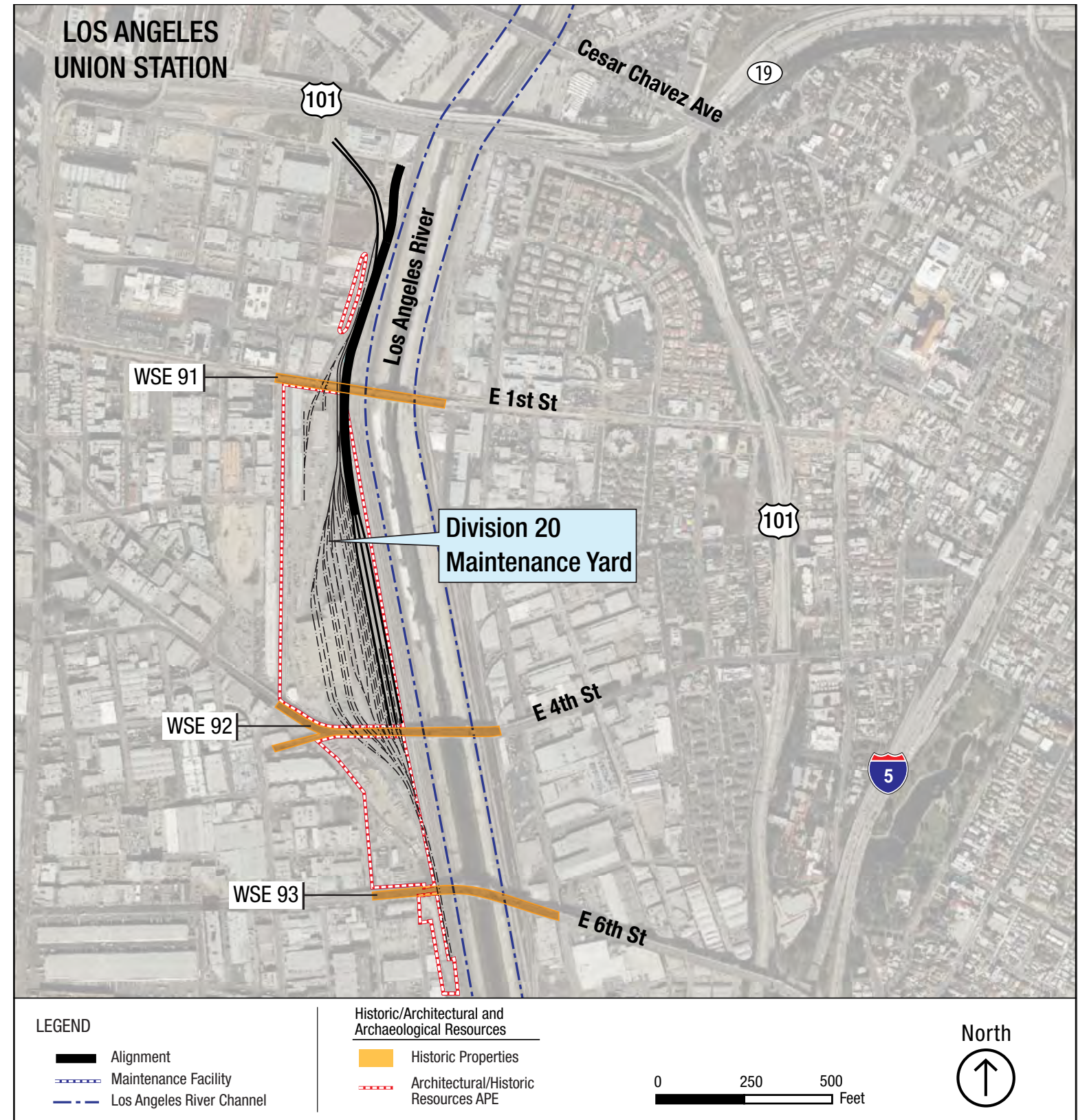


Figure 4-58. Historic, Architectural, and Archaeological Resources (Division 20 Maintenance Yard)

Under the Concurrent Construction Scenario, the LPA is expected to begin construction in 2013 with all major construction completed by 2019; therefore, historic property identification efforts focused on parcels containing improvements constructed in or before 1968 (2019 - 50 years = 1969, less an additional year to be conservative). Under the Phased Construction Scenario, construction on Phase 1 is also expected to begin in 2013 with all major construction completed by 2019. However, construction on Phase 2 is expected to begin no later than 2020 with major construction completed no later than 2026, and construction on Phase 3 is expected to begin no later than 2030 with major construction completed by 2035. If the LPA is constructed under the Phased Construction Scenario, mitigation measure HR-3 requires that 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.

### **Archaeological Resources**

For archaeological resources, an APE was defined as a radius of 100 feet along the subway alignment and maintenance facilities. At the station locations, a 500-foot radius was established. The archaeological resources APE remains the same under the Concurrent Construction Scenario and the Phased Construction Scenario.

#### **4.14.3 Methodology**

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

The Project's Alternatives Analysis phase included an initial assessment of the location of historic, archaeological, and paleontological resources along each evaluated alignment. This was one of the evaluation criteria used in the selection of alternatives to study in the Draft EIS/EIR. Modifications to the Project, especially in the area of stations, that may avoid or minimize adverse effects, continued throughout the conceptual engineering phase and will continue during the ongoing design of the LPA. Consultation with the SHPO will continue regarding options to minimize effects where feasible. Refer to Appendix D, Memorandum of Agreement and Section 106 Correspondence, for the MOA.

##### **Historic Built Resources**

Background research to determine the nature and substance of existing documentation on historic built environment (architectural) resources within the APE was conducted between 2009 and 2011 at and with the South Central Coastal Information Center, the Native American Heritage Commission (Sacred Lands File Search), various municipalities and agencies, Los Angeles County Assessor (current and early land ownership records), Southern California libraries, historical societies and preservation groups, previously prepared environmental documentation (Metro Library), and numerous online (e.g., California Historic Topographic Map Collection, historic aerial photographs) and printed (e.g., Sanborn Fire Insurance Company Maps) sources. Research at the South Central Coastal Information Center included a review of the Historic Property Data File, NRHP and CRHR listings, and state and local landmarks.



The records search area extended from a quarter-mile radius to a half-mile radius beyond the architectural APE.

Field surveys by architectural historians were undertaken in 2009 and 2010 in support of the Draft EIS/EIR and again in 2011 in support of the LPA. Initial reconnaissance (windshield) surveys within the architectural APE were conducted to identify potentially significant historic-period properties, followed by pedestrian surveys to physically inspect potentially significant properties and complete architectural descriptions and evaluations.

Disturbance or damage to identified historic-period architectural resources by the LPA was determined by the relation to the LPA alignment alternatives and construction methods. Avoidance options were offered where appropriate. Where avoidance was deemed infeasible, subsequent mitigation measures to reduce adverse effects to historic properties were identified.

### **Evaluating the Significance of Built Historic Properties**

NRHP criteria defined in 36 CFR 60.4 were applied to evaluate pre-1968 built properties in the APE—which would be 50 years or older at completion of the LPA as currently defined—for eligibility for listing in the NRHP. In addition to NRHP Criteria A, B, C, and D, those properties that are less than 50 years old were evaluated per NRHP Criteria Consideration G. In the event the LPA is constructed under the Phased Construction Scenario, mitigation measure HR-3 requires that 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.

Historic properties may be eligible for nomination to the NRHP, if they possess “...the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association.” These properties must also meet one or more of the following criteria (NPS 1991; CFR 2004):

- **Criterion A**—Resource is associated with events that have made a significant contribution to the broad patterns of our history
- **Criterion B**—Resource is associated with the lives of persons significant in our past
- **Criterion C**—Resource embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction
- **Criterion D**—Have yielded, or may be likely to yield, information important in prehistory or history
- **Criteria Consideration G**—A property achieving significance within the past 50 years if it is of exceptional importance



## Chapter 4—Environmental Analysis, Consequences, and Mitigation

---

Generally, all historic properties listed in or determined eligible for the NRHP are automatically listed in the CRHR and are, therefore, historical resources for the purposes of CEQA. In addition, Section 15064.5 of the CEQA guidelines states that the term “historical resources” will include the following:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC §5024.1, Title 14 CCR, Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in PRC §5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC §5024.1(g), will be presumed to be historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency’s determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be “historically significant” if the resource meets one or more of the criteria for listing on the CRHR (PRC §5024.1, Title 14 CCR, Section 4852), including the following:
  - ▶ **Criterion 1**—Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage
  - ▶ **Criterion 2**—Is associated with the lives of persons important in our past
  - ▶ **Criterion 3**—Embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of an important creative individual or possesses high artistic values
  - ▶ **Criterion 4**—Has yielded, or is likely to yield, information important in prehistory or history

Effects to all identified eligible, determined eligible, or listed historic properties were evaluated within the current context and setting of the property, with regard to the identified historic significance and level of retention of historic integrity, and in relation to changes to the property or within its vicinity that the LPA will or may cause. An adverse effect determination was made when the LPA will alter, directly or indirectly, any of the characteristics of the historic property that qualify the property for inclusion in the NRHP in a manner that will diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association. Consideration was given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property’s eligibility for the NRHP.

Using the criteria of adverse effect established in 36 CFR 800.5(a)(1) (CFR 2004) and guidance found in the National Register Bulletin *How to Apply the National Register Criteria for Evaluation* (NPS 1997), each historic property was evaluated to determine if implementation of the LPA will alter any historically significant characteristics or features of a historic property by diminishing relevant aspects of that property’s historic





integrity. For some eligible or listed resources within the APE, certain aspects of integrity are not critical to the reasons that a property was determined to be eligible for listing. For each historic property, one of the following findings was made regarding the LPA's affect on each aspect of integrity: *no effect*, *no adverse effect*, or *adverse effect*.

### **Archaeological Resources**

Background research to determine the nature and substance of existing documentation on prehistoric and historic-period archaeological resources within the APE was conducted between 2009 and 2011. Research at the South Central Coastal Information Center included a review of the Historic Property Data File, NRHP and CRHR listings, and state and local landmarks. The records search area extended a quarter-mile radius beyond the archaeological APE. Additional research included the collection and review of the following:

- Native American Heritage Commission Sacred Lands File Search
- Los Angeles County Tax Assessor early land ownership records
- Sanborn Fire Insurance Company maps
- Historic topographic maps
- Historic aerial photographs
- Previously prepared environmental documentation (Metro Library)
- Coordination with local Offices of Historic Resources

Field surveys by archaeologists were undertaken in 2009 and 2010 in support of the Draft EIS/EIR and again in 2011 in support of the LPA. The foot surveys within the archaeological APE were conducted to provide data about the presence or absence of prehistoric and historic archaeological resources, their distribution, surface condition, and significance.

Disturbance or damage to identified archaeological resources was determined in relation to the LPA alignment options and construction methods. Avoidance options were offered where appropriate.

### **Evaluating the Significance of Archaeological Resources**

Historic properties and historical resources may include archaeological resources. Archaeological resources identified within the APE that may be historic properties were evaluated for NRHP eligibility according to criteria set forth in 36 CFR 60.4 (CFR 2007) (Criteria A–D detailed above). The age criterion for inclusion in the NRHP is 50 years or older, except in cases of overriding significance (Criteria Consideration G).

Archaeological resources identified within the APE that may be historical resources were evaluated for CRHR eligibility according to criteria set forth at PRC 5024.1 (Criteria 1–4 detailed above), as well as Section 15064.5 of the CEQA guidelines. Although there is no established age threshold for the CRHR, the same 50-year cutoff was employed. The CRHR was established to serve as an authoritative guide to the state's significant historical and archaeological resources (PRC 5024.1).

Effects to all identified eligible historic properties/historical resources were evaluated within the current context and setting of the archaeological resource, with regard to the identified historic significance and level of retention of historic integrity and in relation

to changes to the resource or within its vicinity that the LPA will or may cause. In accordance with Section 106 and CEQA, a project would result in a significant impact on an archaeological resource if it would result in the direct or indirect alteration or physical destruction of all or part of an archaeological resource eligible for listing in the NRHP or CRHR.

### **Paleontological Resources**

This study utilized multiple sources of information to assess the known and potential paleontological resources in the Westside study area. For additional details, refer to the *Westside Subway Extension Cultural Resources Technical Report* (Metro 2010ad) prepared in support of the Draft EIS/EIR. These include the following:

- A paleontological record search through the Natural History Museum of Los Angeles County, which includes the records of the George C. Page Museum of La Brea Discoveries
- Published geologic maps
- Published documents describing area geology and paleontological resources
- Previously prepared unpublished environmental documentation for related Metropolitan Transit Authority and Southern California Rapid Transit District Metro rail projects
- Unpublished documents prepared for other various planned and constructed projects in the vicinity of the possible routes of the Westside Extension
- Field investigation

### **Evaluating the Significance of Paleontological Resources**

Fossils are classified as non-renewable scientific resources protected by state and federal regulations. The Society of Vertebrate Paleontology (SVP) (SVP 1995) established professional standards and outlined criteria for assessing the paleontological potential of geologic rock units to yield unique or significant paleontological resources as follows:

- **High potential**—Geologic units from which vertebrate or significant invertebrate or plant fossils have been recovered; only invertebrate fossils that provide new information on existing flora or fauna or on the age of a rock unit would be considered significant.
- **Low potential**—Geologic units that are not known to have produced a substantial body of significant paleontological material.
- **Undetermined potential**—Geologic units for which little to no information is available.

Under Section 15064.5 of the CEQA guidelines, a project would result in an impact on paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. In areas containing paleontologically sensitive geologic units, subsurface disturbance has the potential to directly impact an unknown quantity of fossils.

The SVP also established professional standards for mitigation of adverse impacts to paleontological resources (SVP 1995; SVP 1996). Direct adverse impacts can often be mitigated to below a level of significance by locality documentation, fossil recovery, preparation, identification, cataloging, and curation to make fossils available for



scientific research, education, display, and preservation in perpetuity at a public museum.

### **Identify Consulting and Interested Parties**

Extensive effort was made to identify, contact, and consult with groups with demonstrated interests relating to historic, archeological, and paleontological resources within the APE. The purpose of consultation was to identify historic, archaeological, and paleontological resources and to discuss other issues relating to the LPA's effects on such resources.

The Section 106 regulations require that a federal agency evaluate all built and archaeological resources within the APE and identify historic properties by gathering information from consulting parties, applying the NRHP criteria, and seeking concurrence from the SHPO or Tribal Historic Preservation Officer, as appropriate. In accordance with 36 CFR 800.3, FTA and Metro initiated the Section 106 process with the SHPO and personnel from the Office of Historic Preservation (OHP) on June 22, 2009, via a notification letter. A letter concurring with the APE was received from the SHPO on September 27, 2010. Following extensive survey of the resources in the corridor and coordination with the SHPO, letters were received on November 1, 2011, and December 8, 2011, concurring with FTA's Determination of Eligibility and of Effect. The SHPO is also a party to the MOA. For copies of the documentation, refer to Appendix D, Memorandum of Agreement and Section 106 Correspondence.

Local agencies and jurisdictions, including the Cities of Beverly Hills, Los Angeles, Santa Monica, and West Hollywood, the U.S. Department of Veterans Affairs, and the California Native American Heritage Commission, were contacted on behalf of the FTA and Metro in order to identify cultural resources listed by the agencies within a quarter-mile-search radius of the APE for the five alternatives analyzed in the Draft EIS/EIR (see Appendix G of the *Westside Subway Extension Historic Property Survey Report* [Metro 2010m]). Local historical or archaeological societies or museums (namely the Los Angeles Conservancy, Los Angeles City Historical Society, Los Angeles County Museum of Art, Beverly Hills Historical Society, Santa Monica Historical Society, Hollywood Heritage, and Palm Society of Southern California) were also contacted in support of the Draft and Final EIS/EIR. Tribal contacts were made and documented in Appendix A of the *Westside Subway Extension Cultural Resources Technical Report* (Metro 2010ad) prepared in support of the Draft EIS/EIR, with additional contacts made and documented in Appendix A of the *Westside Subway Extension Archaeological Resources Supplemental Survey Technical Report* (Metro 2012c) prepared in support of the LPA.

#### **4.14.4 Affected Environment/Existing Conditions**

Detailed information regarding the prehistoric, ethnographic, and historic conditions associated with the Project study area and its surrounding vicinity is provided in the *Westside Subway Extension Historic Property Survey Report* (Metro 2010m) and the *Westside Subway Extension Cultural Resources Technical Report* (Metro 2010ad) prepared in support of the Draft EIS/EIR, as well as the *Westside Subway Extension Historic Resources Properties Supplemental Survey Technical Report* (Metro 2012b) and the *Westside*

*Subway Extension Archaeological Resources Supplemental Survey Technical Report* (Metro 2012c) prepared in support of the LPA.

### Historic and Architectural Resources

The historic period can be divided into three periods: the Spanish, Mexican, and American periods. The following historic context places an emphasis on the development of the cities in the American period, since the cultural resources expected to be encountered and evaluated in the APE would be representative of this period.

#### American Period Historic Context

##### *Mid Wilshire/Miracle Mile*

The area of Wilshire Boulevard spanning from roughly La Brea to Fairfax Avenues, known as the Miracle Mile, is recognized as one of the first outlying commercial corridors to challenge the hegemony of downtown Los Angeles and to take advantage of the emerging popularity of automobiles. It was dubbed a “miracle” because it occurred in spite of restrictive residential zoning that had been established by the original owner, Gaylord Wilshire. Secondly, it was developed in the absence of a previously established residential or retail community.



**Figure 4-59. Johnie's Coffee Shop Exterior in 2007**



**Figure 4-60. The Beverly Wilshire Hotel in 1959**

Built during the late 1920s and 1930s, several buildings in the Miracle Mile exhibited aspects of the Art Deco style—Zig Zag Moderne and Streamline Moderne. The first major retail establishment developed in the Miracle Mile was Desmond's (clothing store). After Desmond's, a number of retailers were lured to the new Miracle Mile, including the May Company. Between these large retail anchors, low-rise retail structures were designed to front on Wilshire Boulevard. Johnie's Coffee Shop (Figure 4-59) was a popular venue. Historic neighborhoods in the Mid-Wilshire area include Wilshire Park, Hancock Park, Carthay Circle, and Wilshire Square. The Mid-Wilshire/Miracle Mile area is located along the Phase 1 alignment if the LPA is constructed under the Phased Construction Scenario.

##### *Beverly Hills*

In 1900, the Amalgamated Oil Company purchased farm-lots, held by Hammel and Denker Ranch, for the exploration of oil. This oil company created a new residential community, named “Beverly” with broad tree-lined streets, spacious lots, and generous parks. Beverly was renamed Beverly Hills, and on February 23, 1907, the new subdivision was officially recorded. With its grand design, the Beverly Wilshire Hotel (Figure 4-60), completed in 1912, became a local historic icon and attraction for visitors. Beverly Hills is located along Phase 1 and Phase 2 of the alignment if the LPA is constructed under the Phased Construction Scenario.





**Figure 4-61. Century Plaza Hotel exterior in 2011**

### **Century City**

Century City is a section of the City of Los Angeles that was master-planned in 1964 to 1966 on 180 acres of land purchased from Fox Studios by the Aluminum Company of America (Alcoa). The land was formerly the back lot of Fox Studios. The parcel south of Olympic and west of Avenue of the Stars was retained by Fox and it remains the historic Fox Studios lot. Among the first buildings developed were the “gateway” buildings flanking the north end of Avenue of the Stars, the Century Plaza Hotel just north of the center of the cross axis (Figure 4-61), and residential towers at the south end at Olympic Boulevard. Century City is located along Phase 2 of the alignment if the LPA is constructed under the Phased Construction Scenario.

### **UCLA/Westwood Village**

Westwood Village was originally part of Rancho San Jose de Buenos Ayres, which was granted to Jose Maximo Alanes by the Mexican Governor, Manuel Micheltorena, in 1843. In the mid-1920s, the University of California’s southern branch had outgrown its 25-acre campus on North Vermont Avenue, and the Westwood Village site was chosen as the site for a new campus. On September 20, 1929, the first buildings were ready for occupancy. The first four buildings—the College Library, Royce Hall, the Physics-Biology Building, and the Chemistry Building—were located around a central quadrangle. UCLA/Westwood Village is located along Phase 3 of the alignment if the LPA is constructed under the Phased Construction Scenario.

### **Veterans Affairs Medical Center**

The Veterans Affairs Medical Center (now called the Greater Los Angeles Healthcare System-West Los Angeles Medical Center) opened in 1888 in response to the growing number of veterans entering the National Home for Disabled Volunteer Soldiers. Located southwest of UCLA and the Westwood area, buildings from both the post-Civil War and World War I eras are prominent at this center. The Wadsworth Theater, immediately northwest of the proposed Westwood/VA Hospital North Station, has been determined a contributing building in the NRHP-eligible Veterans Affairs Medical Center Historic District. The Catholic-Protestant Chapels (also known as the Wadsworth Chapel), immediately north of the Westwood/VA Hospital North Station, was listed in the NRHP and CRHR in 1972 and is also a contributing building in the district. The Center is located in a park-like setting; the established landscape is a distinctive feature of the historic fabric of the district. The VA West Los Angeles Campus is located along Phase 3 of the alignment if the LPA is constructed under the Phased Construction Scenario.

### **Historic Districts Identified**

One previously identified historic district is located in the APE for the LPA. The Los Angeles VA Medical Center Historic District was determined eligible for NRHP inclusion in 1981 and is also listed on the CRHR. The district includes the Wadsworth Theater and Wadsworth Chapel noted above, as well as an established historic landscape

with a grove of large ficus trees and a palm garden on the east side of Bonsall Avenue in the APE for the Westwood/VA Hospital Station. The historic landscape is a contributing element to the district. The VA Medical Center Historic District is located along Phase 3 of the alignment if the LPA is constructed under the Phased Construction Scenario.

One additional previously unidentified historic district is eligible for listing in the NRHP and CRHR—the Westwood/UCLA Historic District. Four buildings comprising the district were built in the Revival architectural style between 1933 and 1940 and front Wilshire Boulevard or Lindbrook Drive in the APE for the LPA alignment option near the Westwood/UCLA Station. The Westwood/UCLA Historic District is located along Phase 3 of the alignment if the LPA is constructed under the Phased Construction Scenario.

### **Historic Properties Identified**

Within the APE, 41 historic-period built resources, including two historic districts, are on or eligible for NRHP and CRHR inclusion or are also considered a historical resource for purposes of CEQA. The 41 historic properties include three of the four contributing resource buildings for the Westwood/UCLA Historic District within the APE.

If the LPA is constructed under the Phased Construction Scenario, 18 historic properties are located within Phase 1; 11 historic properties are located within Phase 2; and 12 historic properties, including the two historic districts, are located within Phase 3.

### **Cultural Heritage Artwork Identified**

Although not a historic property or a historical resource protected by Section 106 of the National Historic Preservation Act or CEQA, a military-themed mural painted on the walls of the Bonsall Avenue underpass and ramps in 1995 by Peter Stewart is a work of public art that is protected by state and federal law (*California Art Preservation Act* [CCC 1979] and the federal *Visual Artists Rights Act* [USC 1990b]). Although the mural is not a historic property, Metro will ensure the artwork is protected from damage during construction activities. If the LPA is constructed under the Phased Construction Scenario, the mural is located within Phase 3 of the LPA.

### **Archaeological Resources**

The Study Area was occupied by the Tongva/Gabrieleno. The Tongva/Gabrieleno are a Native American people who inhabited the area in and around Los Angeles, which they shared with the Tataviam people. The Gabrieleno are considered one of the most distinctive tribes in all of California, occupying a large area that was bordered on the west by Topanga and Malibu, the San Fernando Valley, the greater Los Angeles basin, and the coastal strip south to Aliso Creek, south of San Juan Capistrano. The search of the Sacred Lands File did not indicate the presence of Native American cultural resources within one-half mile of the APE.

### **Archaeological Resources Identified**

The records search identified 128 previously conducted cultural resources investigations within a quarter-mile-search radius of the APE. Forty-nine of these investigations are within or immediately adjacent to the APE. The record search indicated that 17 archeological resources (15 sites and 2 isolates) were recorded in West Los Angeles,



Beverly Hills, and Hollywood within the quarter-mile-search radius. The La Brea Tar Pits is the most prominent prehistoric and archaeological resource in the project vicinity. Within the quarter-mile-search radius, the sites within the Los Angeles and Beverly Hills area are mainly historic refuse dumps that were discovered during trenching beneath paved streets, or circa 1900 remnants of the Los Angeles Zanja System, the city's original water system. A filled-in open pit asphalt mine of the Civil War Period was identified in Los Angeles beneath today's Hancock Park.

Five archaeological resources are located within the APE for the LPA at the Division 20 maintenance yard (Table 4-58); also see the *Westside Subway Extension Archaeological Resources Supplemental Survey Technical Report* prepared in support of the LPA [Metro 2012c]). Each is associated with the American period during the late 19th and early 20th centuries. Included are two archaeological sites and one isolate identified by the records search and two archaeological sites identified during field survey in 2010. Three of the known historic period sites (CA-LAN-2563, CA-LAN-4192, and CA-LAN-4193) do not qualify as historic properties or historical resources and are considered not eligible for listing in the NRHP or CRHR. The isolated find does not qualify for listing on either the NRHP or CRHR. For additional information on these sites, refer to *Westside Subway Extension Cultural Resources Technical Report* (Metro 2010ad) prepared in support of the Draft EIS/EIR, as well as the *Westside Subway Extension Archaeological Resources Supplemental Survey Technical Report* (Metro 2012c) prepared in support of the Final EIS/EIR.

The remaining site, CA-LAN-2610, is a remnant of the circa 1893 cobblestone street and street car tracks associated with the La Grande Railroad Station that was adjacent to the Los Angeles River at the former eastern extent of the Little Tokyo Historic District. Since this resource is situated beneath developed areas, direct examination of its condition, horizontal extent, and integrity is prohibited. The site has not been formally evaluated but is considered eligible for listing in the NRHP and CRHR. It will be avoided by construction for the LPA at the Division 20 maintenance yard. If the LPA is constructed under the Phased Construction Scenario, this site is located along Phase 1 of the LPA as expansion of the Division 20 Vehicle Storage and Maintenance Facility is scheduled to occur during Phase 1.

**Table 4-58. Archaeological Resources Recorded within the APE at the Division 20 Vehicle Storage and Maintenance Facility**

| Phase   | Primary No. | Trinomial   | Brief Description   | USGS Quadrangle | NRHP and CRHR Eligibility (and Criteria) | Impact/ Determination             |
|---------|-------------|-------------|---|-----------------|--|-----------------------------------|
| Phase 1 | P-19-002563 | CA-LAN-2563 | Historic refuse deposit; beneath modern facility  | Los Angeles     | Not Eligible (Criterion D/4)             | Not historic property; no effect  |
|         | P-19-002610 | CA-LAN-2610 | Remnant of historic cobblestone street and rail line in Little Tokyo Historic District; beneath modern street | Los Angeles     | Eligible (Criteria A/1, D/4)             | LPA will avoid; no adverse effect |
|         | P-19-100887 | n/a         | Historic isolate: Japanese bowl and bottle base   | Los Angeles     | Not Eligible (Criterion D/4)             | Not historic property; no effect  |
|         | P-19-004192 | CA-LAN-4192 | Historic brick and glass scatter  | Los Angeles     | Not Eligible (Criterion D/4)             | Not historic property; no effect  |
|         | P-19-004193 | CA-LAN-4193 | Remnant of historic road; beneath modern street   | Los Angeles     | Not Eligible (Criterion D/4)             | Not historic property; no effect  |

**Paleontological Resources**

The Study Area is situated within the Los Angeles Basin between the Peninsular and Transverse ranges. The basin began to form at least 15 million years ago while still under water, with sediments accumulating over millennia. Oil fields eventually formed from the marine plankton deposited in the ocean basin. The most well-known oil fields near the LPA include Beverly Hills, Cheviot Hills, San Vicente, and Salt Lake. The latter includes the oil seeps known as the Rancho La Brea Tar Pits.

Within the LPA, terrestrial fossils from 50 to 11 thousand years old in asphaltic deposits and underlying marine fossils from 10 million to 50 thousand years old are highly likely to be encountered during subsurface excavations at the Wilshire/La Brea and Wilshire/Fairfax Stations. If the LPA is constructed under the Phased Construction Scenario, the Wilshire/La Brea and Wilshire/Fairfax Stations will be constructed as part of Phase 1. Subsurface excavations at all other stations may encounter terrestrial fossils from 50 to 11 thousand years old in non-asphaltic deposits and underlying marine fossils from 10 million to 50 thousand years old. At the Division 20 maintenance yard, the sediments are too young to contain fossils and are also highly disturbed.

**Geologic Units within the Study Area**

This section presents a description of documented paleontological locations and geologic formations that are known to or potentially may contain sensitive paleontological resources within the LPA. The geology within the LPA is discussed in Section 4.8. The geologic units that may be encountered in tunnel excavations are, from oldest to youngest, the Miocene-age Puente Formation, the Pliocene-age Fernando Formation, the Pleistocene age San Pedro and Lakewood Formations, Pleistocene (Older) Alluvium, and Holocene (Younger) Alluvium.





**Figure 4-62. 1941 View of Hancock Park La Brea Tar Pits Pond**

The LPA is underlain by Younger Alluvium and Older Alluvium. Younger Alluvium is of Holocene age (less than about 10,000 years). Remains of less than 5,000 years are not considered to be significant paleontological resources. The Older Alluvium is dated from the Holocene/Pleistocene boundary (approximately 10,000 years ago) to over one million years. It produces Pleistocene vertebrate fossils, mostly of mammals. However, in the vicinity of Hancock Park (Rancho La Brea Tar Pits, Figure 4-62), it has produced more than one million vertebrate fossils and perhaps two million invertebrate fossils. The George C. Page Museum is dedicated to researching the tar pits and displaying specimens from the animals that died there.

The San Pedro Formation is not exposed at the surface anywhere within the LPA, but is mapped beneath the surface. San Pedro Formation has a high sensitivity for producing significant paleontological resources. In the LPA vicinity, the San Pedro Formation has produced horse, coyote, turtle, fish, shark, and invertebrate fossils. Marine units less than 1 million years old (ma) have been identified in borings within Hancock Park. The latest marine sediments in the sequence are considered correlatives of the Bent Springs Amino-Acid Assemblage Zone, dated at approximately 320 thousand years old (ka). Also identified below that zone are the Lava Creek Ash (665 ka), the Bishop Ash (770 ka), the Brunhes/Matuyama boundary (780 ka), and the Jarmillo paleomagnetic chron (an 84,000-year period of reversed magnetic polarity from 0.986 to 1.053 ma). All these are treated here as parts of the San Pedro Sand.

The Fernando Formation is not exposed at the surface within the LPA, but is known below the surface along Crenshaw Boulevard westward to the City of Santa Monica and between South Rimpau Boulevard and South McCadden Place in the Hancock Park area. The Fernando Formation has a high sensitivity for producing significant paleontological resources. It has not produced any paleontological resources in the LPA vicinity, but elsewhere in the Los Angeles Basin the formation has produced numerous invertebrate species, several fish species, and a few birds and mammals.



**Figure 4-63. Columbian mammoth skeleton from the tar pits displayed in the George C. Page Museum**

The Puente Formation is not exposed at the surface within the LPA. The top of the Puente Formation beneath Hancock Park was deposited within an interval dated between 5.5 and 10 million years ago. The Puente Formation has a high sensitivity for producing significant paleontological resources. It has produced numerous significant paleontological resources, ranging from plants to invertebrates to vertebrates, including numerous types of fish and a few reptiles, birds, and mammals.

**Paleontological Resources Identified**

A specimen of mammoth near Wilshire Boulevard and Serrano Avenue was unearthed during construction of the existing Metro Purple Line (Figure 4-63). At Western Avenue and Council

Street, a mastodon fossil was also recovered. East of La Brea Avenue and south of Wilshire Boulevard, three localities produced Late Pleistocene vertebrate fossils (mastodon, shrew, and camel) in asphalt deposits at shallow depths.

From La Brea Boulevard to La Cienega Boulevard are a large number of Pleistocene fossil localities, particularly in and around the Rancho La Brea Tar Pits in Hancock Park. These localities occur in asphaltic sands and silts and those deposits producing extinct organisms dated from 11,000 to 38,000 years old. These occur from ground surface to perhaps 40 feet deep. Some sources judge that these constitute the densest accumulation of vertebrate fossils in the world.

On Wilshire Boulevard both east and west of Beverly Drive, the Older Alluvium has produced horse and artiodactyl fossils. A locality in Century City, between the Century City/Santa Monica Boulevard and Century City/Constellation Boulevard segments, produced turtle, rodent, coyote, horse, fish, shark, and invertebrate fossils from the San Pedro Sand. At a locality near the intersection of Century City/Santa Monica Boulevard and Wilshire Boulevard and Thayer Avenue, the Older Alluvium produced horse, kangaroo rat, wood rat, vole, and gopher fossil. Between Olympic and the Interstate 10 Freeway at Cloverfield Boulevard, a locality produced a fossil of the American lion from the Older Alluvium.

For more detailed information on paleontology in the LPA vicinity, refer to the *Westside Subway Extension Cultural Resources Technical Report* (Metro 2010ad) prepared in support of the Draft EIS/EIR.

### 4.14.5 Environmental Impacts/Environmental Consequences

#### Historic Properties

Forty-one historic properties were identified within the APE, including the VA Medical Center Historic District and the Westwood/UCLA Historic District (Table 4-59). The SHPO has concurred with this determination by the FTA (see Appendix C to the *Westside Subway Extension Historic Resources Properties Supplemental Survey Technical Report* [Metro 2012b]). FTA, in consultation with SHPO, has determined that the LPA will have no adverse effect on 38 individual architectural historic properties and the two historic districts that are on or eligible for listing in the NRHP. FTA, in consultation with the SHPO, has determined that the LPA will have an adverse effect on one historic property, the Ace Gallery, as shown on Table 4-59. The Ace Gallery is located along Phase 2 of the alignment if the LPA is constructed under the Phased Construction Scenario.

#### No Build Alternative

The No Build Alternative would not affect built historic resources. No construction will be undertaken as a part of the No Build aside from the existing planned or on-going construction projects in the vicinity.

**Table 4-59. Historic Properties within LPA and Effect Determination under Section 106**

| Phase                                 | WSE Number/Historic Properties                     | Location Related to Station/Alignment | Brief Description                    | NRHP Eligibility (Listing Criteria)/ CRHR Eligibility (Listing Criteria)                  | Impact/ Determination  |
|---------------------------------------|--|---------------------------------------|--------------------------------------|---|--|
| <b>Individual Historic Properties</b> |  |                                       |                                      |   |  |
| Phase 1                               | WSE 31—Pierce National Life                        | Wilshire/Western                      | Mid-Century Modern                   | Eligible NRHP (G, C)/ Eligible CRHR (3)   | Avoid: no adverse effect   |
|                                       | WSE 30—Wiltern Theater                             | Wilshire/Western                      | Art Deco style                       | Listed NRHP (C)/Listed CRHR (3), City of Los Angeles Historic-Cultural Monument #118      | Avoid: no adverse effect   |
|                                       | WSE 29—Los Altos Hotel and Apartments              | Wilshire/Crenshaw Laydown Area        | Spanish Revival                      | Listed NRHP (C)/Listed CRHR (3), City of Los Angeles Historic-Cultural Monument #311      | Avoid: no adverse effect   |
|                                       | WSE 28—Tidewater (Getty) Oil Building              | Wilshire/Crenshaw Laydown Area        | International style                  | Eligible NRHP (C)/Eligible CRHR (3)   | Avoid: no adverse effect   |
|                                       | WSE 94—Clem Wilson/Mutual of Omaha Building        | Wilshire/La Brea                      | Art Deco and Gothic                  | Eligible NRHP (C)/Listed CRHR (3)   | Avoid: no adverse effect   |
|                                       | WSE 90—Security National Bank Building/Zephyr Club | Wilshire/La Brea                      | Art Deco commercial                  | Eligible NRHP (C)/Listed CRHR (3), City of Los Angeles Historic-Cultural Monument #813    | Avoid: no adverse effect   |
|                                       | WSE 27 —Art Deco-style commercial building         | Wilshire/La Brea                      | Art Deco commercial                  | Eligible NRHP (C)/Eligible CRHR (3)   | Avoid: no adverse effect   |
|                                       | WSE 26 —Darkroom Photography Store façade          | Wilshire/La Brea                      | Streamline Moderne                   | Eligible NRHP (C)/ Eligible CRHR (3), City of Los Angeles Historic-Cultural Monument #451 | Avoid: no adverse effect   |
|                                       | WSE 25—Art Deco-style commercial building          | Wilshire/La Brea                      | Art Deco                             | Eligible NRHP (C)/ Eligible CRHR (3)  | Avoid: no adverse effect   |
|                                       | WSE 23—Johnie’s Coffee Shop                        | Wilshire/Fairfax                      | Googie style design                  | Eligible NRHP (C)/ Eligible CRHR (3)  | Avoid: no adverse effect   |
|                                       | WSE 24—May Company Wilshire/ LACMA West            | Wilshire/Fairfax                      | Streamline Moderne                   | Eligible NRHP (C)/Eligible CRHR (3), City of Los Angeles Historic-Cultural Monument #566  | Station portal entrance will be constructed in the interior of the first level; avoid alterations to the exterior of the building: no adverse effect |
|                                       | WSE 89—Beverly Hills Porsche Dealership            | Wilshire/La Cienega                   | 1920s Spanish Revival commercial     | Eligible NRHP (A, C)/ Eligible CRHR (1, 3)  | Avoid: no adverse effect   |
|                                       | WSE 96 (unoccupied)                                | Wilshire/La Cienega                   | Art Deco                             | Eligible NRHP (C)/Eligible CRHR (3)   | Avoid: no adverse effect   |
|                                       | WSE 21—Fox Wilshire Theater                        | Wilshire/La Cienega                   | Art Deco                             | Eligible NRHP (C)/ Eligible CRHR (3)  | Avoid: no adverse effect   |
| WSE 18—Fine Arts Theater              | Wilshire/La Cienega                                | Art Deco                              | Eligible NRHP (C)/ Eligible CRHR (3) | Avoid: no adverse effect  |  |

**Table 4-59. Historic Properties within LPA and Effect Determination under Section 106 (continued)**

| Phase   | WSE Number/Historic Properties                                     | Location Related to Station/Alignment | Brief Description                      | NRHP Eligibility (Listing Criteria)/ CRHR Eligibility (Listing Criteria) | Impact/ Determination  |
|---------|--|---------------------------------------|--|--|--|
| Phase 2 | WSE 17—California Bank Building-Sterling Plaza                     | Wilshire/Rodeo                        | Art Deco Commercial                    | Eligible NRHP (C)/ Eligible CRHR (3)                                     | Avoid: no adverse effect   |
|         | WSE 15—Ace Gallery Building  | Wilshire/Rodeo                        | Mid-Century Modern— Brutalism          | Eligible NRHP (C)/Eligible CRHR (3)                                      | Demolish: adverse effect   |
|         | WSE 14—Union Bank Building   | Wilshire/Rodeo                        | Mid-Century Modern                     | Eligible NRHP (C)/Eligible CRHR (3)                                      | Alteration for station entrance of exterior wall on west end of first level: no adverse effect |
|         | WSE 88—Wilshire Beverly Centre Building (Bank of America Building) | Wilshire/Rodeo                        | Mid-Century Modern                     | Eligible NRHP (C)/Eligible CRHR (3)                                      | Avoid: no adverse effect   |
|         | WSE 56—Perpetual Savings Bank Building                             | Wilshire/Rodeo                        | Mid-Century Modern                     | Eligible NRHP (G, C)/Eligible CRHR (3)                                   | No impact by tunneling noise or vibration: no adverse effect                                   |
|         | WSE 16—Glendale Federal Savings Building                           | Wilshire/Rodeo                        | Mid-Century Modern                     | Eligible NRHP (G, C)/Eligible CRHR (3)                                   | Avoid: no adverse effect   |
|         | WSE 13—Beverly Wilshire Hotel                                      | Wilshire/Rodeo                        | Italian Renaissance                    | Listed NRHP (A, C)/Listed CRHR   | Avoid: no adverse effect   |
|         | WSE 55—Beverly Hills High School                                   | Century City Constellation            | French Eclectic and Streamline Moderne | Eligible NRHP (B)/Eligible CRHR (3)                                      | No impact by tunneling noise or vibration: no adverse effect                                   |
|         | WSE 11—Century Plaza Hotel   | Century City Constellation            | Mid-Century Modern                     | Eligible NRHP (G, C)/ Eligible CRHR (3)                                  | Avoid: no adverse effect   |
|         | WSE 12—Century Park Towers   | Century City Constellation            | Mid-Century Modern                     | Eligible NRHP (G, C)/ Eligible CRHR (3)                                  | Avoid: no adverse effect   |
|         | WSE 87—AAA Building  | Century City Constellation            | Mid-Century Modern                     | Eligible NRHP (C)/ Eligible CRHR (3)                                     | No impact by tunneling noise or vibration: no adverse effect                                   |



**Table 4-59. Historic Properties within LPA and Effect Determination under Section 106 (continued)**

| Phase   | WSE Number/Historic Properties                       | Location Related to Station/Alignment | Brief Description                       | NRHP Eligibility (Listing Criteria)/ CRHR Eligibility (Listing Criteria)                  | Impact/ Determination   |
|---------|--|---------------------------------------|---|---|---|
| Phase 3 | WSE 54—The Barn                                      | Century City Constellation            | Home and office of A.Q. Jones architect | Eligible NRHP (G, B)/ Eligible CRHR (2)   | No impact by tunneling noise or vibration: no adverse effect  |
|         | WSE 97—Los Angeles Country Club (South Course)       | Century City Santa Monica             | Private club established in 1897        | Eligible NRHP (C)/ Eligible CRHR (3)  | No impact by tunneling noise or vibration: no adverse effect  |
|         | WSE 10—Linde Medical Bulding                         | Westwood/UCLA                         | Mid-Century Modern                      | Eligible NRHP (G, C)/ Eligible CRHR (3)   | Removal for station entrance of a section of meeting wall between attached, integrated garage and rear of main structure: no adverse effect |
|         | WSE 49—University Bible Building                     | Westwood/UCLA                         | Gothic Revival                          | Eligible NRHP (C)/ Eligible CRHR (3)  | No impact by tunneling noise or vibration: no adverse effect  |
|         | WSE 47 —Courtyard Apartment Complex                  | Westwood/UCLA                         | Monterey Revival                        | Eligible NRHP (C)/ Eligible CRHR (3), City of Los Angeles Historic-Cultural Monument #447 | No impact by tunneling noise or vibration: no adverse effect  |
|         | WSE 46—Lindbrook Village                             | Westwood/UCLA                         | Spanish Revival                         | Eligible NRHP (C)/ Eligible CRHR (3), City of Los Angeles Historic-Cultural Monument #446 | No impact by tunneling noise or vibration: no adverse effect  |
|         | WSE 45—Glendon Arcade Shops                          | Westwood/UCLA                         | Spanish Revival                         | Eligible NRHP (C)/ Eligible CRHR (3)  | Avoid: no adverse effect  |
|         | WSE 44—Ralph’s Grocery Store                         | Westwood/UCLA                         | Spanish Revival                         | Listed NRHP (C)/ Listed CRHP (3), City of Los Angeles Historic-Cultural Monument #360     | Avoid: no adverse effect  |
|         | WSE 43—Westwood Federal Building                     | Westwood/UCLA                         | Mid-Century Modern                      | Eligible NRHP (G, C)/ Eligible CRHR (3)   | Avoid: no adverse effect  |
|         | WSE 42—Catholic-Protestant Chapels/ Wadsworth Chapel | Westwood/ VA Hospital                 | 1890 Chapel                             | Listed NRHP (A, C)/Listed CRHR (1, 3)   | Avoid: no adverse effect  |
| Phase 1 | WSE 91—1st Street Viaduct                            | Division 20 Yard                      | 1920s concrete bridge                   | Eligible NRHP (C)/Listed CRHR (3), City of Los Angeles Historic-Cultural Monument #909    | Avoid: no adverse effect  |
|         | WSE 92—4th Street Bridge                             | Division 20 Yard                      | 1920s concrete bridge                   | Eligible NRHP (C)/Listed CRHR (3), City of Los Angeles Historic-Cultural Monument #906    | Avoid: no adverse effect  |
|         | WSE 93—6th Street Viaduct                            | Division 20 Yard                      | 1920s concrete bridge                   | Eligible NRHP (C)/Listed CRHR (3), City of Los Angeles Historic-Cultural Monument #905    | Avoid: no adverse effect  |

**Table 4-59. Historic Properties within LPA and Effect Determination under Section 106 (continued)**

| Phase   | WSE Number/Historic Properties   | Location Related to Station/Alignment | Brief Description  | NRHP Eligibility (Listing Criteria)/ CRHR Eligibility (Listing Criteria) | Impact/ Determination  |
|---|--|---------------------------------------|--|--|--|
| <b>Historic Districts</b>   |  |                                       |  |  |  |
| <b>Phase 3</b>  | HD 1—Westwood/UCLA Historic District   | Westwood/UCLA                         | Spanish Revival; Monterey Revival; includes WSE 46, WSE 47, WSE 49, and contributor HD 1a/WSE 61   | Eligible NRHP (C)/ Eligible CRHR (3)                                     | No impact by tunneling noise or vibration: no adverse effect   |
|   | WSE 41—VA Medical Center Historic District—includes contributing buildings and landscapes (WSE 41a, WSE 41b) | Westwood/ VA Hospital                 | Old Soldiers Home and VA Medical Center buildings; includes WSE 41a Wadsworth Theater, and WSE 41b historic landscape.   | Eligible NRHP (A, C)/Listed CRHR (1, 3)                                  | No impact by tunneling noise or vibration: no adverse effect   |
|   |  |                                       | WSE 41b landscape on north side of Wilshire includes a grove of large ficus trees near Wadsworth Theater (WSE 41a), and a palm garden on east side of Bonsall Avenue in “cut-and-cover” area of station APE. Ficus trees near the Theater and the palm garden will be removed during construction activities and then replaced in their original spaces. |  | Temporary removal and return of trees to original site and return of historic landscape to original condition: no adverse effect |
| WSE 41b landscape on south side of Wilshire includes large mature trees. The trees, particularly a large eucalyptus (blue gum), will be protected from project impacts. |  |                                       | Station entrance, protection of trees and return of historic landscape to original condition: no adverse effect  |  |  |

NRHP = National Register of Historic Places

LACMA = Los Angeles County Museum of Art

CRHR = California Register of Historical Resources

ROW = right-of-way



### **Locally Preferred Alternative**

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing impacts to historic resources during operation of the LPA.

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Under the Concurrent Construction Scenario, the LPA will be operational in its entirety to Westwood/VA Hospital in 2022. The majority of the proposed alignment for the LPA, including the Division 20 Vehicle Storage and Maintenance Facility, has been designed to minimize adverse effects on historic properties and remains within the existing right-of-way boundaries of the major roadways (e.g., Santa Monica Boulevard and Wilshire Boulevard).

Subsurface easements would be located below the existing property at a depth of 30 to 70 feet or more and would not cause temporary or permanent effects to built historic properties, such as a change in use to the historic property, physical destruction or damage, alterations not consistent with the *Secretary of Interior Standards for Rehabilitation*, removal, or neglect of the property. Also refer to the *Westside Subway Extension Noise and Vibration Study* (Metro 2011g) for additional information.

### **No Build Alternative**

The No Build Alternative would not affect built historic resources. No construction will be undertaken as a part of the No Build aside from the existing planned or on-going construction projects in the vicinity.

### **Locally Preferred Alternative**

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing impacts to historic resources during operation of the LPA.

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Under the Concurrent Construction Scenario, the LPA will be operational in its entirety to Westwood/VA Hospital in 2022. The majority of the proposed alignment for the LPA, including the Division 20 Vehicle Storage and Maintenance Facility, has been designed to minimize adverse effects on historic properties and remains within the existing right-of-way boundaries of the major roadways (e.g., Santa Monica Boulevard and Wilshire Boulevard).

Subsurface easements would be located below the existing property at a depth of 30 to 70 feet or more and would not cause temporary or permanent effects to built historic properties, such as a change in use to the historic property, physical destruction or damage, alterations not consistent with the *Secretary of Interior Standards for*

## Chapter 4—Environmental Analysis, Consequences, and Mitigation

---

*Rehabilitation*, removal, or neglect of the property. Also refer to the *Westside Subway Extension Noise and Vibration Study* (Metro 2011g) for additional information.

A no adverse effect determination was made for the historic properties and contributing buildings for which subsurface easements for tunneling outside the existing right-of-way will be obtained (Table 4-59). These 10 historic properties, including the 2 historic districts, are as follows:

- VA Medical Center Historic District (WSE 41)
- 9720 Wilshire Boulevard—Perpetual Savings Building (WSE 56)
- 1950 Century Park East—AAA Building (WSE 87)
- 10101 Wilshire Boulevard—Los Angeles Country Club (South Course) (3-acre APE in southwest corner) (WSE 97)
- 10300 Santa Monica Boulevard—The Barn (WSE 54)
- 241 Moreno Drive—Beverly Hills High School (WSE 55)
- Westwood/UCLA Historic District (HD-1)
- 10830-10836 Lindbrook Drive—Lindbrook Village (WSE 46)
- 10840 Lindbrook Drive—Courtyard Apartment Complex (WSE 47)
- 10801 Wilshire—University Bible Church (WSE 49)

The recommendation (see Chapter 7, Evaluation of Alternatives) includes properties with tunneling under the Perpetual Savings Building, AAA Building, Beverly Hills High School, and a portion of the VA Medical Center Historic District south of Wilshire Boulevard.

Four historic properties, including the VA Medical Center Historic District landscape, will be altered by either construction staging activities or station entrance options and also have a determination of no adverse effect (Table 4-59). The effect of the LPA on these historic properties will meet the *Secretary of Interior Standards for Rehabilitation and for Treatment of Cultural Landscapes*. These four historic properties are as follows:

- 6067 Wilshire Boulevard—May Company Wilshire/LACMA West (WSE 24)
- 9460 Wilshire Boulevard—Union Bank Building (WSE 14)
- 10921 Wilshire Boulevard—Linde Medical Plaza (WSE 10)
- VA Medical Center Historic District—Landscape (ficus trees, palm garden, eucalyptus trees) (WSE 41)

The recommendation (see Chapter 7, Evaluation of Alternatives) includes properties at the Linde Medical Plaza and the VA Center Historic District Landscape, but does not include the May Company Wilshire/LACMA West or Union Bank Building.

For the properties that have a determination of No Adverse Effect, implementation of mitigation measure HR-1 described in Section 4.14.6 will further ensure avoidance of adverse effects to the historic properties.

Only one of the 41 historic properties within the LPA APE has a Determination of Adverse Effect—Ace Gallery (WSE 15) (Table 4-59). FTA, in consultation with SHPO, has determined that the LPA will have an adverse effect on the Ace Gallery (see Appendix D, Memorandum of Agreement and Section 106 Correspondence, for correspondence). The recommendation (see Chapter 7, Evaluation of Alternatives)





**Figure 4-64. Ace Gallery**

includes the demolition of the Ace Gallery for a station entrance and for construction staging.

Located at 9430 Wilshire Boulevard, the Ace Gallery (Figure 4-64) is a commercial building designed in the Brutalism style of architecture. The original building on the site was a commercial restaurant building dating from 1932 that was enveloped by the new façade on the front (north) and east side elevations when Bank of America purchased and rehabilitated the building in 1950. Brutalist-style buildings, many of which are constructed from concrete and were built between World War II and the mid-1980s, are typically designed with striking repetitive

angular geometries. 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) will treat the adverse effect.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the impacts to historic properties are the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of impacts to historic properties. Under the Phased Construction Scenario, any impacts to historic properties along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for any impacts to historic properties along Phase 1 of the LPA will remain the same as the Concurrent Construction Scenario since Phase 1 will open for operation in 2022.

##### *Phase 1 to Wilshire/La Cienega*

Under Phase 1, the LPA will operate to the Wilshire/La Cienega Station. The majority of the proposed alignment for Phase 1 of the LPA, including the Division 20 Vehicle Storage and Maintenance Facility, has been designed to minimize adverse effects on historic properties and remains within the existing right-of-way boundaries of major roadways (e.g., Santa Monica Boulevard and Wilshire Boulevard).

Of the 41 historic properties identified within the APE, 15 are located along the Phase 1 alignment with an additional 3 located at the Division 20 Vehicle Storage and Maintenance Facility, which will be expanded as part of Phase 1. Phase 1 of the LPA will have No Adverse Effect on all 18 of these identified properties. None of the 18 properties will require subsurface easements.

Of the 18 historic properties located within Phase 1, one historic property, May Company Wilshire/LACMA West (WSE 24), will be altered by either construction staging activities or a station entrance option in the building's interior, which would not result in alteration of the historic exterior of the building and therefore has a determination of No Adverse Effect (Table 4-59). The effect of the LPA on this historic property will meet the *Secretary of Interior Standards for Rehabilitation*. The

recommendation (see Chapter 7, Evaluation of Alternatives) does not include an entrance at the May Company Wilshire/LACMA West.

For the properties that have a determination of No Adverse Effect, implementation of mitigation measure HR-1 described in Section 4.14.6 will further ensure avoidance of adverse effects to the historic properties.

### Phase 2 to Century City

Under Phase 2, the LPA will operate to the Century City Station. The majority of the proposed alignment for Phase 2 has been designed to minimize adverse effects on historic properties and remains within the existing right-of-way boundaries of major roadways (e.g., Santa Monica Boulevard and Wilshire Boulevard).

Of the 41 historic properties identified within the APE, 11 are located along the Phase 2 alignment. Of the 11 identified historic properties, the LPA will have an adverse effect on one property—the Ace Gallery (WSE 15).

Depending on the option selected, Phase 2 may require underground easements. Subsurface easements would be located below the existing property at a depth of 30 to 70 feet or more, and would not cause temporary or permanent effects to built historic properties, such as a change in use to the historic property, physical destruction or damage, alterations not consistent with the *Secretary of Interior Standards for Rehabilitation*, removal, or neglect of the property. Refer to the *Westside Subway Extension Noise and Vibration Study* (Metro 2011g) for additional information.

A No Adverse Effect determination was made for the historic properties and contributing buildings for which subsurface easements for tunneling outside the existing right-of-way will be obtained (Table 4-59). Tunneling beneath these three historic properties would be required if the Century City Station is located along Constellation Boulevard, but not if it is located along Santa Monica Boulevard. These three historic properties are as follows:

- 9720 Wilshire Boulevard—Perpetual Savings Building (WSE 56)
- 1950 Century Park East—AAA Building (WSE 87)
- 241 Moreno Drive—Beverly Hills High School (WSE 55)

The recommendation (see Chapter 7, Evaluation of Alternatives) includes the Century City Constellation Station, which will require tunneling under the Perpetual Savings Building, AAA Building, and Beverly Hills High School as part of Phase 2.

Within Phase 2, one historic property, Union Bank Building (WSE 14), will be altered by either construction staging activities or a station entrance option and has a determination of No Adverse Effect (Table 4-59). The effect of the LPA on this historic property will meet the *Secretary of Interior Standards for Rehabilitation*.

The recommendation (see Chapter 7, Evaluation of Alternatives) does not include an entrance at the Union Bank Building as part of Phase 2.

For the properties that have a determination of No Adverse Effect, implementation of mitigation measure HR-1 described in Section 4.14.6 will further ensure avoidance of adverse effects to the historic properties.



Only one of the 11 historic properties within the Phase 2 APE has a Determination of Adverse Effect—Ace Gallery (WSE 15) (Table 4-59). FTA, in consultation with SHPO, has determined that the LPA will have an adverse effect on the Ace Gallery (see Appendix D, Memorandum of Agreement and Section 106 Correspondence, for correspondence). The recommendation (see Chapter 7, Evaluation of Alternatives) includes the demolition of the Ace Gallery for a station entrance and for construction staging. Refer to the Concurrent Construction Scenario section for a full discussion of the Ace Gallery.

*Phase 3 to Westwood/VA Hospital*

Under Phase 3, the LPA will be opened in its entirety to the Westwood/VA Hospital Station. The majority of the alignment for Phase 3 has been designed to minimize adverse effects on historic properties and remains within the existing right-of-way boundaries of major roadways (e.g., Santa Monica Boulevard and Wilshire Boulevard).

Of the 41 historic properties identified within the APE, 12 are located along the Phase 3 alignment. Phase 3 of the LPA will result in No Adverse Effect on all 12 of these identified historic properties.

Depending on the option selected, Phase 3 may require underground easements. Subsurface easements would be located below the existing property at a depth of 30 to 70 feet or more, and would not cause temporary or permanent effects to built historic properties, such as a change in use to the historic property, physical destruction or damage, alterations not consistent with the *Secretary of Interior Standards for Rehabilitation*, removal, or neglect of the property. Refer to the *Westside Subway Extension Noise and Vibration Study* (Metro 2011g) for additional information.

A No Adverse Effect determination was made for the historic properties and contributing buildings for which subsurface easements for tunneling outside the existing right-of-way will be obtained (Table 4-59). These seven historic properties, including two historic districts, are as follows:

- VA Medical Center Historic District (WSE 41)
- 10101 Wilshire Boulevard—Los Angeles Country Club (3-acre APE in southwest corner) (WSE 97)
- 10300 Santa Monica Boulevard—The Barn (WSE 54)
- Westwood/UCLA Historic District (HD 1)
- 10830-10836 Lindbrook Drive—Lindbrook Village (WSE 46)
- 10840 Lindbrook Drive—Courtyard Apartment Complex (WSE 47)
- 10801 Wilshire—University Bible Church (WSE 49)

The recommendation (see Chapter 7, Evaluation of Alternatives) includes the Century City Constellation, Westwood/UCLA On-Street, and Westwood/VA Hospital South Station locations, which would not require tunneling underneath these seven historic properties as part of Phase 3, except for tunneling underneath a portion of the VA Center Historic District south of Wilshire Boulevard.

Two historic properties, including the VA Center Historic District Landscape, will be altered by either construction staging activities or station entrance option as part of Phase 3 and also have a determination of No Adverse Effect (Table 4-59). The effect of



the LPA on these historic properties will meet the *Secretary of Interior Standards for the Treatment of Historic Properties with Guidelines for Rehabilitating Historic Buildings* and for the *Treatment of Cultural Landscapes*. These historic properties are as follows:

- 10921 Wilshire Boulevard—Linde Medical Plaza (WSE 10)
- VA Medical Center Historic District—Landscape (ficus trees, palm garden, eucalyptus trees) (WSE 41)

The recommendation (see Chapter 7, Evaluation of Alternatives) includes a station entrance at the Linde Medical Plaza and within a portion of the VA Center Historic District as part of Phase 3.

For the properties that have a determination of No Adverse Effect, implementation of mitigation measure HR-1 described in Section 4.14.6 will further ensure avoidance of adverse effects to the historic properties.

### **Archaeological Resources**

#### **No Build Alternative**

The No Build Alternative would not affect archaeological resources. No excavation will be undertaken as a result of the No Build Alternative and, therefore, no archaeological resources would be affected.

#### **Locally Preferred Alternative**

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing impacts to archaeological resources during operation of the LPA.

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Under the Concurrent Construction Scenario, the LPA will be operational in its entirety to Westwood/VA Hospital in 2022. No archaeological resources have been identified within the APE for the alignment of the LPA, including all station, alignment, and station entrance options still under consideration. The LPA may affect undocumented cultural resources, including intact archaeological deposits. Given that the LPA 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 (Table 4-58). 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 LPA 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.

***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, any impacts to archaeological resources are the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of any impacts to archaeological resources. Under the Phased Construction Scenario, any impacts on archaeological resources along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for any impacts to archaeological resources along Phase 1 of the LPA will remain the same as the Concurrent Construction Scenario since Phase 1 will open for operation in 2022.

*Phase 1 to Wilshire/La Cienega*

Under Phase 1, the LPA will operate to the Wilshire/La Cienega Station. No archaeological resources have been identified within the APE for the Phase 1 alignment of the LPA. Phase 1 may affect undocumented cultural resources, including intact archaeological deposits. Given that the Phase 1 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. 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 isolate find have been identified in the APE at the Division 20 Vehicle Storage and Maintenance Facility (Table 4-58), which will be expanded under Phase 1. 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. 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 LPA at the Division 20 Vehicle Storage and Maintenance Facility.

The construction of proposed improvements at the Division 20 Vehicle Storage and Maintenance Facility 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 Vehicle Storage and Maintenance 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.

### *Phase 2 to Century City*

Under Phase 2, the LPA will operate to the Century City Station. No archaeological resources have been identified within the APE for the Phase 2 alignment of the LPA. The LPA may affect undocumented cultural resources, including intact archaeological deposits. Given that the LPA 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. Implementation of mitigation measure AR-1 will reduce construction impacts to undocumented archaeological resources, including human remains.

### *Phase 3 to Westwood/VA Hospital*

Under Phase 3, the LPA will be opened in its entirety to the Westwood/VA Hospital Station. No archaeological resources have been identified within the APE for the Phase 3 alignment of the LPA. Phase 3 may affect undocumented cultural resources, including intact archaeological deposits. Given that the Phase 3 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 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.

## **Paleontological Resources Impacts**

### **No Build Alternative**

The No Build Alternative would not affect paleontological resources. No excavation would be undertaken as a part of the No Build aside from the existing planned or ongoing construction projects.

### **Locally Preferred Alternative**

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not



result in substantially differing impacts to paleontological resources during operation of the LPA.



**Figure 4-65. La Brea Tar Pits and Page Museum**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Under the Concurrent Construction Scenario, the LPA will be operational in its entirety to Westwood/VA Hospital in 2022. The LPA may encounter fossil localities at all stations. The upper sediments (Older Alluvium) may contain Pleistocene fossils in asphaltic deposits similar to those in and around Hancock Park (Rancho La Brea Tar Pits, Figure 4-65), as well as similar fossils in non-asphaltic deposits. Rancho La Brea is one of the world's most famous fossil localities, recognized for having the largest and most diverse assemblage of extinct Ice Age plants

and animals in the world. The lower sediments (San Pedro, Fernando, and Puente Formations) may contain Miocene to Pleistocene marine fossils at variable depths. A recently constructed garage built for the County Art Museum approximately 100 yards from the proposed station location, excavated the first complete Mammoth skeleton.

Excavations will impact paleontological resources, unless mitigation measures are employed. Although tunnels are likely to impact known fossiliferous marine sediments and mitigation measures will apply to entry and exit ramps and related staging areas, mitigation for tunnel interiors is infeasible since the modern tunneling machines to be employed simultaneously drill and exude cement for tunnel walls. Implementation of the mitigation measures (PA-1) provided in Section 4.14.6 would substantially reduce the impacts to paleontological resources. During construction, implementation of mitigation measures PA-2 through PA-7 would further reduce impacts to undocumented paleontological resources.

The sediments at the Division 20 maintenance yard are Younger Alluvium and have low potential to produce fossils. In addition, the yard has been extensively developed, and the depth of subsurface disturbance for yard improvements will be minimal. Maintenance yard improvements will have no significant impact on paleontological resources.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, any impacts to paleontological resources are the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of any impacts to paleontological resources. Under the Phased Construction Scenario, any impacts to paleontological resources along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for any impacts to paleontological resources along Phase 1 of the LPA will remain the same as the Concurrent Construction Scenario since Phase 1 will open for operation in 2022.

### *Phase 1 to Wilshire/La Cienega*

Under Phase 1, the LPA will operate to the Wilshire/La Cienega Station. Phase 1 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 in Phase 1. Implementation of the mitigation measure (PA-1) provided in Section 4.14.6 would substantially reduce the impacts to paleontological resources. During construction, implementation of mitigation measures PA-2 through PA-7 would further reduce impacts to undocumented paleontological resources.

### *Phase 2 to Century City*

Under Phase 2, the LPA will operate to the Century City Station. Phase 2 may encounter fossil localities at all stations. Implementation of the mitigation measure (PA-1) provided in Section 4.14.6 would substantially reduce the impacts to paleontological resources. During construction, implementation of mitigation measures PA-2 through PA-7 would further reduce impacts to undocumented paleontological resources.

### *Phase 3 to Westwood/VA Hospital*

Under Phase 3, the LPA will be opened in its entirety to the Westwood/VA Hospital Station. Phase 3 may encounter fossil localities at all stations. Implementation of the mitigation measure (PA-1) provided in Section 4.14.6 would substantially reduce the impacts to paleontological resources. During construction, implementation of mitigation measures PA-2 through PA-7 would further reduce impacts to undocumented paleontological resources.

## **4.14.6 Mitigation Measures**

To avoid and minimize adverse effects to historic properties that may be adversely affected as part of the LPA, specific mitigation measures are incorporated into the Section 106 MOA. Refer to the MOA in Appendix D for more details. The MOA also describes the treatment that will be required to resolve the Adverse Effect that will result from demolition of the Ace Gallery under the Concurrent Construction Scenario or under Phase 2 if the LPA is constructed under the Phased Construction Scenario. Refer to HR-2 below. In addition, the mitigation measures outlined below will be required for the Concurrent Construction Scenario and for all three phases of the Phased Construction Scenario for the four properties listed. The following details the measures planned as part of the LPA in accordance with 36 CFR Parts 800.6(a) and 800.6(b)(1) (CFR 2004):

### ■ **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 four 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 SHPO has the 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*.

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

**HABS/HAER Documentation**—The adverse effects of the project 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 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 project 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 project, will be prepared and maintained for a 10-year period.



### ■ 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 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 MOA 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.

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 described in Mitigation Measures HR-2 or other treatment appropriate to the specific resource(s) would be implemented.

In order to minimize impacts to paleontological resources, the following mitigation measures are planned:

### ■ 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.

If the LPA is constructed under the Phased Construction Scenario, PA-1 will be required as part of all three phases.

#### 4.14.7 Construction

Pursuant to CEQA, an impact to archaeological, historic, or paleontological resources would result in a significant impact if construction of the LPA would result in the following:

- Demolish or materially alter a significant archaeological, historic, or paleontological resource.

#### Archaeological Resources

##### America Fast Forward (30/10) Scenario (Concurrent Construction)

There is the potential to encounter subsurface prehistoric and/or historic archaeological deposits during the Concurrent Construction Scenario 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.

### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

The analysis of the potential for construction-related impacts to archaeological resources is provided in the Concurrent Construction Scenario discussion above. There is the potential to encounter subsurface prehistoric and/or historic archaeological deposits during the construction of Phase 1, Phase 2, and Phase 3 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 minimize potential impacts to previously unidentified cultural resources during construction.

### ***Mitigation Measures***

The MOA sets forth measures to be implemented to reduce potential construction impacts within the Area of Potential Effects (APE) to known archaeological historic properties and to undocumented archaeological resources, including human remains. For additional details refer to the MOA in Appendix D, Memorandum of Agreement and Section 106 Correspondence. Implementation of the following measures will reduce impacts to archeological resources:

- **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

## Chapter 4—Environmental Analysis, Consequences, and Mitigation

---

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 PRC 5097.98 (a)–(d), which provides for the notification of discovery of Native American human remains, descendants; disposition of human remains and associated grave goods.

The mitigation measures to reduce construction-related impacts to archaeological resources will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario.

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 mitigating impacts to archaeological sites. The same requirements apply to discovery of paleontological resources. According to the CEQA Guidelines, preservation in place may be accomplished by, but is 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 a 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 or paleontological resources are uncovered during construction, a data recovery plan would be prepared and reviewed under the provisions of the MOA.

With implementation of these mitigation measures, the construction of the LPA will not have adverse effects or significant impacts to archaeological resources under either scenario.

### **Historic Resources**

#### **America Fast Forward (30/10) Scenario (Concurrent Construction)**

The construction of the LPA will result in an adverse effect on one historic property at the Wilshire/Rodeo Station (Ace Gallery at 9430 Wilshire Boulevard) which will be demolished. Subsurface easements for the LPA are anticipated under nine historic properties. Ground-borne noise and vibration from construction activity will not adversely affect these historic resources.

#### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

Under the Phased Construction Scenario, the construction of Phase 2 will result in an adverse effect on one historic property at the Wilshire/Rodeo Station (Ace Gallery at 9430 Wilshire Boulevard), which will be demolished. The construction of Phase 2 will result in subsurface easements for up to three historic properties. The construction of

Phase 3 will result in subsurface easements for up to six historic properties. Ground-borne noise and vibration from construction activity will not adversely affect these historic resources.

### **Mitigation Measures**

Implementation of the following measures will avoid adverse effect to historic district contributing historic landscape element at the VA Medical Center Historic District:

- **HR-4—Geotechnical Pre-Construction Survey and Historic Landscape 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 TBM in close proximity to historic properties. An architectural historian or historical architect who meets the Secretary of the Interior's Professional Qualification Standards (CFR 2010) 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*.

The mitigation measures to reduce construction-related impacts to historic resources will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario, except that under the Phased Construction Scenario work on the contributing landscape elements of the VA Medical Center Historic District would occur during Phase 3. Construction of the LPA also will result in an unavoidable and significant long-term impact to a historic resource at the Wilshire/Rodeo Station to accommodate construction staging activities and a station entrance. If the LPA is constructed under the Phased Construction Scenario, this impact will occur during construction of Phase 2.

### **Paleontological Resources**

#### **America Fast Forward (30/10) Scenario (Concurrent Construction)**

Construction of the LPA 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 LPA alignment based on known paleontological resources along La Cienega Boulevard, Wilshire Boulevard near Beverly Drive, near Century City, and at Wilshire and Thayer.

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. Preliminary preparation and excavation in advance of construction could minimize construction delays, if feasible.

In specific cases where paleontological or other significant cultural resources are found, it may be possible to alter the cut-and-cover construction methods to allow for sufficient time to evaluate and recover the resources while not requiring the complete suspension of construction activities. One such method could be to employ raised decking, which would allow for traffic to be restored as originally planned without disturbing the encountered resources. The decking system would be elevated above the existing street level, which would also require ramps for traffic to transition on-to and off-of the decking. Although raised decking may temporarily increase the visual impacts to adjacent properties, as well as present some access restrictions, this method would

significantly reduce traffic impacts during any period of cultural resource investigation and/or recovery.

### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

The analysis of the potential for construction-related impacts to paleontological resources is provided in the Concurrent Construction Scenario discussion above. Areas surrounding the Wilshire/Fairfax and Wilshire/La Brea Stations, which are located along Phase 1, are known to have tar deposits and/or tar sands and possibly paleontological features that may have to be removed under special conditions as described above.

Fossils from non-asphaltic deposits may be recovered in other areas along the Phase 1, Phase 2, and Phase 3 alignments based on known paleontological resources along La Cienega Boulevard, Wilshire Boulevard near Beverly Drive, near Century City, and at Wilshire Boulevard and Thayer Avenue.

### **Mitigation Measures**

Implementation of the following mitigation measures will reduce impacts to paleontological resources:

- **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 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.

- **PA-5—Require 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.

■ **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.

The mitigation measures to reduce construction-related impacts to paleontological resources will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario. If the LPA is constructed under the Phased Construction Scenario, these mitigation measures will be of particular importance during construction of Phase 1 where there are known tar deposits and/or tar sands and possible paleontological features. As discussed above under AR-1, preservation in place is likely not feasible for any unique paleontological resources discovered during construction.

With implementation of these mitigation measures, the construction of the LPA will not have adverse effects or significant impacts to paleontological resources under either construction scenario.

### 4.14.8 California Environmental Quality Act Determination

The CEQA determination compares the effects of the LPA, under either the Concurrent Construction Scenario or the Phased Construction Scenario, with the existing conditions described in the affected environment/existing conditions section. Pursuant to CEQA, a long term impact to archaeological, historical, or paleontological resources would be considered significant if the LPA:

- 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

Pursuant to CEQA, an impact to archaeological, historic, or paleontological resources would result in a significant impact if construction of the LPA would result in the following:

- Demolish or materially alter a significant archaeological, historic, or paleontological resource.



While no eligible archaeological resources were identified during the pedestrian surveys, given the nature of the built environment and the one identified eligible site (CA-LAN-2610) that will be avoided by the LPA, there is a possibility for discovery during construction of undocumented archaeological resources, for which the LPA may materially impair the significance of previously unidentified archaeological resources by directly or indirectly altering or physically destroying all or part of the resource (PRC Section 5020.1[q] and CEQA Guidelines Section 15064.5[b]). The opening of the LPA as a single phase under the Concurrent Construction Scenario or in three sequential phases under the Phased Construction Scenario will not result in substantially differing impacts to archaeological resources.

Implementation of the unanticipated discovery mitigation measure (AR-1) will reduce construction impacts to undocumented archaeological resources to a less than significant impact.

The LPA will result in a significant impact to one historical resource—the Ace Gallery at the Wilshire/Rodeo Station. The LPA will result in demolition of the Ace Gallery. The location of the Ace Gallery is a construction laydown area site and a Wilshire/Rodeo Station entrance option. If the LPA is constructed under the Phased Construction Scenario, the Ace Gallery will be demolished during the implementation of Phase 2.

The LPA will result in a less than significant impact at four historic properties, including the VA Center Historic District Landscape, which will be altered by either construction staging activities or a station entrance option. The effect of the LPA on four historic properties will meet the *Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for Rehabilitating Historic Buildings* and for the *Treatment of Cultural Landscapes*. If the LPA is constructed under the Phased Construction Scenario, one historical resource will be altered during Phase 1; one historical resource will be altered during Phase 2; and two historical resources will be altered during Phase 3. To ensure the LPA will result in a less than significant impact, implementation of the mitigation measure (HR-4) will reduce any construction-related impacts to these four built historical resources to a less than significant impact under either the Concurrent Construction Scenario or the Phased Construction Scenario.

Although the military-themed mural located at the Bonsall Avenue underpass is not a historical resource, it is protected by state and federal law (CCC 1979; USC 1990b). If the LPA is constructed under the Phased Construction Scenario, the mural is located along Phase 3. Metro will protect this civic artwork from damage during construction activities in concert with implementation of mitigation measure HR-4. Given the protection of the resource, the LPA will not result in a significant impact under either the Concurrent Construction Scenario or the Phased Construction Scenario.

The LPA 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. 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 either the Concurrent Construction Scenario or the Phased Construction Scenario.

Ground disturbance for the LPA will not disturb any human remains, including those interred outside formal cemeteries. Although the LPA will be in the vicinity of the Los Angeles National Cemetery, construction activities will not impact the cemetery. Should human remains be encountered, however, implementation of the unanticipated discovery mitigation measures (AR-1) will reduce construction impacts to the unanticipated discovery of human remains to a less than significant level under either the Concurrent Construction Scenario or the Phased Construction Scenario.

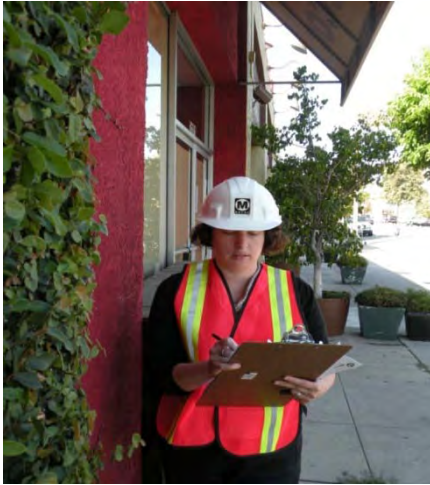
### 4.15 Construction Impacts and Mitigation

This section has been updated from the Draft EIS/EIR to focus on the analysis of the effects of the LPA on construction impacts. For this Final EIS/EIR, the construction impact discussion for Environmental Justice has been moved to Section 4.2.6 and the construction impact discussion for Archaeological, Historic, and Paleontological Resources has been moved to Section 4.14. The Transportation Construction Impacts discussion remains in Chapter 3, Transportation.

The LPA could either be constructed as a single phase under the America Fast Forward (30/10) Scenario (Concurrent Construction), or as three consecutive phases under the Metro Long Range Transportation Plan Scenario (Phased Construction). The construction of the LPA as a single phase or in three sequential phases does not substantially change the construction analysis that was presented in the Draft EIS/EIR. The analysis of all the Build and TSM Alternatives in the Draft EIS/EIR is incorporated into this document by reference. Information in this section is summarized from the *Westside Subway Extension Construction and Mitigation Technical Report* (Metro 2010r) and Appendix E, Construction Methods.

#### 4.15.1 Overview of Construction Activities

Pre-construction activities will include: a survey of properties adjacent to and above tunnels and stations to assess property condition and to produce a photographic record. Construction staging areas will be used during construction for storage of equipment and construction activities. While most construction activity will occur within the public right-of-way, most station entrance points and construction staging areas will be outside the public right-of-way and will require removal of buildings. Construction-related impacts will involve preparation of and demolition on construction staging sites; during construction from activities around station areas, and related to the construction of system components (traction power substations, maintenance and storage facility); and during post-construction from activities related to rehabilitation of the streets and construction staging sites. Effects could include dust, noise and traffic disruption, congestion, and diversion, as well as limited or temporarily loss of access to residences and businesses as discussed in the following sections.



Metro has always been committed to maintaining business and residential access during construction. Construction impacts will be temporary and limited in areas as construction proceeds along the length of the LPA alignment. If the LPA is constructed in three phases under the Phased Construction Scenario, construction impacts will be mostly limited to the phases under construction. Metro will coordinate with affected residents and businesses prior to construction. A detailed survey of community stakeholders and businesses will be conducted in advance of construction. A construction safety campaign will be developed and community response protocols (notification of construction activities, hot lines, etc.) will be produced. A public involvement plan will be developed prior to each construction phase and will be tailored to the

construction phase. Metro will maintain the Project website, which will provide information to the public regarding construction phasing. Metro will develop a program tailored for different locations and needs. The program will involve signage and marketing assistance to businesses, identification of parking alternatives, and other measures.

The construction requirements will be specified to minimize adverse construction effects. Construction will follow all applicable local, state, and federal laws for building and safety. Standard construction methods will be used for traffic, noise, vibration, and dust control, consistent with all applicable laws. Metro will employ techniques to reduce the impacts during construction. Some of these include: locating soil removal sites near major streets and highways where possible; considering sequencing and timing of all construction stages; locating station excavation access and load out facilities off-street where possible; locating staging areas adjacent to construction sites where possible; installation of aesthetic treatments (e.g. attractive fencing materials); and implementing dust and noise mitigation measures, described in the following sections.

Metro will maintain integrated field offices with Metro and contractor staff and monitor compliance with mitigation measures finalized during Final EIS/EIR. Monitoring efforts will ensure that the environmental commitments in the Final EIS/EIR and the permit conditions are met during the final design and construction of the LPA. Metro will employ a dedicated environmental compliance manager to oversee construction contractor compliance with all stormwater BMPs, construction noise mitigation measures, utility coordination, business access requirements, and all other mitigation plans prepared for the LPA presented below.

#### **4.15.2 Construction Scenarios**

This section summarizes the durations of construction activities for tunnel and station construction including techniques and equipment, staging areas, and other construction elements under both the Concurrent Construction Scenario and the Phased Construction Scenario. In general, conventional construction techniques and equipment will be used, consistent with other similar projects in Southern California. This will include the use of pressurized-face TBM to excavate the tunnels.

The major LPA elements are tunnels, underground stations, station-related facilities, maintenance and operations yards and buildings, track work, ventilation equipment, and specialty systems such as traction power, communications, signaling equipment, and trains. The number of workers present at any one time on a particular site will vary depending on the activities being performed.

Table 4-60 provides an overview of the general sequence and approximate duration of construction activities. The approximate duration of construction activities for each element are approximately the same under both the Concurrent Construction Scenario and the Phased Construction Scenario. Under either construction scenario, portions of certain activities will be conducted at the same time as other activities. With the Concurrent Construction Scenario, a greater overlap of construction activities will occur since all three segments will be constructed concurrently. For example, relocation and support of underground utilities, station excavation and station construction could be concurrent at any individual station location.

Table 4-61 provides a summary of construction activities, including types of construction equipment to be used, volumes of soil and concrete, haul truck trips per day, and approximate range of workers required per day.

Construction durations are divided into three segments (Wilshire/Western to Wilshire/La Cienega, Wilshire/La Cienega to Century City, and Century City to Westwood/VA Hospital). These three segments can be constructed either concurrently under the Concurrent Construction Scenario or as sequential phases under the Phased Construction Scenario. Under either scenario, portions of activities will occur at the same time as other activities. Under the Concurrent Construction Scenario, a greater number of activities will overlap than with the Phased Construction Scenario because construction on all three segments will occur simultaneously. The construction schedule for the LPA under the Concurrent Construction Scenario and the Phased Construction Scenario is described below to illustrate the range in construction duration.

**Table 4-60. Generalized Sequence and Approximate Duration of Construction Activities**

| Activity <sup>1</sup>                      | Duration <sup>2</sup>  | Description   | Equipment Required   |
|--|--|---|--|
| Survey and Pre-construction                | 4 to 6 months  | Surveys and limited excavation  | Largely hand tools and small equipment   |
| Tunnel Construction <sup>3</sup>           | Approximately 8 to 12 months for a typical one-mile length between stations <sup>2</sup> | Excavation and tunnel lining  | TBM, slurry pumping and separation equipment, concrete equipment. Hauling equipment to remove spoil and bring in segments and tunnel supplies. |
| Underground Utilities                      | Approximately 18 to 24 months  | Locate, move and support utilities  | Hand tools and small excavation equipment  |
| Station Excavation                         | Approximately 1 year   | Support of excavation and cut-and-cover excavation  | Various excavation equipment, drilling equipment, slurry wall equipment and a crane  |
| Station Construction                       | Approximately 2 .5 years   | Form and place concrete structure, finish work, architectural and mechanical  | Hauling equipment to bring in ready mix concrete and building materials. Concrete form and placing equipment                                   |
| Street/Site Restorations                   | Approximately 4 months   | Paving and sidewalks  | Paving equipment   |
| Vent Shafts and Emergency Exits            | Approximately 12 months  | Shafts and cross-passages   | Crane and tunnel equipment   |
| Systems Installation and Facilities        | Approximately 2.5 years  | Installation of trackbed, rails, third rail (traction power); conduits for systems installations; electrical substations; and communications and signaling. | Crane, flatbed trucks, hand tools and small equipment, and rail welding equipment.   |
| Systems Testing and Pre-Revenue Operations | 5 to 6 months  | Testing of power, communications, signaling, and ventilation systems; training of operators and maintenance personnel                                       | Small equipment and rail vehicles  |

<sup>1</sup>Durations and activities shown are for one location (e.g., one station).

<sup>2</sup>Portions of activities will be conducted at the same time as other activities. For example underground utilities, station excavation and station construction will be concurrent at any individual station location.

<sup>3</sup>Tunnel excavation generally will range from 8 to 12 months for the typical one-mile length between stations, but will vary, depending on the ground conditions encountered, site and work area constraints, length of tunnel, and the number of TBMs used.



**Table 4-61. Construction Activity Summary**

| Phase      | Activity   | Construction Equipment |                |       |           |       |           |         | Soil (CY) | Concrete (CY) | Haul Truck Trips per Day | Workers per Day |        |
|------------|--|------------------------|----------------|-------|-----------|-------|-----------|---------|-----------|---------------|--------------------------|-----------------|--------|
|            |  | Haul Truck             | Concrete Truck | Dozer | Excavator | Crane | Drill Rig | Flatbed |           |               |                          |                 |        |
| Phases 1-3 | Pre-construction   |                        |                |       |           |       |           | ✓       | ✓         | N/A           | N/A                      | 5               | 10-20  |
|            | Site preparation   | ✓                      | ✓              | ✓     | ✓         | ✓     |           |         | ✓         | 1,000         | 1,000                    | 10-20           | 20-30  |
|            | Operating systems installation                             | ✓                      |                |       |           | ✓     |           |         | ✓         | N/A           | N/A                      | 2               | 20-30  |
| Phase 1    | TBM tunnel from Wilshire/Western to Wilshire/La Brea       | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 316,000       | Precast Segments         | 80-120          | 50-80  |
|            | TBM tunnel from Wilshire/La Brea to Wilshire/La Cienega    | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 251,000       | Precast Segments         | 80-120          | 50-80  |
|            | Access point at Wilshire/Western Station                   | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 12,000        | 1,000                    | 25-50           | 20-30  |
|            | Wilshire/La Brea Station (cut-and-cover with crossover)    | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 245,000       | 40,000                   | 60-100          | 70-150 |
|            | Wilshire/Fairfax Station (cut-and-cover)                   | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 184,000       | 34,000                   | 40-80           | 70-150 |
|            | Wilshire/La Cienega Station (cut-and-cover with crossover) | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 203,000       | 41,000                   | 40-80           | 70-150 |
| Phase 2    | TBM tunnel from Wilshire/La Cienega to Century City        | ✓                      | ✓              | ✓     | ✓         | ✓     |           |         | ✓         | 396,000       | Precast Segments         | 90-130          | 50-80  |
|            | Wilshire/Rodeo Station (cut-and-cover with crossover)      | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 224,000       | 37,000                   | 60-100          | 70-150 |
|            | Century City Station (cut-and-cover with crossover)        | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 296,000       | 48,000                   | 80-120          | 70-150 |
| Phase 3    | TBM tunnel from Century City to Westwood/VA Hospital       | ✓                      | ✓              | ✓     | ✓         | ✓     |           |         | ✓         | 333,000       | Precast Segments         | 100-140         | 50-80  |
|            | Westwood/UCLA Station                                      | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 207,000       | 37,000                   | 60-100          | 70-150 |
|            | GSA double crossover                                       | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 125,000       | 18,000                   | 60-100          | 70-150 |
|            | Westwood/VA Hospital Station (cut-and-cover)               | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 211,000       | 5,000                    | 40-60           | 70-150 |
|            | Emergency exit shaft—Westwood/VA Hospital                  | ✓                      | ✓              | ✓     | ✓         | ✓     | ✓         | ✓       | ✓         | 2,000         | 2,000                    | 25              | 20-30  |

### Construction Schedule for America Fast Forward (30/10) Scenario (Concurrent Construction)

Under the Concurrent Construction Scenario, the LPA will be constructed as a single phase from the Wilshire/Western Station to the Westwood/VA Hospital Station, with construction on all three segments occurring at the same time. Construction of the segment from the Wilshire/Western Station to the Wilshire/La Cienega Station is anticipated to start at the primary tunnel mining location (possibly at the Wilshire/La Brea Station) and also at the Wilshire/Fairfax Station. Construction is expected to take about 8 to 9 years for the Wilshire/Western to Wilshire/La Cienega segment. Early, pre-construction activities will focus on utility relocations and on the paleontological deposit areas at Fairfax and La Brea and include implementation of mitigation measures PA-2 to PA-7 (see Section 4.14.6) to avoid and minimize impacts to paleontological resources in these areas.

Construction of the Wilshire/La Cienega to Century City segment will be largely dependent on the station and alignment scenario chosen. Construction of the Century City to Westwood/VA Hospital segment is expected to take approximately 5 to 9 years. By staging the tunnel excavation operation from the Westwood/VA Hospital Station to excavate east to the Century City Station, this segment of tunnel and station construction will be able to proceed independently of any effect of work timing for the other two segments.

Together the aforementioned segments constitute the LPA, which could be constructed within a time-span of approximately 11 years (including pre-construction activities) if all work is concurrently scheduled.



Figure 4-66. Construction Schedule under Concurrent Construction Scenario

Selection of the location of the Century City, Westwood/UCLA and Westwood/VA Hospital Station location will not generally change the duration of construction. Tunnel excavation generally will range from 8 to 12 months for the typical 1-mile length between stations, but will vary, depending on the ground conditions encountered, site and work area constraints, length of tunnel, and the number of TBMs used.

### **Construction Schedule for Metro Long Range Transportation Plan Scenario (Phased Construction)**

Under the Phased Construction Scenario, the LPA will be constructed in three sequential construction phases. The three phases are the same as the three segments identified in the Concurrent Construction Scenario, and therefore the general construction activities are the same in either scenario. The only major difference between the two scenarios is that the overall construction timeline is longer under the Phased Construction Scenario since construction activities will not overlap for the most part. Under this scenario, the LPA will open in three phases as construction on each phase is complete. The LPA will open in its entirety in 2036. A detailed description of activities during each construction phase is provided in Appendix E, Construction Methods.

#### **Phase 1 to Wilshire/La Cienega**

Phase 1 will extend from the Wilshire/Western Station to the Wilshire/La Cienega Station and will be constructed in the same manner as under the Concurrent Construction Scenario. Construction on Phase 1 will commence in 2013 and be completed in 2020 with Phase 1 opening for operation in 2020.

TBMs will be launched from the Wilshire/La Brea Station and will excavate both eastward toward the Wilshire/Western Station and westward toward the Wilshire/La Cienega Station. In addition, a slurry processing plant and other TBM support facilities will be constructed at the laydown and storage sites for the Wilshire/La Brea Station.

Early pre-construction activities along Phase 1 will focus on utility relocations and on the paleontological deposit areas at Fairfax and La Brea and include implementation of mitigation measures PA-2 through PA-7 (see Section 4.14.6) to avoid and minimize impacts to paleontological resources in these areas.

#### **Phase 2 to Century City**

Phase 2 will extend from the Wilshire/La Cienega Station to the Century City Station. Phase 2 construction will begin in 2019 and be completed in 2026 with Phase 2 opening for operation in 2026. Construction on Phase 2 will commence prior to the completion of Phase 1, but Phase 2 construction will be conducted separately.



\*Dates for Phase 2 and 3 illustrate the schedule should no funding be secured under the various accelerated funding initiatives. Should partial funding be secured, the construction on Phase 2 and Phase 3 would begin earlier, allowing Phase 2 to open between 2022 and 2026 and Phase 3 to open between 2022 and 2035.

**Figure 4-67. Construction Schedule under Phased Construction Scenario**

TBMs will be launched from the Century City Station (either Santa Monica or Constellation). The TBMs will tunnel eastward toward the Wilshire/La Cienega Station, which will have been completed as part of Phase 1.

#### **Phase 3 to Westwood/VA Hospital**

Phase 3 will extend from the Century City Station to the Westwood/VA Hospital Station. Phase 3 construction will begin in 2029 and be completed in 2036. With the completion of Phase 3, the LPA will be open for operation in its entirety in 2036. Construction of Phase 3 will commence several years after completion of Phase 2. Therefore, Phase 3 will be a stand-alone project with no interfaces with construction of Phase 1 and Phase 2.



**Figure 4-68. Pressurized-Face Tunnel Boring Machine**

TBMs will be launched from the Westwood/VA Hospital Station and tunnel eastward toward the Century City Station, which will have been completed as part of Phase 2.

#### **Tunnel Construction**

Tunnels will be constructed using TBMs, large-diameter horizontal “drills” that continuously excavate circular tunnel sections (Figure 4-68).

The TBM will excavate two parallel tunnels (22-foot diameter) similar to the twin tunnels excavated for the Metro Eastside Extension (Figure 4-69).





**Figure 4-69. Twin Tunnels on Eastside Extension**

Both the ground in front of the machine and the horizontal “hole” it creates are continuously supported by the TBM pressurized face, shield, and pre-cast concrete tunnel liners that are installed as the machine progresses. This method creates a tunnel with little or no disruption at the surface and reduces risk of settlement. The TBM technology allows the tunnel lining to be installed concurrently with the excavation and without lowering groundwater levels. Excavated materials are removed through the tunnel to the shaft area (station excavation) and brought to the surface for disposal off-site, typically in a landfill or re-used for fill material.

Where hazardous hydrocarbons and/or gases are expected to be encountered, it is likely that a slurry-face TBM will be required (Figure 4-70) though earth pressure balanced (EPB) machines may also be suitable. Slurry-face TBMs use a fully enclosed system to transport excavated soil to the surface. Bentonite slurry is pumped through pipelines to the TBM’s pressurized face, and soil cuttings are suspended in the slurry and removed through the return slurry lines. A treatment plant is set up at the surface to separate slurry from soil cuttings so that the

slurry can be recycled and the soil cuttings transported to a disposal site. The American Public Transportation Association Peer Review of tunneling from 2005 concluded that: “It is possible to tunnel and operate a subway along the Wilshire Corridor safely” using these new technologies. Where there is no known hazardous ground conditions, either a slurry-face or earth-pressure balance TBM could be used (refer to Section 4.8 for additional discussion of gassy ground conditions).

Tunnel excavation generally will range from 8 to 12 months for the typical one-mile length between stations, but will vary, depending on the

ground conditions encountered, site and work area constraints, length of tunnel, and the number of TBMs used.

The excavated material (for tunnel and station construction) is brought to the surface, stockpiled, and then hauled away by trucks to suitable disposal sites. The routes and times of hauling will be approved by local city departments of transportation beforehand, and the public will be notified according to the public involvement plan.

---

### Typical steps for tunneling

Prepare site and excavate shaft or stations where TBMs are lowered into ground

Lower TBMs using cranes

Assemble TBMs and tailing equipment

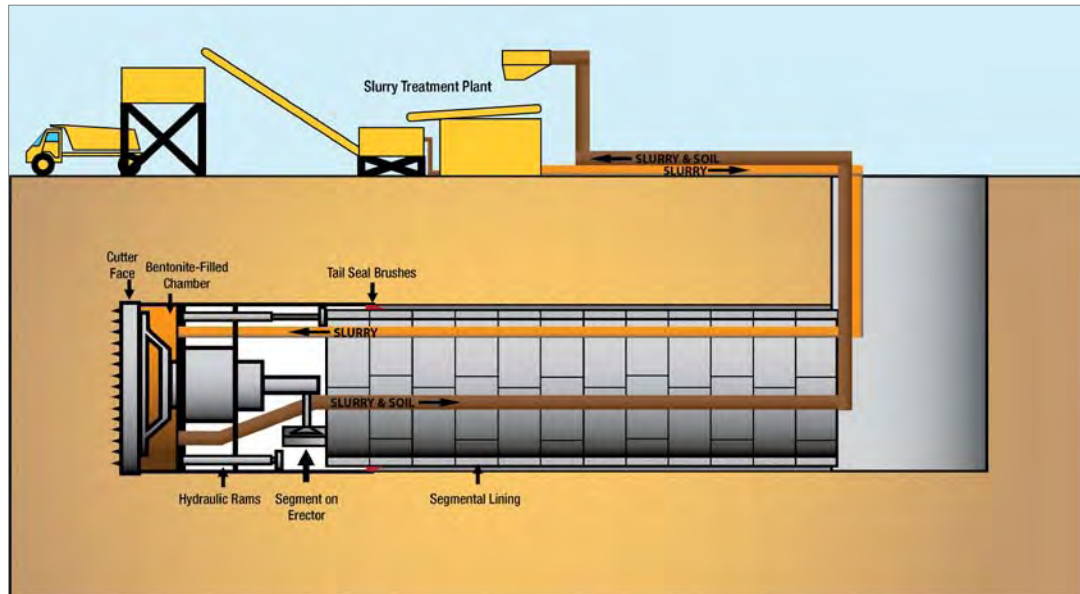
Excavate two parallel tunnels (22 ft. diameter)

Install pre-cast concrete tunnel lining with gasket seals

Install rails, electrical and other systems

Boring can proceed on each tunnel simultaneously; machines can excavate about 40 to 50 feet per day

---



**Figure 4-70. Tunneling in Gassy Areas with Pressure Face TBM**

Cross-passages between adjacent tunnels will be constructed to connect tunnels at intervals of about every 800 feet. These openings would be excavated using small excavating equipment, such as backhoes, and subsequently concreted. Before exposing the ground, particularly where water or gas would be encountered, a tight seal of improved soils (using grout freezing or other soil improvements) would typically be installed around the area to be excavated.

Individually, ground conditions would dictate the method and detail of preparing the cross-passage sites for excavation. Ground treatment for cross passages often includes drilling and grouting from above the tunnels at the street surface. Although surface drilling is often more disruptive to surface activities, it may provide for greater control.

### Tunneling in gassy areas

Pressure face TBMs isolate gas from workers and public

Gassy soil and tar separated and treated appropriately

Enhanced ventilation system ensures tunnel and station safety

Double gaskets for tunnel lining or other methods used as appropriate

### Station Construction

Cut-and-cover construction is planned for all stations. With the exception of the Westwood/VA Station, stations will be constructed within the street right-of-way. Some station entrance points and construction staging areas will be outside the street right-of-way and will require removal of buildings. A typical cut-and-cover station excavation and construction sequence is illustrated in Figure 4-71. Underground station construction will take roughly 72 to 84 months from start of excavation to backfilling over the station and street restoration.

The typical on-street station construction process involves: 1) relocation of utilities as necessary to maintain service; 2) drilling “soldier piles” on station box perimeter at edge of the roadway; 3) removal of the top six to twelve feet of soil below the existing roadway; 4) installation of a decking across the roadway; 5) installation of shoring and excavation of the area beneath the deck to the depth of the station; 6) construction of the station box

in the excavated area; 7) installation of station elements and architectural features; and 8) backfilling over the station box, removal of decking, repaving of streets, and re-opening of streets to traffic. A typical street excavation is shown in Figure 4-72. Figure 4-73 shows the typical concrete decking that will be flush with the existing street level so that traffic can continue to flow. Construction will continue below the decking (Figure 4-74). Typical off-street station construction involves a similar process; however, the decking is not required (Figure 4-75).

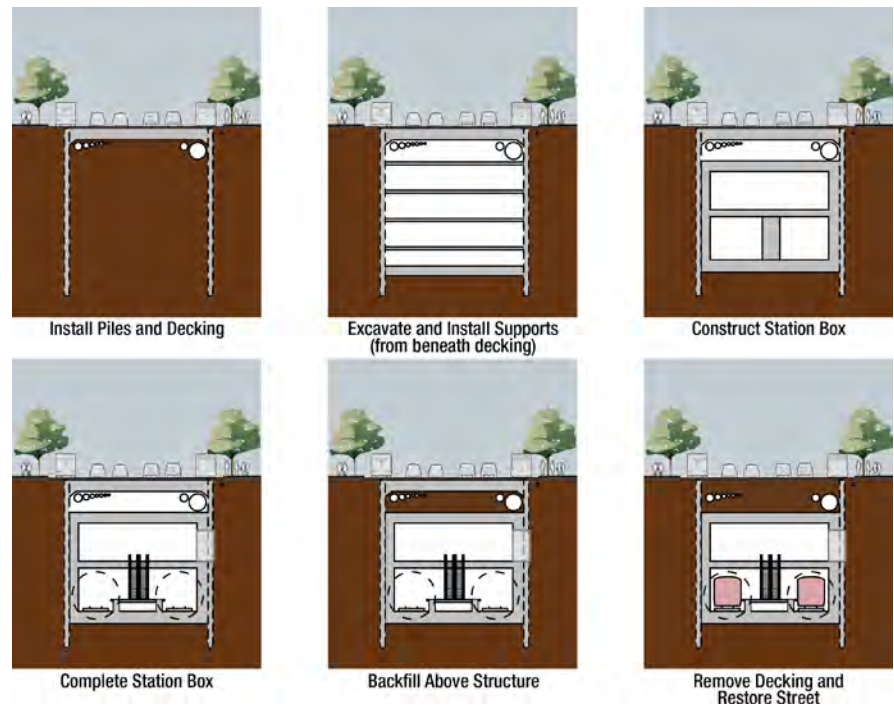


Figure 4-71. Typical Cut-and-Cover Construction Sequence



Figure 4-72. Typical Street Excavation



Figure 4-73. Concrete Decking on Street





**Figure 4-74. Construction Activities below Concrete Decking**



**Figure 4-75. Off-Street Station Box Excavation**

In areas where gas is present, such as the Wilshire/Fairfax Station, initial support for the station walls could require a less permeable wall system such as slurry walls or secant pile walls (Appendix E, Construction Methods). Equipment for excavation of slurry walls includes specialized excavation equipment such as hydromills (large trenching

machines) or clamshell-type buckets to remove soil as well as slurry mixing tanks and processing equipment.

### Staging Areas

Contractor staging areas (also referred to as “laydown areas”) will be necessary for tunnel construction, stations, and ancillary facilities. Off-street space will be needed for setup, insertion, operation, and extraction of equipment and materials to the tunnel and station excavations (Figure 4-76). Construction staging areas are described in the *Westside Subway Extension Real Estate and Acquisitions Technical Report* (Metro 2010c), the *Westside Subway Extension Acquisitions and Displacement Supplemental Report* (Metro



**Figure 4-76. Off-Street Construction Area on Metro's Eastside Extension**

2011c), and Chapter 2, Project Description, and Appendix C, Acquisitions. It is important to note that several construction staging site alternatives are under consideration at a few station locations and are evaluated in this Final EIS/EIR. Selection of the construction staging site will consider where the station entrances could be co-located, environmental impacts, and cost, as well as other factors. The decision will be made by the Metro Board of Directors following the circulation and public review of this Final EIS/EIR.





**Figure 4-77. On Street Construction Area Used for 7th/Metro Station**

Work areas to support tunnel excavation operations, including processing and removing tunnel spoils, handling precast concrete tunnel-lining segments, and tunnel utilities (such as ventilation, water supply, wastewater removal, and power supply) will be needed. In-street work areas will only be used when no off-street alternative exists (Figure 4-77). Temporary easements, typically a portion of the sidewalk, traffic lanes, and/or parking areas, may be required at various locations for staging or for construction, particularly of station emergency exits and air intake and discharge structures.

### Other Construction Elements

In addition to the primary system features of tunnels and stations, there are common elements: building-protection measures, such as underpinning or ground improvement to protect structures; relocation, modification, or protection of utilities; removal or

#### Construction Staging Areas

Requires up to 3 acres for a typical TBM site, and unless on Metro-owned property, the area is usually leased for time needed.

Off-street location immediately adjacent to station box preferred

On-street staging possible where sites not available, but not desirable due to cost and disruption to traffic.

relocation of structures at construction staging sites and station entrances; surface and subsurface drainage systems; traction power substations with electrical power feeds; track work, ventilation, traction power, communications, and signaling systems for train operations; emergency (backup) power systems; station finishes, including fare vending equipment, elevators, escalators, landscaping, signage, and other necessary amenities; urban design enhancements around station entrances; system integration testing and simulated revenue operation test runs; and final commissioning of the system.

The time necessary for each activity will vary, depending on the amount of tunneling required and the number of stations. Other factors will include the number and type of utilities requiring

relocation, subsurface conditions, and the location and condition of nearby surface and subsurface structures.

### 4.15.3 Construction Impacts

The No Build Alternative would not have a project construction component and would not result in any construction impacts. Therefore, this section focuses on the construction impacts of the LPA, including all station, alignment, and station entrance options under both the Concurrent Construction Scenario and the Phased Construction Scenario.

Section 3.8 discusses transportation-related construction impacts, including impacts to traffic, circulation, and parking. This chapter examines construction impacts for resource areas discussed in Chapter 4 (Table 4-62). Environmental justice and safety and security are discussed separately in Section 4.2.6 and Section 4.12, respectively.



Displacement and relocation of existing uses are discussed in this section as they relate to construction land use and community impacts, but displacements themselves are considered a long-term impact and are discussed in Section 4.2.2. For a more detailed analysis of construction-related impacts and proposed mitigation for any of the resource areas listed in Table 4-62, see the related technical reports and their addendums.

Under the Concurrent Construction Scenario and the Phased Construction Scenario, overall construction impacts resulting from construction of the LPA will be very similar because the necessary construction activities will generally be the same. The major difference between the two scenarios is the timing of construction activities and, therefore, the duration of the construction impacts. Under the Phased Construction Scenario, construction activities will be spaced over a longer period of time—from 2013 to 2036, which will result in a longer overall duration for any construction impacts. Under the Concurrent Construction Scenario, all construction activities will occur between the 2013 and 2022. For some resource areas, such as air quality, the phased construction approach will result in a reduction in the intensity of impacts at a given point in time as construction activities will not occur concurrently. However, most resource areas discussed in the following sections will not see a substantial difference in overall impacts during construction of the LPA, whether or not it is constructed in phases.

### **Traffic, Circulation, and Parking**

Refer to Chapter 3, Transportation, for construction impacts related to traffic, circulation and parking.

### **Land Use and Development**

Prior to construction, Metro will acquire several parcels for construction staging and station entrances. Parcels acquired for construction staging could be left vacant for a period of time before construction begins. After construction is completed, these parcels will be available for development, offering a future opportunity for transit-oriented development. In addition to the parcels Metro will acquire for construction staging, a number of parcels will be used temporarily for construction staging but will not be acquired by Metro.

Construction staging and construction activities 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, Alternatives Considered, and in Appendix C, Acquisitions. The approximate sizes of construction staging areas are as follows:

- Four station construction sites, each approximately one to two acres, located at the Wilshire/Fairfax, Wilshire/La Cienega, Wilshire/Rodeo, and Westwood/UCLA Stations. If the LPA is constructed under the Phased Construction Scenario, the Wilshire/Fairfax and Wilshire/La Cienega Stations are located along Phase 1; the Wilshire/Rodeo Station is located along Phase 2; and the Westwood/UCLA Station is located along Phase 3.

**Table 4-62. Construction-related Impacts Remaining after Mitigation**

| Resource Area Affected during Construction | Concurrent Construction Scenario | Phased Construction Scenario |         |         |
|--|----------------------------------|------------------------------|---------|---------|
|  |                                  | Phase 1                      | Phase 2 | Phase 3 |
| Land Use and Development                   | ▮                                | ▮                            | ▮       | ▮       |
| Community and Neighborhoods                | ▮                                | ▮                            | ▮       | ▮       |
| Visual and Aesthetics                      | ▮                                | ▮                            | ▮       | ▮       |
| Air Quality                                |                                  |                              |         |         |
| Emissions                                  | ●                                | ●                            | ●       | ●       |
| Particulate Matter                         | ▮                                | ▮                            | ▮       | ▮       |
| Gas  | ▮                                | ▮                            | ▮       | ▮       |
| Odor                                       | ▮                                | ▮                            | ▮       | ▮       |
| Climate Change                             | ○                                | ○                            | ○       | ○       |
| Noise                                      | ●                                | ●                            | ●       | ●       |
| Vibration                                  | ▮                                | ▮                            | ▮       | ▮       |
| Energy                                     | ○                                | ○                            | ○       | ○       |
| Geological Hazards                         |                                  |                              |         |         |
| Seismic and Liquefaction                   | ○                                | ○                            | ○       | ○       |
| Subsidence and Settlement due to Tunneling | ▮                                | ▮                            | ▮       | ▮       |
| Hazardous Subsurface Gas                   | ▮                                | ▮                            | ▮       | ▮       |
| Hazardous Waste and Materials              | ▮                                | ▮                            | ▮       | ▮       |
| Ecosystems/Biological Resources            | ▮                                | ▮                            | ▮       | ▮       |
| Water Resources                            |                                  |                              |         |         |
| Water Supply                               | ○                                | ○                            | ○       | ○       |
| Groundwater                                | ▮                                | ▮                            | ▮       | ▮       |
| Drainage                                   | ▮                                | ▮                            | ▮       | ▮       |
| Water Quality                              | ▮                                | ▮                            | ▮       | ▮       |
| Parks and Community Facilities             | ▮                                | ▮                            | ▮       | ▮       |
| Economic and Fiscal                        |                                  |                              |         |         |
| Construction-related Economic Loss         | ▮                                | ▮                            | ▮       | ▮       |
| Construction-related Employment            | ○                                | ○                            | ○       | ○       |

- Temporary adverse effect/temporary significant impact remaining after mitigation
- ▮ Temporary adverse effect/temporary significant impact prior to mitigation, reduced to less-than-significant levels with mitigation
- No temporary adverse effects/no temporary significant impacts

- Three combined TBM launch and station construction sites, each approximately three acres, located at the Wilshire/La Brea, Century City, and Westwood/VA Hospital Stations. If the LPA is constructed under the Phased Construction Scenario, the Wilshire/La Brea Station site is located along Phase 1; the Century City Station site is located along Phase 2; and the Westwood/VA Hospital Station site is located along Phase 3.
- Two additional construction staging sites to support construction activities, each approximately one acre, located at the existing Wilshire/Western Station and in the Wilshire/Crenshaw vicinity. If the LPA is constructed under the Phased Construction Scenario, both of these sites are located along Phase 1.

Existing land uses in the station areas is detailed in Section 4.1 and the land uses of the parcels to be acquired is detailed in Section 4.2. The total number of acquisitions for the LPA is summarized in Table 4-63. If the LPA is constructed under the Phased Construction Scenario, acquisitions will occur before the start of construction for each phase.

**Table 4-63. Acquisitions, Easements, and Job Losses Associated with the LPA**

| Phase                                   | Affected Parcels |                    |                                 |  | Number of Job Losses |
|---|------------------|--------------------|---------------------------------|--|----------------------|
|   | Full Acquisition | Permanent Easement | Temporary Construction Easement | Permanent Underground Easements by Property <sup>1</sup> |                      |
| <b>Concurrent Construction Scenario</b> |                  |                    |                                 |  |                      |
| Entire LPA                              | 35-57            | 3-10               | 6-12                            | 93-137   | 231-279              |
| <b>Phased Construction Scenario</b>     |                  |                    |                                 |  |                      |
| Phase 1                                 | 30-32            | 1-2                | 1                               | 1  | 208-210              |
| Phase 2                                 | 5-25             | 1-4                | 0-4                             | 6-32   | 23-69                |
| Phase 3                                 | 0                | 1-4                | 5-7                             | 89-104   | 0                    |

Source: TAHA, 2011

<sup>1</sup>Property = Condominium units in the same building counted as a single property

Land use impacts during construction will be considered significant if the construction of the LPA 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

**America Fast Forward (30/10) Scenario (Concurrent Construction)**

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 LPA will be reduced during construction due to these closures and traffic detours; however, these impacts will end with the completion of construction. This will be a temporary adverse impact. The mitigation measures identified in Chapter 3, Transportation, will ensure that traffic and pedestrian circulation and access will be maintained throughout construction. Therefore with implementation of mitigation measures, construction activities will not result in the physical division of established communities.

The applicable land use plans, policies, and regulations of local agencies are detailed in Section 4.1. The construction of the LPA, including all station, alignment, and station entrance options still under consideration, will not directly conflict with the identified land use plans, policies, and regulations.

The existing adjacent and surrounding land uses in the station vicinities are described in Section 4.1. Parcels to be acquired for construction staging are primarily currently commercial or vacant/parking properties. The acquisition of these parcels will require the demolition of any existing structures on the properties to accommodate planned construction activities. Since approximately 25 percent of these properties are currently vacant/parking, the use of these properties for construction activities will not substantially alter land uses in the station area vicinity.

Following construction, these parcels will increase the opportunity for development in station areas. These parcels will affect the inventory of existing vacant land and parking areas, land uses that can be characterized as developable at some future date. Because these parcels will be Metro-owned and adjacent to station areas, they will create additional opportunity for transit-oriented development. Metro's role in the ownership of these parcels will be limited to that of a property owner and the parcels will be subject to the land use controls of the local jurisdictions. Depending on the station entrance selected for implementation, some station entrances will present more joint-development opportunities than others and was a factor in developing the recommendations for station entrance locations.

### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

The analysis of potential construction impacts on land use is provided in the Concurrent Construction Scenario discussion above. The construction of Phase 1, Phase 2, and Phase 3 will result in a temporary adverse impact related to the physical division of established communities due to temporary street and sidewalk closures and traffic detours. The mitigation measures identified in Chapter 3, Transportation, will ensure that traffic and pedestrian circulation and access will be maintained throughout construction of all three phases. Therefore with implementation of these mitigation measures, construction activities during Phase 1, Phase 2, and Phase 3 will not result in the physical division of established communities.

The applicable land use plans, policies, and regulations of local agencies are detailed in Section 4.1. The construction of Phase 1 and Phase 2 will not directly conflict with the identified local land use plans, policies, and regulations of the Cities of Los Angeles and Beverly Hills. Phase 3 will not directly conflict with the identified local land use plans, policies, and regulations of the City of Los Angeles and the County of Los Angeles.



The existing adjacent and surrounding land uses in the station vicinities are described in Section 4.1. Parcels to be acquired for construction staging along all three phases are primarily currently commercial or vacant/parking properties. The acquisition of these parcels will require the demolition of any existing structures on these properties to accommodate planned construction activities. Approximately 34 percent of the parcels to be acquired as part of Phase 1 (including Division 20) and 25 percent of the parcels to be acquired as part of Phase 2 are currently vacant/parking. No properties will be permanently acquired as part of Phase 3. Therefore, the use of these properties for construction activities will not substantially alter land uses in the station area vicinity.

### **Mitigation Measures**

See mitigation measures TCON-1, TCON-10 and TCON-11. The mitigation measures will be the same whether the LPA is constructed under the Concurrent Construction Scenario or under the Phased Construction Scenario.

### **Community and Neighborhoods**

The existing characteristics of the Study Area communities and neighborhoods are discussed in Section 4.2. Many of the neighborhoods are characterized by retail and commercial uses along Wilshire Boulevard with primarily single-family residential uses beyond Wilshire Boulevard to the north and south.

Community and neighborhood impacts during construction will be considered significant if the construction of the LPA 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

### **America Fast Forward (30/10) Scenario (Concurrent Construction)**

The physical division of communities is discussed and evaluated in the above Land Use section. As stated above, with mitigation measures, construction activities will not result in the physical division of established communities. It also will not result in the social or psychological division of an established community.

Spillover traffic as a result of temporary street closures due to construction activities and haul truck routes have the potential to affect the residential character of the neighborhoods north and south of Wilshire and Santa Monica Boulevards. As mitigation, Metro will develop site-specific traffic-control plans, an overall transportation management plan, and designated haul routes that will use arterial streets and avoid residential neighborhoods (where feasible) during noise restriction hours and special events. These measures are described in Chapter 3, Transportation.

In addition, street closures are expected to impact mobility and access to community facilities, as much of the construction activity will be centered on Wilshire Boulevard, which is a central point of access for the neighborhoods. As a result, it could be more difficult to access some community resources such as churches and museums along Wilshire and Santa Monica Boulevards. In addition to temporary street and sidewalk closures, construction activities will also reduce on-street and off-street parking. This could affect access to and profitability of existing businesses as customers may choose to

avoid ongoing construction. The mitigation measures identified in Chapter 3, Transportation, will ensure that traffic and pedestrian circulation and access will be maintained throughout construction and that adequate parking is available.

The displacement of community assets or institutions during construction is discussed below in the Parks and Community Facilities section.

With implementation of these mitigation measures, construction-related adverse effects will be reduced for adjacent communities and neighborhoods.

### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

The analysis of the potential for construction impacts on community and neighborhoods is provided in the Concurrent Construction Scenario discussion above. As stated in the Land Use section, with mitigation measures, construction activities for Phase 1, Phase 2, and Phase 3 will not result in the physical division of established communities. These activities also will not result in the social or psychological division of an established community. With implementation of the mitigation measures outlined in Chapter 3, Transportation, the construction of Phase 1, Phase 2, and Phase 3 will not affect access to community facilities. The displacement of community assets or institutions during construction is discussed below in the Parks and Community Facilities section. With implementation of the mitigation measures listed below, construction-related adverse effects will be reduced for adjacent communities and neighborhoods during construction of Phase 1, Phase 2, and Phase 3.

### **Mitigation Measures**

Metro will develop and implement a community outreach plan to notify local communities of construction schedules, road and sidewalk closures, and detours.

#### ■ **CON-1—Signage**

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

See mitigation measures TCON-1, TCON-2, TCON-3, T-CON-4, TCON-7, TCON-8, TCON-10 and TCON-11. The mitigation measures will be the same whether the LPA is constructed under the Concurrent Construction Scenario or under the Phased Construction Scenario.

### **Visual and Aesthetics**

The existing visual character at station and staging areas is described in Section 4.3. Overall, the station and staging areas are located in visual settings that include a combination of residential, commercial, transportation and utilities, industrial, and public/institutional buildings of varied height and scale. Residences are the primary land use with commercial buildings concentrated along major roadways.

Construction activities, at station and staging areas and the selected maintenance and operations facility, may introduce considerable heavy equipment such as cranes and associated vehicles, bulldozers, backhoes, graders, scrapers, and trucks, as well as erosion-control devices, excavated materials, and new lighting sources into the view corridor of public streets, sidewalks, and properties. In addition, mature vegetation,



including trees, will be removed from some areas. The Wilshire/Fairfax Station and the Wilshire/La Brea Station may require raised decking for station construction to minimize impacts to paleontological resources. If the LPA is constructed under the Phased Construction Scenario, the Wilshire/Fairfax and Wilshire/La Brea Stations will be located along Phase 1.

Visual impacts during construction will be considered significant if the construction of the LPA 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

#### **America Fast Forward (30/10) Scenario (Concurrent Construction)**

Views of construction staging activities may be possible from residential land uses on some of the adjacent parcels, either directly through fencing, through entrance gates, or over fencing from second story and higher windows. Construction of some station entrances will be more visible from residential areas than others. 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. If not screened from view, construction staging activities could temporarily affect adjacent viewers at all station and staging areas.

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.

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 adverse effect.

The current estimate for the cut-and-cover station construction is 72 to 84 months. The primary visual impact to the local neighborhood will be associated with the time it takes to install piles and decking for the station box support system, visible for a three-to-four-month period. Construction of the station will continue while traffic travels on the decking so visual impacts during this period will be reduced.

During the construction period, these visual elements will temporarily degrade the physical character of the station and staging areas and will result in an adverse effect without mitigation. With the implementation of the mitigation measures below, no adverse impact will remain.

Construction activities at the selected maintenance yard will introduce considerable heavy equipment and associated vehicles, including bulldozers, graders, scrapers, and trucks, into the views to and from the sites. However, due to the limited duration of construction and the low visual quality of the sites, construction visual impacts at the



maintenance yard will be minimal and no mitigation will be required for the maintenance yard.

### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

The analysis of the potential for construction-related visual impacts is provided in the Concurrent Construction Scenario discussion above. If not screened from view, construction staging activities could temporarily affect adjacent viewers at all station and staging areas along Phase 1, Phase 2, and Phase 3 of the LPA.

The introduction of heavy construction equipment, stockpiled construction-related materials, erosion-control devices, excavated materials, and the removal of trees in these primarily commercial and residential areas will conflict with the existing visual character and will change visual quality along Phase 1, Phase 2, and Phase 3 of the LPA.

The lighting of the construction staging areas at night will create a new light source. If not mitigated, this will be a temporary adverse effect along Phase 1, Phase 2, and Phase 3 of the LPA.

During the construction period, these visual elements will temporarily degrade the physical character of the station and staging areas and will result in an adverse effect without mitigation. With implementation of the mitigation measures described below, no adverse impact will remain along Phase 1, Phase 2, and Phase 3 of the LPA.

### **Mitigation Measures**

To ensure impacts related to construction activities are minimized, the following mitigation measures will be implemented:

#### ■ **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 to reduce visual effects on adjacent viewers.



The mitigation measures will be the same whether the LPA is constructed under the Concurrent Construction Scenario or under the Phased Construction Scenario.

### **Air Quality**

The assessment of the air quality construction impacts used factors from the California Air Resources Board's Urban Emissions Model (URBEMIS), the Road Construction Emissions Model, Version 6.3.2 (RCEM) developed by the Sacramento Metropolitan Air Quality Management District, and SCAQMD's OFFROAD 2007 emission factors.

Based on CEQA guidelines, the significance criteria established by the applicable air quality management or air pollution control district, in this case SCAQMD, may be relied upon to make the following determinations. CEQA also considers that a project would result in significant impacts if it 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.

As the construction is at set locations along the LPA alignment, construction emissions were estimated for each major construction element and for the entire Study Area. Daily emissions for each construction element for each scenario are shown in Table 4-64 and Table 4-65, along with the estimated construction daily emissions for the entire Project, assuming that each emission source will occur during the same peak period. The results in Table 4-64 and Table 4-65 reflect the highest daily emission levels for each activity. The totals presented in this table reflect the highest daily emissions for all activities combined; therefore, the peak total emissions may not add up to the total of each activity presented since their peaks may occur on different days.

### **Emissions**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

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.

## Chapter 4—Environmental Analysis, Consequences, and Mitigation

As shown in Table 4-64, SCAQMD thresholds will be exceeded for all pollutants when the total Concurrent Construction Scenario 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 LPA area.

**Table 4-64. Estimated Construction Impacts for Concurrent Construction Scenario Construction Elements (pounds/day)**

| Activity   | VOC        | CO          | NO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
|--|------------|-------------|-----------------|------------------|-------------------|
| <b>Typical Station with a TBM entry/exit site, such as Wilshire/La Brea Station</b>    |            |             |                 |                  |                   |
| Construction Equipment   | 74         | 164         | 406             | 18               | 18                |
| Dust Generated from Dirt Handling (Excavation, Backfilling, etc.)                      |            |             |                 | 138              | 29                |
| Mobile Sources (Deliveries, worker trips, hauling of material, etc.)                   | 5          | 48          | 50              | 3                | 3                 |
| <b>Total</b>   | <b>77</b>  | <b>194</b>  | <b>436</b>      | <b>195</b>       | <b>42</b>         |
| <b>SCAQMD Thresholds</b>   | <b>75</b>  | <b>550</b>  | <b>100</b>      | <b>150</b>       | <b>55</b>         |
| <b>Typical Station without a TBM entry/exit site, such as Wilshire/Fairfax Station</b> |            |             |                 |                  |                   |
| Construction Equipment   | 28         | 102         | 137             | 7                | 7                 |
| Dust Generated from Dirt Handling (Excavation, Backfilling, etc.)                      |            |             |                 | 64               |                   |
| Mobile Sources (Deliveries, worker trips, hauling of material, etc.)                   | 3          | 36          | 29              | 2                | 2                 |
| <b>Total</b>   | <b>31</b>  | <b>135</b>  | <b>162</b>      | <b>72</b>        | <b>22</b>         |
| <b>SCAQMD Thresholds</b>   | <b>75</b>  | <b>550</b>  | <b>100</b>      | <b>150</b>       | <b>55</b>         |
| <b>Maintenance Facility</b>  |            |             |                 |                  |                   |
| Construction Equipment   | 26         | 98          | 221             | 9                | 8                 |
| Dust Generated from Dirt Handling (Excavation, Backfilling, etc.)                      |            |             |                 | 53               | 11                |
| Mobile Sources (Deliveries, worker trips, hauling of material, etc.)                   | 1          | 31          | 4               | 1                | 1                 |
| <b>Total</b>   | <b>27</b>  | <b>129</b>  | <b>225</b>      | <b>63</b>        | <b>20</b>         |
| <b>SCAQMD Thresholds</b>   | <b>75</b>  | <b>550</b>  | <b>100</b>      | <b>150</b>       | <b>55</b>         |
| <b>Concurrent Construction Scenario</b>  |            |             |                 |                  |                   |
| <b>Total</b>   | <b>236</b> | <b>1054</b> | <b>1679</b>     | <b>709</b>       | <b>203</b>        |
| <b>SCAQMD Thresholds</b>   | <b>75</b>  | <b>550</b>  | <b>100</b>      | <b>150</b>       | <b>55</b>         |

Total construction emissions assumes that each emission source will occur during the same peak period, which is highly unlikely; therefore, the peak total emissions may not add up to the total of each activity presented since their peaks may occur on different days.



**Table 4-65. Estimated Construction Impacts for Phased Construction Scenario  
Construction Elements (pounds/day)**

| Activity   | VOC        | CO         | NO <sub>x</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
|--|------------|------------|-----------------|------------------|-------------------|
| <b>Typical Station with a TBM entry/exit site, such as Wilshire/La Brea Station</b>    |            |            |                 |                  |                   |
| Construction Equipment   | 74         | 164        | 406             | 18               | 18                |
| Dust Generated from Dirt Handling<br>(Excavation, Backfilling, etc.)                   |            |            |                 | 138              | 29                |
| Mobile Sources (Deliveries, worker trips,<br>hauling of material, etc.)                | 5          | 48         | 50              | 3                | 3                 |
| <b>Total</b>   | <b>77</b>  | <b>194</b> | <b>436</b>      | <b>195</b>       | <b>42</b>         |
| <b>SCAQMD Thresholds</b>   | <b>75</b>  | <b>550</b> | <b>100</b>      | <b>150</b>       | <b>55</b>         |
| <b>Typical Station without a TBM entry/exit site, such as Wilshire/Fairfax Station</b> |            |            |                 |                  |                   |
| Construction Equipment   | 28         | 102        | 137             | 7                | 7                 |
| Dust Generated from Dirt Handling<br>(Excavation, Backfilling, etc.)                   |            |            |                 | 64               |                   |
| Mobile Sources (Deliveries, worker trips,<br>hauling of material, etc.)                | 3          | 36         | 29              | 2                | 2                 |
| <b>Total</b>   | <b>31</b>  | <b>135</b> | <b>162</b>      | <b>72</b>        | <b>22</b>         |
| <b>SCAQMD Thresholds</b>   | <b>75</b>  | <b>550</b> | <b>100</b>      | <b>150</b>       | <b>55</b>         |
| <b>Maintenance Facility</b>  |            |            |                 |                  |                   |
| Construction Equipment   | 26         | 98         | 221             | 9                | 8                 |
| Dust Generated from Dirt Handling<br>(Excavation, Backfilling, etc.)                   |            |            |                 | 53               | 11                |
| Mobile Sources (Deliveries, worker trips,<br>hauling of material, etc.)                | 1          | 31         | 4               | 1                | 1                 |
| <b>Total</b>   | <b>27</b>  | <b>129</b> | <b>225</b>      | <b>63</b>        | <b>20</b>         |
| <b>SCAQMD Thresholds</b>   | <b>75</b>  | <b>550</b> | <b>100</b>      | <b>150</b>       | <b>55</b>         |
| <b>Phase 1</b>   |            |            |                 |                  |                   |
| <b>Total</b>   | <b>134</b> | <b>544</b> | <b>809</b>      | <b>198</b>       | <b>94</b>         |
| <b>SCAQMD Thresholds</b>   | <b>75</b>  | <b>550</b> | <b>100</b>      | <b>150</b>       | <b>55</b>         |
| <b>Phase 2</b>   |            |            |                 |                  |                   |
| <b>Total</b>   | <b>134</b> | <b>564</b> | <b>809</b>      | <b>442</b>       | <b>103</b>        |
| <b>SCAQMD Thresholds</b>   | <b>75</b>  | <b>550</b> | <b>100</b>      | <b>150</b>       | <b>55</b>         |
| <b>Phase 3</b>   |            |            |                 |                  |                   |
| <b>Total</b>   | <b>134</b> | <b>564</b> | <b>809</b>      | <b>442</b>       | <b>103</b>        |
| <b>SCAQMD Thresholds</b>   | <b>75</b>  | <b>550</b> | <b>100</b>      | <b>150</b>       | <b>55</b>         |

Total construction emissions assumes that each emission source will occur during the same peak period, which is highly unlikely; therefore, the peak total emissions may not add up to the total of each activity presented since their peaks may occur on different days.



### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

As shown in Table 4-65, SCAQMD thresholds will be exceeded under each construction phase for all pollutants, except for CO in Phase 1, when the total emissions over the duration of the construction period are accounted for. This is due to the magnitude of the project and the schedule that has been developed to minimize the disturbances that construction can bring to the residents and businesses within the LPA area.

As shown in Table 4-65, SCAQMD thresholds will be exceeded for all pollutants over the duration of the construction period.

### ***Mitigation Measures***

To reduce air quality emission impacts related to construction activities, the following mitigation measures are recommended to be implemented:

- **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 MSHA standards.

- **CON-7—Meet SCAQMD Standards**

Metro and its contractors will set and maintain work equipment and standards to meet SCAQMD standards, including NO<sub>x</sub>.

- **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.

These mitigation measures will help to reduce air quality particulate matter 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. Therefore, adverse effects will remain after mitigation.

**Particulate Matter**

***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Demolition, grading, stockpiling, and hauling soil will contribute to particulate matter emissions affecting the local environment. Excavated soil will be separated from the slurry and stockpiled on the surface for up to two or three days. The 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 PM<sub>10</sub> will be exceeded, if not mitigated, resulting in adverse effects. With the mitigation proposed, it is predicted that PM<sub>10</sub> levels at each site and within the Study Area will be below the SCAQMD threshold levels.

Dust from handling wet slurry and spoils generated by the TBM are not expected to be a problem. Dust could be generated by the slurry treatment plant when the bentonite is mixed; however, the treatment plant includes a “bag house” to collect dust during the mixing process. Bag houses typically filter at least 99 percent of fine particulate matter. As a result, the slurry treatment plant will generate minimal dust emissions and will not result in an adverse effect.

***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Demolition, grading, stockpiling, and hauling soil will contribute to particulate matter emissions affecting the local environment. Excavated soil will be separated from the slurry and stockpiled on the surface for up to two or three days. The 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 PM<sub>10</sub> will be exceeded, if not mitigated, resulting in adverse effects. With the mitigation proposed, it is predicted that PM<sub>10</sub> levels at each site and within the Study Area will be below the SCAQMD threshold levels.

Dust from handling wet slurry and spoils generated by the TBM are not expected to be a problem. Dust could be generated by the slurry treatment plant when the bentonite is mixed; however, the treatment plant includes a “bag house” to collect dust during the mixing process. Bag houses typically filter at least 99 percent of fine particulate matter.

As a result, the slurry treatment plant will generate minimal dust emissions and will not result in an adverse effect.

### **Mitigation Measures**

To reduce air quality particulate matter impacts related to construction activities, the following mitigation measures are recommended to be implemented:

- **CON-14—Measures to Reduce the Predicted PM<sub>10</sub> Levels**

Mitigation measures such as watering, the use of soil stabilizers, etc. will be applied to reduce the predicted PM<sub>10</sub> 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.



With the mitigation proposed, it is predicted that particulate levels at each site and within the Study Area will be below the SCAQMD threshold levels and will not result in adverse effects.

### **Gas**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Methane is a hazard in confined spaces. Methane is a flammable, colorless, odorless gas that is an explosion hazard when mixed with air at concentrations exceeding 5 percent and less than 15 percent. Methane is non-toxic. However, the presence of methane can reduce the amount of oxygen in the air to levels lower than necessary to support life.

Since the Wilshire/Fairfax Station and Wilshire/La Brea Station are located in known ground that contains hydrocarbon deposits, disturbance of the ground will generate varying degrees of toxic or explosive gases. As such, it is essential that workers be sufficiently protected. Detection and monitoring equipment will be required to warn of the presence of unsafe gas conditions.

Once excavation has been completed, Metro will continue to monitor for gases in the excavations. Exposing new ground for construction of cross-passageways, shafts, and other structures will also expose workers to potentially hazardous gases. Fans will provide air movement to dilute methane and hydrogen sulfide concentrations in the tunnels. Monitoring will alert personnel to alter ventilation, don personal protective equipment, or perhaps to temporarily evacuate. Gases emanating from the slurry treatment plant, 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.

Previous projects in the Methane Risk Zone have been successfully and safely excavated. Multiple underground parking garages, such as the LACMA parking facility, have been constructed in this area. With implementation of similar construction measures (discussed under mitigations), there will be no impact.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related impacts related to hazardous gases is provided in the Concurrent Construction Scenario discussion above. 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, are both located along Phase 1 of the LPA. With implementation of the construction methods and mitigation measures described below, there will be no air quality impacts related to naturally occurring gases during construction of Phase 1, Phase 2, and Phase 3.

#### ***Mitigation Measures***

To reduce air quality gas impacts related to construction activities, mitigation measures CON-8, CON-51, and CON-52 will be implemented. With implementation of these construction measures, there will be no air quality impacts related to naturally occurring gases and construction activities. The mitigation measures will be the same whether the LPA is constructed under the Concurrent Construction Scenario or under the Phased



Construction Scenario. These mitigation measures will be of particular importance during construction of Phase 1, which includes the Wilshire/Fairfax and Wilshire/La Brea Stations.

### **Odor**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Hydrogen sulfide gas in the area occurs in localized zones rather than in a continuous pattern and, thus, the concentrations of the gas vary between and in the vicinity of the Wilshire/La Brea, Wilshire/Fairfax and Wilshire/La Cienega Stations. Hydrogen sulfide odors could also be released from groundwater containing hydrogen sulfide. As a result, aside from odors from vehicle exhaust, the LPA could result in odors from hydrogen sulfide. Hydrogen sulfide is a toxic, flammable, and colorless gas that poses an immediate fire and explosion hazard when mixed with air at concentrations exceeding 4 percent. Hydrogen sulfide has a distinct “rotten-egg” smell. Continuous inhalation of hydrogen sulfide can cause deadening of the sense of smell, dizziness, headache, nausea, and respiratory tract irritation. Additional discussion of hydrogen sulfide properties is provided below in the Hazardous Subsurface Gas section under Geologic Hazards and in Section 4.8. The presence of methane and hydrogen sulfide can be hazardous. Potentially hazardous gas levels have been detected in portions of the Study Area. Therefore continuous professional focus on safety, Cal/OSHA specific requirements (see the Hazardous Subsurface Gas section under Geologic Hazards below) and the listed mitigation measures contained in this document are essential to safety.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related impacts related to odors is provided in the Concurrent Construction Scenario discussion above. The known hydrogen sulfide gas located in the vicinity of the Wilshire/La Brea, Wilshire/Fairfax, and Wilshire/La Cienega Stations occurs along Phase 1. Additional discussion of hydrogen sulfide properties is provided in Section 4.8. The presence of methane and hydrogen sulfide can be hazardous. Therefore continuous professional focus on safety, Cal/OSHA specific requirements (see the Hazardous Subsurface Gas section under Geologic Hazards below), and the listed mitigation measures contained in this document are essential to safety for construction of Phase 1, Phase 2, and Phase 3.

#### ***Mitigation Measures***

To reduce air quality odor impacts related to construction activities, mitigation measures CON-8, CON-51, and CON-52 will be implemented. With implementation of these construction measures, there will be no air quality odor impacts related to construction activities. The mitigation measures will be the same whether the LPA is constructed under the Concurrent Construction Scenario or under the Phased Construction Scenario.



## Climate Change

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

### **America Fast Forward (30/10) Scenario (Concurrent Construction)**

It is estimated that construction of 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 addition, 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.

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.

### **Metro Long Range Transportation Plan Scenario (Phased 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.

**Mitigation Measures**

Aside from the measures included for air quality (mitigation measures CON-6, CON-7, CON-8, CON-9, CON-10, CON-11, CON-12, and CON-13), no additional mitigation measures for climate change are proposed.

**Noise and Vibration**

**Criteria**

The criteria for assessing noise and vibration impacts for construction are based on 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. The City of Los Angeles’ noise ordinance contains a table that lists the ambient noise levels presumed for several land use zones for both the daytime and nighttime hours of the day, which are presented in Table 4-66. Presumed ambient noise levels for the City of Beverly Hills is similar. The noise and vibration limits specified by Section 01565 are based on eliminating or minimizing noise and vibration generated by construction

activities. The noise and vibration criteria are the same for both the Concurrent Construction Scenario and the Phased Construction Scenario. For additional information please see the *Westside Subway Extension Construction and Mitigation Technical Report* (Metro 2010r).

The LPA is located within the urbanized environment of the Cities of Los Angeles and Beverly Hills and the County of Los Angeles and is primarily commercial and residential land uses. The existing noise and vibration conditions are described in Section 4.6. The existing conditions are the same for both the Concurrent Construction Scenario and the Phased Construction Scenario. Noise and vibration impacts

**Table 4-66. City of Los Angeles Presumed Ambient Noise Levels**

| Land Use Zone    | Daytime Presumed Noise Levels (dBA, Leq) | Nighttime Presumed Noise Levels (dBA, Leq) |
|------------------|--|--|
| Residential      | 50                                       | 40   |
| Commercial       | 60                                       | 55   |
| Light industrial | 65                                       | 65   |
| Heavy industrial | 70                                       | 70   |

Source: Los Angeles Municipal Code, Chapter 11, Section 111.02

from construction will vary greatly depending on location. The greatest noise impacts will occur near stations, tunnel access portals, and construction laydown areas where construction activities at the surface are concentrated. With the exception of these areas, all other construction will occur completely below-grade.

Although mitigation measures will help to reduce noise impacts during construction, an adverse construction noise effect will remain after mitigation under both the Concurrent Construction Scenario and the Phased Construction Scenario.

### Construction Noise Levels

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Noise impacts from construction will differ for the at-grade and the underground

sections of the LPA. 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. Typical construction equipment noise emission levels are shown in Table 4-67. The values shown in Table 4-67 are representative of noise emissions from typical construction equipment and methods from empirical data obtained during similar construction projects. 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, the equipment listed in Table 4-67 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.

Cut-and-cover construction methods are anticipated to be used for underground stations and for crossover track structures. This construction technique generally begins by opening the ground surface to an adequate

depth to permit support of existing utility lines and to install drilled soldier piles or other means of retaining the excavation. After the surface opening is covered with a temporary decking so traffic and pedestrian movement can continue, excavation proceeds to the

**Table 4-67. Noise Level of Typical Construction Equipment at 50' (dBA Lmax)**

| Construction Equipment  | Noise Level at 50 Feet |
|---|------------------------|
| Roller  | 74                     |
| Concrete Vibrator, Pump or Saw  | 76                     |
| Spike Driver  | 77                     |
| Backhoe, Tie Handler  | 80                     |
| Dozer   | 81                     |
| Ballast Equalizer, Compactor, Concrete Pump or Shovel   | 82                     |
| Ballast Tamper, Crane Mobile or Scarifer  | 83                     |
| Tie Cutter  | 84                     |
| Concrete Mixer, Grader, Impact Wrench, Loader, Pneumatic Tool, Tie Inserter or Auger Drill Rig <sup>1</sup> | 85                     |
| Crane Derrick, Jack Hammer or Truck   | 88                     |
| Paver or Scraper  | 89                     |
| Rail Saw  | 90                     |
| Pile Driver (Sonic)   | 96                     |
| Rock Drill  | 98                     |
| Pile Driver <sup>2</sup> (Impact)   | 101                    |

Sources: FTA Manual, Table 12-1, 2006.

<sup>1</sup>FHWA RCNM

<sup>2</sup>Note: Pile drivers not used, shown for perspective. Piles will be drilled.



necessary depth from beneath the decking. A concrete station box structure is then built within the excavated space, backfilled up to street level, and the surface is restored.

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 *Westside Subway Extension Construction and Mitigation Technical Report* (Metro 2010r). The excavation and install of street decking is expected to last four to five months. 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. Therefore, the excavation of the station box will result in a temporary adverse noise effect.

Most of the underground tunnel activities will not be audible at street level. Support equipment for the excavation and tunneling will be located at street level and could include ventilation fans, compressors, electric generator sets, and a concrete batch plant.

Tunnel excavation material will be removed and stock-piled. Haul trucks, used to remove the excavated material, will be a source of noise along city streets. LADOT and Los Angeles County are responsible for selecting the haul routes; however, Metro will work with the agencies to develop a plan to avoid impacting residential areas, schools, and playgrounds as much as feasible. In addition, heavy equipment and other construction-related vehicles moving to and from construction staging areas will be another source of noise along city streets and in the vicinity of the staging areas. Chapter 3, Transportation, discusses haul routes and mitigation measures in more detail. As mitigation, the haul routes will use arterial streets to minimize noise and vibration impacts to adjacent neighborhoods and will not be allowed in residential neighborhoods (where feasible) during noise restriction hours and special events (TCO-2). Therefore, with mitigation, the haul trucks will not result in an adverse noise effect.

The types and levels of noise and vibration associated with tunneling and construction activities in the known gassy or potentially gassy areas generally will be the same as those associated with tunneling in the non-gas zones. For tunneling in the known gassy or potentially gassy areas, a slurry plant will be an additional component of the construction activities and associated noise. Without mitigation, the slurry plant will be an adverse noise impact to the surrounding community. Noise from the treatment plant will be minimized by enclosing the plant behind sound walls or within a building as listed in the below mitigation measures. Therefore, with mitigation, noise associated with this single component will not result in higher noise levels as compared to the overall construction activities.

### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related noise impacts is provided in the Concurrent Construction Scenario discussion above. Noise resulting from construction activities will primarily be focused near stations, tunnel access portals, and construction laydown areas where construction activities will be concentrated. The impacts of each of these construction activities are described above, and the intensity of noise levels at each



location will be the same as under the Concurrent Construction Scenario. Under the Phased Construction Scenario, during the construction of Phase 1, these noise impacts will be concentrated in the vicinity of the Wilshire/La Brea, Wilshire/Fairfax, and Wilshire/La Cienega Stations, as well as the Wilshire/Western and Wilshire/Crenshaw construction staging areas. Tunneling plants and materials, including a slurry separation system, if used, will be located at these tunnel access shaft sites. The slurry plant, if used, will be located at the Wilshire/La Brea Station. During construction of Phase 2, the noise impacts will be concentrated in the vicinity of the Wilshire/Rodeo and Century City Stations. The slurry plant, if used, will be located at the Century City Station. For Phase 3, the noise impacts will be concentrated in the vicinity of the Westwood/UCLA and Westwood/VA Hospital Stations as well as the GSA crossover. The slurry plant, if used, will be located at the Westwood/VA Hospital Station. Noise impacts will be mitigated as described in the following sections, but adverse noise impacts during construction will remain after mitigation for the locations identified as part of Phase 1, Phase 2, and Phase 3.

### **Mitigation Measures**

Noise impacts from construction of the LPA will require mitigation 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 final determination of construction noise impacts will depend on the equipment and activities used by the contractor to construct the LPA. Since this information on means and methods of construction is not available now, noise mitigation is presented as typical noise-control measures that have been used on other similar construction projects.

#### *Metro Baseline*

Metro Baseline Specifications Section 01565, Construction Noise and Vibration Control, require that the contractor shall, among other provisions:

- **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.

The Metro Baseline Specifications will be required for all construction activities under both the Concurrent Construction Scenario and the Phased Construction Scenario.

*Station and Tunnel Excavation Equipment*

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

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,

■ **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**

Fixed noise-producing equipment will be used to comply with regulations in the course of LPA-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 LPA-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 Address or Music**

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

The same mitigation measures related to minimizing noise produced by station and tunnel excavation equipment will be required for all construction activities under both the Concurrent Construction Scenario and the Phased Construction Scenario.



### Haul Routes and Traffic

- **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 LPA-related traffic will be used.

- See TCON-2.

The same mitigation measures related to minimizing noise produced by haul routes and traffic will be required for all construction activities under both the Concurrent Construction Scenario and the Phased Construction Scenario.

### *Slurry Plant*

- **CON-41—Enclosures for Fixed Equipment**

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

The same mitigation measures related to minimizing noise produced by slurry plant equipment will be required for all construction activities under both the Concurrent Construction Scenario and the Phased Construction Scenario.

These mitigation measures will help to reduce overall noise impacts during construction, but an adverse construction noise effect will remain after mitigation under either scenario.

### **Construction Vibration Levels**

As with noise, existing vibration levels reflect the urbanized nature of the Study Area. Existing vibration levels at the ground surface typically range between 50 and 65 VdB. Vibration, as it is related to risk of building damage, is generally assessed in terms of PPV. PPV is the appropriate metric for evaluating whether building damage would occur and is often used in monitoring blasting and construction vibration since it relates to the stresses that are experienced by buildings. PPV is typically a factor of 1.7 to 6 times greater than root mean square vibration velocity. Human annoyance from vibration is assessed using rms vibration velocity. A factor of four has been used to relate the building damage criteria used to approximate rms vibration velocity levels, which are used by FTA to define the vibration generated by train operations.

The criteria levels, presented in Table 4-68, will be used to judge the risk of damage to historic buildings or cultural resource structures during construction of the LPA. The criteria are based on research to date on damages to structural buildings, architectural buildings, and historic buildings and cultural resource structures. These levels are significantly greater than the FTA vibration criteria of 72 to 75 VdB for train operations.

**Table 4-68. Damage Risk Vibration Criteria**

| Type of Building   | Peak Particle Velocity<br>(inches/second) | RMS Velocity—VdB<br>(re: 1 micro inch/second) |
|--|---|---|
| Structural building damage   | 2.0                                       | 120   |
| Architectural building damage                                      | 0.5                                       | 108   |
| Damage risk to historic buildings and cultural resource structures | 0.12 to 0.20                              | 95 to 100                                     |

PPV is assumed to be four times greater than rms vibration velocity.

***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Common vibration-producing equipment used during demolition and station construction activities includes jackhammers, pavement breakers, hoe rams, augur drills, bulldozers, cranes, and backhoes. 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. As mitigation, impact pile driving will be avoided and soldier piles, if used, will be drilled. Therefore, vibration at construction sites will not result in noticeable vibration or adverse impact.

Equipment used for underground construction, such as the TBM and mine trains, could generate vibration levels that could result in audible ground-borne noise levels in buildings at the surface, depending on the depth of the tunnel and soil conditions. The 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.

Since underground construction is expected to occur continuously over a 24-hour day, there is a very low possibility that these operations, particularly the mine trains, will be audible during the nighttime sleep hours when background noise levels inside the residential buildings will be very low.

The Metro Red Line construction used a tunneling shield, as opposed to a boring machine with a cutting wheel for the tunneling work. A ground vibration study of the mining operations was conducted to estimate construction vibration both from actual excavation of the tunnel and from the trains used to haul mine spoils out of the tunnel. The study concluded the following:

- Vibration from the tunnel excavation and mine trains will be rarely a significant problem in adjacent areas, although the vibration could be sufficient to cause several hours of intrusive low level ground-borne vibration at areas above the tunnel when the mining is at that location.
- Although well below any damage thresholds, vibration from mine trains could cause intrusive ground-borne noise inside buildings above the tunnel.

More recently, a tunnel boring machine was also used for the Metro Gold Line Eastside Extension. No noise complaints associated with the TBM or the mine trains used for the Gold Line were received.

If the Metro ground-borne noise limits or ground-borne vibration limits are exceeded during tunneling, 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. Therefore, with mitigation, there will be no construction-related vibration adverse effect due to tunneling activities.

### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related vibration impacts is provided in the Concurrent Construction Scenario discussion above. Since impact pile driving will be avoided and soldier piles, if used, will be drilled, vibration at construction sites will not result in noticeable vibration or adverse impact in station areas.

Equipment used for underground construction, such as the TBM and mine trains, could generate vibration levels that could result in audible ground-borne noise levels in buildings at the surface, depending on the depth of the tunnel, the contractor's materials and equipment, and soil conditions along Phase 1, Phase 2, and Phase 3. As described above, if the Metro ground-borne noise limits or ground-borne vibration limits are exceeded during tunneling, the contractor will be required to take action to reduce vibrations to specified levels. Such action could include reducing the mine train speed, additional rail and tie isolation, and more frequent rail and wheel maintenance. Therefore, with mitigation, there will be no construction-related vibration adverse effect due to tunneling activities along Phase 1, Phase 2, or Phase 3 of the LPA.

### ***Mitigation Measures***

Vibration impacts from construction of the LPA will require mitigation 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 final determination of construction vibration impacts will depend on the equipment and activities used by the contractor to construct the LPA.

The contractor will be responsible for the protection of vibration-sensitive historic buildings or cultural resource structures within 200 feet of any construction activity. These structures have been identified in Section 4.14. To ensure proper protection, the contractor will be required to perform periodic vibration monitoring at the closest structure to any construction activities using approved seismographs. Specifically, for any fragile historic properties within a 200-foot range, the contractor will evaluate the vibration levels resulting from the excavated-materials train as it passes under historic properties. If the vibration levels emanating from the muck train exceed 0.1 inch/second maximum PPV velocity level, the contractor will take action to reduce the vibration levels to 0.1 inch/second or less as soon as possible. If vibration levels exceed 0.12 inch/second PPV, the contractor will cease excavation operations until he or she takes action to reduce vibration levels below 0.1 inch/second. Such action could include reducing the speed of muck trains carrying excavated material, additional rail and tie isolation, and more frequent rail and wheel maintenance. Which historic properties are to be deemed fragile will be determined through a pre-construction survey. This measure will not apply to the TBM but only to operations resulting from the muck train hauling excavated materials under or near fragile historic properties. To ensure that noise and vibration



impacts associated with construction are below threshold levels, Metro’s plans, specifications, and estimates (“bid”) documents will include the following 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 not be used. 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 not be used 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 actions, for example, may include reducing the muck train speed, additional rail and tie isolation, and more frequent rail and wheel maintenance.

The vibration mitigation measures will be the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario.

See above for noise mitigation measures. With implementation of the noise and vibration mitigation measures, there will be no vibration adverse effect due to construction activities under either scenario.

**Energy**

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 capital energy consumption, decreasing reliance on fossil fuels, and increasing reliance on renewable sources.

**America Fast Forward (30/10) Scenario (Concurrent Construction)**

The LPA alignment is approximately nine miles in length and will include the construction of seven stations, four of which will be tunnel boring machine launch sites. Energy consumption required to construct the LPA’s tunnels, stations, and ancillary facilities will be 2,309 billion 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 LPA 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 LPA 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 LPA 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 LPA will not lead to a wasteful, inefficient, or unnecessary usage of fuel or energy during construction, and therefore will not result in an adverse energy impact in the short or long term.

### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

The analysis of the potential for construction-related energy impacts is provided in the Concurrent Construction Scenario discussion above. Energy consumption required to construct Phase 1 of the LPA will be approximately 913 billion BTUs. In addition, as part of Phase 1, 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. Energy consumption required to construct Phase 2 of the LPA will be approximately 671 BTUs. Energy consumption required to construct Phase 3 of the LPA will also be approximately 671 BTUs. The construction of each phase will require less than 0.01 percent of the total energy consumed per year in the State of California.

In addition, over the long term, Phase 1, Phase 2, and Phase 3 will all reduce regional mobile source energy consumption, off-setting the short-term increase in energy consumption during construction. It is estimated that once operational, Phase 1 will reduce regional mobile source BTU consumption by approximately 348 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. It is estimated that once operational, Phase 2 will reduce regional mobile source BTU consumption by approximately 134-618 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 one to five years. It is estimated that once operational, Phase 3 will reduce regional mobile source BTU consumption by approximately 405-921 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 0.7 to 1.6 years. Under the Phased Construction Scenario, the full energy benefits of the LPA will not be realized until 2036, compared to 2022 under the Concurrent Construction Scenario. The energy consumption required for construction of Phase 1, Phase 2, and Phase 3 should be considered a “wise and efficient use of energy” to reduce long-term energy consumption in the region.

During construction of Phase 1, Phase 2, and Phase 3, Metro will require the construction contractor to implement energy conserving BMPs in accordance with Metro’s Energy and Sustainability Policy as outlined in the Concurrent Construction Scenario section above, and therefore the construction of Phase 1, Phase 2, and Phase 3 will not result in an adverse energy impact in the short or long term.

### **Mitigation Measures**

The construction of the LPA, including all station, alignment, and station entrance options still under consideration for the Concurrent Construction Scenario and the Phased Construction Scenario, will not result in an adverse energy impact; therefore mitigation measures are not required.

### **Geologic Hazards**

Tunneling, foundation excavation, and other construction related activities may encounter geological hazards and subsurface hazardous substances.

### **Seismic and Liquefaction**

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Construction within the LPA 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 liquefaction is not a significant impact during construction.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related seismic and liquefaction impacts is provided in the Concurrent Construction Scenario discussion above. Construction of Phase 1, Phase 2, and Phase 3 will be susceptible to seismic ground shaking.

Construction of Phase 2 and Phase 3 will be susceptible to surface fault rupture where the alignment crosses the Santa Monica Fault Zone and the Newport-Inglewood Fault Zone. Construction of all phases will be performed in accordance with Metro Design Criteria that include national standards and codes to protect workers and work under construction considering seismic conditions.

Under the Phased Construction Scenario, the same designs to minimize risk of liquefaction will be used during construction of Phase 1, Phase 2, and Phase 3. Liquefaction is not a significant impact during construction of any of the three phases.

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

#### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

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

Ground settlement may occur from construction activities such as tunneling and dewatering at station areas along the full lengths of the LPA. 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.

#### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related subsidence and settlement impacts is provided in the Concurrent Construction Scenario discussion above.

No current significant subsidence problems related to petroleum or groundwater extraction have been identified in the vicinity of Phase 1, Phase 2, and Phase 3 of the alignment or the Division 20 Vehicle Storage and Maintenance Yard. Therefore, subsidence related to extraction of petroleum and groundwater is not considered a significant hazard during construction of Phase 1, Phase 2, or Phase 3.

Ground settlement may occur from construction activities such as tunneling and dewatering at station areas along Phase 1, Phase 2, and Phase 3, but, as described above, significant settlement due to dewatering is not expected to have a significant impact during the construction of Phase 1, Phase 2, or Phase 3.

### **Mitigation Measures**

The following measures will be implemented to reduce impacts related to subsidence and settlement due to tunneling:

- **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

The mitigation measures implemented to prevent subsidence and settlement due to tunneling will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario.

**Hazardous Subsurface Gas**

***America Fast Forward (30/10) Scenario (Concurrent Construction)***

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 LPA.

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 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. Appendix E, Construction Methods, presents additional information on tunneling technology, and the *Westside Subway Extension Century City Area Tunneling Safety Report* (Metro 2011x) contains additional information on tunneling in gassy conditions and areas with suspected oil well casings.

The LPA 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.

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 that include:

- All equipment used in the tunnel must be approved. For example, internal combustion engines and other equipment such as lighting must meet approval standards of the US Mine Safety and Health Administration (MSHA). These approvals require verification that equipment is safe with respect to not producing sparks or emitting gas into the tunnel.
- Smoking will not be allowed in the tunnel, nor is standard welding, cutting, or other spark-producing operations. Special permits and additional air monitoring will be required if welding or cutting operations are essential for the work. In addition, welding will only be allowed in stable atmospheres containing less than 10% of the lower explosive limit and under the direct supervision of qualified personnel.
- A fixed system of continuous automatic monitoring equipment will be provided for the heading (working area of the tunnel), spoils handling transfer points and return air sources. The monitors will be equipped with sensors so situated to detect any anticipated gas to be encountered. Monitors will automatically signal the heading, give visual and audible warning and shut down electric power in the tunnel—except for acceptable ventilation, lighting, and pumping equipment necessary to evacuate



personnel, when 20% or more of lower explosive limit is encountered. In addition, a manual shut down control will be provided near the heading.

- Tests for flammable and hazardous gas and petroleum vapors will be conducted in the return air and measured a short distance from the working surfaces.
- Whenever gas levels in excess of 10% of the lower explosive limit are encountered, Cal/OSHA will be notified immediately. After the approval to proceed by Cal/OSHA, any work will then be conducted with required precautionary measures such as increased ventilation.
- The main ventilation systems must exhaust flammable gas or vapors from the tunnel, will be provided with explosion relief mechanisms, and will be constructed of fire-resistant materials. This exhaust requirement means that only rigid fan lines (as opposed to flexible), and two-way fan systems that operate in both directions by blowing exhaust out from the tunnel and blowing air in to the tunnel, could be used in gassy tunnels.
- A refuge chamber or alternate escape route must be maintained within 5,000 feet of the face of a tunnel classified as gassy or extra-hazardous. Workers must be provided with emergency rescue equipment and trained in its use. Refuge chambers (typically pre-fabricated) will be equipped with a compressed air supply, a telephone, and means of isolating the chamber from the tunnel atmosphere. The emergency equipment, air supply, and rescue chamber installation will be acceptable to Cal/OSHA.
- Special health and safety training and procedures will be implemented due to the health and safety issues associated with tunneling through a zone known to have elevated methane, hydrogen sulfide, and oil seeps. These procedures may require basic Hazardous Waste and Emergency Response training (29 CFR 1926 Subpart M), as well as training for excavations in a hazardous atmosphere (29 CFR 1926 Subpart P).
- The tunnel must have adequate ventilation to dilute gases to safe levels.

***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related impacts due to hazardous and subsurface gases is provided in the Concurrent Construction Scenario discussion above.

The high concentrations of methane and hydrogen sulfide along Wilshire Boulevard from about Burnside Avenue to about La Jolla Avenue, described above, are located along Phase 1 of the LPA alignment. A fully enclosed tunnel mining system, such as a slurry-face TBM (a type of pressurized-face TBM), as described above, will be used for tunneling in elevated gassy areas along Phase 1.

Phase 1, Phase 2, and Phase 3 are all within the City's Methane Zone. Therefore, the possibility of encountering gaseous subsurface conditions can be expected along all three phases of the alignment, and hazardous subsurface gases pose a significant hazard during construction of Phase 1, Phase 2, and Phase 3.

For underground construction of Phase 1, Phase 2, and Phase 3 in areas classified as "Gassy" by Cal/OSHA (California Code of Regulations, Title 8, Tunnel Safety Orders),

specific requirements will include compliance with the California Tunnel Safety Orders as outlined above for the Concurrent Construction Scenario.

### **Mitigation Measures**

The following measures will be implemented to reduce impacts related to hazardous subsurface gases:

- **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 through use of enclosed tunneling systems such as pressurized face—TBMs 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 a safe working environment.

- **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).

The mitigation measures to reduce impacts related to hazardous subsurface gases during construction will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario. These mitigation measures will be critical during the construction of Phase 1 under the Phased Construction Scenario, where there are known elevated levels of methane and hydrogen sulfide.

**Hazardous Waste and Materials**

**America Fast Forward (30/10) Scenario (Concurrent Construction)**

A number of gas stations, dry cleaners and other hazardous waste generators are located in the vicinity of the LPA. Contaminated soils could be disturbed by construction activities. Underground storage tanks, volatile organic compounds and oil exploration sites also occur in the LPA area. Regulations for handling hazardous materials and suspected contaminated material locations are presented in Section 4.9. 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). In areas of station excavation, contaminated soils are more likely to be encountered as near surface soils are excavated. During construction, the LPA 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 LPA 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.

### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

The analysis of the potential for construction-related impacts related to hazardous waste and materials is provided in the Concurrent Construction Scenario discussion above.

A number of gas stations, dry cleaners, and other hazardous waste generators are located in the vicinity of Phase 1, Phase 2, and Phase 3 of the LPA as identified in Section 4.9. Eight of these hazardous waste generators are located along the Phase 1 alignment; one is located along Phase 2; and one is located along Phase 3. One additional location is located in the vicinity of the Division 20 Vehicle Storage and Maintenance Yard, which will be expanded as part of Phase 1. As described above, contaminated soils could be disturbed by construction activities. Regulations for handling hazardous materials and suspected contaminated material locations are presented in Section 4.9, and these regulations will be followed during the construction of Phase 1, Phase 2, and Phase 3. During construction of Phase 1, Phase 2, and Phase 3, 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 at the beginning stages of construction for each phase for sites only along the phase under construction. Along Phase 1, Phase 2, and Phase 3, 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 along all three phases, the properties will be evaluated for hazardous materials and removal requirements.

### **Mitigation Measures**

The following measures will be implemented to avoid or minimize impact as required by applicable regulations and will be followed under the Concurrent Construction Scenario and the Phased Construction Scenario:

- Depending upon the amount of affected material encountered, the concentrations of hazardous constituents, and the type of hazardous constituents encountered during construction activities, the following options will be used for mitigation:
- Removal and disposal—One mitigation option is to identify, remove, and haul and dispose of the material to a licensed Class I, II, or III disposal facility.



- Recycling—Impacted material may be treated and recycled at regulated recycling facilities.
- Combination—An off-site remediation facility could be used to remediate the waste material to a Class III standard and then dispose of it as clean fill at a Class III landfill
- Treatment and handling of groundwater during excavation and/or tunneling will be conducted in accordance with applicable regulations.
- All hazardous materials, drums, trash, and debris will be removed and disposed of in accordance with regulatory guidelines.
- 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.
- Emergency response or contingency plans will be developed in conformance with federal, state and local regulations in the unlikely event of a major hazardous materials release close to or within the vicinity of construction.

In addition, the following mitigation measures are included for hazardous materials handling and disposal:

- **CON-55—Site Assessments**

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 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 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.

- **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 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 LPA 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.

Other measures related to water quality are discussed in the Water Resources section. With implementation of mitigation measures, there will be no impact associated with hazardous waste and materials due to construction activities. The mitigation measures to reduce impacts related to hazardous waste and materials during construction will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario.

### **Ecosystems/Biological Resources**

The construction of a project would have a significant impact on ecosystems/biological resources if it would result 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

The existing conditions for ecosystems and biological resources are described in Section 4.10. The Study Area is located within a densely developed and urbanized area with limited ecosystems/biological resources.

### **America Fast Forward (30/10) Scenario (Concurrent Construction)**

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.



An adverse 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.

### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

The analysis of the potential for construction-related impacts to ecosystems and biological resources is provided in the Concurrent Construction Scenario discussion above. Any tree removal along Phase 1, Phase 2, and Phase 3 will require compliance with all applicable 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. Because the majority of the Study Area, including Phase 1, Phase 2, and Phase 3, 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.

### **Mitigation Measures**

Mitigation measures will be required for compliance with the Migratory Bird Treaty Act and state migratory bird protection and to avoid and minimize impacts to bird species that may utilize trees that could be removed or disturbed during construction of the LPA. The following mitigation measure will be implemented:

#### ■ **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 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.

■ **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.

The mitigation measures to reduce construction-related impacts to ecosystems/biological resources will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario. With implementation of these mitigation measures, no adverse impact to ecosystems/biological resources during construction is expected under the Concurrent Construction Scenario or the Phased Construction Scenario.

**Hydrology and Water Resources**

Based on CEQA guidelines, the hydrology and water resources analysis of potential construction effects includes water supply, surface and groundwater, drainage, and water quality resources as described below.

**Water Supply**

Based on CEQA guidelines, a significant impact to the water supply would occur if construction of the LPA results in the following:

- Substantially deplete water resources

***America Fast Forward (30/10) Scenario (Concurrent Construction)***

During construction, 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 LPA construction will not adversely affect 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 LPA. Therefore, dewatering will not affect water supply.

### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related impacts to the water supply is provided in the Concurrent Construction Scenario discussion above. Since construction will occur over a longer period time under the Phased Construction Scenario, the construction of each individual phase will result in less water consumption than under the Concurrent Construction Scenario where all segments will be constructed concurrently. However, the construction of all three phases will result in similar overall water consumption as the construction of the LPA under the Concurrent Construction Scenario. Construction of Phase 1, Phase 2, and Phase 3 will not adversely affect the municipal water supply.

### ***Mitigation Measures***

Construction of the LPA, under either the Concurrent Construction Scenario or the Phased Construction Scenario, will not result in adverse effects or significant impacts to the water supply, and no mitigation measures will be required.

### ***Groundwater***

- Based on CEQA guidelines, a significant impact to groundwater would occur if construction of the LPA results in any of 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

### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Constructing the LPA 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.

### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related impacts to groundwater is provided in the Concurrent Construction Scenario discussion above. Construction of Phase 1, Phase 2, and Phase 3 is anticipated to require dewatering during tunneling. If contaminated groundwater is encountered along Phase 1, Phase 2, or Phase 3, it will be managed in compliance with applicable permits and regulations. Permission from the LARWQCB will be necessary to pump groundwater back into groundwater basins or discharge it into the storm drain system along Phase 1, Phase 2, and Phase 3.



### ***Mitigation Measures***

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

- **CON-70—Methods to Control Contaminated Ground Water**

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 Ground Water 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.

The mitigation measures to reduce construction-related impacts to groundwater will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario. With implementation of these mitigation measures, the construction of the LPA will not result in an adverse effect or significantly impact groundwater.

### **Drainage**

Based on CEQA guidelines, a significant impact to hydrology and water quality would occur if construction of the LPA results in any of 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

### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

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.



### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related impacts to drainage is provided in the Concurrent Construction Scenario discussion above. Under the Phased Construction Scenario, the construction of three stations during Phase 1, two stations during Phase 2, and two stations during Phase 3 will affect existing drainage structures. The affected drainage structures will be resized or relocated to maintain drainage requirements and prevent flooding or ponding.

### ***Mitigation Measures***

In addition to the measures identified for geologic hazards and hazardous wastes and materials, the following measures are recommended to avoid and minimize impacts to water resources and water quality as they relate to drainage:

#### ■ **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.

As required under the National Pollution Discharge Elimination System permit, an Urban Stormwater Mitigation Plan and appropriate drainage plan will be implemented to control pollutants to the maximum extent practicable. The drainage control plan will be developed to properly convey drainage from the Study Area and avoid ponding on adjacent properties. BMPs for tunnel construction activities will include, but are not limited to, the following measures, as appropriate:



■ **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 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.

Specific construction stormwater management controls will be implemented to comply with the LPA Storm Water Pollution Prevention Plan. These controls will minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, solvents) with stormwater. Site supervisors will conduct regular meetings to discuss pollution prevention.

The mitigation measures and BMPs to reduce construction-related impacts to drainage systems will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario. With implementation of these mitigation measures, construction of the LPA will not result in adverse effects or significantly impact drainage systems under either scenario.

**Water Quality**

- Based on CEQA guidelines, a significant impact to hydrology and water quality would occur if construction of the LPA 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

### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

The LPA 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. 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.

### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related impacts to water quality is provided in the Concurrent Construction Scenario discussion above.

Phase 1, Phase 2, and Phase 3 do not cross any surface water and are 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 under Phase 1, Phase 2, or Phase 3.

Runoff during construction of Phase 1, Phase 2, and Phase 3 will be routed to existing storm drain systems and/or lined channels, thereby avoiding offsite erosion. BMPs in the SWPPP will also minimize construction impacts to water quality and will be implemented during construction of Phase 1, Phase 2, and Phase 3.

Disposal of water used during construction activities associated with Phase 1, Phase 2, and Phase 3 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 during the construction of Phase 1, Phase 2, or Phase 3.

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 during the construction of Phase 1, Phase 2, and Phase 3.



### ***Mitigation Measures***

In addition to the measures identified for geologic hazards and hazardous wastes and materials, the following measures are recommended to avoid and minimize impacts to water quality:

- See mitigation measures for Drainage (CON-72, CON-73, CON-74, CON-75, CON-76, CON-77, CON-78, CON-79, CON-80, and CON-81).

The mitigation measures to reduce construction-related impacts to water quality will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario. With implementation of these mitigation measures, construction of the LPA under either scenario will not have adverse effects or significantly impact water quality.

### **Parks and Community Facilities**

#### **America Fast Forward (30/10) Scenario (Concurrent Construction)**

Metro's construction policy for the LPA 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) and the University Bible Church (between Century City and Westwood/UCLA). As discussed above under Construction Noise and Vibration, 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 LPA 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.

### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

The analysis of the potential for construction-related impacts to parks and community facilities is provided in the Concurrent Construction Scenario discussion above. The location of the various parks and communities facilities in relation to Phase 1, Phase 2, and Phase 3 is detailed in Section 4.13. With implementation of the mitigation measures listed below, construction of the LPA will not result in adverse effects or significant impacts to parks or community facilities along Phase 1, Phase 2, or Phase 3 of the LPA.

### **Mitigation Measures**

In addition to the measures for communities and neighborhoods, the following measures will avoid and minimize impacts to parks and community facilities:

- **CON-82—Soil and Building Material Storage**

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.

The mitigation measures to reduce construction-related impacts to parks and community facilities will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario. With implementation of these mitigation measures, construction of the LPA will not result in adverse effects or significant impacts to parks or community facilities.

### **Economic and Fiscal**

Construction of the LPA will result in both economic/fiscal impacts and benefits.

#### **Construction-related Economic Losses**

##### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

Construction 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. However, at least one access point will be maintained at all times. The selection of some station entrances will result in a temporary loss of parking during construction. Business impacts could also include reduced visibility of commercial signs and business locations. These construction impacts could result in adverse economic impacts to businesses.

##### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

The analysis of the potential for construction-related impacts related to economic losses is provided in the Concurrent Construction Scenario discussion above. Construction of Phase 1, Phase 2, and Phase 3 will have temporary impacts on businesses, particularly those near or adjacent to construction sites as described above, and could result in adverse economic impacts to businesses along all three phases.

**Mitigation Measures**

Measures to minimize temporary business disruption will include the following:

- **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.

- See mitigation measures CON-1, TCON-1, T-CON-4, TCON-7, TCON-8, TCON-10, and TCON-11.

The mitigation measures to reduce construction-related impacts resulting in economic losses will be the same under the Concurrent Construction Scenario and the Phased Construction Scenario. With implementation of these mitigation measures, construction of the LPA will not result in any adverse effects or significant economic impacts to

businesses under either scenario.

**Construction-related Employment  
America Fast Forward (30/10) Scenario  
(Concurrent Construction)**

The LPA will result in a beneficial direct and indirect employment impacts. New direct jobs (jobs and services purchased to build the LPA) could be approximately 35,699 and indirect employment (secondary demand for goods and services) could be approximately 27,567 for the LPA. Construction related employment is directly proportional to the magnitude of capital expenditures, with higher cost construction alternatives generating more construction-related employment.

Figure 4-78 provides a breakdown of jobs that the LPA will create by industry. Construction, professional services, and retail trade are three of the top four industries impacted by the construction spending. Other industries that are expected to see significant job impacts from the LPA include manufacturing, health care, food services, administration and waste management, and real estate.



**Figure 4-78. Breakdown of Construction Related Job Creation by Industry**



Figure 4-79. Breakdown of Construction Related Job Creation by Earnings Range

It is also important to consider the quality of the jobs that will be created, which can be most easily measured by the number of jobs created at various levels of compensation. Figure 4-79 shows that the majority of jobs generated by the LPA will receive compensation above \$40,000 per year. This indicates that construction of the LPA will help to stimulate the local economy.

**Metro Long Range Transportation Plan Scenario (Phased Construction)**

The construction of Phase 1, Phase 2, and Phase 3 will result in beneficial direct and indirect employment impacts. As described above, construction-related employment is directly proportional to the magnitude of capital expenditures, with higher cost construction alternatives generating more construction-related employment. Therefore, construction of each individual phase will generate only a portion of the total number of jobs created by construction of the LPA in its entirety under the Concurrent Construction Scenario. The total number, type, and quality of jobs created to construct all three phases will be similar under either scenario. The difference between the two scenarios is that the jobs created by construction under the Phased Construction Scenario will be spread out over a longer period of time since the phases will be constructed sequentially.

**Construction Spending on the Regional Economy**

**America Fast Forward (30/10) Scenario (Concurrent Construction)**

The jobs created as a result of construction spending on the LPA will result in both direct and indirect economic impacts on the Los Angeles region. This can be quantified as the overall output for the Los Angeles region. Output can be defined as the total value of sales made for all intermediate and final purchases within a region resulting from increased demand for an industry’s goods or services. It should not be confused with Gross Regional Product (similar to Gross Domestic Product), which is the sum of value added for all industries; value added is an economic concept which nets out the cost of intermediate purchases for materials and labor. The overall output generated for the LPA as a result of construction spending is estimated to be \$4,749 million direct output and \$5,369 million indirect/induced output, for a total of \$10,118 million in 2010 dollars. For a more detailed analysis refer to the *Westside Subway Extension Economic and Fiscal Impacts Analysis and Mitigation Report* (Metro 2010p) and *Westside Subway Extension Economic and Fiscal Impacts Analysis and Mitigation Memorandum* (Metro 2011o). Approximately 47 percent of the projected output is directly related to the construction of the LPA, while the remaining is expected to result from indirect and induced spending.



### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the jobs created as a result of construction spending on Phase 1, Phase 2, and Phase 3 will result in both direct and indirect economic impacts on the Los Angeles region as described above. The overall output generated for the construction of each phase of the LPA as a result of construction spending will only be a portion of the total output generated by construction of the LPA in its entirety under the Concurrent Construction Scenario. The overall output generated by the construction of all three phases will be similar under either scenario. The difference between the two scenarios is that the output generated by construction under the Phased Construction Scenario will be spread out over a longer period of time since the phases will be constructed sequentially.

### **4.16 Growth Inducing Impacts**

This section has been updated from the Draft EIS/EIR to include analysis of the effects of potential growth inducing impacts of the LPA. The analysis results have not changed from the Draft EIS/EIR. The LPA could either be constructed as a single phase under the America Fast Forward (30/10) Scenario (Concurrent Construction) or as three consecutive phases under the Metro Long Range Transportation Plan Scenario (Phased Construction). The opening of the LPA as a single phase or in three sequential phases does not substantially change the growth inducing impacts analysis that was presented in the Draft EIS/EIR. The analysis of all the Build and TSM Alternatives in the Draft EIS/EIR is incorporated into this document by reference.

This section addresses the potential to directly or indirectly induce population, housing, and employment growth within the Study Area and the region. It summarizes the *Westside Subway Extension Growth Inducing Impacts Technical Report* (Metro 2010s).

#### **4.16.1 Regulatory Setting**

Guidance for analyzing potential growth inducing impacts has been established by federal and state regulations. The regulatory settings for the LPA are the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario.

#### **National Environmental Policy Act Guidance**

The CEQ established guidelines for implementing NEPA. These guidelines require the evaluation of potential consequences of all proposed federal actions. Any proposed federal activity or program must examine not only direct consequences, but also indirect, or secondary, impacts that may occur in areas beyond the immediate influence of a proposed action and at some time in the future (40 CFR 1508.8). Secondary impacts may include changes in land use, which include housing and economic vitality (including employment and population density) and all components of growth. The NEPA guidelines require an evaluation of reasonably anticipated growth in relation to growth projections that a federally designated metropolitan planning organization develops.



### **California Environmental Quality Act Guidance**

CEQA requires consideration and discussion of the Project’s potential to induce growth. CEQA guidelines section 15126.2(d) requires discussing “the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.” Growth inducing impacts also include the removal of obstacles to population growth and encouraging and facilitating other activities that could significantly affect the environment, either individually or cumulatively.

According to CEQA guidelines, a project may result in a significant impact if it induces substantial population growth in an area, either directly (for example, by proposing new homes or a business) or indirectly (for example, through extending roads or other infrastructure) if the resulting growth results in significant impacts.

### **Regional Growth Management Plans**

SCAG is the federally designated metropolitan planning organization for the counties of Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial. SCAG develops regional growth management plans to provide efficient movement of people, goods, and information; enhance economic growth and international trade; and improve the Southern California regional quality of life.

The 2008 SCAG RCPG (SCAG 1994) describes the plan for implementing short-term strategies and long-term initiatives and guiding principles for a sustainable and livable region. The RCPG focuses on specific planning and resource management areas, including land use and housing, open space and habitat, water, energy, air quality, solid waste, transportation, security and emergency preparedness, and the economy. The RCPG’s Growth Management chapter addresses issues related to SCAG’s regional growth and land use and enumerates guiding principles for development that supports the RCPG goals.

SCAG completed a comprehensive growth visioning process described in its 2004 *Southern California Compass Growth Vision Report* (SCAG 2004). The objective of the visioning process was to further develop ways to accommodate growth while maintaining mobility, prosperity, and sustainability goals. This resulted in a regional vision known as the *Compass Blueprint Growth Vision*.

#### **4.16.2 Affected Environment/Existing Conditions**

The affected environment and existing conditions for the LPA are the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario. Under the Phased Construction Scenario, Phase 1 and Phase 2 will extend through the cities of Los Angeles and Beverly Hills, and Phase 3 will extend through the city of Los Angeles and unincorporated portions of Los Angeles County.

### **Study Area**

The Study Area traverses 2 of the 14 subregions comprising the SCAG region—the city of Los Angeles and the Westside Cities Council of Governments subregion, where the cities of Beverly Hills, West Hollywood, and Santa Monica are located.

**Population and Housing Growth**

The 2009 SCAG regional population was roughly 18.7 million. Between 2000 and 2009, Los Angeles County had the largest population growth (from 9.5 million to 10.4 million) or 40 percent, with an additional 873,855 residents. However, Los Angeles County was the slowest growing SCAG county with a 1-percent annual average population growth rate.

During the same period, Los Angeles County increased households by 869,358, from 9.3 million to 10.2 million. While these households comprised about 40 percent of the SCAG total housing growth, the 1.2-percent average annual growth rate was the lowest of the six SCAG counties.

Table 4-69 shows that between 2000 and 2009, the cities of Los Angeles and Santa Monica had a 1.1-percent annual average population growth rate. The cities of Beverly Hills and West Hollywood had less than 1-percent annual average population growth rates.

**Table 4-69. Population Growth in Cities within the Study Area, 2000–2009**

| City           | Year 2000 | Year 2009 | 2000–2009 Change | Annual Average % Change |
|----------------|-----------|-----------|------------------|-------------------------|
| Los Angeles    | 3,694,742 | 4,065,585 | 370,843          | 1.1                     |
| West Hollywood | 35,794    | 37,580    | 1,786            | 0.6                     |
| Beverly Hills  | 33,784    | 36,090    | 2,306            | 0.8                     |
| Santa Monica   | 84,084    | 92,494    | 8,410            | 1.1                     |

*Source: State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2001-2009, with 2000 Benchmark*

As shown in Table 4-70, by 2009, the city of Los Angeles had the largest number of households at 1,407,967. Households in the cities of Los Angeles and Santa Monica both grew at about 0.5 percent annually compared to the 0.17 and 0.16 percent for the cities of West Hollywood and Beverly Hills.

**Table 4-70. Households in Cities within the Study Area, 2000–2009**

| City           | Year 2000 | Year 2009 | 2000–2009 Change | Annual Average % Change |
|----------------|-----------|-----------|------------------|-------------------------|
| Los Angeles    | 1,340,036 | 1,407,967 | 67,931           | 0.50                    |
| West Hollywood | 24,142    | 24,560    | 418              | 0.17                    |
| Beverly Hills  | 15,946    | 16,206    | 260              | 0.16                    |
| Santa Monica   | 48,133    | 50,371    | 2,238            | 0.47                    |

*Source: State of California, Department of Finance, E-5 Population Estimates for Cities, Counties, and the State, 2001-2009, with 2000 Benchmark*

## Employment Growth

SCAG regional employment, including self-employment, decreased by 73,200 jobs between 2000 and 2009. Los Angeles County lost about 228,000 jobs, a 5.2-percent decrease between 2000 and 2009. The current Los Angeles County unemployment rate was estimated at 12.3 percent, just slightly below the 12.5-percent statewide unemployment rate (as of February 2010).

Employment in all four cities in the Study Area decreased between 5 and 5.2 percent between 2000 and 2009. The city of Los Angeles lost 88,100 jobs and has a 13.6-percent unemployment rate. The city of West Hollywood has an estimated 10.4-percent unemployment rate; the city of Santa Monica has a 10.2-percent unemployment rate; and the city of Beverly Hills has an 8.6-percent unemployment rate, the lowest among the four cities as of February 2010.<sup>3</sup>

Generally, growth-inducing projects are located in isolated, undeveloped, or underdeveloped areas, necessitating major infrastructure being extended (e.g., sewer and water facilities, roadways) or are those that could encourage “premature” or unplanned growth (i.e., “leap-frog” development). Growth inducing impacts may be considered significant if a project has the potential to induce substantial area population growth, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extending roads or other infrastructure), and if the resulting growth results in significant impacts.

## Future Growth Projections

According to SCAG’s projections, the region is expected to steadily grow to about 24 million residents and 10.3 million jobs by 2035. The region is expected to have 7.7 million households. Population and employment in Los Angeles County are projected to increase by nearly 2 million people and 490,000 jobs between 2010 and 2035. This represents an estimated average annual increase of nearly 800,000 persons (less than 0.7-percent average annual population growth) and 19,600 jobs (less than 0.5-percent average annual employment growth).

SCAG’s 2008 RTP projections show that population growth in all the Study Area cities is projected to be relatively low during the 2010–2035 period, reflecting their built-out character. The population of the city of Los Angeles is projected to grow 0.35 percent per year, while population growth in the city of Santa Monica is projected at 0.04 percent per year, or the lowest rate among the cities in the Study Area. The household growth closely corresponds to the projected population growth, with the city of Los Angeles adding households at a 0.73-percent annual growth rate and the city of Santa Monica at 0.06 percent per year over the next 25 years. Similarly, employment growth is projected to be the highest at an average of 0.38 percent per year for the city of Los Angeles and the lowest at 0.28 percent per year for the cities of Santa Monica and Beverly Hills (Table 4-71).

<sup>3</sup> California Department of Finance, March 2010.



**Table 4-71. Population, Households, and Employment Growth in Cities within the Study Area, 2010–2035**

| City           | 2010 Population | 2035 Population | 2010 Households | 2035 Households | 2010 Employment | 2035 Employment |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Los Angeles    | 4,057,484       | 4,415,772       | 1,366,985       | 1,616,578       | 1,820,092       | 1,994,134       |
| West Hollywood | 38,223          | 39,821          | 23,718          | 24,940          | 32,185          | 34,719          |
| Beverly Hills  | 36,433          | 38,508          | 15,289          | 16,094          | 58,068          | 62,104          |
| Santa Monica   | 91,335          | 92,314          | 46,088          | 46,764          | 101,871         | 109,118         |

Source: SCAG, 2010-2035 RTP Adopted Growth Forecast, 2008

### 4.16.3 Environmental Impact/Environmental Consequences

To evaluate potential growth inducing impacts under both the Concurrent Construction Scenario and the Phased Construction Scenario, the 2008 SCAG RCPG, 2008 RTP, and the 2004 *Compass Growth Vision Report* were used. SCAG also states that the *Final 2008 Regional Transportation Plan Program Environmental Impact Report* (PEIR) (SCAG 2008b) can be used as the basis of regional impact analyses for their individual projects. In particular, this environmental analysis uses the RTP population, housing, and employment projections with relevant PEIR information to address the magnitude of a project’s potential impacts related to regional growth.

#### No Build Alternative

The No Build Alternative includes all existing highway and transit services and facilities, and the committed highway and transit projects in the 2009 *Metro Long Range Transportation Plan* (Metro 2009a) and the 2008 *Southern California Association of Governments’ Regional Transportation Plan*<sup>4</sup> (SCAG 2008a). Under the No Build Alternative, no new infrastructure would be built within the Study Area, aside from projects currently under construction or projects funded for construction, environmentally cleared, planned to be in operation by 2035, and identified in the LRTP.

All these transportation improvement projects are located within a densely developed urban region, including the greater Los Angeles area. They will not extend into previously undeveloped areas that could induce growth in such areas or remove a barrier to growth.

These projects are intended to help accommodate the existing and future transportation needs of the area’s population—which is projected to grow steadily into the future—by providing new public transit options that will help increase subregional and local mobility for current and future residents. At the same time, while accommodating the existing and future needs and transportation demand, these projects will indirectly provide local development and growth opportunities, including opportunities for transit-oriented development around new stations.

<sup>4</sup> Metro is working with SCAG to update the RTP, which will add the projects identified in Metro’s LRTP into the RTP. The update was scheduled to be completed in summer 2010.



By enhancing mobility, particularly for transit-dependent populations, the No Build Alternative could create opportunities for more intensive and focused urban growth near new transit stations and corridors, as well as for continuing growth in areas made accessible by these new transit services. With these opportunities, future growth and development in certain areas may occur sooner, rather than later, as a result of the No Build Alternative. However, such future development would be consistent with land use and community plans and subject to all applicable regulations of each local jurisdiction, and no growth beyond that already anticipated in local or regional plans would occur.

The No Build Alternative would also generate new employment, directly and indirectly. Employment is directly proportional to the magnitude of capital expenditure associated with each project. When combined, these projects would generate significant direct and indirect long-term operation-related employment within the SCAG region, including the city of Los Angeles and the Westside Cities Council of Governments subregions.

Overall, the No Build Alternative would significantly contribute to general economic growth, including employment growth, within their corridors, their regions' cities and counties, and within the entire SCAG region. This is considered a significant beneficial effect since this new employment is anticipated to help alleviate the effects of lost jobs resulting from the current recession, help alleviate current unemployment, and help generate future employment that has been projected for the region and the Study Area. The No Build Alternative would not result in adverse growth inducing effects.

### **Locally Preferred Alternative**

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing growth inducing impacts during operation of the LPA.

### ***America Fast Forward (30/10) Scenario (Concurrent Construction)***

As with the No Build Alternative, the LPA 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 LPA 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). 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 LPA, including station, alignment, and station entrance options, 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.

### ***Metro Long Range Transportation Plan Scenario (Phased Construction)***

Under the Phased Construction Scenario, the potential for growth inducing impacts is the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of these potential impacts. Under the Phased Construction Scenario, the potential for growth inducing impacts along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential growth inducing impacts along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of growth inducing impacts is discussed in the Concurrent Construction Scenario section above. Phase 1, Phase 2, and Phase 3 of the LPA 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 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 for Phase 1, Phase 2, or Phase 3 of the LPA.

### **4.16.4 Mitigation Measures**

The LPA, including station, alignment, and station entrance options, under both the Concurrent Construction Scenario and the Phased Construction Scenario, will not result in growth inducing impacts during operation of the system; therefore, no mitigation measures will be required. For a more detailed discussion of impacts during construction and mitigation measures, refer to Section 4.15.

### **4.16.5 California Environmental Quality Act Determination**

The CEQA determination compares the effects of the LPA under either the Concurrent Construction Scenario or the Phased Construction Scenario with the existing conditions described in Section 4.16.2. 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.

The No Build Alternative would result in a beneficial effect and would not induce growth either directly or indirectly beyond that already anticipated by regional and local land use and community plans, as well as regional projections for the city of Los Angeles, the



Westside Cities Council of Governments subregions, and the entire SCAG region. No significant impacts are anticipated pursuant to CEQA.

The LPA, including station, alignment, and station entrance options, will not induce growth, either directly or indirectly, beyond that already anticipated in the regional plans and projections for the SCAG region or in local land and community plans of the city of Los Angeles or the Westside Cities Council of Governments subregions. The LPA, including station, alignment, and station entrance options, will result in beneficial effects. No significant adverse impacts are anticipated pursuant to CEQA or related to growth inducement; therefore, no mitigation measures are required.

The opening of the LPA as a single phase under the Concurrent Construction Scenario or in three sequential phases under the Phased Construction Scenario will not result in differing growth inducing impacts, as discussed in Section 4.16.3. The only difference between the two scenarios is the timing of potential for growth inducing impacts. Under the Phased Construction Scenario, the potential for growth inducing impacts along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential growth inducing impacts along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

## **4.17 Cumulative Impacts**

This section has been updated from the Draft EIS/EIR to focus on the analysis of the effects of the LPA on cumulative impacts. The LPA could either be constructed as a single phase under the America Fast Forward (30/10) Scenario (Concurrent Construction), or as three consecutive phases under the Metro Long Range Transportation Plan Scenario (Phased Construction). The opening of the LPA as a single phase or in three sequential phases does not substantially change the analysis that was presented in the Draft EIS/EIR. The analysis results have not changed from the Draft EIS/EIR. The analysis of all the Build and TSM Alternatives in the Draft EIS/EIR is incorporated here by reference.

This section examines the cumulative impacts that could result from implementing the LPA when considered in combination with the identified past, present and foreseeable future projects.

### **4.17.1 Regulatory Setting**

Guidance for analyzing cumulative impacts has been established by both federal and state regulations, as described below. The regulatory settings for the LPA are the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario.

#### **National Environmental Policy Act Guidance**

CEQ regulations regarding implementation of NEPA defines cumulative effects as those effects that result from incremental impacts of a proposed action when added to past, present, and reasonably foreseeable future actions, regardless of which agency (federal or non-federal) or person undertakes such actions.



Cumulative effects can result from individually minor, but collectively significant, actions that occur over time (40 CFR 1508.7).

### **California Environmental Quality Act Guidance**

Section 15355 of the CEQA guidelines defines cumulative impacts as two or more individual effects that, when considered together, are considerable and may compound or increase other environmental impacts.

Cumulative impacts can result from individually minor, but collectively significant, projects occurring over a period of time (Section 15355(b)).

### **Regional Growth Management Plans**

SCAG is the federally designated metropolitan planning organization for a six-county Southern California region (the counties of Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial). SCAG develops regional growth management plans with the goals to provide for efficient movement of people, goods, and information; enhance economic growth and international trade; and improve the quality of life for the Southern California region.

The 2008 SCAG RCPG describes the action plan for implementing short-term strategies and long-term initiatives and the guiding principles for a sustainable and livable region. The RCPG focuses on specific planning and resource management areas, including land use and housing, open space and habitat, water, energy, air quality, solid waste, transportation, security and emergency preparedness, and economy. The RCPG's Growth Management chapter addresses issues related to growth and land use, and enumerates guiding principles for development that support the overall RCPG goals.

The 2008 SCAG RTP is a regional planning document that establishes the goals, objectives, and policies for the region's transportation system and establishes an implementation plan for transportation investments through the year 2035. The RTP contains regional population, housing, and employment growth projections through the year 2035. These projections are used as growth guidelines in each jurisdiction within the SCAG region.

SCAG is also conducting a comprehensive growth visioning process, the Southern California Compass Blueprint. The objective of the Compass Blueprint process is to further develop ways through transportation and land-use planning to accommodate growth region-wide while maintaining mobility, prosperity, and sustainability goals for the region's residents.

#### **4.17.2 Methodology**

The cumulative impact analysis follows the guidelines provided in "Considering Cumulative Effects under the National Environmental Policy Act" (Council on Environmental Quality, January 1997). The analysis is also consistent with CEQA guidelines, Section 15130(b)(1), which direct cumulative impact analyses to include "a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan,

or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program.”

This cumulative impact analysis incorporates the regional projections from the 2008 RTP. The SCAG region’s budget for the next 30 years totals an estimated \$568.9 billion. The RTP recommends “closing critical gaps in the transit system to improve service and extending routes to serve a greater number of passengers,” and has identified \$163.7 billion (approximately 29 percent of the budget) for proposed, committed, and programmed transit projects.

The region-wide impact analysis conducted in the 2008 RTP Program Environmental Impact Report (EIR) (SCH No. 2007061126, May 2008) serves as the basis for this cumulative impacts analysis, pursuant to Section 15130(b)(1) of the CEQA guidelines.

In addition to long-term cumulative effects, cumulative effects associated with short-term (temporary) construction effects of the LPA when combined with construction effects of other transportation and transit projects are also addressed.

#### **4.17.3 Affected Environment/Existing Conditions**

The Study Area for this cumulative impacts analysis generally encompasses the SCAG region, including the areas traversed by the LPA (i.e., the two SCAG subregions comprised of the City of Los Angeles and the Westside Cities Council of Governments subregions where the City of Beverly Hills is located). The affected environment and existing conditions for the LPA are the same whether the LPA is constructed under the Concurrent Construction Scenario or the Phased Construction Scenario.

#### **4.17.4 Environmental Impact/Environmental Consequences**

##### **No Build Alternative**

The No Build Alternative includes all existing highway and transit services and facilities, and the committed highway and transit projects in the 2009 Metro LRTP and the 2008 SCAG RTP.<sup>5</sup> Under the No Build Alternative, 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. These projects and their anticipated completion dates are as follows:

- Exposition Boulevard Light Rail Phase 1 (Expo 1), spring 2012
- Exposition Boulevard Light Rail Phase 2 (Expo 2), 2015
- Gold Line Foothill Extension, 2017
- Eastside Phase 2, 2035
- Crenshaw Transit Corridor Project, 2018

---

<sup>5</sup> Metro is working with SCAG to update the RTP, which will add the projects identified in Metro’s LRTP into the RTP. The update was scheduled to be completed in Summer 2010.

- Green Line Extension to Los Angeles Airport (LAX), 2035
- South Bay Green Line Extension to Torrance Transit Center, 2035
- LAX Automated People Mover (APM), 2028, depending on availability of funding

These projects are anticipated to be completed and operational within the same planning horizon as the LPA. Of these projects, the Expo 1 and 2 and the Crenshaw Transit Corridor Projects are closest to the LPA.

The No Build Alternative also includes all the existing bus service provided by Metro and other transit agencies and incorporates the following three planned projects: (1) the Metro Orange Line Extension, in service by summer 2012; (2) the Wilshire Bus Rapid Transit Project with construction expected to begin in 2012; and (3) the Metro Silver Line (Line 910 El Monte Station–Artesia Transit Center via Downtown) that started in December 2009. The nearly complete Metro Rapid Bus Program is also included.

The region-wide impact analysis conducted in the 2008 RTP Program EIR identified significant cumulative impacts associated with the 2008 RTP, which is included in the No Build Alternative. These effects are a result of substantially increased urbanization within the SCAG region by 2035. The provision of new and enhanced transportation projects and improvements under the No Build Alternative would increase mobility and provide opportunities for local land use development, including transit-oriented development within the region, and thus, would influence urbanization growth.

In addition to examining the influences on growth, the 2008 RTP Program EIR also identified significant cumulative impacts on the following resources: traffic; air quality (short-term and long-term effects associated with criteria air pollutant emissions and greenhouse gas emissions from construction and operation activities); visual character; biological resources; cultural resources; energy consumption; geotechnical hazards; hazardous materials transport to areas outside the SCAG region; land use; noise (as a result of expanded or new transportation facilities and increased use of existing transit facilities); open space; some public services and utilities; fire hazard; water quality and flooding; and existing water supplies and infrastructure.

### **Locally Preferred Alternative**

This cumulative impacts discussion assesses the overall cumulative effects of the LPA, which includes a maintenance facility. The following analysis examines cumulative impacts associated with operations, followed by cumulative impacts involved with construction. It is important to note that impacts would increase for any future extensions beyond the LPA.

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing cumulative impacts for operations or construction.



## **Cumulative Impacts for Operations**

### ***Transit***

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA, 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 LPA on the transit network will be beneficial. Even allowing time spent for accessing subway service (including vertical movement to platforms) under the LPA, 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 LPA's beneficial cumulative effect will accrue to the entire SCAG region and, in particular, to the Los Angeles County subregion.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the beneficial cumulative effects to the transit network are the same as under the Concurrent Construction Scenario. The analysis of cumulative effects to the transit network is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of these beneficial cumulative effects to the transit network. 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. The timing for beneficial cumulative effects to transit resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Therefore, under the Phased Construction Scenario, it will take longer to realize the full beneficial effects to the transit network. When combined with other planned transit projects and improvements pursuant to the 2008 RTP, the beneficial cumulative effect of Phase 1, Phase 2, and Phase 3 will accrue to the entire SCAG region and, in particular, to the Los Angeles County subregion.

### ***Traffic***

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

In general, the LPA is projected to result in fewer vehicle trips and VMT as compared to the 2035 No Build Alternative; thus, the incremental effect of the LPA 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 (refer to Section 3.5.2 for a specific discussion of impacts). However, the cumulative traffic impact of this station entrance is not cumulatively considerable. Additionally, the Bank of America entrance is not the recommended location for the Wilshire/Rodeo Station entrance. The Wilshire/Rodeo Station entrance at Ace Gallery, which is the recommended entrance location, and the entrance at Union Bank will not result in significant traffic impacts. Therefore, the LPA, including all station, alignment, and station entrance options still under consideration, will not contribute to the projected 2035 cumulative traffic increase.



### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the cumulative traffic effects are the same as under the Concurrent Construction Scenario. The analysis of cumulative traffic impacts is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of these cumulative traffic effects. Under the Phased Construction Scenario, the cumulative traffic effects resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for cumulative traffic effects resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. The one significant traffic impact resulting from the entrance at the Bank of America building for the Wilshire/Rodeo Station would be part of Phase 2 of the LPA. However, the cumulative traffic impact associated with the Wilshire/Rodeo Station entrance at the Bank of America is not cumulatively considerable. Furthermore, the Wilshire/Rodeo Station entrance at Ace Gallery, which is the recommended entrance location, and the entrance at Union Bank will not result in significant traffic impacts. Therefore, Phase 1, Phase 2, and Phase 3 will not contribute to the projected 2035 cumulative traffic increase.

### **Parking**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA 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 LPA's parking impact will be cumulatively considerable when considered together with the increased parking demand that could result from a higher population density in LPA 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 LPA 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 LPA 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. UCLA and the Department of Veterans Affairs, respectively, own these locations and are working with Metro on station development. The parking analysis indicates that this impact will be minimized since the parking at the Westwood/VA Hospital South Station, if that station option is selected, will be replaced by a new parking structure east of the VA Hospital building, and it is anticipated that other parking facilities owned or planned by UCLA will be able to absorb any displaced demand. The parking demand itself could be reduced by the provision of the proposed subway transportation option.

In addition, the LPA 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. This impact will depend on the station entrance selected. 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 LPA, including all station, alignment, and station entrance options still under consideration.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

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. Under the Phased Construction Scenario, the cumulative parking effects resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for cumulative parking effects resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. The cumulative parking effects associated with each phase are discussed below.

*Phase 1 to Wilshire/La Cienega*

The cumulative parking effects are discussed in the Concurrent Construction Scenario section above. Phase 1 is expected to result in on-street parking impacts due to residential neighborhood spillover at the Wilshire/La Brea, Wilshire/Fairfax, and Wilshire/La Cienega Station areas. The projected increase in population within a one-quarter mile walking distance of station location options will also increase parking demand. Therefore, the Phase 1 parking impact will be cumulatively considerable when considered together with the increased parking demand that could result from a higher population density in Phase 1 station areas, as well as stations of other transit projects and improvements. The mitigation recommendations contained in the *Westside Subway Extension Parking Policy Plan* for the LPA 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.

*Phase 2 to Century City*

The cumulative parking effects are discussed in the Concurrent Construction Scenario section above. Phase 2 is expected to result in on-street parking impacts due to residential neighborhood spillover and resulting lack of available parking capacity for users at either the Wilshire/Rodeo or Century City Stations. Phase 2 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 and Wilshire/Rodeo Stations. This impact will depend on the station entrance selected. 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 Phase 2.

### *Phase 3 to Westwood/VA Hospital*

The cumulative parking effects are discussed in the Concurrent Construction Scenario section above. Phase 3 is expected to result in on-street parking impacts due to residential neighborhood spillover at the Westwood/UCLA and Westwood/VA Hospital Stations. The projected increase in population within a one-quarter mile walking distance of station location options will also increase parking demand. Therefore, the Phase 3 parking impact will be cumulatively considerable when considered together with the increased parking demand that could result from a higher population density in Phase 3 station areas, as well as stations of other transit projects and improvements. The mitigation recommendations contained in the *Westside Subway Extension Parking Policy Plan* for the LPA 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.

Phase 3 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. UCLA and the Department of Veterans Affairs, respectively, own these locations and are working with Metro on station development. The parking analysis indicates that this impact will be minimized since parking at the Westwood/VA Hospital South Station, if that station option is selected, will be replaced by a new parking structure east of the VA Hospital building, and it is anticipated that other parking facilities owned or planned by UCLA will be able to absorb any displaced demand. The parking demand itself could be reduced by the provision of the proposed subway transportation option.

In addition, Phase 3 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 Westwood/UCLA and Westwood/VA Hospital Stations. This impact will depend on the station entrance selected. At many of these locations, underground parking exceeds the levels required by local parking ratios. In general, no mitigation measures are required since no adverse impacts are expected under Phase 3.

### ***Air Quality***

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA is expected to reduce regional VMT and regional air pollutant emissions burden levels, and thus will not contribute to cumulative air quality impacts. The LPA 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 LPA 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 LPA, including all station, alignment, and station entrance options still under consideration, will have a beneficial impact on air quality; therefore, there will not be cumulatively considerable adverse impact on air quality.



*Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the beneficial cumulative air quality impacts are the same as under the Concurrent Construction Scenario. The analysis of cumulative air quality impacts is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the beneficial cumulative air quality impacts. Under the Phased Construction Scenario, the beneficial cumulative air quality impacts resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for beneficial cumulative air quality impacts resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Therefore, under the Phased Construction Scenario, it will take longer to realize the full beneficial cumulative air quality effects of the LPA. Phase 1, Phase 2, and Phase 3 will not result in a cumulatively considerable adverse impact on air quality.

**Climate Change**

*America Fast Forward (30/10) Scenario (Concurrent Construction)*

Climate change impacts for the LPA 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 LPA 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 LPA 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 LPA 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 LPA shows no measurable change in greenhouse gas emissions. The LPA, including all station, alignment, and station entrance options still under consideration, will have a beneficial impact on climate change; therefore, there will not be cumulatively considerable adverse impact on greenhouse gas emissions.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the beneficial cumulative effect on climate change will be the same as under the Concurrent Construction Scenario. The analysis of cumulative climate change effects is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the beneficial cumulative climate change effects. Under the Phased Construction Scenario, the beneficial cumulative climate change effects resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for beneficial cumulative climate change effects resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Therefore, under the Phased Construction Scenario, it will take longer to realize the full beneficial

cumulative climate change effects of the LPA. Phase 1, Phase 2, and Phase 3 will not result in a cumulatively considerable adverse impact on greenhouse gas emissions.

### **Noise and Vibration**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

Noise impacts to the environment from introducing transit system noise generally result from operations of at grade and elevated transit systems. The LPA 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 LPA, including all station, alignment, and station entrance options still under consideration, will not contribute to a cumulative airborne noise impact from these components.

The LPA 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 LPA 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 LPA 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 LPA, including all station, alignment, and station entrance options still under consideration, will not make a considerable contribution to cumulative operational vibration impacts.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for cumulative noise and vibration effects will be the same as under the Concurrent Construction Scenario. The analysis of cumulative noise and vibration effects is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for noise and vibration effects. Under the Phased Construction Scenario, the potential for cumulative noise and vibration impacts resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential noise and vibration effects resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Therefore, under the Phased Construction Scenario, Phase 1, Phase 2, and Phase 3 will not result in a cumulatively considerable contribution to noise and vibration impacts.





### ***Land Use and Development***

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA 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 LPA, including all station, alignment, and station entrance options still under consideration, 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 LPA 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.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative direct and indirect land use impacts is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative direct and indirect land use impacts resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative direct and indirect land use impacts resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Therefore, under the Phased Construction Scenario, Phase 1, Phase 2, and Phase 3 will not result in cumulative direct land use impacts, but will indirectly result in a cumulatively 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.

### ***Community and Neighborhood Impacts***

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA 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 LPA, 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 LPA, including all station, alignment, and station entrance options still under consideration.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts to communities and neighborhoods is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts to communities and neighborhoods resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts to communities and neighborhoods resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Therefore, under the Phased Construction Scenario, Phase 1, Phase 2, and Phase 3 will not result in a cumulatively considerable adverse impact to communities or neighborhoods.

***Parklands and Other Community Facilities***

*America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA, including all station, alignment, and station entrance options still under consideration, 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 LPA 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.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts to parklands and other community facilities is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for



these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts to parklands and other community facilities resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts to parklands and other community facilities resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Therefore, under the Phased Construction Scenario, Phase 1, Phase 2, and Phase 3 will not result in cumulatively considerable direct or indirect impacts to parklands or other community facilities.

### **Visual Effects**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA, including all station, alignment, and station entrance options still under consideration, will not directly result in adverse impacts on scenic highways and vistas, visual character, or light and glare. The LPA 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 LPA will not contribute to significant cumulative effects and result in a cumulatively considerable impact.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for cumulative impacts to visual resources will be the same as under the Concurrent Construction Scenario. The analysis of cumulative impacts to visual resources is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts to visual resources resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts to visual resources resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Therefore, under the Phased Construction Scenario, Phase 1, Phase 2, and Phase 3 will not result in cumulatively considerable impacts to visual resources.

### **Cultural and Historic Resources**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA will remove one building, Ace Gallery, at the Wilshire/Rodeo Station. Removal of historic resources is considered an adverse effect. 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.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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.

### **Archaeological Resources**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

No archaeological resources have been identified within the APE for the LPA stations, alignment, or laydown areas. The LPA may affect undocumented cultural resources, including intact archaeological deposits. Given that the LPA 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.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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. Under the Phased Construction Scenario, the potential for cumulative impacts to archaeological resources resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts to archaeological resources resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of cumulative impacts to archaeological resources is provided in the Concurrent Construction Scenario discussion above. 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 is cumulatively considerable.

### **Paleontological Resources**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA 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 LPA 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 LPA, including all station, alignment, and station entrance options still under consideration, 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.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts to paleontological resources is provided in the Concurrent Construction Scenario discussion above. 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.

Under the Phased Construction Scenario, the timing for potential cumulative impacts to the known paleontological resources resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

**Energy**

*America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA will use energy during operations. However, the LPA, including all station, alignment, and station entrance options, 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 LPA 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 LPA will decrease regional energy consumption resulting in a beneficial energy impact. The energy consumption associated with the LPA, including all station, alignment, and station entrance options, 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.



### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the beneficial cumulative effects to energy consumption are the same as under the Concurrent Construction Scenario. The analysis of cumulative effects to energy consumption is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of these beneficial cumulative effects to energy consumption. 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. The timing for beneficial cumulative effects to energy consumption resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Therefore, under the Phased Construction Scenario, it will take longer to realize the full beneficial effects to energy consumption.

### **Water Quality**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA 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 LPA, including all station, alignment, and station entrance options, 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.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for cumulative impacts to water quality will be the same as under the Concurrent Construction Scenario. The analysis of cumulative impacts on water quality is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts to water quality resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts to water quality resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Phase 1, Phase 2, and Phase 3 of the LPA 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.

### **Geologic Hazards**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

As with any transportation and other development projects within the seismically active Southern California region, the LPA 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 LPA 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 LPA, including all station, alignment, and station entrance options still under consideration, to the significant cumulative regional geotechnical effects associated with implementation of the 2008 RTP transportation projects and improvements will be limited.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

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. Under the Phased Construction Scenario, the potential for cumulative impacts related to geologic hazards resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts related to geologic hazards resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The analysis of cumulative impacts related to geologic hazards is provided in the Concurrent Construction Scenario discussion above. The West Beverly Hills Lineament, considered to be the northern extension of the Newport Inglewood fault zone, crosses Phase 2 of the LPA in the Century City vicinity. The Santa Monica fault zone crosses Phase 3 of the LPA 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 LPA 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 LPA to the significant cumulative regional geotechnical effects associated with implementation of the 2008 RTP transportation projects and improvements will be limited.

**Hazardous Materials**

*America Fast Forward (30/10) Scenario (Concurrent Construction)*

Several facilities included on hazardous materials site lists were identified along the LPA, 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 LPA, including all station, alignment, and station entrance options still under consideration, is not anticipated to result in exposure to acutely hazardous materials and will not contribute to cumulatively considerable impacts regarding hazardous materials.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts related to hazardous materials is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts related to hazardous materials resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts related to hazardous materials resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Operation of Phase 1, Phase 2, and Phase 3 of the LPA is not anticipated to result in exposure to acutely hazardous materials and will not contribute to cumulatively considerable impacts regarding hazardous materials.

### **Cumulative Impacts for Construction**

The construction impacts assessment indicates that the LPA under both the Concurrent Construction Scenario and the Phased Construction Scenario will result in similar cumulative impacts described in the following paragraphs.

#### **Traffic**

*America Fast Forward (30/10) Scenario (Concurrent Construction)*

Constructing the LPA, including all station, alignment, and station entrance options still under consideration, 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.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts for construction related to traffic is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to traffic resulting from Phase 2 and Phase 3 will occur later than under the



Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction related to traffic resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Construction of Phase 1, Phase 2, and Phase 3 of the LPA will result in significant and unavoidable traffic impacts during the construction period.

### **Parking**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

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, when combined with similar parking effects associated with other transit and transportation projects pursuant to the 2008 RTP and the localized nature of this impact, the public parking loss during construction of the LPA, including all station, alignment, and station entrance options still under consideration, will not be cumulatively considerable.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts for construction related to parking is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to parking resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction related to parking resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Construction of Phase 1, Phase 2, and Phase 3 of the LPA when combined with similar parking effects associated with other transit and transportation projects pursuant to the 2008 RTP and the localized nature of this impact will not result in cumulatively considerable loss of public parking.

### **Pedestrian and Bicycle Circulation**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

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, when combined with similar pedestrian and bicycle significant impacts associated with other transit and transportation projects pursuant to the 2008 RTP and given the localized nature of this impact, the pedestrian and bicycle impacts will not be cumulatively considerable.

### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts for construction related to pedestrian and bicycle circulation is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to pedestrian and bicycle circulation resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction related to pedestrian and bicycle circulation resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Construction of Phase 1, Phase 2, and Phase 3 of the LPA when combined with similar pedestrian and bicycle significant impacts associated with other transit and transportation projects pursuant to the 2008 RTP will not result in cumulatively considerable pedestrian and bicycle impacts.

### **Air Quality**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

Constructing the LPA, including stations, support facilities, subway tunnels, and infrastructure, 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 LPA 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 LPA will be below SCAQMD thresholds. However, because the Study Area is in a nonattainment area for these pollutants, the LPA 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.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts for construction related to air quality is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to air quality resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction related to air quality resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Construction of Phase 1, Phase 2, and Phase 3 of the LPA 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.

**Noise and Vibration**

*America Fast Forward (30/10) Scenario (Concurrent Construction)*

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.

*Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts for construction related to noise and vibration is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts for construction-related noise and vibration resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction related to noise and vibration resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Construction of Phase 1, Phase 2, and Phase 3 of the LPA 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 will not result in cumulatively considerable noise and vibration impacts.

### **Community and Neighborhood Effects**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

Construction of the LPA, including all station, alignment, and station entrance options still under consideration, will be disruptive to communities and neighborhoods in the immediate vicinity of construction activities. If construction of the LPA 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.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts for construction on communities and neighborhoods is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts for construction on communities and neighborhoods resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction on communities and neighborhoods resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. If construction of Phase 1, Phase 2, or Phase 3 of the LPA 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.

### **Geologic Hazards**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

The LPA, including all station, alignment, and station entrance options still under consideration, 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 LPA will apply similar construction measures, and there will be no impact on public health and safety. Therefore, the LPA will not contribute to a significant cumulative impact.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to geologic hazards will be the same as under the Concurrent Construction Scenario. The analysis of cumulative impacts for construction related to geologic hazards is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts



for construction-related geologic hazards resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction related to geologic hazards resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Construction of Phase 1, Phase 2, and Phase 3 of the LPA will apply similar construction measures as previous projects that have successfully and safely excavated in the Methane Risk Zone. Therefore, construction of all three phases of the LPA will not result in cumulatively considerable geologic hazards.

### **Hazardous Materials**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

Construction of the LPA, including all station, alignment, and station entrance options still under consideration, 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.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts for construction related to hazardous materials is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to hazardous materials resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction related to hazardous materials resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. The spoils from construction of Phase 1, Phase 2, and Phase 3 of the LPA will be disposed of off-site at licensed disposal facilities after treatment. Since there is only a limited number of disposal facilities within the SCAG region, when combined with disposal associated with construction of other transit and transportation projects pursuant to the 2008 RTP, the cumulative effect of transporting hazardous materials outside the SCAG region will be cumulatively considerable.

### **Water Quality**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

Constructing the LPA 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 LPA, including all station, alignment, and station entrance options still under consideration, 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.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts for construction related to water quality is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to water quality resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction related to water quality resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Construction of Phase 1, Phase 2, and Phase 3 of the LPA will not result in a significant impact to water quality. However, the contribution of any of the three phases of the LPA, including all station, alignment, and station entrance options, 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.

### **Visual Effects**

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

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.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts for construction related to visual quality is provided in the Concurrent Construction Scenario discussion above.



The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to visual quality resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction related to visual quality resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. Construction of Phase 1, Phase 2, and Phase 3 of the LPA, combined with similar effects associated with construction of other transit and transportation projects pursuant to the 2008 RTP, given the local nature of impacts, the combined impact will not be cumulatively considerable.

### ***Biological Resources***

#### *America Fast Forward (30/10) Scenario (Concurrent Construction)*

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 LPA 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 LPA, including all station, alignment, and station entrance options still under consideration, to cumulative impacts is therefore less than cumulatively considerable.

#### *Metro Long Range Transportation Plan Scenario (Phased Construction)*

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 analysis of cumulative impacts for construction related to biological resources is provided in the Concurrent Construction Scenario discussion above. The only difference between the two scenarios is the timing of the potential for these impacts. Under the Phased Construction Scenario, the potential for cumulative impacts for construction related to biological resources resulting from Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential cumulative impacts for construction related to biological resources resulting from Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020. The potential for the construction of Phase 1, Phase 2, and Phase 3 of the LPA to contribute to significant cumulative effects on biological resources—including wetlands, sensitive habitats, and wildlife movement corridors—is limited. Therefore the contribution of all three phases of the LPA to cumulative impacts is less than cumulatively considerable.



### 4.18 Relationship between Short-term Uses of the Environment and Long-term Productivity

This section has been updated from the Draft EIS/EIR to focus on the analysis of the effects of the LPA on the relationship between short-term uses of the environment and long-term productivity. The LPA could either be constructed as a single phase under the America Fast Forward (30/10) Scenario (Concurrent Construction), or as three consecutive phases under the Metro Long Range Transportation Plan Scenario (Phased Construction). The opening of the LPA as a single phase or in three sequential phases does not substantially change the relationship between short-term uses of the environment and long-term productivity analysis that was presented in the Draft EIS/EIR. The analysis results have not changed from the Draft EIS/EIR. The analysis of all the Build and TSM Alternatives in the Draft EIS/EIR is incorporated into this document by reference.

Pursuant to NEPA and CEQA, significant irreversible environmental changes are described as uses of non-renewable resources during the initial and continued phases of a project that may be irreversible (losses that cannot be recovered or reversed) if removal of the resources occurs, or the loss of future options and the resource cannot be recovered or reused. Primary impacts and secondary impacts, such as dedication of right-of-way to transportation uses, typically commit future generations to similar uses. In addition, irreversible damage can result from environmental accidents associated with a project (CEQA Guidelines 15126(e)).

The LPA, under the Concurrent Construction Scenario and the Phased Construction Scenario is included in the Metro LRTP and the SCAG RTP, which consider the need for present and future transportation requirements within the context of present and future land use development in the Southern California region. The local short-term impacts and use of resources by the LPA are consistent with the maintenance and enhancement of long-term productivity for the local area and region.

#### **No Build Alternative**

The No Build Alternative does not entail construction beyond the projects that are currently under construction and planned. It would not result in short-term or long-term losses or gains. It would not resolve worsening congestion on local streets and highways. As a result, the No Build Alternative would not enhance the Study Area or regional long-term productivity.

#### **Locally Preferred Alternative**

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing impacts to the relationship between short-term uses of the environment and long-term productivity during operation of the LPA.

#### **America Fast Forward (30/10) Scenario (Concurrent Construction)**

Under the Concurrent Construction Scenario, the LPA would be operational in its entirety to Westwood/VA Hospital in 2022. For the LPA, including station, alignment,



and station entrance options still under consideration, short-term losses will include economic losses experienced by business relocations and temporary construction impacts, such as noise, air quality, visual quality, energy, greenhouse gas emissions and motorized and non-motorized traffic delays or detours. There also will be a short-term loss of plant resources from removing any street trees or landscaping. This is considered a short-term loss since Metro will comply with local tree ordinances and replace trees, as necessary. Short-term benefits will include increased jobs and revenue generated during construction. The opening of the LPA as a single phase or in three sequential phases will not result in differing short-term losses or benefits.

Long-term losses associated with the LPA, including station, alignment, and station entrance options still under consideration, will include construction materials and energy. Construction activities may result in the loss of paleontological and archaeological site values. The demolition, in whole or part, of historic properties will also be a long-term loss.

Long-term gains associated with the LPA, including station, alignment, and station entrance options still under consideration, include improvements to the transit network, enhanced access to regional and local activity centers, air quality, energy, reduced local street and highway congestion, and increased jobs and revenue through expanded transit services. Equally important, the LPA will locate transit alignments and stations in areas with existing land uses conducive to transit use or in areas that have the greatest potential to develop transit-supportive land uses. Sites used for construction staging will be available for development after construction is complete, and these vacant parcels present a future opportunity for TOD. Therefore, the LPA will enhance the local and regional long-term productivity.

#### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

Under the Phased Construction Scenario, short-term losses, short-term benefits, long-term losses, and long-term gains are the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of potential for impacts. Under the Phased Construction Scenario, the potential for short-term and long-term losses and benefits along Phase 2 and Phase 3 will occur later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing for potential short-term and long-term losses and benefits along Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

The short-term losses, short-term benefits, long-term losses, and long-gains discussed in the Concurrent Construction Scenario above would be felt for each of the three phases of the LPA. The operation and maintenance of all three phases of the LPA will be similar to the existing Metro Red and Purple Lines and will be conducted in accordance with OSHA, CALOSHA, CPUC, and Metro policies and practices. No adverse impacts are anticipated under operation of Phase 1, Phase 2, and Phase 3 of the LPA.

### 4.19 Irreversible and Irretrievable Commitments of Resources

This section has been updated from the Draft EIS/EIR to focus on the analysis of the effects of the LPA on the irreversible and irretrievable commitments of resources. The LPA could either be constructed as a single phase under the America Fast Forward (30/10) Scenario (Concurrent Construction), or as three consecutive phases under the Metro Long Range Transportation Plan Scenario (Phased Construction). The opening of the LPA as a single phase or in three sequential phases does not substantially change the irreversible and irretrievable commitment of resources analysis that was presented in the Draft EIS/EIR. The analysis results have not changed from the Draft EIS/EIR. The analysis of all the Build and TSM Alternatives in the Draft EIS/EIR is incorporated into this document by reference.

CEQA Section 15126.2(c) requires a discussion of any significant irreversible environmental changes that would be caused by a proposed project should it be implemented. Generally, a project would result in significant irreversible environmental changes if any of the following would occur:

- The project would involve a large commitment of nonrenewable resources
- The proposed consumption of resources is not justified (e.g., the project involves wasteful energy use)
- The primary and secondary impacts would generally commit future generations to similar uses
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project

#### **No Build Alternative**

Under the No Build Alternative, no new infrastructure would be built within the Study Area, aside from projects currently under construction or projects funded for construction, environmentally cleared, planned to be in operation by 2035, and identified in the Metro LRTP. The No Build Alternative provides the baseline conditions for comparing impacts from the LPA.

#### **Locally Preferred Alternative**

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing impacts to the commitment of resources.

#### **America Fast Forward (30/10) Scenario (Concurrent Construction)**

Under the Concurrent Construction Scenario, the LPA would be operational in its entirety to Westwood/VA Hospital in 2022. Construction of the LPA, including station, alignment, and station entrance options still under consideration, will entail the one-time irreversible and irretrievable commitment of nonrenewable resources, such as energy (fossil fuels used for construction equipment) and construction materials (such as lumber, sand, gravel, metals, and water). Additionally, labor and natural resources are used to produce construction materials. These materials are generally not retrievable; however, they are not in short supply and their use will not have an adverse effect upon



continued availability of these resources. Construction will also require a substantial one-time expenditure of both local and federal funds, which are not retrievable.

Land used to construct the LPA is considered an irreversible commitment during the period the land is used. After construction is completed, land used for the construction laydown area will be available for other uses. The heavy rail transit system is primarily underground. The LPA will commit land at stations and the maintenance facility to transit use. Station portals, maintenance facilities, and aboveground elements will be located on sites with existing commercial, retail, and industrial uses and will not require a substantial land commitment. This commitment of long-term land resources is consistent with the policies of the County of Los Angeles and the Cities of Los Angeles and Beverly Hills to promote transit-oriented uses.

The consumption of nonrenewable resources related to the LPA includes water, petroleum products, and electricity. Tunneling activities will require water for slurry for the TBM and in-water cooling towers. While much of this water can be recycled and reused, these processes will also create wastewater that will require disposal. In addition, fossil fuels will be used for transporting workers and materials during construction, and electricity and fuel will be used for trains, stations, and worker vehicles for maintenance and operation during the life of the LPA. The consumption amount and rate of these resources will not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of such resources because they will increase transit use (which increases energy efficiency) and decrease automobile dependence (which uses fossil fuels).

Benefits from the LPA will include improved mobility, transit accessibility, and energy and time savings. The resources commitment and consumption for the LPA are considered appropriate because regional and local area residents and visitors will benefit from improved transit services, which, in turn, will result in an overall decrease in the irreversible and irretrievable commitment of nonrenewable resources. For example, transportation sources account for more than 40 percent of the energy consumed in California. The LPA is expected to remove passenger cars from the regional roadway network, easing the increase in VMT and the use of fossil fuels. The LPA will reduce regional automobile VMT by approximately 581,000 and reduce mobile source energy consumption up to nearly 930 billion BTUs compared to the No Build. Therefore, it could substantially decrease the irreversible and irretrievable commitment of resources.

The LPA consists of a heavy rail transit system that will include transit stations and a maintenance facility. Maintenance of these project components will primarily use household-type cleaning materials, such as detergents and cleansers. Oil, solvents, and other materials will be used for train maintenance in relatively small volumes and are not considered acutely hazardous materials according to the National Institute of Health. There is the potential for hazardous materials/waste spills to occur; however, the storage and disposal of hazardous materials/waste will be conducted in accordance with all federal and state requirements to prevent or manage hazards. In the unlikely event that a spill does occur, remediation will be conducted accordingly. Therefore, there will be minimal risk of irreversible damage caused by an environmental accident associated

with hazardous or acutely hazardous materials. For additional details refer to Section 4.9.

### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

Under the Phased Construction Scenario, the commitments of nonrenewable resources, labor, natural resources, and local and federal funds are the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of when these resources would be used. Under the Phased Construction Scenario, resources required for the construction of Phase 2 and Phase 3 will be used later than under the Concurrent Construction Scenario due to an extended construction timeline. The resources required for the construction of Phase 1 will be used earlier than under the Concurrent Construction Scenario since Phase 1 will be open for operation in 2020.

The discussion of irreversible and irretrievable commitment of resources is discussed in the Concurrent Construction Scenario above. The consumption amount and rate of these resources for Phase 1, Phase 2, and Phase 3 of the LPA will not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of such resources.

## **4.20 Anticipated Permits and Approvals**

This section has been updated from the Draft EIS/EIR to focus on anticipated permits and approvals for the LPA. The LPA could either be constructed as a single phase under the America Fast Forward (30/10) Scenario (Concurrent Construction), or as three consecutive phases under the Metro Long Range Transportation Plan Scenario (Phased Construction). The opening of the LPA as a single phase or in three sequential phases does not substantially change the anticipated permits and approvals presented in the Draft EIS/EIR. The results have not changed from the Draft EIS/EIR. The Build and TSM Alternatives discussion in the Draft EIS/EIR are incorporated here by reference.

### **No Build Alternative**

No permits or approvals are required for the No Build Alternative.

### **Locally Preferred Alternative**

The LPA could either be constructed as a single phase under the Concurrent Construction Scenario or as three consecutive phases under the Phased Construction Scenario. The opening of the LPA as a single phase or in three sequential phases will not result in substantially differing permits and approval.

### **America Fast Forward (30/10) Scenario (Concurrent Construction)**

Under the Concurrent Construction Scenario, the LPA would be operational in its entirety to Westwood/VA Hospital in 2022. The LPA, including station, alignment, and station entrance options still under consideration, will comply with the State General Permit for Storm Water Discharges Associated with Construction Activity (Order No. 99-08-DQW), Construction General Permit (Order No. 2009-0009-DWQ), and Industrial General Permit (Order No. 97-03-DWQ). In addition, tunneling will likely occur at or below groundwater levels, and dewatering is anticipated. Therefore, an





LARWQCB dewatering permit will be required. Waste discharges must comply with LARWQCB Municipal NPDES Permit (LARWQCB Order No. R4-2008-0032) and waste discharge requirements (WDR) (Order No. 93-010 and Order No. 91-93). Approvals for discharges into drainage and sewer systems will be required under Municipal Separate Storm Sewer System (MS4) Permits (Order No. 01-182, NPDES No. CAS004001) from the County of Los Angeles; the Cities of Los Angeles and Beverly Hills; the County Sanitation District; and the Los Angeles County Flood Control District.

Grading and construction permits and compliance with tree protection ordinances will be required by the Cities of Los Angeles and Beverly Hills. Demolition permits will also be required by these cities for the removal of buildings at construction staging and station areas. Coordination and approvals from the communications and utility purveyors (including, but not limited to, Southern California Edison, Southern California Gas Company, AT&T, Verizon, MWD, and LADWP) will be needed for temporary or permanent utilities relocation or service interruption.

Construction of the LPA will require coordination with UCLA for construction of the Westwood/UCLA Off-Street Station or the Westwood/UCLA On-Street Station, and with the GSA for constructing the alignment and special track work near its facilities east of the I-405 Freeway. The LPA will also require VA approvals for constructing the station and tracks at the Westwood/VA Hospital South Station or the Westwood/VA Hospital North Station.

The LPA will cross under the I-405 Freeway. This will require a Caltrans encroachment permit and easement.

#### **Metro Long Range Transportation Plan Scenario (Phased Construction)**

Under the Phased Construction Scenario, anticipated permits and approvals are the same as under the Concurrent Construction Scenario. The only difference between the two scenarios is the timing of obtaining the identified permits and approvals. Under the Phased Construction Scenario, identified permits and approvals along Phase 2 and Phase 3 will be needed later than under the Concurrent Construction Scenario due to an extended construction timeline. The timing of obtaining the identified permits and approvals for Phase 1 of the LPA will occur earlier than under the Concurrent Construction Scenario since Phase 1 will open for operation in 2020.

Anticipated permits and approvals are discussed in the Concurrent Construction Scenario above. Similar approvals and permits will be required for Phase 1, Phase 2, and Phase 3 of the LPA since similar construction activities will occur along each phase. However, Phase 3 of the LPA will require coordination with UCLA for construction of the Westwood/UCLA Off-Street Station or the Westwood/UCLA On-Street Station, and with the GSA for constructing the alignment and special track work near its facilities east of the I-405 Freeway. Phase 3 will also require VA approvals for constructing the station and tracks at the Westwood/VA Hospital South Station or the Westwood/VA Hospital North Station. Additionally, Phase 3 of the LPA will cross under the I-405 Freeway, requiring a Caltrans encroachment permit and easement.