

## CHAPTER 2—ALTERNATIVES CONSIDERED

This chapter summarizes the alternatives considered to best satisfy the Purpose and Need of the Westside Subway Extension Project (Project). The chapter begins with a discussion of the alternatives screening process, including a summary of the Alternatives Analysis (AA) and the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR), resulting in the selection of the Locally Preferred Alternative (LPA) included in the Final EIS/EIR. Each alternative that has been considered is presented as well as the reasons alternatives were eliminated from further study. The LPA evaluated throughout this Final EIS/EIR resulted from a rigorous process involving compliance with the preparation notice comment period; AA, National Environmental Policy Act (NEPA), and California Environmental Quality Act (CEQA) scoping processes; and comments received during the public review of the Draft EIS/EIR. The chapter concludes with a detailed description of the LPA evaluated in this Final EIS/EIR, including station locations, entrance locations, construction staging and laydown areas, and other elements associated with the Project. The No Build Alternative is included in this Final EIS/EIR for comparative purposes.

### 2.1 Introduction

In the fall of 2007, Metro initiated an AA Study for the Westside Extension Transit Corridor. Although the Westside Extension has historically been envisioned as a heavy rail subway, various other modes were considered in the AA Study along with many different alignments. These included looking at alignment options other than Wilshire and Santa Monica Boulevards and other modes that included light rail transit, bus rapid transit, and monorail in both above-ground and below-ground configurations. This effort looked at various types of rail and non-rail options and as many as 19 different alignments.

In February 2009, following an extensive community outreach and technical review, the Metro Board of Directors reaffirmed the historical preference for a heavy rail subway in this Study Area. The primary alignment along Wilshire Boulevard was chosen as the preferred route, and Santa Monica Boulevard was identified as a possible branch alignment that could be considered in support of the primary Wilshire Boulevard route. The Metro Board of Directors also authorized staff to proceed with the next required step, preparation of a Draft EIS/EIR analyzing five subway Build Alternatives, a No Build Alternative, and a Transportation System Management (TSM) Alternative. This decision by the Metro Board of Directors was reinforced by the voters of Los Angeles County when they approved Measure R in November 2008. This Measure provided local sales tax funding for up to 12 new transit corridors throughout the County, including the Westside Extension Corridor. The ballot measure identified \$4.2 billion (2008 dollars) in funds for an extension of the subway from the existing Wilshire/Western Station to Westwood over a distance of approximately nine miles.

In April 2009, Metro initiated preparation of the Draft EIS/EIR with six scoping meetings to further refine the alternatives, assess the impacts of those alternatives both during construction and once the subway is operating, and to look at possible mitigation measures. Issues addressed as the alternatives were refined include decisions about station locations and ultimate alignments. Five public hearings were held during September 2010 to solicit comments from the public on the Draft EIS/EIR. The 45-day public comment period concluded on October 18, 2010, with approximately 800 comment letters received from interested parties, which contained nearly 2,000 comments. A summary of these comments along with responses to the major reoccurring themes is provided in Chapter 8, Public and Agency Outreach. All comments, along with the responses to the comments, appear in Appendix H, Response to Comments.

On October 28, 2010, the Metro Board of Directors approved the Draft EIS/EIR and selected Draft EIS/EIR Alternative 2 as the LPA. The LPA will extend heavy rail transit (HRT), in subway, approximately nine miles from the existing Metro Purple Line

Wilshire/Western Station to a Westwood/VA Hospital Station (Figure 2-1 and Figure 2-2) with seven new stations spaced at approximately one-mile intervals. Section 2.6 provides a detailed description of the LPA. The project elements are listed in Table 2-1.

Based on the selection of Alternative 2 as the LPA, the Metro Board of Directors authorized preparation of this Final EIS/EIR to further evaluate the No Build Alternative and the LPA. In February 2011, the FTA granted approval for Metro to enter into the FTA's Preliminary Engineering Phase. This chapter describes the alternatives considered in the AA, the Draft EIS/EIR, and this Final EIS/EIR.



**Figure 2-1. Wilshire Boulevard Corridor looking West from Western Avenue**

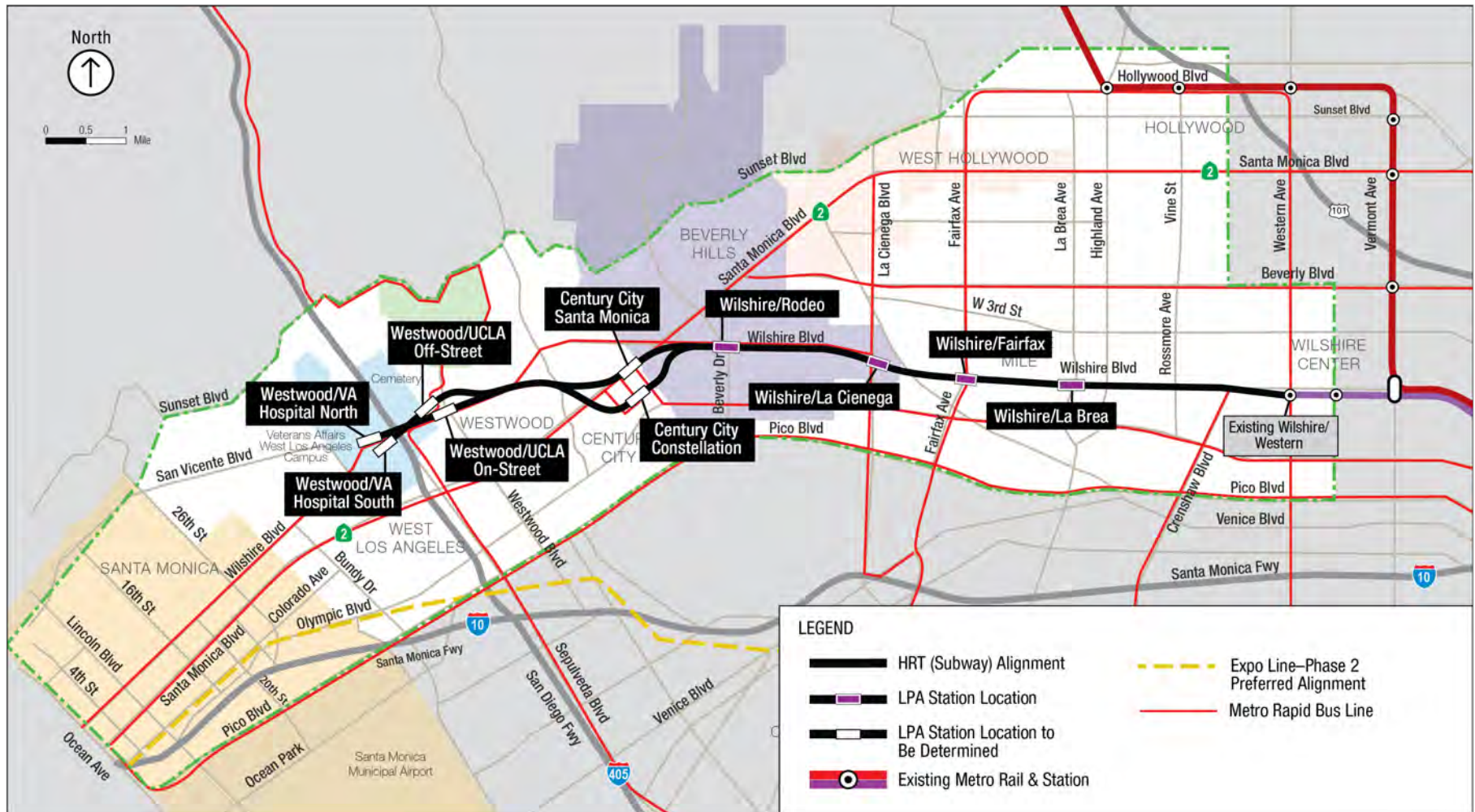


Figure 2-2. Locally Preferred Alternative

**Table 2-1. LPA Elements**

LPA Element	Description
Tunnel Alignment	Approximately nine miles of twin-bored tunnels extending from the existing Wilshire/Western Station to a Westwood/VA Hospital Station
Stations	Seven stations located in approximately one-mile intervals along the alignment: Wilshire/La Brea Wilshire/Fairfax Wilshire/La Cienega Wilshire/Rodeo Century City* (Century City Santa Monica OR Century City Constellation) Westwood/UCLA* (Westwood/UCLA On-Street OR Westwood/UCLA Off-Street) Westwood/VA Hospital* (Westwood/VA Hospital South OR Westwood/VA Hospital North) *Station location to be determined by the Metro Board of Directors following the circulation and public review of the Final EIS/EIR
Station Entrances	One station entrance at each of the seven stations, with the exception of the Westwood/UCLA Station, which will have two station entrances
Construction Laydown Areas	Four station construction sites, each approximately one to two acres, located at the Wilshire/Fairfax, Wilshire/La Cienega, Wilshire/Rodeo, and Westwood/UCLA Stations. 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. Two additional construction staging sites to support construction activities, each approximately one acre, located at the existing Wilshire/Western Station and the Wilshire/Crenshaw intersection
Special Trackwork	Five sets of double crossovers located at the Wilshire/La Brea, Wilshire/La Cienega, Wilshire/Rodeo, Century City, and Westwood/VA Hospital Stations Tail tracks at the Westwood/VA Hospital Station
Traction Power Substations (TPSS)	One TPSS at each of the seven stations, with the exception of the Wilshire/Fairfax Station
Emergency Generators	Two emergency generators, one located at the Wilshire/La Brea Station and one located at the Westwood/VA Hospital Station (South or North)
Emergency Exit Shafts	One emergency exit shaft located at the western terminus of the tail track, west of the Westwood/VA Hospital Station
Maintenance Yard	Expansion of the Division 20 Maintenance Yard to accommodate additional heavy rail vehicles
Replacement Parking Structure	Permanent parking structure at the Westwood/VA Hospital South Station to replace parking losses at the VA Hospital resulting from construction staging activities associated with the Westwood/VA Hospital South Station. A permanent parking structure would not be constructed for the Westwood/VA Hospital North Station.

## 2.2 Changes to this Chapter in Response to Draft Environmental Impact Statement/Environmental Impact Report Comments and Selection of Locally Preferred Alternative

This chapter has been revised to reflect identification of Alternative 2 (Westwood/VA Hospital) as the LPA for the Westside Subway Extension Project. The term “The Project” refers to the subway alternative from the existing Wilshire/Western Station to a Westwood/VA Hospital Station. The term LPA is used to describe the specific elements of the Project, including all station and alignment options. The following sections have been added since the publication of the Draft EIS/EIR or contain new details in response to public and agency comments received on the Draft EIS/EIR.

- Section 2.1, Introduction, includes new detail on the project development process that occurred subsequent to publication of the Draft EIS/EIR.
- Section 2.3, Alternatives Analysis Study Screening and Selection Process, describes the alternatives screening and selection process up to the Draft EIS/EIR.
- Section 2.4, Alternatives Evaluated in the Draft Environmental Impact Statement/Environmental Impact Report, describes alternatives considered in the Draft EIS/EIR.
- Section 2.5, Locally Preferred Alternative Identification Process, describes the selection process to identify the Locally Preferred Alternative and the Metro Board of Directors' selection of Alternative 2 from the Draft EIS/EIR as the Locally Preferred Alternative. The selection of the Locally Preferred Alternative also included the following recommended modifications regarding station location options included in the Draft EIS/EIR: the removal of the Wilshire/Crenshaw Station, the selection of the Wilshire/Fairfax East and Wilshire/La Cienega East Stations, the removal of the West Hollywood Connection Structure, and the decision to continue studying both station options at the Century City Station, the Westwood/UCLA Station, and the Westwood/VA Hospital Station.
- Section 2.6, Locally Preferred Alternative: Westwood/VA Hospital Extension, details the features of the Locally Preferred Alternatives and describes any refinement to the Locally Preferred Alternative since the Metro Board of Directors' selection. These refinements resulted from public comments received, follow-up agency consultation and further engineering and studies. The changes include: the refinements to the proposed entrance locations and construction staging and laydown areas at each station, the shift of the Century City Santa Monica Station to the east (and subsequent determination that a station at this location should not be recommended because of its adverse environmental effects and its inability to meet safety standards), refinements to the alignment in the Century City vicinity, and modifications to the station location options and alignments at Westwood/UCLA and Westwood/VA Hospital. In addition, two construction scenarios for the Locally Preferred Alternative are presented in this Final EIS/EIR – a Concurrent Construction Scenario and a Phased Construction Scenario.

### 2.3 Alternatives Analysis Study Screening and Selection Process

Prior to completion of the Draft EIS/EIR, a full range of alternatives was evaluated at three stages. First, a broad range of alternatives was considered and screened down to 17 Build Alternatives, a No Build Alternative, and a TSM Alternative for evaluation in the *Westside Transit Corridor Alternatives Analysis Study* (Metro 2009c). Second, the AA Study recommended, and the Metro Board of Directors approved, two Build Alternatives, the No Build Alternative and TSM Alternative to be carried forward into the Draft EIS/EIR. The two Build Alternatives recommended from the AA Study were later expanded into five variations for a total of five Build Alternatives analyzed in the Draft EIS/EIR as well as the No Build Alternative and the TSM Alternative. Third, scoping for the Draft EIS/EIR confirmed that there were no alternatives that had not been previously studied and eliminated for good cause that would satisfy the Purpose and Need at less cost, with greater effectiveness, or less environmental or community impacts. The progression of

alternatives from the Alternatives Analysis Study through the Final EIS/EIR is illustrated in Figure 2-3.

### **2.3.1 Screening of a Broad Range of Alternatives/Alternatives Considered in the Alternatives Analysis (October 2007 through February 2009)**

In October 2007, consistent with FTA guidance, an Early Scoping process was used to help define the appropriate range of issues and alternatives to be addressed in the AA Study. Two principal alignment alternatives were presented to the public. These two corridors (Wilshire Boulevard and Santa Monica Boulevard) were the recommended routes for the Westside Extension Project based on previous corridor alignment studies conducted in the 1980s, 1990s, and early 2000s, and represented street rights-of-way that could reasonably be used in an at-grade, elevated, or subway configuration.

Seven goals were established in the AA phase of planning and were used to both screen out alternatives and identify those alternatives that best met the Purpose and Need of the Project to be carried forward and evaluated in the Draft EIS/EIR. These goals include mobility improvements, transit-supportive land use policies, cost-effectiveness, project feasibility, equity, environmental considerations, and public acceptance (Figure 2-4).

Based on public input and evaluation of alternatives to meet the project goals and objectives, 17 Build Alternatives were developed for evaluation in the AA Study. These 17 Build Alternatives fall into five major categories as listed below and illustrated in Figure 2-3 and Figure 2-5.

- Wilshire Boulevard-based HRT subway alignments
- Santa Monica Boulevard-based HRT subway alignments
- Combined Wilshire Boulevard/Santa Monica Boulevard HRT subway alignments
- HRT, LRT, and monorail elevated alignments
- BRT alignments

These 17 conceptual Build Alternatives, as well as No Build and TSM Alternatives, were evaluated in an initial screening process based on the goals and objectives established at the beginning of the AA. The most promising alternatives that best met the Purpose and Need of the Project were carried forward for additional screening as part of the AA. The remaining alternatives were dropped from further consideration.

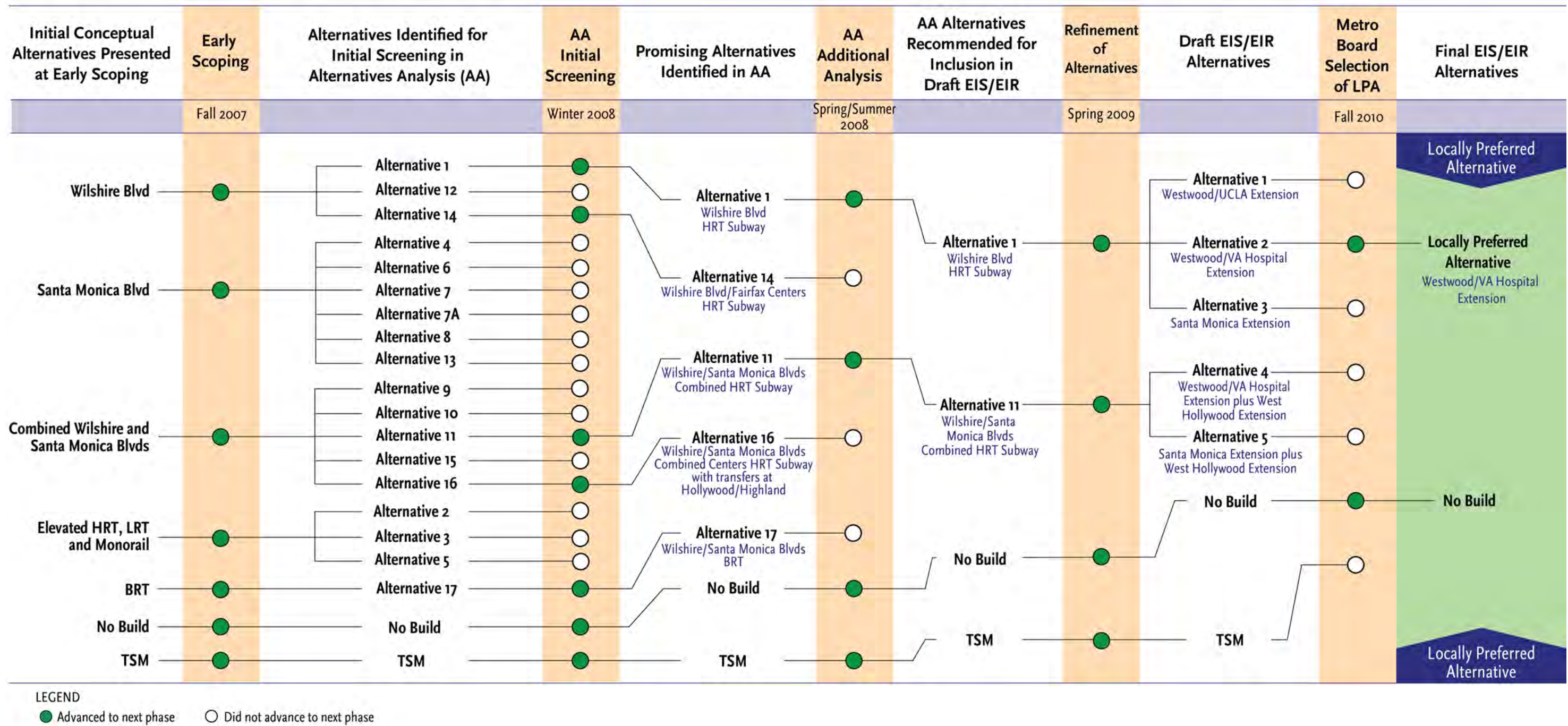


Figure 2-3. Alternatives Considered (AA through Final EIS/EIR)





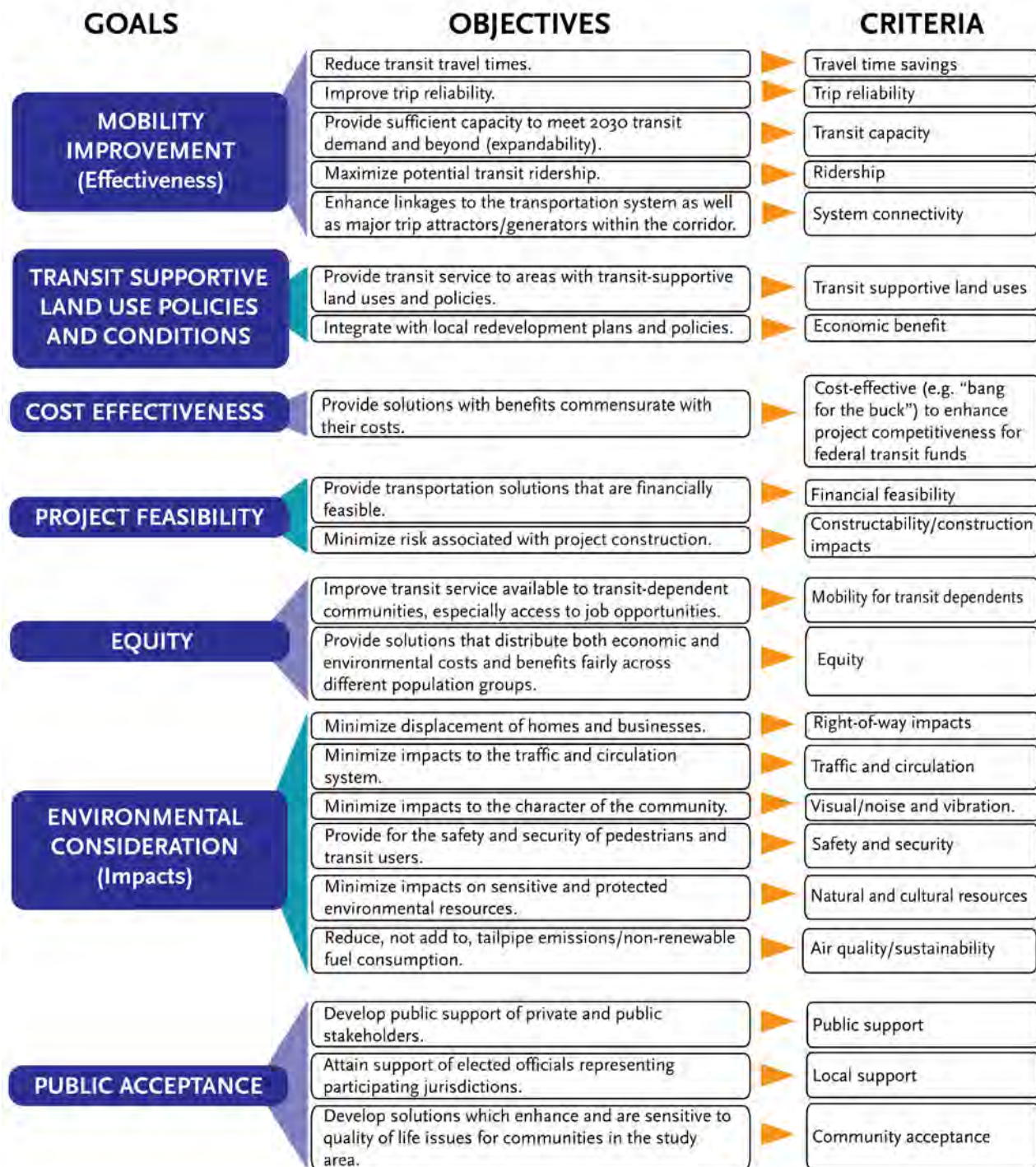






Figure 2-4. Goals, Objectives, and Evaluation Criteria



**Figure 2-5. Universe of Alignment and Station Alternatives Identified following Early Scoping for Evaluation in the AA Study**

The initial screening identified HRT as the preferred technology for further study because it best meets the Purpose and Need of the Project by providing capacity to serve the anticipated ridership demand and limit the number of transfers, which will improve transit services, mobility, and travel time for travel within, to, and from the Study Area (Figure 2-6). The initial screening also resulted in the recommendation of an underground alignment as it has fewer land use, traffic, visual, historical, and noise impacts than an elevated alignment in dense urban environments, such as this corridor. In addition, the initial screening concluded that the Wilshire Boulevard alternatives performed better than the Santa Monica Boulevard alternatives in nearly every screening criterion. As a result, the preferred horizontal alignments for further study were the Wilshire Boulevard alignments and the combined Santa Monica/Wilshire Boulevards alignments.

As the second part of the AA, a more detailed comparative analysis was conducted of these promising alternatives, the Wilshire alignment, and the combined Wilshire-Santa Monica alignment for both HRT subway and BRT at-grade. The additional analysis concluded that while BRT is a good near-term solution, it does not provide sufficient capacity in the long term and does not provide as reliable a trip-time performance as the HRT alternatives, which better meet the Purpose and Need of the Project. Alternatives 14 and 16, which included a deviation off Wilshire Boulevard to serve 3rd Street in the Fairfax vicinity, were eliminated due to slower travel times, higher costs, and lower ridership projections. The evaluation ultimately resulted in the recommendation of two heavy rail subway alignment alternatives, Alternative 1 and Alternative 11, which best met the Purpose and Need of the Project as well as the required No Build and TSM Alternatives, for further study in the Draft EIS/EIR.

Technology	Sample Systems	Actual Operating Characteristics Normalized to 18 vehicles/hour/direction	Conclusions of Westside Extension Transit Corridor Alternatives Analysis Study	Preferred Technology
<b>Heavy Rail Transit (HRT)</b> 	<ul style="list-style-type: none"> <li>• Metro Red Line</li> <li>• Metro Purple Line</li> </ul>	<ul style="list-style-type: none"> <li>• Up to 800 passengers/train (6 cars)</li> <li>• Top speed of 70 mph (32 mph average)</li> <li>• Up to <b>14,000</b> passengers/hour/direction</li> </ul>	<ul style="list-style-type: none"> <li>• Requires expansion of existing Metro HRT Yard or development of a new yard</li> <li>• No transfer needed at the Metro Purple Line Wilshire/Western Station</li> <li>• Highest capacity system studied with the most potential for future capacity expansion</li> </ul>	●
<b>Light Rail Transit (LRT)</b> 	<ul style="list-style-type: none"> <li>• Metro Blue Line</li> <li>• Metro Green Line</li> <li>• Metro Gold Line</li> </ul>	<ul style="list-style-type: none"> <li>• Up to 425 passengers/train (3 cars)</li> <li>• Top speed of 55 mph (24-35 mph average)</li> <li>• Up to <b>7,600</b> passengers/hour/direction</li> </ul>	<ul style="list-style-type: none"> <li>• Requires construction of dedicated maintenance facility</li> <li>• Does not have capacity to support the transit demand and forecasted ridership</li> <li>• Transfer needed at Metro Purple Line Wilshire/Western Station</li> </ul>	○
<b>Monorail</b> 	<ul style="list-style-type: none"> <li>• Las Vegas Monorail</li> <li>• Seattle Monorail</li> <li>• Disneyland Monorail</li> <li>• Disneyworld Monorail</li> </ul>	<ul style="list-style-type: none"> <li>• Up to 350 passenger/train (6 cars)</li> <li>• Top speed of 40-50 mph (18-30 mph average)</li> <li>• Up to <b>6,300</b> passengers/hour/direction</li> </ul>	<ul style="list-style-type: none"> <li>• Requires construction of a dedicated maintenance facility</li> <li>• Additional training and less cross-utilization of Metro train operators</li> <li>• Transfer needed at Metro Purple Line Wilshire/Western Station</li> <li>• Does not have capacity to support transit demands and forecasted ridership</li> </ul>	○
<b>Bus Rapid Transit (BRT)</b> 	<ul style="list-style-type: none"> <li>• Metro Orange Line</li> <li>• Wilshire Rapid Ride</li> </ul>	<ul style="list-style-type: none"> <li>• Up to 100 passenger/bus (articulated)</li> <li>• Top speed of 35 mph (13-22 mph average)</li> <li>• Up to <b>1,800</b> passengers/hour/direction</li> </ul>	<ul style="list-style-type: none"> <li>• Lowest cost mode studied but would not be an exclusive right-of-way</li> <li>• Ridership travel-time savings would be substantially lower than with rail alternatives</li> <li>• System capacity of BRT is substantially lower than that of HRT, LRT, or monorail</li> </ul>	○

LEGEND

- Advanced to next phase      ○ Did not advance to next phase

Figure 2-6. Transit Technologies



- **Alternative 1**—Wilshire Boulevard Alignment HRT Subway extends from the Metro Purple Line Wilshire/Western Station to Wilshire Boulevard and 4th Street in Santa Monica, underground with 10 stations and 1 optional station (Figure 2-7).
- **Alternative 11**—Wilshire/Santa Monica Boulevards Combined HRT Subway includes the full Wilshire Boulevard HRT Subway and adds a second line extending west from the Metro Red Line Hollywood/Highland Station via Santa Monica Boulevard to join the Wilshire Line in Beverly Hills, underground with 14 stations and 1 optional station (Figure 2-8).

### 2.3.2 Alternatives Consideration after the Alternatives Analysis (March 2009 through October 2009)

With the approval of the AA Study and the recommended alternatives, Metro initiated the Draft EIS/EIR phase. During the NEPA/CEQA scoping process in spring 2009, Metro presented the public with the two recommended AA Study alternatives (Alternatives 1 and 11), which included alignment and station options in the Wilshire/Rodeo to Westwood area and along the West Hollywood Branch alignment (green-shaded portions in Figure 2-7 and Figure 2-8).

After the public scoping meetings, Metro refined the two Build Alternatives based on goals and objectives of the Purpose and Need of the Project, public comments, design considerations, and avoidance and minimization of impacts (Chapter 8, Public and Agency Outreach, of this Final EIS/EIR, the *Westside Subway Extension Scoping Report*, and *Alternatives Screening and Refinement Following Environmental Scoping Report* (Metro 2010y) provides more details on the scoping process, comments received, and refinements to alternatives).

Based on the two AA Build Alternatives, Metro developed five Build Alternatives with different lengths to meet the fiscal constraints and funding timelines identified in its *2009 Long Range Transportation Plan* (LRTP) (Metro 2009a) adopted in October 2009. The five Build Alternatives are described in Section 2.4.3 and were the subject of the Draft EIS/EIR.

These five Draft EIS/EIR Build Alternatives included six station and alignment options, which were developed in response to comments received during the Draft EIS/EIR scoping. These six station and alignment options are the result of further investigation and screening, which is discussed in the *Westside Subway Extension Alternatives Screening and Refinement Following Environmental Scoping Report* (Metro 2010y). Figure 2-9 through Figure 2-11 outline the progression of the station and alignment location options from the Draft EIS/EIR scoping through the Final EIS/EIR. Criteria for station and alignment location screening and selection were based on the goals and objectives identified in the Purpose and Need of the Project (Figure 2-4) and included: engineering feasibility, construction feasibility, NEPA/CEQA considerations and community preference, urban design considerations, user benefits and costs. The six station and alignment location options that best met the Purpose and Need of the Project and were carried forward into the Draft EIS/EIR are described in Section 2.4.4.



Wilshire/Beverly Station renamed Wilshire/Rodeo Station during the preparation of the Draft EIS/EIR due to public preference and name recognition of Rodeo Drive.

Figure 2-7. AA Study Alternative 1



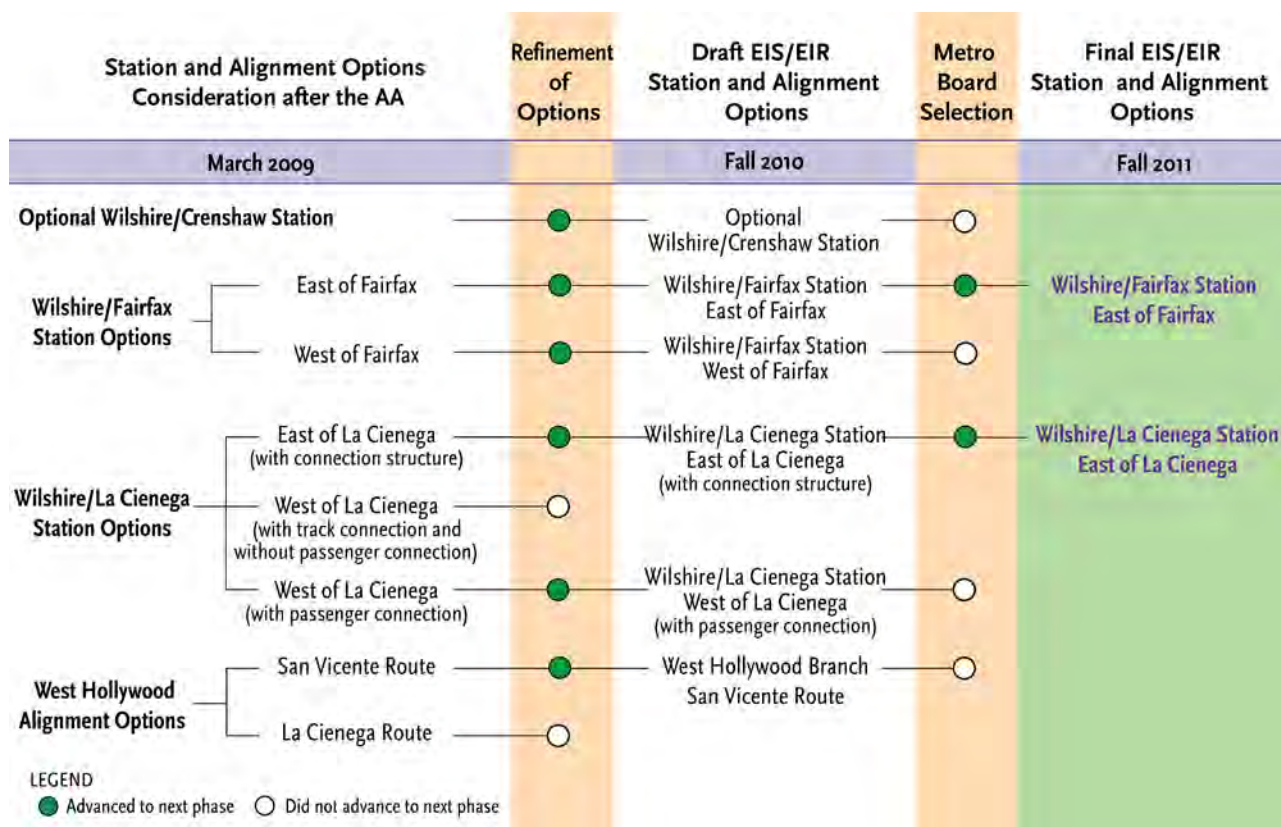


Figure 2-9. Summary of Wilshire/Crenshaw, Wilshire/Fairfax, Wilshire/La Cienega, and West Hollywood Station and Alignment Options

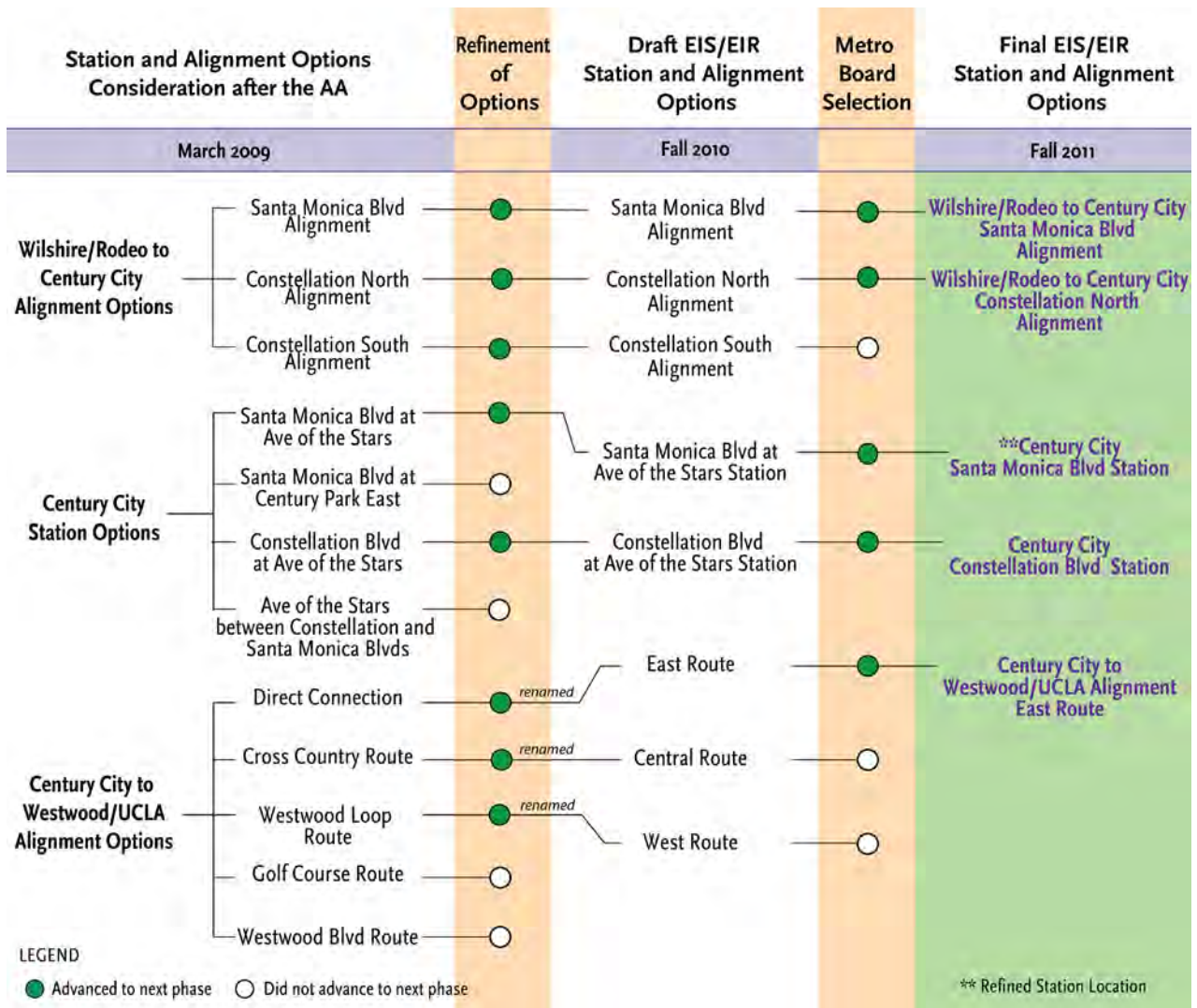


Figure 2-10. Summary of Century City Station and Alignment Options



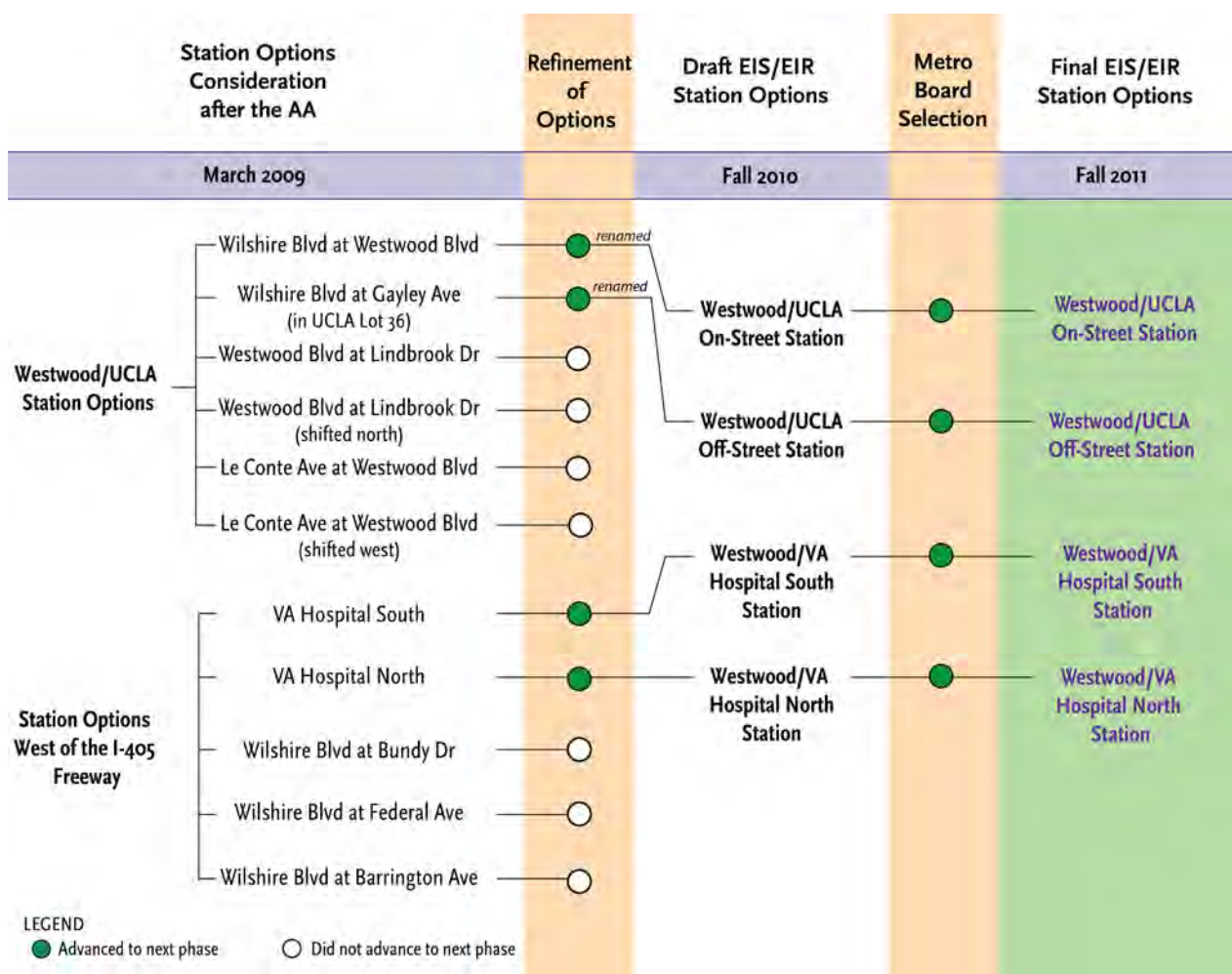


Figure 2-11. Summary of Westwood/UCLA and Westwood/VA Hospital Station Options

## 2.4 Alternatives Evaluated in the Draft Environmental Impact Statement/Environmental Impact Report

A No Build Alternative, a TSM Alternative, and five Build Alternatives with six station and alignment options were analyzed in the Draft EIS/EIR.

With all Build Alternatives, including all station and alignment options, no major restructuring of bus routes is anticipated. In addition, bus fleet requirements will not be modified in a major way as a result of the Build Alternatives. Thus, cost savings that would be associated with major bus service changes are not expected.

### 2.4.1 No Build Alternative

The No Build Alternative provides the transportation network in 2035 as a means of understanding what the transportation environment would be like without any improvements beyond those that are currently committed. The No Build Alternative includes all existing highway and transit services and facilities, and the committed highway and transit projects in the LRTP and the Southern California Association of Governments

(SCAG) *2008 Regional Transportation Plan (RTP)* (SCAG 2008a).<sup>1</sup> 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 adopted Metro LRTP.

### **Highway System**

I-10 and I-405 are the primary east/west and north/south freeway routes, respectively, for commuters within the study area. The No Build Alternative includes the southbound I-405 high-occupancy vehicle (HOV) lane from Sunset Boulevard to State Route 90, and a northbound HOV lane from I-10 to the I-101 Freeways, for a total distance of 10 miles of HOV lanes.

### **Transit System**

Several public transit agencies serve the Study Area, including bus and rail services by Metro, the Los Angeles Department of Transportation (LADOT), Santa Monica Big Blue Bus, Antelope Valley Transit Authority, Santa Clarita Transit, West Hollywood City Line, and the Culver City Bus. The bus and rail services in the Study Area with the No Build scenario are shown in Figure 2-12.

### **Metro Rail**

Metro's Blue, Purple, Red, Green, and Gold Lines currently serve Los Angeles County. Of these, the Metro Red and Purple Lines serve Downtown Los Angeles, Koreatown, and Hollywood on the east side of the Study Area. The 14.8-mile Metro Red Line has two stations within the Study Area: the Hollywood/Highland Station and the Hollywood/Vine Station. The 4.4-mile Metro Purple Line has one station in the study area: the Wilshire/Western Station.

By 2035, several approved urban rail projects are expected to be in operation and are assumed within the No Build Alternative. These include the following:

- Exposition Light Rail Transit Project Phases 1 and 2 (Expo 1 and Expo 2). Expo 1 is planned to connect Downtown Los Angeles with the Westside at Culver City and have 11 stations. Expo 2 would add 7 miles and 7 stations, terminating in Downtown Santa Monica in the vicinity of 4th Street and Colorado Avenue.
- The Metro Gold Line Foothill Extension is planned to extend the existing Pasadena Gold Line from the Sierra Madre Villa Station to the Azusa/Citrus community.

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<sup>1</sup> Metro is working with SCAG to update the 2008 RTP, which would add the projects identified in Metro's LRTP into the 2012 RTP. It is anticipated that the update will be completed in 2011/2012.



White background represents Westside Extension Study Area

Figure 2-12. No Build Alternative Bus and Rail Service within the Study Area

- The Metro Regional Connector is an approximately 2-mile transit link between the Metro Gold and Metro Blue Line through Downtown Los Angeles. The Regional Connector aims to improve access to both local and regional destinations by providing continuous service among Metro Rail lines, including future planned and funded urban rail projects under Measure R, such as the Metro Gold Line Eastside Extension Phase 2 and Expo Line Phase 2.
- The Metro Gold Line Eastside Extension Phase 2 considers LRT alternatives to connect cities east of Los Angeles with the terminus of Phase 1 at the Atlantic Station.
- The Crenshaw/LAX Transit Corridor Project would be a light rail transit line that stretches 8 miles from the I-105 Freeway to the Expo Corridor.
- The South Bay Metro Green Line Extension would extend the existing Metro Green Line from its current terminus at the Redondo Beach Station or Century Aviation to the Torrance Transit Center.
- Enhancements are planned for the Division 20 Maintenance and Storage Facility.

In addition to the Metro lines, the No Build Alternative includes the proposed Los Angeles World Airports (LAX) Automated People Mover (APM), which is part of the LAX Master Plan and will be built and operated by LAX. The APM will operate between a new Intermodal Transportation Center north of Metro's Green Line Aviation/LAX Station and the LAX terminals, with a connection to the Crenshaw/LAX Line at Aviation/Century.

### **Buses**

Several transit agencies (e.g., Metro, LADOT, the Santa Monica Big Blue Bus, and the Culver City Bus, among others) provide bus transit services within the Study Area. The No Build Alternative includes all the existing bus service provided by Metro and the other transit agencies; it also reflects Metro's plans to restructure its bus routes system-wide, eliminating duplicate service or reducing service on routes that will be serviced by rail other than the Westside Subway Extension. It also incorporates two planned projects:

- The Metro Orange Line Extension is a 4-mile dedicated busway linking the Metro Orange Line from the Canoga Station to the Chatsworth Metrolink Station. Four new stations will be located at Sherman Way, Roscoe Boulevard, Nordhoff Street, and the Chatsworth Train Depot. The Metro Orange Line Extension is expected to be in service in summer 2012.
- The Wilshire Bus Rapid Transit Project proposes dedicated curbside bus lanes during the morning and evening rush hours along Wilshire Boulevard to the Santa Monica city line, excluding the City of Beverly Hills. The Final Environmental Impact Report/Environmental Assessment was certified by the Metro Board of Directors in December 2010. The Metro Board of Directors also authorized Metro to enter into contract agreements with the City of Los Angeles to construct the peak-period bus lanes.

### 2.4.2 TSM Alternative

The TSM Alternative emphasizes more frequent bus service than the No Build Alternative to reduce delay and enhance mobility. As such, the TSM meets some aspect of the Purpose and Need to provide enhanced transit service and improved mobility in the Study Area. The TSM Alternative contains all elements of the highway, transit, Metro Rail, and bus service described under the No Build Alternative. In addition, the TSM Alternative increases the frequency of service during peak periods for Metro Rapid Bus Line 720 (Santa Monica–Vermont via Wilshire Boulevard). The bus and rail services in the Study Area with the No Build scenario are shown in Figure 2-13.

The service area of the Metro Rapid Bus Line 720 is the same for both the No Build and TSM Alternatives. The existing Metro Rapid Bus Line 720 runs between 4th Street and Colorado Avenue in Santa Monica to Commerce Center in Commerce. However, for both the No Build and the TSM Alternatives, the Metro Rapid Bus Line 720 will operate between 4th Street and Colorado Avenue in Santa Monica and Wilshire Boulevard and Vermont Avenue in Koreatown.

Under the No Build Alternative, during peak periods, the Metro Rapid Bus Line 720 operates at a frequency of five minutes in the peak flow direction and 10 minutes in the nonpeak flow direction. The TSM Alternative increases the frequency of Metro Rapid Bus Line 720 in both directions to 3.3 minutes during the peak period. This means that nonpeak flow buses run roughly twice as often during the peak period compared to the No Build Alternative.

In the TSM Alternative, Metro Purple Line rail service to the Wilshire/Western Station would operate in each direction at 10-minute headways during peak and off-peak periods. The Metro Red Line service to Hollywood/Highland Station would operate in each direction at five-minute headways during peak periods and at 10-minute headways during midday and off-peak periods.



Figure 2-13. TSM Alternative

**Table 2-2. Future Transit Network Changes between No Build and TSM Alternatives**

Operator	Route Group No.	Route ID and Description	No Build		TSM	
			Peak Headway (minutes)	Off-peak Headway (minutes)	Peak Headway (minutes)	Off-peak Headway (minutes)
Metro	720	EB-SM-Vermont	10 in a.m. 5 in p.m.	11.5	3.3	11.5
Metro	720	WB-Vermont-SM	5 in a.m. 10 in p.m.	11	3.3	11

Source: Metro

### 2.4.3 Build Alternatives

Five Build Alternatives were analyzed in the Draft EIS/EIR (Figure 2-14):

- Alternative 1—Westwood/UCLA Extension
- Alternative 2—Westwood/VA Hospital Extension
- Alternative 3—Santa Monica Extension
- Alternative 4—Westwood/VA Hospital Extension plus West Hollywood Extension
- Alternative 5—Santa Monica Extension plus West Hollywood Extension

These are described in the following sections and shown in Figure 2-15 through Figure 2-19.

In addition to the five Build Alternatives, the Draft EIS/EIR considered station and alignment options. These are described in Section 2.4.4. The base stations for each alternative are also identified in Section 2.4.4.

#### Alternative 1—Westwood/UCLA Extension

This alternative extends HRT, in subway, from the existing Metro Purple Line Wilshire/Western Station to a Westwood/UCLA Station (Figure 2-15). The alignment is approximately 8.60 miles in length.

From the Wilshire/Western Station, Alternative 1 travels westerly beneath Wilshire Boulevard to the Wilshire/Rodeo Station and then southwesterly toward a Century City Station. Alternative 1 then extends from Century City and terminates at a Westwood/UCLA Station.

#### Alternative 2—Westwood/Veterans Affairs Hospital Extension

This alternative is the same as Alternative 1 from the existing Metro Purple Line Wilshire/Western Station to a Westwood/Westwood/UCLA Station. From this station, Alternative 2 then travels westerly under Veteran Avenue and continues west under the I-405 Freeway, terminating at a Westwood/VA Hospital Station (Figure 2-16). This alignment is 8.96 miles in length from the Wilshire/Western Station.



### **Alternative 3—Santa Monica Extension**

This alternative is the same as Alternative 2, from the existing Metro Purple Line Wilshire/Western Station to the Westwood/VA Hospital Station. From this station, Alternative 3 would then continue westerly under Wilshire Boulevard, terminating at the Wilshire/4th Street Station between 4th and 5th Streets (Figure 2-17). The alignment is 12.38 miles in length from the Wilshire/Western Station.

### **Alternative 4—Westwood/VA Hospital Extension plus West Hollywood Extension**

This alternative is similar to Alternative 2, extending from the existing Metro Purple Line Wilshire/Western Station to a Westwood/VA Hospital Station but also adds a West Hollywood Extension (Figure 2-18). The West Hollywood branch extends from the existing Metro Red Line Hollywood/Highland Station to the track connection structure near Robertson and Wilshire Boulevards (shown as a white box in Figure 2-18 to the west of the Wilshire/La Cienega Station). The alignment is 14.06 miles in length.

From a new station at Hollywood/Highland, the West Hollywood Line generally extends south under Highland Avenue, westerly under Santa Monica Boulevard, southerly on San Vicente Boulevard, then southwesterly toward Wilshire Boulevard to connect into the alignment of Alternative 2 at a track connection structure at Robertson and Wilshire Boulevards.

### **Alternative 5—Santa Monica Extension plus West Hollywood Extension**

This alternative is similar to Alternative 3, extending from the existing Metro Purple Line Wilshire/Western Station to the Wilshire/4th Station and adds a West Hollywood Extension similar to the extension described in Alternative 4 (Figure 2-19). The alignment is 17.49 miles in length.





Figure 2-14. All Build Alternatives



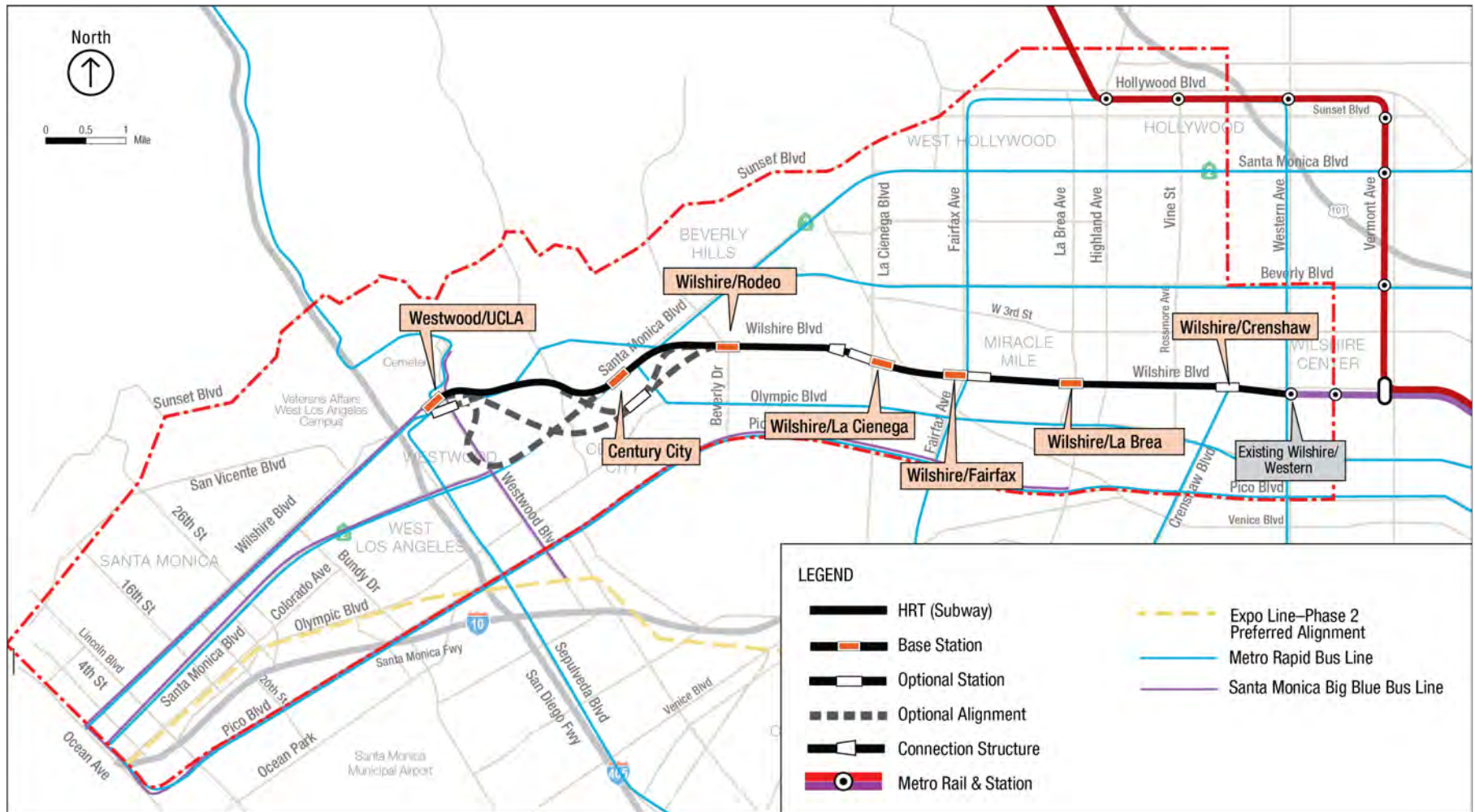


Figure 2-15. Alternative 1—Westwood/UCLA Extension

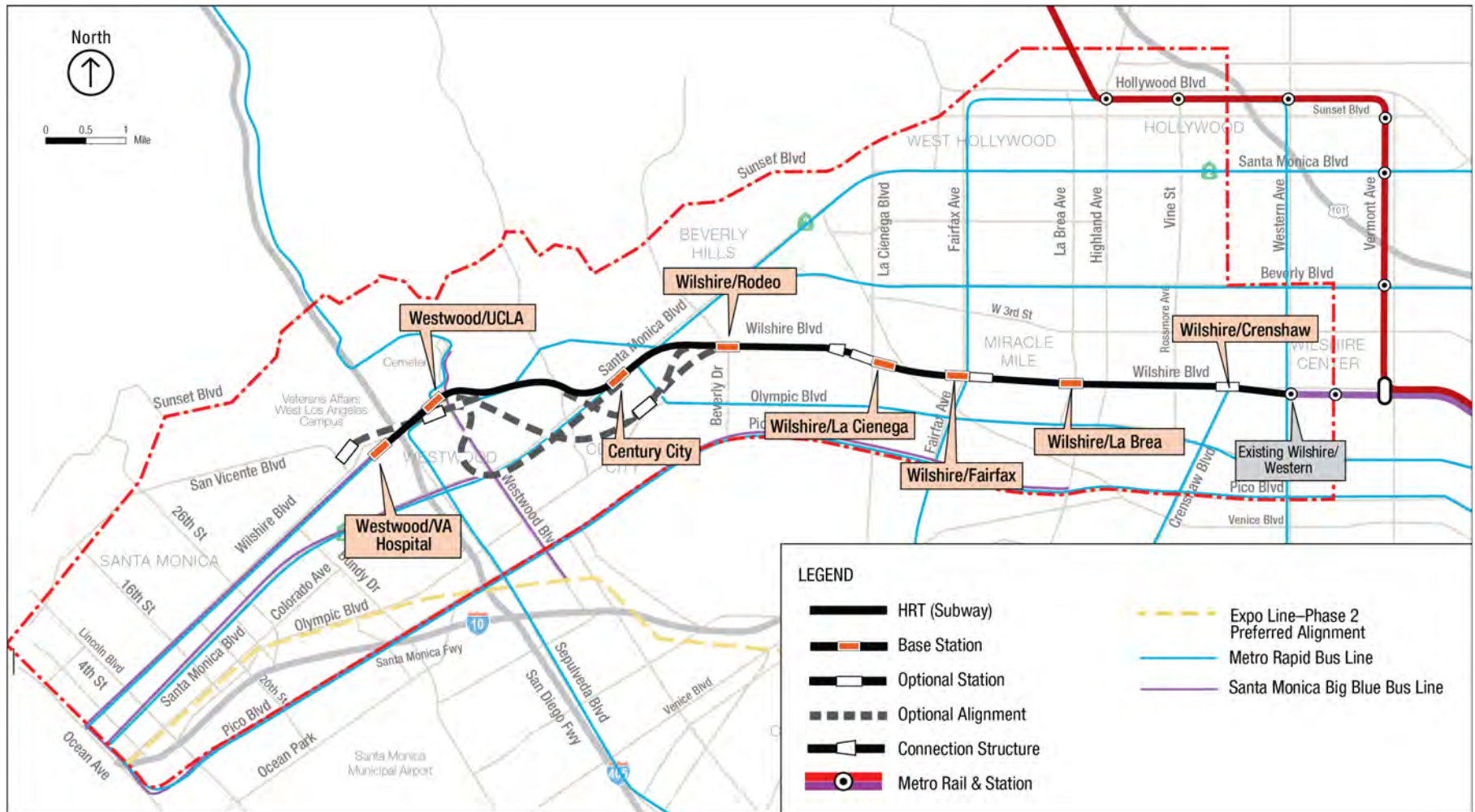


Figure 2-16. Alternative 2—Westwood/VA Hospital Extension

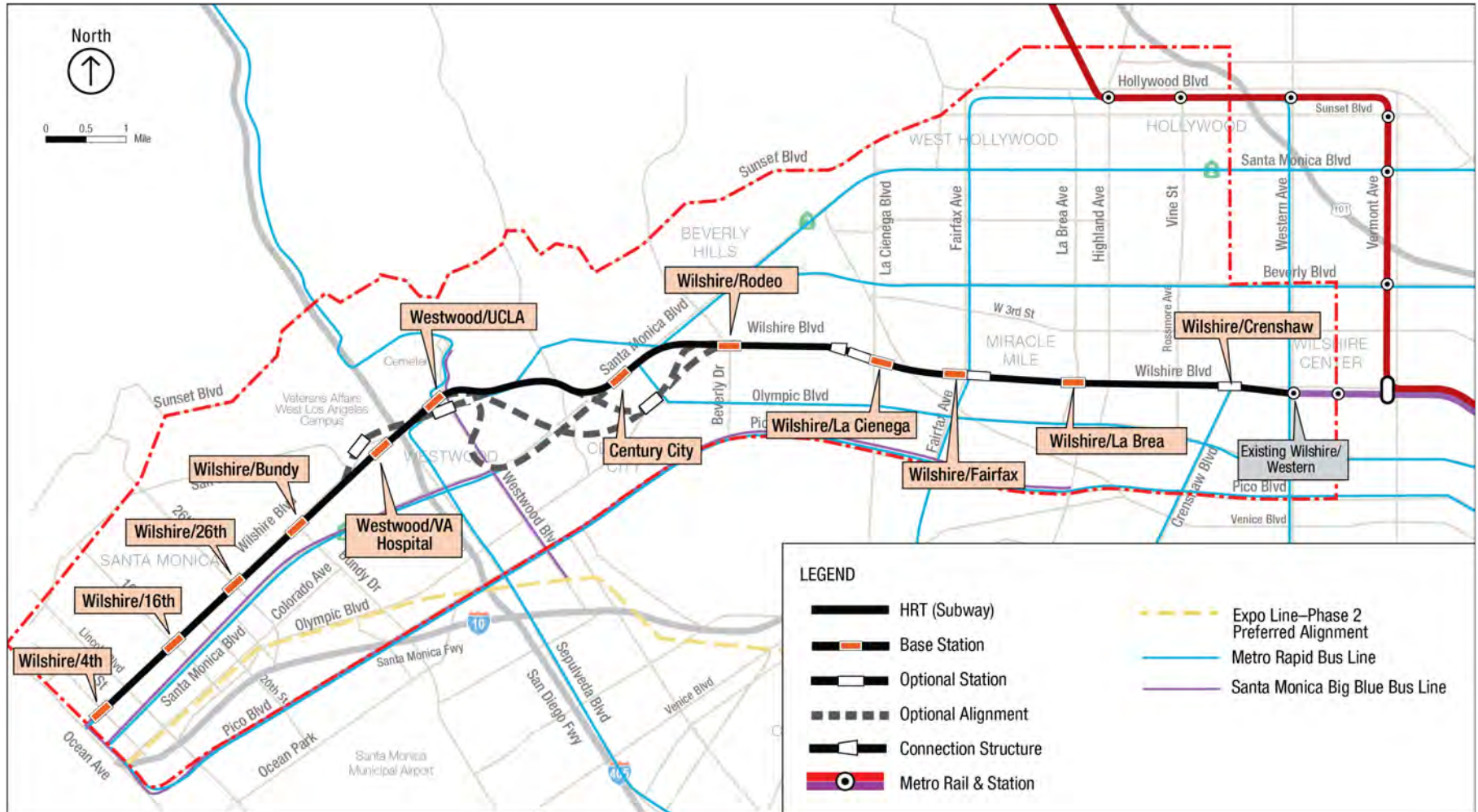


Figure 2-17. Alternative 3—Santa Monica Extension

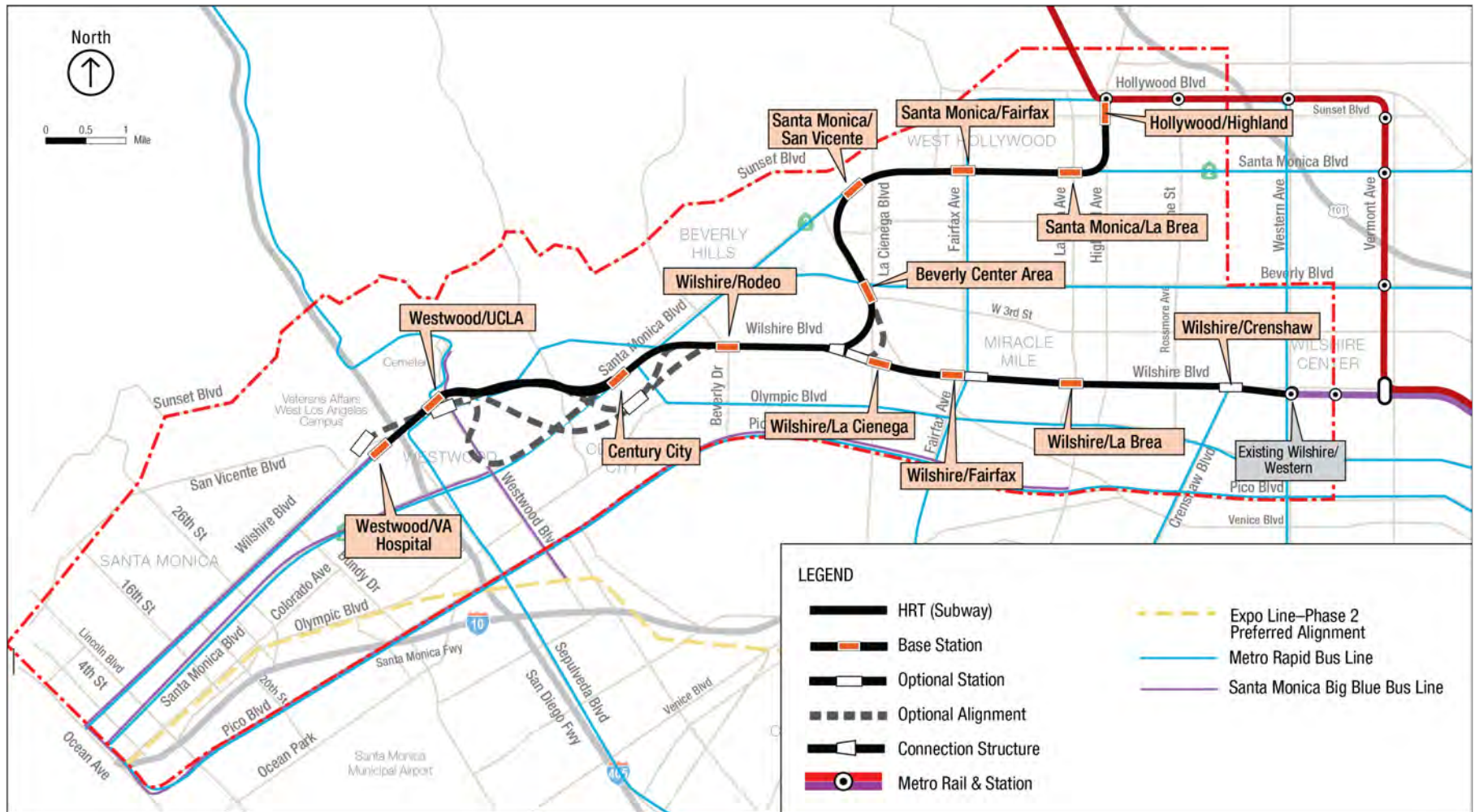


Figure 2-18. Alternative 4—Westwood/VA Hospital Extension plus West Hollywood Extension

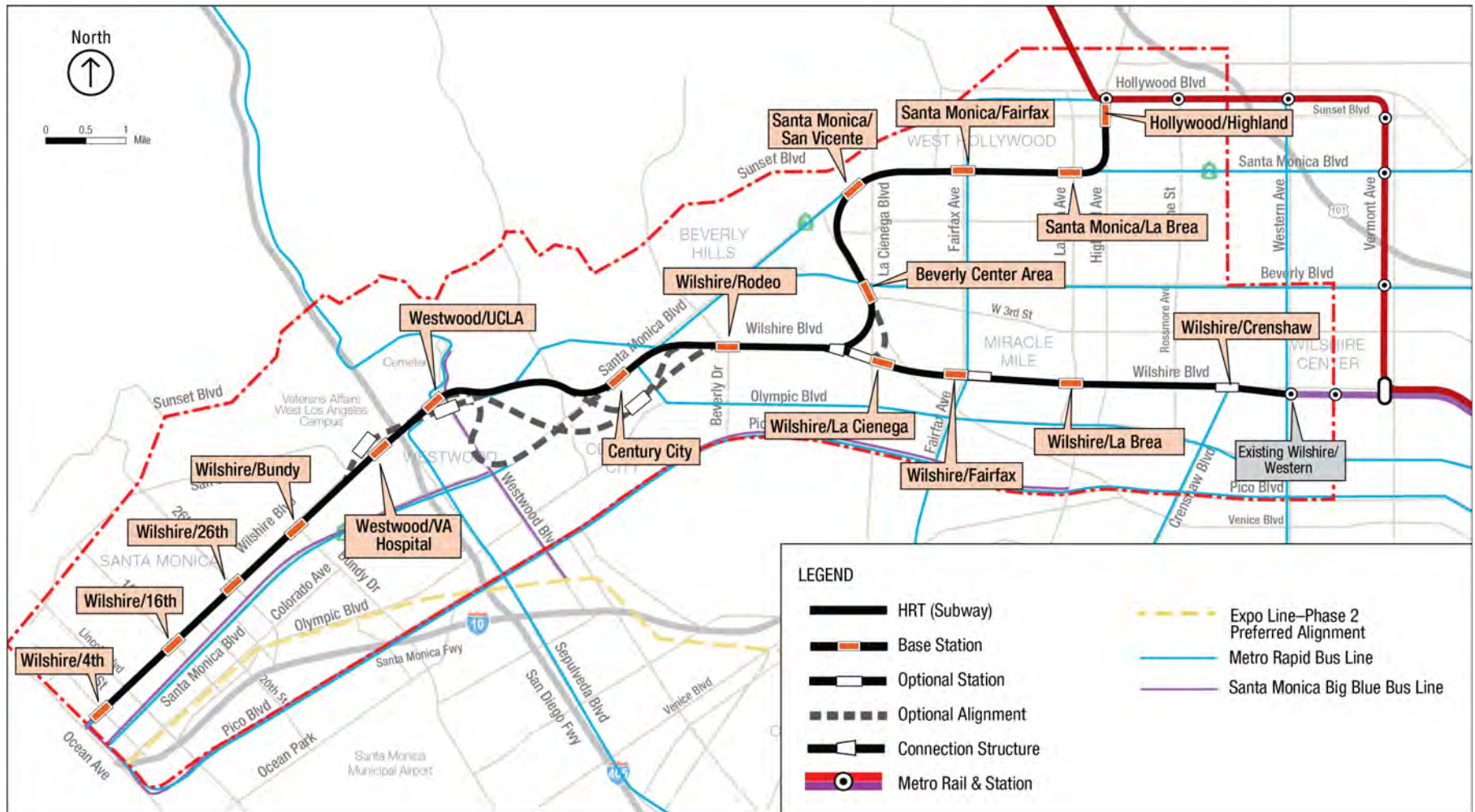


Figure 2-19. Alternative 5—Santa Monica Extension plus West Hollywood Extension

## 2.4.4 Base Stations, and Station and Alignment Options

### Base Stations

Table 2-3 lists the base stations that were considered for the five Build Alternatives in the Draft EIS/EIR. The number of stations for each alternative is as follows:

- Alternative 1—7 stations
- Alternative 2—8 stations
- Alternative 3—12 stations
- Alternative 4—13 stations
- Alternative 5—17 stations

Figure 2-20 shows the location of each of these base stations.

### Station and Alignment Options

In addition to the alternative alignments and base station locations described above, several station and alignment options were considered for the Build Alternatives in the Draft EIS/EIR. Each of the options was considered as a result of comments received from the public on their preferences and to determine the station and alignment locations that will best meet the Purpose and Need of the Project.

Table 2-3 lists the six station options evaluated in the Draft EIS/EIR and to which alternatives they are applicable. Figure 2-20 shows the station and alignment options. They are as follows:

- Option 1—Wilshire/Crenshaw Station Option
- Option 2—Wilshire/Fairfax Station Option
- Option 3—Wilshire/La Cienega Station and West Hollywood Connection Structure Option
- Option 4—Century City Station and Alignment Options
- Option 5—Westwood/UCLA Station Option
- Option 6—Westwood/VA Hospital Station Option

#### Option 1—Wilshire/Crenshaw Station Option

This option does not include the Wilshire/Crenshaw Station, as opposed to the base station that includes this station.

#### Option 2—Wilshire/Fairfax Station Option

This alternate station option would locate the Wilshire/Fairfax Station farther east, with the station underneath the Wilshire/Fairfax intersection, as opposed to the base station location west of Fairfax Avenue.



Table 2-3. Base Stations and Options for Alternatives Considered in the Draft EIS/EIR

Stations	Alternatives				
	1	2	3	4	5
	Westwood/ UCLA Extension	Westwood/ VA Hospital Extension	Santa Monica Extension	Westwood/ VA Hospital Extension Plus West Hollywood Extension	Santa Monica Extension Plus West Hollywood Extension
<b>Base Stations</b>					
Wilshire/Crenshaw	•	•	•	•	•
Wilshire/La Brea	•	•	•	•	•
Wilshire/Fairfax	•	•	•	•	•
Wilshire/La Cienega	•	•	•	•	•
Wilshire/Rodeo	•	•	•	•	•
Century City Santa Monica	•	•	•	•	•
Westwood/UCLA Off-Street	•	•	•	•	•
Westwood/VA Hospital		•	•	•	•
Wilshire/Bundy			•		•
Wilshire/26th			•		•
Wilshire/16th			•		•
Wilshire/4th			•		•
Hollywood/Highland				•	•
Santa Monica/La Brea				•	•
Santa Monica/Fairfax				•	•
Santa Monica/San Vicente				•	•
Beverly Center Area				•	•
<b>Station Options</b>					
1—No Wilshire/Crenshaw	•	•	•	•	•
2—Wilshire/Fairfax East	•	•	•	•	•
3—Wilshire/La Cienega (Transfer Station)	•	•	•	•	•
4—Century City Constellation	•	•	•	•	•
5—Westwood/UCLA On-Street	•	•	•	•	•
6—Westwood/VA Hospital North		•	•	•	•

**Option 3—Wilshire/La Cienega Station and West Hollywood Connection Structure Option**

The base station east of La Cienega Boulevard includes the option of constructing a West Hollywood connection structure in the Robertson Boulevard vicinity. This connection structure would provide a track connection between the Wilshire Boulevard and West Hollywood branches but would not provide a passenger transfer. To transfer between the two branches, passengers would have to travel to the Wilshire/Rodeo Station. The alternate station option would be located west of La Cienega Boulevard and would be designed as a transfer station, allowing for direct passenger transfers between the Wilshire Boulevard and West Hollywood branches.

#### **Option 4—Century City Station and Alignment Options**

In the Beverly Hills to Century City areas, both alignment and station options were considered in the Draft EIS/EIR, as follows:

- Century City Station Options (two station options)
- Beverly Hills to Century City Alignment Options (three alignment options)
- Century City to Westwood/UCLA Alignment Options (three alignment options)

##### ***Century City Station Options***

Two station locations were considered in the Century City area:

- Century City Santa Monica Station—The base station located on Santa Monica Boulevard centered on Avenue of the Stars
- Century City Constellation Station—The optional station located on Constellation Boulevard straddling Avenue of the Stars

##### ***Century City Alignment Options***

Three alignments were considered to connect the Wilshire/Rodeo Station in Beverly Hills to one of the two Century City Station locations:

- Santa Monica Boulevard—The base alignment extending west on Wilshire Boulevard and then turning west along Santa Monica Boulevard into the station on Santa Monica Boulevard
- Constellation North—Optional alignment from Wilshire/Rodeo Station to near Linden Drive, southwesterly to under Constellation Boulevard into the Constellation Boulevard station location
- Constellation South—Optional alignment from Wilshire/Rodeo Station to Bedford Drive, then southwesterly into the Constellation Boulevard station location

##### ***Century City to Westwood/UCLA Alignment Options***

Three alignments were considered to connect one of the two Century City Station locations to one of the Westwood/UCLA Station locations:

- East Alignment—This is the base alignment extending from either station location to Century Park West and connecting into either Westwood/UCLA Station location
- Central Alignment—This alignment is farther west past the East Alignment, turning northwesterly near Beverly Glen, and then connecting with one of the two Westwood/UCLA Station locations
- West Alignment—This alignment travels farther west past both the East and Central Alignments along Santa Monica Boulevard to Westwood Boulevard, then northward to connect to one of the two Westwood/UCLA Station locations





### **Option 5—Westwood/UCLA Station Option**

This station option would locate the Westwood/UCLA Station On-Street under the center of Wilshire Boulevard west of Westwood Boulevard, as opposed to the base Off-Street station location under UCLA Lot 36.

### **Option 6—Westwood/VA Hospital Station Option**

This station option would locate the Westwood/VA Hospital Station on the north side of Wilshire Boulevard, just west of Bonsall Avenue, as opposed to the base station location south of Wilshire Boulevard.

### **2.4.5 Maintenance Yards and Other Elements**

Currently, Metro stores and maintains its Red Line/Purple Line vehicle fleet at the existing Division 20 Maintenance and Storage Facility. Two alternatives for the maintenance yard expansion were analyzed in the Draft EIS/EIR to accommodate additional heavy rail vehicles that will be added to the fleet to accommodate the Build Alternatives.

The first option would be to expand storage immediately south of the Division 20 Maintenance and Storage Facility between the 4th and 6th Street Bridges. This would accommodate 102 vehicles, which is sufficient capacity for Alternatives 1 and 2.

For Alternative 3, 4, and 5, a satellite facility would be built at the Union Pacific (UP) Los Angeles Transportation Center Rail Yard, connected by yard lead tracks to the Division 20 Maintenance and Storage Facility. An additional 1.3 miles of track and a new bridge over the Los Angeles River would be constructed for vehicles to reach this yard.

The Draft EIS/EIR also analyzed traction power substations, emergency generators, mid-tunnel vent shafts, and special trackwork options.

## **2.5 Locally Preferred Alternative Identification Process**

Subsequent to completion of the Draft EIS/EIR, the Metro Board of Directors reviewed and considered the findings of the document. After careful deliberation of the benefits and impacts of all the alternatives analyzed in the Draft EIS/EIR, and review of the public comments received on the Draft EIS/EIR, the Metro Board of Directors approved the Draft EIS/EIR and selected Alternative 2 as the LPA on October 28, 2010. The Metro Board of Directors also made several decisions related to the station options and alignments, which are described in Section 2.5.2. The alternative evaluation criteria used to inform the Metro Board of Directors' decision are discussed in Section 2.5.1. These evaluation criteria are based on the goals and objectives identified in the Purpose and Need of the Project (Figure 2-4). Following the Metro Board of Directors' determination, the station locations continued to be refined. The details of the LPA included in the Final EIS/EIR are described in Section 2.6.

The adopted LRTP includes the Westside Subway Extension to Westwood in the Constrained Element. Inclusion of the Project in the Constrained Element of the LRTP means that Metro has identified funds for the construction of the project. The LRTP assumes a phased delivery in three construction segments for completion in the following years:

- Fairfax Extension (2019)
- Century City Extension (2026)
- Westwood Extension (2036)

In April 2010, the Metro Board of Directors adopted the 30/10 Initiative (subsequently referred to as America Fast Forward) that directs the authority to seek infrastructure loans that would allow all three phases of the Project to be constructed simultaneously. The parallel construction of portions of the alignment and stations will allow the entire Project to the Westwood/VA Hospital Station to be open and operational in 2022 and not open in sequential phases as initially envisioned. In the event that the accelerated Federal funding cannot be secured, the Project will be constructed in three sequential phases as outlined in the LRTP. The two construction schedule scenarios are described in Section 2.6.11.

All of the five Build Alternatives studied would provide significant countywide benefits as the Project will serve as a primary connector between residential communities throughout the county where people live and the very dense regional job centers on the Westside (Westwood, Century City, and Beverly Hills). However, only Alternatives 1 and 2 are affordable within the adopted LRTP. Between these two alternatives, Alternative 2 provides significantly higher ridership and somewhat improved cost-effectiveness over Alternative 1. Extending one additional station to the Westwood/VA Hospital Station will serve this major regional center and provide an important access point to the regional transit system located west of the I-405 Freeway.

### 2.5.1 Evaluation of Alternatives in the Draft EIS/EIR

The Draft EIS/EIR documented the comparative evaluation of alternatives and station options (Chapter 7, Evaluation of Alternatives) as a means of providing the basis for selecting an LPA. The evaluation was based on the goals, objectives, and measures developed in the Purpose and Need of the AA Study, which were drawn upon and refined to reflect current data and the more focused evaluation in the Draft EIS/EIR. These goals and objectives include mobility improvements, transit-supportive land uses, cost-effectiveness, project feasibility, equity, environmental considerations, and public acceptance. These goals, objectives, and measures also capture, to a degree, the New Starts Criteria that the Federal Transit Administration (FTA) currently uses to rate projects for funding in the discretionary Section 5309 New Starts program.

#### Mobility Improvements

Table 2-4 shows some of the mobility and cost factors used to evaluate the alternatives. The new transit trips are a function of decreasing travel times, improved transit operating speeds, reliability, convenience, and comfort. Projected increases in transit ridership also indicate the extent to which an alternative can be expected to reduce vehicle miles traveled and congestion on the highway system, reduce air pollution emissions, and reduce the use of gasoline.

**Table 2-4. Summary of Data for Alternatives Considered in the Draft EIS/EIR**

Alternative	New Transit Trips (per day in 2035)	Vehicle Miles Traveled (Study Area)	Reduction in Vehicle Miles Traveled Compared to No Build (Study Area)	Total Capital Cost (in Million 2009 Dollars)	Cost per Hour of Transit-User Benefits Compared to TSM Alternative (FTA Cost Effectiveness Index, or CEI)
No Build	Base	5,056,227	Base	Base	N/A
TSM	2,115	5,055,329	898	\$42	Base
1	24,142	5,032,417	28,982	\$4,036	\$35.98
2	27,615	5,032,719	31,899	\$4,358	\$33.58
3	35,235	5,021,729	37,768	\$6,116	\$36.31
4	31,224	5,023,750	34,786	\$6,985	\$49.50
5	40,123	5,014,584	41,643	\$8,747	\$47.55

As this table shows, Alternative 5 would result in the greatest mobility improvements, including the largest increase in transit ridership and the greatest reduction of VMT within the Study Area. By covering the largest area, as well as offering a connection in Hollywood between the Metro Red and Purple Lines, Alternative 5 offers the greatest improvement in transit service.

The TSM Alternative is the least effective, attracting no more than 10 percent of the new riders that would be attracted by the rail alternatives. The TSM Alternative would not significantly reduce transit travel time or improve operating speeds over the No Build Alternative.

The one-station extension from Westwood/UCLA (Alternative 1) to the Westwood/VA Hospital (Alternative 2) results in approximately 3,500 new transit trips, an increase of almost 15 percent. Extending one additional station to the Westwood/VA Hospital Station will provide access to communities west of I-405.

A comparison between Alternatives 2 and 3 and between Alternatives 4 and 5 demonstrate the benefits of the Santa Monica extension, with an increase in transit ridership of about 28 percent. The Santa Monica extension would require the fewest number of transfers to reach destinations and would provide direct connections to north-south bus routes. Alternative 3 (Santa Monica Extension) is second to Alternative 5 in providing the highest increase in transit ridership.

A comparison between Alternatives 3 and 5 and between Alternatives 2 and 4 show the benefits of the West Hollywood extension, with an increase in transit ridership of about 13 percent. By providing a direct connection from Century City and Westwood to West Hollywood, Hollywood, and North Hollywood in the San Fernando Valley, the West Hollywood Extension (Alternatives 4 and 5) has the greatest potential to shorten transit travel time, and thus, would be the most competitive with the automobile. For trips to the San Fernando Valley, Alternatives 4 and 5 would be 7 to 10 minutes faster than the Build Alternatives that do not include the West Hollywood extension.

Based on this comparison, the Santa Monica extension alone would increase transit ridership more than the West Hollywood extension alone.

## Transit-Supportive Land Use Policies and Conditions

Twelve activity centers—defined as locations with major commercial activity and mixed uses—and two high opportunity redevelopment areas were identified in the Study Area. All of the Build Alternatives were developed to serve these activity centers and high opportunity areas. The extent to which they are served is a function of each alternative’s length and number of stations. Alternatives 4 and 5 serve more activity centers and high opportunity areas than the other alternatives.

## Cost-Effectiveness

Although longer Build Alternatives would result in greater mobility and land use benefits, these alternatives would also cost more to construct and operate. In 2009 dollars, the rail alternatives range in cost from \$4.0 to \$8.7 billion. Table 2-4 presents each alternative’s cost per hour of user benefits as a measure of cost-effectiveness compared to the TSM Alternative.

Alternative 2 is the most cost-effective of the Build Alternatives. Alternatives 1, 2, and 3 are more cost-effective than Alternatives 4 and 5. In other words, while Alternatives 4 and 5 tend to have more benefits than Alternatives 1, 2, and 3, they achieve these additional benefits at a higher incremental cost. The cost-effectiveness for Alternatives 1 and 3 are similar—the added investment of extending the line to Santa Monica has roughly the same cost per hour of benefit as a shorter extension to Westwood/UCLA.

## Equity

The number of low-income and minority residents living in close proximity to the Build Alternatives increases with the length of the alternative. However, the percentage of residents within one-half mile who are low income or minority varies little across the alternatives.

Those alternatives with the larger number of stations will provide better mobility to a larger number of low-income and minority people. Similarly, alternatives with a larger scope and number of stations will expose more low-income and minority residents to short-term construction impacts.

## Environmental Considerations

For many of the environmental resources, there are no or very little differences in impacts among the Build Alternatives. In most instances the primary reason for differences in impacts is due to the length of the alignment rather than severity of the impact. These variations include the following:

- **Displacements**—Alternative 1 would have the fewest displacements (277) and Alternative 5 would have the highest (437), primarily attributable to the length of the alternative.
- **Economic and Fiscal**—Operations and maintenance expenditures from direct and indirect employment vary slightly among alternatives, with lower numbers of Person Years for Alternatives 1 and 2 and higher numbers for Alternatives 3, 4, and 5.
- **Air Quality**—Slight differences exist in the quantity of emissions burdens expected to be reduced by the alternatives, with the greatest reductions with Alternatives 4 and 5.



- **Energy**—Energy consumption varies by alternative. The decrease in mobile source energy consumption is much lower for Alternative 5 (10,000 additional rail miles over Alternative 4 results in more energy use and less energy savings), and energy consumption for stations is nearly double for Alternative 5 than for Alternative 1.
- **Geologic Hazards**—Some variations exist among the alternatives because portions of the Alternative 3 and Alternative 5 alignment would pass through areas in Santa Monica that are more susceptible to geologic hazards.
- **Liquefaction**—Some variations exist among the alternatives because of their different station locations.
- **Water Resources**—Some variation exists among the alternatives because a portion of the alignments for Alternatives 3 and 5 are in a coastal zone and would require a Coastal Development Permit.
- **Safety and Security**—Alternatives 2 through 5 would require risk assessment because they pass by federal facilities, including the VA Medical Center and California Army National Guard.

Each of the alternatives would also cause impacts during construction, including traffic and access disruptions near station sites, construction noise and emissions, temporary removal of parking, visual effects, and haul trucks removing material excavated from the tunnel and station boxes. The amount of impact would generally be a function of the length of the subway and the number of stations. Metro will mitigate these construction impacts as previously described.

### **Public Acceptance**

During the public comment period, nearly 800 comment letters were received, which contained almost 2,000 unique comments on the Draft EIS/EIR. The public overwhelmingly supported the Project with many commenters wanting to see the project built as quickly as possible and as far west as possible. Of the comments that specifically supported one of the alternatives, the majority supported Alternative 2. While there was substantial support for the Santa Monica and West Hollywood Extensions, most commenters recognized that only Alternatives 1 and 2 could be funded with Measure R revenue and of those two alternatives, the public preferred Alternative 2.

### **Trade-offs**

As described above, many of the criteria evaluated are linked to the project length, with longer alternatives resulting in greater mobility benefits and public support, but also costing more and resulting in additional environmental impacts.

All Build Alternatives are more effective than the TSM Alternative in enhancing mobility, serving development opportunities, and addressing other aspects of the Purpose and Need. Alternatives 3, 4, and 5 are more effective in improving mobility than Alternatives 1 and 2. All of the Build Alternatives would reduce vehicle miles traveled, pollutant emissions, and energy consumption, with the longer Build Alternatives having the greatest environmental benefit as well as the largest environmental impacts.

Alternatives 1, 2, and 3 have similar cost-effectiveness indices and are all more cost-effective than Alternatives 4 and 5, with Alternative 2 being the most cost-effective.

Based on cost-effectiveness and other factors, Alternatives 1 and 2 are expected to be most competitive for New Starts funds. These are also the only Build Alternatives that can be built with available Measure R and other identified funds. Alternatives 3, 4, and 5 are not financially feasible without a new source of revenue.

The results of these trade-offs indicate that Alternative 2 is the Build Alternative that will best meet the Purpose and Need of the Project by increasing transit ridership and providing benefits at a reasonable cost that is financially feasible. Based on these conclusions, the Metro Board of Directors selected Alternative 2 as the Locally Preferred Alternative for further evaluation in the Final EIS/EIR.

### **2.5.2 Determination of Station Options and Alignments in the Draft EIS/EIR**

The Metro Board of Directors selected the Locally Preferred Alternative definition among the Station Options and Alignments that had been presented in the Draft EIS/EIR, although these decisions are not final will not be final until certification of the EIR/EIS and final action on the Project. The Metro Board of Directors requested that the station location options at three station areas—Century City, Westwood/UCLA, and Westwood/VA Hospital—be further evaluated during the preparation of the Final EIS/EIR to better understand the trade-offs between the station options. A more detailed description of the station locations included in the Final EIS/EIR is provided in Section 2.6.

#### **Option 1—Wilshire/Crenshaw Station Option**

As part of the LPA, the Metro Board of Directors decided to not build the Wilshire/Crenshaw Station. The Wilshire/Crenshaw Station would have been located in the Park Mile section of Wilshire Boulevard, adjacent to lower density land uses that are not planned for future growth in the adopted Community Plan and Park Mile Specific Plan. This site is only 0.5 mile from the existing Wilshire/Western Station and does not serve a major north south intersection, as Crenshaw Boulevard terminates at Wilshire Boulevard and does not extend to the north. Because this is a comparatively lower ridership station with a cost of \$153 million, deleting the station improves the cost-effectiveness of Alternative 2. Furthermore, future connections from the Westside subway stations along Wilshire Boulevard to the planned Crenshaw/LAX Light Rail Transit project to the south have been recommended to take place at La Brea, La Cienega, or San Vicente rather than at Wilshire/Crenshaw.

#### **Option 2—Wilshire/Fairfax Station Option**

The Metro Board of Directors decided to include the Wilshire/Fairfax East Station location as part of the LPA due to stronger community support and better access and land integration opportunities, including proximity to Museum Row.

#### **Option 3—Wilshire/La Cienega Station Option**

As part of the LPA, the Metro Board of Directors selected the Wilshire/La Cienega East Station location without a West Hollywood connection structure. This is the preferred station entrance location for the City of Beverly Hills because it will be located in a denser, more commercial area than the other station location to the west of La Cienega. This entrance location also will provide excellent connections to two major north-south arterials—La Cienega and San Vicente Boulevards.

The Board chose not to include a West Hollywood connection structure as part of the LPA due to funding constraints. The cost of the connection structure is not sufficiently justified when there may be alternative, less costly solutions to serve the West Hollywood transit market, such as a light rail line.

### **Option 4—Century City Station and Alignment Options**

As mentioned above, the Metro Board of Directors decided to continue to discuss both station locations in Century City (Santa Monica Boulevard and Constellation Boulevard) as part of the LPA in the Final EIS/EIR to address concerns raised by the community.

Specifically, the Metro Board of Directors also directed that further discussion of the Century City Station options be included in the Final EIS/EIR to address these concerns raised by the public, the majority of which related to the safety of tunneling directly on a seismic fault (for the Santa Monica Boulevard alignment) and the safety of tunneling under homes and schools (for the Constellation North and East alignments).

Of the two alignments that serve the Constellation Station, the Constellation North Alignment was selected by the Metro Board of Directors for further discussion as part of the LPA. The Constellation North Alignment would pass beneath 4 residential properties while the Constellation South Alignment would pass beneath 23 residential properties. Both Constellation North and South alignments would have similar initial costs. The Santa Monica Boulevard alignment that follows Wilshire Boulevard and Santa Monica Boulevard was also recommended to be carried forward for further study as part of the LPA so that a route serving the station on Santa Monica Boulevard is also provided. As previously noted, the location of the station on the Santa Monica Boulevard alignment would present adverse environmental effects and safety issues that cannot be reasonably mitigated.

With regard to alignments connecting Century City with Westwood/UCLA, the East Alignment was approved by the Metro Board of Directors to be carried forward as part of the LPA. The West Alignment is significantly longer than the other two, and would increase travel time between Century City and Westwood by more than two minutes. This, in turn, would lead to somewhat lower ridership and user benefits, and to fewer air quality and energy conservation benefits. The West Alignment Option would also increase capital costs by \$122 to \$142 million in comparison to the East Alignment Option. Between the Central and East Alignment Options, both have similar performance characteristics and costs. The East Alignment, however, passes under fewer private properties. Therefore, it was selected to be carried forward as part of the LPA into the Final EIS/EIR.

### **Option 5—Westwood/UCLA Station Option**

The LPA also includes both the Westwood/UCLA On-Street and Off-Street station locations. The Metro Board of Directors determined that further discussion of both the On-Street and Off-Street station options was desirable. Factors to be considered included construction impacts, traffic impacts, costs, and accessibility issues.

### **Option 6—Westwood/VA Hospital Station Option**

As mentioned above, the Metro Board of Directors determined that further discussion of the costs, benefits, and impacts of the Westwood/VA Hospital North and South Station options was desirable during the Final EIS/EIR. Factors to be considered included construction impacts, costs, and accessibility issues. Metro continues to coordinate with VA regarding both station locations on the VA property.

### **Maintenance Yard**

Since the Metro Board of Directors selected Alternative 2 as the LPA, the expansion of the Division 20 Maintenance and Storage Facility to the south will be sufficient to accommodate the expanded heavy rail vehicle fleet. The satellite facility would increase the capital cost of the Project. Therefore, the Metro Board of Directors included the expansion of the Division 20 Maintenance and Storage Facility to the south as part of the LPA.

## **2.6 Locally Preferred Alternative: Westwood/VA Hospital Extension**

The LPA (Alternative 2 from the Draft EIS/EIR) will extend HRT, in subway, from the existing Metro Purple Line Wilshire/Western Station to a Westwood/VA Hospital Station (Figure 2-2 and Figure 2-21). The LPA, including all station, alignment, and station entrance options still under consideration, will best meet the Purpose and Need of the Project to improve mobility and provide fast, reliable, high-capacity, and environmentally sound transportation solutions in the Study Area.

The LPA overlays new rail service on the rail and bus networks in the No Build Alternative. HRT meets the transit usage characteristics in the study area since it is designed to provide service in long, high-density corridors to connect the central city with major activity centers and large, dense suburban communities. HRT systems provide high speed (maximum of 70 mph), high capacity (high passenger-carrying capacity of up to 800 passengers per train with up to six cars per train), and reliable service since they operate in an exclusive grade-separated right-of-way. The separated right-of-way is all in a tunnel, with the top of the tunnel at least 30 to 70 feet below the ground surface. The subway will be powered by electricity from a third rail adjacent to and parallel with the running rail.

The construction schedule for the Project is partially dependent on the timing of federal funding availability. Two LPA construction scenarios are considered in this Final EIS/EIR (Figure 2-22). Both scenarios will contain the same elements with differences only in the timing of when they are built and operational. The first construction scenario assumes that under the America Fast Forward (30/10) Scenario (Concurrent Construction), the LPA would open in its entirety to the Westwood/VA Hospital Station in 2022 with the three construction segments built concurrently (Wilshire/Western to Wilshire/La Cienega, Wilshire/La Cienega to Century City, and Century City to Westwood/VA Hospital). The second construction scenario assumes that under the Metro Long Range Transportation Plan Scenario (Phased Construction), the LPA would open in three consecutive phases (Phase 1 to Wilshire/La Cienega, Phase 2 to Century City, and Phase 3 to Westwood/VA Hospital), with the entire LPA operational to the Westwood/VA Hospital Station in 2036.

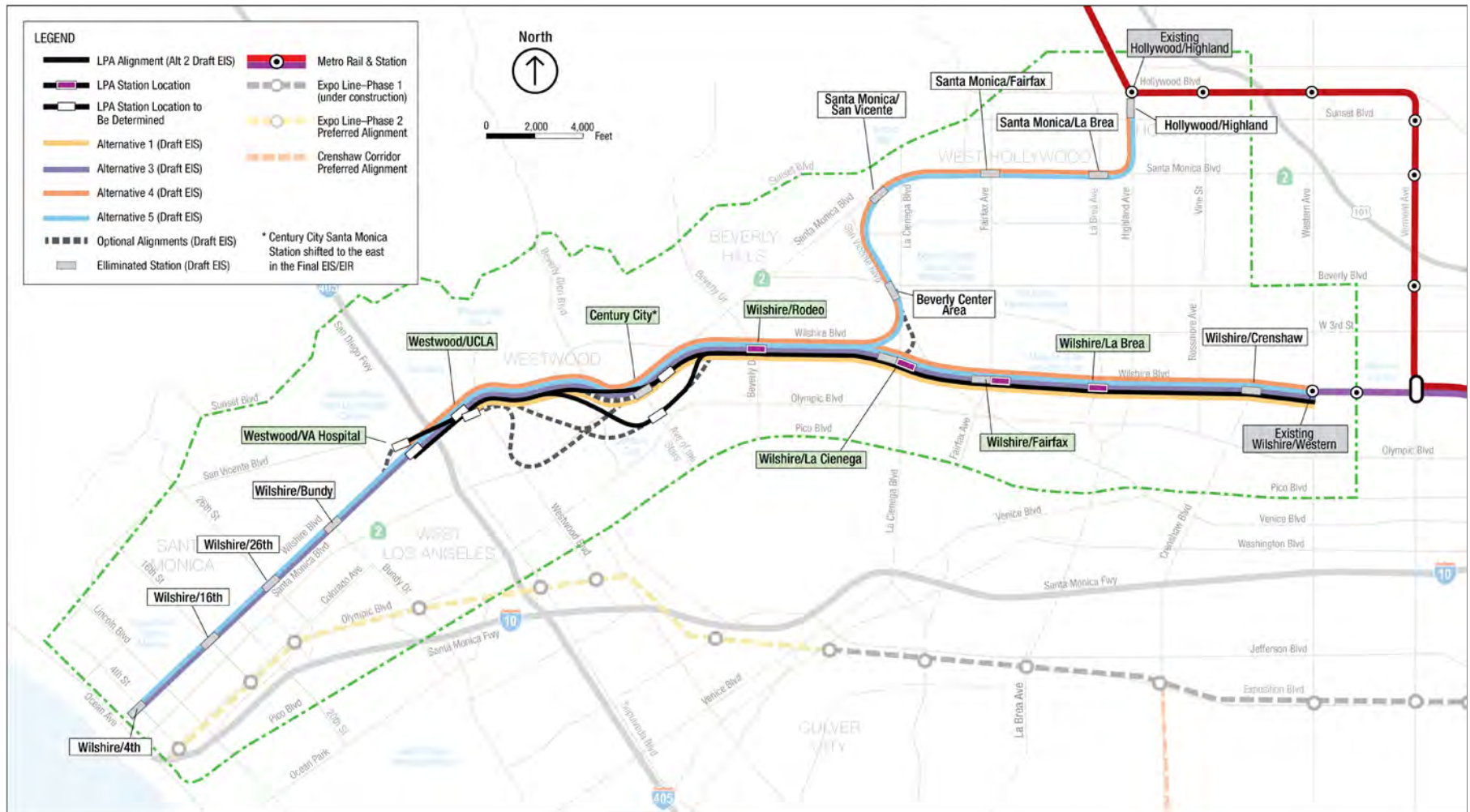
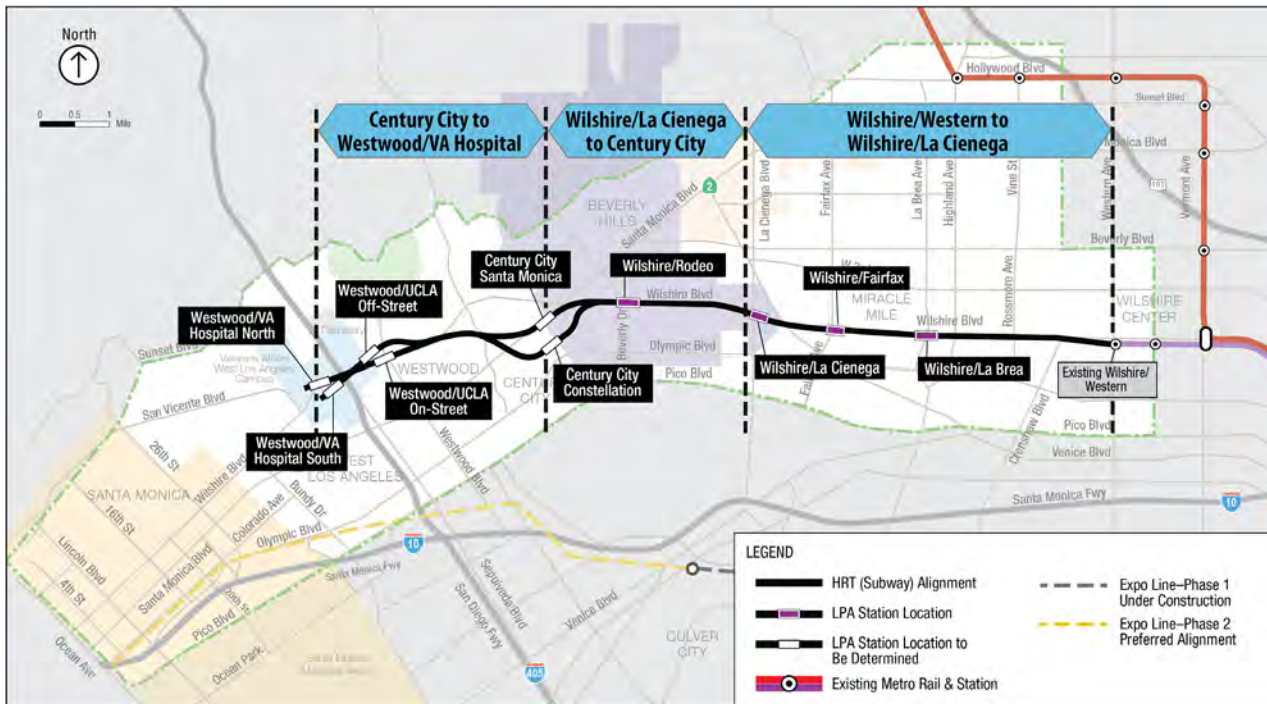


Figure 2-21. Locally Preferred Alternative Compared to Draft EIS/EIR Build Alternatives



**Figure 2-22. Construction Phases for Westside Subway Extension (either concurrent or phased construction)**

The LPA tunnel alignment will be between 8.6 and 8.8 miles in length from the Wilshire/Western Station (east to west) to the Westwood/VA Hospital Station (plus tail tracks) depending on the alignment between Wilshire/Rodeo and Westwood/VA Hospital. If the LPA is constructed under the Phased Construction Scenario, Phase 1 will be 3.8 miles long and extend from the Wilshire/Western Station to the Wilshire/La Cienega Station; Phase 2 will be between 2.4 and 2.7 miles long, depending on the location of the Century City Station, and extend from the Wilshire/La Cienega Station to the Century City Station; and Phase 3 will be approximately 2.3 miles long and extend from the Century City Station to the Westwood/VA Hospital Station.

The LPA alignment will serve numerous activity centers across the Westside of Los Angeles (Figure 2-23 and Figure 2-24). The extension will include a total of seven new stations located in approximately one-mile intervals. From the Wilshire/Western Station, the LPA will travel westerly beneath Wilshire Boulevard to a station at the Wilshire/La Brea intersection, which is surrounded by a mix of commercial and residential land uses. From there, the alignment will continue westerly beneath Wilshire Boulevard to a station at the Wilshire/Fairfax intersection, a major cultural and tourism-oriented hub that includes LACMA, the Page Museum, and the La Brea Tar Pits, as well as high-density residential development. From Wilshire/Fairfax, the alignment will continue westerly beneath Wilshire Boulevard to a station at the Wilshire/La Cienega intersection, which will serve a mixture of commercial, residential, and restaurant uses. If the LPA is constructed under the Phased Construction Scenario, Phase 1 will terminate at the Wilshire/La Cienega Station.

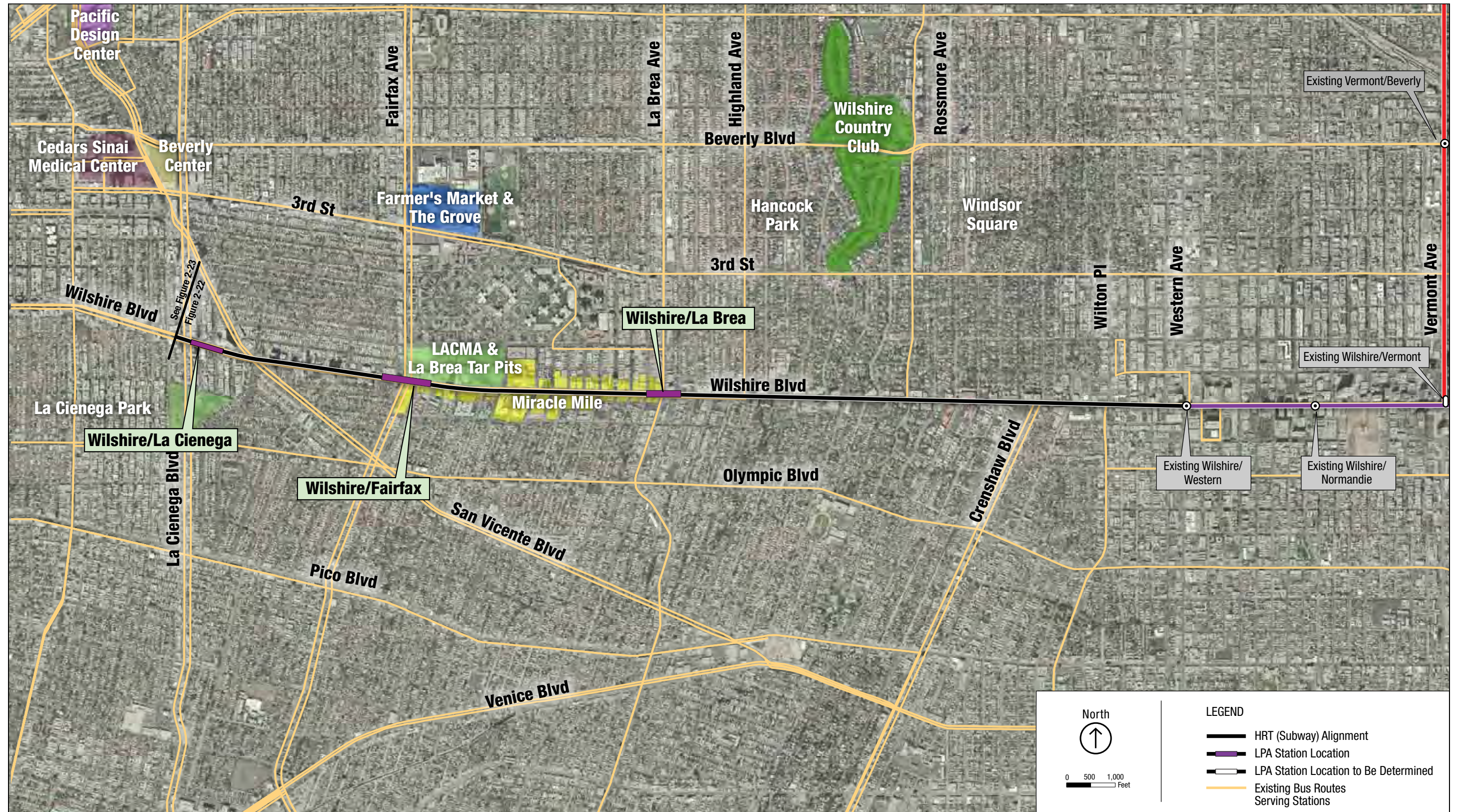


Figure 2-23. Activity Centers Served by the Locally Preferred Alternative (Existing Wilshire/Western Station to Wilshire/La Cienega Station)

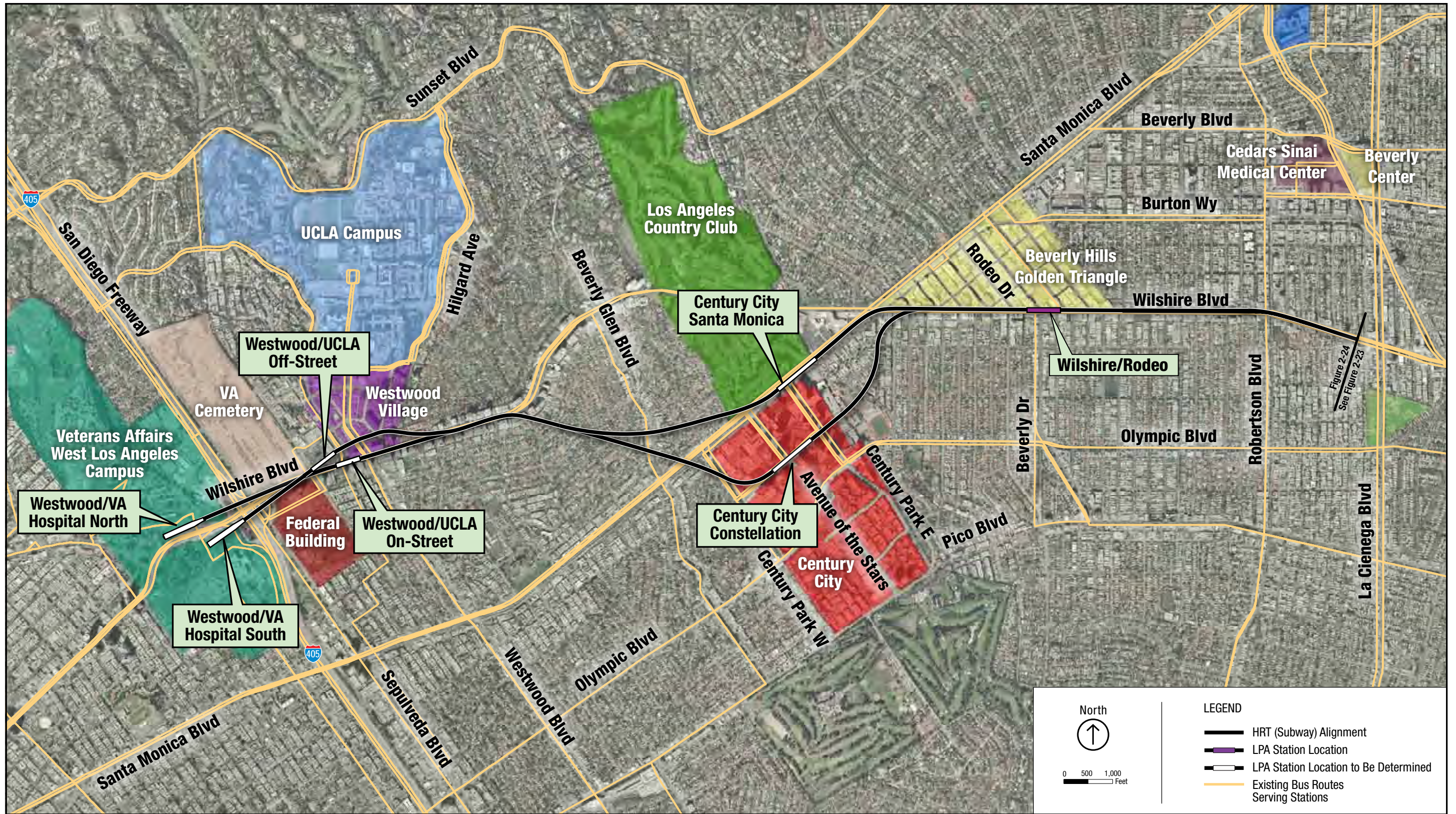


Figure 2-24. Activity Centers Served by the Locally Preferred Alternative (West of Wilshire/La Cienega Station to Westwood/VA Hospital Station)



From Wilshire/La Cienega, the alignment will continue westerly beneath Wilshire Boulevard to a station near the Wilshire/Rodeo intersection, which will serve the Beverly Hills “Golden Triangle,” a local and regional shopping destination and a hub for tourists visiting the famous Rodeo Drive and shops along Beverly Drive.

Two alternate station locations were considered for each of the three stations west of Wilshire/Rodeo (Century City, Westwood/UCLA, and Westwood/VA Hospital Stations). The location of each of these stations affects the LPA alignment west of Wilshire/Rodeo. The LPA remains uncommitted as to the location of these stations. The location for each of these three stations will be selected by the Metro Board of Directors following circulation and public comment on this Final EIS/EIR. However, it should be noted that although the Century City Santa Monica Station is analyzed in this Final EIS/EIR, it is no longer recommended as a viable option due to the environmental and safety issues discussed herein.

From Wilshire/Rodeo, the alignment will turn southwesterly toward a Century City Station. For a Century City Santa Monica Station, the alignment would follow Santa Monica Boulevard to the intersection of Santa Monica Boulevard and Century Park East. For a Century City Constellation Station, the alignment would turn southwesterly at Lasky Drive and then turn westerly to connect to a station at the intersection of Constellation Boulevard and Avenue of the Stars. If the LPA is constructed under the Phased Construction Scenario, Phase 2 will terminate at the Century City Station.

From either Century City Station, the alignment will continue northwesterly, traveling beneath a residential neighborhood toward a Westwood/UCLA Station. The Westwood/UCLA Station will either be on-street beneath Wilshire Boulevard or off-street beneath a property known as UCLA Lot 36. The Westwood/UCLA Station will serve the high-rise office buildings along Wilshire Boulevard; Westwood Village, a major hub for tourists; UCLA and medical center users, students, professors, and employees; and shoppers and moviegoers. From the Westwood/UCLA Station, the alignment will travel westerly, traversing under Veteran Avenue, continuing west under the I-405 Freeway, and terminating at a Westwood/VA Hospital Station that will either be north or south of Wilshire Boulevard on the VA campus. The Westwood/VA Hospital Station will serve veterans, visitors, and workers using the VA campus and will provide connections to the West Los Angeles, Brentwood, and Santa Monica communities. If the LPA is constructed under the Phased Construction Scenario, Phase 3 will terminate at the Westwood/VA Hospital Station.

Since the release of the Draft EIS/EIR, the design of the LPA has been refined to further minimize impacts to the natural and built environments and improve the overall project design and performance. These refinements from the Draft EIS/EIR include the locations of the station entrances and construction staging and laydown areas. Locations for station entrances were refined based on surrounding land use, engineering, and environmental constraints; community input; as well as linkages to existing transit, bicycle, and pedestrian access; employment and activity centers; and neighborhoods. The refinement of the locations for the station entrances and construction staging and laydown areas at each station are described in Section 2.6.4. The Plan and Profile for the

LPA are included in Appendix A, Plan and Profile, and Typical Section Drawings, and the Station Site Plans are included in Appendix B, Station Plan Report.

The following sections provide a detailed description of the LPA operating plan, the bus network, HRT station components, the stations and alignments, construction staging and laydown areas, traction power substations, emergency generators, emergency exit shafts, special trackwork, the rail operations center, the maintenance and operations yard, and the construction schedule.

### **2.6.1 Operating Plan**

The LPA, including all station, alignment, and station entrance options still under consideration, is expected to operate seven days per week, 365 days per year, with hours of operation from 4:30 a.m. to 1:30 a.m. Peak-period headways of 4 minutes will be in effect during weekday non-holidays, from 6:00 a.m. to 9:00 a.m. and from 3:00 p.m. to 7:00 p.m. Off-peak headways of 10 minutes will be in effect during the remaining weekday hours of operation and on weekends. Service frequencies on other Metro Rail lines and bus routes in the corridor will be the same as for the No Build Alternative. The operating plan is the same under both the Concurrent Construction Scenario and the Phased Construction Scenario. The operating plan was refined following the Draft EIS/EIR with peak-period headways decreasing in frequency from 3.3 minutes to 4 minutes.

The estimated one-way running time will range from approximately 14 minutes, 26 seconds to 15 minutes, 21 seconds from the Wilshire/Western Station to the Westwood/VA Hospital Station depending on the alignment between the Wilshire/Rodeo and Westwood/VA Hospital Stations. If the LPA is constructed under the Phased Construction Scenario, the one-way running time for Phase 1 from the Wilshire/Western Station to the Wilshire/La Cienega Station will be approximately 4 minutes, 12 seconds. The one-way cumulative running time for Phase 1 and Phase 2 from the Wilshire/Western Station to the Century City Station will range from approximately 10 minutes, 30 seconds to 10 minutes, 48 seconds depending on the location of the Century City Station. Phase 3 will complete the LPA in its entirety to the Westwood/VA Hospital Station. As stated above, the estimated one-way running time will range from approximately 14 minutes, 26 seconds to 15 minutes, 21 seconds from the Wilshire/Western Station to the Westwood/VA Hospital Station depending on the alignment between the Wilshire/Rodeo and Westwood/VA Hospital Stations.

Metro will construct an expanded Rail Operations Center (ROC) as a systemwide improvement prior to the opening of the Westside Subway Extension. The expansion of the ROC is not a component of the LPA, but the project will contribute funding to cover a fair share of costs. Funding will also be contributed by other Metro rail projects, including Crenshaw/LAX and Regional Connector.

### **2.6.2 Bus Network**

With the LPA, including all station, alignment, and station entrance options under both the Concurrent Construction Scenario and the Phased Construction Scenario, no major restructuring of bus routes is expected, and bus fleet requirements will not be modified

in a major way. Thus cost savings that would be associated with major bus service changes are not expected.

The baseline for the ridership model was refined following the Draft EIS/EIR with 720 peak-period headways decreasing in frequency from 3.3 to 4 minutes to be consistent with refinements to the LPA headways.

### 2.6.3 HRT Station Components

The HRT stations serve as the gateway to the transit system for the user. Station entrances (or entrances) give identity to a place and provide access to important



Figure 2-25. Existing Metro HRT Train and Station

destinations. Locations for stations and station entrances were developed, taking into consideration surrounding land use, engineering, and environmental constraints; community input; and linkages to existing transit, bicycle, and pedestrian access; employment and activity centers; and neighborhoods. As a result of these considerations, station entrance sizes vary from station to station. HRT stations consist of a station “box,” or area in which the basic components are located (Figure 2-25 and Figure 2-26). The station box will be accessed from street-level entrances by stairs, escalators, and elevators that will bring patrons to a concourse level where the ticketing functions are located. Three entrance types will be used for stations: plazas with covered entries, entries integrated with existing buildings, and entries incorporated into future joint developments. Knockout panels will be provided at locations where there is potential for an entrance to be constructed in the future.



Figure 2-26. Typical Subway Station

The standard circulation prototypes consist of a center loaded, single-end loaded, or a double-end loaded concourse (Figure 2-27 through Figure 2-30).

The 450-foot platforms will be one level below the concourse level and will allow level boarding (the train car floor will be at the same level as the platform) for full accessibility. Stations consist of a center platform. Each station will be equipped with under-platform exhaust shafts, over-platform exhaust systems and exhaust, and fresh air intake shafts. Stations and station entrances will comply with the *Americans with Disabilities Act of 1990* (ADA) (USC 1990), the California Building Code (Title 24 of the California Code of Regulations [CCR]), , and the U.S. Department of Transportation (USDOT) *Transportation Services for Individuals with Disabilities* (ADA) (49 CFR 37).

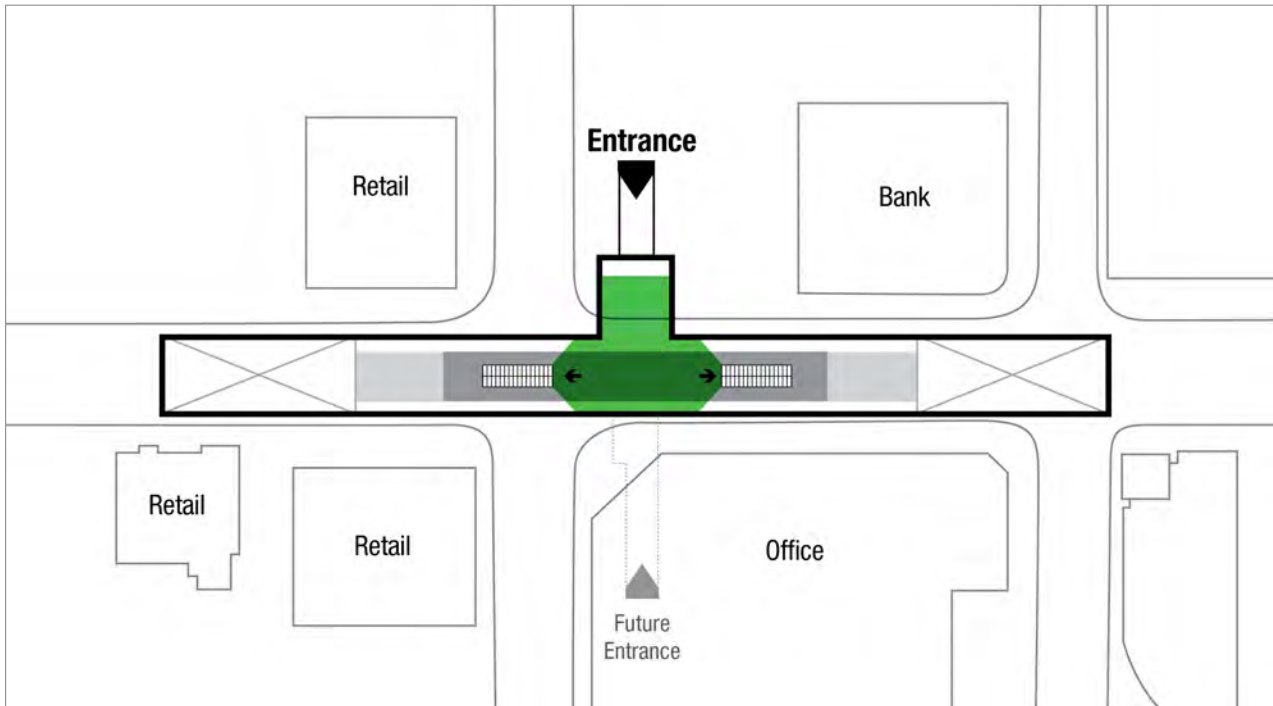


Figure 2-27. Prototypical Center Loaded Concourse

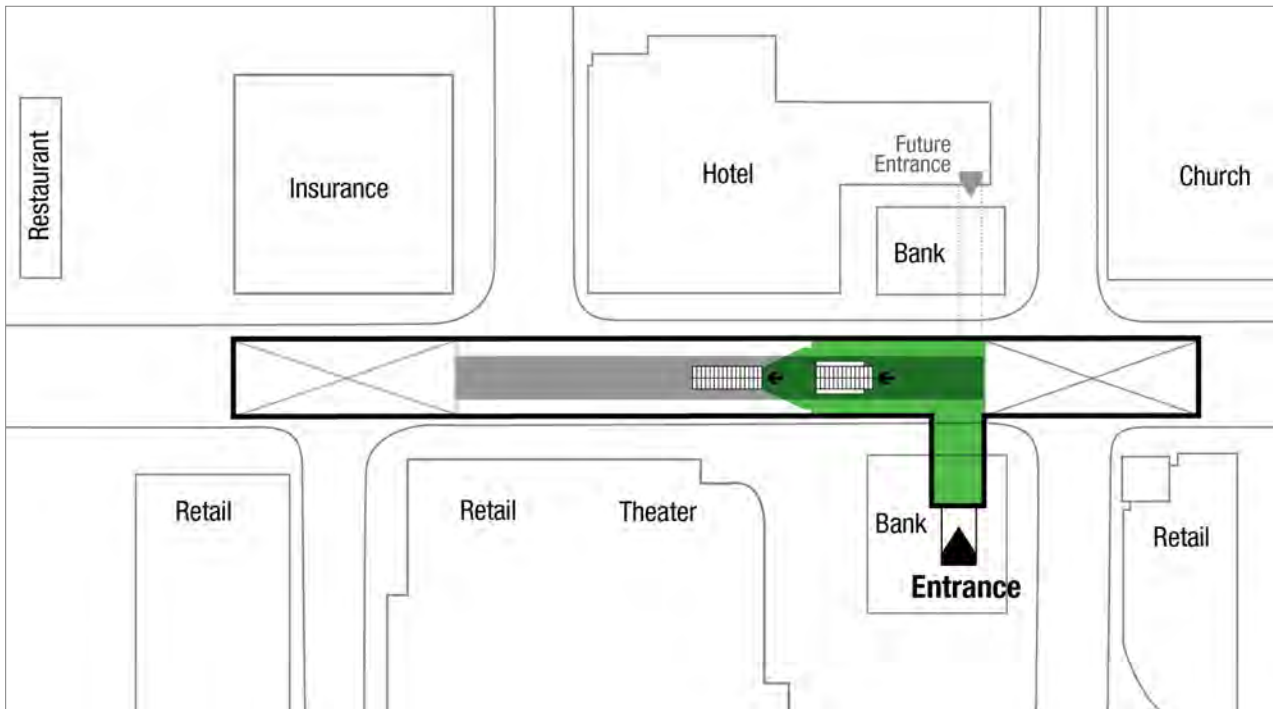


Figure 2-28. Prototypical Single-End Loaded Concourse

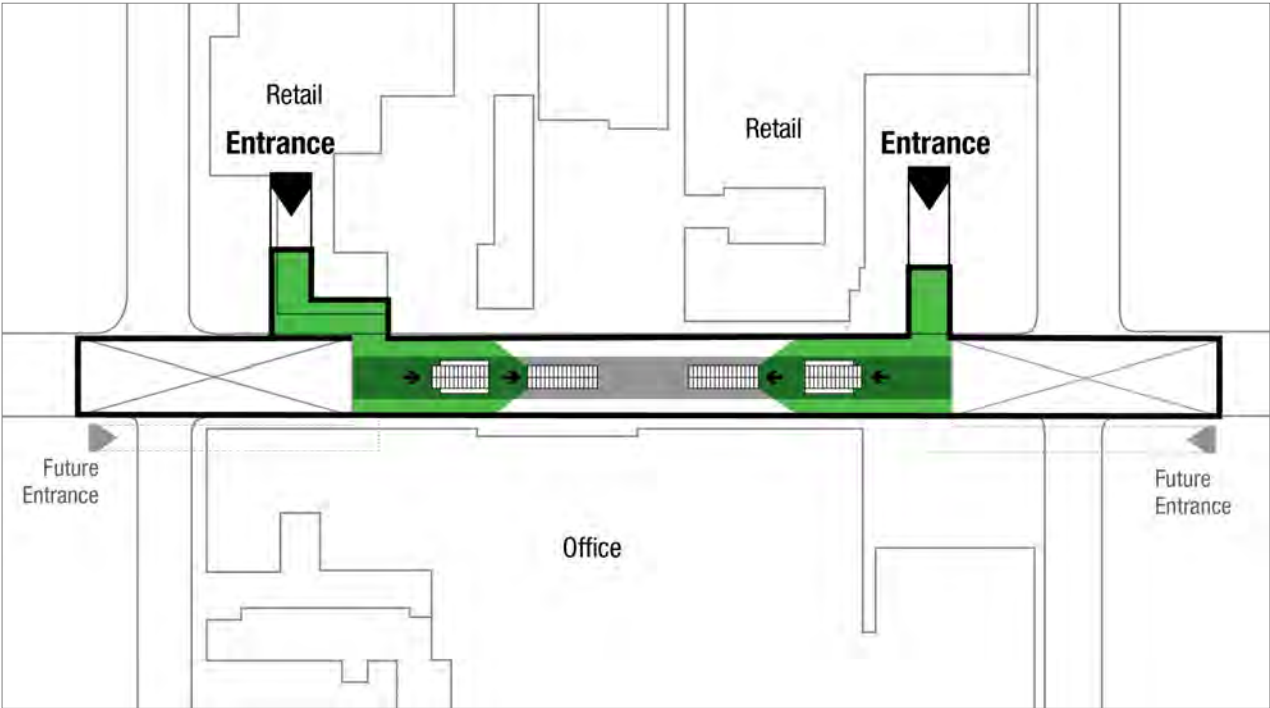


Figure 2-29. Prototypical Double-End Loaded Concourse



Figure 2-30. Typical Double-End Loaded Concourse Station (Existing Civic Center Station)

Platforms will be well-lighted and include seating, trash receptacles, artwork, signage, safety and security equipment (closed-circuit televisions, public announcement system, and passenger assistance telephones), and a transit passenger information system. The fare collection area will include ticket vending machines, fare gates, and information map cases.

#### 2.6.4 Stations and Alignments

The description of each station (and station and alignment options, where applicable) as well as a description of refinements from the Draft EIS/EIR are presented below. The station diagrams following the station descriptions show the station box location, the entrance locations, special trackwork such as crossovers and tail tracks, and construction staging areas that will be necessary for construction of the station box. Several stations have multiple options for the entrance and construction staging location. Metro will construct only one entrance at each station, with the exception of Westwood/UCLA, which will have two entrances due to high ridership projections. The recommendation for the station entrance location is included in Chapter 7, Evaluation of Alternatives. Following circulation and public comment of the Final EIS/EIR, the Metro Board of Directors will review the recommendations and determine the location of the station entrances and construction staging areas.

Construction staging and laydown areas will be necessary for construction of station excavations, tunnels, station entrances, crossover structures, traction power substations (TPSS), and tunnel boring machine (TBM) retrieval shafts. Staging areas are used principally for the operation of contractors' equipment, storage of materials and for site offices, and for access to the station excavation. At TBM sites, the staging areas will also be used for storage and preparation of precast concrete segments, temporary spoil storage, ventilation lines, shaft support (air, water, electricity, spoil hoisting), workshops, mixing and processing slurry for excavation support or tunnel excavation, and post-excavation slurry treatment (separation), which will include filters, centrifuges, and vibrator equipment. The layout of a typical construction staging and laydown site at the Wilshire/La Brea Station is provided in Figure 2-31. Usually, these construction staging and laydown areas will be located at station sites to facilitate access to the tunnel. In addition to the construction staging and laydown areas and the decking over the station box, construction activity will occur in the vicinity of the station entrances. The construction staging and laydown areas in the vicinity of stations are identified below. Section 2.6.5 discusses construction staging and laydown areas that are not adjacent to station sites. Appendix E, Construction Methods, provides a detailed discussion of construction activities that are planned for each station site and construction staging and laydown area.

TPSS and emergency generators are also discussed in more detail in Section 2.6.6 and Section 2.6.7. Additional detail on special trackwork, such as crossovers and tail tracks, may be found in Section 2.6.9.



Figure 2-31. Typical Construction Staging and Laydown Site—Wilshire/La Brea

### Wilshire/La Brea Station

The Wilshire/La Brea Station will be located in a commercial and residential area and will serve as a key transit connection. This station box will be located beneath Wilshire Boulevard from Detroit Street to just east of Orange Drive. Double crossover tracks will be located on the eastern end of the station under Wilshire Boulevard between Sycamore Avenue and Orange Drive. If the LPA is constructed under the Phased Construction Scenario, the Wilshire/La Brea Station will be constructed as part of Phase 1.

Two locations for the station entrance are under consideration:

- **North of Wilshire Boulevard** (Figure 2-32)—The first option would locate the station entrance on the northwest corner of the Wilshire Boulevard and La Brea Avenue intersection on Metro-owned property, at the current site of the Metro Customer Center. The entrance would be oriented toward the north and would consist of two sets of stairs and escalators. Station elevators would be located to the west of the entrance. A knockout panel would be located near the southwest corner of the Wilshire Boulevard and La Brea Avenue intersection. An emergency generator would be located above ground along Detroit Street, north of Wilshire Boulevard, on current Metro-owned property (refer to Section 2.6.7).
- **South of Wilshire Boulevard** (Figure 2-33)—Alternatively, the station entrance would be located on the southwest corner of the Wilshire Boulevard and La Brea Avenue intersection, at the current location of the Bank of America building. The entrance would be oriented toward the north and would consist of two sets of stairs and escalators. Station elevators would be located to the east of the entrance. A knockout panel would be located near the northwest corner of the Wilshire Boulevard and La Brea Avenue intersection. An emergency generator would be located above ground to the southwest of the entrance on the property planned to be used for construction staging and laydown (refer to Section 2.6.7).

Wilshire/La Brea will also be a launch site for TBMs and the location for the equipment needed to support the operation of the TBMs in addition to typical station excavation activities. Approximately three acres of construction staging and laydown area will be needed at Wilshire/La Brea. Construction staging and laydown areas (Figure 2-32 and Figure 2-33) will be located on the north (primarily on Metro-owned property) and south sides of Wilshire Boulevard between Detroit Street and La Brea Avenue. The construction staging and laydown site on the north side of Wilshire Boulevard will require the permanent reconfiguration of the public alley that intersects the site. The alley will be reconfigured prior to construction to be located north of the existing Lawrence of La Brea structure and will remain accessible during construction. All structures on the identified properties will be demolished to accommodate construction activities.

#### ***Refinements from the Draft EIS/EIR***

Two of the three entrances included in the Draft EIS/EIR are evaluated in the Final EIS/EIR. The entrance on the southeast corner of the Wilshire Boulevard and La Brea Avenue intersection was eliminated from further evaluation due to a proposed development on the corner parcel. The development has received entitlements and will include an underground parking structure that will abut the property line, which will impede construction of an entrance on the southeast corner.



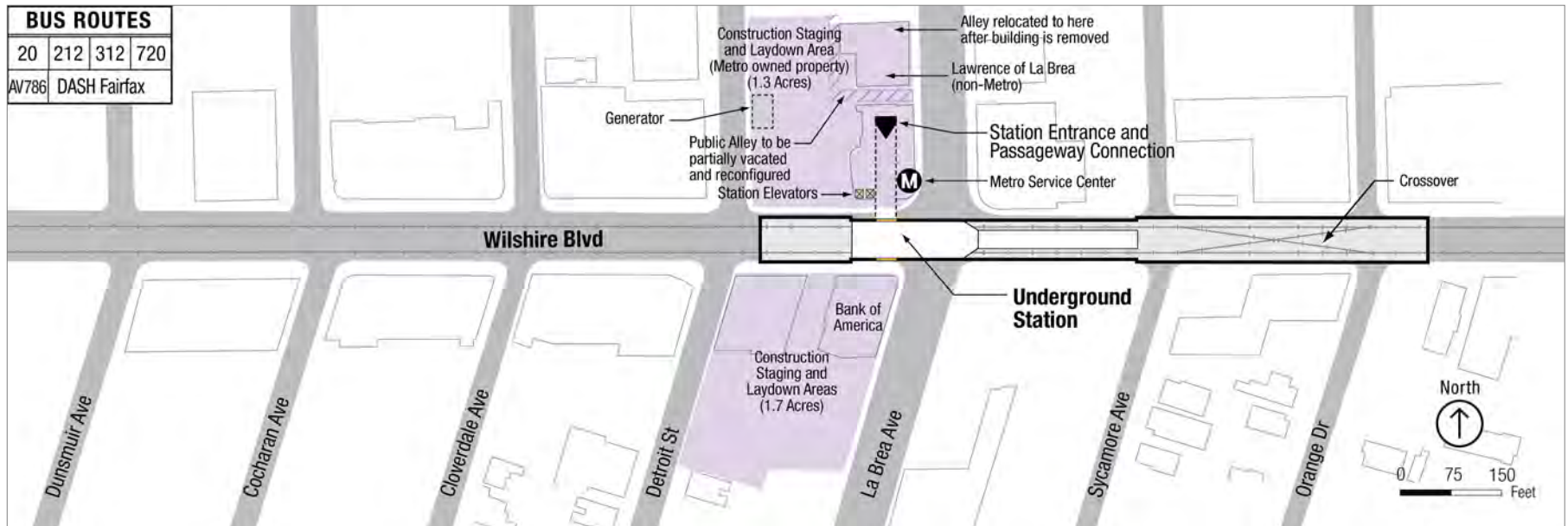


Figure 2-32. Wilshire/La Brea Station—North of Wilshire

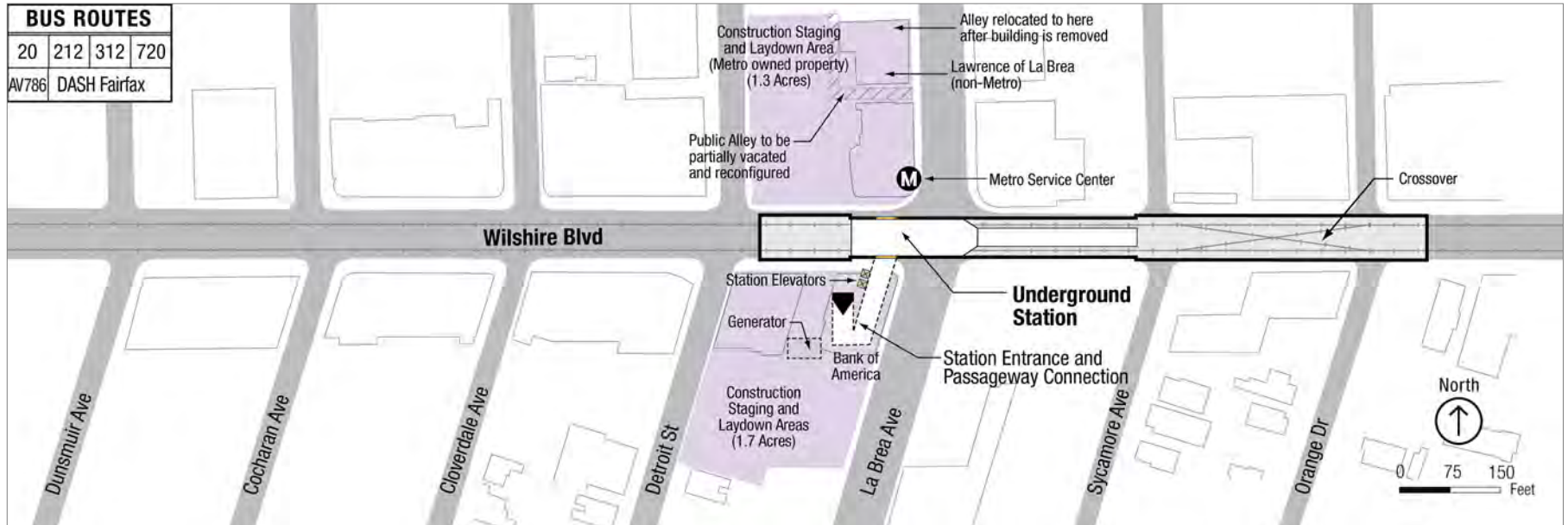


Figure 2-33. Wilshire/La Brea Station—South of Wilshire

Since the Draft EIS/EIR, the construction staging and laydown area on the north side of La Brea Avenue was expanded to the north to provide adequate space to accommodate a TBM launch site. As described above, approximately 3 acres will be needed to support a TBM launch site. The construction staging and laydown area on the south remained the same as in the Draft EIS/EIR.

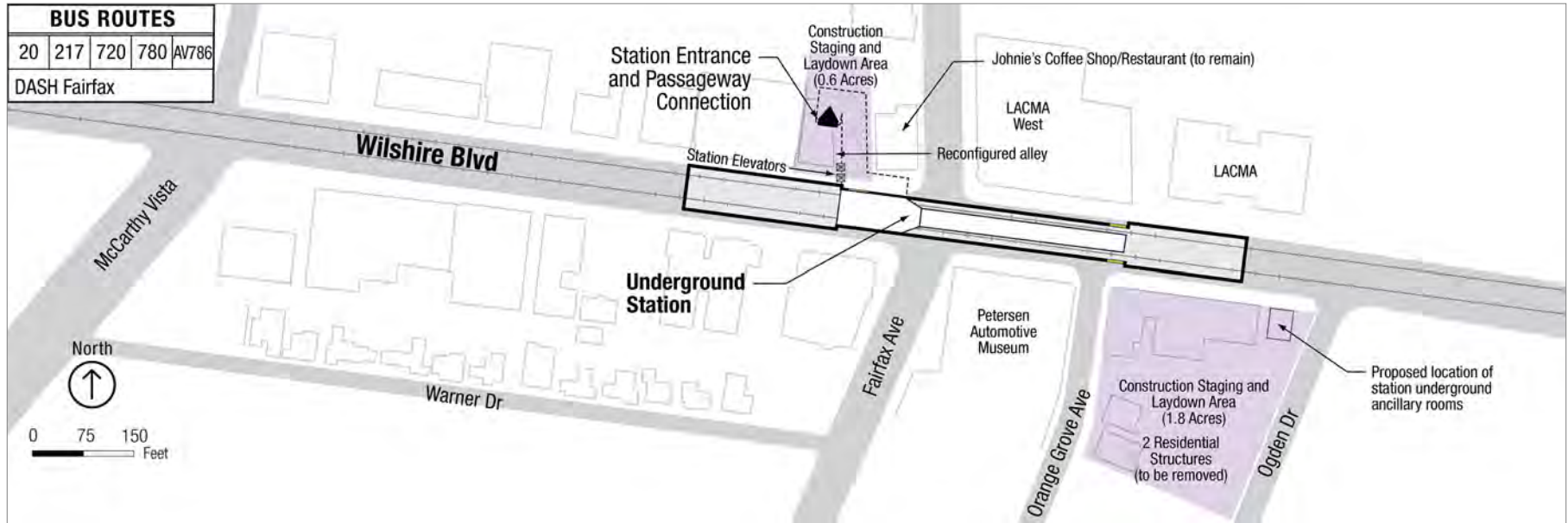
The double crossover at the Wilshire/La Brea Station was on the west side of the station box in the Draft EIS/EIR. The crossover box was moved to the east side of the station box in the Final EIS/EIR to optimize operations.

### **Wilshire/Fairfax Station**

The Wilshire/Fairfax Station will offer access to a major cultural and tourism hub, including the Los Angeles County Museum of Art (LACMA), the Page Museum, the La Brea Tar Pits, the Peterson Automotive Museum, the Architecture and Design Museum, and the Craft and Folk Art Museum. This station will also provide access to the nearby Farmer’s Market, shops along West 3rd Street and Beverly Boulevard, and The Grove. The station will also provide connections to bus service along Fairfax Avenue, a major north/south thoroughfare. The station box will be located under Wilshire Boulevard from just west of Fairfax Avenue to just east of Orange Grove Avenue. If the LPA is constructed under the Phased Construction Scenario, the Wilshire/Fairfax Station will be constructed as part of Phase 1.

Three proposed station entrance locations are evaluated in the Final EIS/EIR. Knockout panels will be provided at the proposed entrance locations that are not selected to be constructed as part of the project.

- **Johnie’s Coffee Shop** (Figure 2-34)—The first proposed location for the station entrance would be immediately west of Johnie’s Coffee Shop on the northwest corner of Wilshire Boulevard and Fairfax Avenue (Figure 2-34). The station entrance would be situated on the current location of Hayworth Avenue, a public alley connecting Wilshire Boulevard and Orange Street. The entrance would be oriented toward the south and consist of two sets of stairs and escalators. Station elevators would be located to the east of the entrance. Construction of this entrance would require the alley to be permanently shifted to the west of the proposed station entrance, which is the current site of the Marinello School of Beauty. The alley would be reconfigured prior to construction so there would be no closure of the alley. The Johnie’s Coffee Shop structure would remain intact and unaltered. Knockout panels would be located on the east side of Fairfax Avenue—in front of LACMA West and near the southeast corner of Wilshire Boulevard and Orange Grove Avenue. Underground ancillary rooms would be located on the property on the southwest corner of Wilshire Boulevard and Ogden Drive. A rendering of the proposed entrance at Johnie’s Coffee Shop is presented in Figure 2-35.



**Figure 2-34. Wilshire/Fairfax Station—Johnie's Coffee Shop**



Figure 2-35. Proposed Entrance at Wilshire/Fairfax Station (Johnie's Coffee Shop)

- **LACMA** (Figure 2-36)—Alternatively, the station entrance could be retrofitted into LACMA West (the former May Company Building) on the northeast corner of Wilshire Boulevard and Fairfax Avenue. The entrance would be located within the lobby of the LACMA West Building with two sets of stairs and escalators leading to the basement level, where there would be a connection into the station box. Station elevators would be located within the building lobby, connecting to the basement level. Knockout panels would be located on the northwest corner of Wilshire Boulevard and Fairfax Avenue and the southeast corner of Wilshire Boulevard and Orange Grove Avenue. Underground ancillary rooms would be located on the property on the southwest corner of Wilshire Boulevard and Ogden Drive.
- **South of Wilshire Boulevard** (Figure 2-37)—The third option would be to locate the station entrance on the south side of Wilshire Boulevard, between Ogden Drive and Orange Grove Avenue. This site would also serve as a construction staging and laydown area. This entrance would also consist of two sets of stairs and escalators and an elevator bank adjacent to the west of the entrance. Knockout panels would be located near the northwest corner of Wilshire Boulevard and Fairfax Avenue and on the north side of the station box in front of LACMA West.

In addition to the areas immediately adjacent to the station entrances, approximately 1.5 acres of laydown area will be needed at the Wilshire/Fairfax Station to support construction of the station and for the storage of boxed fossils removed during station excavation. This station site will not support TBM facilities. The construction staging and laydown area (Figure 2-34, Figure 2-36, and Figure 2-37) will be located on the south side of Wilshire Boulevard between Ogden Drive and Orange Grove Avenue and the northwest corner of Wilshire Boulevard and Fairfax Avenue. The construction staging and laydown area will be the same regardless of the location of the entrance, with the exception of construction activities surrounding the entrance. All structures on these two identified construction staging and laydown sites, with the exception of Johnie's Coffee Shop, will be demolished to accommodate construction activities.

#### **Refinements from the Draft EIS/EIR**

All three of the station entrances that were evaluated in the Draft EIS/EIR are included in the Final EIS/EIR. The design of all three entrances has been reconfigured slightly since the Draft EIS/EIR due to engineering and urban design considerations.

The construction staging and laydown areas for this station have been refined from the Draft EIS/EIR. The construction staging and laydown area on the south side of Wilshire Boulevard between Orange Grove Avenue and Ogden Drive was expanded to the south to make it a total of 1.8 acres. Due to this expanded construction staging and laydown area, only a portion of the property on the north side of Wilshire Boulevard between Fairfax Avenue and Crescent Heights will be needed. The construction staging and laydown area will be limited to area immediately adjacent to the station entrance to the west of Johnie's Coffee Shop. The property on the south side of Wilshire Boulevard between Fairfax Avenue and McCarthy Vista is no longer under consideration as a construction staging and laydown area in the LPA.

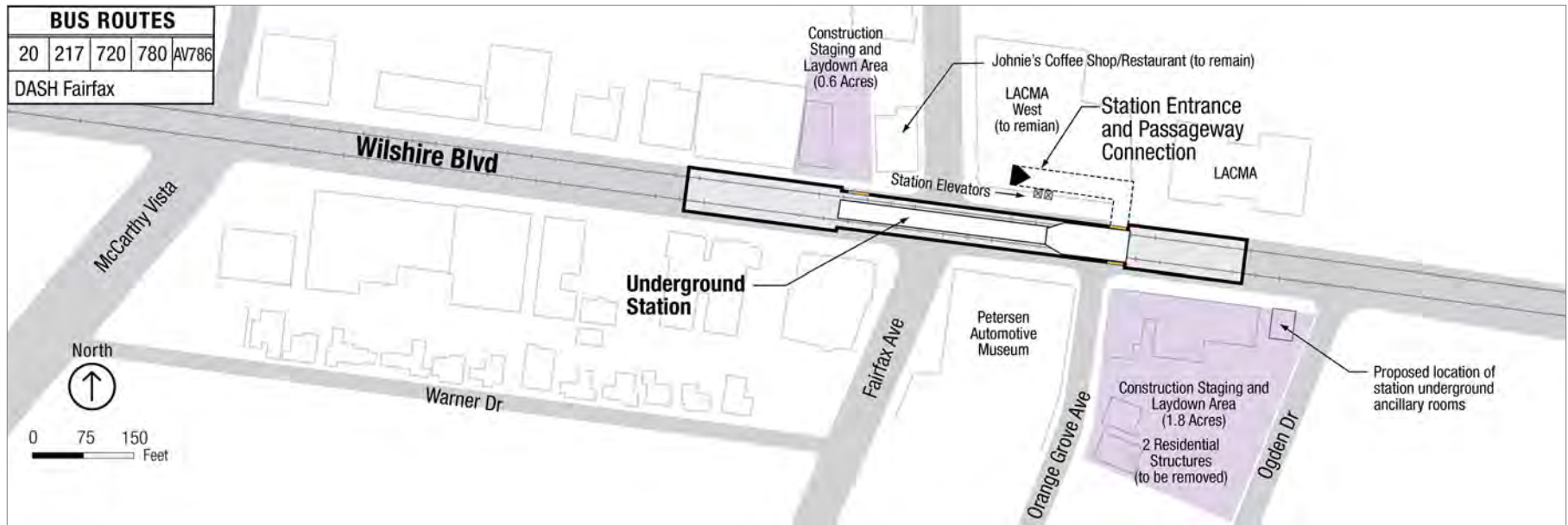


Figure 2-36. Wilshire/Fairfax Station—LACMA

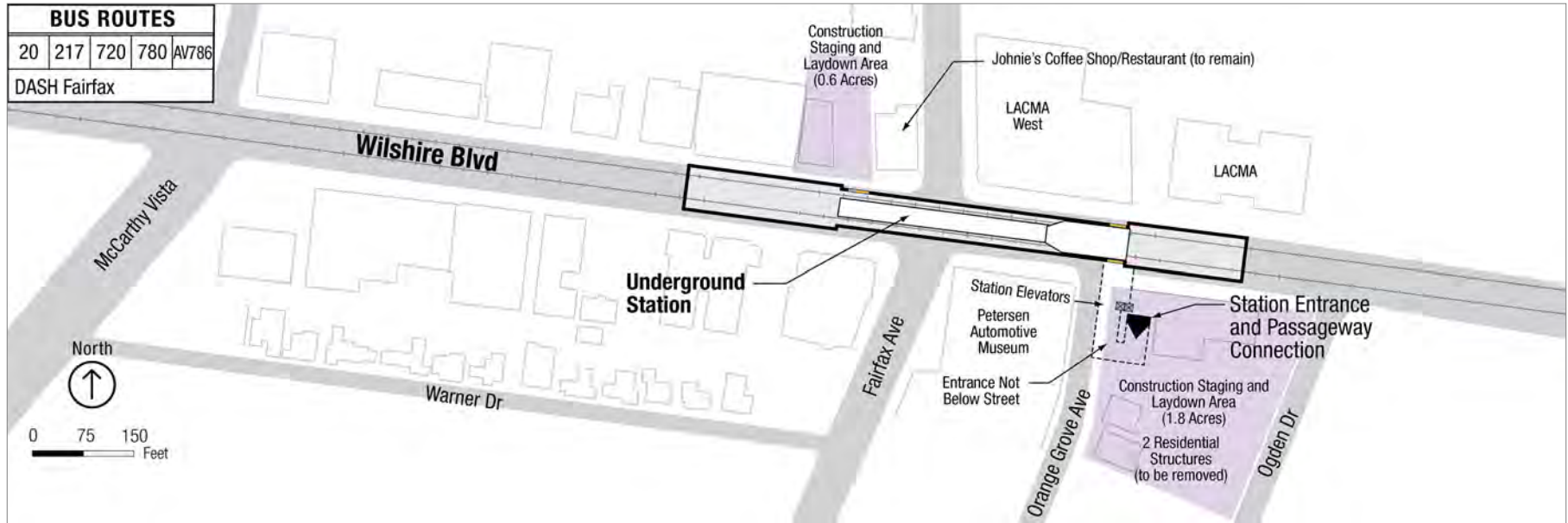


Figure 2-37. Wilshire/Fairfax Station—South of Wilshire



An optional double crossover west of the Wilshire/Fairfax Station was included in the Draft EIS/EIR. Since the Final EIS/EIR includes double crossovers at both the Wilshire/La Brea and Wilshire/La Cienega Stations, a double crossover will not be necessary at the Wilshire/Fairfax Station and is not included in the Final EIS/EIR for the LPA.

### **Wilshire/La Cienega Station**

The Wilshire/La Cienega Station will provide access to a mixture of commercial, residential, and restaurant uses. This station will provide access to nearby Cedars-Sinai Medical Center, the Beverly Center, the Beverly Connection, and shops along West 3rd Street and Beverly Boulevard. La Cienega Boulevard also serves as a major north/south thoroughfare for the Los Angeles region with numerous bus routes. The station box will be located beneath Wilshire Boulevard from La Cienega Boulevard to Tower Drive (Figure 2-38). Double crossover tracks will be located to the east of the station from east of Gale Drive to Tower Drive. If the LPA is constructed under the Phased Construction Scenario, the Wilshire/La Cienega Station will be constructed as part of Phase 1.

The station entrance will be located on the northeast corner of the Wilshire Boulevard and La Cienega Boulevard intersection at the current site of the CitiBank building. The entrance will be oriented to the north and will consist of two sets of stairs and escalators. Station elevators will be located along Wilshire Boulevard to the east of the station entrance. In order to construct the station entrance, a temporary construction easement will be required in the underground parking garage of the six-story office building on the northwest corner of Wilshire Boulevard and Hamilton Drive. Construction activities will result in the temporary removal of approximately 10 parking spaces in this garage. A permanent subsurface easement will also be required at this property to accommodate the station entrance. A knockout panel will be located near the northwest corner of Wilshire Boulevard and Gale Drive. A rendering of the proposed entrance for the Wilshire/La Cienega Station is presented in Figure 2-39.

Approximately 1 acre of construction staging and laydown area will be needed at the Wilshire/La Cienega Station, principally for construction of the station. In addition to the construction staging and laydown area surrounding the station entrance, a construction staging and laydown area will be located on the northwest corner of the Wilshire Boulevard and Gale Drive intersection, at the current location of an office building and a residential structure. All existing structures on the identified parcels will be demolished to accommodate construction activities.

### **Refinements from the Draft EIS/EIR**

Only one of the two proposed station entrances evaluated in the Draft EIS/EIR is included in the Final EIS/EIR. The station entrance on the south side of Wilshire Boulevard between La Cienega Boulevard and Hamilton Drive was eliminated from further consideration due to a conflict with underground parking structure at the Flynt Building. Additionally, the public voiced a strong preference for locating the station entrance on the north side of Wilshire Boulevard, which will provide better access to existing development.

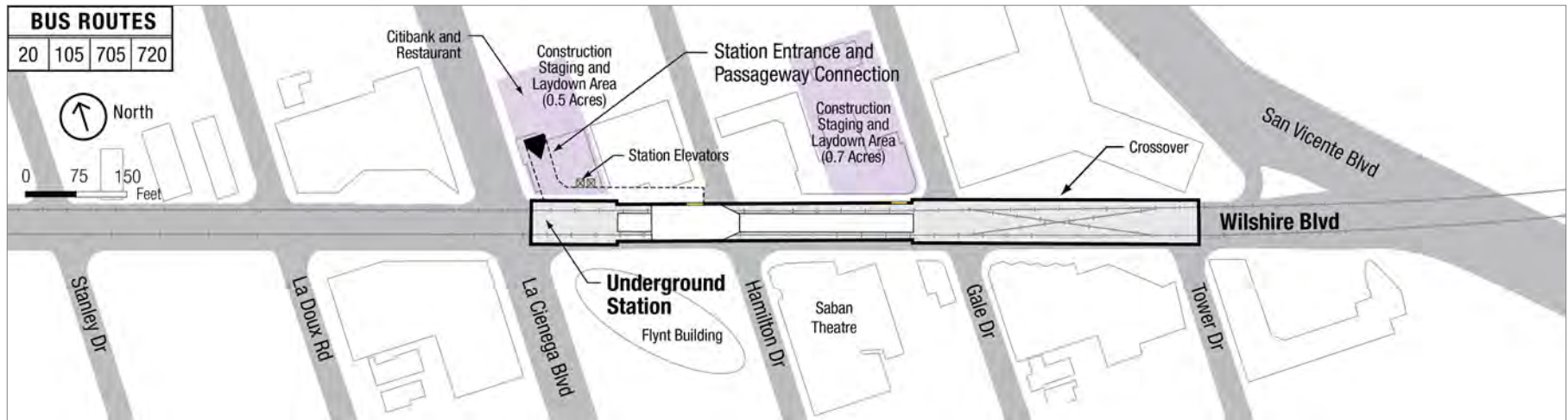


Figure 2-38. Wilshire/La Cienega Station



Figure 2-39. Proposed Entrance for the Wilshire/La Cienega Station

The construction staging and laydown area has been moved from the southwest corner of the Wilshire Boulevard and Gale Drive intersection in the Draft EIS/EIR to the northwest corner of the intersection. One of the structures on the southwest corner has been identified as an historic resource. In order to avoid impacting this historic resource, the construction staging and laydown area was moved to the north side of Wilshire Boulevard.

An optional double crossover west of the Wilshire/La Cienega Station was included in the Draft EIS/EIR. The crossover was moved to the east side of the station box for the Final EIS/EIR to optimize operations. Shifting the crossover also moved the cut-and-cover construction out of the Wilshire Boulevard and La Cienega intersection.

### **Wilshire/Rodeo Station**

The Wilshire/Rodeo Station will serve the Beverly Hills “Golden Triangle,” a local and regional shopping destination as well as a hub for tourists visiting the famous Rodeo Drive and shops along Wilshire Boulevard, Beverly Drive, and other streets. This area of Beverly Hills also serves as a major employment center. The station box will be under Wilshire Boulevard, extending between El Camino Drive on the west and Canon Drive on the east (Figure 2-40, Figure 2-42 and Figure 2-43). Double crossover tracks will be located to the east of the station box from Reeves Drive to Canon Drive. If the LPA is constructed under the Phased Construction Scenario, the Wilshire/Rodeo Station will be constructed as part of Phase 2.

Three proposed locations for the station entrance at the Wilshire/Rodeo Station are under consideration. Knockout panels will be provided at the entrance locations that are not constructed as part of the project. Only one of the three station entrance locations described below will be constructed:

- **Ace Gallery** (Figure 2-40)—The first possibility is to locate the entrance on the southwest corner of Wilshire Boulevard and Reeves Drive at the current site of the Ace Gallery, which would also be used for construction staging and laydown following demolition of the Ace Gallery building. The entrance would be oriented to the north and would consist of two sets of stairs and escalators. The station elevators would be located to the north of the entrance. Knockout panels would be located near the southwest corner of the Wilshire Boulevard and Beverly Drive intersection. A rendering of the proposed entrance at the Ace Gallery is presented in Figure 2-41.
- **Bank of America** (Figure 2-42)—Alternatively, the station entrance could be located on the northwest corner of Wilshire Boulevard and Beverly Drive, adjacent to the Bank of America Building. This entrance would be split into two “half entrances” along the sidewalk on the west side of Beverly Drive, each with one set of escalators and stairs. One entrance would be oriented to the north and the other oriented to the south. The elevator bank would be located to the east of the Bank of America Building along Beverly Drive. In order to construct this entrance, both parking lanes on Beverly Drive would be removed as well as the southbound right-turn pocket and the northbound left-turn pocket into the Bank of America parking garage. The sidewalk on the west side of Beverly Drive would be extended into Beverly Drive to accommodate the station entrances and heavier volumes of pedestrian traffic. In addition, the construction of this entrance would result in the permanent

displacement of approximately 40 parking spaces in the Bank of American underground parking garage. Knockout panels would be located on the south side of the station box between El Camino Drive and Beverly Drive and near the southwest corner of Wilshire Boulevard and Reeves Drive.

- **Union Bank** (Figure 2-43)—The third option would be to locate the station entrance on the southeast corner of the Wilshire Boulevard and El Camino Drive intersection at the current site of the Union Bank Building. The entrance would be retrofitted into the existing structure and would be a full entrance with two sets of escalators and stairs. Station elevators would be located to the north of the station entrance. The construction of this entrance would result in the permanent displacement of approximately 30 parking spaces in the Union Bank parking garage. During construction, the entire Union Bank parking garage (approximately 200 spaces) would be closed while the structure is reconfigured to accommodate the station entrance footprint. Knockout panels would be located on the northwest corner of Wilshire Boulevard and Beverly Drive and the southwest corner of Wilshire Boulevard and Reeves Drive.

In addition to the construction activity around the station entrance, approximately 1 acre of construction staging and laydown area will be needed at this site to support construction of the Wilshire/Rodeo Station. This station site will not support TBM facilities. The construction staging and laydown area will be the same regardless of the location of the entrance, with the exception of construction activities surrounding the entrance. Construction staging areas will be located at the southwest corner of Wilshire Boulevard and Reeves Drive at the site of the Ace Gallery and on the northeast corner of Wilshire Boulevard and Canon Drive. All existing structures on the properties identified for construction staging and laydown will be demolished to accommodate construction activities.

### **Refinements from the Draft EIS/EIR**

Three of the five entrances evaluated in the Draft EIS/EIR are included in the Final EIS/EIR. The proposed entrances on the northeast corner of Wilshire Boulevard and Beverly Drive and the northwest corner of Wilshire Boulevard and Canon Drive are not included in the Final EIS/EIR due to engineering constraints and urban design considerations. The public strongly expressed a preference to locate the entrance for the Wilshire/Rodeo Station on the north side of Wilshire Boulevard and as close as possible to Rodeo Drive. The proposed entrance on the northwest corner of Wilshire Boulevard and Canon Drive would have been too far east to provide access to the activity centers of Beverly Drive and Rodeo Drive. Furthermore, the building on the northwest corner has an underground parking garage that extends beneath the plaza, and locating an entrance on the plaza would displace parking and impact the parking structure. The proposed entrance on the northeast corner of Wilshire Boulevard and Beverly Drive would also have been too far to the east and would have been difficult from an engineering perspective to retrofit into the existing Sterling Plaza building, which was identified as an eligible historic resource.

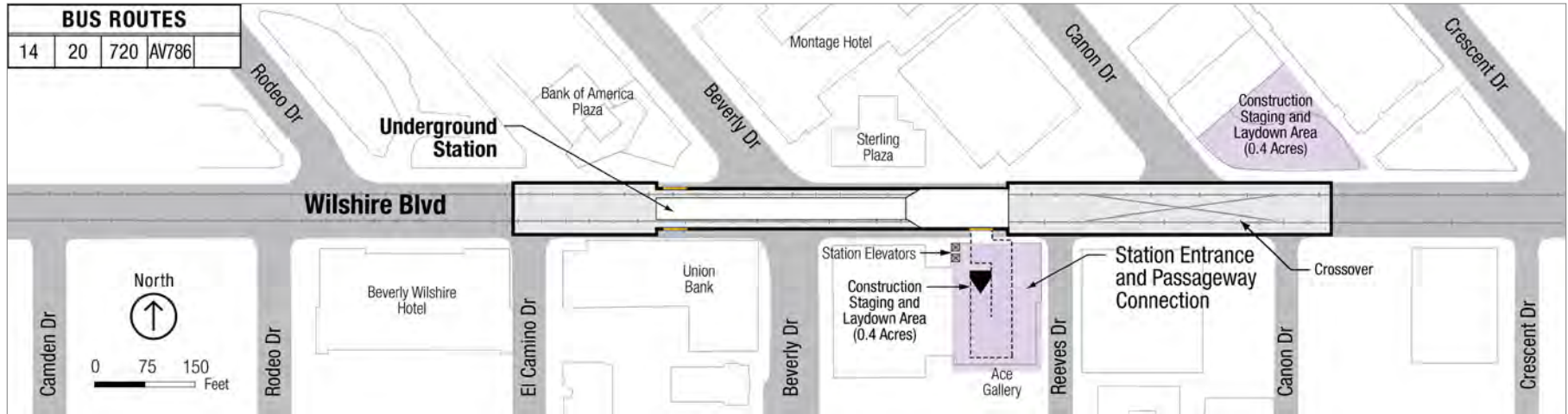


Figure 2-40. Wilshire/Rodeo Station—Ace Gallery



Figure 2-41. Proposed Entrance at Wilshire/Rodeo Station (Ace Gallery Entrance)

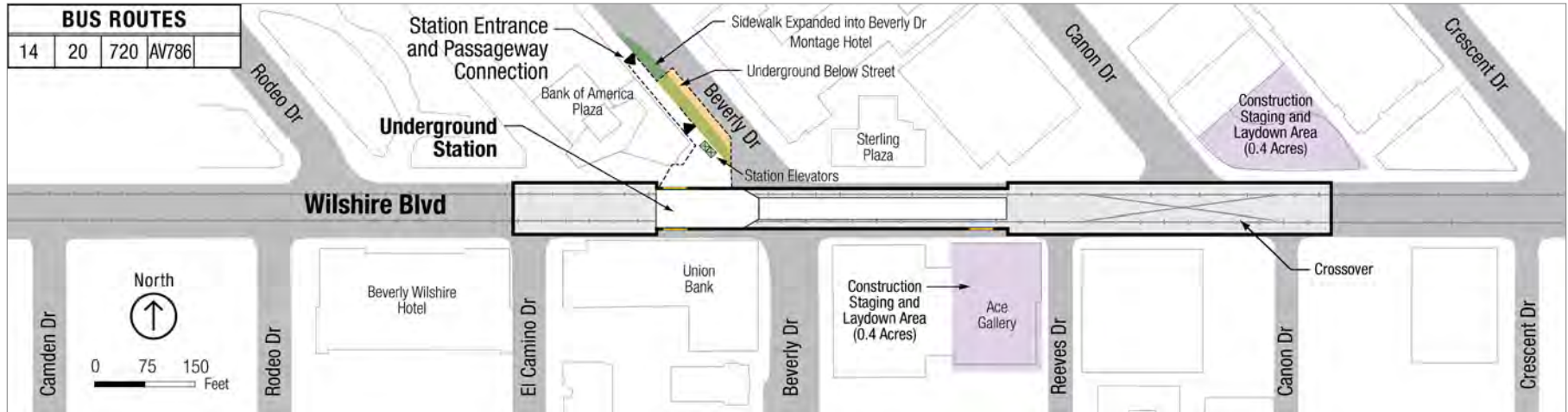


Figure 2-42. Wilshire/Rodeo Station—Bank of America

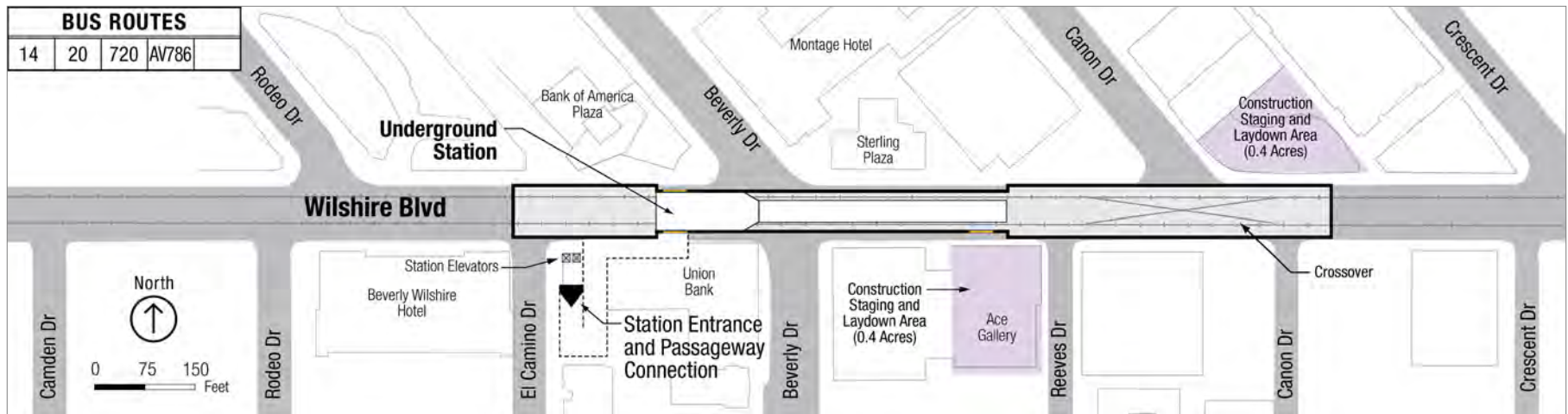


Figure 2-43. Wilshire/Rodeo Station—Union Bank



One of the construction staging and laydown areas identified in the Draft EIS/EIR was moved to a new site for the Final EIS/EIR. The Union Bank site on the southeast corner of the Wilshire Boulevard and El Camino Drive intersection is no longer under consideration as a construction staging and laydown area. In order to use the property as construction staging and laydown area, a portion of the Union Bank building would have been demolished, displacing parking for the adjacent Union Bank building, which would be costly to relocate. Additionally, the Union Bank structure is an historic resource. In place of the Union Bank property, property on the northeast corner of Wilshire Boulevard and Canon Drive is identified as a construction staging and laydown area in the Final EIS/EIR. The construction staging and laydown site at the Ace Gallery property on the southwest corner of Wilshire Boulevard and Reeves Drive remains the same in the Final EIS/EIR as in the Draft EIS/EIR.

The Draft EIS/EIR did not include a double crossover at the Wilshire/Rodeo Station. To optimize operations, a double crossover was added to the east end of the station box for the Final EIS/EIR.

### **Century City Station and Alignment Options**

The Century City Station will serve a high-density commercial, employment, and residential center. As part of the LPA selection, the Metro Board of Directors decided to continue to evaluate two station locations in Century City (Santa Monica Boulevard and Constellation Boulevard) to address concerns raised by the community regarding locating a station directly on a seismic fault (Santa Monica Boulevard Station) and the safety of tunneling under homes and schools (Constellation Boulevard Station). The results of further geotechnical investigations in the Century City vicinity conducted during preparation of the Final EIS/EIR in response to the Metro Board of Directors request are located in Section 4.8 of this Final EIS/EIR, the *Westside Subway Extension Century City Area Fault Investigation Report* (Metro 2011w), and the *Westside Subway Extension Century City Area Tunneling Safety Report* (Metro 2011x). The location of the Century City Station will affect the tunnel alignment to the east and west of the station. If the LPA is constructed under the Phased Construction Scenario, the Century City Station will be constructed as part of Phase 2.

### **Century City Santa Monica Station**

The Century City Santa Monica Station location would be a modified version of the Century City Santa Monica Station that was in the Draft EIS/EIR. During preparation of the Final EIS/EIR, further geotechnical investigations were conducted to better define the location of the Santa Monica Fault. Based on the results of these studies, the station box for the Century City Santa Monica Station shifted to the east to avoid locating the station box on the Santa Monica Fault. The station box would extend from just west of Moreno Drive to just west of Century Park East (Figure 2-44 and Figure 2-45). Double crossover tracks would be located east of the station. The structure for the double crossover tracks would be separated from the station box to accommodate a storm drain line that crosses Santa Monica Boulevard.

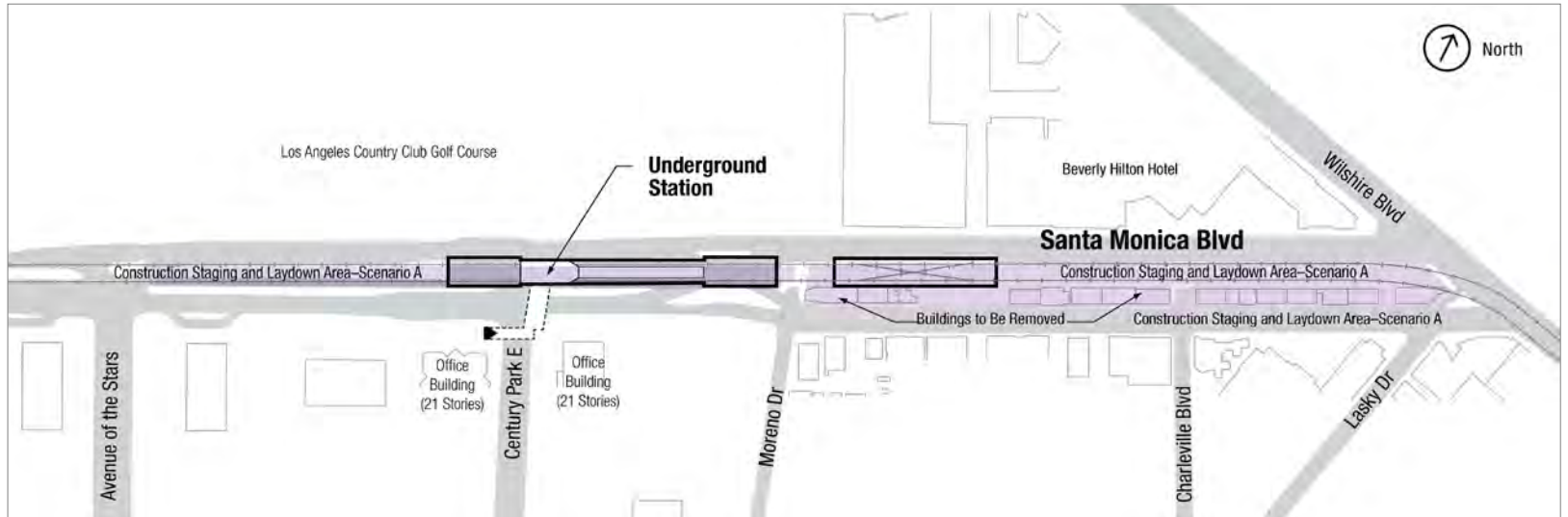


Figure 2-44. Century City Santa Monica Station—Construction Staging and Laydown Scenario A

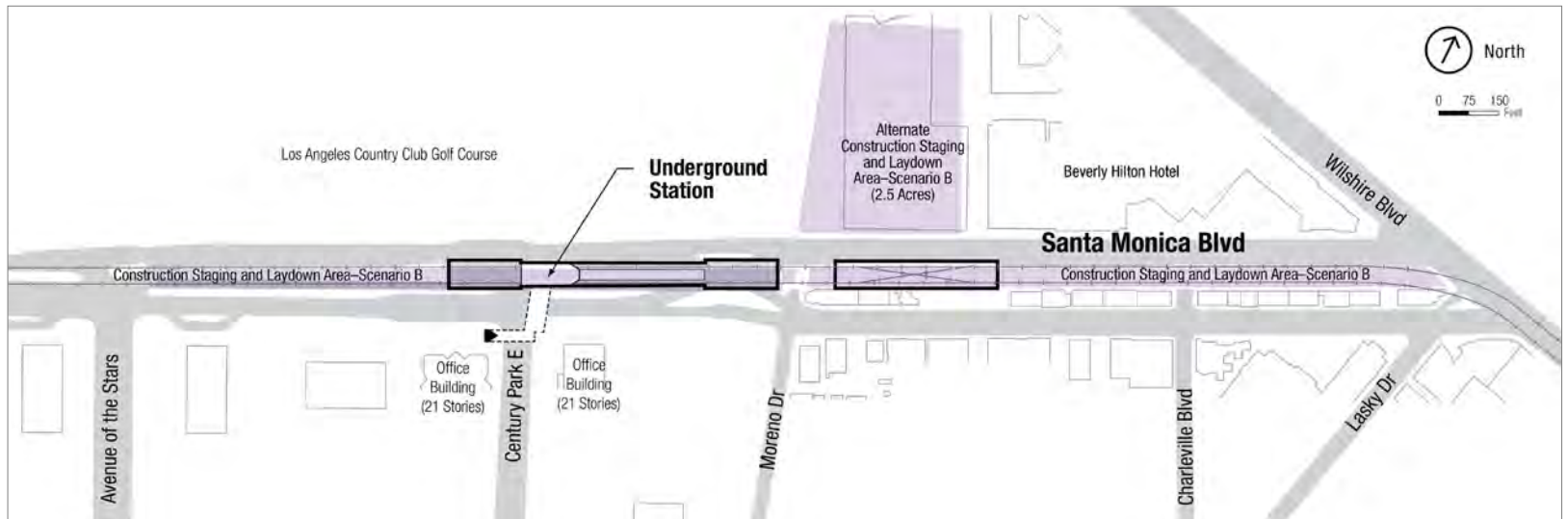


Figure 2-45. Century City Santa Monica Station—Construction Staging and Laydown Scenario B

The entrance would be located on the southwest corner of Santa Monica Boulevard and Century Park East. The entrance would be oriented to the west and would consist of two sets of stairs and escalators. The station elevators would be located on the southeast corner of Santa Monica Boulevard and Century Park East. The construction of the station entrance and station elevators may result in the permanent displacement of parking spaces in underground parking structures at the corner of Santa Monica Boulevard and Century Park East. One knockout panels would be provided on the south side of the station box between Century Park East and Moreno Drive.

The Century City Santa Monica Station would also serve as a launch site for TBMs and the location for the equipment needed to support the operation of the TBMs. Approximately 3 acres of construction staging and laydown area would be needed at this station. Two alternatives for the construction staging and laydown area have been identified in the Final EIS/EIR.

- **Santa Monica Boulevard Median** (Figure 2-44—Scenario A)—The first option for the construction staging and laydown area would be located in the median between Santa Monica and South Santa Monica Boulevards from Avenue of the Stars to Lasky Drive/Wilshire Boulevard. Both the public right-of-way as well as private properties located along the median would be used for construction staging and laydown. This option would require the removal of commercial properties located along Little Santa Monica Boulevard between Wilshire Boulevard and Moreno Drive (refer to Appendix C, Acquisitions).
- **Robinson May Parking Garage** (Figure 2-45—Scenario B)—The second option for the construction staging and laydown area would be located at the current site of the Robinson May parking garage on the north side of Santa Monica Boulevard, just east of the Los Angeles Country Club Golf Course. In addition to the parking structure, the vacant public right-of-way along the median between Santa Monica and South Santa Monica Boulevards would be used for construction staging and laydown. However, private properties along the median would not be used.

From the Wilshire/Rodeo Station, the Santa Monica alignment associated with the Century City Santa Monica Station would travel westerly beneath Wilshire Boulevard to the Wilshire Boulevard and Santa Monica Boulevard intersection, then curve southwesterly to Santa Monica Boulevard, passing beneath properties in the Santa Monica Boulevard median. The alignment would connect to the Century City Santa Monica Station between Century Park East and Moreno Drive (Figure 2-24 and Figure 2-46).

The Century City Santa Monica Station location would require the tunnel alignment to pass beneath private properties to the west of the station to connect to the Westwood/UCLA Station. The alignment west of the Century City Santa Monica Station would travel west under Santa Monica Boulevard from the station location. The alignment would turn north at Avenue of the Stars, pass under the Los Angeles Country Club Golf Course, and continue northwesterly to the vicinity of the Wilshire Boulevard and Westholme Avenue intersection, where it would then travel westerly to beneath Wilshire Boulevard to connect to either the Westwood/UCLA Off-Street or On-Street Station (Figure 2-47).

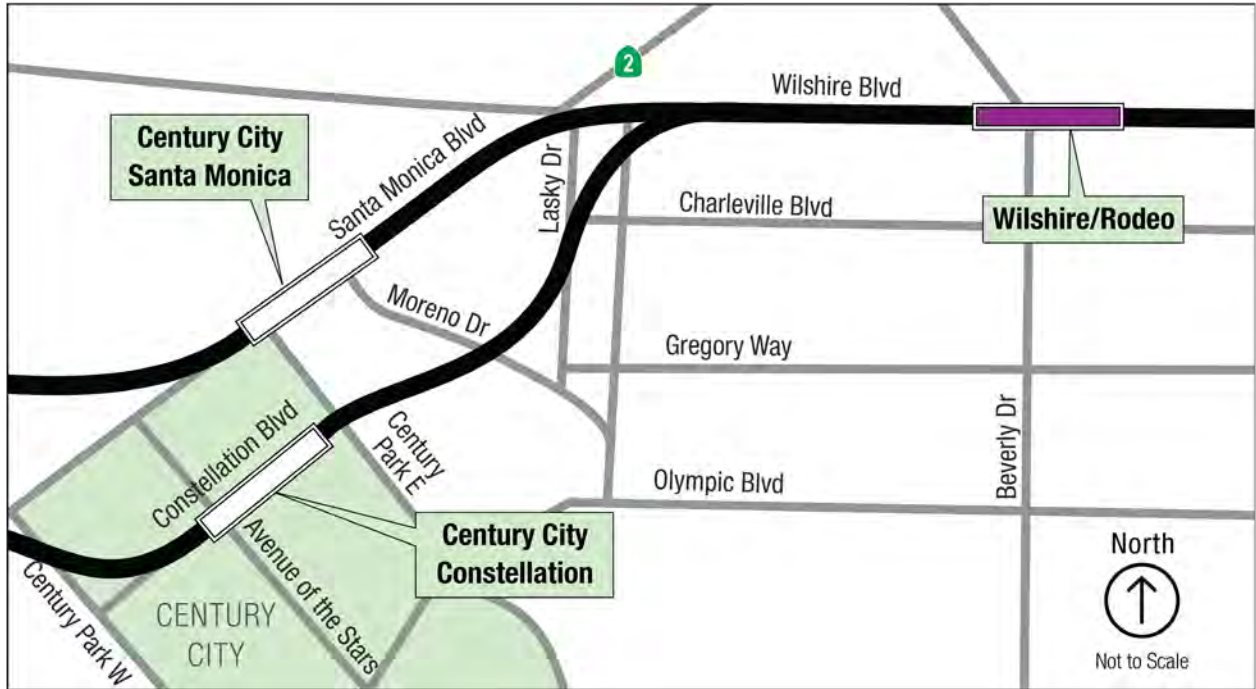


Figure 2-46. Beverly Hills to Century City Station and Alignment Options



Figure 2-47. Century City to Westwood/UCLA Station and Alignment Options

### *Refinements from the Draft EIS/EIR*

As discussed above, the location for the Century City Santa Monica station box has been refined from the Draft EIS/EIR to avoid locating the station box on the Santa Monica Fault. Because surface faulting is generally confined to a relative narrow zone of tens to several hundred feet wide, avoidance can be a practical means of avoiding surface fault rupture hazards for stations. Metro shifted the location of the Century City Santa Monica Station to the east as a result of supplemental geotechnical investigations along Santa Monica Boulevard that were conducted as part of the preparation for the Final EIS/EIR to better identify the location of the fault.

The State of California identifies the Santa Monica fault as an active fault within the most recent geologic epoch (the Holocene era, which extends from about 11,000 years ago until the present). The State of California bases this conclusion on the most thorough scientific research conducted to date on the fault (Dolan, et al, 2000). This information is used as the primary source for scientific information about the fault.

While this research determined that the Santa Monica fault is active, it had not been able to lead to a conclusion on the precise location of the fault. When the Alternatives Analysis for the Westside Subway Extension began in 2007, the best information available about the location of the Santa Monica Fault in the vicinity of Century City came from a 2005 study using a method known as “surface topography” to estimate the location of the fault. Surface topography is based on visual examination of ground surface elevations and contours. Information gathered this way is not always sufficient to fully identify the fault locations and characteristics.

In 2009-2010, as a part of studies for the Draft EIS/EIR, Metro contractors conducted preliminary geotechnical tests in the area, including soil borings and geophysical tests, to measure how vibrations travel through the ground. These tests provided more information about the location and characteristics of the Santa Monica Fault in the Century City area than earlier topography work. Based on these preliminary studies, the Century City Santa Monica Station was centered at Avenue of the Stars for evaluation in the Draft EIS/EIR.

During the preparation of the Final EIS/EIR, which included Preliminary Engineering, Metro contractors conducted extensive additional studies to provide far more data on the Santa Monica fault in the vicinity of the Century City Station than has ever been performed before (see the *Westside Subway Extension Century City Area Fault Investigation Report* [Metro 2011w]). This extensive geophysical testing was conducted to gather additional information about the fault and its location. The results of this testing concluded that there is a linear component that would be where the upthrust would occur but there is also a broad zone of several hundred feet wide in which there would be vertical distortion and sheering horizontally. In other words, there is a broad zone in which there could be both vertical and horizontal movement. The Santa Monica Fault is an oblique-left-lateral reverse fault that would displace in an east-west and vertical direction. The Santa Monica Fault could have a maximum credible earthquake (Mw) of 6.6. Investigations undertaken by Metro to date have located the fault in at least two locations related to the Project—south of Santa Monica Boulevard in zones crossing

Century Park West Boulevard, and crossing of Avenue of the Stars running sub-parallel (in an east-west direction).

Based on this information, it was recommended to shift the Century City Santa Monica Station to the east to avoid the Santa Monica Fault zone in the vicinity of Avenue of the Stars as it was currently understood. More detailed information about the geotechnical investigations is available in Section 4.8 of this Final EIS/EIR and the *Westside Subway Extension Century City Area Fault Investigation Report* (Metro 2011w).

The refined station box location required identifying a new location for the station entrance. Instead of locating the entrance at the Santa Monica Boulevard and Avenue of the Stars intersection, the entrance would be located at the Santa Monica Boulevard and Century Park East intersection. This intersection is the farthest west the entrance could be constructed with the refined station box location.

During preparation of the Final EIS/EIR, the Century City Station was identified as one of the three TBM launch sites, which required expanding the construction staging and laydown area to 3 acres. The two alternative locations for the construction staging and laydown areas are described above. The construction staging and laydown areas identified in the Draft EIS/EIR are no longer under consideration due to the modified station box location and the need for more construction staging and laydown space.

This alignment east and west of the Century City Santa Monica Station has been revised slightly since the Draft EIS/EIR to incorporate the refined station location and curves that improve alignment design and travel times. Additionally, the mid-line ventilation shafts that were included in the Draft EIS/EIR would not be necessary either east or west of the station because neither segment exceeds 6,000 feet.

### **Century City Constellation Station**

The Century City Constellation Station would be located underneath Constellation Boulevard from west of Avenue of the Stars to just west of Century Park East. There are two construction staging and entrance location scenarios for this station location—the northeast corner or the southwest corner of Constellation Boulevard and Avenue of the Stars. In both scenarios, double crossover tracks would be located to the east of the station box between Avenue of the Stars and Century Park East. Cut-and-cover construction would extend east of the station box to the intersection of Century Park East to avoid tie-backs in the vicinity. The Century City Constellation Station would serve as a launch site for TBMs and the location for the equipment needed to support operation of the TBMs. Approximately 3 acres of construction staging and laydown area is needed at this station.

- **Northeast of Constellation Boulevard and Avenue of the Stars** (Figure 2-48)—In the first scenario, the station entrance would be located at the northeast corner of Constellation Boulevard and Avenue of the Stars. The entrance would be oriented toward the north and would consist of two stairs and escalators. The station elevators would be located to the east of the entrance. A construction staging and laydown area would be located north of Constellation Boulevard between Avenue of the Stars and Century Park East. An additional construction staging area would be located on the east side of Century Park East at Constellation Boulevard, which would facilitate the removal of an oil well. Knockout panels would be located near the northwest and southwest corners of Constellation Boulevard and Avenue of the Stars.
- **Southwest of Constellation Boulevard and Avenue of the Stars** (Figure 2-49)—In the alternate scenario, the station entrance would be located at the southwest corner of Constellation Boulevard and Avenue of the Stars near the Century Plaza Hotel. The entrance would be oriented toward the west and would consist of two stairs and escalators. The station elevators would be located to the west of the entrance. In this scenario, the construction staging area would be located along the east side of Century Park East, at the eastern end of Constellation Boulevard and south of the Constellation Boulevard and Century Park East intersection. Additionally, construction staging would occur in the Constellation Boulevard right-of-way from Century Park East to MGM Drive. The construction staging would require the closure of the middle lanes of traffic, leaving the far northern westbound and southern eastbound lanes open. The traffic lanes would be closed for the duration of the construction phase. Knockout panels would be located near the northwest and northeast corners of Constellation Boulevard and Avenue of the Stars.

The Century City Constellation Station location would require the tunnel alignment to pass beneath private properties both east and west of the station, as well as beneath Beverly Hills High School to the east of the station.

From the Wilshire/Rodeo Station, the alignment would travel west to near Linden Drive, then curve southwesterly at Linden Drive to Lasky Drive, and then under Lasky Drive to just north of Young Drive (Figure 2-46). This alignment would then turn southwesterly under Constellation Boulevard to connect to the Century City Constellation Station at Avenue of the Stars.

To the west of the Century City Constellation Station, the alignment would turn northwesterly under Westfield Mall, cross underneath Santa Monica Boulevard, and continue northwesterly to the vicinity of the Wilshire Boulevard and Westholme Avenue intersection, where it would then travel westerly to beneath Wilshire Boulevard to connect to either the Westwood/UCLA Off-street or On-Street Station (Figure 2-47).

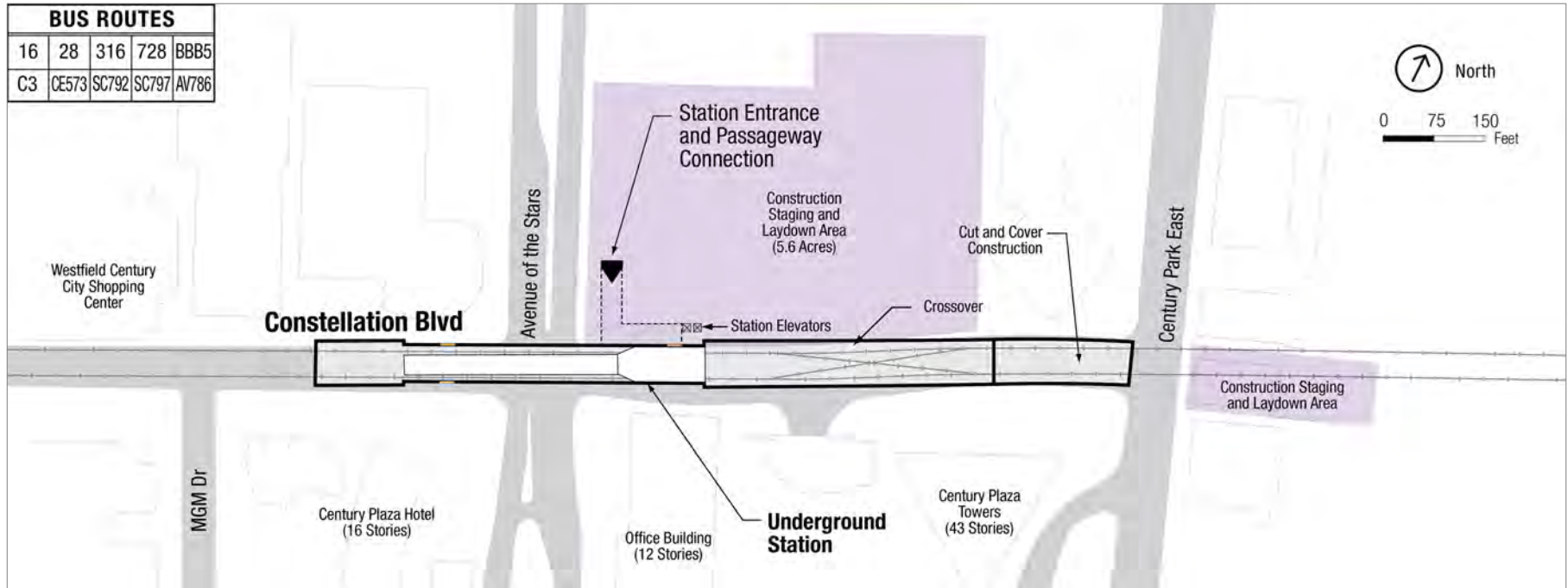


Figure 2-48. Century City Constellation Station—Northeast Corner



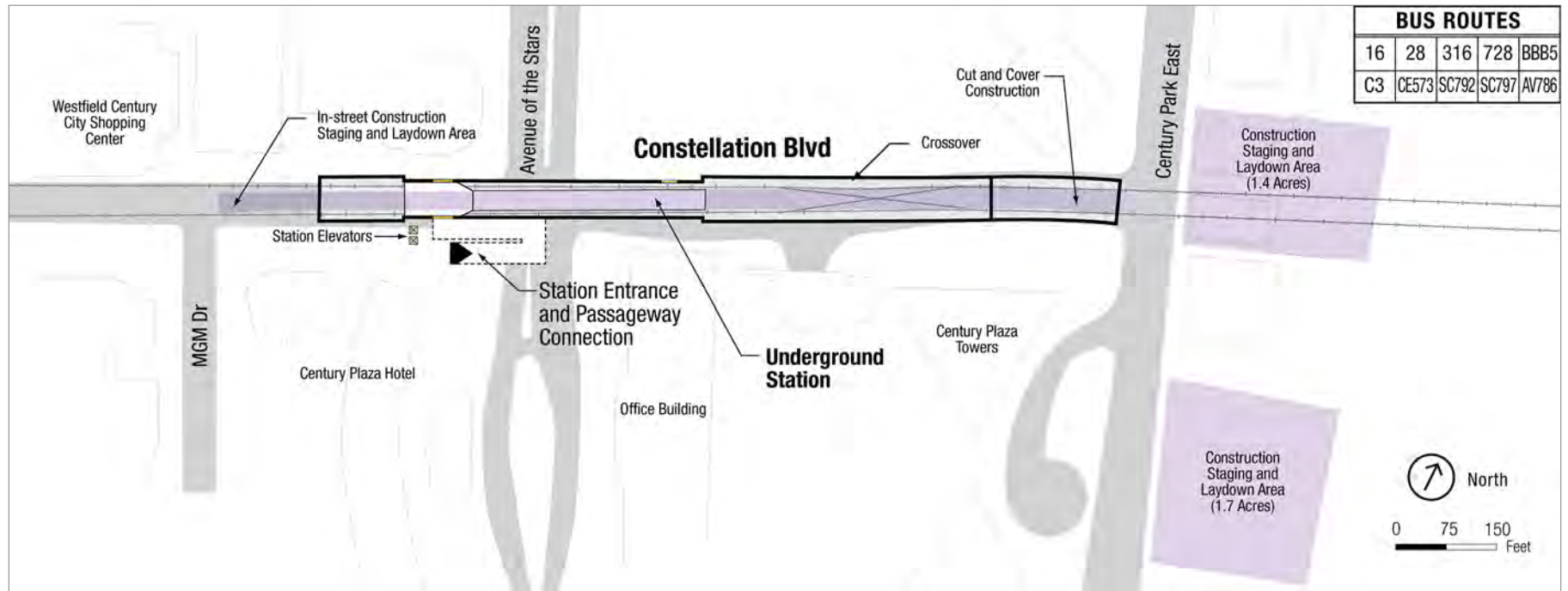


Figure 2-49. Century City Constellation Station—Southwest Corner

### *Refinements from the Draft EIS/EIR*

Two of the four station entrances evaluated in the Draft EIS/EIR are included in the Final EIS/EIR. The station entrance on the southeast corner of Constellation Boulevard and Avenue of the Stars was eliminated from further consideration because the entrance would conflict with existing underground parking and access ramps beneath the plaza. Locating an entrance on this site would result in displacement of parking and impacts to the parking structure. The station entrance at the Westfield Shopping Center, on the north side of Constellation Boulevard, opposite of MGM Drive, was eliminated from further consideration as a primary entrance because of the distance from the station box and the Constellation Boulevard and Avenue of the Stars intersection. Constructing a long entrance would increase costs of entrance construction. Knockout panels would be provided at both of these locations so that additional entrances could be constructed independently of the subway project.

As with the Century City Santa Monica Station, the construction staging and laydown areas for the Century City Constellation Station have been expanded since the Draft EIS/EIR to provide the 3 acres necessary to support a TBM launch site. The construction staging and laydown areas that are evaluated in the Final EIS/EIR are described above.

This alignment east and west of the Century City Constellation Station has been revised slightly since the Draft EIS/EIR to incorporate curves that improve alignment design and travel times. Additionally, the mid-line ventilation shafts that were included in the Draft EIS/EIR would not be necessary either east or west of the station because neither segment exceeds 6,000 feet.

### **Westwood/UCLA Station Options**

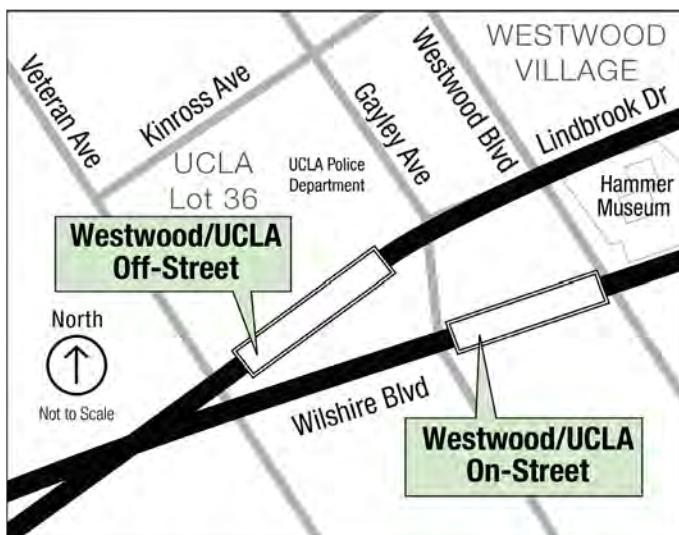
The Westwood/UCLA Station will serve as a major hub station for tourists, UCLA and medical center users, students, professors, and employees. As part of the LPA selection, the Metro Board of Directors decided to continue to study two station locations at Westwood/UCLA (Off-Street and On-Street) (Figure 2-50). These station locations and associated alignments are described below.

If the LPA is constructed under the Phased Construction Scenario, the Westwood/UCLA Station will be constructed as part of Phase 3.

#### **Westwood/UCLA Off-Street Station**

This station box would be located underneath UCLA Lot 36, north of Wilshire Boulevard between Gayley Avenue and Veteran Avenue (Figure 2-51).

Two entrances would be constructed given the high ridership projections at this station. The station entrances would be on the northwest corner of the Wilshire Boulevard and Gayley Avenue intersection, and the northeast corner of the Wilshire Boulevard



**Figure 2-50. Westwood/UCLA Stations**

and Veteran Avenue intersection. The entrance on the northwest corner of Wilshire Boulevard and Gayley Avenue would be oriented toward the north and would consist of two stairs and two escalators. A station elevator would be located to the west of the station entrance. The entrance on the northeast corner of Wilshire Boulevard and Veteran Avenue would be oriented toward the west and would consist of two stairs and escalators. A station elevator would be located south of the entrance. Knockout panels would be located on the south side of the station box near the northeast corner of Wilshire Boulevard and Veteran Avenue and on the north side of the station box, just south of the current location of the UCLA police department building.

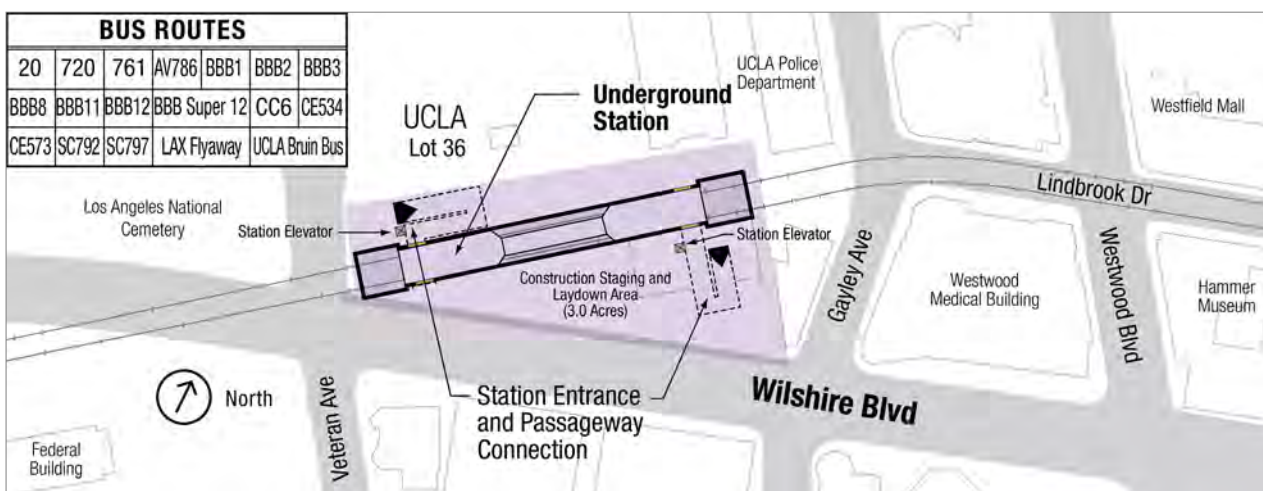


Figure 2-51. Westwood/UCLA Off-Street Station

The Westwood/UCLA Off-Street Station would not support TBM facilities. The construction staging and laydown site to support station construction activities would be on the southern half of UCLA Lot 36, which is on the north side of Wilshire Boulevard between Gayley Avenue and Veteran Avenue. This would require the temporary relocation of parking and the demolition and relocation of activities in one UCLA-owned structure.

The Westwood/UCLA Off-Street Station would require tunneling beneath private properties east of the station where the alignment turns north off of Wilshire Boulevard right-of-way.

***Refinements from the Draft EIS/EIR***

Two of the four entrances evaluated in the Draft EIS/EIR are included in the Final EIS/EIR. The station entrance connecting to Gayley Avenue has been eliminated from further consideration due to a proposed hotel development on the west side of Gayley Avenue, across from Lindbrook Drive. Additionally, this development would include several levels of underground parking that would require the profile of the tunnel to be lowered, increasing construction costs for the Westwood/UCLA Off-Street Station. The station entrance on the southeast corner of the Wilshire Boulevard and Veteran Avenue intersection is not included in the Final EIS/EIR because this corner is too far removed from the activity center of Westwood Village. It would also be more costly to construct

than the other entrances due to the long entrance that would be required. Additionally, locating an entrance on this corner would conflict with an existing underground parking structure, permanently displacing parking.

The locations of the two entrances that are included in the Final EIS/EIR have been further refined since the Draft EIS/EIR. The entrance on the northwest corner of the Wilshire Boulevard and Gayley Avenue intersection was reoriented to face northward. The entrance on the north side of the station box in the Draft EIS/EIR was shortened and reoriented to be located on the northeast corner of the Wilshire Boulevard and Veteran Avenue intersection. This entrance was modified to reduce construction costs and provide access to the Wilshire Boulevard and Veteran Avenue intersection.

### **Westwood/UCLA On-Street Station**

This station box would be located under Wilshire Boulevard, extending just west of Westwood Boulevard to west of Gayley Avenue, almost to Veteran Avenue (Figure 2-52).

Two scenarios for the entrance locations are under consideration. Two entrances would be constructed given the high ridership projections at this station.

- **North of Wilshire Boulevard** (Figure 2-52)—In the first option, both station entrances would be located on the north side of Wilshire Boulevard. One station entrance would be located at the north side of Wilshire Boulevard between Gayley Avenue and Veteran Avenue in Lot 36 and the other would be on the northwest corner of the Wilshire Boulevard and Westwood Boulevard intersection. The entrance in Lot 36 would be oriented toward the west and would consist of two sets of stairs and escalators. A station elevator would be located east of the entrance. The entrance at the Wilshire Boulevard and Westwood Boulevard intersection would be retrofitted into the existing structure. The entrance would be designed to enter the Wilshire Medical Building within the parking garage along Westwood Boulevard to avoid impacting the historic façade of the building along Wilshire Boulevard. The entrance would be oriented toward the north and would consist of two set of stairs and escalators. A station elevator would be located south of the entrance. A knockout panel would be located on the south side of Wilshire Boulevard between Midvale Avenue and Westwood Boulevard. Knockout panels would also be located on the north and west sides of the entrance tunnel in Lot 36.
- **North and South of Wilshire Boulevard** (Figure 2-53)—In the second option, the station entrance on the northwest corner of Wilshire Boulevard and Gayley Avenue in Lot 36 would be in the same location, but the station entrance at the Wilshire Boulevard and Westwood Boulevard intersection would be split between the north and south sides of Wilshire Boulevard. The entrance in Lot 36 would be oriented toward the west and would consist of two sets of stairs and escalators as well as an elevator located to the south of the entrance. The two entrances near Westwood Boulevard would be “half-entrances,” consisting of only one set of escalators and stairs each, as well as one elevator adjacent to each entrance. The entrance on the north side of Wilshire Boulevard would be oriented toward the north, and the station elevator would be located to the west of the entrance, along Wilshire Boulevard. The entrance on the south side of Wilshire Boulevard would be oriented toward the east,

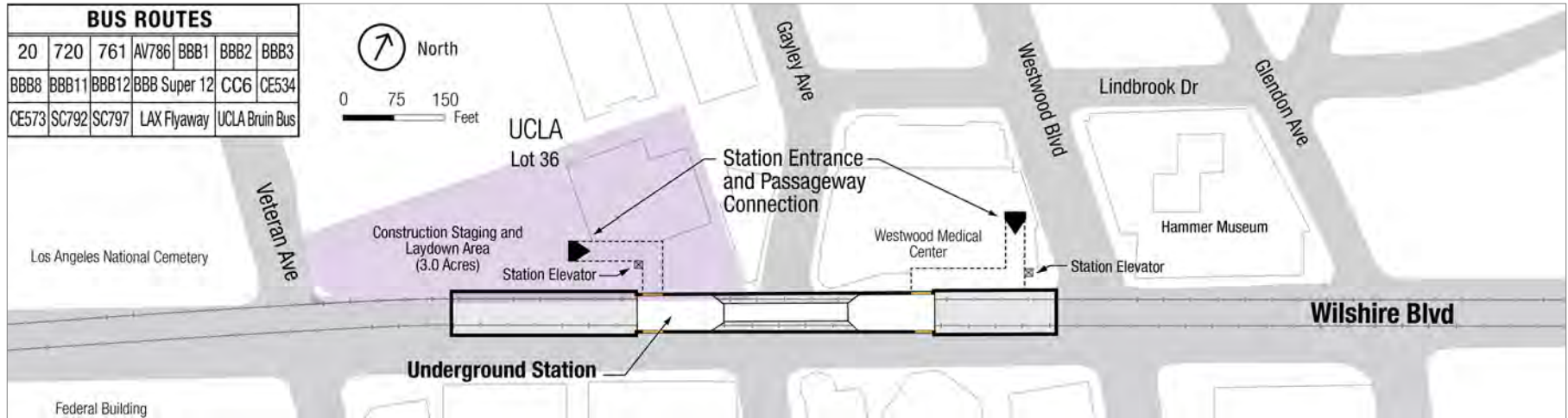


Figure 2-52. Westwood/UCLA On-Street Station—North of Wilshire

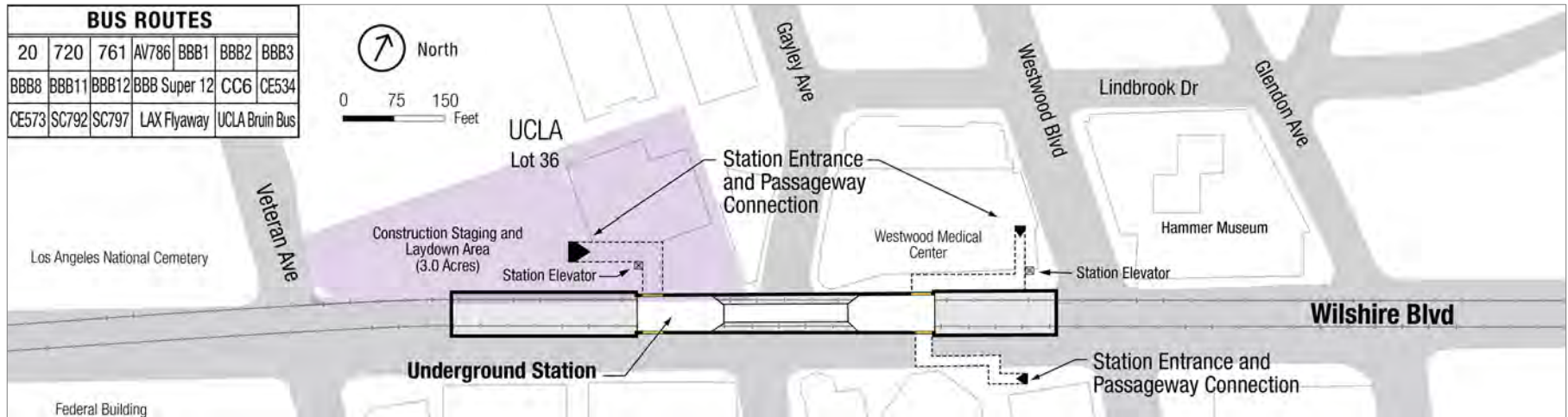


Figure 2-53. Westwood/UCLA On-Street Station—South of Wilshire

and the station elevator would be located west of the entrance along Wilshire Boulevard. Knockout panels would be located on the north and west sides of the entrance tunnel in Lot 36.

The Westwood/UCLA On-Street Station would not support TBM facilities. The construction staging and laydown site to support station construction activities would be in the same location as for the Off-Street Station—on the southern half of UCLA Lot 36, which is on the north side of Wilshire Boulevard between Gayley and Veteran Avenues.

***Refinements from the Draft EIS/EIR***

Three of the five entrance locations evaluated in the Draft EIS/EIR are included in the Final EIS/EIR. The station entrance on the southeast corner of the Wilshire Boulevard and Midvale Avenue intersection in the Draft EIS/EIR is not included in the Final EIS/EIR because it would conflict with an underground parking structure. The entrance on the southeast corner of the Wilshire Boulevard and Westwood Boulevard intersection is not included in the Final EIS/EIR because it would require a long connecting tunnel to the station box, which would increase station construction costs. The three entrances included in the Final EIS/EIR are slightly modified versions of those included in the Draft EIS/EIR. The entrances were refined because of engineering constraints and urban design considerations.

**Westwood/VA Hospital Station Options**

The Westwood/VA Hospital Station will serve veterans, visitors and workers using the VA campus and provide connections to the West LA, Brentwood, and Santa Monica communities. As part of the LPA selection, the Metro Board of Directors decided to continue to study two station locations at Westwood/VA Hospital (South of Wilshire and North of Wilshire) (Figure 2-54). These station locations and associated alignments are described below. If the LPA is constructed under the Phased Construction Scenario, the Westwood/VA Hospital Station will be constructed as part of Phase 3.



**Figure 2-54. Westwood/VA Hospital Stations**

### **Westwood/VA Hospital South Station**

This station would be located on VA and California Department of Transportation (Caltrans) property, south of Wilshire Boulevard. The station box would be located at the northern edge of the VA Hospital parking lot and would be adjacent to Wilshire Boulevard. The station box would begin at the northern tip of the cloverleaf for the I-405 on/off-ramp on the east, and extend to just west of Bonsall Avenue on the west (Figure 2-55 and Figure 2-56).

A comprehensive station access circulation study was conducted for this station due to feedback from both the VA and the public. This station circulation study resulted in a detailed urban design concept for both Westwood/VA Hospital Stations. Currently, Wilshire Boulevard and Bonsall Avenue are grade-separated with Bonsall Avenue passing beneath Wilshire Boulevard. The existing bus drop-off area at the Wilshire level on the north and south sides of Wilshire Boulevard would remain the same. A passenger drop-off area would also be provided on the Wilshire level within the bus drop-off area on the north side of Wilshire Boulevard.

The proposed station entrance would be located on the Bonsall level, beneath the bus drop-off area to the north of the VA Hospital parking lot (Figure 2-56 and Figure 2-57). The entrance would be oriented to the west and would consist of two sets of stairs and escalators. To accommodate the grade separation at this site, additional stairs, escalators, and elevators connecting the Wilshire level and the Bonsall level would be located on both the north and south sides of Wilshire Boulevard. A set of elevators south of the entrance would connect the Wilshire level, the Bonsall level, and the station concourse level. A second set of stairs and escalators just south of the elevators and the entrance would connect the Bonsall level and the Wilshire level. Two sets of stairs and escalators as well as an elevator would be located on the north side of Wilshire Boulevard, connecting the Wilshire level and Bonsall level.

The station area design would also require the relocation of existing roadways and the reconfiguration of the Wilshire Boulevard overpass. On the south side of Wilshire Boulevard, the access road extending east from Bonsall Avenue to Wilshire Boulevard would need to be reconfigured to accommodate the expanded passenger plaza. On the north side of Wilshire Boulevard, the access road from Wilshire Boulevard to Bonsall Avenue, both east and west of Bonsall Avenue, would also need to be reconfigured to accommodate the proposed stairs and escalators and expanded passenger plaza.

Double crossover tracks would be located east and west of the station. The double crossover tracks east of the station would be located on GSA and Caltrans property in front of the Federal Building, between the Westwood/UCLA and Westwood/VA Hospital Stations (Figure 2-58). Approximately 1 acre of construction staging and laydown area would be needed at the GSA location to support construction of the crossover. The construction staging and laydown area would be located immediately around the crossover as well as in the I-405 on/off-ramp cloverleaf. A set of double crossover tracks would also be located immediately west of the station. Tail tracks and the exit shaft location would be located west of the station to just past Bonsall Avenue.





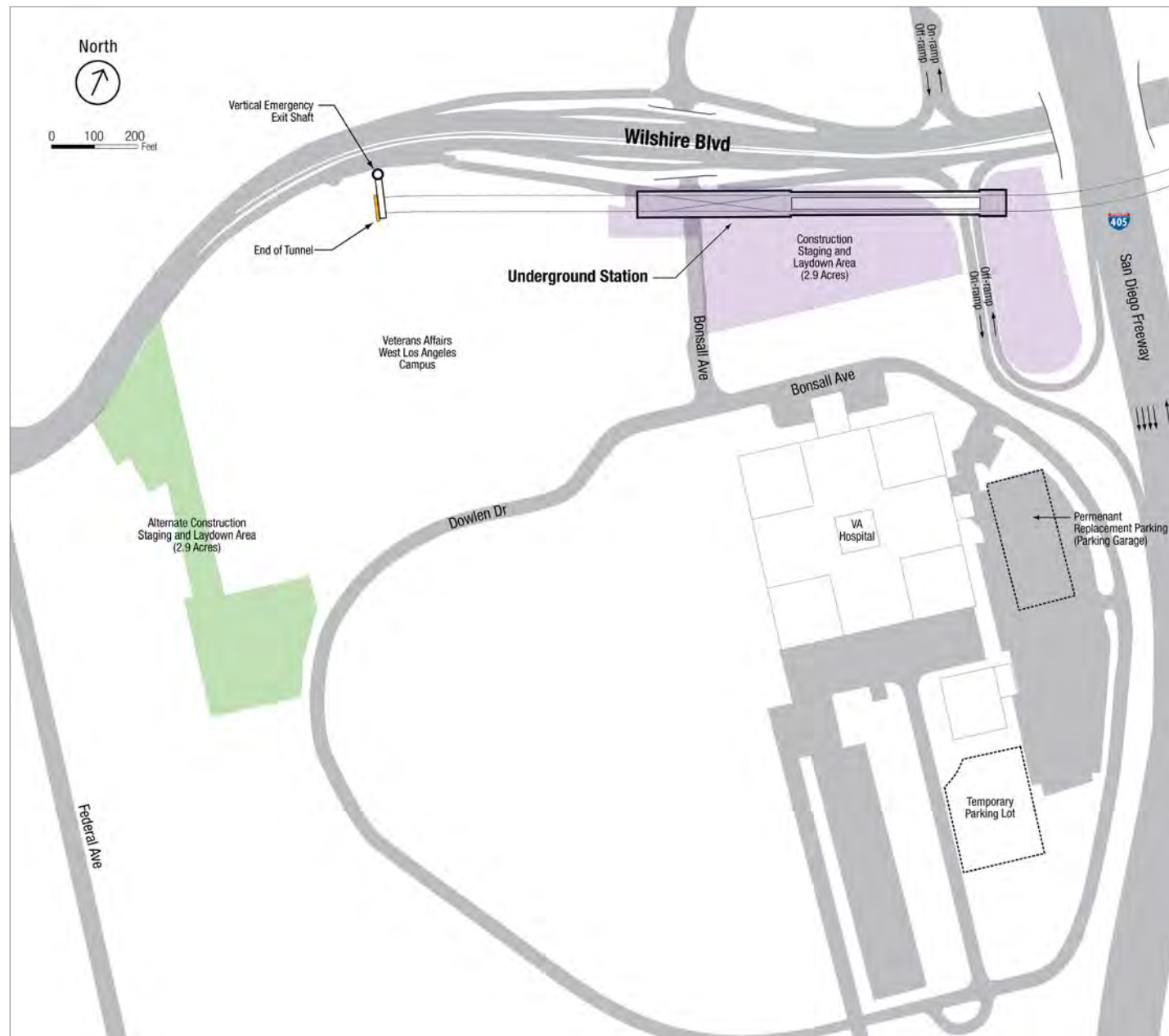


Figure 2-55. Westwood/VA Hospital South Station Area Plan

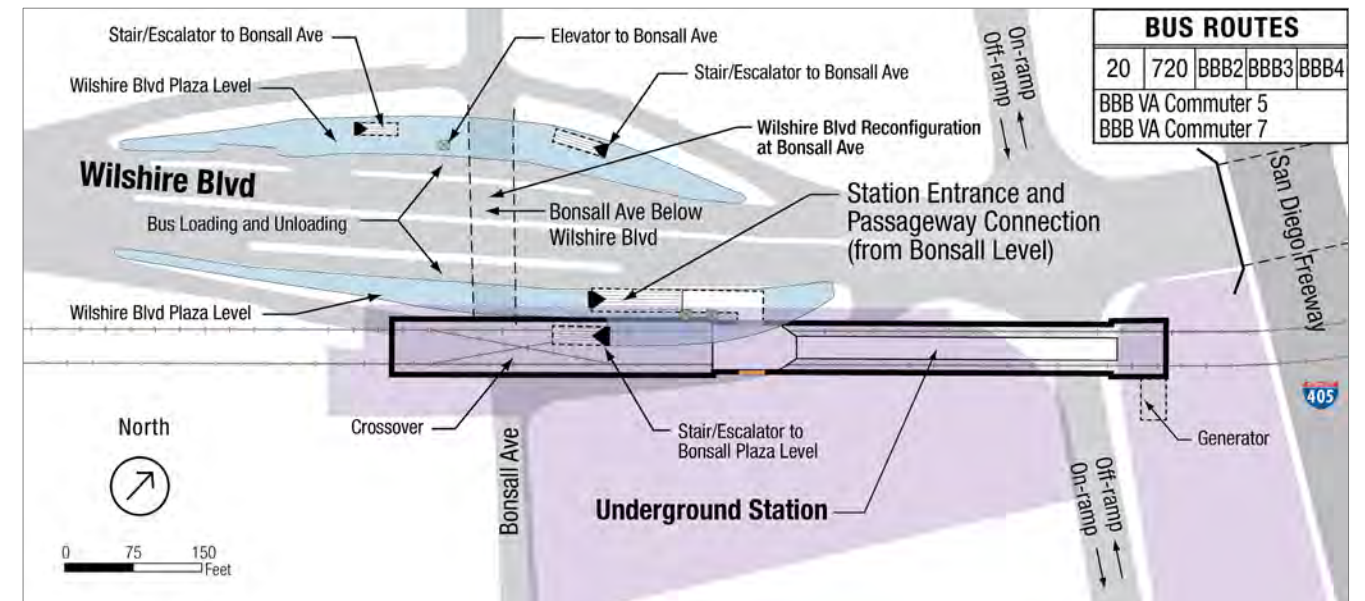


Figure 2-56. Westwood/VA Hospital South Station Site Plan

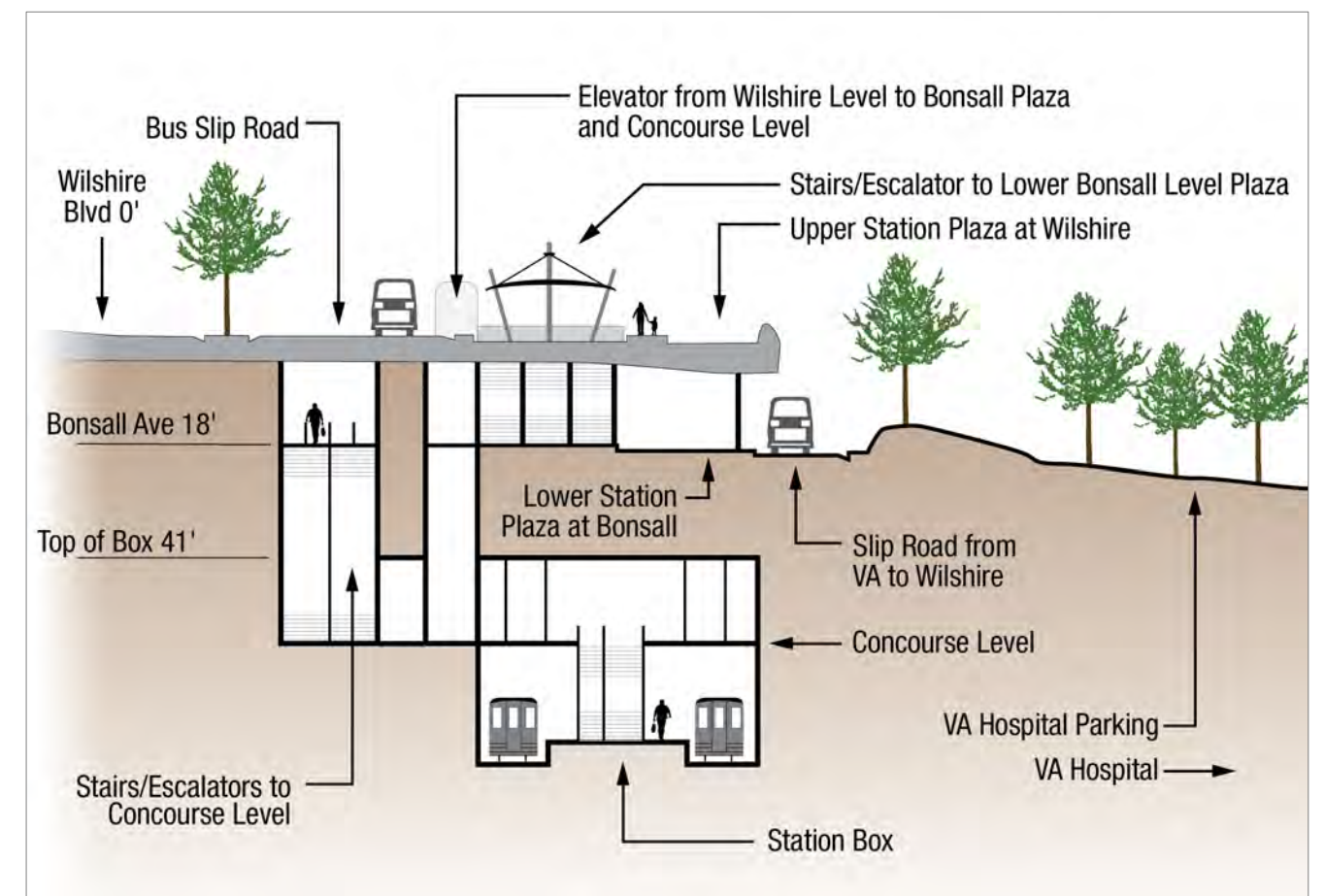
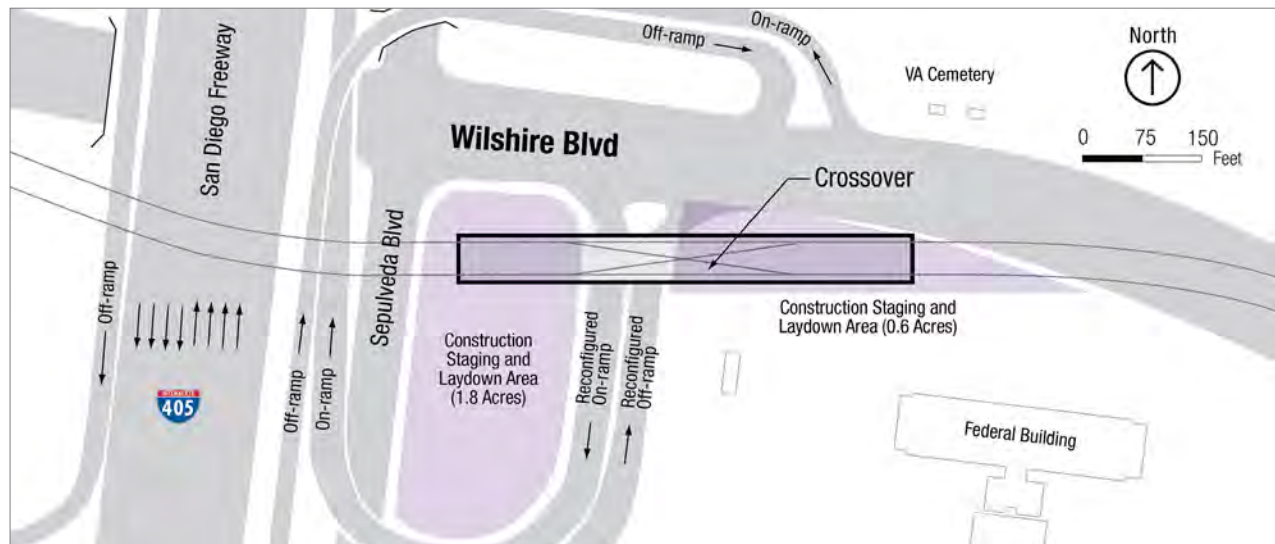


Figure 2-57. Westwood/VA Hospital South Station Cross Section





**Figure 2-58. Double Crossover at GSA for Westwood/VA Hospital (South of Wilshire) Station**

An emergency exit shaft would be located in the Wilshire Boulevard right-of-way to the west of Bonsall Avenue. An at-grade structure for the emergency generator would be constructed east of the station entrance, near the I-405 ramps.

Approximately 3 acres of laydown area would be needed at the Westwood/VA Hospital Station site to support construction of the station and TBM launch site activities, including the storage of equipment needed to support operation of the TBMs. The two options for the location of the reconstruction staging and laydown areas for this station are as follows:

- **VA Hospital Parking Lot**—With the first option, the construction staging and laydown area would be located on the VA Hospital parking lot south of the station box and the cloverleaf of the I-405 on/off-ramps south of Wilshire Boulevard. Coordination with the Caltrans would be required for construction in the I-405 right-of-way and under the on/off-ramps at Wilshire Boulevard.
- **Army Reserve Site**—Alternatively, the construction staging and laydown area would be located on Army Reserve and VA property. The Army Reserve site would be used for construction staging and laydown if the VA Hospital parking lot is developed before construction on the Westwood/VA Hospital Station begins.

A parking structure providing both permanent and temporary replacement parking would be located in the existing physician's parking lot, east of the VA Hospital (Figure 2-55). Temporary replacement parking would also be located in a new lot south of the VA Hospital and east of Bonsall Avenue. The existing handicapped parking in the parking lot north of the VA Hospital would not be displaced during construction.

#### ***Refinements from the Draft EIS/EIR***

The station box for the Westwood/VA Hospital South Station has been shifted north from the location evaluated in the Draft EIS/EIR. The station box and entrances in the Draft EIS/EIR were situated in the middle of the VA Hospital parking lot. Based on feedback from the VA and the public, the station box was shifted to the far northern end

of the parking lot. By shifting the station box to the edge of the parking lot, the VA would be able to more easily develop their property in the future because they would not be constrained by the station box and entrances in the middle of the lot. Additionally, by shifting the station closer to Wilshire Boulevard, public access to the station and circulation would be improved, which was a major concern raised by the public in comment on the Draft EIS/EIR. A comprehensive station circulation study was undertaken during preparation of the Final EIS/EIR, which included recommendation to improve access to the Westwood/VA Hospital Station. This station location further away from the VA Hospital also facilitates a clearer delineation between station activities, near Wilshire Boulevard, and VA activities, on the VA Campus, which was a concern of the VA.

Shifting the station box resulted in modifying the locations of the station entrances. In addition, a comprehensive urban design study was conducted during the preparation of the Final EIS/EIR, which resulted in additional station design enhancements as described above that were not included in the Draft EIS/EIR.

In the Draft EIS/EIR, the Westwood/VA Hospital Station included an at-grade entrance plaza and double platforms. For the Final EIS/EIR the station concept for the Westwood/VA Hospital Station was redesigned as described above.

The location of the replacement parking was not defined in the Draft EIS/EIR. During the development of the Final EIS/EIR, the replacement parking needs at the VA were better defined. Based on discussions with the VA, plans were developed for both temporary replacement parking and a permanent replacement parking structure, which are included in the Final EIS/EIR and described above.

### Westwood/VA Hospital North Station

This station option would locate the Westwood/VA Hospital Station on the north side of Wilshire Boulevard. The end of the station box would begin east of Bonsall Avenue, west of the I-405 on-ramp, and end just to the south of the Wadsworth Theater (Figure 2-59).

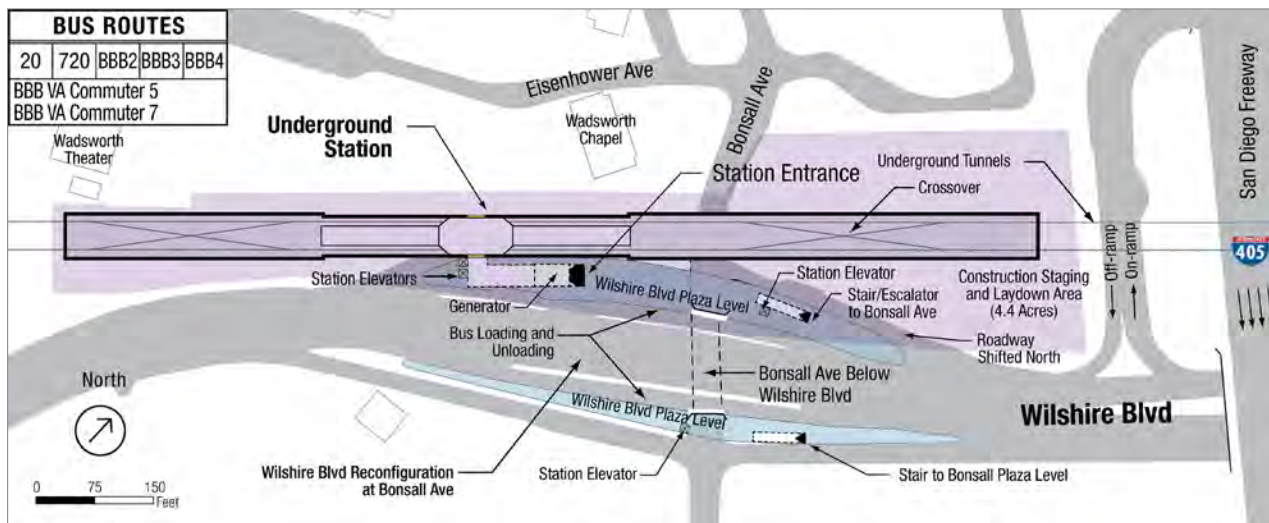


Figure 2-59. Westwood/VA Hospital North Station

As with the Westwood/VA Hospital South Station, a comprehensive circulation study was conducted and an urban design concept was developed for the Westwood/VA Hospital North Station to connect the bus drop off and passenger drop-off areas on the Wilshire level (Figure 2-60). The station entrance would be located along the north side of Wilshire Boulevard, just west of Bonsall Avenue and south of the station box on the Bonsall level. The station entrance would be oriented to the east and consist of two sets of stairs and escalators. Elevators would be located to the west of the station entrance. As with the South station, to accommodate the grade separation at this site, stairs, escalators, and elevators connecting the Wilshire level and the Bonsall level would be located on both the north and south sides of Wilshire Boulevard. One set of stairs and escalators and an elevator would be located to the east of the entrance on the north side of Wilshire Boulevard. A second set of stairs and escalators and an elevator would be located on the south side of Wilshire Boulevard.

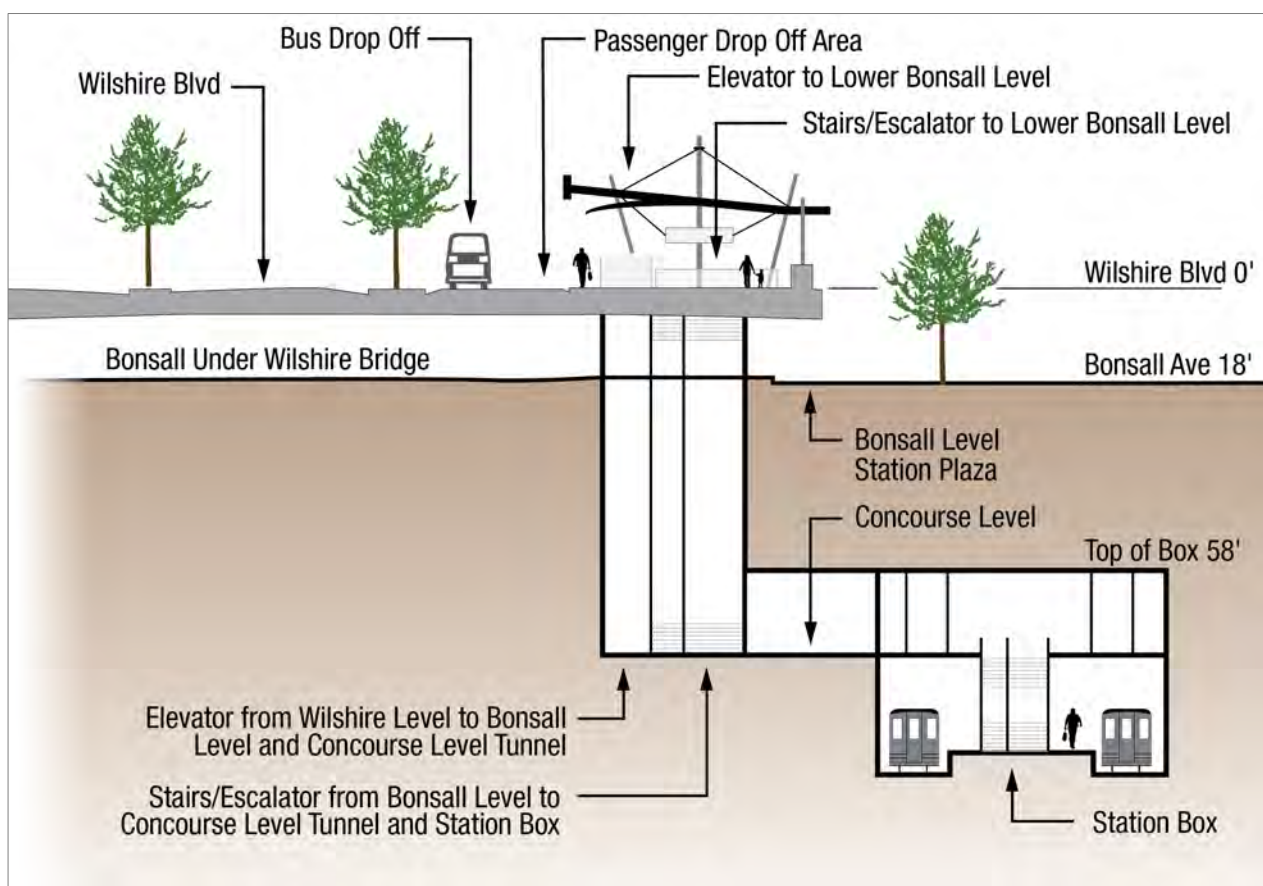


Figure 2-60. Westwood/VA Hospital North Station Cross-section

As with the Westwood/VA Hospital South Station, the station area design would require the relocation of existing roadways. The existing bus drop-off area at the Wilshire level on the north and south sides of Wilshire Boulevard would remain the same. However, the access road from Wilshire Boulevard to Bonsall Avenue would need to be reconfigured on the north and south sides of Wilshire Boulevard to accommodate the proposed station entrance and access features. The access road would be reconfigured both east and west of Bonsall Avenue on the north side of Wilshire Boulevard and only east of Bonsall Avenue on the south side of Wilshire Boulevard.

Double crossover tracks would be located on the east side of the station between Bonsall Avenue and the on/off-ramps of I-405. Tail tracks and another set of double crossover tracks would be on the western end of the station. An exit shaft would be located at the tunnel terminus on the east side of San Vicente Boulevard. An at-grade structure for the emergency generator would be constructed east of the station, near the I-405 ramps.

Approximately 3 acres of laydown area would be needed at the Westwood/VA Hospital Station site to support construction of the station and TBM launch site activities. The construction staging and laydown area would be on the north side of the station box between I-405 on/off-ramps and the Wadsworth Theater. Temporary replacement parking would be provided for parking displaced during construction.

#### ***Refinements from the Draft EIS/EIR***

The station box for the Westwood/VA Hospital North Station has been refined from the Draft EIS/EIR. As with the Westwood/VA Hospital South Station, in the Draft EIS/EIR, the Westwood/VA Hospital North Station included an at-grade entrance plaza and double platforms. For the Final EIS/EIR, the station concept for the Westwood/VA Hospital North Station was redesigned as described above.

The size of the construction staging and laydown area has been expanded from the Draft EIS/EIR to accommodate a TBM launch site in the Final EIS/EIR.

#### **2.6.5 Additional Construction Staging and Laydown Sites**

In addition to the construction staging areas identified above at the station areas, construction staging and laydown sites will be located at the existing Wilshire/Western Station and at the Wilshire/Crenshaw intersection. If the LPA is constructed under the Phased Construction Scenario, both of these construction sites will be used during Phase 1.

#### **Wilshire/Western Construction Staging and Laydown Site**

At Wilshire/Western, a shaft will be constructed to retrieve the two TBMs tunneling to Wilshire/Western from Wilshire/La Brea. Once the TBMs have been retrieved, the shaft can be used by personnel to access the western end of the tunnels without the need to pass through the Wilshire/Western Station and to move materials into and out of the tunnels (e.g., a location to pump concrete into the tunnels for the construction of tunnel invert and walkways and for the construction of cross-passages).

A construction staging and laydown area will be required adjacent to the shaft to store materials and equipment used to construct the shaft and decking and for access into the shaft from the laydown area that will allow the contractor to freely move personnel, materials, and equipment between the laydown area and the shaft beneath the decked street without the need to close traffic lanes. The laydown area will also serve as a location for contractor field offices, for off-street parking and amenities for the site-based workforce, and for any equipment needed for treatment of dewatering effluent.

There are two options for the location of this construction staging and laydown area. The first option for the site is at the northeast corner of Wilshire Boulevard and Manhattan Place (Figure 2-61). Alternatively, the construction staging and laydown area would be located on the south side of Wilshire Boulevard between Western Avenue and St. Andrews Place (Figure 2-62).

### ***Refinements from the Draft EIS/EIR***

The size of the construction staging and laydown area at Wilshire Boulevard/Western Avenue in the Draft EIS/EIR was reduced for the Final EIS/EIR. It was determined that only 0.5 acre will be necessary to support the construction activities planned for this site. Therefore, the site on the south side of Wilshire Boulevard was reduced to approximately 0.5 acre. An alternate construction staging and laydown site on the north side of Wilshire Boulevard that was not identified in the Draft EIS/EIR is included in the Final EIS/EIR.

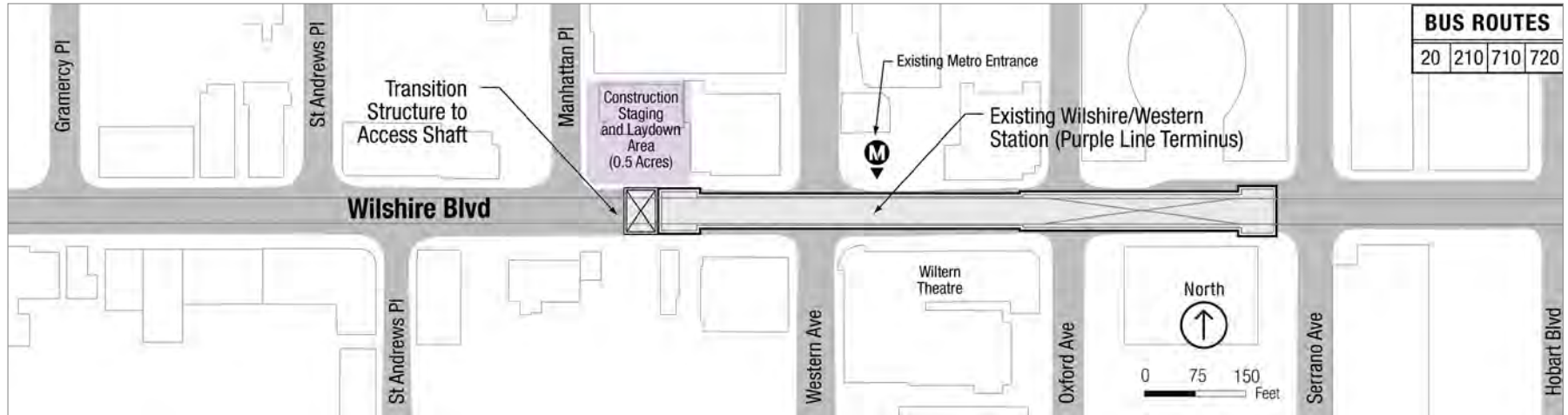


Figure 2-61. Wilshire/Western Station—Transitional Structure and Construction Staging and Laydown—North of Wilshire

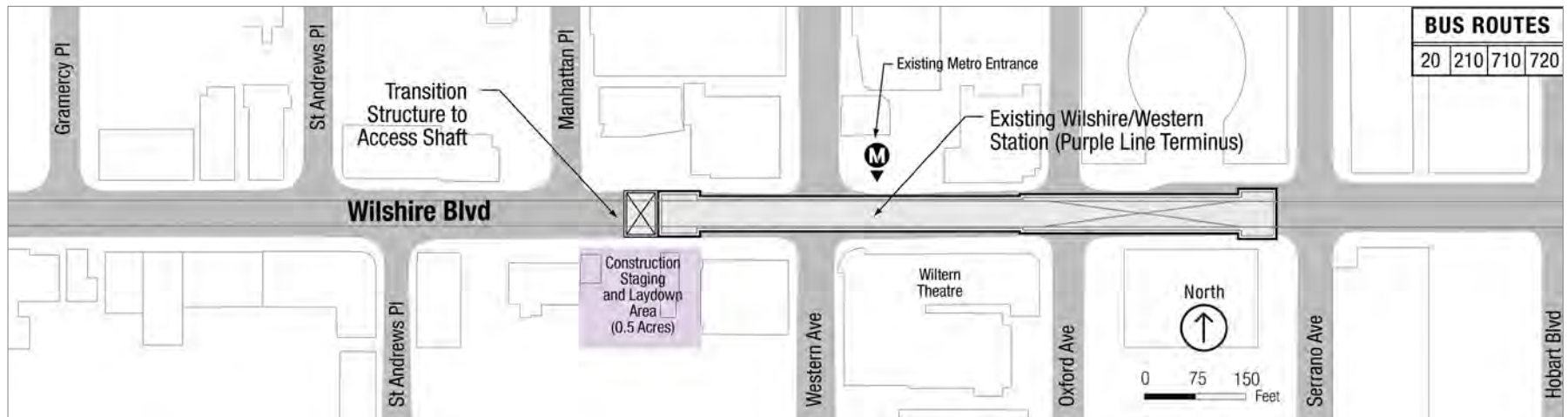


Figure 2-62. Wilshire/Western Station—Transitional Structure and Construction Staging and Laydown—South of Wilshire



### Wilshire/Crenshaw Construction Staging and Laydown Site

Although a station at the Wilshire/Crenshaw intersection is not included in the LPA, the properties on the south side of Wilshire Boulevard between Lorraine Boulevard and Crenshaw Boulevard will be used for construction staging (Figure 2-63). The Wilshire/Crenshaw site will be used by the contractor for storage of materials not immediately required at work sites or for sites where laydown area is scarce. The site will also be used as a location for the contractor’s office. The laydown area will also serve as a location for off-street parking and amenities for the site-based workforce, and for any equipment needed for treatment of dewatering effluent. This site will also serve to store and process fossil bones removed during the Wilshire/Fairfax Station excavation.



Figure 2-63. Wilshire/Crenshaw Construction Staging and Laydown

### 2.6.6 Traction Power Substations

TPSSs are required to provide traction power for the HRT system. Substations will be located at every station—except at the Wilshire/Fairfax Station—along the alignment within the station box or in the crossover structure. The TPSS will be located in a room that is approximately 50 feet by 100 feet in a below grade structure. Table 2-5 identifies the locations of the substations.

Table 2-5. Substation and Emergency Generator Locations

Station	TPSS	Emergency Generators
Wilshire/La Brea	X	X
Wilshire/Fairfax		
Wilshire/La Cienega	X	
Wilshire/Rodeo	X	
Century City Santa Monica	X	
Westwood/UCLA	X	
Westwood/VA Hospital	X	X

### 2.6.7 Emergency Generators

Table 2-5 also lists the locations of the emergency generators. An emergency generator will be located at the Wilshire/La Brea Station and at the Westwood/VA Hospital Station. The emergency generators will be an enclosed one-story structure and require approximately 50 feet by 100 feet of property in an off-street location near the station entrance. The locations of these emergency generators are shown in the station diagrams for the Wilshire/La Brea and Westwood/VA Hospital Stations in the Section 2.6.4.

An existing emergency generator structure at the Wilshire/Vermont Station is shown in Figure 2-64. If the LPA is constructed under the Phased Construction Scenario, the generator at the Wilshire/La Brea Station will be constructed as part of Phase 1 and the generator at the Westwood/VA Hospital Station will be constructed as part of Phase 3.



**Figure 2-64. Existing Emergency Generator Structure at Wilshire/Vermont Station**

### 2.6.8 Station Appendages

Station appendages refer to any ground surface openings at station areas other than the station entrance(s). These include emergency exits, maintenance hatches, air intakes and air exhausts, and entrances for maintenance staff. The station appendages will primarily be located within the existing public right-of-way, either terminating along sidewalks or in-street, although they could also be located off-street near a station entrance. Appendages are normally reinforced concrete boxes terminating in the sidewalk and covered with gratings or hatches. If the LPA is constructed under the Phased Construction Scenario, the station appendages will be constructed along with each station.

Emergency exit shafts will be constructed at the western terminus of the tail track tunnels. The location of the emergency exit shafts were detailed in the description of the Westwood/VA Hospital Station options. For the Westwood/VA Hospital South Station, the emergency exit shaft would be located in the Wilshire Boulevard right-of-way, to the west of Bonsall Avenue (Figure 2-65). For the Westwood/VA Hospital North Station, the emergency exit shaft would be located on the western edge of the VA property, just east of San Vicente Boulevard and north of Wilshire Boulevard (Figure 2-66). If the LPA is constructed under the Phased Construction Scenario, the emergency exit shafts at the Westwood/VA Hospital Station will be constructed as part of Phase 3.

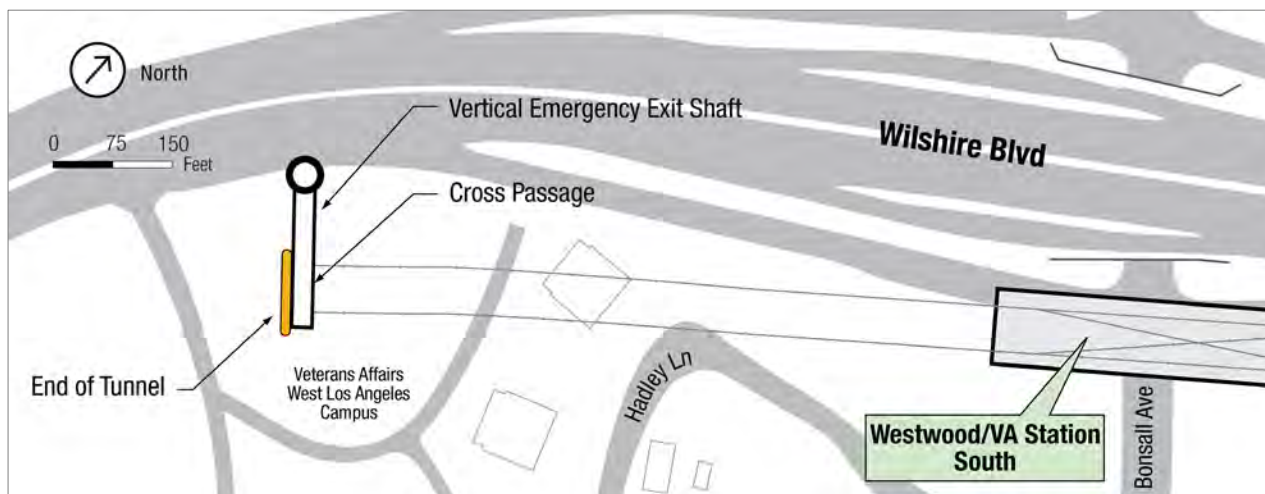


Figure 2-65. Emergency Exit Shaft—Westwood/VA Hospital South

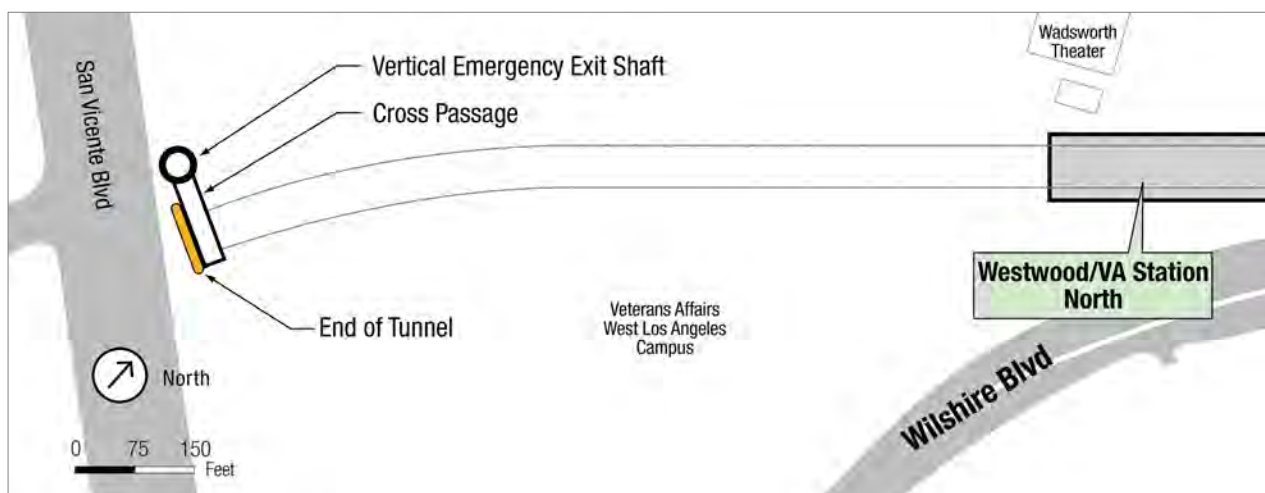


Figure 2-66. Emergency Exit Shaft—Westwood/VA Hospital North

### 2.6.9 Special Trackwork

The system will require components of special trackwork that provide for operational efficiency and safety. These components include the following:

- **Tail tracks**—a track, or tracks, that extends beyond the end of a terminal station (the last station on a line) that allows for safe braking distances and storage of cars or switching trains between tracks for the return trip (the tail tracks for this Project extend a minimum of 450 feet beyond the end of the crossover west of the terminal station).
- **Double crossovers**—when two sets of crossovers are installed with a diamond, allowing trains to cross over to the other track in either direction from either track. The four-turnout configuration is called a double crossover.

Table 2-6 lists the locations of these components and Figure 2-67 shows their locations. The crossovers are also shown on the applicable station drawings above. These components are not optional and will be part of the LPA. If the LPA is constructed under the Phased Construction Scenario, the phases in which the special trackwork will be constructed are listed in Table 2-6.

**Table 2-6. Special Trackwork Locations**

Phase	Station	Locally Preferred Alternative
Phase 1	Wilshire/La Brea	Double crossover east of station
	Wilshire/Fairfax	None
	Wilshire/La Cienega	Double crossover east of station
Phase 2	Wilshire/Rodeo	Double crossover east of station
	Century City (Constellation or Santa Monica)	Double crossover east of station
Phase 3	Westwood/UCLA	None
	Westwood/VA Hospital South	Double crossover between Westwood/UCLA and Westwood/VA Stations under the GSA property on the south side of Wilshire Boulevard Double crossover west of station Tail tracks
	Westwood/VA Hospital North	Double crossover east and west of station Tail tracks

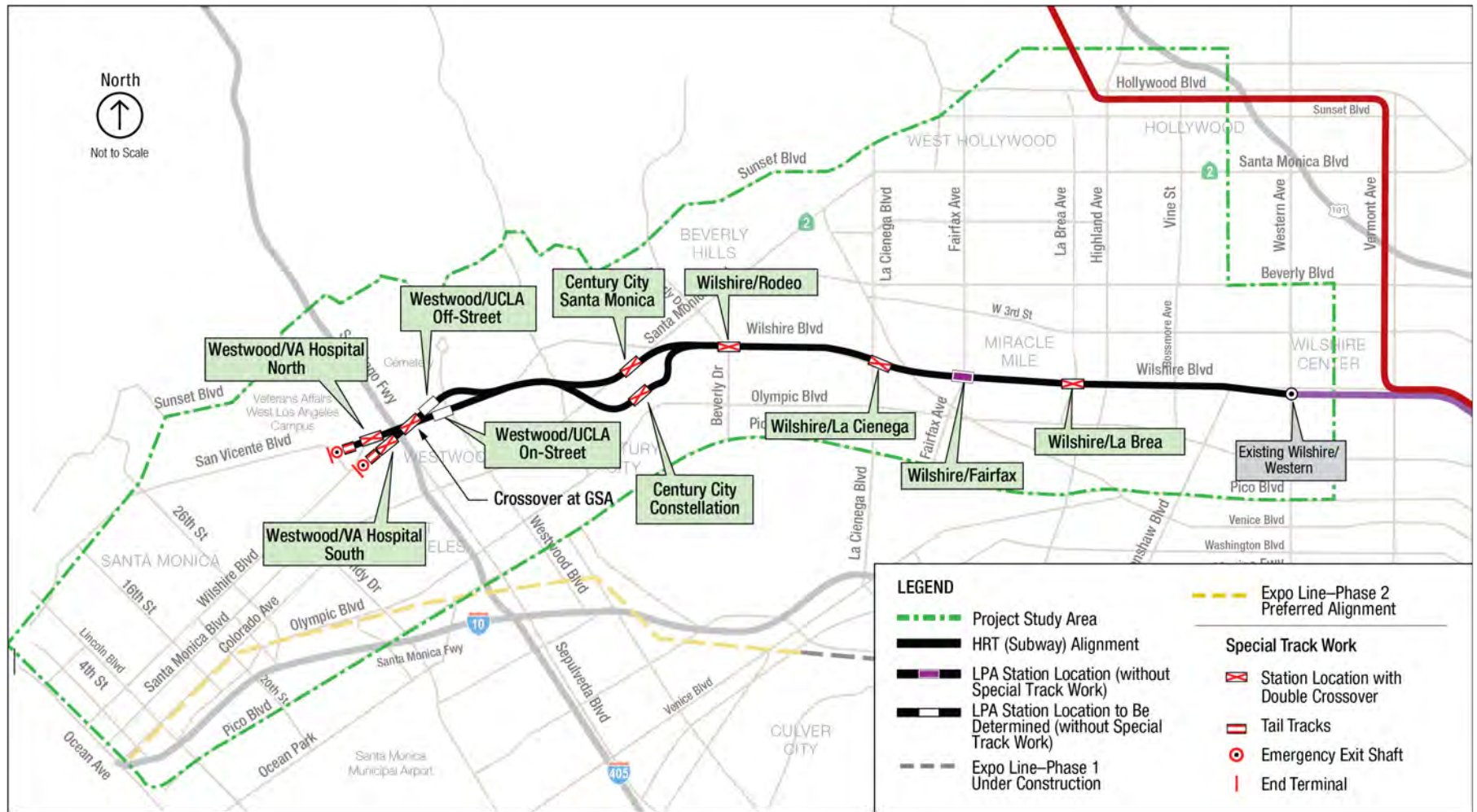


Figure 2-67. Special Trackwork Locations for the LPA

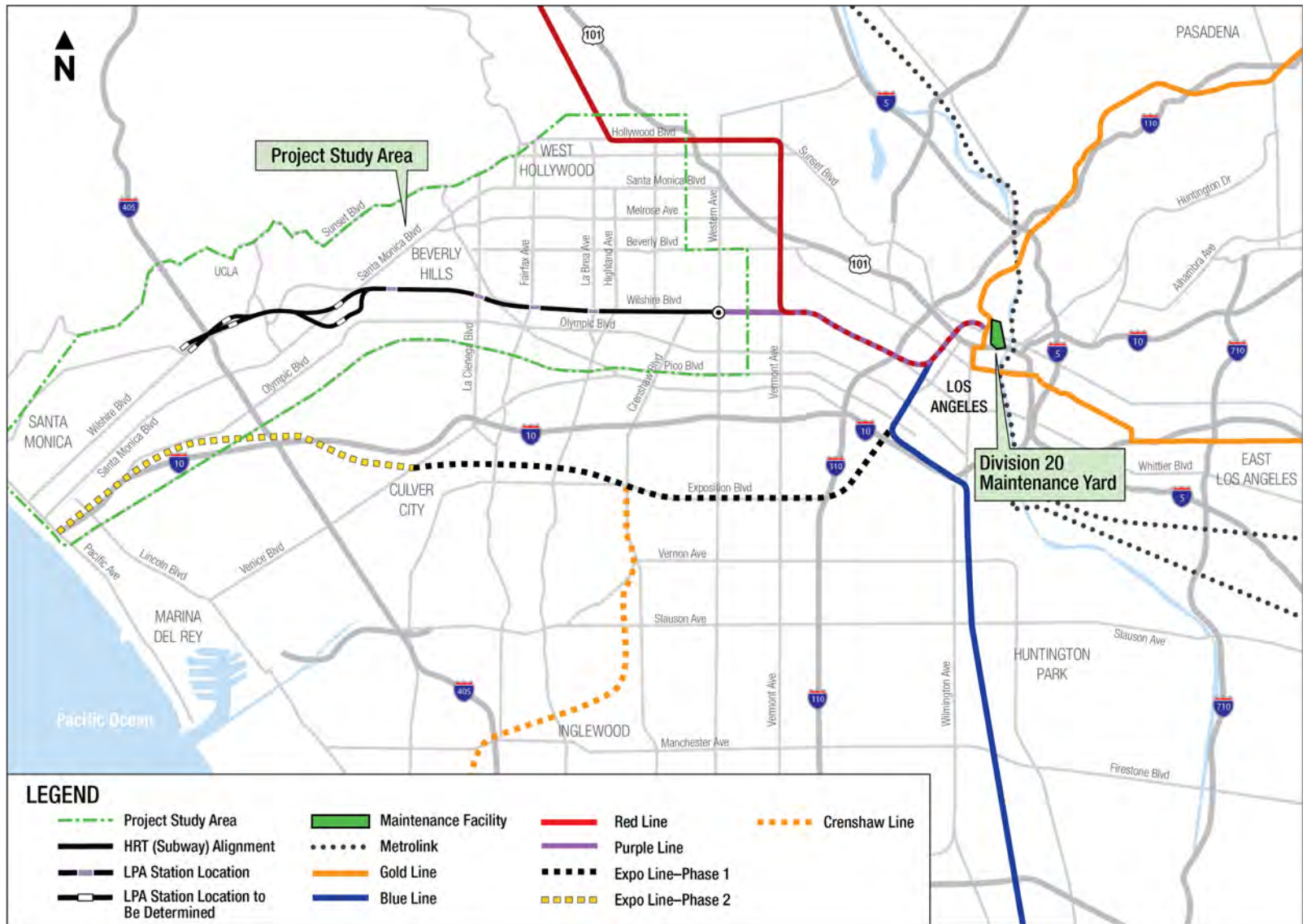


Figure 2-68. Division 20 Maintenance Yard Site

### 2.6.10 Maintenance Yard

At present, Metro stores and maintains its Red Line/Purple Line vehicle fleet at the existing Division 20 Maintenance and Storage Facility at the site bounded by Ducommun Street on the north, the Los Angeles River on the east, Amtrak property and 6th Street Bridge on the south, and Santa Fe Avenue on the west (Figure 2-69).

Several enhancements at the facility are planned and programmed to accommodate the additional service that will be delivered by the Westside Subway Extension, in addition to planned increases in headways for the existing Red Line. New storage tracks will be provided for an additional 72 cars at the south end of the yard between the 4th and 6th Street Bridges (Figure 2-70), providing sufficient added capacity for the LPA and a total storage in the expanded yard of 272 cars. This requires purchasing private property abutting the southern and western boundary of the existing facility. Two new turnback platforms supplied by three turnback tracks will also be provided to enable trains to reverse direction more efficiently and accommodate the planned expansion of the fleet. In addition, since more frequent train service systemwide will put more mileage on Metro's HRT vehicles, more frequent maintenance will be necessary. Additional planned improvements will increase capacity at Division 20 for major repairs, wheel truing, service and inspection, and blow down operations, in addition to other associated facilities such as storage, offices, and amenities. The costs of the maintenance facility improvements are included in the LPA's capital cost estimate. If the LPA is constructed under the Phased Construction Scenario, expansion of the Division 20 Vehicle Storage and Maintenance Facility will occur as part of Phase 1.

### 2.6.11 Construction Schedule

The construction schedule for the Project is partially dependent on the timing of Federal funding availability. Two LPA construction scenarios are considered in this Final EIS/EIR. In either construction scenario, the three construction segments/phases would be the same—Wilshire/Western to Wilshire/La Cienega, Wilshire/La Cienega to Century City, and Century City to Westwood/VA Hospital (Figure 2-22). The first construction scenario assumes that under the Concurrent Construction Scenario, the LPA would open in its entirety to the Westwood/VA Hospital Station in 2022 with the three construction segments built concurrently. The second construction scenario assumes that under the Phased Construction Scenario, the LPA would open in three consecutive phases, with the entire LPA operational to the Westwood/VA Hospital Station in 2036.

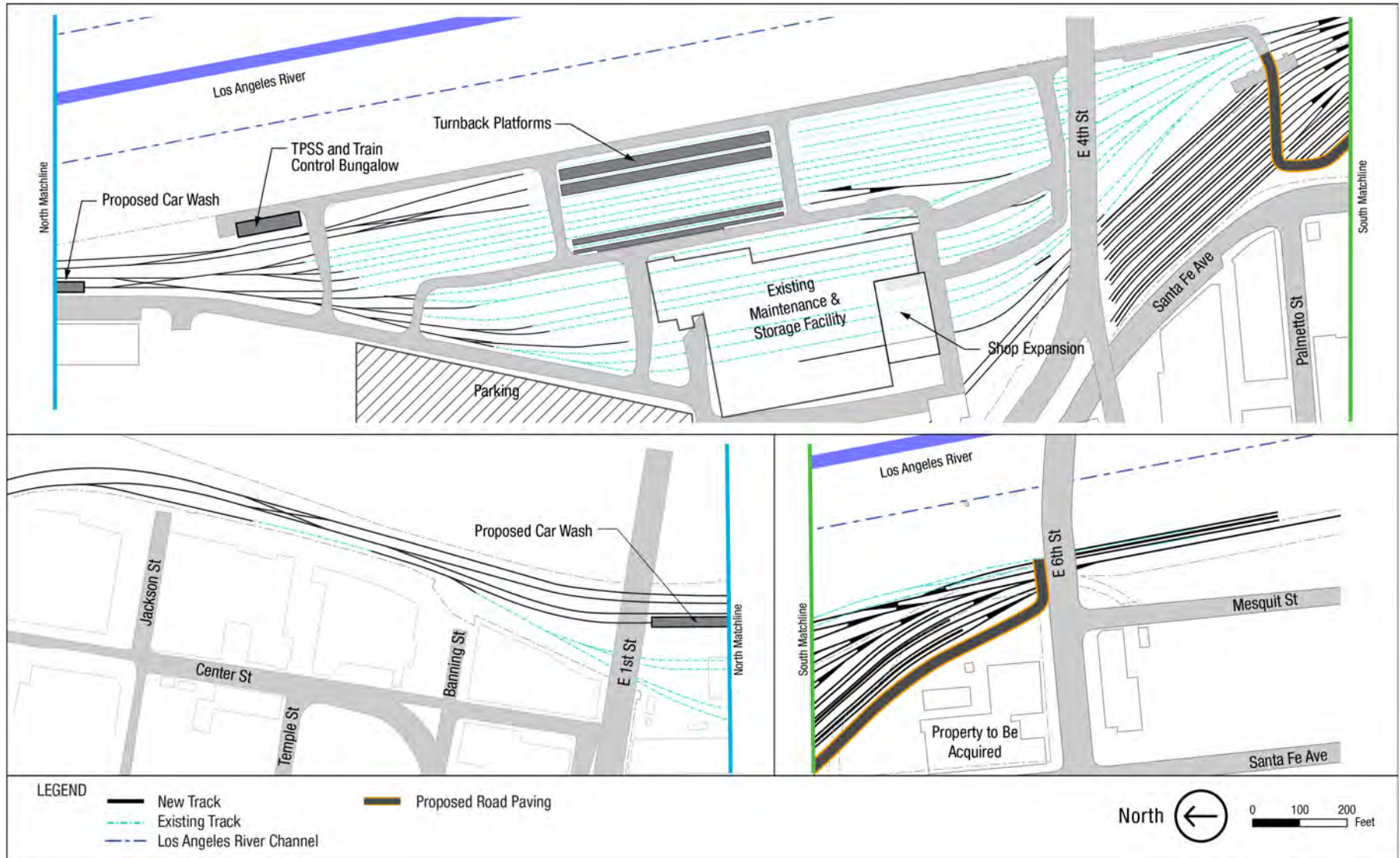


Figure 2-69. Expanded Division 20 Yard



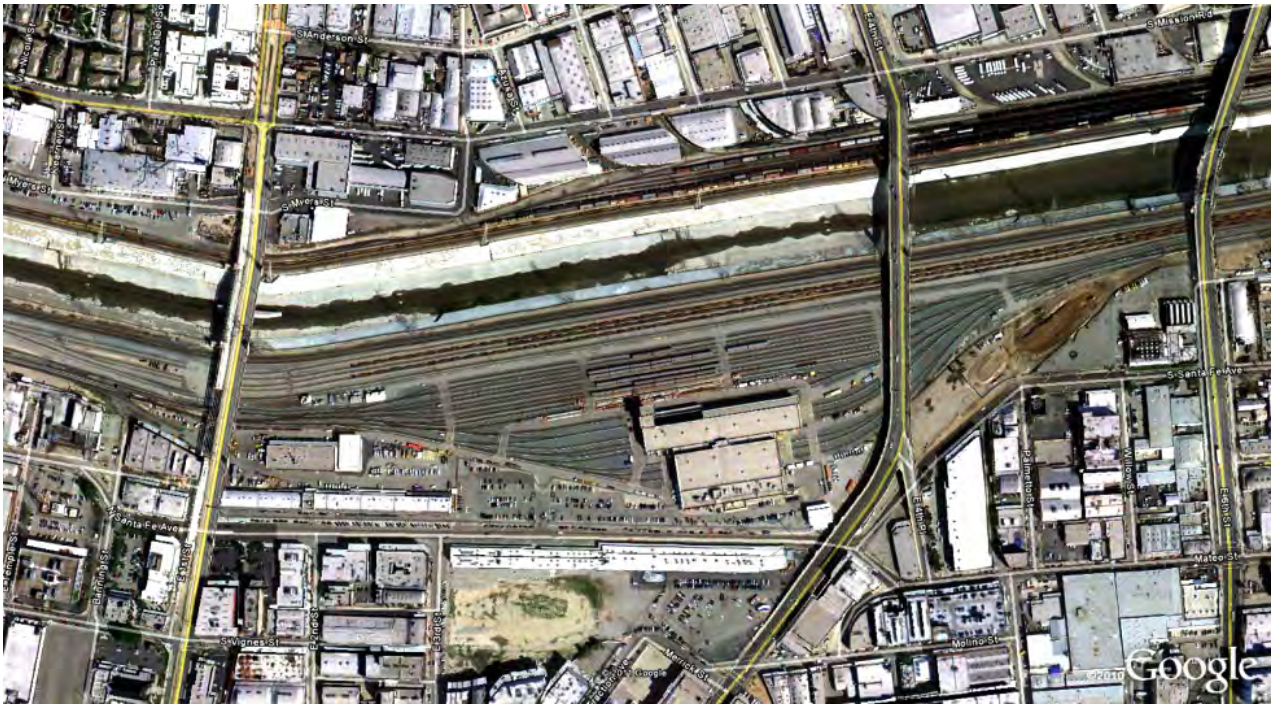


Figure 2-70. Bird's Eye View of Existing Division 20 Yard

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

Based on the America Fast Forward (30/10) Scenario (Concurrent Construction), the entire Project would be operational to Westwood/VA Hospital in 2022 with construction beginning in 2013 (Figure 2-71). The Concurrent Construction Scenario assumes that the Federal America Fast Forward (AFF) Program legislation is passed and that Metro will use long-term revenue from the Measure R sales tax as collateral for long-term bonds and a Federal loan that will allow Metro to build 12 key mass transit projects, including the Westside Subway Extension which would be completed in 10 years rather than 30 years. The long-term bonds that are proposed to accelerate project delivery will need to be authorized by Congress. Under this funding assumption, the three construction segments would be constructed concurrently, allowing the entire Project to the Westwood/VA Hospital Station to be open and operational by 2022. This accelerated schedule will result in cost savings and create economic benefits.

The LPA from the Wilshire/Western Station to the Westwood/VA Hospital Station would be constructed simultaneously in three construction segments: Wilshire/Western Station to Wilshire/La Cienega Station, Wilshire/La Cienega Station to Century City Station, and Century City Station to Westwood/VA Hospital Station. Construction of tunnels would start at the primary tunnel boring launch locations (Wilshire/La Brea Station, Century City Station, and Westwood/VA Hospital Station). Pre-construction activities, including utility relocation and acquisition of properties, would commence in 2012 for each of the three segments. Early construction activities would focus on the paleontological deposit areas at Wilshire/Fairfax and Wilshire/La Brea and include implementation of mitigation measures to avoid and minimize impacts to paleontological resources. Construction would begin in 2013, starting with station box

excavation. Major street work, from the commencement of temporary station shoring and street decking to the removal of street decking and street reinstatement, would take approximately seven years to complete.



**Figure 2-71. Project Construction Schedule under Concurrent Construction Scenario—Wilshire/Western to Westwood/VA Hospital**

Construction duration for the segment from the Wilshire/La Cienega Station to the Century City Station would also depend on the station and alignment options selected at Century City. Construction time for the segment from the Century City Station to the Westwood/VA Hospital Station would be a function of the alignment station location selected at Century City, Westwood/UCLA, and Westwood/VA Hospital. Work in each of the three tunnel segments could proceed independently and would not be affected by the other two segments. However, construction of systemwide components such as trackwork, traction power, signaling, and communications systems, which follows tunnel and station construction, would be affected by events in any of the three segments. This in turn could affect the completion of the Project and start of passenger service.

Each of the three segments could be constructed within a time-span of approximately nine to ten years if all work is concurrently scheduled. Overall construction time would not be significantly reduced if fewer segments were built.

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

In the event that full funding for the Project is not secured under the Concurrent Construction Scenario, the Project would be constructed and opened in three phased segments with the entire Project operational to the Westwood/VA Hospital Station after 2022 but at least by 2036 (Figure 2-72) under the Metro Long Range Transportation Plan Scenario (Phased Construction). The three phases are the same as the three construction segments identified for the Concurrent Construction Scenario. However, under the Phased Construction Scenario, instead of being constructed simultaneously, the construction and opening of the phases would be staggered.



\* Dates for Phases 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 2-72. Project Construction Schedule under Phased Construction Scenario—Wilshire/Western to Westwood/VA Hospital**

This construction schedule is based on the availability of funding under the current LRTP and assumes that no funding will 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 2036.

Construction methods for each phase would consist of the same activities outlined under the Concurrent Construction Scenario. Tunnel boring launch sites would be located at the same locations (Wilshire/La Brea Station, Century City Station, and Westwood/VA Hospital Station). However, each phase would take approximately five to eight years to construct because systemwide construction activities would occur only for the length of each phase instead of the length of the entire LPA.

### Phase 1

The first phase would extend the subway from the existing Wilshire/Western Station to the Wilshire/La Cienega Station (Figure 2-73). This phase would be approximately 3.8 miles in length and include three new stations (Wilshire/La Brea, Wilshire/Fairfax, and Wilshire/La Cienega). Construction on the first phase would begin in 2013 with service to the Wilshire/La Cienega Station opening in 2020.

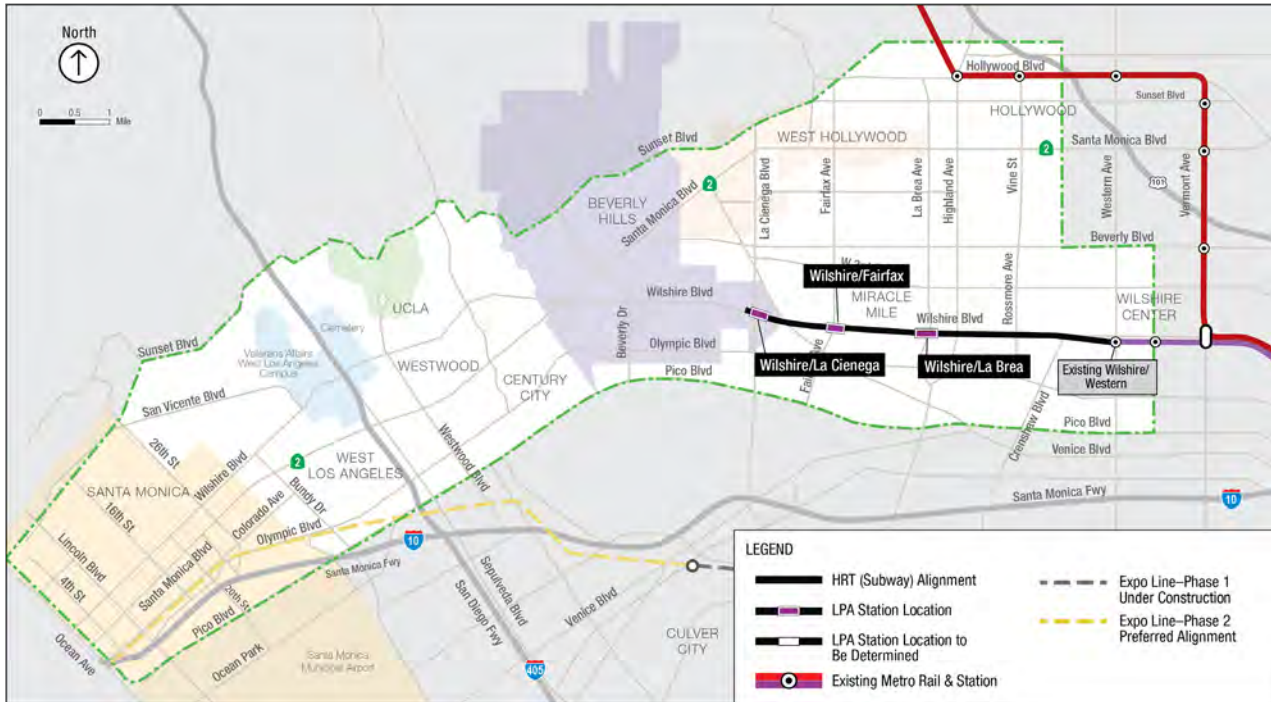
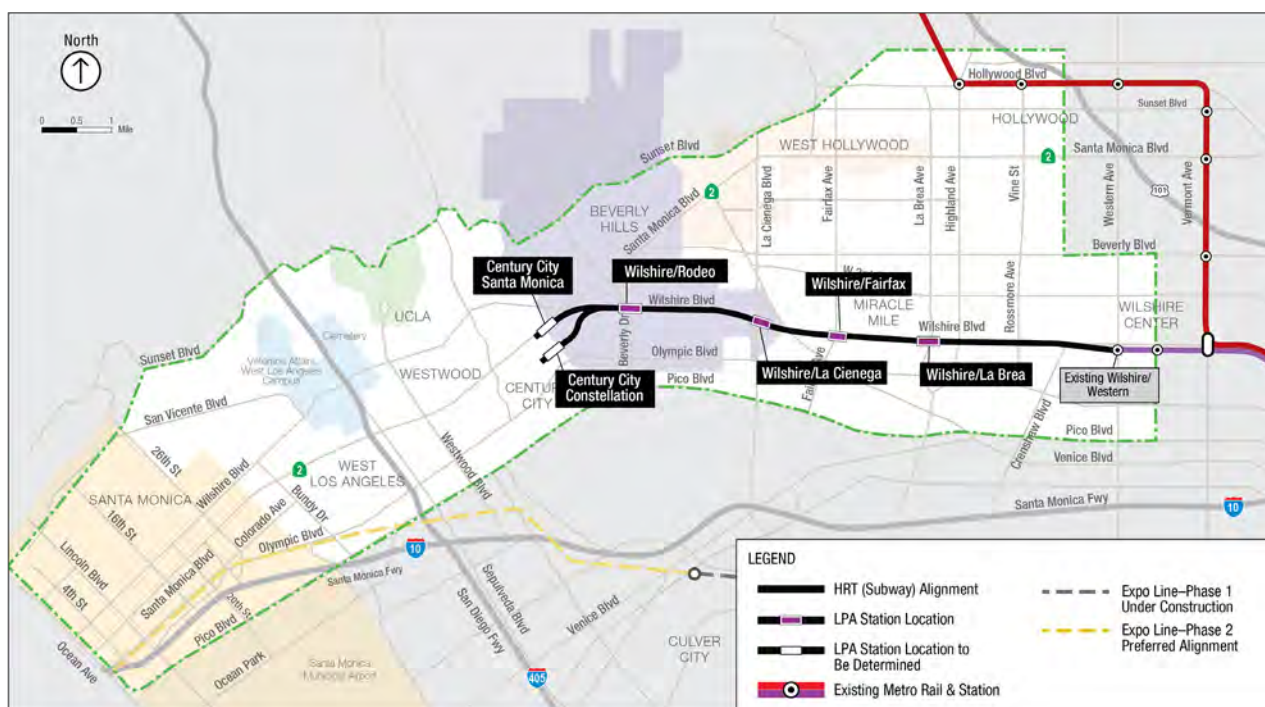


Figure 2-73. Phase 1 to Wilshire/La Cienega

**Phase 2**

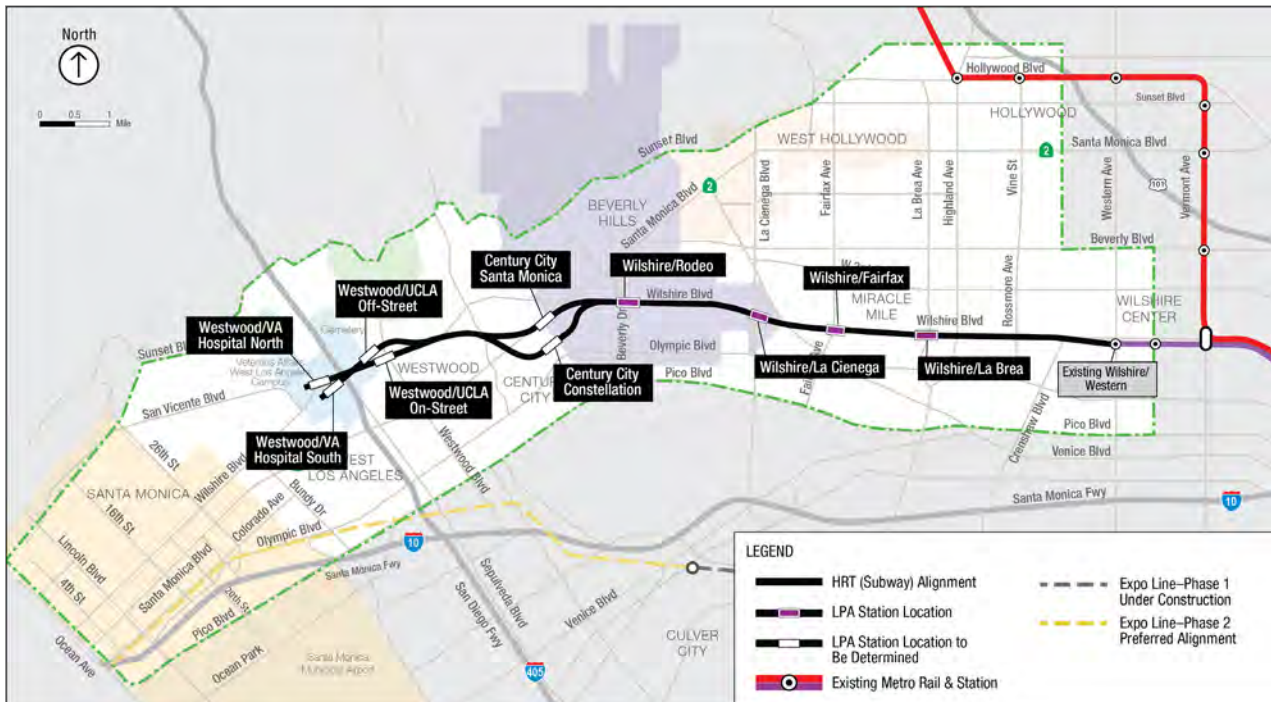
The second phase would extend the subway from the Wilshire/La Cienega Station to the Century City Station (either Santa Monica Boulevard or Constellation Boulevard) (Figure 2-74). This phase would be approximately 2.7 miles in length and include two new stations (Wilshire/Rodeo and Century City). Construction of the second phase would begin as soon as funding is secured following the start of construction of Phase 1, but in no case later than 2019 with service to the Century City Station opening no later than 2026.



**Figure 2-74. Phase 2 to Century City**

### Phase 3

The third and final phase would extend the subway from the Century City Station to the Westwood/VA Hospital Station, completing the LPA (Figure 2-75). This phase would be approximately 2.5 miles in length and include two new stations (Westwood/UCLA and Westwood/VA Hospital). Construction on the third phase would begin as soon as funding is secured following the start of construction of Phase 2, but in no case later than 2029. Service to the Westwood/VA Hospital Station would be open no later than 2036. Upon completion of the Phase 3 segment, the LPA would be operational in its entirety from the Wilshire/Western Station to the Westwood/VA Hospital Station.



**Figure 2-75. Phase 3 to Westwood/VA Hospital (LPA)**

### Refinements from the Draft EIS/EIR

The Draft EIS/EIR assumed that the project would be constructed under the Metro LRTP. The construction schedule in the Draft EIS/EIR assumed a phased delivery in three construction segments for completion in the following years:

- Fairfax Extension (2019) (MOS-1)
- Century City Extension (2026) (MOS-2)
- Westwood Extension (2036)

In April 2010, the Metro Board of Directors adopted the AFF that directs the authority to seek infrastructure loans that would allow all three phases of the Project to be constructed simultaneously. The parallel construction of portions of the alignment and stations will allow the entire Project to the Westwood/VA Hospital Station to be open and operational in 2022 and not open in sequential phases as initially envisioned.

Due to the development of two alternative funding scenarios, the Final EIS/EIR incorporates an analysis of construction of the LPA under both the Concurrent Construction Scenario and the Phased Construction Scenario. In addition, the Phased Construction Scenario was refined from the Draft EIS/EIR based on further engineering efforts during preparation of the Final EIS/EIR.

Due to constructability considerations, the terminus of the first phase was shifted west from the Wilshire/Fairfax Station to the Wilshire/La Cienega Station. The Wilshire/Fairfax Station vicinity has known deposits of paleontological resources and high concentrations of methane and hydrogen sulfide. Both of these issues complicate construction of the Wilshire/Fairfax Station, resulting in more risk to the schedule than other stations along the alignment. The construction schedule is of particular importance for terminus stations, which serve as the entry and exit locations for the TBMs. Additionally, terminus stations must include a crossover to allow trains to access either side of the platform when entering or leaving the station. A station with a crossover requires 20 percent more cut-and-cover excavation as a station without a crossover.

The elevated gas levels are located along Wilshire Boulevard from about Burnside Avenue to about La Jolla Avenue, which includes the location of the Wilshire/Fairfax Station. The Wilshire/La Cienega Station is located west of this elevated gas area. A fully enclosed tunnel mining system, such as a slurry-face TBM (a type of pressurized-face TBM), will be used for tunneling in the elevated gassy areas. If the Wilshire/Fairfax Station serves as the terminus for the first phase, the fully enclosed tunnel mining system would be required for both the first and second phases of construction. By terminating at the Wilshire/La Cienega Station instead, the fully enclosed tunnel mining system would not be necessary for the second phase of construction—only the first phase—reducing construction costs for the second phase.

Additionally, because the Wilshire/Fairfax Station has known deposits of paleontological resources, there is the potential for delays to station excavation activities if paleontological resources are encountered. Section 4.15 details the paleontological mitigation measures that will be implemented to minimize impacts to paleontological resources. However, even with these mitigation measures in place, there is still the potential for delays to station excavation and construction at the Wilshire/Fairfax Station. Therefore, the Wilshire/La Cienega Station, which is less likely to result in the encounter of paleontological resources and the associated schedule delays, is a more logical terminus station.



Finally, by shifting the terminus station from Wilshire/Fairfax to Wilshire/La Cienega, a crossover is no longer required at the Wilshire/Fairfax Station, thereby reducing the amount of cut-and-cover excavation in the vicinity of tar sands, elevated gas levels, and known paleontological deposits. By requiring cut and cover for a smaller area, fewer fossils will be encountered and less hazardous waste will require disposal. Additionally, there are safety benefits of reducing the amount of area and time spent excavating in the elevated gassy grounds.

The terminus of the second phase to Century City is the same in the Final EIS/EIR as it was in the Draft EIS/EIR.