CHAPTER 7—EVALUATION OF ALTERNATIVES

This chapter draws upon and summarizes the information provided in previous chapters, and it organizes that information to highlight significant trade-offs to be made in selecting among the Westside Subway Extension Project (Project) alternatives presented in Chapter 2, Alternatives Considered. Section 7.1 presents the evaluation methodology. It is followed by an evaluation of the Locally Preferred Alternative (LPA) in Section 7.2, an evaluation of the station and alignment options in Section 7.3, and an evaluation of the station entrance location options in Section 7.4. Section 7.5 presents the recommendations, and Section 7.6 presents the funding scenarios for the LPA under the America Fast Forward (30/10) Scenario (Concurrent Construction) and the Metro Long Range Transportation Plan Scenario (Phased Construction).

This chapter differs from Chapter 7 of the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR), which was prepared in support of a decision to select the LPA. For that purpose, the Draft EIS/EIR also evaluated a low-cost Transportation System Management (TSM) Alternative, five heavy rail build alternatives, and two Project phasing options (Minimum Operable Segment [MOS]-1 and MOS-2). With the Metro Board of Director's selection of an LPA in October 2010, Chapter 7 in this Final EIS/EIR focuses on the decisions that remain to be made in refining the LPA. The chapter also draws upon the updated technical information presented in the previous chapters and supporting technical reports.

7.1 Evaluation Methodology

This section describes the approach taken to evaluate the alternatives presented in Chapter 2, Alternatives Considered. The methodology includes a set of goals, objectives, and evaluation measures for comparing the alternatives in terms of their overall effectiveness in meeting the Project's Purpose and Need, their costs and feasibility, and their impacts.

7.1.1 Goals, Objectives, and Evaluation Measures

Seven goals were established in the Alternatives Analysis (AA) phase of planning and were used to both screen out alternatives and identify those alternatives to be carried forward into the Draft EIS/EIR (see Figure 2-4 in Chapter 2). These same goals were used to evaluate alternatives in the Draft EIS/EIR, leading to the selection of the LPA, and they provide the basis for the evaluation in this Final EIS/EIR to support further decisions to refine the Project.

- **Goal A: Mobility Improvement**—The primary purpose of the Project is to improve public transit service and mobility in the Westside Extension Transit Corridor. To compare the alternatives in terms of mobility improvement, the evaluation examines how well each alternative improves the ability of residents and employees to reach desired destinations through the provision of high quality, convenient, and reliable east-west transit service.
- **Goal B: Transit-supportive Land Use Policies and Conditions**—A major aspect of this goal is to locate transit alignments and stations in areas with existing land uses conducive to transit use or in those areas that have the greatest potential to develop transit-supportive land uses.

- **Goal C: Cost-effectiveness**—This goal ensures that both the capital and operating costs of the Project are commensurate with its benefits.
- **Goal D: Project Feasibility**—The fourth goal is that the Project be financially feasible. Specifically, this goal helps ensure that funds for the construction and operation will be readily available and will not place undue burdens on the sources of those funds. The goal also includes minimizing risks associated with project construction.
- **Goal E: Equity**—This goal evaluates project solutions based on how fairly the costs and benefits are distributed across different population groups with particular emphasis on serving transit-dependent communities.
- **Goal F: Environmental Considerations**—The sixth goal is to develop solutions that minimize impacts to environmental resources and communities within the Study Area.
- **Goal G: Public Acceptance**—This goal aims to develop solutions that are supported by the public with special emphasis on residents and businesses within the Study Area.

In the 2009 AA, specific objectives and measures were developed and applied to assess the extent to which each alternative met each goal. The objectives and measures used in this Final EIS/EIR draw upon and refine those used in 2009, reflecting current data and the more focused evaluation in this Final EIS/EIR.

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. The FTA's rating system considers projects from two perspectives—project justification and local financial commitment—and considers the following criteria to arrive at a project rating:

- **Project Justification Criteria**
  - Mobility Improvements (20 percent of justification rating)
  - Cost-effectiveness (20 percent of justification rating)
  - Transit-supportive Land Use (20 percent of justification rating)
  - Economic Development Benefits (20 percent of justification rating)
  - Environmental Benefits (10 percent of justification rating)
  - Operating Efficiencies (10 percent of justification rating)
- **Financial Commitment Criteria**
  - Non-New Starts Share of Capital Cost (20 percent of financial rating)
  - Soundness of Capital Finance Plan (50 percent of financial rating)
  - Soundness of Operating Finance Plan (30 percent of financial rating)

To be recommended for funding by FTA, projects must receive at least a *medium* rating on both project justification and local financial commitment. FTA's latest rating for the Project is *medium* on both. It should be noted that FTA has started a rulemaking process that may significantly alter the measures FTA uses to evaluate, rate, and select projects for funding recommendations.

7.1.2 Decision Tree Framework

Recognizing the complexity of the Westside Corridor Subway Extension and the number of alternatives and options, the Draft EIS/EIR evaluation was structured around a decision tree framework composed of several tiers of decision-making:

- Mode and project concept
- Station locations and alignments
- Vehicle storage and maintenance facility
- Project phasing

The Metro Board of Director's October 2010 action to select Alternative 2 in the Draft EIS/EIR as the LPA identified the Project as a heavy rail subway project with seven new stations extending for a distance of approximately 9 miles. The station locations were selected for the four easternmost stations, but two alternative locations were retained for each of the three westernmost stations (Century City, Westwood/UCLA, and Westwood/VA Hospital) to allow for further study during preparation of this Final EIS/EIR. Each of these alternative station sites has a corresponding alignment option. The Metro Board of Director's decision also established the Project's terminus at Westwood/VA Hospital although, as discussed in Chapter 2, Alternatives Considered, and Chapter 6, Cost and Financial Analysis, the phasing of construction will depend upon Federal funding availability. The vehicle storage and maintenance facility site was also established as an expansion of the existing Division 20 heavy rail maintenance and storage yard in Downtown Los Angeles. This Final EIS/EIR seeks to resolve the remaining station location and alignment decisions while also addressing entrance location options at each station.

7.2 Locally Preferred Alternative

This section compares the LPA, including all station, alignment, and station entrance options still under consideration, with the No Build Alternative, summarizing the overall Project's benefits, costs, and impacts. Data presented in this section assume that the LPA will follow the alignment as presented in Chapter 2, Alternatives Considered. The benefits, costs, and impacts of station location and alignment options are evaluated in Section 7.3.

The evaluation data are presented in Table 7-1, and significant findings are highlighted below.

7.2.1 Mobility Improvements

This section highlights the LPA's mobility benefits, focusing on transit travel time; reliability, comfort, and convenience; and capacity and expandability.

Transit Travel Time

The LPA, operating in an exclusive guideway that is fully separated from roadway traffic, will achieve much higher speeds than would be possible with buses, even with the bus priority treatments assumed in the No Build Alternative. As discussed in Section 3.4, several zone pairs were selected to show estimated AM peak hour travel times in 2035 under each alternative. The analysis demonstrates that transit travel times will be

significantly faster with the LPA. New links between the LPA and other transit lines will improve transit travel time for residents throughout the County.

Table 7-1. Summary of LPA Costs, Benefits, and Impacts

Relevant Goals, Objectives, and Measures	No Build	LPA
Mobility Improvement		
Average end-to-end transit operating speed	13.5	30.8
Percentage of transit passenger miles on fixed guideway	5%	40%
Total daily boardings at new Westside Extension transit stations (2035)	Base	46,000 to 49,300
Transit-supportive Land Use Policies and Conditions		
High-density mixed-use activity centers within one-half mile of alignment	NA	7
High-opportunity areas for redevelopment within one-half mile of alignment	NA	1
Cost-effectiveness		
Capital cost (in million year of expenditure dollars)	Base	$5,662
Year 2035 systemwide (bus and rail) operating and maintenance cost (in million dollars)	$3,854	$3,919
Cost per hour of user benefit compared with TSM Alternative (FTA Cost Effectiveness Index)	NA	$31.77
Project Feasibility		
Affordability	Yes	Yes
Equity		
Low-income residents within one-half mile of guideway alignment	NA	27,180
Percent of residents who are low income within one-half mile of guideway alignment	NA	17.1
Minority residents within one-half mile of guideway alignment	NA	74,236
Percent of residents who are minority within one-half mile of guideway alignment	NA	45.5%
Environmental Considerations		
Number of single-family residences displaced	0	1
Number of multi-family residences displaced	0	3
Number of jobs potentially displaced	0	231 to 279
Daily reduction in vehicle miles traveled compared to No Build Alternative	Base	318,000 to 581,000

Source: Parsons Brinckerhoff, 2011

Because of its higher operating speeds, the rail alternatives offer a travel mode that is more competitive with the automobile. During peak periods, rail operating speeds are faster than speeds for a comparable trip by automobile.

Transit Ridership

Alternatives that attract the highest ridership are those that offer the best service to the greatest number of people. Projected increases in transit ridership also indicate the extent to which an alternative can be expected to reduce vehicle miles of travel and congestion on the highway system, reduce air pollutant emissions, and reduce the use of gasoline.

With improved transit speeds, the LPA will attract more travelers to transit. Daily boardings at the seven new LPA stations are expected to range from approximately 46,000 to 49,300 per day. Approximately 27,200 to 30,100 net additional daily riders will be attracted to public transportation with the LPA. These are trips that would have been

made by another mode. Another 20,000 riders are expected to switch from bus to rail each day to take advantage of the subway's greater speed and reliability. In total, transit riders using the LPA will receive more than 38,000 hours of travel time savings per day.

Reliability, Comfort, and Convenience

Transit vehicles in mixed-flow traffic not only operate more slowly but also have less reliable travel time, as buses can be affected by traffic incidents or other adverse road conditions. The bunching of buses can lead to irregular headways and uncertain trip times. With the LPA, transit will operate on its own exclusive guideway and will not be affected by roadway conditions. Arrival times and trip times will be extremely reliable.

The LPA can be evaluated in terms of the percentage of transit passenger miles that will occur on an exclusive fixed guideway facility. As noted in Table 7-1, and as discussed in Section 3.4, about 5 percent of transit passenger miles within the project Study Area would occur within a fixed guideway under the No Build Alternative. The remaining transit passenger miles would be in buses operating in mixed traffic or bus lanes subject to various traffic delays. Under the LPA, more than 40 percent of transit passenger miles will occur in a fixed guideway. Subway service will provide frequent and reliable service regardless of traffic conditions on the streets and highways above. Transit reliability in the study area will be affected in a very positive way.

Another measure of transit travel time and convenience to passengers is the number of transfers travelers must make to get from their origins to their destinations. Riders generally consider out-of-vehicle travel time—i.e., the time spent waiting for a bus or train to arrive—as being more onerous than time spent moving in a vehicle. The LPA will significantly reduce the number of transfers. Under the LPA, riders from the study area can access Metrolink and Amtrak with just one transfer at Union Station.

For transit riders who stand, subway service will provide increased comfort and safety compared to frequent stop-and-go travel that occurs on buses operating in mixed traffic or uneven road surfaces. Because station platforms will be at the same level as subway vehicles, they will accommodate quick and easy boardings for all passengers.

Capacity and Expandability

While the LPA offers sufficient capacity to meet the transit demand projected for 2035, it also offers greater ability to expand capacity as growth continues beyond 2035, simply by adding cars to a train or running more frequent trains.

7.2.2 Transit-Supportive Land Use Policies and Conditions

The *City of Los Angeles Land Use/Transportation Policy*, adopted in November 1993, is a joint effort of Metro and the City to coordinate land use and transportation. The policy seeks to establish transit centers and station areas as focal points for future growth and to foster higher-density, mixed-use projects near rail and major bus facilities. Beverly Hills also has adopted plans that encourage transit-oriented development.

The extent to which the LPA meets these land use goals can be measured by the number of high-density, mixed-use activity centers within one-half mile of the alignment and by the number of high-opportunity areas for redevelopment within one-half mile of the alignment. Twelve activity centers—defined as locations with major commercial activity

and mixed uses—and two high-opportunity areas were identified in the Draft EIS/EIR (Figure 7-1). The LPA will provide subway service to seven of the activity centers and one high-opportunity area.

Transit-supportive land use is also a critical aspect of the FTA's rating of projects that are seeking discretionary New Starts funds. Forty percent of the project justification rating is a function of transit-oriented land use, and FTA has given the project a *medium-high* rating on this criterion.

Activity Centers

1. Hollywood
2. Sunset Strip
3. The Grove/Farmer's Market
4. Wilshire Center
5. Miracle Mile
6. Century City
7. Westwood/UCLA
8. West Los Angeles
9. Downtown Santa Monica
10. West Hollywood
11. Beverly Center/Cedars Sinai Hospital
12. Beverly Hills/Rodeo Drive

High Opportunity Areas

A. City of Los Angeles Community Redevelopment Agency (CRA) Redevelopment Area in Wilshire Center-Koreatown
B. City of Los Angeles CRA Redevelopment Area in Hollywood

Figure 7-1. Activity Centers and High-opportunity Areas in Study Area

7.2.3 Cost-Effectiveness

Whereas Sections 7.2.1 and 7.2.2 evaluated the LPA in terms of its effectiveness in meeting mobility and land use goals, this section addresses the cost-effectiveness goal, comparing the LPA's benefits with its capital and operating costs. The LPA is significantly more expensive than the No Build Alternative. It is also more costly to operate and maintain.

Table 7-1 presents the LPA's cost effectiveness index (cost per hour of user benefits) as reported in the FTA's *Annual Report on Funding Recommendations, Fiscal Year 2012* (FTA 2012).

Cost-Effectiveness Index

The cost-effectiveness measure used in this evaluation is derived by annualizing the LPA's capital cost, adding the annual O&M cost, and dividing the sum by the alternative's annual transit system user benefits. User benefits refer primarily to travel time savings. Both costs and user benefits are computed relative to a baseline, which is the TSM Alternative presented in the Draft EIS/EIR.

This measure, referred to as the "cost effectiveness index," is used by the Federal Transit Administration in its rating of projects seeking New Starts funds.

FTA currently assigns *low* cost effectiveness ratings to projects with cost effectiveness indexes (CEI) higher than $31.50. With a CEI of $31.77, this Project received a *low* rating in FTA's *Annual Report on Funding Recommendations, Fiscal Year 2012* (FTA 2012), submitted to Congress in February 2011. With such a rating, under current rules and guidelines, FTA will only recommend New Starts funding if the Project performs very well on FTA's other project justification criteria, such as transit-supportive land use and economic development, as the LPA does.

7.2.4 Project Feasibility

As described in Chapter 6, Cost and Financial Analysis, the Project depends upon funding from the Measure R sales tax and federal New Starts funding. Measure R was approved by Los Angeles County voters in November 2008, and the Metro Board of Directors has allocated substantial funds for the Project from this funding source. The financial feasibility of the LPA depends upon the following:

- How well the LPA is likely to compete for New Starts funds, where the ratings process considers both project justification and local financial commitment
- Whether the local share of the LPA's capital cost is affordable under Measure R and other sources of local funds.

Considering both project justification and local financial commitment, FTA approved the Project's entry into Preliminary Engineering, and assigned the LPA a *medium* overall rating in its *Annual Report on Funding Recommendations, Fiscal Year 2012* (FTA 2012). With such a rating, the Project is eligible for New Starts funding. Further, FTA included the Project on a short list of candidates for advanced project development funding.

Cost estimates, revenue projections, and the financial plan will continue to be refined as the Project is advanced through Preliminary Engineering and Final Design.

7.2.5 Equity

Four measures of equity are used to evaluate the LPA:

- The number of low-income residents within one-half mile of the rail alignment
- The percentage of residents within one-half mile of the alignment who are low income
- The number of minority (Black, Asian, and Hispanic) residents within one-half mile of the alignment
- The percentage of residents within one-half mile of the alignment who are minority

Table 7-1 shows the results of this analysis. More than one-sixth of the residents within one-half mile of the alignment are low income and nearly half are minority.

7.2.6 Environmental Considerations

The LPA will be a subway system, and the tunnels will be constructed completely below grade using deep-bore tunneling technology. Only the stations will be constructed using cut-and-cover technology. Thus, as discussed in Chapter 4, Environmental Analysis, Consequences, and Mitigation, the potential for environmental impacts occurs mostly at stations, where entrances are built on the surface and construction activities occur.

The LPA will require the acquisition of properties to construct station entrances and provide for construction staging and the acquisition of easements where the alignment or station boxes are beneath private property. The LPA will entail 35 to 57 full acquisitions, 3 to 10 permanent easements, 3 to 11 temporary construction easements, and 92 to 137 permanent underground easements (see Section 4.2.2 and Appendix C, Acquisitions). The actual number will depend on which station location and entrance location is selected at each station. Businesses employing between 231 and 279 people will be displaced (see Section 4.2.3). Many of these businesses may choose to relocate to other nearby locations and job losses would be mitigated. In addition, some job losses from displacement will be offset by new construction and operations jobs created by the Project.

The LPA will lead to a reduction in vehicle miles of travel (VMT) on the highway system, with attendant reductions in roadway congestion, pollutant emissions, and fossil fuel consumption. The decrease is small in relation to total VMT in the Study Area.

The LPA will also cause impacts during construction. As discussed in Chapter 3, Transportation, and Chapter 4, Environmental Analysis, Consequences, and Mitigation, construction impacts will include traffic and access disruptions near station sites, construction noise and emissions (NO_x and PM_{10}), temporary removal of parking, visual effects, and haul trucks removing material excavated from the tunnel and station boxes. Metro will mitigate these construction impacts as previously described.

7.2.7 Public Acceptance

Chapter 8, Public and Agency Outreach, provides an overview of the community outreach for the project and summarizes the comments on the Draft EIS/EIR received from the public and agencies during the official public comment period. An overwhelming majority of the comments received support the Westside Subway Extension as a means of reducing Westside traffic congestion and providing an

alternative mode of transportation. Many individuals wanted to see the Project built as quickly as possible and as far west as possible.

Many commenters expressed concern about safety-related issues in regard to tunneling. These issues related to safety of tunneling under residences and schools; noise and vibration impacts; and concern about seismic issues, abandoned oil wells, methane gas, settlement and subsidence, liquefaction, and other geotechnical concerns. Many of these comments are interrelated as most relate to the safety and impacts of tunneling. These concerns were addressed with further geotechnical and noise and vibration studies during preparation of this Final EIS/EIR.

7.3 Station and Alignment Options

This section focuses on the western portion of the LPA where decisions remain to be made on the location of the three westernmost stations and the alignment between them. It addresses those objectives and measures considered to be most relevant to decisions on each of the remaining station and alignment options. Further details can be found in the *Westside Subway Extension Westwood/UCLA Station and Westwood/VA Hospital Station Locations Report* (Metro 2011t) and the *Westside Subway Extension Century City Station Location Report* (Metro 2012e).

In some respects, the choices for station locations at the west end of the line are interdependent. Because there are two optional locations at each of the three station sites, any one of eight potential combinations of stations and alignments could be selected. The subway alignments connecting the different station location options are different, and the combination chosen will impact transit travel time, the number of subsurface easements between the stations, and project cost. Table 7-2 presents data related to combining the Century City Station options with the options for Westwood/UCLA and Westwood/VA Hospital, which is used in the evaluation of station locations below. Sections 7.3.2 and 7.3.3 address issues that relate to each of the three stations individually.

Transit Travel Time

The time it takes a train to travel from the Wilshire/Western Station to the Westwood/VA Hospital Station, called the run time, is a function of the distance between these stations and speed of the train, which is affected by the degree of curvature along the alignment. As indicated in Chapter 3, Transportation, and in Table 7-2, transit run times among the eight possible station and alignment combinations vary by close to a minute. The shortest run time is achieved by an alignment connecting the Century City Santa Monica, Westwood/UCLA On-Street, and Westwood/VA Hospital South Station options. The longest run time would result from combining the Century City Constellation Boulevard, Westwood/UCLA Off-Street, and Westwood/VA Hospital North Station options.

Table 7-2. LPA Station and Alignment Combination Criteria

Station Combination			Configuration Number	Transit Run Times			Permanent Underground Easements[1]				Capital Cost ($2011 millions)
				Length (miles)	Total Run Time (eastbound)	Total Run Time (westbound)	Residential Properties	Schools, Religious, and Other Community Facilities	Other Non-residential Properties	Total Properties	
Century City Santa Monica	Westwood/ UCLA On-Street	Westwood/VA Hospital South	1	8.57	14:19	14:26	78	0	17	95	$4,348–$4,435
		Westwood/VA Hospital North	2	8.73	14:21	14:28	78	0	15	93	$4,382–$4,468
	Westwood/ UCLA Off-Street	Westwood/VA Hospital South	3	8.60	14:45	14:52	82	1	25	108	$4,323–$4,410
		Westwood/VA Hospital North	4	8.74	14:50	14:58	82	1	23	106	$4,357–$4,444
Century City Constellation	Westwood/ UCLA On-Street	Westwood/VA Hospital South	5	8.80	14:44	14:49	86	1	37	124	$4,368–$4,409
		Westwood/VA Hospital North	6	8.95	14:45	14:52	86	1	35	122	$4,402–$4,442
	Westwood/ UCLA Off-Street	Westwood/VA Hospital South	7	8.83	15:11	15:16	90	2	45	137	$4,344–$4,384
		Westwood/VA Hospital North	8	8.97	15:17	15:21	90	2	43	135	$4,377–$4,417

Sources: Westside Subway Extension Accelerated Financial Plan (Metro 2011ae); Westside Subway Extension Alternative Financial Plan (Metro 2011af); Westside Subway Extension Acquisitions and Displacement Supplemental Technical Report (updated) (Metro 2011c)

[1]Condominium units in the same building counted as a single property

Recommended station and alignment location

Longer run times will normally reduce project benefits and increase operating and maintenance costs. While those combinations that include a Century City Station under Constellation Boulevard would have run times that are approximately 23 to 27 seconds longer than those with a Century City Station under Santa Monica Boulevard, the Constellation Boulevard location would attract more boardings due to its more central location in Century City as discussed below in Section 7.3.1.

Subsurface Easements

There has been substantial public comment about proposed tunnel alignments beneath residential and non-residential properties, such as Beverly Hills High School.

While significant impacts are not anticipated to any of the alignments that pass directly beneath properties in Beverly Hills, Century City, and Westwood, one way to compare the station location and alignment options is in terms of the number of subsurface easements beneath private property. Table 7-2 identifies the number of permanent underground easements that would be required between the Century City and Westwood/VA Hospital Stations with each of the eight station location and alignment combinations. Residential properties include both apartment buildings and condominiums. Non-residential properties include businesses, churches, and schools. Table 7-2 shows that

- The Santa Monica Boulevard Option at Century City would require fewer residential and non-residential permanent underground easements than the Constellation Boulevard Option, regardless of the location of the Westwood/UCLA and Westwood/VA Hospital Stations.
- The On-Street Option at Westwood/UCLA would require fewer residential and non-residential permanent underground easements than the Off-Street Option, regardless of the location of the Westwood/VA Hospital and Century City Stations.
- The North Option at Westwood/VA Hospital would require slightly fewer permanent underground easements from non-residential properties than the South Option, regardless of the location of the Century City and Westwood/UCLA Stations.

Beverly Hills High School is one of the non-residential properties that would require a subsurface easement with the Century City Constellation Station Option. No subsurface easement would be required at Beverly Hills High School if the Century City Santa Monica Station Option is selected.

Capital Cost

The capital costs of the station and alignment combinations, shown in Table 7-2 and further discussed in Section 6.2, vary by less than 2 percent. Several observations can be made from these estimates:

- Combinations with the Century City Constellation Station Option are slightly more expensive than those with the Century City Santa Monica Station Option. This is primarily due to the greater length (approximately 0.25 mile longer) that would result in greater construction costs of up to $25 million.
- Combinations with the On-Street Station Option at Westwood/UCLA generally cost more than those with the Off-Street Station Option. This is generally due to the higher costs of utility relocation and traffic controls for construction under this

highly travelled street rather than construction that is predominantly off-street that would result in higher costs of up to $45 million.

- Combinations with the Westwood/VA Hospital North Option tend to cost more than those with the South Option. This is primarily due to the longer length of the North Option (approximately 0.15 mile longer) and the greater amount of excavation required due to the more hilly terrain north of Wilshire Boulevard that would result in higher costs of up to $33 million.

7.3.1 Century City Station Options

This section summarizes the differences in ridership, costs, benefits, and impacts between the two station location options at Century City, highlighting the trade-offs to be made in selecting a preferred site for this station. Key differences between the two station locations under consideration are noted in Table 7-2 and Table 7-3. The criteria considered in these tables are structured around the evaluation methodology discussed in Section 7.1. Construction staging scenarios for each station option are detailed in Chapter 2, Alternatives Considered.

During the official public comment period on the Draft EIS/EIR, a significant volume of comments were received on the location of the Century City Station. Those who favored the Century City Santa Monica location were primarily concerned with the safety and risks of tunneling under homes and schools in Southwest Beverly Hills that would be necessary if the station is located at Century City Constellation. Those in favor of the Century City Constellation location stated that the location better served the office and residential core of Century City. Metro responded to safety concerns by conducting further geotechnical studies evaluating the safety of tunneling under homes and schools (*Westside Subway Extension Century City Area Tunneling Safety Report* [Metro 2011x]). The report concluded that it is safe to tunnel under homes and schools in the Century City and Westwood areas.

It should be noted that during preparation of this Final EIS/EIR, the Century City Santa Monica Station was shifted approximately 900 feet to the east along Santa Monica Boulevard from the location in the Draft EIS/EIR. As described in Section 2.6.4, this shift was determined to be necessary during preparation of Preliminary Engineering in order to avoid placing the station within the Santa Monica fault zone—an active earthquake fault zone that passes under Santa Monica Boulevard at Avenue of the Stars. Moving the station farther east avoids the risks of the Santa Monica fault zone but shifts the station entrance from the intersection of Santa Monica Boulevard and Avenue of the Stars to Santa Monica Boulevard and Century Park East. For the purposes of this comparative analysis, the more easterly location for the Century City Santa Monica Station described in this Final EIS/EIR has been used. More detailed information about the geotechnical investigations is available in Section 4.8 and the *Westside Subway Extension Century City Area Fault Investigation Report* (Metro 2011w). Although the Century City Santa Monica Station is discussed herein for purposes of analysis, it should be noted that, following a hard look in this environmental review process, the location is no longer considered a viable option because of its position on the Newport-Inglewood fault zone.

An alignment serving a station on Constellation Boulevard would be about one-quarter mile longer than an alignment serving a station on Santa Monica Boulevard. This added distance plus two curves east of the station would add between 23 and 27 seconds to the run time of between 14 and 15 minutes for all project trains (Table 7-2).

Table 7-3. Comparison of Station Location Options at Century City

Relevant Goals, Objectives, and Criteria	Century City Constellation	Century City Santa Monica
Mobility Improvement		
Number of existing residents within one-quarter mile	210	180
Number of existing jobs within one-quarter mile	20,170	10,310
Number of existing jobs within 600 feet	10,260	4,820
Environmental Considerations		
Acquisitions and easements at the Century City Station	1 to 4 full takes 5 temporary construction easements	2 to 21 full takes 2 temporary construction easements 2 permanent easements
Permanent underground easements	122 to 137	93 to 108
Cultural resources adversely affected at the Century City Station	None	None
Geotechnical conditions	Station box is located outside zones of active faulting	Station box within an extension of the Newport-Inglewood Fault Zone—an active fault zone
Traffic impacts during construction	Lower	Higher
Noise and vibration	Within FTA criteria	Within FTA criteria

Source: Westside Subway Extension Century City Station Location Report (Metro 2012e)

Compensating for this slight increase in travel time is the fact that a station on Constellation Boulevard would be more centrally located within Century City, making it more convenient for potential transit riders in Century City. As documented in Metro's *Westside Subway Extension Century City TOD and Walk Access Study* (Metro 2012a), a Constellation Boulevard station would be less than a one-quarter mile walk from more than 20,000 existing jobs and less than a 600-foot walk from more than 10,000 existing jobs, twice the number of jobs within these walking distances from the Santa Monica Boulevard station site.

This report also assessed the ability for each of the Century City station options to support walk trips based on Vikas Mehta's hierarchy for pedestrian needs (Mehta 2008). Building on previous urban design theories, Mehta proposed a hierarchy of needs in the decision-making process leading to walking, which includes: (1) accessibility, (2) usefulness, (3) safety, (4) comfort, (5) sensory pleasure, and (6) sense of belonging. For each of the levels, urban design theory and findings from research on walking to transit were used to develop criteria on which to grade each of the Century City Station options. The Constellation Boulevard site outperformed the Santa Monica Boulevard site on all but one of the criteria.

As noted in Section 3.4 and Table 7-4, the difference between the two Century City Station options is discernable in the regional travel demand forecasting model. Based on more detailed demographic analysis that was performed subsequent to the Draft EIS/EIR ridership forecasts, the model predicts more than 3,000 additional daily boardings at the Century City Constellation Station than at the Century City Santa Monica Station. If the Century City Station is located at Constellation Boulevard, daily boardings at all seven new Purple Line stations would be approximately 3,350 higher than if the Century City Station is located at Santa Monica Boulevard.

Table 7-4. Daily Boardings with Century City Station Options from Travel Demand Model

	Century City Constellation	Century City Santa Monica
Daily boardings at Century City in 2035	8,566	5,492
Total daily boardings at Westside subway stations in 2035	49,340	45,989

Source: Westside Subway Extension Technical Report Summarizing the Results of the Forecasted Alternatives (Metro 2011al)

The two station location options differ in terms of their proximity to the Santa Monica and Newport-Inglewood Fault Zones. As described in Section 4.8, Santa Monica Boulevard between about Moreno Drive and Century Park West Avenue is crossed by multiple faults. A station on Santa Monica Boulevard would lie within an extension of the Newport-Inglewood Fault Zone. Subway stations, because they are structures for human occupancy, should not be built on active fault/deformation zones due to the regulatory code and the difficulty designing such structures to withstand the potential ground rupture and associated deformations. The Constellation Boulevard station site is in an area showing no evidence of faulting. Tunnels approaching either station location would necessarily cross both faults. However, the alignment associated with a Constellation Boulevard station would cross the fault zone nearer to a right angle, which is more desirable for safe design and has been implemented on the Metro Red Line in Hollywood.

The two Century City Station location options also differ in terms of the number of property acquisitions and easements. In particular, the two Century City Station options have generated significant public discussion regarding permanent underground easements beneath residences and Beverly Hills High School (Table 7-2), which would be required with the Century City Constellation Station Option. The alignment for the Century City Constellation Station would require tunneling beneath between 14 and 44 more properties than the alignment for the Century City Santa Monica Station.

Both options would require temporary roadway lane closures during construction. With existing conditions, Constellation Boulevard carries one-fifth the traffic volume of Santa Monica Boulevard and operates at a better level of service. Therefore, traffic impacts during construction would be less with the Century City Constellation Station option.

The recommendation is to locate the Century City Station along Constellation Boulevard as this location would provide better pedestrian access to the jobs and residences in Century City and would avoid the Newport-Inglewood fault zone.

7.3.2 Westwood/UCLA Station Options

Table 7-5 highlights the similarities and differences between the station location options at Westwood/UCLA. The Westwood/UCLA Station is the only station that would be constructed with two entrances due to high forecasted ridership.

The Westwood/UCLA Off-Street Station option would require the station and tunnels to be deep to clear the underside of foundations for a future hotel on Gayley Avenue. The Off-Street Station would be approximately 40 feet deeper than the On-Street Station. Deeper tunnel and stations are riskier to construct and require more time for transit riders to travel between the platform and the station entrance. At the margin, this may affect transit travel times and ridership.

The number of residents and jobs within one-quarter mile of the entrances is almost identical. However, the On-Street Station location would provide a direct entrance at Westwood Boulevard, with at least one of the entrances at the corner of Wilshire and Westwood Boulevards. This entrance location would provide better access to bus connections along Westwood Boulevard and would be closer to the major office buildings and Westwood Village. Furthermore, one of the station entrance options for the Westwood/UCLA On-Street Station is a split entrance between the north and south sides of Wilshire Boulevard. This entrance configuration would provide access to both sides of Wilshire Boulevard, which has four traffic lanes in each direction with double left turn lanes—a significant barrier to easy pedestrian flow across the street.

The Westwood/UCLA On-Street Station option is expected to have more impacts on traffic during construction. Three lanes would be provided in each direction on Wilshire Boulevard between Veteran Avenue and Glendon Avenue, resulting in a 25-percent reduction in roadway capacity in each direction for approximately six weeks. In addition, it is expected that Wilshire Boulevard would be closed to traffic between Veteran Avenue and Westwood Boulevard during 12 to 16 weekends to install decking and again for decking removal. Even with the planned mitigation, traffic impacts are likely to be significant during some phases of construction.

The Westwood/UCLA Off-Street Station location would require approximately 13 additional permanent underground easements due to tunneling beneath private properties on the north of Wilshire Boulevard.

The recommendation is to locate the Westwood/UCLA Station on-street as this location would accommodate an entrance at the Wilshire Boulevard and Westwood Boulevard intersection, providing better pedestrian access to Westwood Village and connections along Westwood Boulevard.

Table 7-5. Comparison of Station Location Options at Westwood/UCLA

Relevant Goals, Objectives, and Criteria	Westwood/UCLA On-Street Station	Westwood/UCLA Off-Street Station
Mobility Improvement		
Number of residents within one-quarter mile of entrance	1,280	1,260
Number of jobs within one-quarter mile of entrance	10,310	10,360
Pedestrian access	Entrances on both north and south sides of Wilshire Boulevard and closer to Westwood Boulevard/ Westwood Village	Entrances on the north side of Wilshire Boulevard and to the west of Westwood Boulevard/ Westwood Village
Environmental Considerations		
Acquisitions and easements at Westwood/UCLA	2-3 Permanent Easements 1 Temporary Construction Easement	1 Permanent Easement 1 Temporary Construction Easement
Permanent underground easements	93 to 124	106 to 137
Cultural resources adversely affected at the Westwood/UCLA Station	Station entrance retrofitted into the historic Linde Medical Plaza but would have no adverse effect	None
Traffic impacts during construction	More impacts because decking is required above station construction in Wilshire Boulevard	Lower impacts because most construction is off street

Source: Parsons Brinckerhoff, 2011

7.3.3 Westwood/VA Hospital Station Options

Table 7-6 highlights the similarities and differences between the station location options at Westwood/VA Hospital. While both options are within one-quarter mile of the VA Hospital, the Westwood/VA Hospital South Station site is within 500 feet of the hospital, while the Westwood/VA Hospital North Station option is 1,200 feet away on the other side of Wilshire Boulevard. Thus, the South option offers much better pedestrian access to the VA Hospital for employees, patients, and visitors. The South option's vertical alignment would also be shallower than the North option's alignment, which would reduce the time it takes transit users to reach the platform from the station entrance.

The construction of the South option would result in more impacts to traffic circulation during construction, including temporary ramp closures at the I-405 interchange. For two to four consecutive weekends, the eastbound Wilshire Boulevard to southbound I-405 on-ramp and the southbound I-405 to eastbound Wilshire Boulevard off-ramp would be closed for decking installation and removal. Similar closures will be required for the northbound I-405 ramps on the south side of Wilshire Boulevard to construct the crossover box located at the West Los Angeles Federal Building (General Services Administration). The South option would also require the closure of Bonsall Avenue for two to four consecutive weekends to deck above the station box. Both the North and South options would require temporary closures to the Wilshire Boulevard on- and off-

ramps to I-405 for Bonsall Avenue—two to four consecutive overnight/weekends for the North and eight to ten weekends for the South—for decking installation and removal. Mitigation measures will be put in place to provide alternate routes for traffic during these closures.

Table 7-6. Comparison of Station Location Options at Westwood/VA Hospital Station

Relevant Goals, Objectives, and Criteria	Westwood/VA Hospital North Option	Westwood/VA Hospital South Option
Mobility Improvement		
Number of residents within one-quarter mile of entrance	0	25
Number of jobs within one-quarter mile of entrance	3500	3500
Future extensions of the line	Because of the curvature of Wilshire Boulevard as it passes through the VA property, any future extension of the subway to the west would have to run beneath many properties west of San Vicente Boulevard and north of Wilshire Boulevard. This would preclude a station at Barrington and require a deeper, more costly future alignment.	No design challenges
Pedestrian access distance to the VA Hospital	1,200 feet and on opposite side of Wilshire Boulevard	500 feet and same side of Wilshire Boulevard
Environmental Considerations		
Cultural resources adversely affected at the Westwood/VA Hospital Station	Los Angeles Veterans Affairs Medical Center Historic District (including historic landscape) will be protected from project impacts. No adverse effect.	Los Angeles Veterans Affairs Medical Center Historic District (including historic landscape). Ficus trees near the theater and the palm garden will be removed during construction activities and then replaced in their original spaces. No adverse effect.
Traffic impacts during construction	No impact on I-405 on- and off-ramps. Full closures of Wilshire Boulevard on- and off-ramps to Bonsall Avenue.	Partial and full closures of I-405 on- and off-ramps required. Full closures of Bonsall Avenue required. Full and partial closures of Wilshire Boulevard on- and off-ramps to Bonsall Avenue.

Source: Parsons Brinckerhoff, 2011

The North option could be problematic in the event of a future extension to Santa Monica. While this would not affect trains on the Westside Subway Extension, performance on a future extension from Westwood/VA Hospital to Santa Monica would be adversely affected. If tail tracks to accommodate five cars were built west of the station, it would be impossible for the alignment to return to Wilshire Boulevard until well west of San Vicente Boulevard. A north alignment west of San Vicente Boulevard would have to pass below a significant number of residential and commercial properties, requiring the acquisition of subsurface rights.

The recommendation is to locate the Westwood/VA Hospital Station on the south side of Wilshire Boulevard as this location would provide better pedestrian access to the VA Medical Center and would more easily accommodate a future westward extension of the subway.

7.4 Station Entrance Locations

Several LPA stations have one or more entrance location options. The choice of station entrance locations helps to establish the convenience of the station to potential riders. Other considerations in selecting the best location for an entrance include right-of-way availability, construction complexities, impact issues, and community input provided by a Station Area Advisory Group (SAAG) composed of stakeholders in each station area (see Chapter 8, Public and Agency Outreach). Table 7-7 lists the entrance location options and highlights their significant differences. Further details on how the options were identified, SAAG comments, and Metro's evaluation of the options are provided in the *Westside Subway Extension Station Entrance Location Report and Recommendation* (Metro 2012f).

7.4.1 Wilshire/LaBrea Station Entrance Options

As explained in Chapter 2, Alternatives Considered, two entrance locations are under consideration for the Wilshire/La Brea Station:

- Northwest corner of Wilshire Boulevard and La Brea Avenue
- Southwest corner of Wilshire Boulevard and La Brea Avenue

The impacts of both options are similar, as both are designated as construction laydown areas, and existing buildings on each site would be demolished for this purpose. The northwest option offers somewhat better access to multi-family residences located north and west of the intersection and is closer to potential development sites. The northwest option is also located on Metro-owned property. An entrance on the northwest corner was favored by the SAAG.

The recommendation is to locate the Wilshire/La Brea station entrance on the northwest corner of Wilshire Boulevard and La Brea Avenue as this location is Metro-owned property and would provide better access to multi-family residences north and west of the intersection.

7.4.2 Wilshire/Fairfax Station Entrance Options

Three entrance options are under consideration for the Wilshire/Fairfax Station:

- Northwest corner of Wilshire Boulevard and Fairfax Avenue (west of Johnie's Coffee Shop)
- Northeast corner of Wilshire Boulevard and Fairfax Avenue (in the interior of the LACMA West, former May Company, building)
- Southeast corner of Wilshire Boulevard and Orange Grove Avenue

From the perspective of transit service, the first two sites provide the best locations for bus transfers on Fairfax Avenue and offer better connectivity to destinations to the north, including the Farmer's Market/The Grove and higher-density residential communities, such as Park La Brea.

Table 7-7. Comparison of Station Entrance Options

Station and Entrance Options	Right-of-Way	Construction Complexities/ Construction Impacts	Long-term Impacts	Urban Design Considerations	Recommended Station Entrance
Wilshire/La Brea Station					
Northwest corner of Wilshire Boulevard and La Brea Avenue	Primarily on Metro-owned property (Metro Customer Center)	Construction staging will occur on this site. Location of entrance would not create any further impacts beyond those that are required for construction staging.	None beyond those that would occur during construction.	Direct north-south bus transfer connections. Joint development opportunities. Stronger visual and commercial linkages to West Hollywood activity centers on north La Brea.	● Yes
Southwest corner of Wilshire Boulevard and La Brea Avenue	Within construction laydown and staging site to be acquired by Metro	Construction staging will occur on this site. Location of entrance would not create any further impacts beyond those that are required for construction staging.	None beyond those that would occur during construction.	Adjacent to major bus connections. Joint development opportunities.	○ No
Wilshire/Fairfax Station					
Northwest corner of Wilshire Boulevard and Fairfax Avenue (Johnie's Coffee Shop)	On private property (Johnie's Coffee Shop and Marinello Beauty School)	Marinello Beauty School would be demolished and the business would require relocation. No impact on Johnie's Coffee Shop. Requires realignment of alley serving the 99-Cents Only Store.	None beyond those that would occur during construction.	Provides direct north-south bus connections and close to intersection of Wilshire Boulevard and Fairfax Avenue.	● Yes
Northeast corner of Wilshire Boulevard and Fairfax Avenue (LACMA)	Requires an easement within existing LACMA building. This easement may not be available due to potential use of the building for the Academy of Motion Pictures Arts and Sciences Film Museum.	Requires modifications to ground floor and basement of historic building; greater costs and schedule risk due to uncertainties of constructing within existing building. Construction of entrance would require temporary lane closures on westbound Wilshire Boulevard and northbound Fairfax Avenue.	None beyond those that would occur during construction.	Provides direct north-south bus connections and close to intersection of Wilshire Boulevard and Fairfax Avenue.	○ No

Table 7-7. Comparison of Station Entrance Options (continued)

Station and Entrance Options	Right-of-Way	Construction Complexities/ Construction Impacts	Long-term Impacts	Urban Design Considerations	Recommended Station Entrance
South side of Wilshire Boulevard between Ogden Drive and Orange Grove Avenue	Within construction laydown and staging site to be acquired by Metro	Entrance lies beneath the northbound lanes of Orange Grove Avenue. Construction would require decking or extended lane closures.	None beyond those that would occur during construction.	The site provides good access to LACMA and the other museums and cultural facilities located east of Fairfax Avenue. The site is less convenient than the Johnie's site and LACMA West site for transit riders seeking to make rail-to-bus transfers to points farther west and to points farther north on Fairfax Avenue. This would be offset, however, by the high number of transit users who would be going to LACMA and other cultural institutions east of Fairfax Avenue.	○ No
Wilshire/La Cienega Station					
Northeast corner of Wilshire Boulevard and La Cienega Boulevard	Within construction laydown and staging site to be acquired by Metro	Construction staging will occur on this site. Location of entrance would not create any further impacts beyond those that are required for construction staging.	None beyond those that would occur during construction.	Direct connection to north-south bus connections and to Restaurant Row. Joint development opportunities.	● Yes
Wilshire/Rodeo Station					
Southwest corner of Wilshire Boulevard and Reeves Drive (Ace Gallery)	Within construction laydown and staging area to be acquired by Metro	Ace Gallery site to be used for construction laydown and staging. Its use as station entrance site would have no additional impact.	None beyond those that would occur during construction.	Joint development opportunities. Located farthest east from activity centers and attractions at and around Rodeo Drive.	● Yes
Northwest corner of Wilshire Boulevard and Beverly Drive (Bank of America entrance)	Within existing sidewalk that includes both public right-of-way and private property	Difficult due to lack of laydown next to work area. Structural modifications to existing underground parking structure required. Traffic and parking impacts. Businesses fronting Beverly Drive would be next to construction site.	Requires widening existing sidewalk and eliminating right-turn lane on Beverly Drive, which would result in long-term traffic impacts. Permanent loss of 40 parking spaces.	No joint development opportunities. Located on north side of Wilshire Boulevard, which has majority of businesses and activity in area. Adjacent to major office buildings and Montage Hotel.	○ No

Table 7-7. Comparison of Station Entrance Options (continued)

Station and Entrance Options	Right-of-Way	Construction Complexities/ Construction Impacts	Long-term Impacts	Urban Design Considerations	Recommended Station Entrance
Southeast corner of Wilshire Boulevard and El Camino Drive (Union Bank)	Within Union Bank parking structure and existing one-story building. One-story building would be used for the at-grade entrance	Parking garage deck slabs would require partial demolition and reconstruction. Lane closures on El Camino Drive may impact entrances to Beverly Wilshire Hotel. Underground parking structure would be temporarily closed to reconstruct ramps.	Existing business would need to be moved out of ground-floor office to be used as entrance. A reduction in capacity of the underground parking garage would impact remaining businesses in the building that remain. Permanent loss of 30 parking spaces.	No joint development opportunities. Close to activity centers and attractions at and around Rodeo Drive but on south side of Wilshire Boulevard.	○ No
Century City Santa Monica Station					
Southwest corner of Santa Monica Boulevard and Century Park East	Requires an easement on private property	Partially within underground garage. Impacts to underground parking for existing structures. Temporary street closures during construction. Unable to build to safety standards due to location on Newport-Inglewood fault zone.	Possible reduction of parking capacity in underground structure.	Close to Westfield Mall and bus connections along Santa Monica Boulevard but poorer pedestrian connections to employment center of Century City than Constellation Boulevard location.	○ No (station location not recommended)
Century City Constellation Station					
Northeast corner of Constellation Boulevard and Avenue of the Stars	Within currently vacant site that is planned for construction laydown and staging site	Site to be used for construction laydown and staging. Its use as station entrance site would have no additional impact.	None beyond those that would occur during construction.	Close to Avenue of the Stars' main pedestrian circulation.	● Yes
Southwest corner of Constellation Boulevard and Avenue of the Stars	Within Century Plaza Hotel property	Partially within underground garage. Would necessitate additional decked area in Constellation Boulevard and Avenue of the Stars, causing temporary traffic impact.	Possible reduction of parking capacity in Century Plaza Hotel parking garage.	Close to Avenue of the Stars' main pedestrian circulation. This site could be reconsidered if northeast corner is not available due to redevelopment of that site prior to construction of the subway.	○ No

Table 7-7. Comparison of Station Entrance Options (continued)

Station and Entrance Options	Right-of-Way	Construction Complexities/ Construction Impacts	Long-term Impacts	Urban Design Considerations	Recommended Station Entrance
Westwood/UCLA Off-Street Station					
Lot 36 (UCLA Parking Lot)	Within planned construction laydown and staging area	Requires mining below existing storm drain. Site to be used for construction laydown and staging. Its use as station entrance site would have no additional impact.	None beyond those that would occur during construction.	Direct connection to UCLA shuttle bus on Lot 36. Site could be developed around subway entrances by UCLA.	○ No (Off-Street station location not recommended, but station entrance location recommended for On-Street station location, see below)
Northeast corner of Wilshire Boulevard and Veteran Avenue	Within planned construction laydown and staging area	Site to be used for construction laydown and staging. Its use as station entrance site would have no additional impact.	None beyond those that would occur during construction.	Direct connection to UCLA shuttle bus on Lot 36. Joint development opportunity. West of north-south connections along Westwood Boulevard and Westwood Village.	○ No (station location not recommended)

Table 7-7. Comparison of Station Entrance Options (continued)

Station and Entrance Options	Right-of-Way	Construction Complexities/ Construction Impacts	Long-term Impacts	Urban Design Considerations	Recommended Station Entrance
Westwood/UCLA On-Street Station					
Lot 36 (UCLA Parking Lot)	Within planned construction laydown and staging area	Requires mining below existing storm drain. Site to be used for construction laydown and staging. Its use as station entrance site would have no additional impact.	None beyond those that would occur during construction.	Direct connection to UCLA shuttle bus on Lot 36. Site could be developed around subway entrances by UCLA.	● Yes
Northwest corner of Wilshire Boulevard and Westwood Boulevard	Within historically significant building (Linde Medical Plaza), although entrance would not result in an adverse effect	Requires piling within basement with low headroom. Building foundations require underpinning and may have to be partially demolished. Access to street-level businesses in Linde Medical Plaza would be through work site. Disruptions to businesses in the Linde Medical Plaza basement to point where businesses may be unable to operate during construction. Extended lane closures would be required on both Wilshire and Westwood Boulevards during periods of construction. Pedestrian detours around construction zone would be required for some periods of construction.	None beyond those that would occur during construction.	Provides direct north-south bus connections and direct connections to Westwood Village along Westwood Boulevard.	● Yes (half entrance)
Southwest corner of Wilshire Boulevard and Westwood Boulevard	Between public right-of-way and building set back	Requires decking of the eastbound lanes of Wilshire Boulevard and modifications to stairs, planters, driveway, and underground garage vent structure. Extended lane closure on south side of Wilshire Boulevard for construction.	None beyond those that would occur during construction.	Direct north-south bus connections along Westwood Boulevard and north side of Wilshire Boulevard. Direct pedestrian connections to south side of Wilshire Boulevard underground.	● Yes (half entrance)

Table 7-7. Comparison of Station Entrance Options (continued)

Station and Entrance Options	Right-of-Way	Construction Complexities/ Construction Impacts	Long-term Impacts	Urban Design Considerations	Recommended Station Entrance
Westwood/VA Hospital South Station					
South side of Wilshire Boulevard, to the east of Bonsall Avenue	Requires an easement on VA property	Construction of subway station would require temporary closure of surface streets. Temporary detours would be required at the following locations: • I-405 on- and off-ramps • Bonsall Avenue • Access roads from Wilshire Boulevard to Bonsall Avenue Loss of parking during construction would be mitigated by prior construction of a parking garage for use by VA Hospital.	None beyond those that would occur during construction.	Maintains existing bus circulation patterns along Wilshire Boulevard and enhances existing pedestrian connections to buses. Provides better pedestrian access to VA Hospital.	● Yes
Westwood/VA Hospital North Station					
North side of Wilshire Boulevard, to the west of Bonsall Avenue	Requires an easement on VA property	Construction of subway station would require temporary closure of surface streets. Temporary detours would be required at the following locations: • Bonsall Avenue • Access roads from Wilshire Boulevard to Bonsall Avenue No impact to I-405 on- and off-ramps.	Greater cost than south side of Wilshire Station due to greater length and depth required. Future extensions of the subway to the west would be more difficult due to curve in Wilshire Boulevard, which would require any future extension from the north to pass under several blocks of buildings and foundations of high-rise structures located along Wilshire Boulevard, west of San Vicente Boulevard.	Opposite side of Wilshire Boulevard from VA Hospital.	○ No (station location not recommended)

As discussed in Chapter 5, Section 4(f) Evaluation, potential subway entrances at Johnie's Coffee Shop and the LACMA West/May Company are located within or adjacent to historic structures. FTA, with State History Preservation Office (SHPO) concurrence on Johnie's Coffee Shop, has determined that a subway entrance adjacent to Johnie's Coffee Shop or a station entrance within LACMA West/May Company building would result in a "no adverse effect."

SAAG members expressed a preference for the entrance to be located at the LACMA West site. While this site would offer a direct connection into a significant cultural facility, and the possibility of an iconic entrance, it would involve more complex construction. Metro would face a variety of unknowns, such as seismic upgrading of a historic structure and potential conflicts with other proposals that are under consideration for the adaptive re-use of this structure. It is currently estimated that the LACMA West entrance would cost at least $9 million more than the entrance near Johnie's Coffee Shop. This amount could increase by up to $30 million depending on the particular conditions of the historic May Company structure. Furthermore, LACMA has indicated that a recently announced agreement with the Academy of Arts and Sciences to construct a film museum within the former May Company building could preclude the ability to include a subway entrance within this historic building. For this reason, LACMA has requested that Metro no longer consider the West/May Company building as a location for a primary station entrance and instead consider the site at the southeast corner of Wilshire Boulevard and Orange Grove Avenue as the primary station entrance. Metro acknowledges this request. Johnie's Coffee Shop continues to be the recommended station entrance for the reasons described below.

The site at the southeast corner of Wilshire Boulevard and Orange Grove Avenue is conveniently located for access to the major cultural institutions serving the station area, including LACMA, Hancock Park/La Brea Tar Pits, Page Museum, Peterson Automotive Museum, Craft and Folk Art Museum, and others, The site is less convenient for rail and bus transit riders who would be required to walk farther to make their transfers at bus stops located closer to the intersection of Wilshire Boulevard and Fairfax Avenue.

The recommendation is to locate the Wilshire/Fairfax Station entrance on the northwest corner of the intersection, immediately west of Johnie's Coffee Shop, as this location would provide access to destinations on the north side of Wilshire Boulevard and to north-south bus connections as compared to a station entrance at Wilshire Boulevard and Orange Grove Avenue. The selection of the Johnie's site would avoid any conflicts with the proposed plans for a film museum as well as the additional risks and costs associated with construction of an entrance inside the LACMA West/May Company building.

7.4.3 Wilshire/La Cienega Station Entrance

The one station entrance under consideration for the Wilshire/La Cienega Station is at the northeast corner of Wilshire and La Cienega Boulevards. The SAAG expressed support for this location and did not recommend consideration of any other location.

7.4.4 Wilshire/Rodeo Station Entrance Options

The station is located under the intersection of Wilshire Boulevard and Beverly Drive, in close proximity to the business district and the major north-south thoroughfares of Beverly and Rodeo Drives. Three entrance options are under consideration:

- Southeast corner of Wilshire Boulevard and El Camino Drive (Union Bank)
- Northwest corner of Wilshire Boulevard and Beverly Drive (Bank of America)
- Southwest corner of Wilshire Boulevard and Reeves Drive (Ace Gallery)

The original preference of the SAAG was to locate the station entrance as far west as possible in order to serve Rodeo Drive and the many businesses and other uses located in the Beverly Hills "Golden Triangle." Since Beverly Drive is the single north-south arterial that crosses Wilshire Boulevard in the vicinity of the station, an entrance near Beverly Drive was preferred.

The northwest corner of Wilshire Boulevard and Beverly Drive was the originally preferred location; however, this site is occupied by the Bank of America structure and further investigation revealed that the site had severe design limitations. The Bank of America Plaza site is eligible for historic status. The effect of locating an entrance at this site is expected to meet the *Secretary of Interior Standards for Rehabilitation*. FTA, with SHPO concurrence on the Bank of America Plaza, has determined that a subway entrance adjacent to the Bank of America Plaza would result in a "no effect."

Although closer to the "heart of Beverly Hills," the limited space at the Bank of America site also poses significant design limitations. A portion of the underground parking garage would need to be removed, parking and a turn lane would be removed from Beverly Drive, and traffic on adjacent streets would be affected. Access to businesses would be disrupted during construction. For these reasons, the SAAG identified this site as a potential site for a secondary station entrance that could be incorporated into the existing public sidewalk and parking lanes on Beverly Drive at a later time but did not recommend its consideration as the primary station entrance.

The Union Bank site is also a historic property. This historic property's interior could serve as a station entrance, and the effect by the entrance at this location is expected to meet the *Secretary of Interior Standards for Rehabilitation*. Since the contributing elements of the historic structures would be minimized by modifying the structure per the *Secretary of Interior's Standards for the Treatment of Historic Properties*, FTA, with SHPO concurrence on the Union Bank site, has determined that a subway entrance in the Union Bank structure would result in a "no adverse effect." As a result, FTA has determined the proposed Wilshire/Rodeo Station and alignment would have a *de minimis* finding under Section 4(f) on the Union Bank building. While offering convenient access to Rodeo Drive businesses, use of this site for a station entrance would require property acquisition and business relocation. It would have temporary and permanent impacts to the parking garage that were not supported by the SAAG.

The Ace Gallery entrance is on a designated construction laydown and staging area, and thus this building would be acquired and demolished so that the site could be used for construction staging. A station entrance would not require additional right-of-way acquisition and poses the fewest construction challenges of the three sites. The Ace

Gallery building is also an historic building. FTA, with SHPO concurrence on the Ace Gallery site, has determined that a subway entrance and construction laydown area at the Ace Gallery site would result in an "adverse effect." The demolition of the Ace Gallery for construction laydown also would be a use under Section 4(f), as discussed in Chapter 5, Section 4(f) Evaluation. An avoidance analysis was conducted to determine if there are any prudent and feasible alternatives to the use of the Ace Gallery as a construction laydown area given the limitations of sites in this area; none were identified. Given full consideration of the three available options for an entrance location, the SAAG expressed a preference for this site.

The recommendation is to locate the Wilshire/Rodeo Station entrance on the southwest corner of Wilshire Boulevard and Reeves Drive as this location would have the lowest overall cost and would not result in long-term traffic and parking impacts.

7.4.5 Century City Station Entrance Options

If the Century City Station is located on Santa Monica Boulevard, the entrance would be located at the southwest corner of Santa Monica Boulevard and Century Park East. Elevators would be located on the southeast corner. This location would place the entrance closer to Century City than the other three corners of this intersection. However, the recommendation is to construct the entrance at the Constellation Boulevard location instead of the Santa Monica Boulevard location.

Two entrance location options exist if the station is located on Constellation Boulevard:

- Northeast corner of Constellation Boulevard and Avenue of the Stars
- Southwest corner of Constellation Boulevard and Avenue of the Stars

The northeast corner of Constellation Boulevard and Avenue of the Stars is approximately 5 acres in size and is currently vacant. If the Constellation Station is selected for the Century City Station and this site remains vacant at the time that construction is started, this would be the preferred site. Its central location in the heart of Century City provides excellent access to all of the major job centers in this area. Significant opportunities exist to incorporate the station entrance into any new development that is planned for the site. This site has also been identified as a preferred site for construction staging if the Constellation Boulevard location is selected. Should excavation occur on this site for construction staging, construction of a subway entrance would be more easily incorporated into this site than the other locations considered.

The southwest corner option would be built within the Century Plaza Hotel property and could affect the hotel's underground parking structure. The Century Plaza Hotel is considered a property with historic significance, but the entrance would completely avoid the building and there would be no impairments to the property as a result of noise, vibration, or visual quality; therefore, there is no use under Section 4(f). This site is currently being planned for redevelopment, and opportunities exist to incorporate a station entrance into this newly planned redevelopment. The site is also in an ideal, central location for providing access to major job centers in Century City. No opportunity exists, however, to use this site for construction staging; therefore, construction of a station entrance at this corner would be more difficult than on the northeast corner.

The SAAG expressed support for the selection of the Century City Station at Constellation Boulevard and Avenue of the Stars, with an entrance at the northeast corner of this intersection.

The SAAG also identified a preference for the provision of a secondary station entrance to directly serve the Westfield Century City Shopping Center from either the station along Santa Monica Boulevard or the station along Constellation Boulevard. However, the recommendation is to construct the station at Constellation Boulevard instead of Santa Monica Boulevard and, therefore, this secondary entrance would need to be provided from the Century City Constellation Station. The design of this station has been provided with a knockout panel and provisions that would not preclude a secondary entrance to serve the shopping center.

The recommendation is to locate the Century City Constellation Station entrance on the northeast corner because this site is identified as a construction staging and laydown area and it would avoid potential construction complications associated with the Century Plaza site. This location would also provide slightly better access to the heart of Century City and provide joint-development opportunities.

7.4.6 Westwood/UCLA Station Entrance Options

For the Westwood/UCLA Off-Street Station option, two potential entrance locations were considered:

- Northwest corner of Wilshire Boulevard and Gayley Avenue (Lot 36)
- Northeast corner of Veteran Avenue and Wilshire Boulevard

Based on Metro's design criteria, if the Off-Street option is selected, two station entrances would be provided due to the high level of anticipated ridership. Entrances would be built at both sites. However, the recommendation is to construct the On-Street Station location instead of the Off-Street Station location.

For the On-Street Station option, multiple entrances would also be built. The options are as follows:

- North of Wilshire Boulevard, with one entrance between Gayley Avenue and Veteran Avenue (UCLA Lot 36) and the other on the northwest corner of the Wilshire Boulevard and Westwood Boulevard intersection within the Linde Medical Plaza building
- North and south of Wilshire Boulevard, with one entrance between Gayley Avenue and Veteran Avenue (UCLA Lot 36), a second "half entrance" at the northwest corner of Wilshire Boulevard and Westwood Boulevard within the Linde Medical Plaza building, and another "half entrance" at the southwest corner of Wilshire Boulevard and Westwood Boulevard in front of the Murdock Plaza office building and the UCLA office building

A station entrance at the Lot 36 site would be within a construction laydown area and, as such, it would not impact any buildings or businesses. Construction would be relatively straightforward.

Entrances at the intersection of Wilshire and Westwood Boulevards would provide the best pedestrian access between the Westwood/UCLA Station and nearby activities. The

northwest option would result in major disruption to the basement level of the Linde Medical Plaza building, which is a property with historic significance. The station entrance would be designed to enter the Linde Medical Plaza building within the parking garage along Westwood Boulevard to avoid impacting the historic façade of the building along Wilshire Boulevard. Although this historic property would be a station entrance, the effect by the LPA is expected to meet the *Secretary of Interior Standards for Rehabilitation*. FTA, with SHPO concurrence on the Linde Medical Plaza building, has determined the use of the property would result in a "no adverse effect." As a result, FTA has determined the proposed Westwood/UCLA Station and alignment would have a *de minimis* finding at Linde Medical Plaza.

The southwest entrance would require modifications to stairs, planters, a driveway, and an underground garage vent structure, and would have traffic impacts on Wilshire Boulevard during construction.

The SAAG strongly recommended that entrances be provided on both the north and south sides of Wilshire Boulevard. Because this street is so wide, pedestrian crossings would be difficult and would impact traffic movements in this heavily congested intersection by requiring long pedestrian crossing signal phases.

The recommendation is to locate one entrance on Lot 36 and to split the second entrance between the north and south sides of Wilshire Boulevard (two half-entrances) as this would provide the best pedestrian access to both sides of Wilshire Boulevard.

7.4.7 Westwood/VA Hospital Station Entrance

Only one entrance location option was identified for each of the North and South Station locations at the Westwood/VA Hospital Station. The costs, benefits, and impacts of the Westwood/VA Hospital Station locations are discussed above (Section 7.3.3).

7.5 Recommendations for Refinements to the Locally Preferred Alternative

In summary, the recommendations for the station locations and entrance locations are presented in Table 7-8. The recommended station and alignment locations are illustrated in Figure 7-2. These recommendations take into consideration all of the various factors discussed above, as well as input received from the community. Final decisions will be made by the Metro Board of Directors following the availability period for this Final EIS/EIR.

Table 7-8. Recommended Station and Entrance Locations

Station	Recommended Station Location	Recommended Entrance Location
Wilshire/La Brea	Wilshire Boulevard and La Brea Avenue	Northwest corner of Wilshire Boulevard and La Brea Avenue
Wilshire/Fairfax	Wilshire Boulevard and Fairfax Avenue	Northwest corner of Wilshire Boulevard and Fairfax Avenue (west of Johnie's Coffee Shop)
Wilshire/La Cienega	Wilshire Boulevard and La Cienega Boulevard	Northeast corner of Wilshire Boulevard and La Cienega Boulevard
Wilshire/Rodeo	Wilshire Boulevard and Beverly Drive	Southwest corner of Wilshire Boulevard and Reeves Drive (Ace Gallery)
Century City	Constellation—Constellation Boulevard and Avenue of the Stars	Northeast corner of Constellation Boulevard and Avenue of the Stars
Westwood/UCLA	On-Street—Wilshire Boulevard and Westwood Boulevard	North and south of Wilshire Boulevard, with one entrance between Gayley Avenue and Veteran Avenue (Lot 36), a second "half entrance" at the northwest corner of Wilshire and Westwood Boulevards, and another "half entrance" at the southwest corner of Wilshire and Westwood Boulevards.
Westwood/VA Hospital	South—Wilshire Boulevard and Bonsall Avenue	Southeast corner of Wilshire Boulevard and Bonsall Avenue

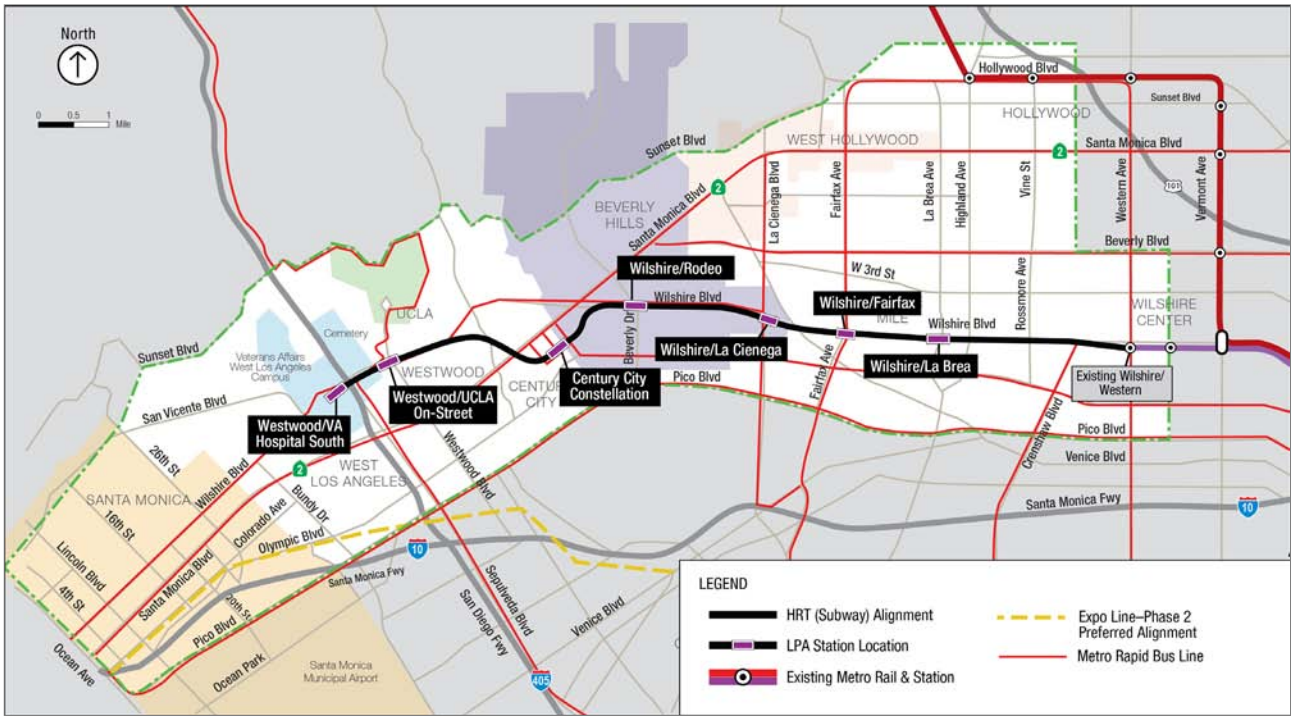

Figure 7-2. Recommended Station and Alignment Locations

7.6 Financial/Phasing Options

The recommended 9-mile project to the Westwood/VA Hospital Station is estimated to cost approximately $5.66 billion (in year of expenditure dollars) based on the Concurrent Construction Scenario. The LPA could to be operational to Westwood/VA Hospital Station in 2022, with construction beginning in 2013. Under the Concurrent Construction Scenario described in Chapter 6, Cost and Financial Analysis, the parallel construction of portions of the alignment and stations will allow the entire project to be open and operational at the same time rather than opening in phases.

In the event that Federal funding is not secured for the Concurrent Construction Scenario, the LPA will be constructed in three sequential phases. The first phase to the Wilshire/LA Cienega Station will open in 2020, the second phase to the Century City Station will open in 2026, and the final phase to the Westwood/VA Hospital Station will open in 2036.

Table 7-9 compares project costs with the Concurrent Construction Scenario or the Phased Construction Scenario. Table 7-9 presents the capital cost estimates for the LPA in $2011 and $YOE under both the Concurrent Construction Scenario and the Phased Construction Scenario. Without finance charges or capital cost escalation, the LPA capital cost in $2011 is $4,407 million under the Concurrent Construction Scenario and $4,367 million under the Phased Construction Scenario. The differences in costs of the two funding plans are described more fully in Chapter 6, Cost and Financial Analysis, of this EIS/EIR; however, the differences described above illustrate that the LPA under the Concurrent Construction Scenario can be delivered at lower overall costs than the LPA under the Phased Construction Scenario, primarily because of lower costs for escalation and financing.

Table 7-9. Comparison of Project Costs under Concurrent Construction Scenario versus Phased Construction Scenario

	Capital Cost ($2011 millions)[1]	Capital Cost ($YOE millions)
Concurrent Construction Scenario		
Single Phase (2022)	$4,407	$5,662
Phased Construction Scenario		
Phase 1 (2020)	N/A	$2,606
Phase 2 (2026)	N/A	$1,584
Phase 3 (2036)	N/A	$2,100
Total	**$4,367**	**$6,290**

[1] Base-year cost estimates ($2011 millions) do not include capital cost escalation or financing costs

Table 7-10 compares ridership for the Concurrent Construction Scenario versus the Phased Construction Scenario. Although the ridership forecast in the year 2035 is the same for each of the seven stations, the forecast predicts that certain stations will experience higher ridership when they operate temporarily as interim termini for Phases 1 and 2. The Wilshire/La Cienega Station would have higher ridership when that

station serves as an interim terminus for Phase 1 than when it operates as part of the full line. Similarly, the Wilshire/Rodeo Station would have higher ridership when it operates as part of Phase 2 only versus part of the full line to the Westwood/VA Hospital Station.

In general, the Project benefits of improved mobility and beneficial environmental effects could be delivered up to 15 years sooner under the Concurrent Construction Scenario than if the Project is delivered under the Phased Construction Scenario. For these reasons, the Concurrent Construction Scenario is recommended for implementation should funding be identified by the time that action is taken to approve the Project.

Table 7-10. LPA Daily Station Boardings

Station	Concurrent Construction Scenario	Phased Construction Scenario		
		Phase 1	Phase 2[1]	Phase 3[2]
Wilshire/La Brea	4,047	3,636	3,774	4,047
Wilshire/Fairfax	6,183	6,025	5,767	6,183
Wilshire/La Cienega	6,530	10,120	6,073	6,530
Wilshire/Rodeo	4,241	N/A	8,057	4,241
Century City Constellation	8,566	N/A	8,021	8,566
Westwood/UCLA[3]	11,967	N/A	N/A	11,967
Westwood/VA Hospital[1]	7,807	N/A	N/A	7,807
Total Station Boardings	**49,340**	**19,871**	**31,692**	**49,340**

Source: Metro Travel Demand Model

[1]Station boardings for Phase 2 include Phase 1 stations
[2]Station boardings for Phase 3 include Phase 1 and Phase 2 stations
[3]Station boardings do not differ for the station options at Westwood/UCLA and Westwood/VA Hospital