WESTSIDE SUBWAY EXTENSION

Alternatives Screening and Refinement Following Environmental Scoping Report

Metro

August 2010

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1.0 INTRODUCTION/SUMMARY

This document presents the results of the alternatives screening and refinement process following the environmental scoping for the Westside Subway Extension Project. As part of the Alternatives Analysis (AA) Study and the Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR), Metro held Early Scoping, Scoping, and additional Community Outreach meetings to solicit input from the public and review the refinements that had been made to the alternatives from previous comments. These meetings included:

- Early Scoping for the AA Study (October 2007)
- Environmental Scoping (March – May 2009)
- Draft EIS/EIR Community Outreach Meetings Group #1 (August 2009)
- Draft EIS/EIR Community Outreach Meetings Group #2 (October – November 2009)
- Draft EIS/EIR Community Outreach Meetings Group #3 (April 2010)
- Draft EIS/EIR Community Outreach Meetings Group #4 (June 2010)

During each of these meetings, the public was asked to comment on a variety of issues, During the AA Study (which was completed in January 2009 as described in Section 2), the focus was on:

- Need for a transit improvement
- Alternate modes
- Other alignments
- Which alignment to be built first

During the Draft EIS/EIR phase of study, the focus was on:

- Reconfirming findings of the AA Study
- Conducting Draft EIS/EIR scoping meetings
- Identifying construction approaches
- Locating a station/portal and refining alignments between stations
- Developing ridership forecasts and cost estimates
- Environmental analysis
- Advanced Conceptual Engineering design

This report provides a summary of the public review process that occurred both during the AA Study and the Draft EIS/EIR. The report presents the alternatives that were shown to the public during both phases, a summary of the comments the public had on alternatives and station locations, an evaluation of these alternatives and stations, and ultimately, how the alternatives were refined to respond to community comments and engineering requirements.

1.1 Background of Westside Subway Extension Project

The Westside Subway Extension Project Study Area is in western Los Angeles County and encompasses approximately 38 square miles (Figure 1-1). The Study Area is oriented east-west and includes portions of five jurisdictions—the Cities of Los Angeles, West Hollywood, Beverly Hills, and Santa Monica, plus portions of unincorporated Los Angeles County. The Study Area boundaries generally extend north to the base of the Santa Monica Mountains along Hollywood, Sunset, and San Vicente Boulevards; east to the Metro Rail stations at Hollywood/Highland and Wilshire/Western; south to Pico Boulevard, and west to the Pacific Ocean.

The Los Angeles County Metropolitan Transportation Authority (Metro) has undertaken numerous steps to identify and evaluate potential alternatives that would satisfy the Purpose and Need of the proposed Westside Subway Extension Project to improve transit travel time and provide more reliable transit service to the 286,246 transit riders who travel through the Study Area today. The Project results from nearly 30 years of planning and environmental review.

In the Fall of 2007, Metro initiated an AA Study for the Westside Extension Transit Corridor. Metro held Early Scoping meetings in October to help define the appropriate range of issues and alternatives to be addressed in the AA Study. 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, monorail in both above-ground and below-ground configurations.

After the alternatives evaluation in the AA Study, two alternatives were recommended for further consideration in the Draft EIS/EIR. These two alternatives best met the Purpose and Need while having the fewest environmental impacts. The alternatives were: (1) Extend the Metro Purple Line Subway via Wilshire Boulevard to Santa Monica, and (2) Extend the Metro Purple Line Subway via Wilshire Boulevard to Santa Monica plus extend a subway from the Metro Red Line Subway Hollywood/Highland Station via Santa Monica Boulevard to connect with the Wilshire line.

In January 2009, following extensive community outreach and technical review, the Metro Board reaffirmed the historical preference for a heavy rail subway in this Study Area and approved the AA Study. 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. These two alignments were recommended to be carried forward into the next phase of study.

This decision by the Metro Board was reinforced by the voters of Los Angeles County when they approved the Measure R ballot measure in November 2008. This measure provided local sales tax funding for up to twelve new transit corridors throughout the County, including Westside Extension Corridor.

Figure 1-1: Project Study Area

The ballot measure identified $4.2 billion in funds for an extension of the subway from the existing Wilshire/Western Station to Westwood over a distance of approximately 9 miles.

1.2 Initiation of the Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR)

With the approval by the Metro Board of Directors of both the AA Study and the recommended alternatives, Metro initiated the Draft EIS/EIR and Advanced Conceptual Engineering (ACE) phase. The results of the Draft EIS/EIR and the ACE are intended to support the selection of a Locally Preferred Alternative (LPA) by the Metro Board of Directors and to request entry into the Preliminary Engineering (PE) phase of project development (see Section 2.1).

During the scoping process for this phase, Metro presented the public with the two recommended AA study alternatives at a series of National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) scoping meetings to solicit further public input on the alternatives. Metro also held additional community outreach meetings from August 2009 through June 2010 to provide the public the opportunity to further refine the alternatives.

In response to public scoping comments and comments received during the additional community outreach meetings, Metro agreed to include certain alignment and station options in the Century City to Westwood area and along the West Hollywood Branch (formerly the Santa Monica) alignment for further evaluation in the Draft EIS/EIR. The results of this public scoping and outreach meeting process are presented below.

1.3 Summary of Alternatives Screening and Refinement Process

During the environmental scoping meetings held between March and May 2009, the public public commented on the areas shown in green in

Figure 1-2. Areas for Additional Alternatives Refinement Identified at Environmental Scoping Meetings (March – May 2009)

. These areas included:

- Optional Crenshaw Station
- Multiple Station Locations in West Hollywood (2), Century City (2), and Westwood (2)
- West Hollywood Alignment Options (2)
- Alignment Options: from Beverly Hills to Century City; and from Century City to Westwood
- Downtown Los Angeles Rail Storage and Maintenance Facility

Based on the comments received during scoping, Metro evaluated refinements in seven areas ():

- Wilshire/Crenshaw Station Option
- Wilshire/Fairfax Station Options
- Wilshire/La Cienega Station Options

- Beverly Hills to Century City Alignment/Station Options (combined in this report into Century City Station and Alignment Options)
- Century City to Westwood Alignment/Station Options (combined in this report into Century City Station and Alignment Options)
- One Station West of I-405 (Westwood/VA Hospital Station Options)
- West Hollywood Alignment Options

The results of the refinements for these areas are presented below and in more detail in Chapter 4 of this report.

Figure 1-2. Areas for Additional Alternatives Refinement Identified at Environmental Scoping Meetings (March – May 2009)

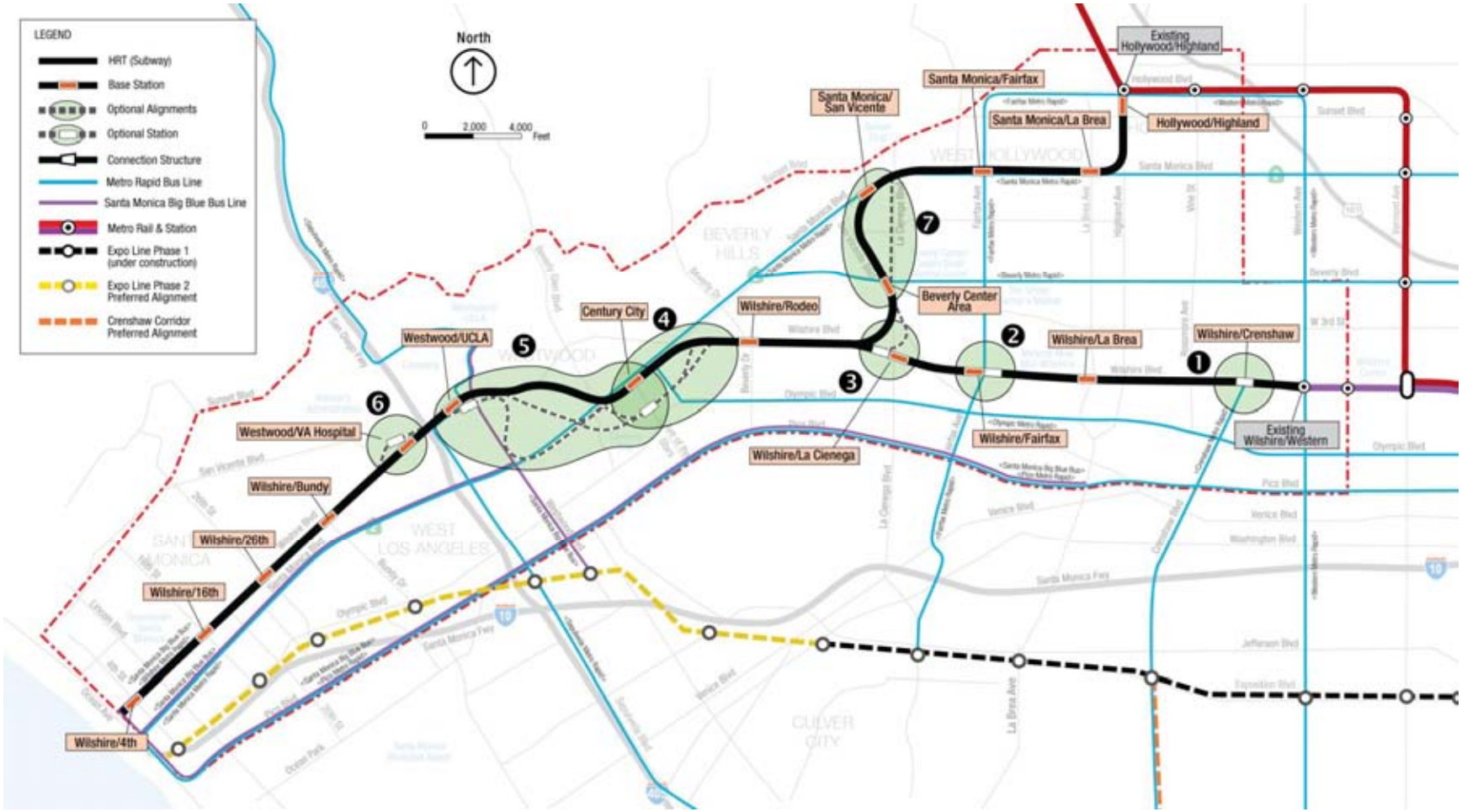


Figure 1-3. Areas Evaluated Based on Environmental Scoping Comments

1.3.1 Wilshire/Crenshaw Station Option

The scoping alternatives show an optional station at Wilshire/Crenshaw. Scoping comments were divided on this station with some commentors expressing support for this station while others argued that it is not needed. This location is only one-half mile west of the Wilshire/Western Station in a relatively low density area that is not planned to grow in the future. Also Crenshaw Boulevard terminates at Wilshire Boulevard so there are less connectively opportunities than at other sites. For these reasons, an option was carried forward in the Draft EIS/EIR that evaluates operating a project without a station at Wilshire/Crenshaw.

1.3.2 Wilshire/Fairfax Station Options

The scoping alternatives showed a single station at Wilshire/Fairfax, west of Fairfax Avenue. This location was selected to move the station as far as possible from the gassy ground near the La Brea Tar Pits while still serving the Los Angeles County Museum of Art (LACMA). Scoping comments stated that the Wilshire/Fairfax Station should more directly serve LACMA and the Page Museum/Hancock Park facilities, which are major activity centers. To address these comments, a second station site closer to the LACMA and park facilities, which meet the need to improve access to major activity and employment centers in the Study Area, was carried forward for further review in the Draft EIS/EIR.

1.3.3 Wilshire/La Cienega Station Options

Different station locations were examined to respond to public comment and address potential connections and transfers to a future West Hollywood alignment. There was a general public preference for a station location east of La Cienega Boulevard; however, this station location could not provide a direct transfer station for the West Hollywood line. The eastern location also offered more potential for development, more transit-oriented development opportunity and fewer impacts on the surrounding residential areas. A connection structure was proposed to be constructed near Wilshire and Robertson Boulevards as part of the station to facilitate possible connections to the West Hollywood Line.

Another station option was developed to have a station that would allow for direct transfers to the West Hollywood Line. This option meets the Purpose and Need to improve Study Area mobility and opportunities for transit supportive development. As a result, two station location options were carried forward for further review in the Draft EIS/EIR.

1.3.4 Beverly Hills to Century City Station and Alignment Options

The different Century City Station options necessitated the development of different route options between the Wilshire/Rodeo Station and Century City. The route to the Century City Station on Santa Monica Boulevard traveled west on Wilshire Boulevard and turned under Santa Monica Boulevard. A route to connect to the station on Constellation Boulevard traveled a more direct route, turning before Santa Monica Boulevard directly toward Constellation Boulevard. Another option generally along Lasky Drive was developed in response to scoping comments to consider ways to minimize subsurface

easements under residential properties. These routes were later renamed at the suggestion of the public to Santa Monica Boulevard (base), Constellation North, and Constellation South. As a result of further analysis, these three routes were carried forward for further evaluation in the Draft EIS/EIR.

1.3.5 Century City to Westwood/UCLA Station and Alignment Options

The AA Study identified multiple sites for subway stations in Century City and Westwood, and multiple connecting routes between the different stations. Four Century City station locations were considered (Santa Monica Boulevard at Avenue of the Stars and at Century Park East, Constellation Boulevard at Avenue of the Stars, and Avenue of the Stars between Constellation and Santa Monica Boulevards). The Santa Monica Boulevard Station at Century Park East was eliminated because of better urban design characteristics at other station options, lower ridership, and its farther distance from the core of Century City. The Avenue of the Stars Station was also eliminated as it would provide similar benefits to the Constellation Boulevard Station but would increase travel time and would be less cost-effective, thereby not meeting the Purpose and Need. Therefore, the other two stations (Santa Monica Boulevard at Avenue of the Stars and Constellation Boulevard at Avenue of the Stars) were carried forward into the Draft EIS/EIR.

Six station location options were considered in Westwood: Wilshire Boulevard at Westwood Boulevard, Wilshire Boulevard at Gayley Avenue (in UCLA Lot 36), Westwood Boulevard at Lindbrook Drive, Westwood Boulevard at Lindbrook Drive but shifted north, Le Conte Avenue at Westwood Boulevard, and Le Conte Avenue at Westwood Boulevard but shifted west. After analysis, the Le Conte Avenue and Westwood Boulevard Stations were eliminated because there were no substantial benefits that justified their increased cost, travel time, and environmental costs and community concerns (crossing under the National Cemetery and under more residential/commercial properties than other options, as well as added construction impacts) and the degree to which they could meet the Purpose and Need relative to the other options. Therefore, the other two options (Wilshire Boulevard at Westwood Boulevard and Wilshire Boulevard at Gayley Avenue in Lot 36) were carried forward for further analysis in the Draft EIS/EIR.

Four general routes were considered for connecting the Century City and Westwood Stations (Golf Course Route, Cross Country Route, Westwood Boulevard Route, and Westwood Loop Route). After station options were selected, several route options were not functional and were therefore eliminated. Other routes (Golf Course) that appeared to reduce tunneling under residential properties did not actually reduce the number of easements required under residences (682 to 833 for the Cross Country routes versus 1,356 to 2,040 for the Golf Course routes) and were more costly and slower, and were therefore eliminated.

The Cross Country routes were considered beneficial because they were the most direct and therefore least expensive and faster. Some routes were eliminated because of impacts to historical and religious facilities. The Westwood routes, while generally longer, more costly, and slower, were considered as a result of potentially reducing the number of easements required beneath residential properties. After scoping, a Direct route was also

added for consideration. The Direct route provided an even more direct connection than the Cross Country routes and was therefore even less expensive and faster than the Cross Country routes.

Following a review of scoping comments, more detailed engineering and environmental studies and targeted stakeholder outreach were conducted to narrow the route options to three: an East route, Central route, and West route. These three routes were carried forward for further analysis in the Draft EIS/EIR. These routes were initially referred to as the Direct Connection, Cross Country, and Westward Loop, but were renamed at the suggestion of the public in June 2010. The East route provides the shortest, fastest, and least costly route between Century City and Westwood, and it tunnels under fewer residential properties than the Central or West routes.

1.3.6 One Station West of I-405 (Westwood/VA Hospital Station Options)

During scoping, the public suggested that an additional station should be provided west of the Interstate I-405 Freeway because there was too much distance between the Westwood/UCLA and Wilshire/Bundy Stations (original stations identified during the AA). Additional station sites were considered at the Veterans Administration (VA) Hospital, Federal Avenue, and Barrington Avenue to identify stations that would provide access between the Westwood/UCLA and Wilshire/Bundy Stations. Federal Avenue was eliminated from further consideration due to its close proximity to the potential Barrington Avenue and VA Hospital Stations, and it would impact more residential properties than these other two stations. The VA Hospital Station was considered a better terminus station than the Barrington Avenue Station. At that time the VA expressed interest in a station on its property, and station spacing between Westwood and Bundy was better with this station. Since the VA Hospital Station was considered a better terminus station, the Barrington Avenue location was eliminated from further consideration because it would be too close to the VA Hospital. Based on further comment from the VA, a second station location on VA property was added, and both were carried forward for analysis in the Draft EIS/EIR. One of the two potential station locations at the VA Hospital, VA Hospital South or VA Hospital North, could be part of a Build Alternative.

1.3.7 West Hollywood Alignment Options

During scoping for the Draft EIS/EIR, the public was presented with two possible routes for the West Hollywood alignment for the north/south segment between Santa Monica and Wilshire Boulevards: one followed La Cienega Boulevard and one followed San Vicente Boulevard. The two routes located the stations for the Santa Monica Boulevard/La Cienega Boulevard and Beverly Center areas along their respective alignments, which would result in differences in ridership, impacts, and access to and from destinations, and community preference. A screening analysis was performed on the two route options examining these factors, as well as engineering and construction feasibility, urban design considerations, and cost differentials. Based on the analysis conducted, it the La Cienega Boulevard alignment was eliminated from further consideration. The San Vicente Boulevard alignment is a longer alignment and therefore more costly; however, it performs substantially better in terms of urban design and community preference. It also provides better connectivity to destinations and

entertainment venues along Santa Monica Boulevard, as well as to Cedars Sinai Medical Center. This option meets the Project's Purpose and Need to improve Study Area mobility and access to major activity centers. As a result, the San Vicente Boulevard route was carried forward for further analysis in the Draft EIS/EIR.

1.4 Selection of the Draft EIS/EIR Alternatives

After ongoing feedback from the public, Metro refined the options within each of the areas described above. The conclusion of this refinement process was the identification of a No Build Alternative, a Transportation Systems Management (TSM) Alternative, five Build Alternatives, and six station and alignment options, and two phasing options—Minimum Operable Segments (MOS) 1 and 2. The six options included in the Draft EIS/EIR are a result of the preliminary post-scoping analysis described in this report (Figure 1-4). Ultimately, the selection of the Locally Preferred Alternative (LPA) will result in a decision on which alternative and alignment and station options included in the Draft EIS/EIR are recommended to move forward into Preliminary Engineering.

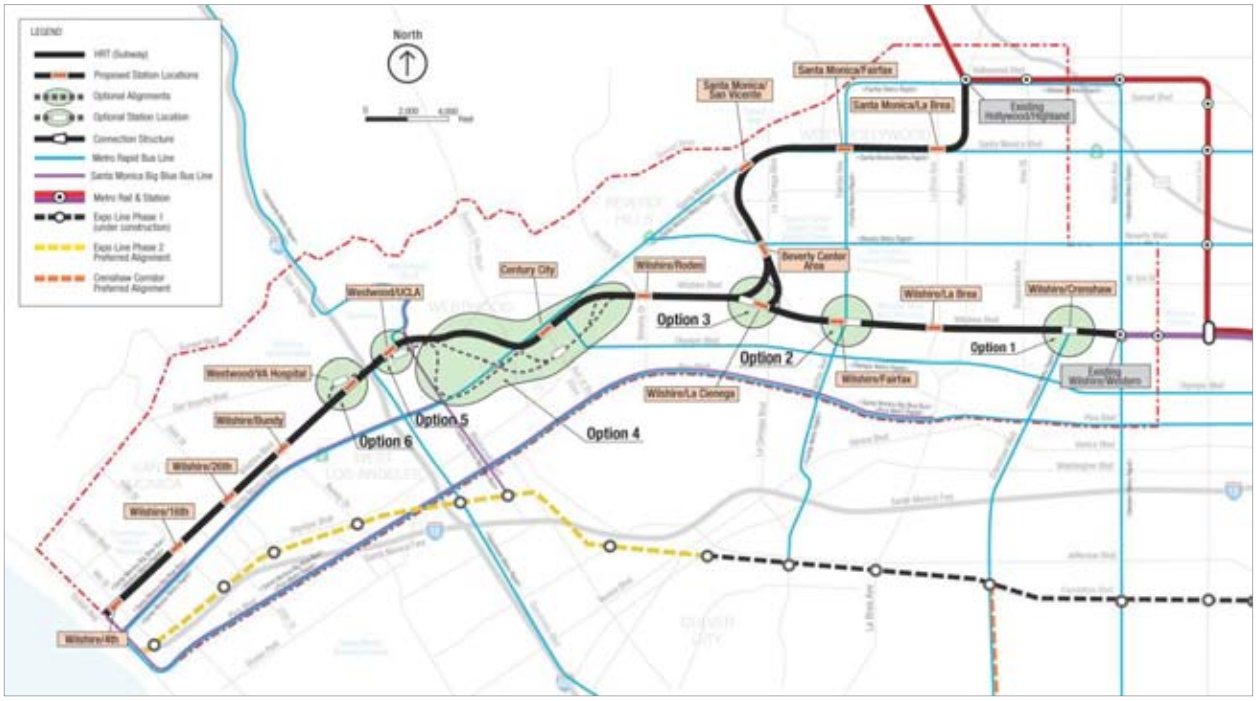


Figure 1-4. Options Included in the Draft EIS/EIR

1.5 Organization of this Report

This report outlines the process that Metro used to identify alternatives, refine and evaluate alternatives, and ultimately carry those alternatives forward into the Draft EIS/EIR. The report is organized by the following sections:

- **Section 2.0**—Background/Early Scoping and Alternatives Considered in the Alternatives Analysis. This section provides an overview of the Federal Transit Administration (FTA) process for project development, the background of the

Westside Subway Extension Project, the scoping process implemented during the AA Study, and the alternatives considered in the AA Study and carried forward into the Draft EIS/EIR.

- **Section 3.0**—Draft EIS/EIR Scoping. This section presents the scoping process used by Metro during the initial stages of the Draft EIS/EIR to solicit input from the public, public agencies, and other interested parties.
- **Section 4.0**—Refinement of Alignments and Station Locations Based on Scoping Comments and Community Outreach Meetings. This section provides an overview of the alignment and station options considered and evaluated based on scoping comments and comments received during additional community outreach meetings, and ultimately, carried forward for further analysis in the Draft EIS/EIR.

2.0 BACKGROUND/EARLY SCOPING AND ALTERNATIVES CONSIDERED IN THE ALTERNATIVES ANALYSIS STUDY

This chapter provides the context and historical development of the alternatives that were carried forward into the Draft EIS/EIR, with an overview of the FTA project development process, the background of the Westside Subway Extension Project, the Early Scoping process in the AA Study, and the alternatives considered and carried forward from the AA Study. The information in this chapter sets the framework for the alternatives that were previously considered and those carried forward for further analysis in the Draft EIS/EIR.

2.1 FTA Project Development Process

The FTA has a prescribed Project Development Process that is to be followed for federally funded New Starts projects. The first step in the process is AA process, which Metro completed in January 2009 (Figure 2-1). The purpose of an AA Study is to focus on a specific transportation need (or set of needs) in a given corridor, identify alternative actions to address these needs, and generate the information needed to select a preferred project for implementation, or a smaller set of viable alternatives for further study. During the AA process, a wide range of alternatives are identified and evaluated; the alternatives are screened against established criteria; and the most promising alternatives are recommended for further evaluation in the next phase of the New Starts process. An AA typically addresses such issues as costs, benefits, environmental and community impacts, and financial feasibility.

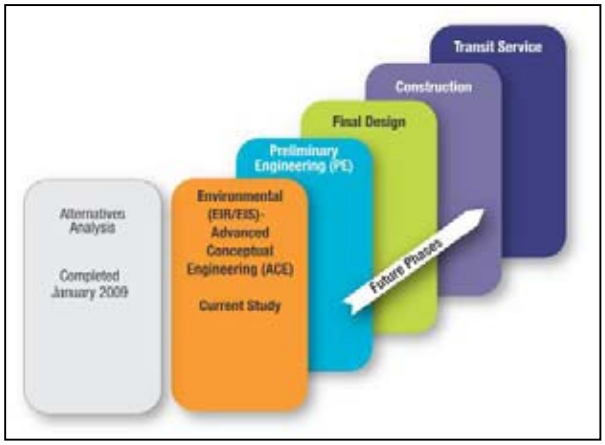


Figure 2-1: FTA Planning Process

The EIS/EIR and Advanced Conceptual Engineering (ACE) is the second step of the FTA's multi-year, project development process (Figure 2-1). This step evaluates the potential environmental impacts of the project alternatives at an ACE level. A combined EIR/EIS allows the lead agency to simultaneously comply with both State (California Environmental Quality Act or CEQA) and Federal (National Environmental Policy Act or NEPA) environmental regulations. The official CEQA/NEPA Scoping is conducted and a Draft EIS/EIR is prepared that presents findings of potential impacts and measures to reduce impacts on a wide range of categories. Public hearings are held on the Draft EIS/EIR, and then a Locally Preferred Alternative (LPA) is selected. At the conclusion of this step, Metro would apply for entry into FTA's third step in the process: Preliminary Engineering (PE) phase.

If entry into the FTA PE phase is granted, a Final EIS/EIR is prepared at the New Starts PE level of engineering. Once the Final EIS/EIR is approved, a Record of Decision (ROD) and a Notice of Determination (NOD) are issued. Metro would then apply for entry into the FTA Final Design phase. This step includes right-of-way acquisition, utility relocation, and the preparation of final construction plans (including construction management plans), detailed specifications, construction cost estimates, and bid documents. The project's financial plan is completed—which is required of all projects seeking a Full Funding Grant Agreement (FFGA) from the FTA. Metro would enter into an FFGA with the FTA and continue with Final Design. Once Final Design is completed, Metro would begin construction, perform project testing, and then initiate transit service.

Metro can choose to fund any proposed high capacity transit improvements in the corridor with Section 5309 New Starts funds and other Federal, State, and local sources. If Metro pursues Section 5309 New Starts funds for the Project, a successful completion of the FTA requirements for the New Starts program and approval of the LPA by FTA must be made prior to entry into PE. The Draft and Final EIS/EIR and PE will be prepared concurrently after the adoption of the LPA and approval into PE by the FTA.

2.2 Background of the Westside Subway Extension Project

Metro has been planning transit improvements in the Westside Extension Transit Corridor for many years and is preparing a Draft EIS/EIR to determine what types of improvements are needed. This effort is a continuation and re-evaluation of previous planning studies, including the Mid-City/Westside-Transit Corridor Major Investment Study, which was completed in 2000, and the Mid-City/Westside Transit Corridor Draft EIS/EIR, which was completed in 2001. At the time of Metro Board Certification, this Mid-City/Westside Transit Corridor Draft EIS/EIR provided the impetus to formally separate the future study of the Wilshire and Exposition Corridors.

Since then, Metro has implemented several new Rapid Bus routes within the Wilshire Transit Corridor to supplement local bus service by providing new options for travel in both north-south and east-west directions. This new service has accommodated some of the demand for improved transit, but additional transit improvements are needed as bus service within the corridor continues to operate at or over capacity conditions in a congested corridor. In addition, the Exposition Construction Authority (Authority) has started construction of Phase I of the Exposition Line and is completing the environmental clearance of Phase II. The completion of both Phase I and Phase II of the Exposition Line, however, will not lessen the need for a major transit investment in the Westside.

As a result, there has also been renewed interest in extending the Metro Purple Line from the current terminus at Wilshire Boulevard and Western Avenue to Downtown Santa Monica along the Wilshire corridor. In addition to a Wilshire corridor alignment, Metro also explored alternative options extending the Metro Red Line westward from Hollywood/Highland along Santa Monica Boulevard to West Los Angeles.

In October 2005, at the request of Metro and the Mayor of the City of Los Angeles, the American Public Transportation Association (APTA) conducted a Peer Review to reconsider the feasibility of tunneling along the federally precluded Wilshire Boulevard segment of the Westside Corridor. As a result of this review, which concluded that tunnels could be safely constructed and operated in the Wilshire Boulevard corridor due to advances in new tunnel construction methods that were previously not available, legislation was enacted in Congress repealing the federal prohibition on subway construction along Wilshire Boulevard in December 2007.

In July 2006, Metro authorized the AA Study for all reasonable fixed-guideway transit alternatives, including the previously excluded subway alternatives, for the portion of the Westside Corridor north of the Exposition Corridor. An Early Scoping Notice to start the AA Study was issued by Metro and the FTA on October 1, 2007.

The Metro Board of Directors adopted the AA phase of the study in January 2009. The AA screened various potential routes, modes, and configurations for the Project and identified two heavy rail subway Build Alternatives, a Transportation System Management (TSM) Alternative, and a No Build or Baseline Alternative. The AA also identified four Minimum Operable Segments (MOS).

Following adoption of the AA Study, Metro initiated the Draft EIS/EIR process in January 2009. As during the AA process, Metro initiated a public outreach effort to solicit input into how to refine the AA-adopted alternatives. The following discussion provides an overview of the public outreach process conducted during the AA Study and the alternatives carried forward into the Draft EIS/EIR.

2.3 Early Scoping and Alternatives Considered in the Alternatives Analysis (October 2007 through January 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 (Figure 2-2). 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.

Figure 2-2. Alignment Alternatives Presented at Early Scoping for the AA Study

During Early Scoping, the public provided input on the need for the Project, the transit technology, alignment route, and stations. Figure 2-3 illustrates the transit technologies considered) in the AA Study. The overwhelming majority of comments received from the public supported the need for a transit investment in the Study Area. The Wilshire subway alignment was the most favored route and technology. There was limited support for aerial/monorail, Light Rail Transit (LRT), or Bus Rail Transit (BRT) modes, with opposition to each of these modes expressed as well.

In addition, Early Scoping comments identified several activity centers, such as University of California, Los Angeles (UCLA), the Grove/Farmers Market, Cedars Sinai Medical Center/Beverly Center, that were not located along either of the two principal routes, but which could be considered for route deviations from these basic alignments. The public provided comments on station locations along the two principal routes, as well as in these areas not located along those routes.

Technology	Actual Operating Charcteristics Normalized to 18 vehicles/hour/direction	Systems Sampled
HRT 	Up to 800 passengers/train (6 cars) Top Speed of 70 mph (32 mph average) Up to **14,000** Passengers/hour/direction	Metro Red Line Metro Purple Line
LRT 	Up to 425 passengers/train (3 cars) Top Speed of 55 mph (24-35 mph average) Up to **7,600** passengers/hour/direction	Metro Blue Line Metro Green line Metro Gold Line
Monorail 	Up to 350 passenger/train (6 cars) Top Speed of 40-50 mph (18-30 mph average) Up to **6,300** passengers/hour/direction	Las Vegas Monorail Seattle Monorail Disneyland Monorail Disneyworld Monorail
BRT 	Up to 100 passenger/bus (articulated) Top speed of 35 mph (13-22 mph average) Up to **1,800** passengers/hour/direction	Metro Orange Line Wilshire Metro Rapid

Figure 2-3. Transit Technologies

Based on public input and evaluation of alternatives to meet the project goals and objectives, 17 representative Build Alternatives were developed for evaluation in the AA Study in five major categories (Figure 2-4). These alternatives were all developed to improve mobility in the Study Area and included:

- Wilshire Boulevard-based Heavy Rail Transit (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

Figure 2-4. Universe of Alignment and Station Alternatives Identified following Early Scoping for Evaluation in the AA Study

Seven goals were established in the 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.

- 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 evaluate the goal 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 for the Project to 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 Study, 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 the Draft EIS/EIR draw upon and refine those used in 2009, reflecting current data and the more focused evaluation in the Draft EIS/EIR.

These goals and objectives expanded upon the Regional Objectives identified by the Southern California Association of Governments (SCAG), and addressed the major considerations related to making choices among different transportation alternatives, such as effectiveness in improving mobility, impacts, cost-effectiveness, financial feasibility, and equity. The goals, objectives, and criteria used for this evaluation to screen out alternatives that did not perform as well as others appear in Figure 2-5.

The ability to improve travel mobility and reliably improve transit services and access within the Study Area, and the other goals and objectives, were used as criteria to determine the technology for transit services. The Study Area ridership analysis demonstrated a need for a transit technology that could provide a capacity of more than 700 passengers per train set to accommodate the high-capacity peak-period loading along the Wilshire and Santa Monica alignments. HRT provides up to 800 passengers per train set; LRT provides up to 425 passengers per train; monorail provides up to 350 passengers per train; and BRT provides up to 100 passengers per articulated bus (Figure 2-3).

The AA Study analyzed the following technology options that were eliminated from further consideration:

- LRT
  - Requires the construction of a dedicated maintenance facility (estimated to be approximately 15 acres in size)
  - Does not have the capacity to support the transit demand and forecasted ridership
  - Transfer needed at Metro Purple Line Wilshire/Western Station, which may affect ridership and travel times

- Monorail
  - Requires the construction of a dedicated maintenance facility (estimated to be approximately 15 acres in size)
  - Additional training and less cross-utilization of Metro train operators
  - Transfer needed at Metro Purple Line Wilshire/Western Station, which may affect ridership and travel times

- BRT
  - Lowest cost mode studied, but it would not be in an exclusive right-of-way
  - Ridership and travel-time savings would be substantially lower than with the rail alternatives
  - System capacity of BRT is substantially lower than that of HRT, LRT, or monorail

As a result, HRT was identified as the preferred technology for further study because it has the capacity to meet the anticipated ridership demand and limit the number of transfers, which would improve transit services, mobility, and travel time for travel within, to, and from the Study Area.

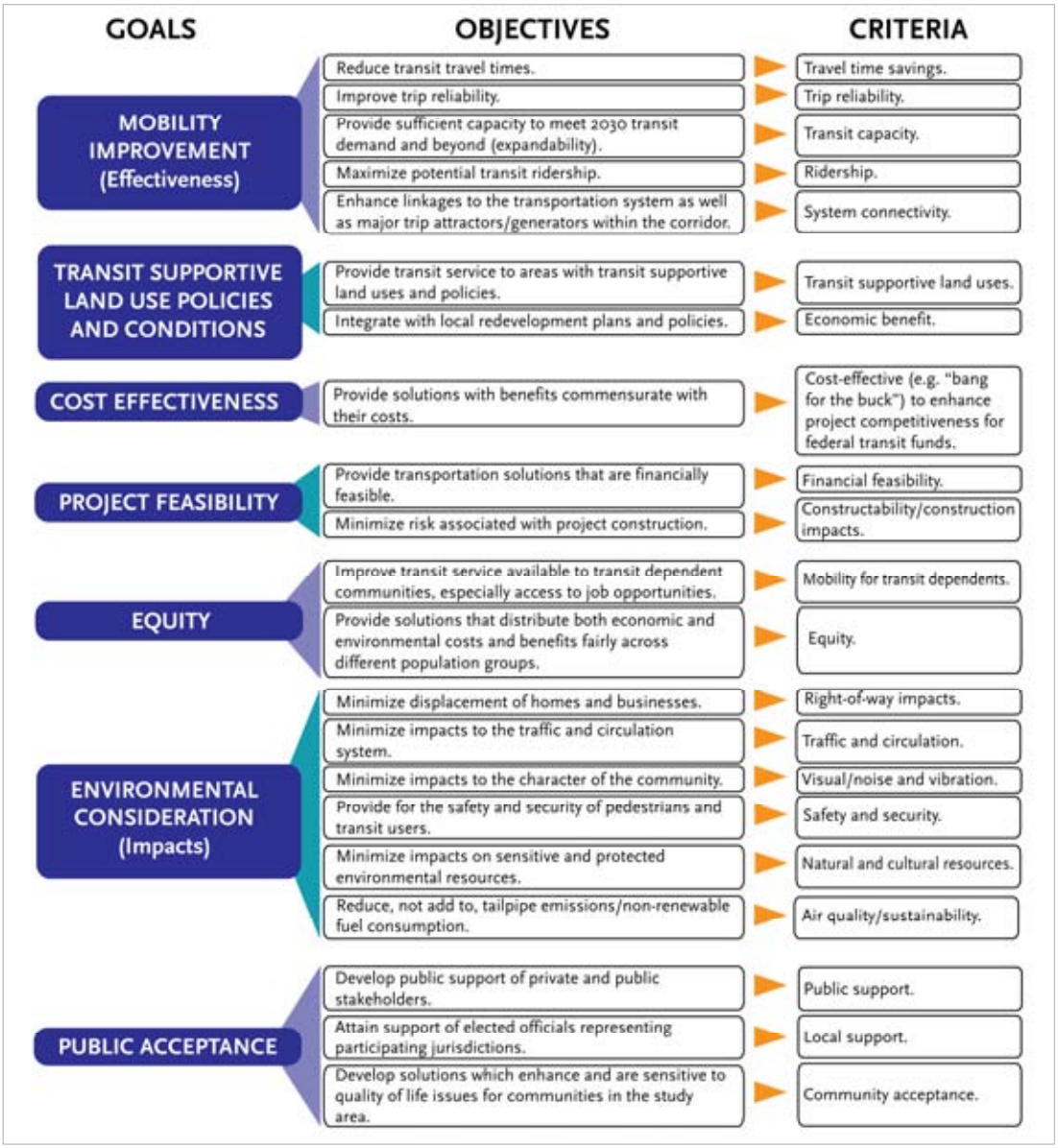


Figure 2-5. Goals, Objectives, and Evaluation Criteria

Based on the pros and cons of the 17 conceptual alternatives (through an evaluation that applied technology carrying capacity and the goals and objectives—all of which responded to the Project's Purpose and Need), alternatives were eliminated from further consideration or carried forward for additional screening (the AA Study provides details on the evaluation results).

Through this analysis, the BRT Alternative was eliminated from the next phase of analysis. BRT is a good near-term solution and has been funded for implementation as a separate project that is included in the No Build and TSM Alternatives; however, it does not provide sufficient capacity for the longer term needs of the Study Area and does not provide as reliable a trip-time performance as the HRT alternatives. Currently, within the City of Los Angeles, a federally sponsored program will provide peak-period bus lanes as a quality near-term solution that will continue to provide benefits even after construction of one of the proposed Build Alternatives.

After further comparative analysis as to what would be the best performing Wilshire alignment and the best performing "combined" Wilshire-Santa Monica alignment, the remaining alternatives were then reduced to heavy rail subway alignment alternatives: Alternative 1 and Alternative 11. Figure 2-6 provides an overview of the evaluation process used during the AA Study to identify and screen alternatives and to identify those alternatives that best met the Project's Purpose and Need to carry forward into the Draft EIS/EIR.

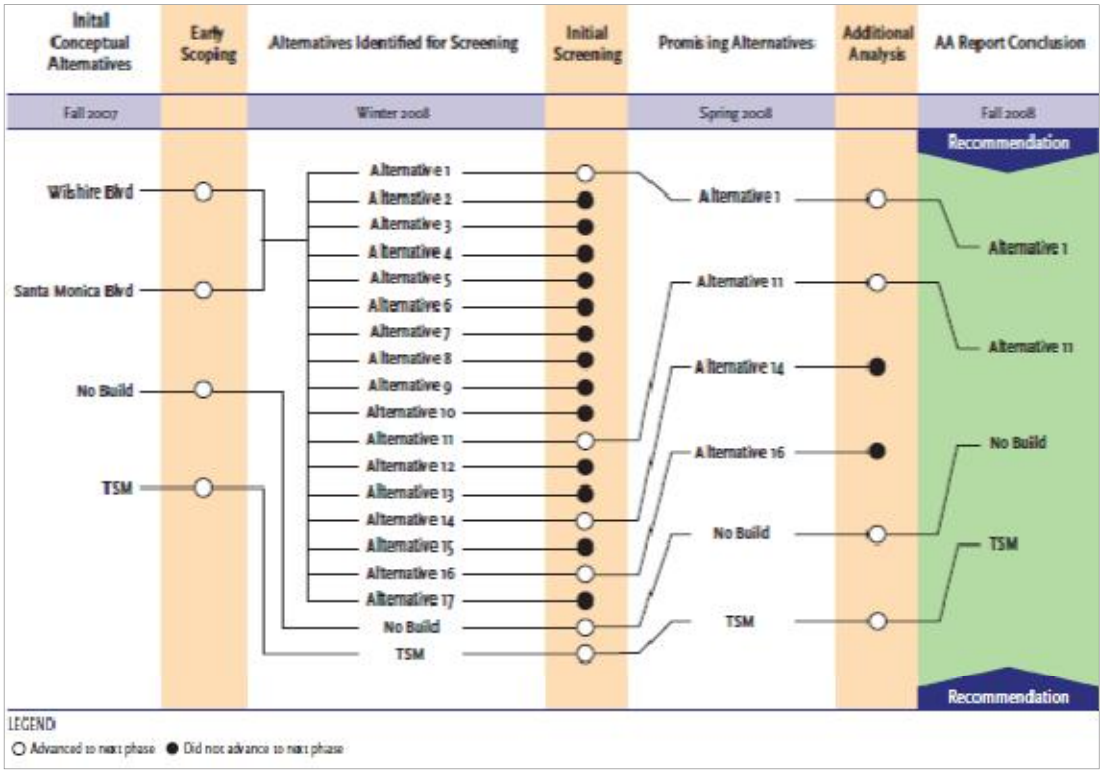


Figure 2-6. Alternatives Analysis Process

- **Alternative 1**—Wilshire Boulevard Alignment HRT Subway extends from the Metro Purple Line Western/Wilshire 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).

Figure 2-7. AA Study Alternative 1

Figure 2-8. AA Study Alternative 11

These two alternatives were carried forward from the AA Study into the Draft EIS/EIR. The No Build Alternative is included in this Draft EIS/EIR to provide a comparison of what future conditions would be if the Project were not implemented. A TSM Alternative is also included as a low-cost alternative that would meet some aspects of the Purpose and Need.

2.3.1 Minimum Operable Segments

Metro also identified four Minimum Operable Segments (MOSs) Alternatives to carry forward into the Draft EIS/EIR: (1) Wilshire Boulevard HRT Subway from Wilshire/Western to Fairfax, 3 miles; (2) Wilshire Boulevard HRT Subway from Wilshire/Western to Century City, 6.5 miles; (3) Wilshire Boulevard HRT Subway from Wilshire/Western to Westwood/UCLA vicinity, 8 to 9.5 miles; and (4) MOS #3 plus Metro Red Line HRT Subway from Hollywood/Highland via Santa Monica Boulevard, 12.5 to 14 miles.

2.3.2 No Build Alternative

The Draft EIS/EIR will also consider a No Build Alternative that includes all existing highway and transit services and facilities, and the committed highway and transit projects in the current Metro Long Range Transportation Plan and the current 2008 Southern California Association of Governments' Regional Transportation Plan. No new infrastructure would be built within the study area, aside from projects currently under construction, or funded for construction and operation by 2030 by the recently approved Measure R and identified in the Metro Long Range Transportation Plan. Proposed major highway improvements affecting the Project by 2030 include completing missing segments of high-occupancy vehicle (HOV) lanes on Interstate 405 (I-405), including southbound HOV lane from Sunset Boulevard to State Route 90 and a northbound lane from I-10 to the I-101 Freeway. From a rail transit perspective, the No Build Alternative includes the Metro Purple and Metro Red Lines along the eastern and northeastern edges of the study area. This alternative also includes the planned Wilshire Bus Lane and an extensive network of local, express, and Metro Rapid bus routes that will continue to be provided, with both bus route additions and modifications proposed.

2.3.3 TSM Alternative

The Draft EIS/EIR will also consider the TSM Alternative, which enhances the No Build Alternative and improves upon the existing Metro Rapid Bus service and local bus service in the study area. This alternative emphasizes service that is more frequent and low cost capital and operations improvements to reduce delay and enhance mobility. Although the frequency of service is very good, this alternative considers improved bus services during peak periods on selected routes.

3.0 DRAFT EIS/EIR SCOPING

The Draft EIS/EIR step in the FTA project development process began with scoping meetings to solicit input from the public and agencies on the alternatives carried forward from the AA Study: the No Build and TSM Alternatives, Alternative 1 (Figure 3-1), Alternative 11 (Figure 3-2), and the four MOSs. The process involved holding numerous scoping meetings, community outreach meetings (including Project Update meetings, Station Area Information meetings, and Urban Design Working Groups), as well as numerous meetings with public agencies and public officials.

During scoping, the public was presented with the following two alternatives: Alternative 1: Wilshire Boulevard Alignment Heavy Rail Transit (HRT) Subway (Figure 3-1) and Alternative 11: Wilshire/Santa Monica Boulevard Combined HRT Subway (Figure 3-2).

The two green-shaded portions of these figures were of particular focus during the scoping meetings, with Metro seeking public comment on the different alignment options in the Century City to Westwood area (shown in both Figure 3-1 and Figure 3-2) and along the West Hollywood Branch alignment (shown in Figure 3-2).

As discussed in Section 3.3.1, the public provided comments on both of these sub-areas, as well as on other aspects of the alternatives, and these comments were used in the screening of alternatives presented in Section 4.0.

Figure 3-1. Alternative 1—Presented During EIS/EIR Scoping

Figure 3-2. Alternative 11—Presented During EIS/EIR Scoping

3.1 Initiation of Scoping

The Draft EIS/EIR phase continued a transparent and inclusive community outreach process that built upon and enhanced the public engagement efforts implemented during the AA Study.

The outreach process began with the Draft EIS/EIR scoping. The NEPA scoping period for the Project Draft EIS/EIR commenced with FTA's approval of the Notice of Intent (NOI) to prepare an EIS. The NOI was published in the *Federal Register* on March 24, 2009 (FR 13507, Vol. 74, No. 58). The NEPA scoping period closed on May 7, 2009.

The NOI announced the FTA's intent to prepare an EIS in accordance with NEPA. This provided formal notice of the opportunity to comment in writing and/or at the public scoping meetings. The NOI included information on the project background, study area, potential alternatives, probable effects to be studied, FTA procedures, relevant scoping meeting information, and contact information.

Metro sent a Notice of Preparation (NOP) for an EIR to the State Clearinghouse on March 24, 2009. The NOP announced Metro's intent to prepare an EIR pursuant to CEQA. Like the NOI, it provided formal notice of the opportunity to comment in writing and/or at the public scoping meetings and commenced the CEQA scoping period. The NOP advised California agencies of their obligation to comment on the proposed project within 30 days.

3.2 Scoping Meetings

3.2.1 Agency Scoping Meetings

Agency scoping meetings were held to provide an opportunity for those agencies potentially interested in the project, or having relevant expertise pertaining to the project, to have input at an early stage.

The Agency Scoping Meeting was held on Monday, April 13, 2009 at 10:00 a.m. at Metro, 1 Gateway Plaza in Los Angeles, California. In attendance were 24 individuals representing a variety of Federal, State, and local agencies, and other organizations. The following agencies were represented at the meeting:

- The U.S. General Services Administration
- University of California Los Angeles
- The City of Los Angeles Planning Department
- The City of Los Angeles Recreation and Parks Department
- The City of Los Angeles Police Department
- The County of Los Angeles Planning Department, Fire Department and Community and Senior Services Department
- The City of Culver City Police Department
- The Federal Transit Administration
- The Southern California Association of Governments
- The City of Beverly Hills Transportation
- The City of Santa Monica Fire Department
- The U.S. Army Corps of Engineers
- The Exposition Construction Authority
- The California Department of Transportation
- OSHA California Tunneling Unit

The agency representatives were engaged in the presentation and discussion related to the Westside Subway Extension. Five agencies submitted formal written comments during the scoping period. The comments submitted stressed the need for the subway and particular station locations, such as UCLA's desire for a stop near their campus. Additional comments discussed the necessary coordination with the various cities' planning, police, and fire departments if construction begins.

3.2.2 Elected Official Briefing Meetings

Two meetings were held with elected officials and/or their staff prior to the public scoping meetings. Typically, the briefing served as a sounding board for the project team about the presentation, and provided these offices notification about the upcoming meetings as well as preliminary information about the status of the project.

The first meeting was held on April 6, 2009 at Los Angeles City Hall. Twenty-one people, representing the following 12 offices, attended this meeting:

- Office City of Los Angeles—Department of City Planning
- City of Los Angeles—Office of Councilman Jack Weiss (District 5)
- City of Los Angeles—Office of Councilman Bill Rosendahl (District 11)

- City of Los Angeles—Office of Councilman Herb Wesson (District 10)
- City of Los Angeles—Office of Councilman Tom LaBonge (District 4)
- City of Los Angeles—Office of Mayor Antonio Villaraigosa
- City of Santa Monica
- Office of Assemblyman Mike Feuer
- Office of Assemblyman Ted Lieu
- Office of Los Angeles County Supervisor Mark Ridley-Thomas
- Office of State Senator Fran Pavley
- Office of U.S. Congresswoman Diane Watson

The second meeting was held on April 7, 2009 at Beverly Hills City Hall. Twelve people, representing eight offices, attended the meeting:

- City of Beverly Hills
- City of Beverly Hills—Traffic and Parking Commission
- City of Los Angeles—Office of Councilman Jack Weiss (District 5)
- City of Los Angeles—Office of Mayor Antonio Villaraigosa
- City of West Hollywood
- Office of State Assembly Speaker Karen Bass
- Office of U.S. Congressman Henry Waxman
- Office of U.S. Senator Diane Feinstein

The purpose of the briefing was to provide a preview of the visual presentation that would be delivered to the community at the public scoping meetings. Area elected officials generally supported the Project and would like to identify opportunities to "fast-track" and identify additional funds for the Project. There was interest in how the MOSs were developed and the anticipated completion date for each segment. There were questions about the Westwood/UCLA and Wilshire/Crenshaw Stations, and the alignment between Century City and UCLA. Finally, there were questions about construction planning and mitigation.

3.2.3 Public Scoping Meetings

Six public scoping meetings were conducted in compliance with NEPA and CEQA guidelines. The meeting locations were selected based on geographic location, recommendations from local elected officials, and Americans with Disabilities Act and public transit accessibility considerations. For the convenience of attendees, bus lines to and from the meeting sites were printed on the public scoping meeting invitations. To provide the greatest opportunity for community participation, meetings were scheduled in the early evening on weekdays.

The six meetings were held on the following dates:

- Monday, April 13, 2009, from 6:00 p.m. to 8:00 p.m.
  Location: LACMA—West, 5905 Wilshire Boulevard, Los Angeles, CA 90036
  Number of Attendees: 72
- Tuesday, April 14, 2009, from 6:00 p.m. to 8:00 p.m.
  Location: Plummer Park, 7377 Santa Monica Boulevard, West Hollywood, CA 90046
  Number of Attendees: 44

- Thursday, April 16, 2009, from 6:00 p.m. to 8:00 p.m.
  Location: Beverly Hills Public Library, 444 North Rexford Drive, Beverly Hills, CA 90210
  Number of Attendees: 43
- Monday, April 20, 2009, from 6:00 p.m. to 8:00 p.m.
  Location: Westwood Presbyterian Church, 10822 Wilshire Boulevard, Los Angeles, CA 90024
  Number of Attendees: 65
- Wednesday, April 22, 2009, from 5:00 p.m. to 7:00 p.m.
  Location: Wilshire United Methodist Church, 4350 Wilshire Boulevard, Los Angeles 90028
  Number of Attendees: 40
- Thursday, April 23, 2009, from 6:00 p.m. to 8:00 p.m.
  Location: Santa Monica Public Library, 601 Santa Monica Boulevard, Santa Monica, CA 90401
  Number of Attendees: 78

Comments and issues raised at the scoping meetings were used to define various alternatives and to conduct the technical analyses of alternatives in the Draft EIS/EIR.

3.3 Scoping Comments

Prior to closure of the public scoping period for the Westside Subway Extension Draft EIS/EIR process on May 7, 2009, Metro received 253 public comments. These included 93 verbal and 34 written comments at the six public scoping meetings held, and 126 comments subsequently received via e-mail and U.S. mail. The public agencies provided 37 comments. No comments related to the scoping process were left on the project's dedicated phone information line.

The comments covered a variety of topics and were submitted by various parties including, but not limited to government agencies, community organizations, elected officials and their staff, and the general public. All comments were documented and organized into an electronic database f. This database identifies the name of the individuals who commented and/or commenting agency, the source of the comment, the content of the comment, the topic(s) discussed in the comment, and comment affiliations, if applicable.

A summary of the comments received is presented below. Detailed comments received during scoping can be found in the *Westside Subway Extension Scoping Report*, July 22, 2009.

3.3.1 Summary of Substantive Comments

The majority of comments received during public scoping for the Draft EIS/EIR support the need for major transit improvements in the Project study area, and specifically for a heavy rail subway extension as a means for reducing Westside traffic congestion.

Of the 253 comments received, 4 opposed the project. The vast majority support a subway mode, with most comments received supporting Alternative 11, the Combined Wilshire/Santa Monica alignment but agree that Wilshire must be built first. There was minimal support for the No Build, TSM, and monorail.

The comments reflected a variety of topics including potential station locations, phasing of the construction process, discussion about parking, and the need for connectivity. Several comments also mentioned urban design preferences and urged that the system be "green" by utilizing innovative technologies and approaches. Various comments also addressed construction issues and possible mitigation measures.

Table 3-1 and Table 3-2 present compilations of the comments received by the general category of the comment. Table 3-1 summarizes comments based on a variety of issues and concerns; Table 3-2 summarizes comments based on alternatives and stations.

3.3.2 Additional Community Outreach Meetings

Subsequent to the environmental scoping meetings, Metro held a series of additional community outreach meetings to solicit further input from the public on refinements to the alternatives and to review with the public those refinements that had been made based on public comment. Additional meetings were held in August 2009, October-November 2009, April 2010, and June 2010. At the community outreach meetings held in April 2010, Metro presented the final grouping of alternatives that were carried into the Draft EIS/EIR.

The refinements to alternatives and stations that resulted from the public scoping and outreach effort are presented in Chapter 4.0. Comments received from the public that related to the refinement of alternatives and stations are also presented in Chapter 4.0.

Table 3-1. Summary of Comments Related to Various Issues

Topic	Comments	
Alignments	West Hollywood at San Vicente/Santa Monica (5) West Hollywood to Wilshire/La Cienega (1) Avoid the La Brea Tar Pits (1) Hollywood/Highland to Santa Monica Boulevard to Beverly Hills (2)	
Issues	Address Westwood issues (1) Avoid neighborhood disruptions (1) Benefits low-wage earners (1) Bike amenities (4) Connect with Exposition LRT (12) Create a SFV connection (11) Create more transit-oriented development (1) Do not put below-grade (1) Do not travel under Comstock Hills (9) Does not want cut and cover used (1) Earthquake fears (3) Expedite project (11) Express service (2) Green House Gases (3) Impacts to water table (2)	Improve bus connections (3) Improve north/south connections (3) Increase park space (1) Increase pedestrian friendliness (2) Negative economic impact to businesses during construction (2) Provide parking (4) Provide senior and disabled access (2) Too expensive (1) Travel under Country Club (1) Tunnel concerns (6) Utility relocations (1) Utilize the Park Mile plan (1) Veterans Cemetery (1) Will bring increased congestion to project area (8)
MOS	Complete in multiple phases to Santa Monica (14) Complete in one phase to Santa Monica (2) MOS 1 to Century City (2) MOS 1 to Fairfax (1) MOS 3 (1) MOS to La Cienega (1) Use fewer MOS (6)	
Other	Plan now for a West Hollywood Extension (3) Turn Pico and Olympic Boulevards into one-way couplets (2) Support monorail (4) Does not support monorail (1) Use public and private partnerships (2)	

Table 3-2. Summary of Comments Related to Alternatives and Stations

Alternatives	Alt 1		Alt 11		Both		Project Support	
	Yes	No	Yes	No	Yes	No	Yes	No
	18	0	45	0	43	0	19	4
Stations	Support						Does Not Support	
	@Hollywood Bowl (2) 3rd/Beverly (2) Cedar Sinai (4) Century City (2) Constellation/Avenue of the Stars (3) Hollywood/Highland (9) Olympic/Avenue of the Stars (1) Santa Monica/Robertson (1) Santa Monica at Beverly Center (1) Santa Monica/La Brea (1) Santa Monica/20th (1) Santa Monica/Avenue of the Stars (3) Santa Monica/Beverly (3) Santa Monica/Doheny (1) Santa Monica/Fairfax (1) Santa Monica/La Cienega (2) Santa Monica/La Brea (2) Santa Monica/San Vicente (4) Sunset/La Cienega (1) UCLA (5) Veterans Administration (VA) Hospital (3) West Hollywood (2)		Westfield Mall in Culver City (1) Westwood/Le Conte (4) Wilshire/16th(3) Wilshire/26th (1) Wilshire/3rd (2) Wilshire/4th (2) Wilshire/Barrington (4) Wilshire/Bundy (6) Wilshire/City of Santa Monica (1) Wilshire/Crenshaw (14) Wilshire/Fairfax (4) Wilshire/Federal (1) Wilshire/Gayley (2) Wilshire/I-405 (7) Wilshire/La Cienega (3) Wilshire/La Brea (3) Wilshire/Manning (1) Wilshire/San Vicente/Barrington Wilshire/Sepulveda (5) Wilshire/Westwood (5)			Santa Monica/La Cienega (1) Wilshire/Crenshaw (14) Santa Monica/26th (1) Santa Monica/Westwood (1)	

4.0 REFINEMENT OF ALIGNMENTS AND STATION LOCATIONS BASED ON SCOPING COMMENTS AND COMMUNITY OUTREACH MEETINGS

This chapter presents the refinement process used to incorporate comments from the scoping process and additional community outreach meetings into the evaluation and of the alternatives that were carried forward and further analyzed in the Draft EIS/EIR.

4.1 Summary of the Refinement of Alignments and Station Locations Process

After the public scoping meetings, Metro refined the two Build Alternatives based on public comments, design considerations, and avoidance and minimization of impacts. Furthermore, different alignment lengths were introduced for consideration based on funding availability and priorities developed in the LACMTA Long Range Transportation Plan.

Public comments focused on the areas discussed below. Through update meetings with the public and public agencies, Metro considered, evaluated, and eliminated various alignment and station options, and ultimately developed the alternatives carried forward for evaluation in the Draft EIS/EIR. The alternatives that were carried forward for further evaluation meet the Project's Purpose and Need.

The areas of particular focus included:

- Wilshire/Crenshaw Station Option
- Wilshire/Fairfax Station Options
- Wilshire/La Cienega Station Options
- Beverly Hills to Century City Station and Alignment Options
- Century City to Westwood Station and Alignment Options
- Station Options West of the I-405 Freeway
- West Hollywood Station and Alignment Options

The following discussion presents the detailed evaluation of each the areas described above. Several options for the Wilshire/Fairfax Station, the Wilshire/La Cienega Station, and the station options west of the I-405 Freeway were considered to identify the options to carry forward into the Draft EIS/EIR. After some preliminary analysis, station areas were eliminated or carried forward for further analysis, as presented below.

The Beverly Hills to Century City and Century City to Westwood Station and Alignment Options and the West Hollywood Alignment Options involved more complex issues that warranted more detailed analysis including consideration of engineering feasibility and environmental issues.

4.2 Wilshire/Crenshaw Station

The scoping alternatives show an optional station at Wilshire/Crenshaw. Scoping comments were divided on this station with some commentors expressing support for this station while others argued that it is not needed.

The base station straddles Crenshaw Boulevard, between Bronson Avenue and Lorraine Boulevard (Figure 4-1 and Figure 4-2). The potential station entrance and a potential construction site are on the southwest corner of Wilshire Boulevard and Crenshaw Boulevards on the Metro-owned property between Crenshaw and Lorraine Boulevards.

A public meeting with the Wilshire/Crenshaw Station community was held in March 2010 to hold a focused discussion about this station. Again, commentors were split in expressing support and opposition for the Wilshire/Crenshaw Station. This station location is only one-half mile west of the Wilshire/Western Station in a relatively low density area that is not planned to grow in the future. Also Crenshaw Boulevard terminates at Wilshire Boulevard so there are less connectively opportunities than at other sites.

For these reasons, an option was carried forward in the Draft EIS/EIR that evaluates operating a project without a station at Wilshire/Crenshaw. However, if the Wilshire/Crenshaw Station is not constructed, a vent shaft (required for tunnel segments longer than 6,000 feet between stations) would be constructed in this location, mid-way between Crenshaw Boulevard and Lorraine Boulevard.

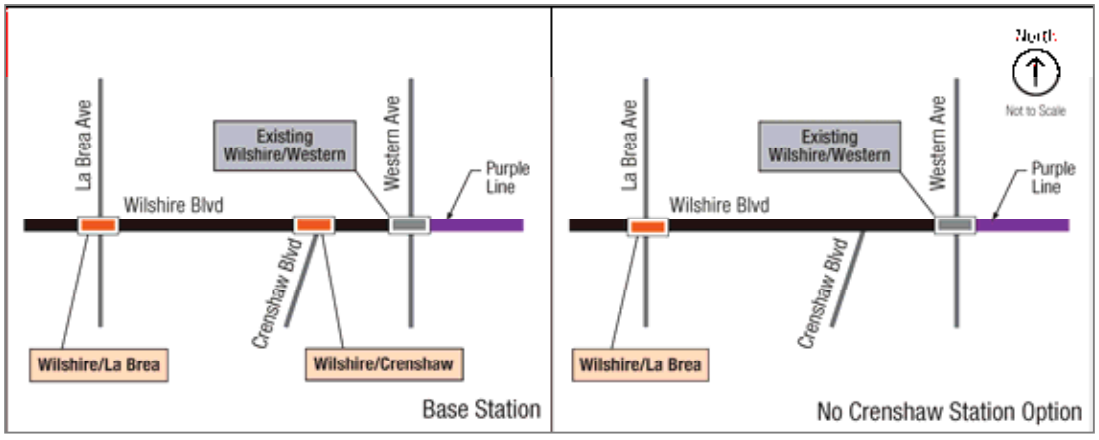


Figure 4-1. Option 1—No Wilshire/Crenshaw Station Option

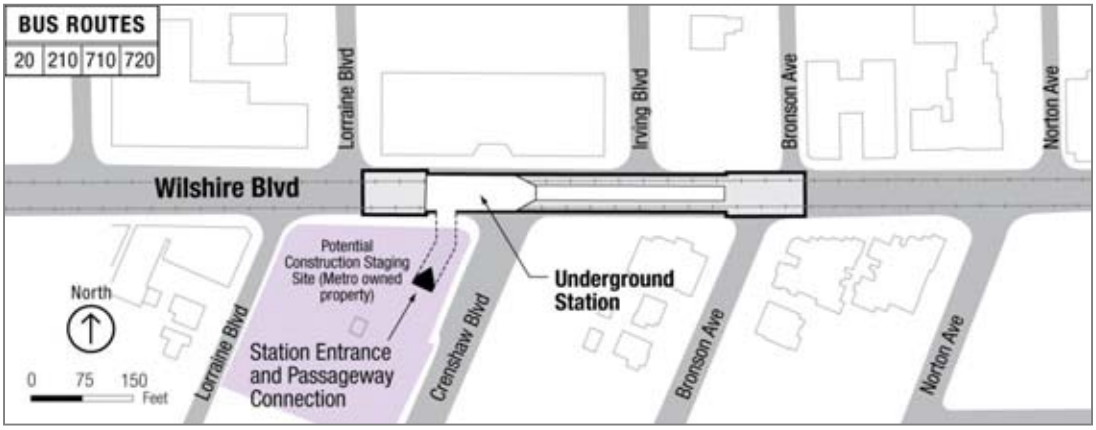


Figure 4-2. Wilshire/Crenshaw Station

4.3 Wilshire/Fairfax Station

4.3.1 Scoping

The scoping alternatives showed a single station at Wilshire/Fairfax, west of Fairfax Avenue. This location was selected to move the station as far as possible from the gassy ground near the La Brea Tar Pits while still serving the Los Angeles County Museum of Art (LACMA). Scoping comments stated that the Wilshire/Fairfax Station should more directly serve LACMA and the Page Museum/Hancock Park facilities, which are major activity centers.

4.3.2 Response to Scoping

In response to scoping comments, a second station option was developed to meet the need to improve access to major activity and employment centers in the Study Area.

4.3.2.1 Option A: Wilshire/Fairfax (East)

The station box straddled the Wilshire/Fairfax intersection with three potential station entrances. One potential station entrance was located on the northeast corner of the Wilshire/Fairfax intersection at LACMA. The other two potential station entrances were located on the northwest corner of the Wilshire/Fairfax intersection—one entrance was located within Johnie's Restaurant and one entrance was located directly to the west of Johnie's Restaurant.

This option was developed in response to the strong preference to have a station location shifted slightly eastward so that the station box straddles the Wilshire Boulevard/Fairfax Avenue intersection and can connect more easily to the east side of Fairfax Avenue. The public seemed to consider location superseding any other concerns with the construction impacts associated with straddling the intersection in order to locate the station in the best possible location.

The potential station entrance located within Johnie's Restaurant was added as a way to minimize impacts to the restaurant, which is a potential historic resource and therefore a

potential Section 4(f) resource. The potential station entrance at LACMA was added based on comments from scoping meetings to provide access to the east side of Fairfax and LACMA's preference to have a station entrance located at the museum. In response to comments, consideration was given to providing additional entrances along the major thoroughfare of Fairfax Avenue. However, no other entrances along Fairfax Avenue were incorporated into Option A.

4.3.2.2 Option B: Wilshire/Fairfax Off-Street

The Wilshire/Fairfax Off-Street Station location is under the north side of Wilshire Boulevard, immediately west of Fairfax Avenue, extending almost to the intersection with Crescent Heights Boulevard. There is one potential station entrance on the northwest corner of the Wilshire/Fairfax intersection, next to Johnie's Restaurant. The Off-Street Station was considered as an option to minimize construction impacts and traffic disruptions at the busy Wilshire/Fairfax intersection.

4.3.2.3 Option C: Wilshire/Fairfax On-Street—West of Fairfax

The third location (Wilshire/Fairfax On-Street—West of Fairfax) was located under the center of Wilshire Boulevard, immediately west of Fairfax Avenue, extending almost to the intersection with Crescent Heights Boulevard. There were three potential station entrances: on the northwest corner of the Wilshire Boulevard/Fairfax Avenue intersection, on the northeast corner of the Wilshire Boulevard/Fairfax Avenue intersection on the LACMA property, and on the site of Johnie's Restaurant on the northwest corner of the Wilshire Boulevard/Fairfax Avenue intersection. As in Option A, Option C also incorporated an entrance within Johnie's Restaurant to minimize the impacts to potential historic resource.

Due to uncertainty regarding the geological features of the immediate area and potential for gassy soils, it was determined that it is necessary to include a station location option as far west as possible. Although it is more desirable from an urban design perspective to have the station box located as far east as possible, the geological uncertainties in the area surrounding the La Brea Tar Pits make it necessary to consider a station further west. Initial geotechnical investigation suggested that there might be slightly lower methane and hydrogen sulfide levels further west.

Additionally, locating the station box entirely west of the Wilshire Boulevard/Fairfax Avenue intersection would slightly reduce construction impacts. From a construction standpoint, it is better to avoid having a station box straddle the intersection since this will make it more challenging to redirect traffic during the cut and cover construction. No benefits were identified in moving the station box completely east of Fairfax Avenue instead of west, and there is considerable more technical risk moving it so close to the La Brea Tar Pits further east. Therefore, only an option with the station box entirely west of the Wilshire Boulevard/Fairfax Avenue intersection was considered.

4.3.3 Analysis and Refinements Wilshire/Fairfax Station Options

Following the Urban Design Working Group meeting in June 2009, the Wilshire/Fairfax Off-Street Station was eliminated from further consideration in the Draft EIS/EIR.

The two station options (Option A and Option B) were presented to the public during the Station Information Meetings in October-November 2009. The feedback from the public at these meetings led to further refinement of the potential station entrances for these two options.

In both Option A and Option B, the potential station entrance in Johnie's Restaurant was eliminated from further consideration. It was determined that the interior of Johnie's may have historical significance, which would preclude locating a station within the structure. Additionally, it was determined that there were engineering challenges (sufficient space) associated with placing the entrance within the structure.

In Option A, an entrance at the Wilshire Boulevard/Orange Grove Avenue intersection was added in response to demand for an entrance on the south side of Wilshire Boulevard. Additionally, the land could possibly be used as a construction staging area.

4.3.4 Wilshire/Fairfax Station Options in Draft EIS/EIR

Two station locations for the Wilshire/Fairfax Station were carried forward for inclusion in the Draft EIS/EIR: The Base Station, Wilshire/Fairfax Station, and Station Option, Wilshire/Fairfax East Station Option (Figure 4-3).

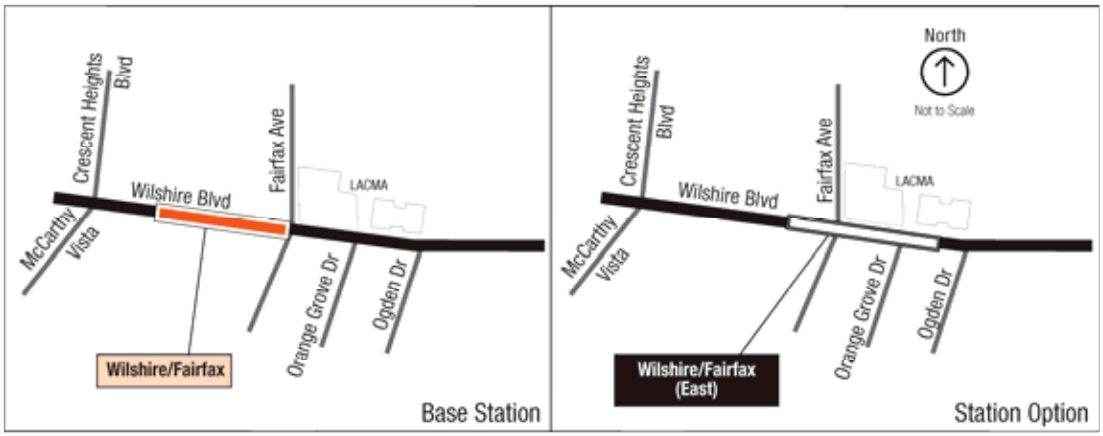


Figure 4-3. Wilshire/Fairfax Base and East Station Option

4.4 Wilshire/La Cienega Station Options

4.4.1 Scoping

During scoping, one location for the Wilshire/La Cienega Station was proposed directly at the Wilshire Boulevard/La Cienega Boulevard intersection. This station location would not serve as a transfer station for the West Hollywood alignment and would require patrons on a West Hollywood alignment to travel to the Wilshire/Rodeo Station and transfer if they wanted to head east towards the Wilshire/Western Station. Comments were received during scoping asking if a transfer option could be provided at the Wilshire/La Cienega Station.

4.4.2 Response to Scoping

In response to the scoping request to consider a transfer option at Wilshire and La Cienega Boulevards, three options were developed—Option A, Option B and Option C. Option A was located east of the Wilshire Boulevard/La Cienega Boulevard intersection and would not allow for a connection to the West Hollywood alignment. Options B and C were considered as connecting or transfer stations for the Wilshire/La Cienega Station.

4.4.2.1 Option A (Base Wilshire/La Cienega Station)

The station box would be located under the center of Wilshire Boulevard, immediately east of La Cienega Boulevard. The station box would extend eastward to just east of Gale Drive. An optional crossover occurs at the west end of the station from La Cienega Boulevard to Le Doux Road. There would be two potential station entrances: on the northeast corner of the Wilshire Boulevard/La Cienega Boulevard intersection and on the southeast corner of the Wilshire Boulevard/La Cienega Boulevard intersection in front of the Flynt building. A transfer to the West Hollywood alignment would not be provided with this station (Figure 4-5).

However, a possible track connection to West Hollywood could be provided via a separate connection structure located at Robertson Boulevard, west of the Wilshire/La Cienega Station (Figure 4-6). This connection structure would not serve as a passenger transfer location. Passengers would need to travel to the Wilshire/Rodeo Station to transfer between the Wilshire and West Hollywood Lines. The connection structure would allow the Wilshire/La Cienega Station to be located further east but not preclude a future connection to the West Hollywood alignment.

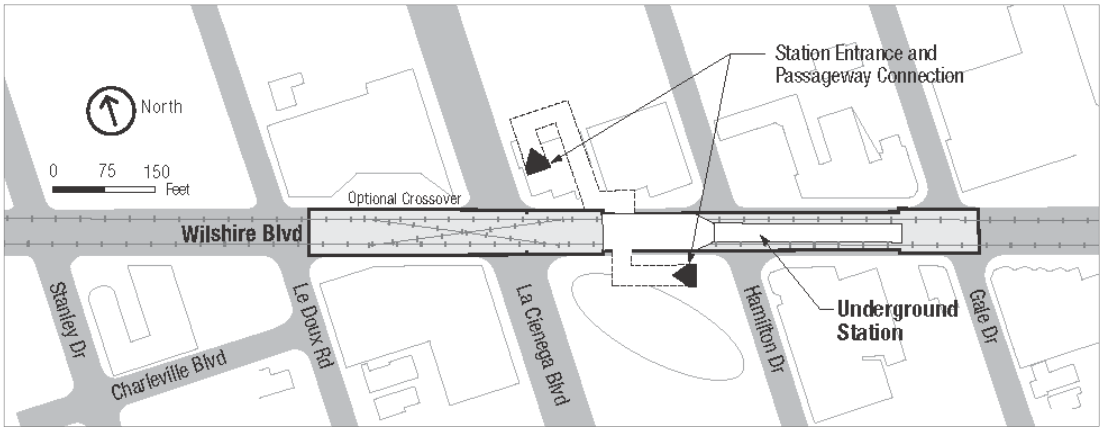


Figure 4-4. Option A: Wilshire at La Cienega East

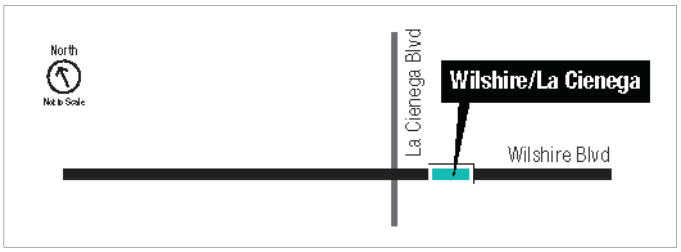


Figure 4-5. Option A: Wilshire at La Cienega East without Connection Structure

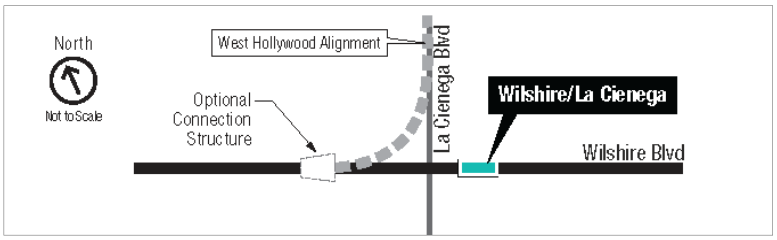


Figure 4-6. Option A: Wilshire at La Cienega East with Connection Structure

4.4.2.2 Option B (Wilshire/La Cienega Station—West of La Cienega Boulevard without Passenger Transfer but with Track Connection)

The station box would extend from the Wilshire Boulevard/La Cienega Boulevard intersection on the east to just east of the Wilshire Boulevard/Willaman Drive intersection on the west (Figure 4-7). There would be two potential station entrances: on the northwest corner of the Wilshire Boulevard/Le Doux Road intersection and on the northwest corner of the Wilshire Boulevard/La Cienega Boulevard intersection in front of the Cedars-Sinai Medical Group building. The location west of La Cienega Boulevard would allow the West Hollywood alignment to merge with the Wilshire alignment at the station box (Figure 4-8). However, this would not serve as a transfer station for passengers. In order to transfer to the West Hollywood alignment, passengers would need to travel to the Wilshire/Rodeo Station.

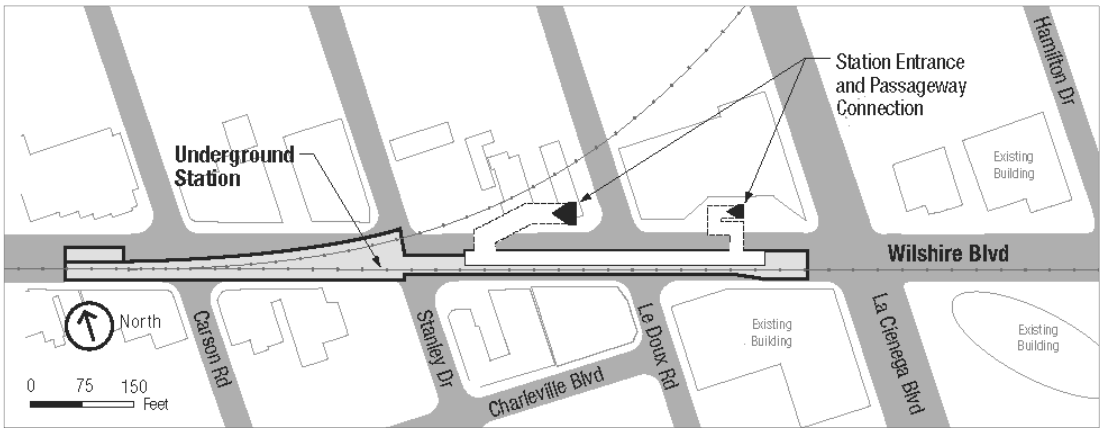


Figure 4-7. Option B: Wilshire at La Cienega with Track Connection, No Passenger Transfers

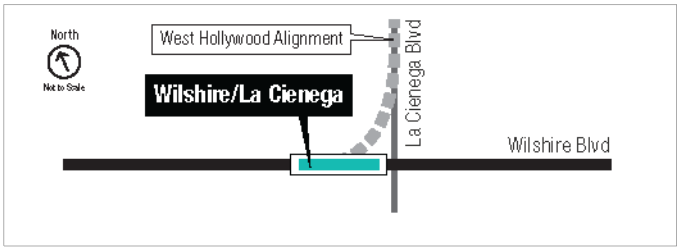


Figure 4-8. Option B: Wilshire at La Cienega with Track Connection, No Passenger Transfers

4.4.2.3 Option C (Wilshire/La Cienega Station—West of La Cienega Boulevard with Passenger Transfer)

The station box would extend from the Wilshire Boulevard/Le Doux Road intersection on the east to just west of the Wilshire Boulevard/Carson Road intersection on the west (Figure 4-9). There would be two potential station entrances: on the northwest corner of the Wilshire Boulevard/Le Doux Road intersection and on the northwest corner of the Wilshire Boulevard/La Cienega Boulevard intersection in front of the Cedars-Sinai Medical Group building. The location of this station farther west of the Wilshire Boulevard/La Cienega Boulevard intersection would allow it to be a future transfer station with the West Hollywood alignment (Figure 4-10).

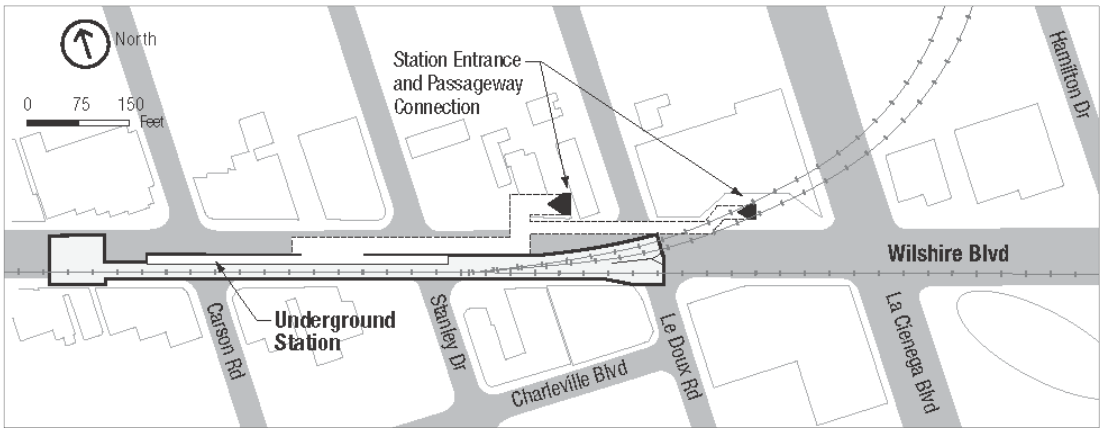


Figure 4-9. Option C at La Cienega with Transfer

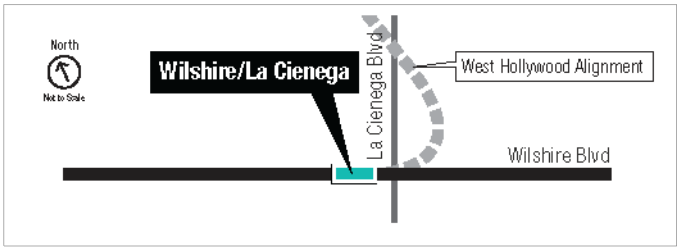


Figure 4-10. Option C at La Cienega with Passenger Transfer

4.4.3 Analysis of Wilshire/La Cienega Station Options

The station options were presented to the public at the Station Information Meetings in October and November 2009.

There was a general public preference for a station location east of La Cienega Boulevard even though this station location could not serve as a direct transfer station for the West Hollywood line. The eastern location also offered more potential for development, more transit-oriented development opportunity, and fewer impacts on the surrounding residential areas. A connection structure was proposed to be constructed near Wilshire and Robertson Boulevards separately to facilitate possible connections to the West Hollywood Line.

Based on the feedback from the public and the cities, Option B was eliminated from further study in the Draft EIS/EIR. The Option B station design would not allow passengers to transfer between lines. To transfer, passengers would need to travel to the Wilshire/Rodeo Station as in Option A. Additionally, from an urban design perspective; this location west of La Cienega Boulevard is inferior to the location east of La Cienega Boulevard, which offers better connectivity to existing development. Since Option B does not provide the transfer option in Option C and is a less desirable location than Option A, Option B was eliminated from further study in the Draft EIS/EIR.

4.4.4 Wilshire/La Cienega Station Options in Draft EIS/EIR

With the elimination of Option B, Option A (Wilshire/La Cienega—Base) and Option C (Wilshire/La Cienega with Transfer) were carried forward into the Draft EIS/EIR. The base Wilshire/La Cienega Station also has the option of incorporating a track connection structure at Robertson Boulevard as described in Option A. Option C meets the Purpose and Need to improve Study Area mobility and opportunities for transit supportive development. As a result, these two station location options were carried forward for further review in the Draft EIS/EIR (Figure 4-11).

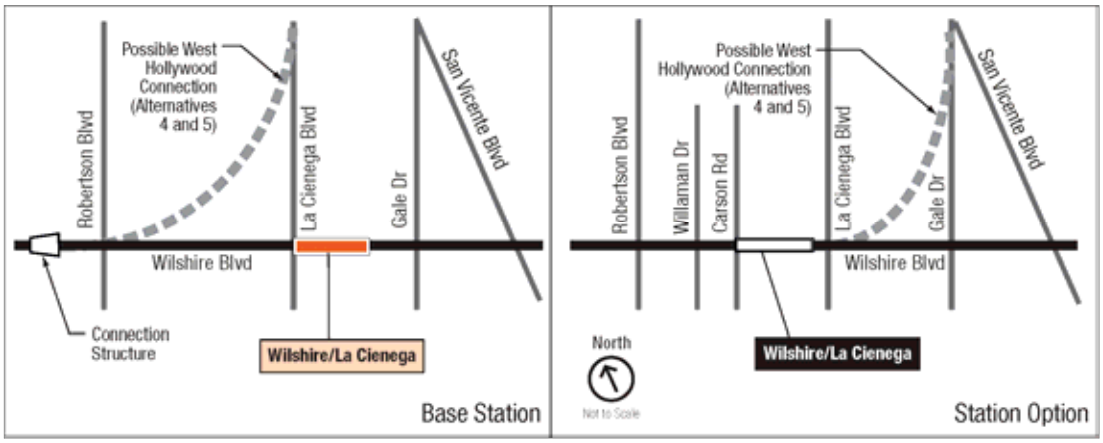


Figure 4-11. Wilshire/La Cienega Base and Station Option

4.5 Century City to Westwood Station and Alignment Options

During the public scoping meetings, the public was presented with three general alignment options for traveling between Century City and Westwood, and several station options in both Century City and Westwood. These alignment and station options were identified during the AA Study. Refinements were made to the alignment and station options to respond to public comment. These options were then evaluated based on: engineering feasibility; construction feasibility; NEPA/CEQA considerations and community preference; urban design pros and cons; user benefits; and costs.

After evaluation, routes were eliminated to: reduce potential impacts to sensitive land uses, historic, religious, and educational facilities; provide opportunities to reduce curvature (which would slow travel time); to reduce the number of residential properties under which a route would tunnel; improve operations; and respond to requests from property owners who expressed an interest in cooperating and allowing for the construction of a route under their property. This section summarizes the analysis and resulting options carried forward in the Draft EIS/EIR.

It should be noted that during scoping, the alignment options were presented from the Wilshire/Rodeo Station to the Westwood/UCLA Station. In order clarify the analysis, the alignment options were divided into two distinct groups—Century City to Westwood/UCLA and Wilshire/Rodeo to Century City. This section describes the

analysis of the Century City to Westwood/UCLA stations and alignments. The Wilshire/Rodeo to Century City analysis will be discussed in Section 4.6.

4.5.1 Scoping Alignment and Station Options

Figure 4-12 shows the general alignments considered between Century City and Westwood presented to the public during the scoping meetings. These included:

- **"Cross-Country Route"—**this route is the center route shown in Figure 4-12. From Century City, the route proceeds west along Santa Monica Boulevard, turns northwest and travels "cross-country" to Wilshire Boulevard. The "cross-country" alignment varies depending on which station options are being connected.
- **Golf Course—**this is the route to the far right in Figure 4-12. From Century City, the route briefly proceeds west along Santa Monica Boulevard, turns north just east of Club View Drive, and travels along the western edge of the Golf Course, and turns west at Wilshire Boulevard.
- **Westwood Boulevard—**this is the route to the far left in Figure 4-12. From Century City, the route travels west along Santa Monica Boulevard, turns north at Westwood Boulevard, and travels north along Westwood Boulevard to Westwood Village.

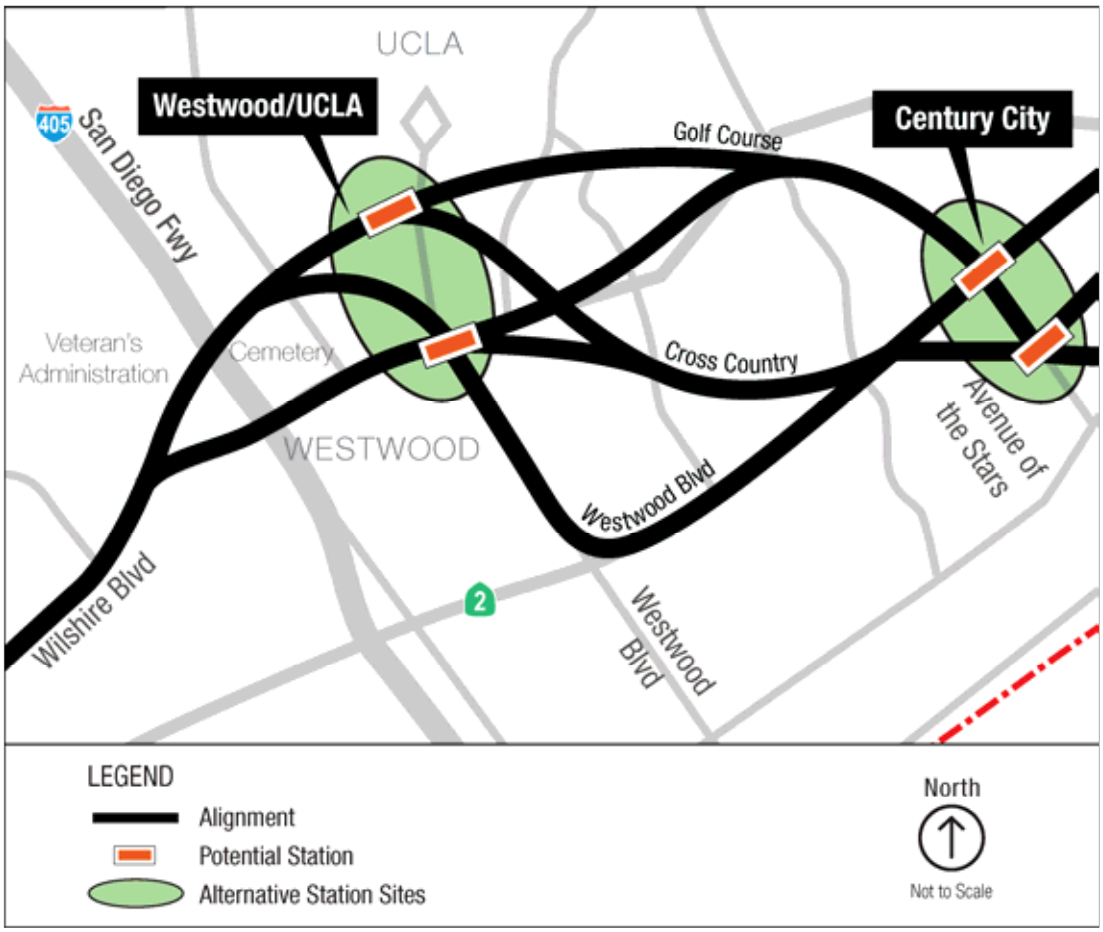


Figure 4-12. Alignment and Station Options between Century City and Westwood Presented during Scoping

The AA Study also identified two station locations in the Century City area and the Westwood/UCLA area. The goal of the AA alignment options, and those that would be screened and carried forward to the Draft EIS/EIR, was to identify the straightest and shortest routes between the Century City and Westwood Stations. In general, the straightest and shortest route would cost the least to construct, have the shortest travel times, have the highest ridership, and also reduce the length of tunneling under residential properties.

4.5.2 Response to Scoping

After scoping, the goal was to more specifically identify and evaluate the various routes possible between the Century City and Westwood/UCLA Stations. Broad questions framed the development of the alignment and station options. The questions were not intended to provide a thorough analysis—that would come later in the process as described below—but to provide the basis for adding or not adding a particular route or station location. The broad questions included:

- What is the most direct route, which in turn would generally represent the shortest, fastest, and most cost-effective route?
- Beyond the most direct route, what are the other routes that are possible between the Century City and Westwood/UCLA areas and would they reduce environmental impacts?
- What other routes have been requested by the public or public agencies and officials?
- What station locations would best serve the community while supporting the preferred alignment routes?
- Once the options were clearly defined, the analysis was divided into three segments: Century City Station Options, Westwood/UCLA Station Options, and Century City-Westwood/UCLA Alignment Options. The options in each of these three areas and the results of the analysis of each are presented below.

4.5.3 Century City Station Options

Four station location options were considered in Century City:

- **Santa Monica Boulevard (at Avenue of the Stars)—**centered under Santa Monica Boulevard with the station box centered on Avenue of the Stars. For this round of analysis, this station was called the Santa Monica/Avenue of the Stars Station. The western end of the Century City/Santa Monica Station extends to Club View Drive. There are three potential station entrances: on the southeast corner of Santa Monica Boulevard and Avenue of the Stars; on the southwest corner of Santa Monica Boulevard and Avenue of the Stars; and at the Westfield Mall entrance mid-block south of Santa Monica Boulevard and west of Avenue of the Stars. The potential entrance at Westfield Mall was added following meetings with the Westfield property management.
- **Santa Monica Boulevard (at Century Park East)**—also centered along Santa Monica Boulevard with the station box shifted slightly to the east from the station at Avenue of the Stars.
- **Constellation at Avenue of the Stars (Constellation Station)**—located under the center of Constellation Boulevard, straddling Avenue of the Stars and extending westward to east of MGM Drive. This station was supported by many at the scoping meeting. There are four potential station entrances: on the northeast, southeast, and southwest corners of Constellation Boulevard and Avenue of the Stars; and on the north side of Constellation Boulevard, mid-block between Avenue of the Stars and Century Park West, with a connection to the Westfield Mall. The station entrance on the southeast corner of Constellation Boulevard and Avenue of the Stars and the entrance connecting to the Westfield Mall were added in response to comments from the public and meetings with the Westfield property management.
- **Avenue of the Stars between Constellation and Santa Monica Boulevard (Avenue of the Stars Station)**—oriented north-south under Avenue of the Stars between Constellation and Santa Monica Boulevards (Avenue of the Stars Station). In the scoping meeting, many supported a Century City Station located at the intersection of Constellation Boulevard and Avenue of the Stars.

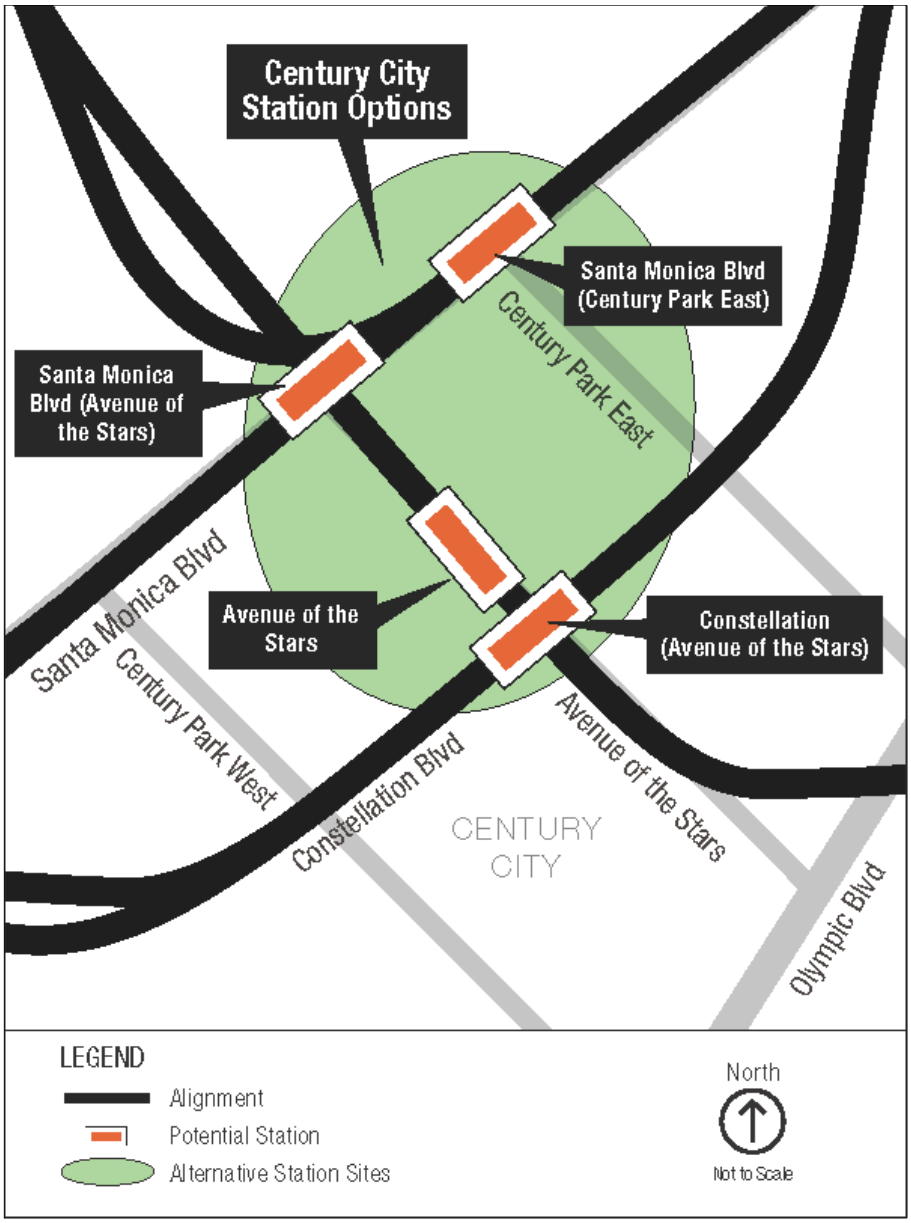


Figure 4-13. Century City Station Options Developed in Response to Scoping

The analysis below compares the four Century City Station locations as well as the alignments that would be required to accommodate each station location based on engineering feasibility and environmental considerations.

4.5.3.1 Engineering and Environmental Evaluation

The engineering and environmental evaluation consisted of the engineering feasibility; construction feasibility; NEPA/CEQA considerations and community preference; urban design pros and cons; user benefits; and costs.

Engineering Feasibility

Potential Utility Relocation Issues

None of the known utilities would necessitate an infeasible or substantially more costly station depth. There are small utilities located parallel to or across all of the proposed Century City Station locations. In addition, an 84-inch diameter reinforced concrete pipe (RCP) at a 15-foot depth is present on the south side of Santa Monica Boulevard east of Avenue of the Stars, and continues at an unknown alignment and depth on the north side and center of Santa Monica Boulevard west of Avenue of the Stars. The two station options located on Santa Monica Boulevard (Santa Monica Boulevard and Avenue of the Stars; Santa Monica Boulevard and Century Park East) could possibly be shifted to the north side of Santa Monica Boulevard to avoid the 84-inch RCP.

Proximity of Fault Crossing

Based on available fault data, all of the Century City Station locations will require the alignment to cross the West Beverly Hills lineament (geological feature) between the Beverly Drive and Century City Stations.

Additionally, the Santa Monica fault parallels Santa Monica Boulevard just west of Avenue of the Stars, and turn north towards Wilshire Boulevard east of Avenue of the Stars. Thus, the Santa Monica Boulevard (at Avenue of the Stars) Station Option is located immediately above the fault.

Further investigation of the fault location was conducted at two locations perpendicular to and crossing Santa Monica Boulevard: along Selby Avenue and along Century Park West across to Warnall Avenue. The Santa Monica Boulevard (at Avenue of the Stars) Station would have significant exposure to the Santa Monica fault because it would run parallel to the fault whereas the other alignments would cross the fault in a perpendicular direction. It is generally preferred to cross a fault in a perpendicular direction rather than in a parallel direction.

Deep Foundation Issues

None of the proposed Century City Station Options requires the tunnel alignment to pass directly beneath buildings with deep foundations. However, some station location options will require the tunnel and station to be built adjacent to tall buildings that were constructed with tiebacks. Tiebacks are tensioned steel strands used for temporary shoring of deep excavations, generally used for underground parking. These steel cables are typically cemented into 8- to 12-inch diameter holes and protrude horizontally as a proportion of the excavation depth. The tiebacks are required to be "de-tensioned" after the final excavation support is placed. However, if a number of tiebacks are in the path of the tunnel boring machine (TBM), additional effort (and cost) is required to remove them ahead of the machine or through the TBM's cutting wheel. If the tiebacks occur at a station box location, somewhat less effort is required to remove them. The tiebacks in the Century City area extend into the street right-of-way and therefore may conflict with the tunnel and station box construction.

It is anticipated that the Constellation Boulevard, as well as the Avenue of the Stars Station Options, would encounter tiebacks as follows:

- Avenue of the Stars Station—Potential to encounter tiebacks along tunnel alignment between Century Plaza and the old Schubert Site
- Constellation Station—High potential for tiebacks on south side of Constellation Boulevard between Century Park East and Avenue of the Stars, where the old Schubert foundation supports are located

Mid-line Ventilation Shaft Need/Location (Wilshire/ Rodeo Station to Century City Station)
The need for mid-line vent shafts is a function of a variety of factors including train headway, distance, and operational strategy. Based on preliminary definition of these factors, it is estimated that vent shafts would need to be located roughly every 6,000 feet. Vent shafts will be located at every station, so the need for a mid-line vent shaft was estimated based on the distance between stations. The distance between the Wilshire/Rodeo Station and each of the Century City Station Options is as follows:

- Santa Monica Boulevard at Avenue of the Stars Station—6,900 feet, therefore estimate vent shaft needed and could be located on Wilshire or Santa Monica Boulevards
- Santa Monica Boulevard at Century Park East Station—5,900 feet, therefore vent shaft not needed
- Constellation Station—7,200 feet, therefore vent shaft needed and could be located on Wilshire Boulevard before cross-country section to avoid residential areas
- Avenue of the Stars Station—8,500 feet, therefore vent shaft needed and would need to be located either on single-family residential streets or on major arterial streets lined with multifamily residential, and possibly near a public park
- The 6,000-foot threshold was set for initial planning purposes and further study based on a more detailed project definition and engineering design is necessary to determine conclusively the need and location options for mid-line vent shafts.

Construction Feasibility

Staging and Construction Work Site Areas
The Century City Station Options would face similar construction staging and work site area challenges. All the station options are located on street. They would require temporary street closures during the initial station excavation and decking, and for removal of decking.

Acquiring land for construction work site areas would be difficult for all station options given that Century City is an intensely developed area, likely to become more developed in the future. Currently, vacant lots and wide landscaped medians provide potential options for work site areas. Existing vacant lots include an approximately 60,000 square foot lot on the southwest corner of Santa Monica Boulevard and Moreno Drive, as well as an approximately 180,000 square foot lot on the northeast corner of Avenue of the Stars and Constellation Boulevard. In addition, there is an approximately 45,000 square foot median area on Santa Monica Boulevard between Century Park East and Avenue of the Stars.

In addition, the Santa Monica (at Avenue of the Stars), Avenue of the Stars, and Constellation Station Options are anticipated to require mid-line vent shafts as described

previously. Construction of a mid-line vent structure requires an excavation from the surface to the tunnel depth, construction of a concrete box structure to house fans and electrical equipment, and placement of street-level grates or raised grates (to prevent flooding). There is some flexibility in the location of the vent shaft.

Treatment of the ground prior to excavation and/or dewatering may also be necessary depending on ground conditions.

NEPA/CEQA Considerations and Community Preference

Environmental Issues

The range of environmental categories typically covered by NEPA and CEQA were reviewed and the following unique issues were identified:

- Historic Resources—The Santa Monica Boulevard and Century Park East Station and the Santa Monica Boulevard and Avenue of the Stars Station both bring the alignment past historic resources at the intersection of Wilshire Boulevard and Santa Monica Boulevard
- Schools—The Constellation Station requires tunneling beneath Beverly Hills High School
- Parks—The Avenue of the Stars Station would require tunneling beneath Roxbury Park, located south of Olympic Boulevard between Spalding and Roxbury Drives
- Cemeteries—None of the Century City Station Options would require tunneling beneath cemeteries

Number of Commercial and Residential Parcels and Dwelling Units Potentially Affected

The two station options on Santa Monica Boulevard affect minimal parcels as the tunnels leading to and from these stations are located primarily within the street right-of-way. The Constellation Station and the Avenue of the Stars Station would require tunneling "cross-country" to connect the Wilshire/Rodeo Station and Century City Station. In addition, the Constellation Station requires tunneling "cross-country" west of Century City as the alignment returns to Santa Monica Boulevard.

- The Constellation Station increases the number of parcels affected relative to the two station options located on Santa Monica Boulevard. These include commercial parcels and residential parcels, comprised of single-family parcels and multifamily parcels. No change in high-rise residential parcels, translating into additional dwelling units potentially affected.
- The Avenue of the Stars Station increases the number of parcels affected by the alignment relative to the two station options located on Santa Monica Boulevard. This breaks down to fewer commercial parcels but additional residential parcels, comprised of single-family parcels, multifamily parcels, and high-rise residential parcels, translating into additional dwelling units potentially affected.

Homeowner Associations Intersected

The Constellation Station requires tunneling beneath properties in the Tract 7260 Homeowner Association and the Southwest Beverly Hills Homeowner Association as the alignment travels cross-country east and west of Century City. The Avenue of the Stars Station requires tunneling beneath properties in the Southwest Beverly Hills

Homeowner Association as the alignment connects between the Wilshire/Rodeo Station and Century City. These homeowner associations are not intersected by the remaining two Century City Station Options.

Scoping Comments

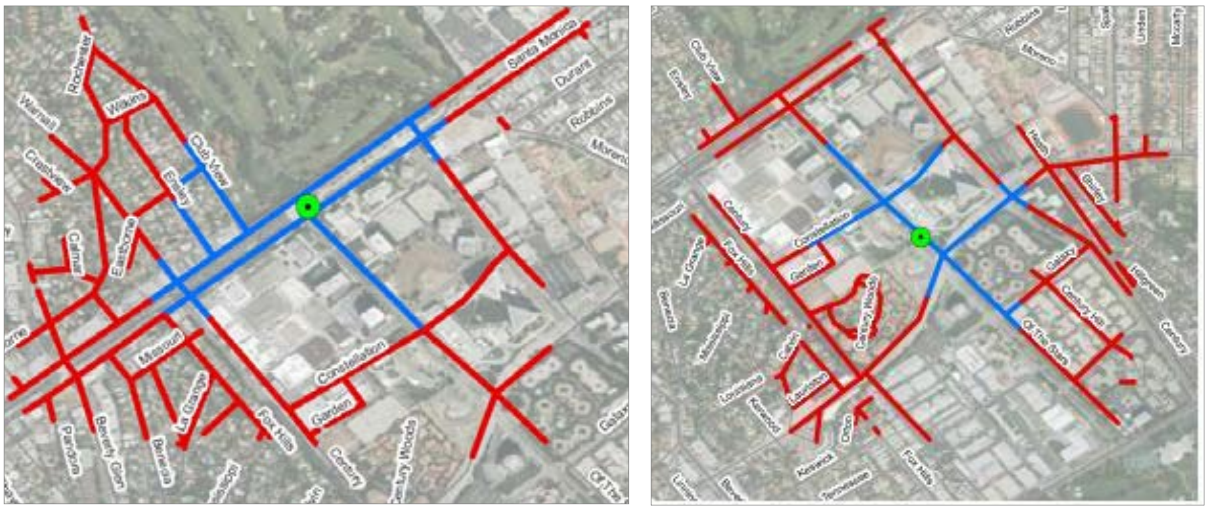
There were about 13 public scoping comments related to the Century City Station location. The majority of these respondents expressed support for the Century City Station to be located in the center of Century City to maximize access to offices. Many respondents supported a Century City Station located at the intersection of Constellation Boulevard and Avenue of the Stars (7 of 13 comments). Several others expressed support for a station along Avenue of the Stars (3 of 13 comments). One person supported the station along Santa Monica Boulevard and one person supported a station along Olympic Boulevard.

Urban Design Pros and Cons

Station Location and Entrances

The Constellation Station and the Avenue of the Stars Station would provide better access to the heart of Century City's commercial and business center than the two station options located on Santa Monica Boulevard. As can be seen in Figure 4-14, all four Century City Station Options would allow subway riders to access the majority of the Century City commercial and business area via a 0.5-mile (approximately 10 minute) or less walk. However, the 2005 WMATA Development-Related Ridership Survey showed that Metrorail office and retail mode share drops about 1 percent every 100 feet from the station entrances; therefore, there is a benefit to locating stations as close as possible to destinations. Based on this consideration of proximity, the four Century City Station Options were ranked on a scale of low, medium, and high:

- Santa Monica Boulevard (at Avenue of the Stars) Station: Medium
- Santa Monica Boulevard (at Century Park East) Station: Low
- Constellation Station: High
- Avenue of the Stars Station: High



Century City – Santa Monica Boulevard

Century City – Constellation

(Blue lines show 0.25-mile walk range; Red lines show 0.5-mile walk range)
Source: Fehr and Peers, Draft Westside Extension Walkability Maps.

Figure 4-14. Walkability Maps for Century City Station Options

Economic Development

Joint development opportunities have not yet been identified for the Century City Station Options. However, the Constellation Station exhibits the greatest potential to stimulate economic development given its central position within the heart of Century City's business and commercial area. The Avenue of the Stars Station has similar, though perhaps slightly less, potential. The two station location options on Santa Monica Boulevard would likely have the least potential of the four station options to stimulate economic development given that they border a golf course. The golf course use is not likely to be changed and it does not enhance the vibrancy of the urban environment in the station area. Based on the potential for economic development, the four Century City Station Options were ranked on a scale of low, medium, and high:

- Santa Monica Boulevard (at Avenue of the Stars) Station: Low
- Santa Monica Boulevard (at Century Park East) Station: Low
- Constellation Station: High
- Avenue of the Stars Station: Medium

Existing Land Use and Master Plan Compatibility

All four Century City Station Options are compatible with existing land uses and master plans for the area.

User Benefits

Travel Time

The two station options on Santa Monica Boulevard have the fastest travel time between the Wilshire/Rodeo Station and Century City, as they offer the shortest and straightest alignment. The Constellation Station and Avenue of the Stars Station would require

more circuitous routes through Beverly Hills and Century City, adding to their travel times, with the Avenue of the Stars being the longest.

Transit Connections
The four Century City Station Options were scored on a scale of low, medium, and high to reflect the availability and ease with which connections may be made to other transit services.

- Santa Monica Boulevard (at Avenue of the Stars) Station: High
- Santa Monica Boulevard (at Century Park East) Station: Medium
- Constellation Station: Medium
- Avenue of the Stars Station: Medium

Cost Differential

Base Cost
In considering the various Century City Station locations, the greatest variables to cost are engineering challenges and additional tunnel length necessary to reach the station location. The Constellation Station and Avenue of the Stars Station would increase the length of the alignment in comparison to the two station options on Santa Monica Boulevard. Also, they are anticipated to encounter more engineering challenges based on available information. These challenges include proximity to tiebacks and the need for mid-line vent shafts. Thus, the Constellation Station and Avenue of the Stars Station would be more expensive to construct.

Potential Added Costs
The Constellation Station and Avenue of the Stars Station require traveling cross-country and are anticipated to encounter tiebacks as they pass through Century City as explained earlier. Both of these factors would further increase the cost of these options.

Months Added to Construction Schedule
The Constellation Station and Avenue of the Stars Station would also increase the duration of construction given their longer lengths.

4.5.3.2 Century City Station Options Carried Forward

Based on the preliminary analysis, the Santa Monica Boulevard (at Avenue of the Stars) Station and the Constellation Station were carried forward into the Draft EIS/EIR. Santa Monica Boulevard (at Century Park East) Station and Avenue of the Stars Station were eliminated from further consideration (Figure 4-15) in the Draft EIS/R. Table 4-1 summarizes the evaluation of the four Century City station options based on the evaluation factors described above.

Figure 4-15. Century City Station Options Carried Forward

The Santa Monica Boulevard (at Century Park East) Station was eliminated from further study in the Draft EIS/EIR because of its inferior urban design characteristics and ridership that result from its location too far to the northeast corner of the Century City commercial and business district.

The Avenue of the Stars Station was also eliminated from further study in the Draft EIS/EIR because it provides similar benefits as the Constellation Station, but poses additional environmental and community preference issues, increases travel time, and is less cost-effective, even when considered in combination with the Golf Course Connecting Route.

Table 4-1. Summary of Century City Station Options Evaluation

Evaluation Criteria	Santa Monica at Avenue of the Stars	Santa Monica at Century Park East	Constellation at Avenue of the Stars	Avenue of the Stars between Constellation and Santa Monica Blvd
Engineering Feasibility	Medium	Medium	Medium	Medium
Environmental Considerations	Good	Good	Medium	Medium
Urban Design	Medium	Poor	Good	Good
User Benefits	Good	Medium	Good	Poor
Cost Evaluation	Good	Medium	Good	Poor
Carried Forward for Further Review in Draft EIS/EIR	★		★	

Good Medium Poor

At the August 2009 Draft EIS/EIR Community Outreach Meetings, the two Century City Stations being carried forward into the Draft EIS/EIR were shared with the public. At this time, the public was presented with the reasoning for the elimination of the other Century City Station options.

Following this preliminary analysis of the Century City Station options, a number of factors still remain uncertain and may require further research. These factors include:

- Degree of difficulty and therefore cost and schedule implications of deep foundations and tieback issues
- Location of the Santa Monica fault
- Location of all utilities
- Availability and location of construction work site areas—cost implications, affects level of street closure needed, and may affect construction schedule

These issues at the two station locations carried forward will be further analyzed during the Draft EIS/EIR.

4.5.4 Westwood/UCLA Station Options

Six station location options were developed in response to scoping comments and considered in the Westwood/UCLA area (Figure 4-16):

- **Wilshire Boulevard at Westwood Boulevard (Wilshire Boulevard Station)**—included in the initial scoping options. This station is located beneath Wilshire Boulevard, near the Wilshire Boulevard/Westwood Boulevard intersection. This option is also referred to as the Westwood/UCLA On-Street option. Five potential station entrances have been identified: on the northwest, southwest and southeast

corners of the Wilshire Boulevard/Westwood Boulevard intersection; the southeast corner of the Wilshire Boulevard/Gayley Avenue intersection; and the northwest corner of the Wilshire Boulevard/Gayley Avenue intersection. With the exception of the entrance on the southeast corner of the Wilshire Boulevard/Gayley Avenue intersection, all of the entrances were added in response to comments from the Urban Design Working Group and the public.

Figure 4-16. Westwood/UCLA Station Options in Response to Scoping

- **Wilshire Boulevard and Gayley Avenue (Lot 36 Station)**—Since the initial scoping, a potential location for a Westwood/UCLA Station has been identified under the UCLA-owned parking lot (Lot 36), which is north of Wilshire Boulevard between Gayley and Veteran Avenues. This station is also referred to as Westwood/UCLA Off-Street Station. The Westwood/UCLA Off-Street Station offers a possible connection via shuttle to the UCLA campus. The Westwood/UCLA Off-Street Option station box is located under UCLA Lot 36. Four potential station entrances have been identified: west side of the Gayley Avenue/Lindbrook Drive intersection, the northwest corner of the Wilshire Boulevard/Gayley Avenue intersection, the southeast corner of the Wilshire Boulevard/Veteran Avenue intersection, and the north side of Lot 36. All of these entrances, with the exception of the entrance directly west of Lindbrook Avenue were added due to comments from the Urban Design Working Group and the public.
- **Westwood Boulevard at Lindbrook Drive (Westwood Boulevard Station)**—Following scoping, a north-south oriented station under Westwood Boulevard, north of Wilshire Boulevard was also added as an option.
- **Westwood Boulevard at Lindbrook Drive (shifted north)**—This station was also added after scoping. The station is north-south oriented under Westwood Boulevard but located slightly farther north.
- **Le Conte Avenue at Westwood Boulevard (Le Conte Station)**—This station had been included in the initial scoping options. The station is located under Le Conte Avenue near the Westwood Boulevard entrance to UCLA. The scoping comments supported a station located close to the UCLA campus.
- **Le Conte Avenue at Westwood Boulevard (shifted west)**—This station is also located beneath Le Conte Avenue at Westwood Boulevard, but shifted slightly to the west.

The alignment between the Westwood/UCLA Station and the intersection of Wilshire Boulevard and Federal Avenue varies based on where the station is located within Westwood. Thus, the analysis below compares the six Westwood Station locations, as well as the alignments connecting them to the intersection of Wilshire Boulevard and Federal Avenue west of Westwood.

4.5.4.1 Engineering and Environmental Evaluation

The engineering and environmental evaluation consisted of the engineering feasibility; construction feasibility; NEPA/CEQA considerations and community preference; urban design pros and cons; user benefits; and costs.

Engineering Feasibility

Potential Utility Relocation Issues

None of the known utilities would necessitate an infeasible or substantially more costly station depth. The Lot 36 Station is expected to have fewer interactions with utilities relative to the other station options in Westwood, as it is the only off-street station option and utilities are typically located within the street right-of-way. However, there is a large storm drain parallel to Wilshire Boulevard on the south side of Lot 36 that could interfere

with construction of entrances and exits to the Lot 36 Station. The discussion below highlights some of the more substantial utility issues identified:

- Wilshire Boulevard Station overlaps a 90-inch diameter RCP at an 18-foot depth, which crosses Wilshire Boulevard at Midvale Avenue. This option also crosses a 111-inch diameter RCP at a 25-foot depth on Veteran Avenue immediately west of the station.
- Lot 36 Station does not overlap major underground utilities, based on information collected to date. However, the station crosses a 108-inch diameter RCP at an 8-foot depth located along the eastern and southern edges of Lot 36, as well as the same 111-inch diameter RCP at a 25-foot depth on Veteran Avenue immediately west of the station.
- Westwood Boulevard Station overlaps a 36-inch diameter RCP at a 13-foot depth located in the median of Westwood Boulevard.
- Utility information was not available to date near the Le Conte Stations.

Proximity of Fault Crossing
The proposed Westwood/UCLA Station locations do not cross or parallel known faults or lineaments.

Deep Foundation Issues
The following issues related to deep foundations were identified:

- Wilshire Boulevard Station—Potential to encounter tiebacks on Wilshire Boulevard in station area
- Lot 36 Station—Potential to encounter tiebacks and increased potential for building settlement where tunnels cross under or close to buildings along Wilshire Boulevard as they curve northward to reach the station site in Lot 36

Vertical Cross Passage and Exit Shaft Need and Location
To minimize the portion of the Los Angeles National Cemetery affected by the tunnels, an over-under tunnel configuration was employed through the cemetery rather than a side-by-side tunnel configuration. Over-under tunnel configurations require vertical cross-passages/exit shafts that exit to the surface, whereas the side-by-side tunnel configurations do not. It was estimated that one vertical cross passage/exit shaft exiting to the surface would be required should the over-under tunnel configuration be maintained for the Le Conte Station Option and the Westwood Boulevard Station Option, both of which travel under the cemetery.

Mid-line Vent Shaft Need and Location (Westwood Station to Wilshire/Federal)
The need for mid-line vent shafts is a function of a variety of factors including headway, distance, and operational strategy. Based on preliminary definitions of these factors, it is estimated that vent shafts be located roughly every 6,000 feet. Vent shafts will be located at every station, so the need for a mid-line vent shaft was estimated based on the distance between stations. The distance between Westwood Station Options and the next station west of Westwood (approximated as the intersection of Wilshire Boulevard/Federal Avenue pending further definition) is as follows:

- Wilshire Boulevard Station—5,200 feet, therefore, estimate vent shaft not needed

- Lot 36 Station—4,700 feet, therefore, estimate vent shaft not needed
- Westwood Boulevard Station—7,500 feet, therefore, estimate vent shaft needed and could be located on Constitution Avenue just west of the I-405
- Westwood Boulevard Station (shifted north)—7,300 feet, therefore, estimate vent shaft needed and could be located on Wilshire Boulevard (note that this station option is combined with a push-pull operation strategy allowing the alignment to return to Wilshire Boulevard as it proceeds westward)
- Le Conte Station—7,500 feet, therefore, estimate vent shaft needed and could be located on Constitution Avenue just west of I-405
- Le Conte Station (shifted west)—6,900 feet, therefore, estimate vent shaft needed and could be located on Constitution Avenue just west of I-405

The 6,000-foot threshold was set for initial planning purposes and further study based on a more detailed project definition (including refinement of the location of the first station west of Westwood) and engineering design is necessary to determine conclusively the need and location for mid-line vent shafts.

Construction Feasibility

Staging and Construction Work Site Areas

The Lot 36 Station is located off-street on an existing UCLA surface parking lot. It would be superior in terms of staging and construction work site areas relative to the other Westwood Station Options that are located on-street. Because the Lot 36 Station is located off-street, it would not require temporary street closures during the initial station excavation and decking as would the on-street station locations. The Lot 36 site would not have sufficient area for a crossover structure. The need and location of crossovers will be studied further as the engineering design progresses, but should this station become a minimum operable segment terminus, both crossovers and tail tracks would be required for train operations. The crossover and tail track, if needed, could be placed across Wilshire Boulevard or off-street if possible, meaning a separate work site.

Lot 36 could serve as a construction work site area for both the Lot 36 Station and the Wilshire Station at Westwood Boulevard which is located on-street, but adjacent to Lot 36. There are currently surface parking lots near both the Westwood Boulevard Stations and the Le Conte Stations that could serve as construction work site areas. However, Westwood is an intensely developed area and will likely become more developed in the future.

In addition, the Le Conte and Westwood Boulevard Station Options are anticipated to require mid-line vent shafts, as described previously. Construction of a mid-line vent structure requires an excavation from the surface to the tunnel depth, construction of a concrete box structure to house fans and electrical equipment, and placement of street-level grates or raised grates (to prevent flooding). There is some flexibility in the location of the vent shaft. As the engineering design progresses, location options that minimize affects to nearby properties and facilitate construction activities will be investigated.

Similarly, the Le Conte and Westwood Boulevard Station Options would require vertical cross-passages/exit shafts should the over-under tunnel configuration be maintained to minimize the horizontal footprint through the cemetery area. Construction of vertical cross-passages/exit shafts requires an excavation from the surface to the tunnel depth. Permanent access to the exit shafts for emergencies and shaft maintenance is required.

Treatment of the ground prior to excavation and/or dewatering may also be necessary depending on ground conditions.

NEPA/CEQA Considerations and Community Preference

Environmental Issues

The range of environmental categories typically covered by NEPA and CEQA were reviewed and the following unique issues were identified:

- Historic Resources—Two historic resources were identified on Westwood Boulevard between Wilshire Boulevard and Kinross Avenue. The Westwood Boulevard Station would be directly adjacent to these resources. The resources would be within 500 feet of the Lot 36 Station and Wilshire Boulevard Station and would be buffered visually by one or more rows of buildings.
- Schools, Religious Facilities, and Parks—None of the Westwood Station Options would be located beneath existing schools, religious facilities, or parks. The Le Conte Stations would be directly adjacent to the UCLA campus, but this is considered a positive attribute as it would not adversely affect the campus.
- Cemeteries—The Westwood Boulevard Stations and the Le Conte Stations would require tunneling beneath the Los Angeles National Cemetery.

Number of Commercial and Residential Parcels and Dwelling Units Potentially Affected

The Wilshire Boulevard Station affects the fewest parcels as its location best allows the alignment to remain within street right-of-way. The Westwood Boulevard Stations and Le Conte Stations require the alignment to travel beneath a residential area, as well as across the Los Angeles National Cemetery as they travel westward from Westwood Village. The Lot 36 Station and Wilshire Boulevard Station require a minimal amount of cross-country travel west of Westwood beneath commercial parcels along Wilshire Boulevard to reach the proposed station on the VA property. The Le Conte Stations and Lot 36 Station require traveling cross-country on their east side to connect from Wilshire Boulevard to the proposed station locations.

Scoping Comments

Overall, there were about 21 public scoping comments regarding the Westwood Station location. Based on these comments, the public seemed split on the location of the Westwood Station. Many commenters voiced support for a station location near the intersection of Wilshire Boulevard and Westwood Boulevard (8 of 21 comments). Many commenters also voiced support for a Westwood Station along Le Conte (9 of 21 comments). A few people felt that the Westwood Station should be located on the UCLA campus (3 of 21 comments). One person expressed interest in a station location along Gayley Avenue to avoid tunneling below parcels. Those who supported the station closer to Wilshire Boulevard suggested operating a shuttle that would connect the station with

the UCLA campus. Those who supported the station farther north, near Le Conte, supported this location because of its proximity to the UCLA campus.

Urban Design Pros and Cons

Station Location and Entrances

The Wilshire Boulevard Station and the Lot 36 Station provides better access to the high-rise office and commercial corridor on Wilshire Boulevard. The Le Conte Stations and Westwood Boulevard Stations provide better access to the UCLA campus and the northern portion of Westwood Village. However, given the size of the UCLA campus, a circulator route between the subway station and various parts of the campus would be necessary for any of the Westwood Station Options under consideration. Figure 4-17 shows that any Westwood Station Options would allow riders to access the majority of Westwood Village, as well as the Wilshire Boulevard commercial and business area via a 0.5-mile (approximately 10 minute) or less walk. However, a 2005 WMATA Development-Related Ridership Survey showed that Metrorail office and retail mode share drops about 1 percent every 100 feet from the station entrances; therefore, there is a benefit to locating stations as close as possible to destinations.

Based on this characteristic of proximity, the six Westwood Station Options were ranked on a scale of low, medium, and high:

- Wilshire Boulevard Station: High
- Lot 36 Station: Medium
- Westwood Boulevard Station: Medium
- Westwood Boulevard Station (shifted north): Medium
- Le Conte Station: Medium
- Le Conte Station (shifted west): Medium

Economic Revitalization

Joint development opportunities have not yet been identified for the Westwood Station Options, except for some potential at the Wilshire Boulevard and Gayley Avenue (Lot 36) site. The Wilshire Boulevard Station and the two Westwood Boulevard Stations would be located in highly commercial areas with economic revitalization potential. The Le Conte Stations are bordered on one side by the southern entrance to the UCLA campus, which is not likely to be redeveloped, and on the other side by Westwood Village, a pedestrian-friendly commercial center. Based on economic revitalization potential, the Westwood Station Options were ranked on a scale of low, medium, and high:

- Wilshire Boulevard Station: Medium
- Lot 36 Station: High
- Westwood Boulevard Station: Medium
- Westwood Boulevard Station (shifted north): Medium
- Le Conte Station: Low
- Le Conte Station (shifted west): Low

Source: Fehr and Peers, Draft Westside Extension Walkability Maps.

Figure 4-17. Westwood Station Walkability
(Blue lines show 0.25-mile walk range; Red lines show 0.5-mile walk range)

Existing Land Use and Master Plan Compatibility

All Westwood Station Options are compatible with existing land uses and master plans for the area.

User Benefits

Travel Time

The Wilshire Boulevard Station and the Lot 36 Station provide the most direct routes from Westwood to the intersection of Wilshire Boulevard and Federal Avenue and offer the fastest travel times. The Westwood Boulevard Stations and Le Conte Stations require

more circuitous routes through Westwood Village and the Los Angeles National Cemetery to reach the intersection of Wilshire Boulevard and Federal Avenue.

One option was considered that combines the Westwood Boulevard Station (shifted north) with a push-pull operation scenario by which trains would pull into the Westwood Boulevard Station and then reverse out traveling adjacent to Wilshire Boulevard towards Federal Avenue. The push pull operations would significantly increase travel time by 5 minutes more than the other alternatives.

Transit Connections
The six Westwood Station Options were scored on a scale of low, medium, and high to reflect the availability and ease with which connections may be made to other transit services.

- Wilshire Boulevard Station: Medium
- Lot 36 Station: High
- Westwood Boulevard Station: High
- Westwood Boulevard Station (shifted north): High
- Le Conte Station: Medium
- Le Conte Station (shifted west): Medium

Cost Differential

Base Cost
In considering the various Westwood/UCLA Station locations, the greatest variable to cost is engineering challenges and additional tunnel length necessary to reach the station location. The Le Conte Stations and Westwood Boulevard Stations would increase the length of the alignment in comparison to the Wilshire Boulevard Station and Lot 36 Station.

Potential Added Costs
The Lot 36 Station and Wilshire Boulevard Station are expected to encounter tiebacks on Wilshire Boulevard as explained earlier. Lot 36 has increased potential for building settlement where tunnels cross under or close to buildings where the tunnel curves off Wilshire to reach the station site in Lot 36. In addition, the Le Conte Stations, Westwood Boulevard Stations, and Lot 36 Stations would increase the amount of cross-country travel required as described earlier. All of these factors would further increase the cost of these options.

Months Added to Construction Schedule
The Le Conte Stations and Westwood Boulevard Station would increase the duration of construction given their longer lengths in comparison to the Wilshire Boulevard Station and Lot 36 Station.

4.5.4.2 Westwood/UCLA Station Options Carried Forward

Based on the preliminary analysis, the Wilshire Boulevard at Westwood Boulevard Station and the Lot 36 Station were carried forward into the Draft EIS/EIR (Figure 4-18). The Le Conte and Westwood Boulevard Stations were eliminated from further

consideration in the Draft EIS/EIR. Table 4-2 summarizes the evaluation of the four Century City station options.

The two Le Conte Stations and the two Westwood Boulevard Stations were eliminated from further consideration because there are no substantial benefits that justify the increased cost, travel time, and environmental costs and community concerns (crossing under the National Cemetery and residential and commercial properties, as well as added construction effects) relative to the other Westwood/UCLA Station Options. The main argument in support of these station locations is their proximity to Westwood Village and/or UCLA. However, it was determined that due to the size of the UCLA campus and the nature of campus land use at its southern entrance at Le Conte Avenue/Westwood Boulevard, a circulator route would need to be provided regardless of station location. Also, these stations would sacrifice proximity to existing high density residential along and south of the Wilshire Boulevard corridor.

At the August 2009 Draft EIS/EIR Community Outreach Meetings, the two Westwood/UCLA Stations being carried forward into the Draft EIS/EIR were shared with the public. At this time, the public was presented with the reasoning for the elimination of the other Westwood/UCLA Station options. At this time, it was discussed that both the Le Conte Stations and Westwood Boulevard Stations would have required tunneling beneath the National Cemetery and would have resulted in greater construction impacts in Westwood Village.

In determining the best location for the Westwood/UCLA Station, a number of factors still remain uncertain and may require further analysis. These factors include:

- Degree of difficulty and therefore cost and schedule implications of deep foundations and tieback issues near Wilshire Boulevard (high rise corridor)
- Location of all utilities
- Availability and location of construction work site area for some station options, both of which have cost implications, affect level of street closure needed, and may affect construction schedule

These issues will be further analyzed in the Draft EIS/EIR for the station options that are carried forward.

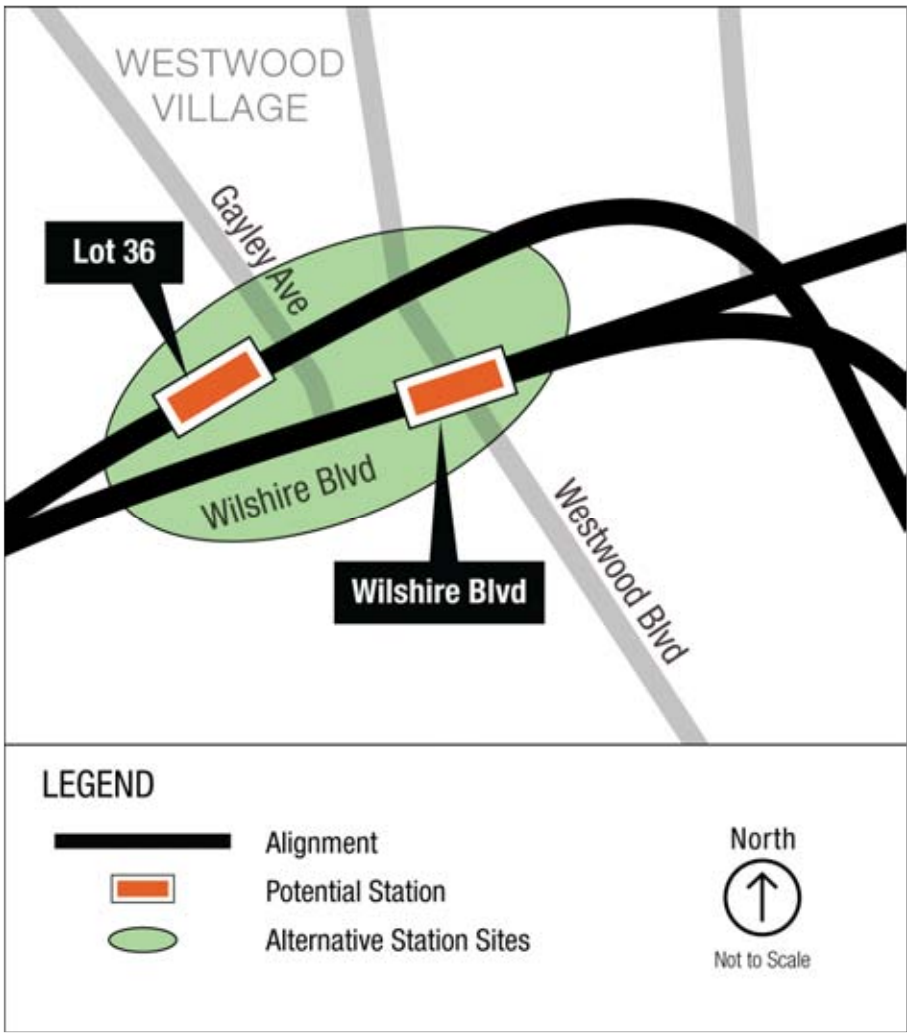


Figure 4-18. Westwood/UCLA Station Options Carried Forward

Table 4-2. Summary of Westwood/UCLA Station Evaluation

Evaluation Measures	Westwood Stations			
	Wilshire Blvd Station	Lot 36 Station	Westwood Blvd Stations	Le Conte Stations
Engineering Feasibility	●	●	●	●
Environmental Considerations	○	●	○	○
Urban Design	●	●	●	●
User Benefits	●	●	●	●
Cost Evaluation	●	●	●	●
Carried Forward for Further Review in Draft EIS/EIR	★	★		

● Good ● Medium ○ Poor

4.5.5 Century City to Westwood Alignment Options

Figure 4-12 in Section 4.5.1 shows the three connecting routes to travel between Century City and Westwood In response to scoping, four general routes for traveling between the Century City and Westwood/UCLA areas were identified to connect all of the station options at each of the station areas. These four routes include refined versions of the three routes presented at scoping:().

- **Cross-Country**—From Century City, this route proceeds west along Santa Monica Boulevard, turns northwest and travels "cross-country" to Wilshire Boulevard. The "cross-country" alignment varies depending on which station options are being connected. The Cross-Country Connecting Route could connect to either the Santa Monica Station or Constellation Station in Century City and either the Wilshire Station, the Lot 36 Station or the Le Conte Station in Westwood. This connecting route could not connect to the Avenue of the Stars Station in Century City or the Westwood Boulevard Station in Westwood.
- **Golf Course**—From Century City, this route briefly proceeds west along Santa Monica Boulevard, turns north just east of Club View Drive and travels along the western edge of the Golf Course, and turns west at Wilshire Boulevard. This connecting route would connect to the Avenue of the Stars Station in Century City and either the Wilshire, Lot 36 or Le Conte Station in Westwood. This connecting route could not connect to either Santa Monica Stations or the Constellation Station in Century City or the Westwood Boulevard Station in Westwood.
- **Westwood Boulevard**—From Century City travels west along Santa Monica Boulevard, turns north at Westwood Boulevard and travels north along Westwood Boulevard to Westwood Village to connect to the Westwood Boulevard Station. The Westwood Boulevard connecting route was refined from scoping. The Westwood Boulevard alignment could connect to either the Santa Monica Station or

Constellation Station in Century City and the Westwood Boulevard Station in Westwood. This connecting route could not connect to the Avenue of the Stars Station in Century City or the Le Conte, Lot 36 or Wilshire Stations in Westwood.

- **Westwood Loop**—From Century City travels west along Santa Monica Boulevard, turns north at Westwood Boulevard and travels north along Westwood Boulevard approximately to Holman Avenue where it turns northeast and follows an s-shaped curve to Wilshire Boulevard, where it curves west to connect to either the Wilshire or Lot 36 Station in Westwood. This connecting route is a slight refinement to the Westwood Boulevard alignment that was presented during scoping. The Westwood Loop alignment could connect to either the Santa Monica Station or Constellation Station in Century City and either the Wilshire Station or Lot 36 Station in Westwood. This connecting route could not connect to the Avenue of the Stars Station in Century City or the Le Conte or Westwood Boulevard Station in Westwood.

Figure 4-19. Century City to Westwood Alignment Options Evaulated

These alignment options underwent an engineering and environmental evaluation (presented below in Section 4.5.51). Subsequent to this analysis, additional community outreach meetings were held in August 2009. These four alignments were then modified

based on additional public comment from these meetings. Additional community outreach meetings were held in November 2009, and additional refinements were made based on further public comment. A Direct alignment was added that would traverse under the Westfield Mall to minimize the number of residential properties under which the alignment would tunnel and provide a more direct connection than the Cross-Country route.

4.5.5.1 Engineering and Environmental Evaluation

The engineering and environmental evaluation consisted of the engineering feasibility; construction feasibility; NEPA/CEQA considerations and community preference; urban design pros and cons; user benefits; and costs.

Engineering Feasibility

Potential Utility Relocation Issues

Once leaving the station vicinities, the tunnels can usually descend to sufficient depth to avoid underground utilities. None of the known utilities would necessitate an infeasible or substantially more costly tunnel depth.

Proximity of Fault Crossing(s)

Based on available fault data, the four connecting routes between Century City and Westwood Stations must cross the Santa Monica fault, while some must also parallel the Santa Monica fault for various distances. The Westwood Boulevard and Westwood Loop connecting routes would parallel the fault for the greatest length while the Golf Course and Cross Country connecting routes would cross the fault. Figure 4-20 illustrates the fault lines in Century City vicinity. Crossing or paralleling faults may increase cost and engineering difficulty. Since the precise location of the Santa Monica fault is not known, it will be investigated as part of future engineering design work. Some investigation is being conducted in this ACE phase.

Figure 4-20. Fault Lines in Century City Vicinity

Deep Foundation Issues

The Cross-Country Connecting Route combined with the Westwood/UCLA Lot 36 Station or Le Conte Station require tunneling across Wilshire Boulevard to reach Lot 36 or Le Conte Avenue at a location where there are high rise buildings with deep foundations on the north side of Wilshire. It is anticipated that tunneling beneath or around these buildings' foundations would require additional engineering and building protection measures. These options will be refined to best avoid conflict with deep foundations should these options be carried forward into further engineering design efforts.

The remaining connecting routes do not require tunneling directly underneath high-rise buildings with deep foundations. It is anticipated that it will be possible for them to descend to sufficient depth to avoid tiebacks that may be present along Wilshire Boulevard between stations.

Vertical Cross-Passages/Exit Shafts Need and Location

To minimize conflicts with deep foundations beneath high-rise buildings on Wilshire Boulevard, an over-under tunnel configuration was assumed necessary as the Cross-Country Route cross Wilshire Boulevard. The over-under tunnel configuration reduces the horizontal width of the alignment footprint, relative to a side-by-side tunnel configuration. However, the over-under tunnel configuration requires vertical cross-passages/exit shafts that exit to the surface, whereas the side-by-side tunnel configuration does not. It was estimated that the Cross-Country Route would each require one vertical

cross passage/exit shaft should the over-under tunnel configuration be maintained. The potential for conflict with deep foundations will be further investigated as the engineering design progresses, and if possible, the over-under configuration and vertical cross-passages/exit shafts will be removed from the design.

Mid-line Vent Shaft Need and Location (Century City Station to Westwood Station)
The need for mid-line vent shafts is a function of a variety of factors including headway, distance, and operational strategy. Based on preliminary definition of these factors, it is relatively certain that mid-line vent shafts would be needed for all connecting routes under consideration. However, the need for a vent shaft will be studied further as the engineering design progresses. The vent shafts could be located on major arterial streets such as Wilshire Boulevard or Santa Monica Boulevard for the connecting routes.

Construction Feasibility

Staging and Construction Work Site Areas
Construction of the connecting route tunnels will occur underground via TBMs. Construction equipment, materials and personnel, and construction byproducts such as excavated soil will be brought into and out of the tunnel via the station areas. Construction equipment and materials will be stored and processed at work sites near the station areas. The availability and convenience of work site areas possible for each station location option was discussed in previous sections.

The Golf Course, Cross-Country, Westwood Boulevard and Westwood Loop Connecting Route Options are all anticipated to require mid-line vent shafts. Construction of a mid-line vent structure requires an excavation from the surface to the tunnel depth, construction of a concrete box structure to house fans and electrical equipment, and placement of street-level grates or raised grates (to prevent flooding). There is some flexibility in the location of the vent shaft. As the engineering design progresses, location options which minimize effects to nearby parcels and facilitate construction activities will be investigated.

The Cross-Country Connecting Route is anticipated to require vertical cross-passages/exit shafts to avoid conflict with deep foundations as they cross Wilshire Boulevard. Further engineering design efforts will look into removing these from the design through use of side-by-side tunnel configuration. However, if they are maintained, their construction requires an excavation from the surface to the tunnel depth. Permanent access to the exit shafts for emergencies and shaft maintenance is required.

Treatment of the ground prior to excavation and/or dewatering may also be necessary depending on ground conditions.

NEPA/CEQA Considerations and Community Preference

Environmental Issues

The range of environmental categories typically covered by NEPA and CEQA were reviewed and the following unique issues were identified:

- Historic Resources—A historic resource was identified on Wilshire Boulevard, west of Comstock Avenue, along the Golf Course Connecting Route alignment.
- Schools and Religious Facilities—The schools and religious facilities encountered by each of the connecting routes are listed below:
    - *Westwood Loop Connecting Route*—Grace of Light Media Church, Southern California Jewish Center, Westwood Presbyterian Church, and Westwood Presbyterian School
    - *Golf Course Connecting Route*
        - If combined with Lot 36 Station—Christian Science Church, Westwood United Methodist Church, Sinai Temple, and Sinai Akiba Academy
        - If combined with the Wilshire Boulevard Station—University Bible Church; Sepharadic Temple Tifereth; Sinai Temple; Sinai Akiba Academy
        - If combined with the Le Conte Station—Sinai Temple, Sinai Akiba Academy, Westwood United Methodist Church, University Presbyterian Church, Westwood Hills Christian Church, and Jews for Jesus
    - *Westwood Boulevard Connecting Route*—Southern California Jewish Center and Grace of Light Media Church
    - *Cross-Country Connecting Route*
        - If combined with Lot 36 Station—Fairburn Avenue Elementary School and Christian Science Church
        - If combined with Wilshire Boulevard Station—Fairburn Avenue Elementary School and University Bible Church
- Parks and Cemeteries—None of the connecting routes tunnel beneath parks or cemeteries.

Number of Commercial and Residential Parcels and Dwelling Units Potentially Affected

The number of parcels affected by each connecting route varies depending on the location of the Century City and Westwood Stations. For example, connecting to the Lot 36 and Le Conte Stations requires traveling cross-country north of Wilshire Boulevard. All of the connecting routes require some amount of cross-country travel between Wilshire Boulevard and Santa Monica Boulevard. Because these areas contain a mix of single-family, multifamily, and high rise residential development, the number of parcels was supplemented with a count of dwelling units contained on the parcels.

Homeowner Associations Intersected

All of the options require tunneling beneath properties in one or more homeowner association.

Scoping Comments

In regards to the alignment connecting the Century City and Westwood Stations, several public scoping comments voiced concern with and opposition to tunneling beneath homes. Specifically, the Comstock Hills Homeowners Association and the Westwood Homeowners Association expressed concern about tunneling beneath homes in the segment connecting Century City to Westwood. One commenter suggested addressing the Westwood Homeowners Association's concerns early in the process, as to minimize opposition. Eight respondents voiced concern or opposition to tunneling below private residential property, citing noise and vibration concerns. To avoid opposition from homeowners, several respondents suggested routes that would avoid tunneling below private residential property; three alternative routes were suggested. Four commenters suggested an alignment that would follow Santa Monica Boulevard and turn north on Westwood Boulevard. Two respondents suggested using an alignment that connects Century City with Westwood by tunneling below the Los Angeles Country Club. One commenter suggested connecting Santa Monica Boulevard to Wilshire Boulevard by following Beverly Glen Boulevard to Wilshire Boulevard. One respondent also voiced support for an additional station located at the intersection of Santa Monica Boulevard and Westwood Boulevard, which would require an alignment that goes under Westwood Boulevard.

Urban Design Pros and Cons

Opportunity for Adding an Extra Station

In response to public comments, the possibility of adding an extra station between Century City and Westwood on Santa Monica Boulevard or on Wilshire Boulevard was considered. The Westwood Boulevard and Westwood Loop Connecting Routes traveling along Westwood Boulevard between Santa Monica and Wilshire and into Westwood Village may have allowed for the addition of an extra station on Westwood Boulevard. However, upon further analysis, it was determined that the geometry of the Westwood Boulevard and Westwood Loop Connecting Routes would not allow a station to be located on Westwood Boulevard without widening curves and thus increasing the number of parcels potentially affected.

User Benefits

Travel Time

Given that it provides the most direct geographic connection and widest turns, the Cross-Country Connecting Route offers the fastest travel time.

Cost Evaluation

Base Cost

The base cost was estimated based on length and an engineering difficulty factor for station construction. In considering the various connecting routes, the greatest variable to cost is engineering challenges and additional tunnel length necessary to reach the station location. The Cross-Country Connecting Route requires the shortest tunnel length.

Potential Added Costs
The following added costs are associated with the connecting routes:

- Mid-line vent shafts—all connecting routes
- Vertical over-under cross-passages/exit shafts—Cross-Country Connecting Route
- Traveling Cross-Country (tunneling below property)—all connecting routes

Months Added to Construction Schedule
The Cross-Country Connecting Route would have the shortest construction duration given its shorter length in comparison to the other connecting routes.

4.5.5.2 Century City to Westwood Alignment Options Carried Forward

Based on the preliminary analysis, the Cross-Country and Westwood Boulevard alignment options were carried forward into the Draft EIS/EIR (Figure 4-21). The Cross-Country option offers the most direct route between Century City and Westwood, and as a result, offers the best travel time and cost. Also, because of its direct route and short length, the Cross-Country Option is better in regards to community concerns for tunneling under fewer residential properties.

The Golf Course and Westwood Boulevard alignments were eliminated from further consideration in the Draft EIS/EIR. This decision was shared with the public at the August 2009 Community Outreach Meetings.

In addition, following the preliminary engineering and environmental analysis, a Direct Connecting Route was developed in response to ongoing public comments regarding tunneling beneath residential properties. The Direct Connecting Route provides an even shorter and more direct route than the Cross-Country Connecting Route. Therefore, the Direct Connecting Route also offers better travel time and cost effectiveness than Cross Country. The Direct Connecting Route would also avoid significant tunneling beneath Tract 7260, a Homeowners Association in Westwood that had voiced concern regarding tunneling beneath their residences. Additionally, the Direct Connecting Route would tunnel beneath fewer residences than the Cross Country Connecting.

Table 4-3 provides a summary of the results of the alignment evaluation. The details of the alignments carried forward are detailed below.

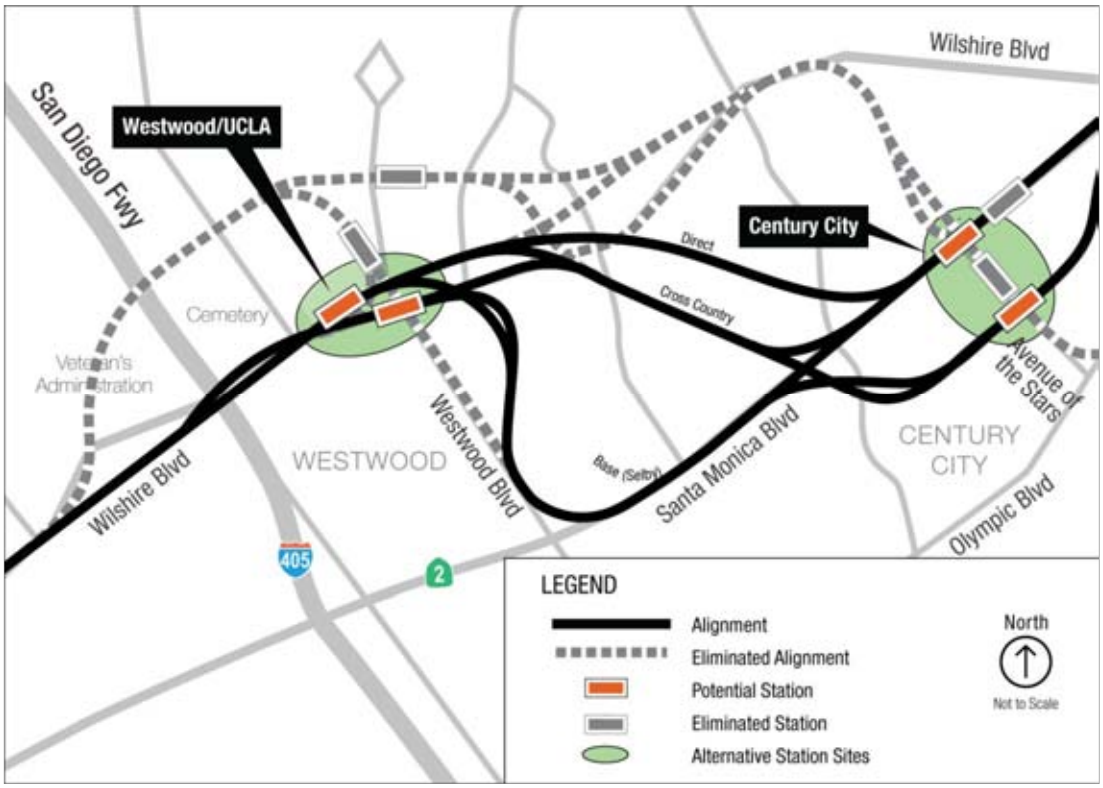


Figure 4-21. Century City to Westwood Alignment Options Carried Forward

Table 4-3. Summary of Alignment Evaluation

Evaluation Measures	Golf Course	Cross-Country	Westwood Boulevard	Westwood Loop
Engineering Feasibility	●	●	○	●
Environmental Considerations	●	●	●	●
Urban Design	N/A	N/A	N/A	N/A
User Benefits	●	●	○	○
Cost Evaluation	●	●	●	●
Carried Forward for Further Review in Draft EIS/EIR		[c] ★		★

● Good ● Medium ○ Poor

Eliminated Routes

- Eliminate the Golf Course Route due to its length, cost and travel time. This option was considered to reduce community concerns regarding tunneling under residential properties. The number of parcels and dwelling units affected by each Beverly Hills to Westwood Option was estimated to determine if this or other options would be

preferable in this regard. The Golf Course Option determined which residential properties were affected; however, it did not reduce the number of residential properties affected. Given this and the added length, cost, and travel time of the Golf Course Option, the Golf Course Option was eliminated.

- Eliminate the Westwood Boulevard Route due to operational challenges at the Westwood Boulevard Station. The Westwood Boulevard alignment would have been combined with the Westwood/UCLA station beneath Westwood Boulevard and would have utilized a push-pull operation strategy. However, this operation strategy is undesirable and would increase travel time on the route significantly.

Routes Carried Forward

- Carry Forward the Cross-Country Route—This option offers the most direct route between Century City and Westwood, and as a result offers the best travel time and cost. Also, as a result of its direct route and short length, the Cross-Country option is one of the better options in regard to community concerns for tunneling under residential properties. Thus, the Cross-Country option was carried forward. Following the post-scoping study, the Cross Country alignment was modified slightly from the route analyzed to further refine the route.
- Carry Forward the Westwood Loop Route—This option addresses concerns regarding tunneling under residential properties by minimizing tunneling beneath residential properties. Additionally, during scoping, the public had expressed interest in an alignment that would follow Westwood Boulevard and provide the possibility of a future station at the Santa Monica/Westwood Boulevard intersection. Although the development of this station was later determined to be infeasible, the connecting route was carried forward in response to these public requests.
- Add the Direct Route - A Direct Connecting Route was developed in response to ongoing public comments regarding tunneling beneath residential properties. The Direct Connecting Route provides an even shorter and more direct route than the Cross-Country Connecting Route. Therefore, the Direct Connecting Route also offers better travel time and cost effectiveness than Cross Country. The Direct Connecting Route would also avoid most of the tunneling beneath Tract 7260, a Homeowners Association in Westwood that had voiced concern regarding tunneling beneath their residences. Additionally, the Direct Connecting Route would tunnel beneath fewer residences than the Cross Country Connecting.

Uncertainties

In determining the best route for connecting the Century City Station to the Westwood Station, a number of factors still remain uncertain and may require further analysis. These factors include:

- Location of Santa Monica fault.
- Need for over-under tunnel configuration and associated vertical cross-passages/exit shafts near Wilshire Boulevard to avoid deep foundations.
-

4.5.6 Century City to Westwood/UCLA Options Included in the Draft EIS/EIR

Following the Post-Scoping Preliminary Engineering and Environmental Studies discussed above, further refinements were made to the alignment options from Century City to Westwood/UCLA based on additional public comment received during four rounds of Community Outreach meetings as detailed above. The two station options at Century City and Westwood/UCLA remained the same.

For the Draft EIS/EIR, the routes were renamed for clarification as follows: East (formerly Direct), Central (formerly Cross Country), and West (formerly Westwood Loop). As shown in Figure 4-22, each of these three segments would be accessed from both Century City Stations and both Westwood/UCLA Stations. The base segment is shown in the solid black line and the options are shown in the dashed grey lines.

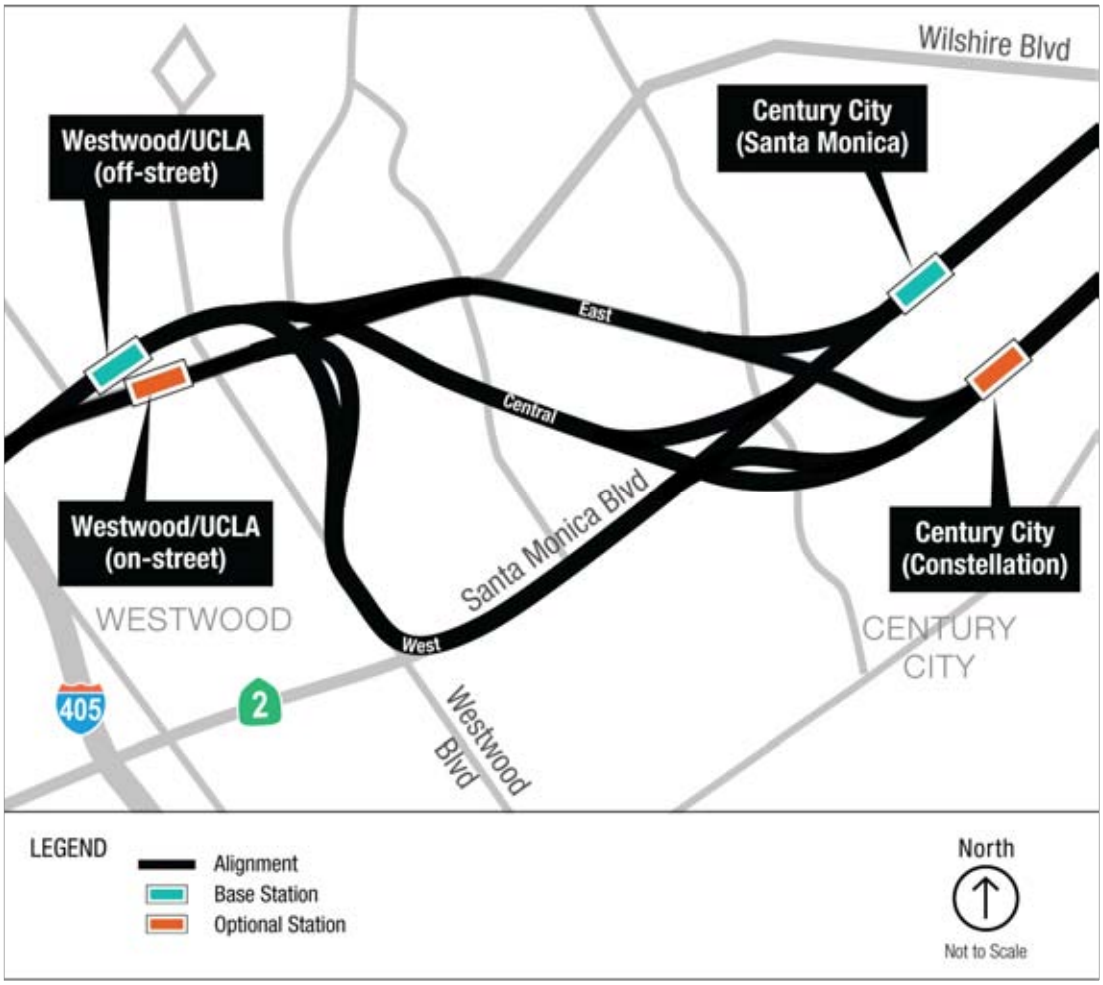


Figure 4-22. Century City to Westwood/UCLA Segment Options carried into the Draft EIS/EIR

Table 4-4 shows how each segment option connects to the Century City and Westwood/UCLA Stations. The general segment descriptions are provided below.

Detailed engineering plans of each option can be found in the *Final Plan and Profile and Typical Section Drawings*, April 2010.

Table 4-4. Century City to Westwood/UCLA Segment Options

Century City Station	Westwood/UCLA Station—Off Street			Westwood/UCLA Station—On Street		
Santa Monica Boulevard	Via East Segment	Via Central Segment	Via West Segment	Via East Segment	Via Central Segment	Via West Segment
Constellation Boulevard	Via East Segment	Via Central Segment	Via West Segment	Via East Segment	Via Central Segment	Via West Segment

4.5.6.1 East Segment

This segment option is located to the far right in Figure 4-23. This is the base segment when combined with the Century City Station (Santa Monica Boulevard) and the Westwood/UCLA Station (Off Street). From the Century City Station (Santa Monica Boulevard), this segment is accessed by traveling west on Santa Monica Boulevard. The segment turns at Century Park West and continues northwesterly until Wilshire Boulevard, where it turns and connects into the Westwood/UCLA Station (Off Street) via Lindbrook Drive. The connection into the Westwood/UCLA Station (On Street) from either Century City Station is made by continuing westerly on Wilshire Boulevard to Westwood Boulevard.

From the Century City Station (Constellation Boulevard), the East Segment is accessed by turning northwesterly under the Westfield Mall and continuing northerly to connect into the segment as described above.

4.5.6.2 Central Segment

This segment option is the dashed grey line shown in the middle of Figure 4-23. From the Century City Station (Santa Monica Boulevard), this segment is accessed by continuing farther west past the East Segment, turning northwesterly near Beverly Glen Boulevard, crossing Wilshire Boulevard, and turning westerly at Lindbrook Drive to enter into the Westwood/UCLA Station (Off Street).

From the Century City Station (Constellation Boulevard), this segment is accessed by continuing farther west past the East Segment, turning northwesterly, crossing Santa Monica Boulevard, and connecting with the Middle Segment described above to enter into the Westwood/UCLA Station (Off Street).

To enter into the Westwood/UCLA Station (On Street) from either Century City Station, the Middle Segment as described above for each Century City Station is followed to Wilshire Boulevard. At Wilshire Boulevard, the Westwood/UCLA Station (On Street) is accessed by continuing west on Wilshire Boulevard to Westwood Boulevard.

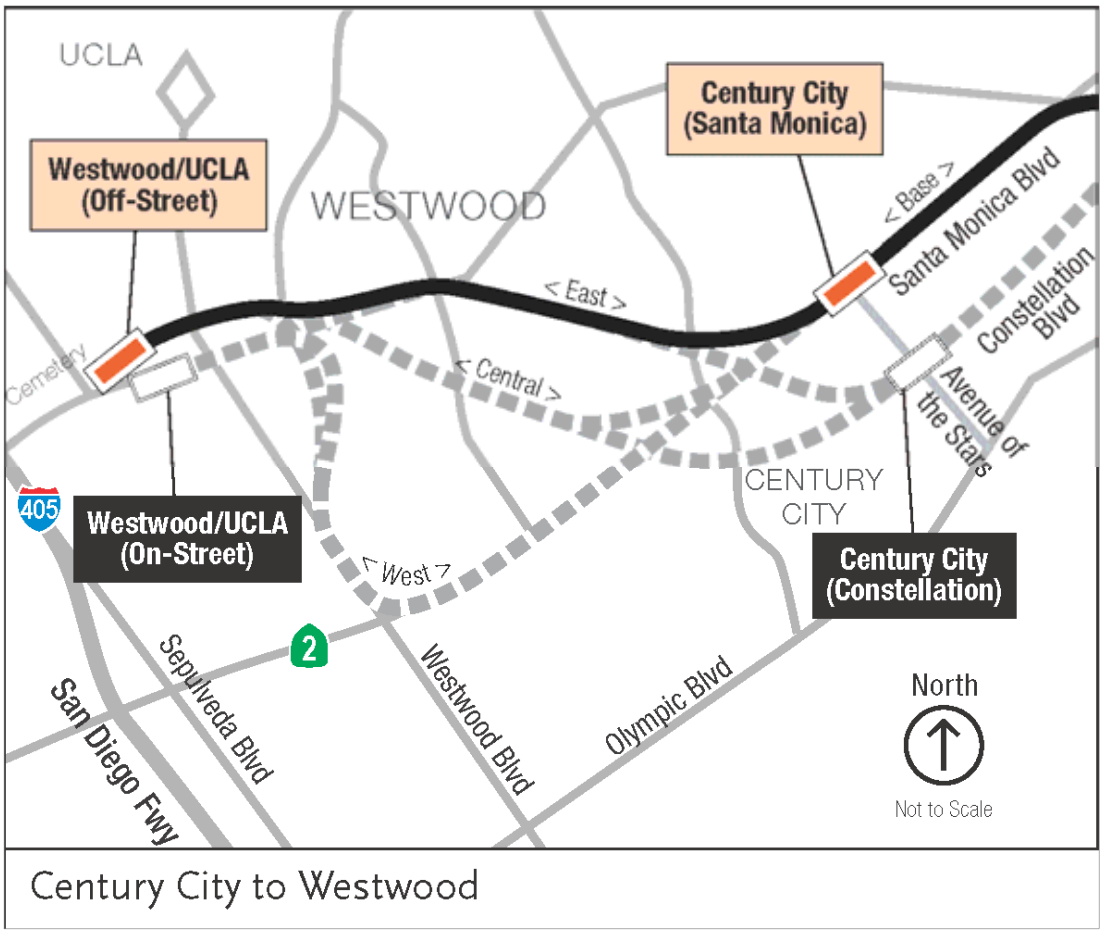


Figure 4-23. Century City to Westwood/UCLA Segment Options carried into the Draft EIS/EIR—Base and Optional Alignments

4.5.6.3 West Segment

This segment option is the dashed grey line shown to the far left in Figure 4-23. From the Century City Station (Santa Monica Boulevard), this segment is accessed by traveling farther west past both the East and Middle Segments along Santa Monica Boulevard to Westwood Boulevard. At Westwood Boulevard, the segment travels north, curves slightly to the east mid-way between Westwood and Wilshire Boulevards to be able to curve westerly into either Westwood/UCLA Station. To access the Westwood/UCLA Station (Off Street), this segment crosses Wilshire Boulevard and connects into the other two segments near Lindbrook Drive and entering this station.

From the Century City Station (Constellation Boulevard), this segment travels along the same route as the Middle Segment until just south of Santa Monica Boulevard, where it turns westerly under Santa Monica Boulevard and connects into the West Segment described above. The connection into either Westwood/UCLA Station is the same as described above.

4.6 Beverly Hills to Century City Alignments/Stations

As with the Century City to Westwood segment of the alignment, the Beverly Hills (Wilshire/Rodeo Station) to Century City stretch has several alignment and station options under consideration.

There is only one location under consideration for the Wilshire/Rodeo Station. This station would be located beneath Wilshire Boulevard between South Canon Drive and El Camino Drive.

There were several Century City Station options that had been presented during scoping and were carried forward into the Draft EIS/EIR. As described, the preliminary engineering and environmental study reduced the number of station options from four stations presented during scoping to two stations carried forward into the Draft EIS/EIR. The two Century City stations under consideration in the Draft EIS/EIR are the Santa Monica Boulevard at Avenue of the Stars Station and the Constellation at Avenue of the Stars Station.

Due to the multiple station options at Century City, there were also multiple alignment options to connect the Wilshire/Rodeo Station and a Century City Station. This section describes the progression of these alignment options from scoping to the Draft EIS/EIR.

4.6.1 Scoping Alignments

During scoping, three basic alignment options between Wilshire/Rodeo and Century City were presented to the public (Figure 4-24). As with the Century City to Westwood alignments, the goal of the AA alignment options, and those that would be screened and carried forward to the Draft EIS/EIR, was to identify the straightest and shortest routes between Beverly Hills and Century City. These routes would cost the least to construct, have the shortest travel times, have the highest ridership, and would also reduce tunneling under residential properties.

During scoping, there were three general alignments presented to the public.

- Santa Monica Boulevard Route—From the Wilshire/Rodeo Station, this route proceeds west beneath Santa Monica Boulevard to the Century City Station along Santa Monica Boulevard. This alignment stays entirely beneath the Santa Monica Boulevard right-of-way.
- Constellation Route—From the Wilshire/Rodeo Station, this route proceeds southwest, beneath residential neighborhoods, to Constellation Boulevard. The alignment follows Constellation Boulevard to the Century City Station beneath Constellation Boulevard at Avenue of the Stars.
- Avenue of the Stars Route—From the Wilshire/Rodeo Station, this route proceeds southwest, beneath residential neighborhoods, to Olympic Boulevard where the alignment turns west to reach either the Constellation Station or the Avenue of the Stars Station.

Figure 4-24. Beverly Hills-Century City Alignment Options Presented During Scoping

4.6.2 Response to Scoping

Following scoping, the goal was to more specifically identify and evaluate the various routes possible between Wilshire/Rodeo and Century City Stations. Broad questions framed the development of the alignment and station options. The questions were not intended to provide a thorough analysis—that would come later in the process as described below—but to provide the basis for adding or not adding a particular route or station location. The broad questions included:

- What is the most direct route, which in turn would generally represent the shortest, fastest, and most cost-effective route?
- Beyond the most direct route, what are the other routes that are possible between the Beverly Hills and Century City areas and would they reduce environmental impacts?
- What other routes have been requested by the public or public agencies and officials?
- What station locations would best serve the community while supporting the preferred alignment routes?

Once the options were clearly defined, the analysis was divided into two segments: Century City Station Options and Wilshire/Rodeo-Century City Alignment Options. The Century City Station Options are discussed above. As in scoping, three general routes for traveling between the Beverly Hills and Century City areas were identified (Figure 4-25):. These three routes are refined versions of the three routes presented at scoping and provide access to all Century City Stations under consideration:

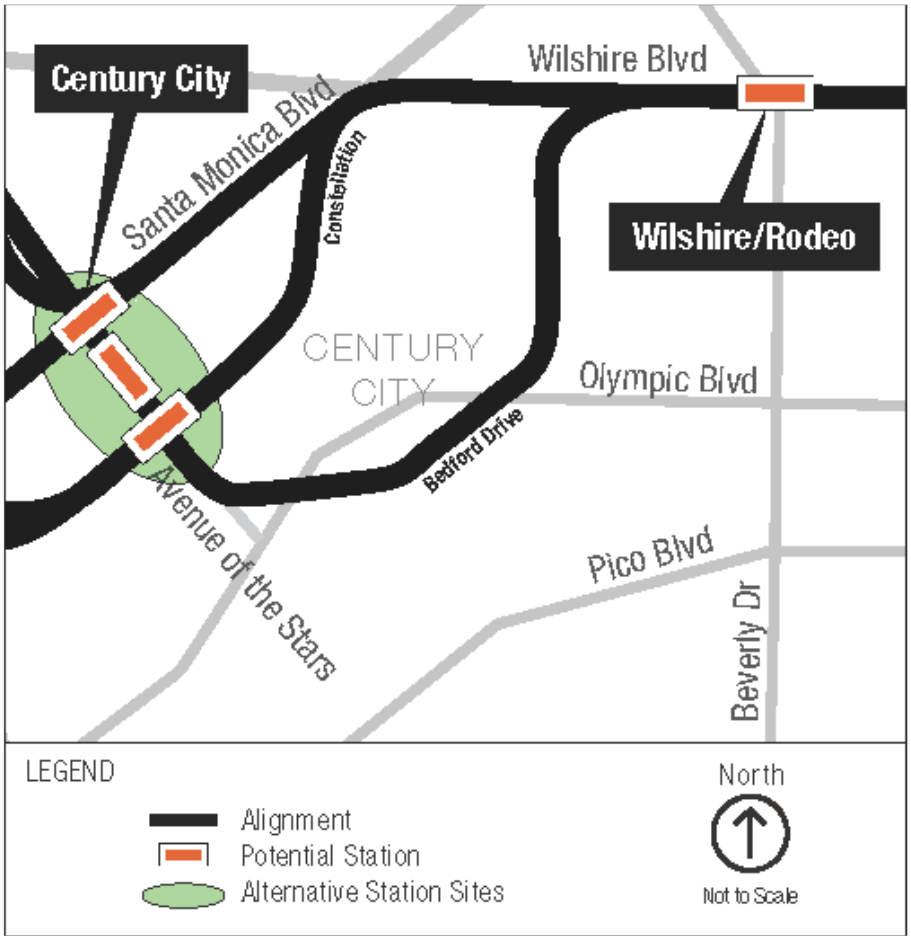


Figure 4-25. Beverly Hills-Century City Alignment Options Included in Post-Scoping Analysis

- **Santa Monica Boulevard Route**—From the Wilshire/Rodeo Station, this route proceeds west beneath Santa Monica Boulevard to the Century City Station along Santa Monica Boulevard. This alignment stays entirely beneath the Santa Monica Boulevard right-of-way. This alignment is the same as the route presented during scoping.
- **Constellation Route**—From the Wilshire/Rodeo Station, this route proceeds west underneath Santa Monica Boulevard. At Lasky Drove, the alignment turns southwest, passing beneath Durant Drive and Robbins Drive and Moreno Drove. The alignment

then passes beneath the Beverly Hills High School and continues west to connect to Constellation Boulevard, where the Constellation Boulevard Station is located. This alignment was shifted slightly west from the alignment presented in scoping.

- **Bedford Drive Route—**From the Wilshire/Rodeo Station, this route proceeds west along Santa Monica Boulevard to Camden Drive, where the alignment turns southwest until it reaches Bedford Drive. At Bedford Drive, the alignment turns south beneath Bedford Drive to Olympic Boulevard, where it turns southwest again. The alignment passes beneath Roxbury Memorial Park, beneath Spalding Drive, Heath Avenue and Century Park East. The alignment crosses under a residential complex, turns northwest and passes back under Olympic Boulevard to reach Avenue of the Stars Station. This is a revised version of the Avenue of the Stars Route presented during scoping and provides access to the Avenue of the Stars Station that was added during post-scoping. This alignment would only connect to the Avenue of the Stars Station and not serve the Constellation Station.

4.6.3 Engineering and Environmental Evaluation

As with the Century City to Westwood alignment options, the Beverly Hills to Century City alignment options were further refined. These changes mainly resulted from engineering considerations and an interest in minimizing or reducing the number of residential properties that were tunneled beneath. The evaluation of the Beverly Hills to Century City alignment options were closely tied to the evaluation of the Century City Station options as discussed in Section 4.5.3.

4.6.3.1 Engineering and Construction Feasibility

Potential Utility Relocation Issues

Once leaving the station vicinities, the tunnels can usually descend to sufficient depth to generally avoid underground utilities. None of the known utilities would necessitate an infeasible or substantially more costly tunnel depth.

Proximity of Fault Crossings

Based on available fault data, the Santa Monica Boulevard alignment would parallel the Santa Monica fault while the Constellation Boulevard and Bedford Drive alignments would avoid fault as it is currently understood. Figure 4-26 illustrates the fault lines in the Century City vicinity. Crossing or paralleling faults may increase cost and engineering difficulty. Since the precise location of the Santa Monica fault is not known, it will be investigated as part of future engineering design work. Some investigation is being conducted in this ACE phase.

Figure 4-26. Fault Lines in Century City Vicinity

Deep Foundation Issues

As discussed in Section 4.5.3, none of the proposed Century City Station Options require the tunnel alignment to pass directly beneath buildings with deep foundations. However, some station location options will require the tunnel and station to be built adjacent to tall buildings which were constructed with tie-backs. Tie-backs are tensioned steel strands used for temporary shoring of deep excavations, generally used for underground parking. These steel cables are typically cemented into 8 to 12 inch diameter holes and protrude horizontally as a proportion of the excavation depth. The tie-backs are required to be "de-tensioned" after the final excavation support is placed. However, if a number of tie-backs are in the path of the Tunnel Boring Machine (TBM), additional effort (and cost) is required to remove them ahead of the machine or through the TBM's cutting wheel. If the tie-backs occur at a station box location, somewhat less effort is required to remove them. The tie-backs in the Century City area extend into the street right of way and therefore may conflict with the tunnel and station box construction. It is anticipated that the Constellation, as well as the Avenue of the Stars Station Options, would encounter tie-backs as follows:

- Avenue of the Stars Station (Bedford Drive Alignment): Potential to encounter tie-backs along tunnel alignment between Century Plaza and the old Schubert Site.
- Constellation Station (Constellation Alignment): High potential for tie-backs on south side of Constellation Boulevard between Century Park East and Avenue of the Stars, where the old Schubert foundation supports are located.

Mid-line Vent Shaft Needs and Locations

The need for mid-line vent shafts is a function of a variety of factors including train headway, distance, and operational strategy. Based on preliminary definition of these factors, it is estimated that vent shafts should be located roughly every 6000 feet. Vent shafts will be located at every station, so the need for a mid-line vent shaft was estimated based on the distance between stations. The distance between the Wilshire/Rodeo Station and each of the Century City Station Options is as follows:

- Santa Monica Boulevard Alignment: 5,900–6,900 feet, therefore estimate vent shaft needed and could be located on Wilshire or Santa Monica Boulevards
- Constellation Boulevard Alignment: 7,200 feet, therefore estimate vent shaft needed and could be located on Wilshire Boulevard before cross-country section in order to avoid residential areas.
- Bedford Drive Alignment (Avenue of the Stars Station): 8,500 feet, therefore estimate vent shaft needed and would need to be located either on single-family residential streets or major arterial streets lined with multi-family residential, and possibly near a public park.
- It should be noted that the 6,000 foot threshold was set for initial planning purposes and further study based on a more detailed project definition and engineering design is necessary to determine conclusively the need and location options for mid-line vent shafts.

4.6.3.2 Construction Feasibility

Staging/Construction Work Site Areas

Construction of the Connecting Route tunnels will occur underground via tunnel boring machines (TBMs). Construction equipment, materials and personnel, as well as construction byproducts such as excavated soil will be brought into and out of the tunnel via the station areas. Construction equipment and materials will be stored and processed at work sites near the station areas. The availability and convenience of work site areas possible for each station location option was discussed in previous sections.

Other Construction Considerations

In addition, all of the alignment options are anticipated to require mid-line vent shafts. Construction of a mid-line vent structure requires an excavation from the surface to the tunnel depth, construction of a concrete box structure to house fans and electrical equipment, and placement of street-level grates or raised grates (to prevent flooding). There is some flexibility in the location of the vent shaft.

Treatment of the ground prior to excavation and/or dewatering may also be necessary depending on ground conditions.

4.6.3.3 NEPA/CEQA Considerations and Community Preference

Historic Resources
The Santa Monica Boulevard alignment would pass historic resources at the intersection of Wilshire Boulevard and Santa Monica Boulevard.

Schools
The Constellation Boulevard alignment requires tunneling beneath Beverly Hills High School.

Hospitals
None of the alignments would tunnel near any hospitals.

Parks
The Bedford Drive alignment would require tunneling beneath Roxbury Park, located south of Olympic Boulevard between Spalding and Roxbury Drives.

Cemeteries
None of the alignments would tunnel near any cemeteries.

Number of Commercial and Residential Parcels Affected
The Santa Monica Boulevard alignment affects minimal parcels as the tunnels are located primarily within the street right-of-way. The Constellation alignment and the Bedford Drive alignment would require tunneling "cross-country" in order to connect the Wilshire/Beverly/Rodeo Station and Century City Station.

- The Constellation alignment increases the number of parcels affected relative to the Santa Monica Boulevard alignment. These include commercial parcels and residential parcels comprised of single-family parcels and multi-family parcels.
- The Bedford Drive alignment increases the number of parcels affected by the alignment relative to Santa Monica Boulevard alignment. This includes fewer commercial parcels and additional residential parcels.

Homeowner Associations Intersected
The Bedford Drive alignment and Constellation alignment requires tunneling beneath properties in the Southwest Beverly Hills Homeowner Association as the alignment connects between the Wilshire/Beverly/Rodeo Station and Century City. This homeowner association is not intersected by the Santa Monica Boulevard alignment.

Scoping Comments
While no comments were received specifically regarding the alignment options between Wilshire/Rodeo and Century City, several comments were received regarding the Century City Station location.

There were about 13 public scoping comments related to the Century City Station location. The majority of these respondents expressed support for the Century City Station to be located in the center of Century City in order to maximize access to offices. Many respondents supported a Century City Station located at the intersection of Constellation Boulevard and Avenue of the Stars (7 of 13 comments). Several others

expressed support for a station along Avenue of the Stars (3 of 13 comments). One person supported the station along Santa Monica Boulevard and one person supported a station along Olympic Boulevard.

4.6.3.4 User Benefits

Travel Time

Given that it provides the most direct geographic connection, the Santa Monica Boulevard alignment offers the fastest travel time while the Bedford Drive alignment has the slowest travel time.

4.6.3.5 Cost Evaluation

Base Cost

The base cost was estimated based on length and an engineering difficulty factor for station construction. In considering the various connecting routes, the greatest variable to cost is engineering challenges and additional tunnel length necessary to reach the station location. The Santa Monica Boulevard alignment requires the shortest tunnel length and therefore the lowest cost. The Bedford Drive alignment requires the longest tunnel length and therefore the highest cost.

Potential Added Costs

The following added costs are associated with the connecting routes:

- Mid-line vent shafts—all alignment options
- Traveling Cross-Country (tunneling below property)—Constellation and Bedford Drive alignment options

Months Added to Construction Schedule

The Santa Monica Blvd alignment would have the shortest construction duration given its shorter length in comparison to the other connecting routes.

4.6.4 Beverly Hills to Century City Alignment Options Carried Forward

Based on the engineering and environmental analysis for both the Beverly Hills to Century City alignment options as well as the Century City Station options, two alignment options were carried forward for inclusion in the Draft EIS/EIR: Santa Monica Blvd and Constellation.

Due to the length of the Bedford Drive alignment, the costs, travel time, and environmental impacts would all be greater than for the other two alignment options. Furthermore, the Avenue of the Stars Station was eliminated from further consideration, due in part to the challenges presented by length and location of the Bedford Drive alignment. Therefore, the Bedford Drive alignment was eliminated from further consideration. The Santa Monica Boulevard and Constellation alignments were carried into the Draft EIS/EIR, which would serve the Century City—Constellation Station.

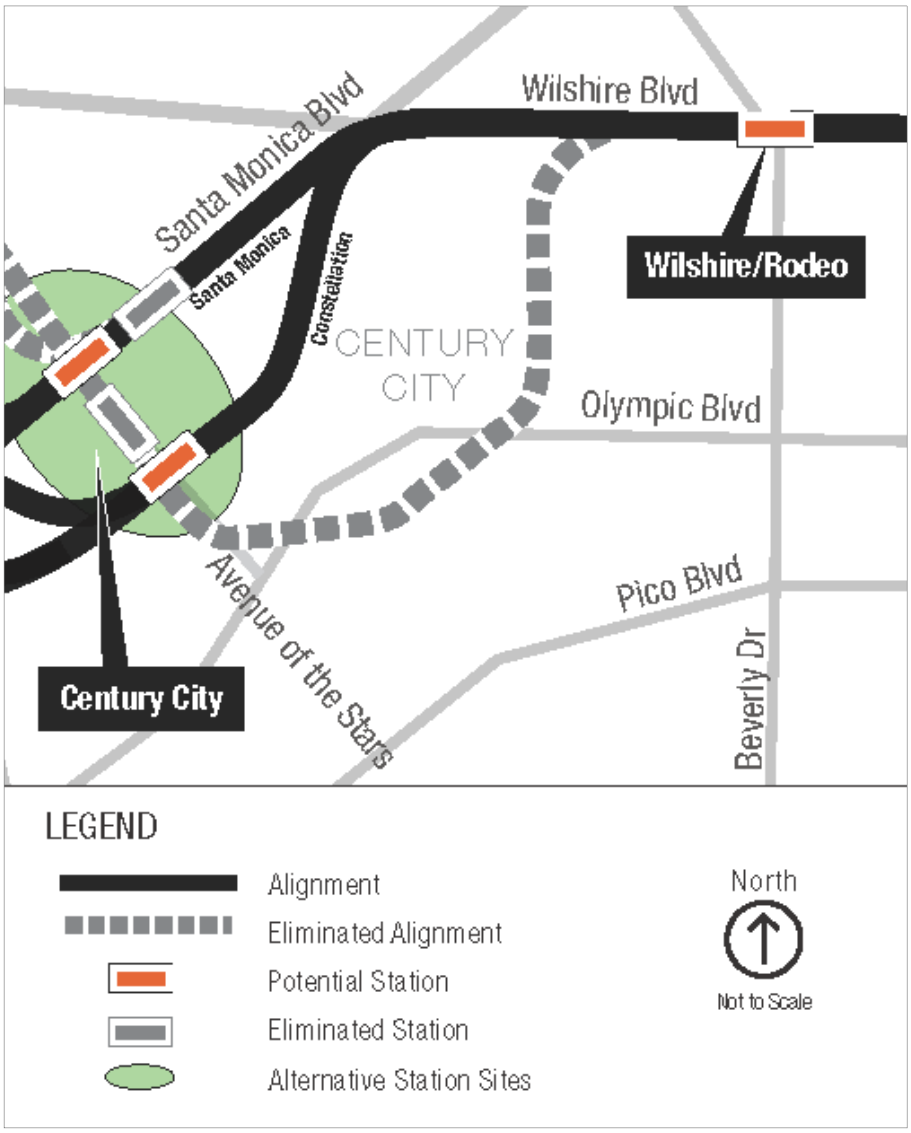


Figure 4-27. Beverly Hills to Century City Alignment Options Carried Forward

4.6.5 Beverly Hills to Century City Alignment Options Included in the Draft EIS/EIR

Based on the findings of the preliminary engineering and environmental analysis, three alignment options between Wilshire/Rodeo and Century City were included in the Draft EIS/EIR (Figure 4-28): via Santa Monica Boulevard, via Constellation North, and via Constellation South. All three extend from the Wilshire/Rodeo Station to a Century City Station, either on Santa Monica Boulevard or Constellation Boulevard. Santa Monica Boulevard is the base alignment option. Constellation North is a slight variation on the old Constellation alignment that was initially developed. Constellation South was developed as a new alignment to provide the most direct connection from the Wilshire/Rodeo Station to the Century City Constellation Station.

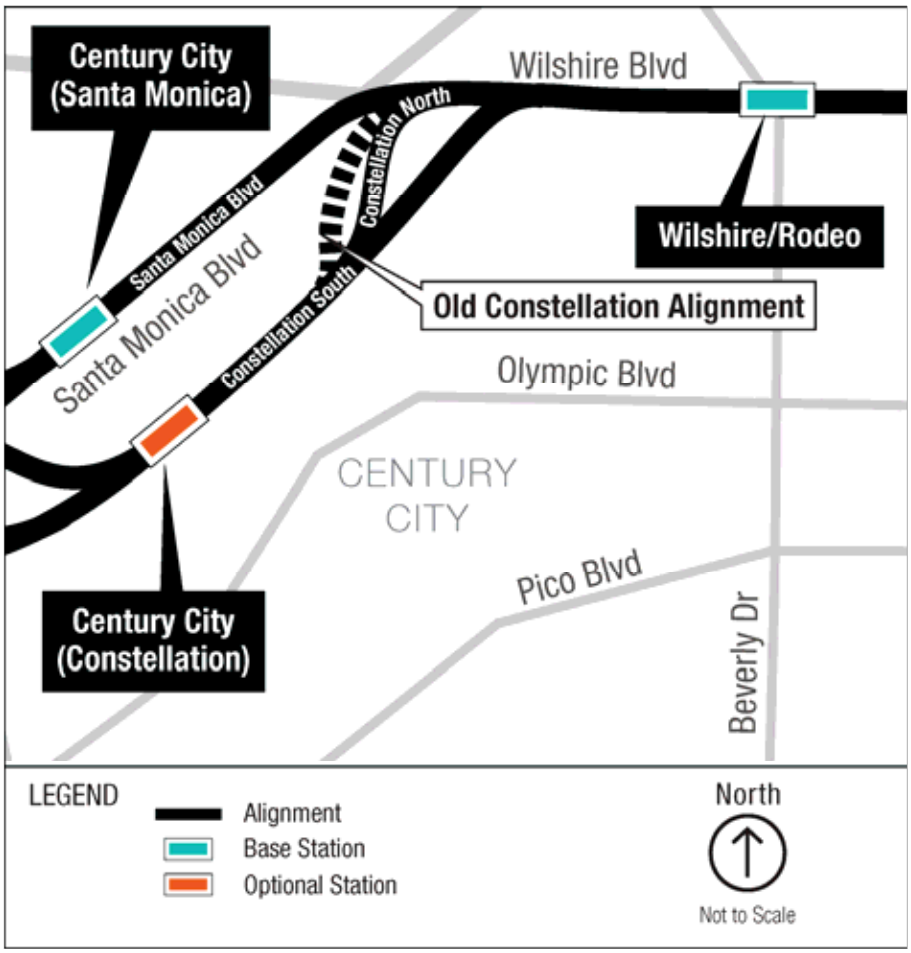


Figure 4-28. Beverly Hills to Century City Alignments Included in the Draft EIS/EIR

4.6.5.1 Base Segment—Santa Monica Boulevard

This alignment is considered the base segment. From the Wilshire/Rodeo Station, the Santa Monica Boulevard segment travels westerly, beneath Wilshire Boulevard, to the Wilshire Boulevard/Santa Monica Boulevard intersection, then curves southwesterly to Santa Monica Boulevard, and to the Century City Station on Santa Monica Boulevard.

Two routes are under consideration to connect the Wilshire/Rodeo Station to the Constellation Station option.

4.6.5.2 Segment Option—Constellation North

The Constellation North segment option begins at the Wilshire/Rodeo Station and travels west to near Linden Drive (Figure 4-28). At this juncture, this segment curves southwesterly at Linden Drive to Lasky Drive, and under Lasky Drive to just north of Young Drive. The segment option then turns southwesterly to under Constellation Boulevard and to the station on Constellation Boulevard at Avenue of the Stars.

4.6.5.3 Segment Option—Constellation South

The Constellation South segment option begins at the Wilshire/Rodeo Station and travels west to Bedford Drive (Figure 4-28). At this juncture, this segment curves to the southwest and travels directly southwest to Constellation Boulevard and into the optional station on Constellation Boulevard at Avenue of the Stars. This alignment follows the route identified in Scoping meetings between Beverly Hills and the Century City-Constellation Station.

4.7 Station Options West of the I-405 Freeway

4.7.1 Scoping

In the alternatives presented at scoping, the first station west of the Interstate 405 (I-405) Freeway was the Wilshire/Bundy Station. During scoping, the public suggested that an additional station should be provided west of I-405 because there was too much distance between a Westwood/UCLA Station and the Wilshire/Bundy Station.

Additionally, Measure R identified $4.2 billion in funds to extend the project approximately 9 miles to the Westwood vicinity, but not as far as the Wilshire/Bundy Station. It was recommended during scoping to provide an alternative that would extend the alignment one station west of I-405 (considered in the Westwood vicinity and therefore covered under Measure R funding). By extending the project west of I-405, passengers west of I-405 would be able to avoid the bottleneck at I-405 and therefore have better access to the system. Therefore, the first station west of I-405 would need to be able to serve as a terminus station.

The options considered for each location are presented below, with a summary of the decisions made as to which station locations were carried forward into the Draft EIS/EIR.

Figure 4-29. Possible Stations at Wilshire/VA Hospital, Wilshire/Federal, Wilshire/

4.7.2 Response to Scoping — Barrington and Wilshire/Bundy

In response to scoping, additional
station sites were considered at the Veterans Administration (VA) Hospital, Federal Avenue, and Barrington Avenue to identify stations that would provide access between the Westwood/UCLA and Wilshire/Bundy Stations ().

4.7.2.1 Westwood/Veterans Administration Hospital Station

At the time of scoping, the VA expressed interest in a station on its property. As a result, an initial station was evaluated on the south side of Wilshire Boulevard. After further discussions with the VA, the VA requested that an additional site be evaluated as an option, and a station north of Wilshire Boulevard was also considered.

4.7.2.2 Westwood/VA Hospital Station—South of Wilshire Boulevard

The Westwood/VA Hospital Station would be located south of Wilshire Boulevard, below the VA parking lot between the I-405 exit ramp and Bonsall Avenue (). The station would have an at-grade entrance plaza with fare collection area and pedestrian connections to VA buildings and Bonsall Avenue. Coordination with the California Department of Transportation (Caltrans) would be required for construction at the I-405.

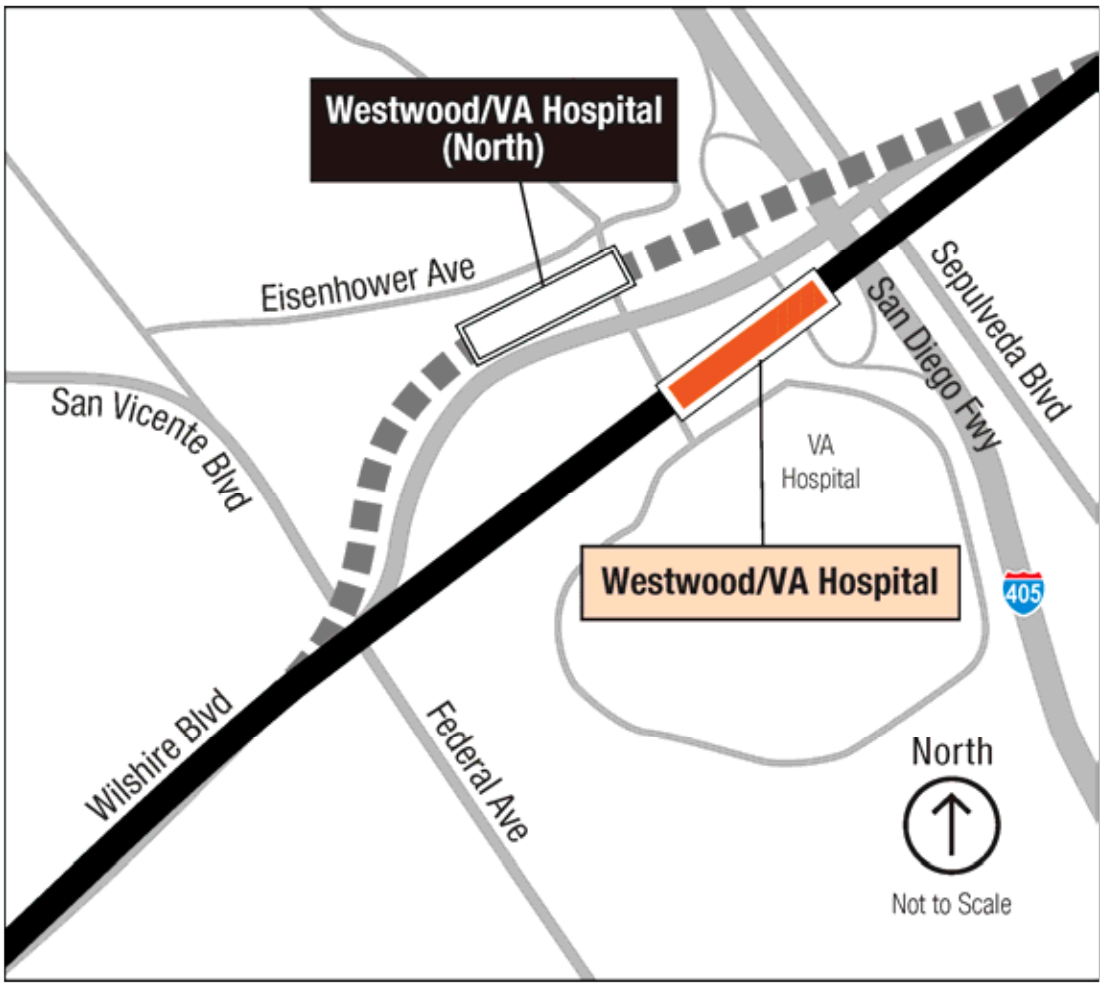


Figure 4-30. Westwood/VA Station Options—South and North of Wilshire

4.7.2.3 Westwood/VA Hospital Station—North of Wilshire Boulevard

This station location would place the Westwood/VA Hospital Station on the north side of Wilshire Boulevard as opposed to the south side. The end of the station box would be just west of I-405, and the western end would be west of Bonsall Avenue. This option would locate the station away from the potentially historic residences south of Wilshire Boulevard to the west of Bonsall Avenue. However, this option may impact Wadsworth Theater and the VA Chapel, which are historic resources. This option would avoid potential conflicts with future plans that the VA has for their parking structure on their parking lot.

4.7.2.4 Wilshire/Federal Station

The station box would be located under Wilshire Boulevard from just west of Federal Avenue to just west of Barrington Avenue. Station entrances would have been located at the northwest corner of Wilshire Boulevard/Barrington Avenue and the southeast corner of the Wilshire Boulevard/Barrington Avenue intersection. It was determined that this

station would impact more residential property than the Westwood/VA Hospital Stations or the Wilshire/Barrington Station.

4.7.2.5 Wilshire/Barrington Station

The Wilshire/Barrington Station was examined as a potential terminus station for an additional alternative or as an MOS. The Wilshire/Barrington Station would be farther west than the Westwood/VA Hospital Station. The funds required to extend the terminal station farther west than a Westwood/VA Hospital Station would have required additional resources beyond Measure R.

In addition, there were some comments from the community opposing a station at Wilshire Boulevard/Barrington Avenue because of concerns regarding development in the area. Some community members view the immediate area as high density and were concerned that a station at this location would only result in further densification of the area. Additionally, the Wilshire/Barrington Station would be located in close proximity to the Wilshire/Bundy Station. There was concern expressed about the Wilshire/Barrington Station as a terminus or interim terminus due to the additional traffic circulation around an end station. The Wilshire/Bundy Station location provided better potential transit connections as it lines up with the future planned Expo station at Olympic/Bundy. The Wilshire/Barrington Station would not have adequate space for a park-and-ride facility or other Metro parking without substantial right-of-way acquisition.

4.7.2.6 Wilshire/Bundy Station

The station would be under Wilshire Boulevard, east of Bundy Drive, extending just east of Saltair Avenue. There would be two potential station entrances: on the northeast corner of the Wilshire Boulevard/Bundy Drive intersection and on the southeast corner of the Wilshire Boulevard/Bundy Drive intersection. During the refinement process, the station box was shifted slightly east to avoid having the station box across the intersection, which would make construction more challenging.

4.7.3 Analysis of Station Options West of the I-405 Freeway

After the stations and potential issues were identified, an analysis was conducted to determine which stations would be most appropriate to carry forward into the Draft EIS/EIR for station options west of the I-405 Freeway. The potential to serve as a terminus station was an important consideration as a criteria in the evaluation.

The Wilshire/Federal Station location would have been located on a site currently used by the U.S. Army Reserve. The site was determined to be too small to accommodate the subway station without impacting adjacent historic homes on the V.A. property. It was also a difficult site for a subway station because of the sharp curve of Wilshire Boulevard and the close proximity to the Westwood/VA Hospital Station site and the Wilshire/Barrington Station site, both of which were determined to be better locations.

The Wilshire/Barrington and the Wilshire/Bundy Stations were located too far west to be funded as part of Measure R. Therefore, they were eliminated as potential terminus stations for the fundable Measure R alternatives. However, a Wilshire/Bundy Station will

continue to be evaluated as part of a later segment that would extend the subway to Santa Monica should additional funding beyond Measure R be identified.

While the Wilshire/Barrington Station is in a high density area with high ridership potential, there were community concerns if this station were to be used as an end of line station due to the additional traffic circulation around a terminus or interim terminus station. For the purposes of this study, the Wilshire/Bundy Station provided better station spacing when paired with the Westwood/VA Hospital Station and the Wilshire/26th Station. In the future, it may be appropriate to reconsider the Wilshire/Barrington location as a possible station site.

4.7.4 Station Options West of the I-405 Freeway in Draft EIS/EIR

Based on the analysis conducted, and comments from the public on station locations, both Westwood/VA Hospital Station locations were carried forward for further analysis in the Draft EIS/EIR. One of the two potential station locations at the VA Hospital—VA Hospital South or VA Hospital North—could be part of a Build Alternative that stops just west of the I-405 Freeway. In addition, the Wilshire/Bundy Station will be included for any alternative that would extend the subway to Santa Monica.

4.8 West Hollywood Alignment

4.8.1 Scoping Alignment and Station Options

Two options for the West Hollywood Branch—San Vicente Option and La Cienega Option--were presented to the public in the April 2009 scoping meetings.

4.8.1.1 San Vicente Option

From the Santa Monica/Fairfax Station, this option travels west along Santa Monica Boulevard, veers southwest to continue following Santa Monica Boulevard, then turns south at San Vicente Boulevard (Figure 4-31). The alignment then continues along San Vicente Boulevard, as it veers southeast until slightly past La Cienega Boulevard, where the alignment shifts south and then southwest to merge with the Wilshire Boulevard alignment just west of La Cienega Boulevard. The alignment is 4.98 miles (26,313 feet) long.

4.8.1.2 La Cienega Option

From the Santa Monica/Fairfax Station, this option travels west along Santa Monica Boulevard, turns south at La Cienega Boulevard and follows La Cienega Boulevard until the intersection with San Vicente Boulevard where it turns slightly southeast and then loops back to the southwest to merge with the Wilshire Boulevard alignment just west of La Cienega Boulevard (Figure 4-31). This alignment is 4.67 miles (24,660 feet) long.

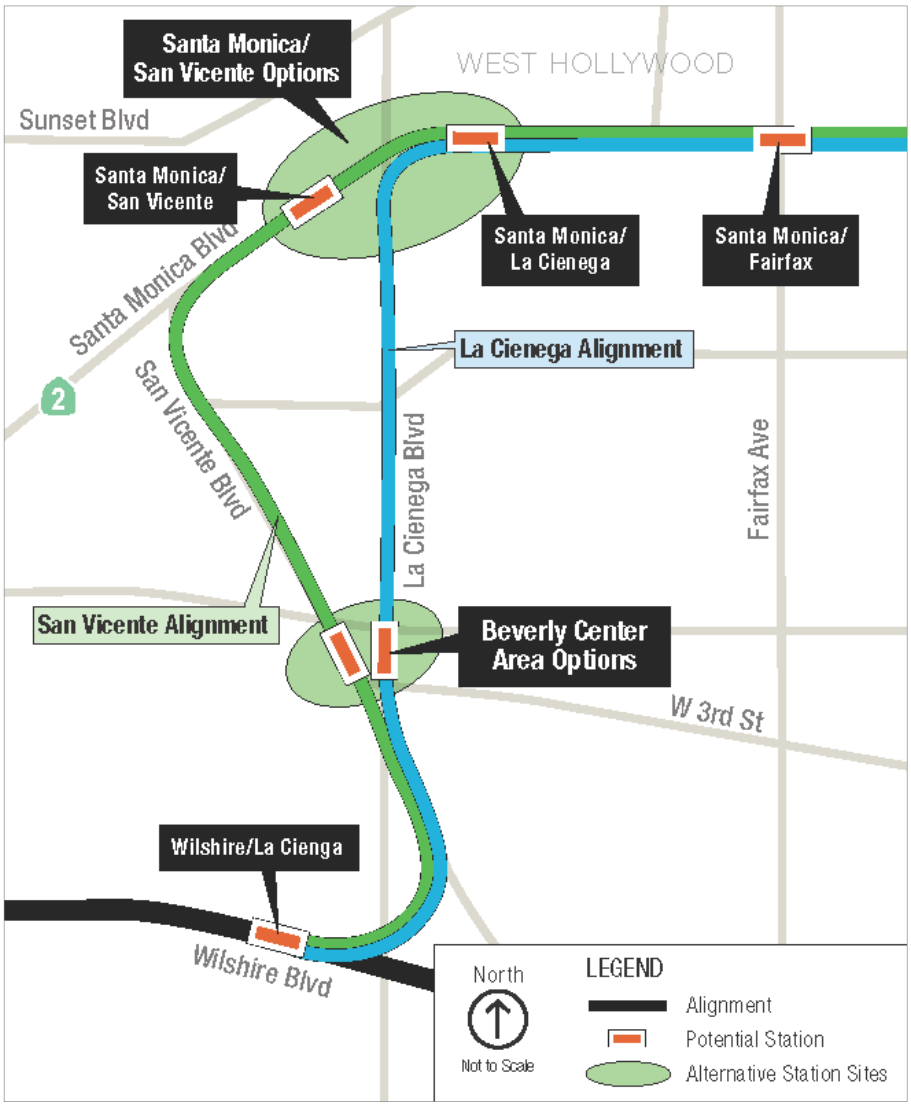


Figure 4-31: West Hollywood Alignment and Station Options

4.8.2 Response to Scoping

During the meetings, the City of West Hollywood and the general public expressed a preference for the San Vicente Option. Based on these preferences, Metro evaluated the comments and conducted a more detailed screening analysis for these two options to determine if the San Vicente Option could be supported by technical and engineering data.

Part of the response to these scoping comments included identifying locations for stations along each of the alignment options, as presented below.

Due to the different alignments, different station locations for the Santa Monica/La Cienega Station and the Beverly Center Area Station were identified, as follows:

4.8.2.1 Santa Monica/La Cienega Station

Location considered under each option:

- San Vicente Option—Santa Monica Boulevard between Hancock Avenue and West Knoll Drive (west of La Cienega Boulevard and east of San Vicente)
- La Cienega Option—Santa Monica Boulevard between Kings Road and Harper Avenue (east of La Cienega Boulevard)

4.8.2.2 Beverly Center Area Station

Location considered under each option:

- San Vicente Option—San Vicente Boulevard between Beverly Boulevard and 3rd Street
- La Cienega Option—La Cienega Boulevard between Beverly Boulevard and Third Street

4.8.3 Engineering and Environmental Evaluation

As with the analysis of the Century City-Westwood options and the Wilshire-Rodeo-Century City options, the West Hollywood alignment and station options were then screened based on a set of evaluation criteria. Evaluation criteria was developed that would incorporate the seven goals established in the AA for the Project: Mobility Improvement; Transit-Supportive Land Use Policies and Conditions; Cost-Effectiveness; Project Feasibility; Equity; Environmental Considerations; and Public Acceptance. The criteria would frame the screening analysis and assist in identifying the major similarities and differences among the options.

The results of the analysis of the West Hollywood branch alignments for each of these criteria are presented below.

4.8.3.1 Engineering and Construction Feasibility

Potential Utility Relocation Issues

- Both options conflict with existing utilities. A great challenge is an existing (estimated 20 feet by 20 feet) storm drain below San Vicente Boulevard. The storm drain would interfere with the tunnel and proposed stations in the San Vicente Option and would be difficult to relocate given its large size. The storm drain could be accommodated by shifting the alignment and station location.
- A storm drain (unknown size) runs along La Cienega Boulevard, potentially conflicting with the Beverly Center Area Station La Cienega Option. The utility information at the Santa Monica/La Cienega Station, for both the San Vicente Option and La Cienega Option, is incomplete at this time.
- In terms of identified utility relocation issues, the San Vicente Option presents more potential challenges than the La Cienega Option. However, each option would require some level of utility relocation.

Proximity of Fault Crossings

Neither the San Vicente Option nor the La Cienega Option alignment crosses a known fault line. Both alignments traverse just south of the Santa Monica fault line. However,

one or both options may briefly parallel the Santa Monica fault line. Crossing or paralleling faults may increase cost and engineering difficulty. Since the precise location of the Santa Monica fault is not known, it will be investigated as part of future engineering design work. Some investigation is being conducted in this ACE phase.

Deep Foundation Issues

There are no known deep foundation issues along either proposed alignment. None of the buildings in the area of the proposed alignments are tall enough to require deep foundations.

Exit Shaft Needs and Locations

Both San Vicente Option and La Cienega Option would require exit shafts as the tunnels approach the Wilshire/La Cienega Station. In both options, the tunnels are designed in an over and under configuration for the stretch approaching the Wilshire/La Cienega Station and would therefore require exit shafts.

Mid-line Vent Shaft Needs and Locations

- The need for mid-alignment vent-shafts is a function of a variety of factors including headway, distance, and operational strategy. Based on preliminary definition of these factors, it is estimated that vent shafts be located roughly every 6,000 feet. Vent shafts will be located at every station, so the need for a mid-alignment vent shaft was estimated based on the distance between stations.
- In the San Vicente Option, a mid-line vent shaft may be necessary for the segment connecting the Santa Monica/Fairfax Station and the Santa Monica/La Cienega Station. As the length of this segment is 6,370 feet, only slightly above the 6,000-foot threshold, further engineering design work is needed to confirm the need for a vent shaft.
- In the La Cienega Option, a mid-line vent shaft would likely be necessary for the segment connecting the Santa Monica/La Cienega Station and the Beverly Center Area Station. This segment is 7,285 feet long.
- The 6,000-foot threshold was set for initial planning purposes and further study based on a more detailed project definition and engineering design is necessary to determine conclusively the need and location options for mid-alignment vent shafts.

Construction Effects

During construction, the San Vicente Option would likely have a temporary direct effect on the Beverly Center Mall as well as the Cedars-Sinai Medical Center whereas the La Cienega Option would likely have a direct effect on the Beverly Center Mall and Beverly Center Extension Shopping Center.

Staging and Construction Work Site Areas

Since both the San Vicente Option and La Cienega Option traverse densely developed portions of West Hollywood and Beverly Hills, obtaining lay down areas is a challenge for both alignments. Furthermore, since all four of the proposed station locations in both options are located on the street, the land immediately surrounding the stations cannot be used as lay down areas. There are few surface lots and vacant parcels and the few that

do exist are likely to be developed in the near future. The cost of acquiring land in this area of the city is also high; therefore, it would add a substantial cost to either proposed option. However, the Santa Monica/La Cienega Station location on the San Vicente alignment option has the advantage of being closer to the Metro property along Santa Monica Boulevard, which could serve as a construction stating area.

4.8.3.2 NEPA/CEQA Considerations and Community Preference

Historic Resources

The San Vicente Option could potentially affect more historic properties than the La Cienega Option. Two previous cultural surveys were conducted along the San Vicente Option alignment; no surveys were conducted along the La Cienega Option alignment. Along the San Vicente alignment option, one cultural survey was n conducted at a site located on the west side of San Vicente Boulevard between Beverly Boulevard and West 3rd Street. The second cultural survey was conducted at a site located on the west side of San Vicente Boulevard between Santa Monica Boulevard and Melrose Avenue. The San Vicente Option alignment also is located near one historic recorded resource on Melrose Avenue, just east of San Vicente Boulevard. The La Cienega Option alignment is near no historic recorded resources.

Schools

Both the San Vicente Option and the La Cienega Option alignments are near the Beverly Hills Montessori School, located on the northeast corner of the Laurel Avenue and Santa Monica Boulevard intersection.

Churches and Religious Facilities

The San Vicente Option alignment is near the Our Lady of Mount Lebanon Church, located at the corner of Burton Way and San Vicente Boulevard. Both the San Vicente Option and B alignments are near the Church of Religious Science, 50 North La Cienega Boulevard, and the Mission of Beverly Hills, 109 North La Cienega Boulevard.

Hospitals

The San Vicente Option alignment passes closer to the Cedars-Sinai Medical Center and may affect the center during construction work. The San Vicente Option alignment is also near the Unity Medical Center. The La Cienega Option alignment is not located near any hospitals.

Parks

The West Hollywood Park, located on the west side of San Vicente Boulevard between Santa Monica Boulevard and Melrose Avenue, is near the San Vicente Option alignment. The La Cienega Option alignment is not near any parks or recreation areas.

Cemeteries

Neither alignment is near any cemeteries.

Number of Commercial and Residential Parcels Affected

The La Cienega Option potentially affects a greater number of total parcels than the San Vicente Option. The San Vicente Option would potentially affect 119 parcels, while the La

Cienega Option would potentially affect approximately 233 parcels. Most of the affected parcels in this area are commercial. However, the San Vicente Option would affect more residential parcels than the La Cienega Option. In total, the San Vicente Option would affect nine multifamily residential parcels and one high-rise residential parcel, while the La Cienega Option would affect no residential parcels.

Scoping Comments
The public scoping comments suggest that support exists for both the San Vicente Option and La Cienega Option alignments. Much of the public commentary focused on voicing support for the construction of Alternative 11. More commenters expressed support for the San Vicente Option alignment, as it would provide better access to popular destinations in West Hollywood. In terms of the location of the Santa Monica/La Cienega Station, there was more support for locating the station west of La Cienega Boulevard (San Vicente Option) rather than east of La Cienega Boulevard (La Cienega Option). One commenter suggested locating the Santa Monica/La Cienega Station on the Metro yard along Santa Monica Boulevard in West Hollywood, near the San Vicente Option Santa Monica/La Cienega Station location. Although some commenters did voice support for the La Cienega Option alignment along La Cienega Boulevard, the majority preferred the San Vicente Option alignment.

4.8.3.3 User Benefits

Transit Connections
The two options were assessed for the availability and ease with which connections may be made to other transit services. The location of the stations in the San Vicente Option allow for better connections to other existing transit service in the area.

At the Santa Monica/La Cienega Station San Vicente Option location, existing transit connections include Metro bus routes 4, 10, 105, 305, 550, and 704. In comparison, the Santa Monica/La Cienega Station La Cienega Option location transit connections include Metro bus routes 4, 105, 704, and 705.

At the Beverly Center Area Station San Vicente Option location, existing transit connections include Metro bus routes 14, 16, 105, 218, 305, 316, 705, and 714. The Beverly Center Area Station La Cienega Option location offers similar transit connections, including Metro bus routes 14, 16, 105, 218, 305, 316, 705, and 714.

Boardings
Year 2030 daily boardings were estimated for the Santa Monica/Fairfax Station, the Santa Monica/La Cienega Station, and the Beverly Center Area Station. Based on these estimates, the San Vicente Option would have 6,300 boardings per day at these three stations. The La Cienega Option would have 6,400 daily boardings at these three stations, indicating that both options perform similarly in this regard.

Travel Time
As it is the most direct route, La Cienega Option has a faster travel time than San Vicente La Cienega Option by 54 seconds. San Vicente Option would take approximately 9.5 minutes to travel from the Hollywood/Highland Station to the intersection of Wilshire

Boulevard and Willaman Drive, while La Cienega Option would take approximately 8.6 minutes to traverse the same segment of the alignment.

4.8.3.4 Urban Design

Station Location and Entrances

From an urban design perspective, the Santa Monica/La Cienega Station San Vicente Option location (west of La Cienega Boulevard) is preferred to the La Cienega Option location (east of La Cienega Boulevard). Since many of the area's attractions are located along the western stretch of Santa Monica Boulevard, the San Vicente Option provides better access to these restaurants and entertainment destinations. This area is located between many popular amenities and attractions, such as the Pacific Design Center and the Plumber Park Historic Route. The western station location provides better access to various West Hollywood community facilities; it is also a center for many special events and holidays as well as being a tourist hub. Additionally, the San Vicente Option location would better serve a higher density residential area (estimated at 50 dwelling units per acre within a 0.5-mile radius of the station area) and provide access to more employment opportunities than the La Cienega Option location. Finally, the San Vicente Option location also allows for potential use of the Metro Division 7 property.

From an urban design perspective, the Beverly Center Area Station located on San Vicente Boulevard (San Vicente Option) is preferred to the location along La Cienega Boulevard (La Cienega Option). The location on San Vicente Boulevard allows for better access to the Cedars-Sinai Medical Center, while still providing access to the Beverly Center.

Economic Revitalization

The station locations in San Vicente Option present better potential for economic revitalization opportunities due to their proximity to major destinations, such as the Cedars-Sinai Medical Center and entertainment venues along Santa Monica Boulevard. Furthermore, the proximity of the Santa Monica/La Cienega Station in the San Vicente Option to Metro Division 7 property presents the possibility for future joint development. The Urban Design Working Group determined that there was significant potential for redevelopment at certain sites surrounding the Beverly Center Station on the San Vicente Option.

Existing Land Use and Master Plan Compatibility

Both the San Vicente Option and La Cienega Option station locations are compatible with existing land uses and master plans for the area.

4.8.3.5 Cost Differential

The San Vicente Option is estimated to cost approximately $131 million more than the La Cienega Option primarily due to its increased length.

4.8.4 West Hollywood Branch Alignments Carried Forward

Table 4-5 provides a summary of the results of the analysis.

Table 4-5. Summary of Evaluation

Evaluation Measures	San Vicente Option	La Cienega Option
Engineering Feasibility	●	●
Environmental Considerations	●	●
Urban Design	●	○
User Benefits	●	●
Cost Evaluation	●	●
Carried Forward for Further Review in Draft EIS/EIR	★	

● Good ● Medium ○ Poor

While the San Vicente Option is longer (4.98 miles versus 4.67 miles) and costs $131 million more than the La Cienega Option, the San Vicente Option performs better in terms of urban design, redevelopment potential, and community preference.

Both the Santa Monica/La Cienega Station and the Beverly Center Station locations along the San Vicente Option provide better connectivity to destinations, including restaurants and entertainment venues along Santa Monica Boulevard as well as to the Cedars Sinai Medical Center. The location of the Santa Monica/La Cienega Station in the San Vicente Option allows access to the Metro Division 7 property, which would provide a valuable construction staging area. Additionally, this Metro property has the potential to be utilized for some form of joint development in the future.

Both the public and the City of West Hollywood have expressed more support for the San Vicente Option than the La Cienega Option. During public scoping, the majority of comments supported the station locations along the San Vicente Option over the station locations along the La Cienega Option because these locations would provide the public with better access to the activity and jobs centers of West Hollywood. During the Urban Design Working Group, the City of West Hollywood voiced a preference for the station locations proposed in the San Vicente Option, as they would better serve civic and major activity centers.

In conclusion, the San Vicente Option meets the evaluation criteria better than the La Cienega Option (Figure 4-32). Although the two options performed relatively similarly on many of the criteria, urban design and community preference set them apart. Since the San Vicente Option provides better connections to major activity centers in the area, this option was carried forward into the Draft EIS/EIR.

In the Draft EIS/EIR, the alignment of the West Hollywood branch does vary slightly depending on the location of the Wilshire/La Cienega station as discussed in Section 4-5.

If the connecting to the connection structure, the alignment is further west than if the alignment connects to the Wilshire/La Cienega transfer station directly.

Figure 4-32. West Hollywood Branch Alignment in Draft EIS/EIR

4.9 Alternative Renaming to Confirm with Measure R Funding Plan/Metro Long Range Transportation Plan

In addition to the specific alignment and station screening and modifications, the alternatives were renamed and reordered for the Draft EIS/EIR. The renamed and reordered list includes:

- 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

The reordering and addition of these alternatives reflects the consideration of the constraints of Measure R funding. Alternatives 1 and 2 are expected to be fundable under the current Measure R while Alternatives 3, 4, and 5 are beyond the limits of projected Measure R funds and would require additional funding sources. Two MOSs were also added for evaluation in the Draft EIS/EIR: MOS 1—Fairfax Extension and MOS 2—Century City Extension.

For reference, Alternative 1 was formerly MOS 3 in the AA. Alternative 2 was not an alternative in the AA or during scoping. Alternative 2 encompasses all of the new Alternative 1 and extends the terminus by one station to the Westwood/VA Hospital Station. This terminus was added because the Greater Los Angeles Veterans Administration (GLAVA) expressed support and interest in having a station on their property. Alternative 3 was formerly Alternative 1 in the AA. Alternative 4 was formerly MOS 4 in the AA. Alternative 5 was formerly Alternative 11 in the AA. The five alternatives and two MOSs to be evaluated in the Draft EIS/EIR are shown on Figure 4-33 through Figure 4-39.

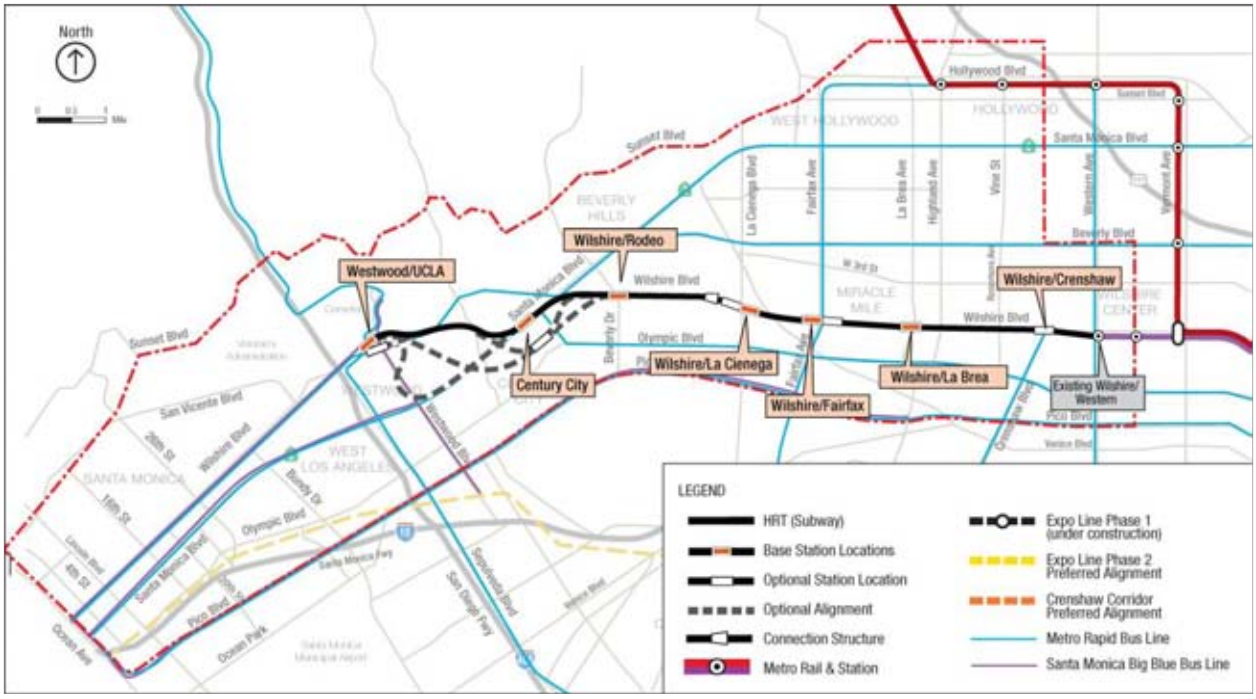


Figure 4-33. Alternative 1—Westwood/UCLA Extension

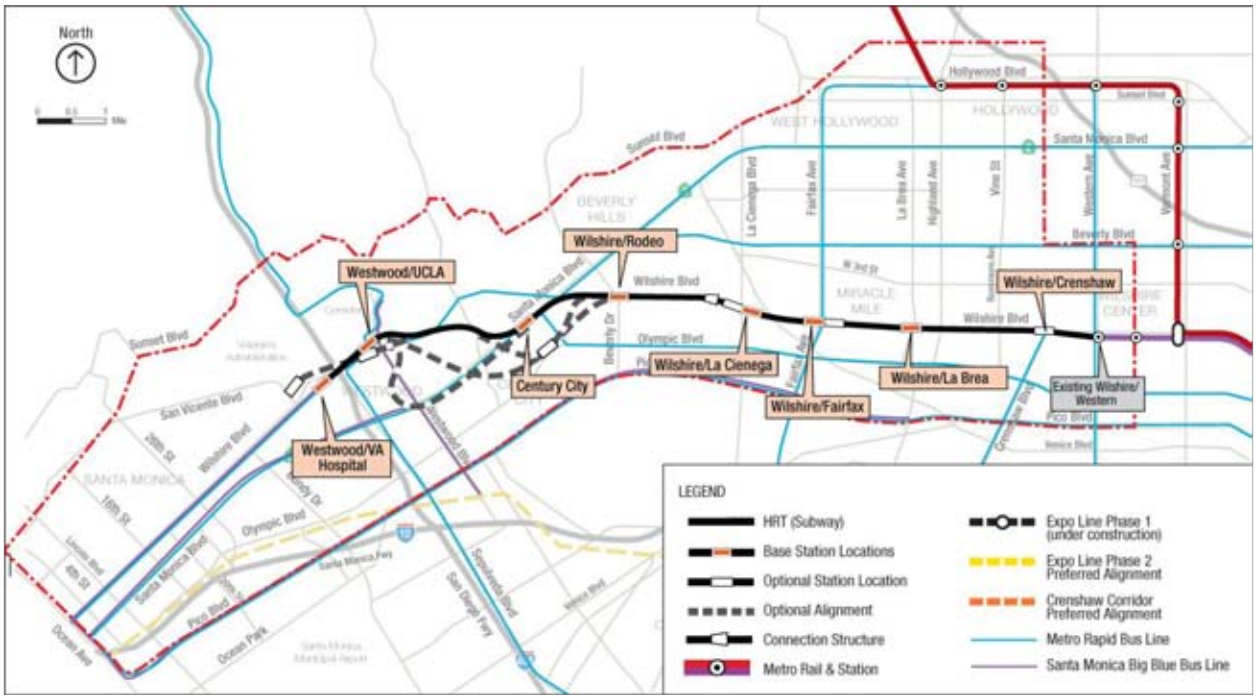


Figure 4-34. Alternative 2—Westwood/VA Hospital Extension

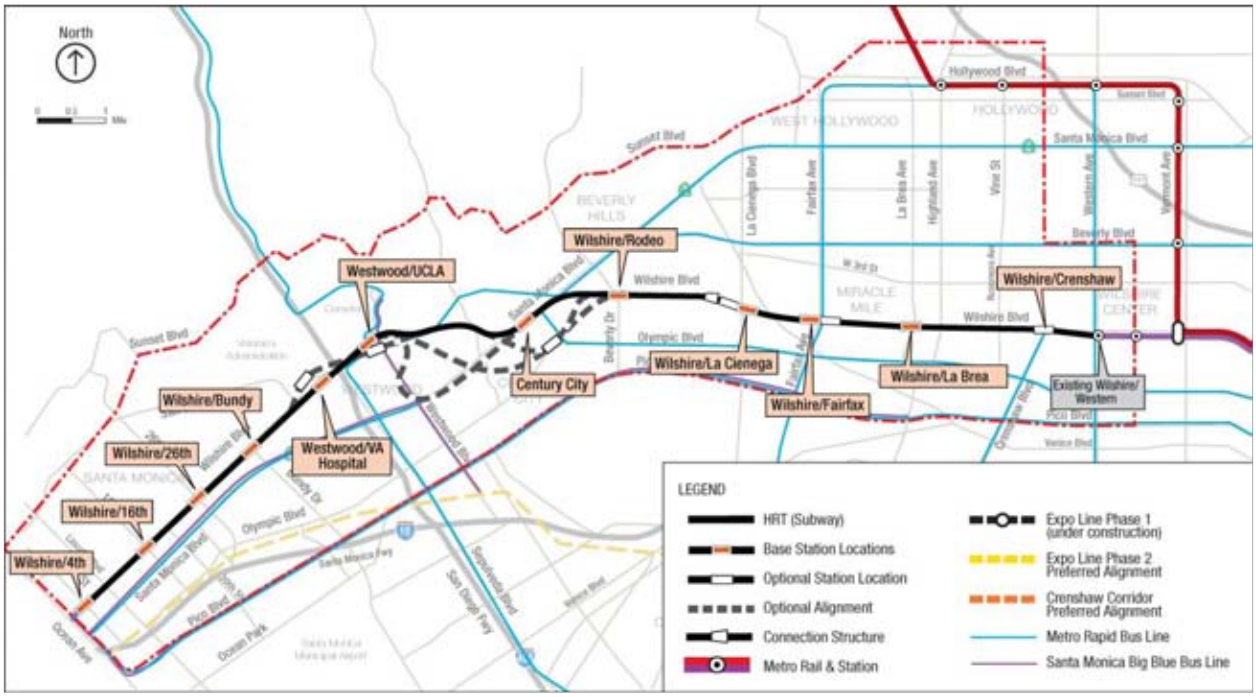


Figure 4-35. Alternative 3—Santa Monica Extension

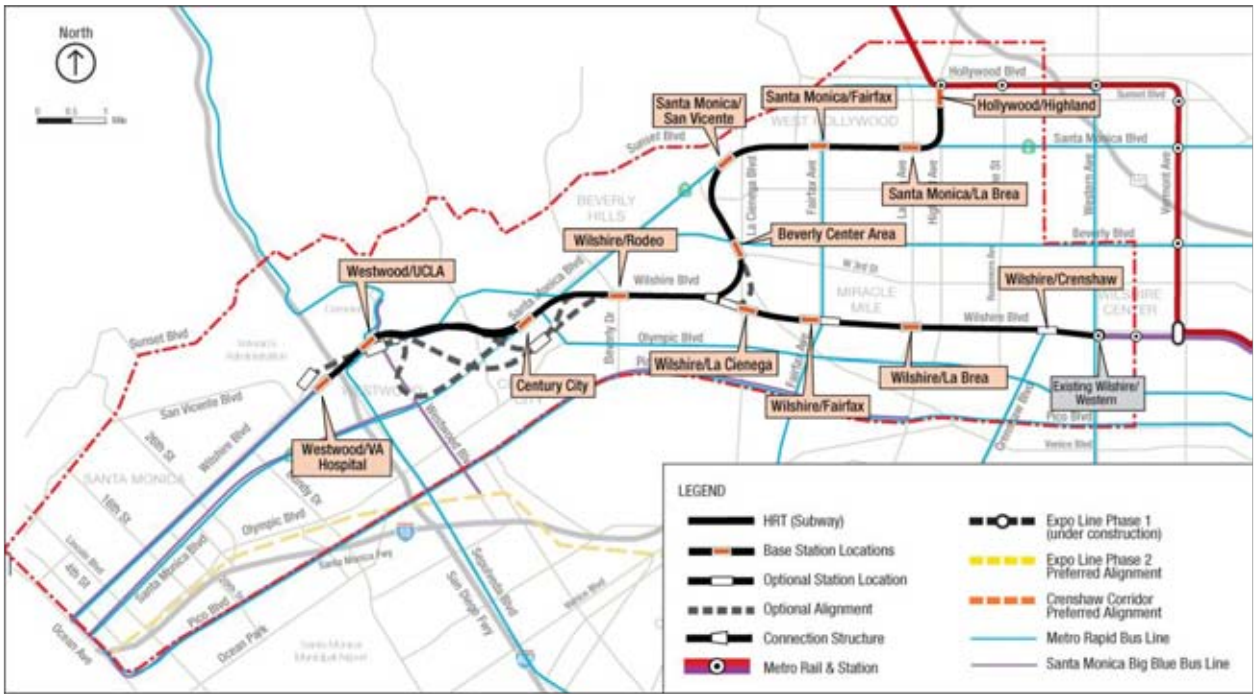


Figure 4-36. Alternative 4—Westwood/VA Hospital Extension plus West Hollywood Extension

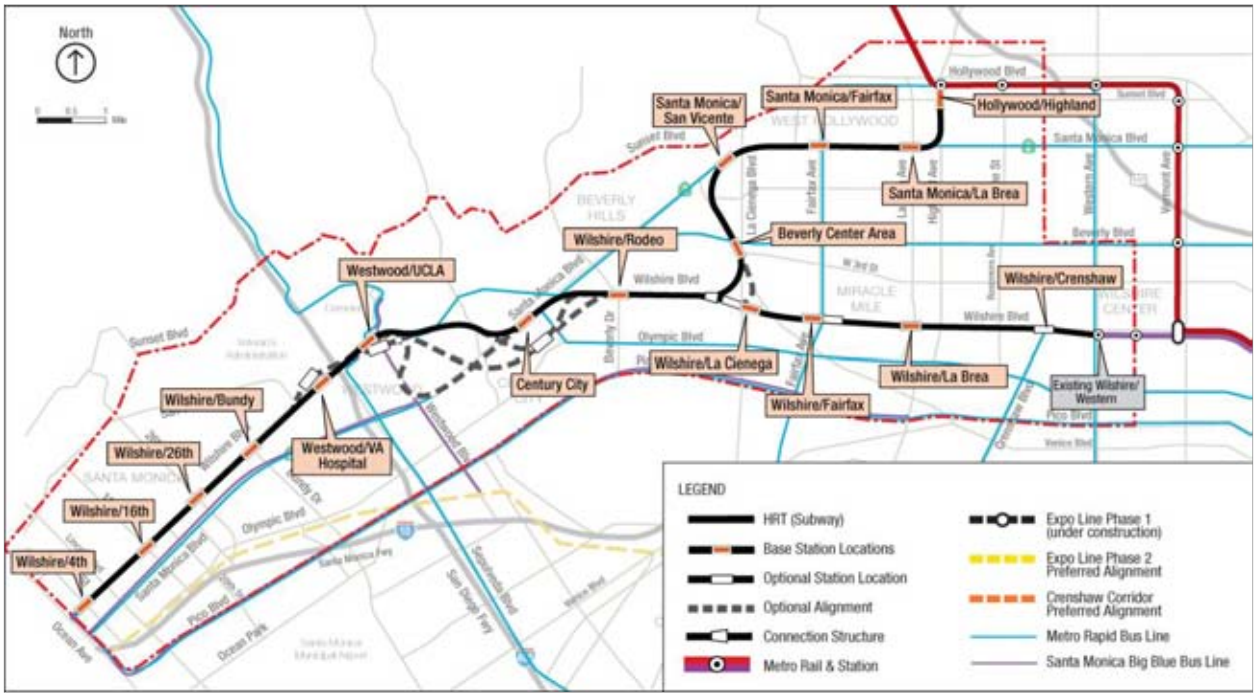


Figure 4-37. Alternative 5—Santa Monica Extension plus West Hollywood Extension

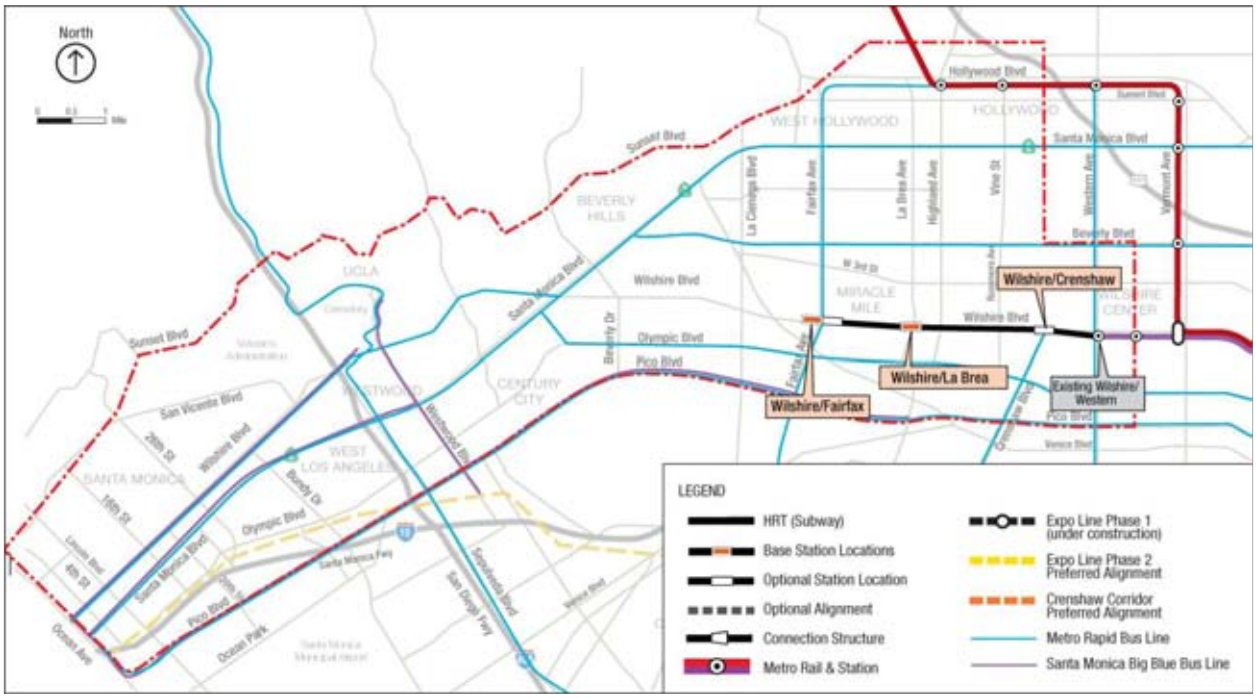


Figure 4-38. MOS 1—Fairfax Extension

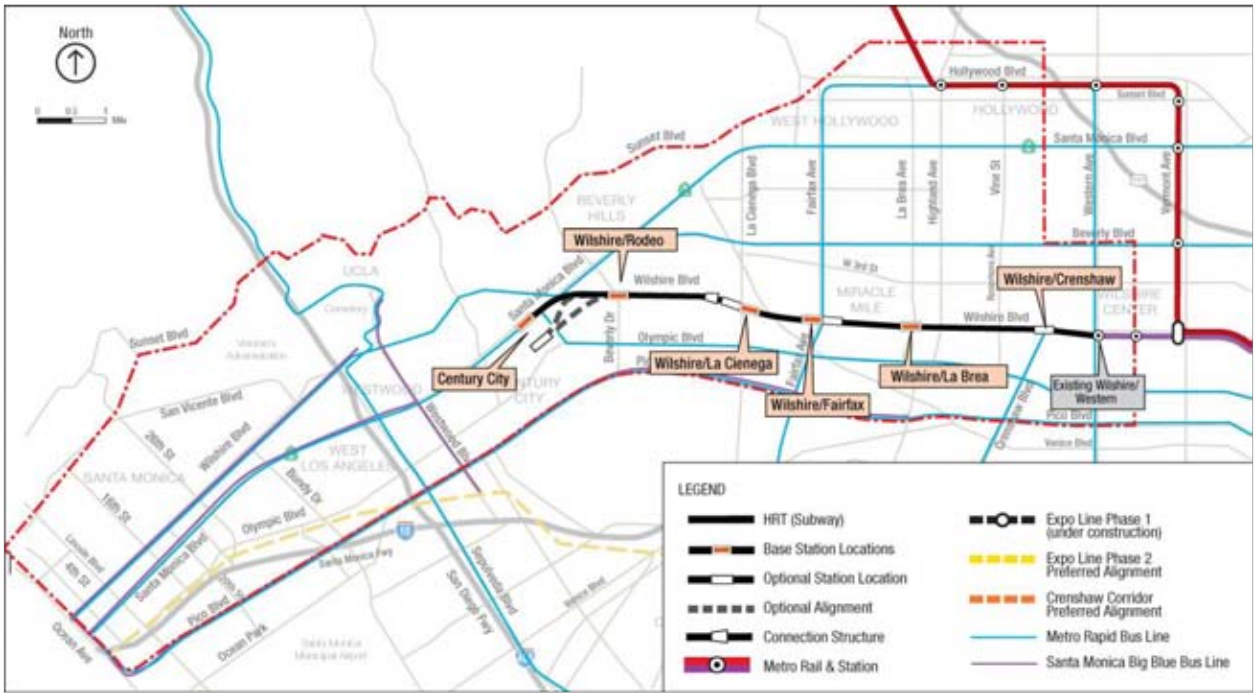


Figure 4-39. MOS 2—Century City Extension