WESTSIDE SUBWAY EXTENSION PROJECT

Century City Station Location Report

Metro

February, 2012

Table of Contents

List of Figures

List of Tables

1.0 PURPOSE

This report evaluates the alternative station locations included in the Locally Preferred Alternative (LPA) for the Century City Station. Recommendations are offered for the final station location.

Background

The Los Angeles County Metropolitan Transportation Authority (Metro) and the U.S. Federal Transit Administration (FTA) are preparing an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Westside Subway Extension Project. FTA is serving as the lead agency for purposes of the National Environmental Policy Act (NEPA) environmental review and Metro is serving as the lead agency for purposes of the California Environmental Quality Act (CEQA) environmental review.

Planning and project development for the Westside Subway Extension began with an Alternatives Analysis (AA), which evaluated alternative transit modes and alignments for the study area. Recommendations from the AA Study were approved by the Metro Board on January 22, 2009. Subsequently, Advanced Conceptual Engineering was performed and a Draft EIS/EIR was prepared and circulated, leading to the Metro Board's selection of a Locally Preferred Alternative (LPA) on October 28, 2010. From the existing Wilshire/Western Station on the Purple Line, the LPA travels west beneath Wilshire Boulevard to the Wilshire/Rodeo Station and then west or southwest toward a Century City Station, then toward a Westwood/UCLA Station. The line then continues west under the I-405 Freeway, terminating at a Westwood/VA Hospital Station. The project also includes expansion of the existing maintenance facility (Division 20) and other support facilities. In addition, a Board Motion was approved to request more detailed exploration of station location and alignment options between the Wilshire/Rodeo Station in Beverly Hills and the Westwood/VA Hospital Station, including station and alignment options at Century City. The Preliminary Engineering phase supports decisions on the station locations and alignment west of the Wilshire/Rodeo Station and presents more detailed information on the remaining station and alignment options and their impacts:

- Century City Station (Options at Constellation Blvd and Santa Monica Blvd, with associated alignment options),
- Westwood/UCLA (On-Street and Off-Street Station Options),
- Westwood/VA Hospital (North Station and South Station Options)

In this paper, the station and alignment options at Century City are studied and recommendations made for the preferred station location.

2.0 CENTURY CITY STATION OPTIONS

2.1 Description

The Century City Station would serve a high-density commercial, employment, and residential center. As part of the LPA selection, the Metro Board decided to continue to study two station locations in Century City (Santa Monica Boulevard and Constellation Boulevard) to address concerns raised by the community regarding the safety of tunneling under residences and schools (Constellation Boulevard Station) and locating a station close to a seismic fault (Santa Monica Boulevard Station).

The location of the Century City Station determines the tunnel alignment to the east and west of the station. The Century City (Constellation Boulevard) Station would be located underneath Constellation Boulevard from west of Avenue of the Stars to just west of Century Park East. See Figure 2-1 and Figure 2-2.

Figure 2-1: Century City (Constellation Boulevard) Station Scenario "A"

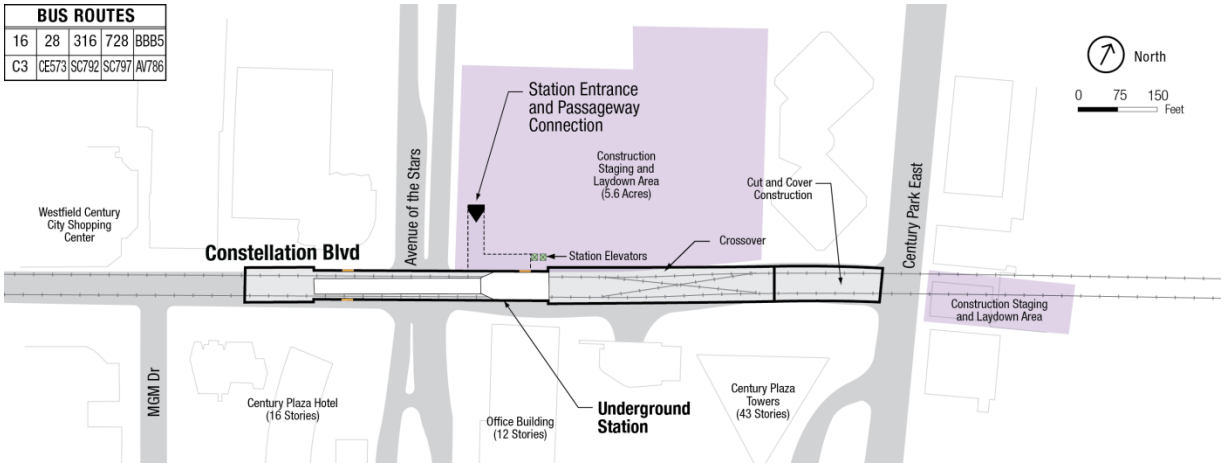
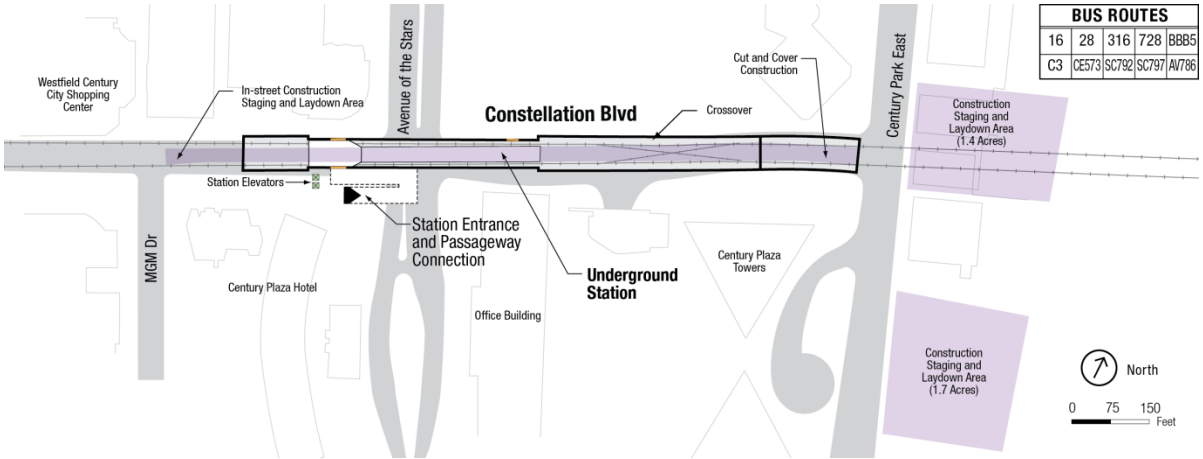


Figure 2-2: Century City (Constellation Boulevard) Station Scenario "B"



The Century City (Santa Monica Boulevard) Station location is located in the median of Santa Monica Boulevard as shown in Figure 2-3 and Figure 2-4.

Figure 2-3: Century City - Santa Monica Boulevard Station Scenario "A"

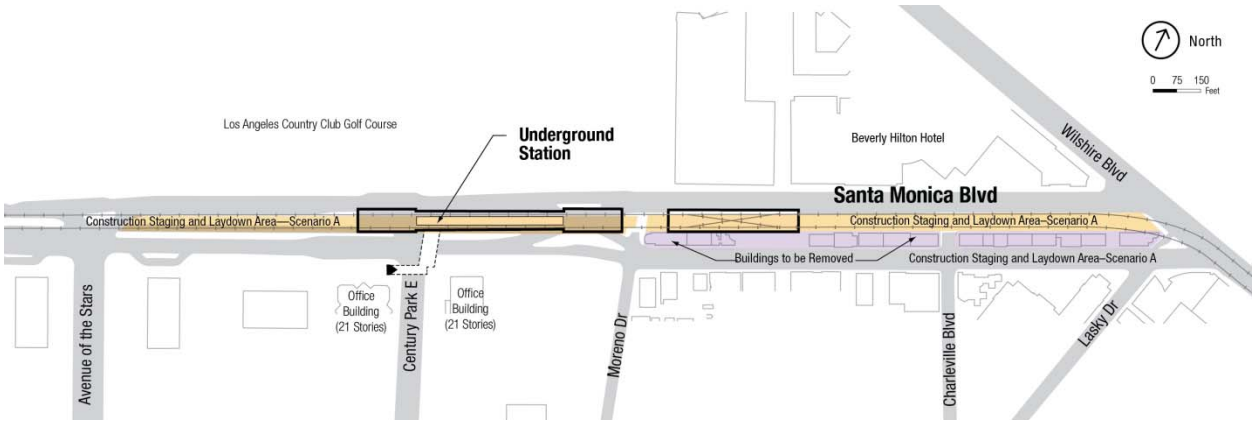
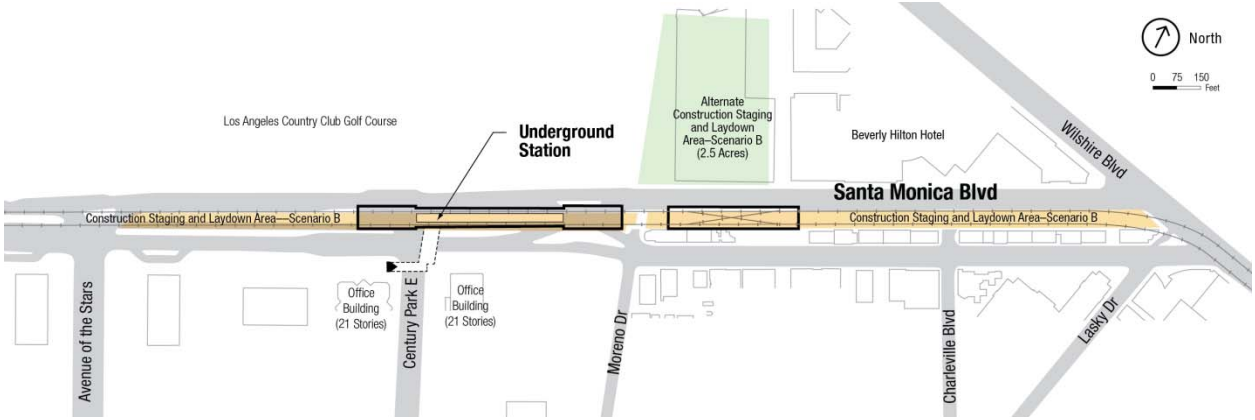


Figure 2-4: Century City - Santa Monica Boulevard Station Scenario "B"



2.2 Screening and Selection Process

The process used to evaluate station location options for Century City is summarized in Chapters 2 and 7 of the Draft EIS/EIR. Seven goals and associated objectives were used to highlight the significant differences between the options. Of the six options considered for Century City alignment and station options, the two options described above best met the seven goals. The seven goals used to narrow the options down to the final two alternatives were as follows:

- Goal A—Mobility Improvement
- Goal B—Transit—Supportive Land Use Policies and Conditions
- Goal C—Cost Effectiveness
- Goal D—Project Feasibility
- Goal E—Equity

- Goal F—Environmental Considerations
- Goal G—Public Acceptance

In response to the Metro Board's request for more information before selecting a site for the Century City Station, further analysis was undertaken to focus on the engineering aspects of the station options. The additional engineering analysis considered the following:

- Major Components—Are there any differences or constraints in the size of the major structures (e.g., station box, crossovers, ventilation structures, and station entrances)
- Alignment—Does one location option provide for better track alignment than the other (e.g., flatter curves)?
- Profile—Are there differences in the tunnel profile between the options (e.g. deeper tunnels vs. shallow)?
- Traffic—Are there differences between the options on the impacts on traffic during the construction period? Is traffic better managed by one or the other option?
- Utility Relocations—Are there major differences in the extent of utility relocations?
- Contractor's Lay Down Areas—Are there differences in the lay down area space available?
- Construction Cost—Are there differences in the cost of construction between the two options?
- Special Mitigations—Do any of the options require special mitigation measures and, if so, how difficult will they be to implement?
- Faulting and Seismic – Are there differences in seismic risks between station sites?

Most of these factors ultimately affect the project's capital cost. An updated cost estimate has been prepared reflecting the more detailed engineering analysis carried out in the initial months of Preliminary Engineering.

In addition, continuing environmental and other studies supporting the development of the Final EIS/EIR have provided more detailed information for comparing the station location options in terms of the following:

- Proximity to Jobs and Residences—How many jobs and residences are within walking distance of the station portal?
- Transit Travel Time—How would the station location and orientation affect run times between stations?
- Right-of-Way Requirements—How many residences and jobs would be displaced by each of the station site options?
- Subsurface Easements—How many residences and commercial properties would lay atop the subway tunnel?
- Cultural Resource Impacts—To what extent would each of the station site options have adverse effects on historic sites, parks, and other cultural resource properties?
- Noise and Vibration—What is the potential impact of noise and vibration to sensitive receptors?

2.3 Evaluation

2.3.1 Major Components

Station Circulation Module—Both the Constellation and Santa Monica locations have space to construct the standard 450-foot-long station platform module.

Crossover Module— Both the Constellation and Santa Monica locations have a No 10 crossover at the east end of the station module. Due to the large storm drain that crosses Santa Monica Boulevard at Moreno Drive, the crossover module will be separated from the station module (see Figure 2-3) so that the storm drain would not have to be diverted around the station Ancillary Modules. Century City Constellation station has a 130 ft ancillary module at the west end of the station. The Santa Monica option requires ancillary modules on both ends of the station circulation module, due to the separation of the cross over module. Both the west and east ancillary modules at the Santa Monica Station are 180 ft long.

2.3.2 Alignment

The Century City (Constellation Boulevard) Station Option would require the tunnel alignment to pass beneath private properties both east and west of the station to enter the station underneath Constellation Boulevard. From the Wilshire/Rodeo Station, the alignment would travel west to near Linden Drive, then curve southwesterly at Linden Drive to Lasky Drive, and then under Lasky Drive to just north of Young Drive – see Figure 2-5. The proposed alignment associated with this station location would run beneath Beverly Hills High School (BHHS) and residential properties. This alignment would then turn southwesterly under Constellation Boulevard to connect to the Century City (Constellation Boulevard) Station at Avenue of the Stars. This alignment has been revised slightly since the Draft EIS/EIR to avoid running under the two-storey section of the school's main building and also reduce the influence of tunneling on the school's historic swimming pool building.

To the west of the Century City (Constellation Boulevard) Station, the alignment would turn northwesterly under Westfield Mall, cross underneath Santa Monica Boulevard, and continue northwesterly until Wilshire Boulevard, where it would travel westerly to connect to either the Westwood/UCLA Off-Street or On-Street Station – see Figure 2-6. This portion of the alignment also has been revised since the Draft EIS/EIR to incorporate flatter curves to the west of Constellation Station. In addition, the area in which the alignment travels contains producing and abandoned oil wells. During the public hearing phase of the Draft EIS/EIR, Metro received numerous comments from the public questioning the safety of a subway system traveling beneath the high school and residences and through an active oil field. A detailed discussion of tunneling in the Century City area which addresses these concerns is presented in the "Century City Area Tunneling Safety Report[1]"

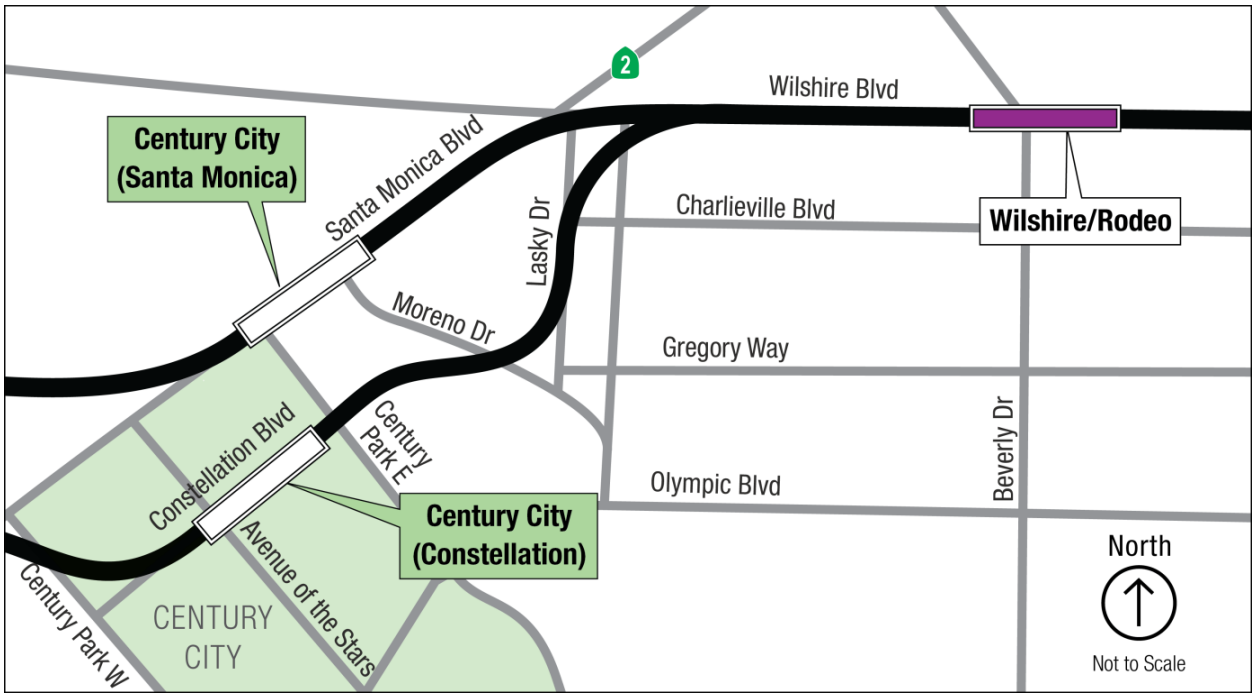
The Century City (Santa Monica Boulevard) Station Option would also require the tunnel alignment to pass beneath private properties east and west of the station. From the Wilshire/Rodeo Station, the alignment associated with the Century City (Santa Monica Boulevard) Station Option would travel westerly beneath Wilshire Boulevard and underneath private property at the Wilshire Boulevard/Santa Monica Boulevard intersection, then curve southwesterly to Santa Monica

[1] Westside Subway Extension Project – Century City Area Tunneling Safety Report. August 2011

Boulevard and to the Century City (Santa Monica Boulevard) Station between Century Park East and Moreno Drive – see Figure 2-5. The alignment west of the Century City (Santa Monica Boulevard) Station Option would travel west under Santa Monica Boulevard from the station location. The alignment would turn north at Avenue of the Stars, pass under the Los Angeles Country Club Golf Course, and continue northwesterly until Wilshire Boulevard, where it would then travel westerly to connect to either the Westwood/UCLA Off-Street or On-Street Station – see Figure 2-6.

The Draft EIS/EIR disclosed that the Century City (Santa Monica Boulevard) Station Option alignment would run within proximity to the Santa Monica Fault. Following the public comment period on the DEIS/DEIR, the Metro Board selected the LPA. However, the Board deferred the decision on the station site at Century City based on the uncertainty of the location of the Santa Monica Fault and the safety of constructing and operating a station at the Santa Monica Boulevard site. Fault investigation studies have been carried out and results and conclusions presented in the "Fault Investigation Report[2]" and the "Tunneling Safety Report[3]."

Figure 2-5: Wilshire/Rodeo Station to Century City Station Option Alignment



[2] Westside Subway Extension Project – Fault Investigation Report. October 2011

[3] Westside Subway Extension Project - Century City Area Tunneling Safety Report. October 2011

Figure 2-6: Century City to Westwood/UCLA Alignment

2.3.3 Profile

The Century City (Constellation Boulevard) Station Option would require the station and tunnels to be at a depth to pass under storm and sanitary sewers below Avenue of the Stars and Constellation Boulevard. Top of rail will be approximately 80 ft below grade. The deeper station does have the benefit of allowing more cover over the tunnels at the Beverly Hills High School and provides space for utility relocations in Constellation Boulevard.

The station for the Century City (Santa Monica Boulevard) Station Option would also need to be deeper than usual. The additional depth is needed to provide clearance below the bottom of the 20 ft x 16 ft reinforced concrete box which will cross the alignment at Moreno Drive.

2.3.4 Station Entrance Locations and Pedestrian Access

The Century City (Constellation Boulevard) Station entrance would be either at the northeast corner of Constellation Boulevard and Avenue of the Stars or at the southwest corner of Constellation Boulevard and Avenue of the Stars near the Century Plaza Hotel.

The Century City (Santa Monica Boulevard) Station entrance would be located on the southwest corner of Santa Monica Boulevard and Century Park East. The station module is generally to the east of Century Park East centered under Santa Monica Boulevard – see Figure 2-3 and Figure 2-4. The Station Entrance Location Report[4] dated August 2011 provides recommended entrance for each station location.

[4] Westside Subway Extension Project - Station Entrance Location Report and Recommendations. December 2011

2.3.5 Traffic Circulation during Construction

Century City (Constellation Boulevard) Station Option

Constellation Boulevard between Century Park West and Century Park East has three lanes in each direction. The existing Average Daily Traffic (ADT) is 12,393 vehicles per day (vpd) east of Century Park West. The three intersections of Constellation Boulevard with Century Park West, Avenue of the Stars, and Century Park East operate at level-of-service (LOS) B, LOS C, and LOS C, respectively, in the AM peak hour, and at LOS D, LOS C, and LOS C, respectively, in the PM peak hour. During construction, the following traffic modifications would occur:

- Two westbound travel lanes and two eastbound travel lanes on Constellation Boulevard would be provided during temporary shoring on the north side of the street. The westbound roadway capacity would be reduced by 33 percent, and the eastbound roadway capacity would be reduced by 33 percent.
- For south side temporary shoring installation on Constellation Boulevard, two lanes would be provided in each direction. Both the westbound and eastbound roadway capacities would be reduced by 33 percent.
- No left-turn lanes would be provided on Constellation Boulevard at Avenue of the Stars during temporary shoring installation. Left-turn movements would be diverted to the Century Park West and Century Park East intersections that would result in a reduction in the level-of-service at these locations.
- For decking installation or removal west of Avenue of the Stars, Constellation Boulevard and Avenue of the Stars would be closed to traffic on consecutive weekends. Duration of the closures would be approximately 6 to 8 consecutive weekends.
- For decking installation or removal east of Avenue of the Stars, Constellation Boulevard would be closed to traffic on consecutive weekends. Duration of the closures could be as much as 16 to 20 consecutive weekends depending on availability of work areas.

Century City (Santa Monica Boulevard) Station Option

Santa Monica Boulevard between Century Park West and Century Park East has three lanes westbound and four lanes eastbound. The existing ADT is 68,277 vpd east of Cotner Avenue and 62,697 vpd at Century Park West. The three intersections of Santa Monica Boulevard with Century Park West, Avenue of the Stars, and Century Park East operate at LOS F, LOS E, and LOS E, respectively, in the AM peak hour, and at LOS C, LOS D, and LOS D, respectively, in the PM peak hour. During construction, the following traffic modifications would occur:

- Two lanes minimum would be provided westbound and three lanes eastbound on Santa Monica Boulevard during north and south side temporary shoring installation. The westbound lane capacity would be reduced by 33 percent, and the eastbound lane capacity would be reduced by 25 percent. The south side shoring lies within the express bus lanes and extended closure of the dedicated bus lanes (20-70 days) east of Avenue of the Stars will be required
- Left-turn lanes would be closed at Century Park East intersection and the diamond cross over at Moreno Drive would be closed during shoring installation. As the station box is in the median, east and west traffic movements would continue during the shoring installation.

- For decking installation or removal two lanes would be provided in each direction on Santa Monica Boulevard. The Santa Monica Boulevard/Avenue of the Stars intersection would be open to traffic but the intersection at Santa Monica East would be closed to left turns and the diamond crossover at Moreno Drive would be closed during decking operations at these locations. The dedicated bus lanes east of the Avenue of the Stars will be closed during decking operations
- Duration of deck installation and removal would be approximately 16 to 18 consecutive weekends for each phase.
- Weekend closures of Santa Monica Boulevard South and Century Park East will also be required for installation of shoring and decking across these streets to construct the station entrance. Approximately 3-4 weekend closures would be required for each street. A further series of closures will be required at the end of station construction to remove the decking and restore the streets. Long term lane closures at station entrance site will be required to construct the entrance.
- Continuous night closures of the dedicated bus lanes east of Avenue of the Stars will be required for the duration of construction (72-84 months) to provide space for construction equipment working in the median above the station excavation.

2.3.6 Utility Relocations

Utility investigations are still in progress. The Century City (Constellation Boulevard) site has many utilities to be managed during construction, some of which are very deep at this location. (storm and sanitary sewers and steam and chilled water piping are examples). Constellation Boulevard is not as wide as Wilshire Boulevard so there is less space for diverting utilities around the station excavation. Underground parking garages at most buildings adjacent to the station excavation extend to the property line, so temporary diversions on private property would have to be at surface level or elevated. Extended lane closures will be required for utility relocations.

The Century City (Santa Monica Boulevard) Station site is split by a 20' x 16' reinforced concrete box (RCB) storm drain. The crossover module is a separate stand alone module and this will require an additional ancillary module at the east end of the station module. Utilities along Santa Monica Boulevard mainly follow the eastbound carriageway, which is favorable for the station in the median. Extended lane closures will be required for utility relocations together with elimination of left turns at Century Park East and closure of the diamond crossover at Moreno Drive for relocation of utilities in these intersections. Construction staging may permit some use of the intersections for left turns and crossing movements during utility relocation work.

2.3.7 Contractor's Lay Down Areas

The Century City Station would serve as a launch site for the tunnel boring machines (TBMs) and as the location for the equipment needed to support operation of the TBMs. Approximately 3 acres of construction staging and lay down area are needed at this station.

The Century City (Constellation Boulevard) Station would be located underneath Constellation Boulevard from west of Avenue of the Stars to just west of Century Park East. There are two construction staging and entrance location scenarios for this station location. The preferred location, Century City Constellation "A" would utilize a 5.6 acre site at the north east corner of Avenue of the Stars and Constellation Blvd as the primary laydown and staging area. Although this is larger than strictly necessary, constructive use of surrounding property would require the taking of 5.6 acres

(Figure 2-1). An additional construction staging area has been designated on the east side of Century Park East at Constellation Boulevard for use in the removal of the oil well named Wolfskill 23. Wolfskill 23 has not been positively located yet, and it may be that that removal will not be necessary, if in fact the location of the oil well is clear of the tunnel alignment.

In the event that the Century City Constellation "A" laydown area is not available, then two sites located along the east side of Century Park East, at the eastern end of Constellation Boulevard and south of the Constellation Boulevard/Century Park East intersection would be used instead. (Century City Constellation "B"). An additional laydown area would be located in the middle of Constellation Boulevard from MGM Drive to Century Park East (Figure 2-2).

The Century City (Santa Monica Boulevard) Station would also serve as a launch site for TBMs and as the location for the equipment needed to support the operation of the TBMs. Approximately 3 acres of construction staging and lay down area would be needed at this station. As with Century City Constellation Station, alternative construction staging and lay down areas have been identified. Century City Santa Monica "A" would utilize the entire median strip between Santa Monica Boulevard and South Santa Monica Boulevards from Avenue of the Stars to Lasky Drive/Wilshire Boulevard. See Figure 2-3.

Century City Santa Monica "B" would utilize the undeveloped section of the median in Santa Monica Boulevard, together with a portion of the former Robinson-May store parking garage which adjoins the north side of Santa Monica Boulevard. See Figure 2-4.

2.3.8 Construction Cost

Parametric cost estimates have been prepared for each of the alignment options considered in the FEIS/FEIR. These cost estimates are presented in Table 2-1.

Table 2-1: Capital Cost Estimates for Station Alignment Options in 2010 Dollars (Millions)

Configuration Number	Configuration Description			Total Cost* $2010 (millions)
	VA Hospital	Westwood UCLA	Century City	
1	South	On-Street	Constellation A	$4,241.525
2	South	On-Street	Constellation B	$4,280.252
3	South	On-Street	Santa Monica A	$4,305.946
4	South	On-Street	Santa Monica B	$4,221.662
5	South	Off-Street	Constellation A	$4,217.302
6	South	Off-Street	Constellation B	$4,256.031
7	North	On-Street	Constellation A	$4,273.871
8	North	On-Street	Constellation B	$4,312.598
9	North	Off-Street	Constellation A	$4,249.868
10	North	Off-Street	Constellation B	$4,288.595
11	South	Off-Street	Santa Monica A	$4,281.752
12	South	Off-Street	Santa Monica B	$4,197.430
13	North	On-Street	Santa Monica A	$4,338.318
14	North	On-Street	Santa Monica B	$4,253.995
15	North	Off-Street	Santa Monica A	$4,314.323
16	North	Off-Street	Santa Monica B	$4,229.999
*Note: Costs do not include financing costs				

The differences in cost between the Century City Constellation and Century City Santa Monica options can be calculated by comparing cost differences between the different configurations, keeping other the stations and alignments constant. See Table 2-2.

Table 2-2: Capital Cost Difference Century City – Constellation vs. Santa Monica

Alignment Options	Alignment Costs ($2010)		Cost Difference* $ 2010 (millions)
Constellation A vs. Santa Monica A			
Configuration 1 - Configuration 3	$4,241.525	$4,305.946	($64.421)
Configuration 5 - Configuration 11	$4,217.302	$4,281.752	($64.450)
Configuration 7 - Configuration 13	$4,273.871	$4,338.318	($64.447)
Configuration 9 - Configuration 15	$4,249.868	$4,314.323	($64.455)
Constellation A vs Santa Monica B			
Configuration 1 - Configuration 4	$4,241.525	$4,221.662	$19.863
Configuration 5 - Configuration 12	$4,217.302	$4,197.430	$19.872
Configuration 7 - Configuration 14	$4,273.871	$4,253.995	$19.876
Configuration 9 - Configuration 16	$4,249.868	$4,229.999	$19.869
Constellation B vs Santa Monica A			
Configuration 2 - Configuration 3	$4,280.252	$4,305.946	($25.694)
Configuration 6 - Configuration 11	$4,256.031	$4,281.752	($25.721)
Configuration 8 - Configuration 13	$4,312.598	$4,338.318	($25.720)
Configuration 10 - Configuration 15	$4,288.595	$4,314.323	($25.728)
Constellation B vs Santa Monica B			
Configuration 2 - Configuration 4	$4,280.252	$4,221.662	$58.590
Configuration 6 - Configuration 12	$4,256.031	$4,197.430	$58.601
Configuration 8 - Configuration 14	$4,312.598	$4,253.995	$58.603
Configuration 10 - Configuration 16	$4,288.595	$4,229.999	$58.596
*Note: Costs do not include financing costs			

Real estate costs for the Century City Constellation and Century City Santa Monica options have a major influence on the cost differences between the two options. This analysis is based on estimated real estate costs, but actual real estate costs negotiated with property owners could differ from the estimates above. There are some general conclusions that can be reached: Santa Monica A is more expensive than either of the two Constellation alternatives, and Santa Monica B is always less expensive than the two Constellation alternatives. Until real estate cost and availability are better defined, construction cost cannot be a discriminator.

2.3.9 Special Mitigation

Special mitigations may be required where the alignments cross fault zones. Fault zone crossings and locations have not yet been defined. Although predicted noise and vibration levels at BHHS are less than FTA criteria, further attenuation measures, e.g. resilient fasteners for trackwork may be required if the Century City Constellation station is selected.

2.3.10 Faulting and Seismic

Extensive geotechnical investigations have been carried out on both alignments in the Century City area. The conclusions resulting from these investigations are presented in two reports entitled "Century City Area Fault Investigation Report" and "Century City Area Tunneling Safety Report. The conclusions reached in these reports are summarized as follows:

The Fault Investigation Report concluded that both the Santa Monica Fault Zone and the Beverly Hills Lineament (part of the Newport-Inglewood fault) are active fault zones and the previously proposed Santa Monica/Avenue of the Stars Station and the currently proposed Santa Monica/Century Park East Station are within the active fault zones. Consequently, these station locations are not recommended. The results also show that the proposed Constellation Station site is located outside zones of active faulting.

The Tunneling Safety Report concluded that

- "Tunneling can be carried out safely beneath the BHHS campus and the West Beverly Hills, Century City and Westwood neighborhood
- Tunneling will not prevent future development of the BHHS campus
- Tunneling will not impact the use of the BHHS campus as an emergency evacuation center
- Vibration and noise levels are within the FTA requirements
- Gassy ground conditions will not be made worse by the tunnels
- Oil wells do not pose an unmitigatible risk to tunneling. Should they be encountered, there are procedures available for their safe removal and abandonment."

Table 2-3 summarizes the engineering analysis for the Century City Station Options.

Table 2-3: Summary of Engineering Analysis for Century City Station Options

Major Components	Constellation Boulevard	Santa Monica Boulevard
Station platform module	No engineering constraints	No engineering constraints
Crossover module	Required. No constraints	Required. Crossover module is stand-alone separated from the station to accommodate 20' x 16' RCB storm drain at east end of the station module
Ancillary module	Standard dimensions	Standard dimensions. Additional ancillary module required at east end of the station circulation module
Station entrances	Entrance structure and appendages must be coordinated with the plans of the site developer. Entrance closer to Century City jobs	Site available for entrance is restricted due to underground parking garage. Entrance may require taking some of the parking spaces. Entrance further from Century City jobs
Alignment	A 961 ft radius curve would be necessary from Wilshire to Lasky and a 965 ft radius curve west of the Constellation station.	Shorter alignment and flatter curves make this alignment 23-27 seconds faster than the Constellation alternative
Profile—depth to top of rail	vertical depth 80 feet	vertical depth 75
Traffic circulation during construction	Temporary traffic disruption due to station construction	Temporary traffic disruption due to station construction. Impacts will be severe due to volume of traffic on Santa Monica Blvd.
Utility relocations	Many underground utilities at proposed station location	Station designed to accommodate major storm drain crossing at Moreno Drive
Contractor's lay down areas	Would need 3 acres. Good laydown if the NE corner of Constellation /Avenue of the Stars site available. Fair laydown site otherwise	Would need 3 acres. Santa Monica median is not a good site for laydown. Good laydown if former Robinson-May site is available
Construction cost	Constellation A cost is from $64.5 million less to $19.8 million more than the Santa Monica options, depending on real estate Constellation B is from $25.7 million less to $58.6 million more than Santa Monica options, depending on real estate.	Santa Monica A is from $25.7 to $64.5 million more expensive than the Constellation options Santa Monica B is from $19.9 million less to $58.6 million less than the Constellation options
Special mitigation	Mitigation for building protection (residences and high school). Mitigation for tie backs at SE corner of Constellation Blvd and Century Park East. Mitigation for tunnel fault crossings	Mitigation for building protection. Mitigation for tunnel fault crossings
Seismic / Faults	The proposed Constellation Station site is located outside zones of active faulting" .	The previously proposed Santa Monica West Station and the currently proposed Santa Monica East Station are within active fault zones
LEGEND		
	Satisfactory	
	Presents Difficulties	
	Presents Major Difficulties	

2.3.11 Proximity to Jobs and Residences

In addition to the engineering analysis discussed in Sections 2.3.1 through 2.3.9, several other planning and environmental factors are to be considered in selecting a preferred site for the Century City Station. One of those is the proximity of the station portal to jobs and residences.

The Constellation Boulevard Station Option has approximately 210 residents and 20,170 jobs within one-quarter mile of the two portals. The Santa Monica Station Option has approximately 180 residents and 10,310 jobs within one-quarter mile of its portal[5].

2.3.12 Transit Travel Time

The time it takes a train to travel from the Century City Station to the Wilshire/Rodeo Station and the Westwood/UCLA Station, called the run time, is a function of the distance between these stations and speed of the train, which depends upon the degree of curvature along the alignment. As indicated in Table 2-4, transit run times between Wilshire /Western and Westwood/VA Hospital through the Constellation Boulevard Station would be 23-27 seconds longer than run times through the Santa Monica Boulevard Station. Longer run times typically reduce project benefits and increase Operation and Maintenance (O&M) costs.

Table 2-4: Transit Run Times with Century City Station Options

Station Combination			Distance (Miles)	Total Run Time (Eastbound)	Total Run Time (Westbound)
Century City / Santa Monica	Westwood / UCLA On-Street	Westwood / VA Hospital South	8.57	4:19	14:26
Century City / Santa Monica	Westwood / UCLA On-Street	Westwood / VA Hospital North	8.73	14:21	14:28
Century City / Santa Monica	Westwood / UCLA Off-Street	Westwood / VA Hospital South	8.60	14:45	14:52
Century City / Santa Monica	Westwood / UCLA Off-Street	Westwood / VA Hospital North	8.74	14:50	14:58
Century City / Constellation Blvd	Westwood / UCLA On-Street	Westwood / VA Hospital South	8.80	14:44	14:49
Century City / Constellation Blvd	Westwood / UCLA On-Street	Westwood / VA Hospital North	8.95	14:45	14:52
Century City / Constellation Blvd	Westwood / UCLA Off-Street	Westwood / VA Hospital South	8.83	15:11	15:16
Century City / Constellation Blvd	Westwood / UCLA Off-Street	Westwood / VA Hospital North	8.97	15:17	15:21
	Run times in minutes: seconds between Westwood /VA Hospital and Wilshire Western				

[5] Century City TOD and Walk Access Study Report (December 2011)

2.3.13 Right-of-Way Requirements

One scenario for the Century City (Constellation Boulevard) Station Option would entail the temporary use of approximately 5.6 acres of land north of Constellation Boulevard between Avenue of the Stars and Century Park East and a site located on the east side of Century Park East at Constellation Boulevard (1.4 acres). Under the second scenario for the Century City (Constellation Boulevard) Station Option, the lay down site would include acreage along the east side of Century Park East, at the eastern end of Constellation Boulevard, and south of the Constellation Boulevard/Century Park East intersection (approximately 3 acres).

The Century City (Santa Monica Boulevard) Station would require approximately 3 acres of construction staging and lay down area in the median between Santa Monica and South Santa Monica Boulevards from Avenue of the Stars to Lasky Drive / Wilshire Boulevard, and/or a portion of the parking garage at the former Robinson-May department store property.

2.3.14 Subsurface Easements

In sections of the alignment that are not in public right-of-way and that would require tunneling beneath private property, a number of permanent underground easements would be required. However, these alignment options would not result in displacement or relocation of any structures on the surface of the parcels. The number of subsurface easements required beneath private property depends not only on the location of the Century City Station but also the location of the adjacent stations at Wilshire/Rodeo and Westwood/UCLA. Table 2-5 summarizes the total number of properties that would require permanent underground easements for each alignment option.

Table 2-5 shows that 29 more properties would require permanent underground easements for the Century City (Constellation Boulevard) Station Option than for the Century City (Santa Monica Boulevard) Station Option. Properties include residences (e.g., single-family residences, apartment buildings, and condominium buildings); commercial/office buildings; government/institutional properties; vacant properties; parking lots; and utilities. Condominium units in the same building are counted as a single property and only one permanent underground easement is required per condominium building.

Table 2-5: Subsurface Easements between Wilshire/Rodeo and Westwood/VA Hospital

Station Combination			Configu-ration Number	Count by Property			
				Residential properties	Schools, Religious, and Other Community Facilities	Other Non-Residential Properties	Total Properties
Century City Santa Monica	Westwood/UCLA On-Street	Westwood /VA Hospital South	1	78	0	17	95
		Westwood /VA Hospital North	2	78	0	15	93
	Westwood/UCLA Off-Street	Westwood /VA Hospital South	3	82	1	25	108
		Westwood /VA Hospital North	4	82	1	23	106
Century City Constellation	Westwood/UCLA On-Street	Westwood /VA Hospital South	5	86	1	37	124
		Westwood /VA Hospital North	6	86	1	35	122
	Westwood/UCLA Off-Street	Westwood /VA Hospital South	7	90	2	45	137
		Westwood /VA Hospital North	8	90	2	43	135

2.3.15 Cultural Resources

There are two entrance options for the Century City (Constellation Boulevard) Station Option. One station entrance option would be located at the southwest corner of Constellation Boulevard and Avenue of the Stars near the Century Plaza Hotel. The hotel is potentially eligible for the National Register of Historic Places (NRHP). Additionally, the landscaping at the corner of Constellation Boulevard and Avenue of the Stars appears to be original and is a contributing element to the historical character of the hotel. The station entrance would be designed to avoid affecting the hotel façade and landscaping along Constellation Boulevard. In addition, Beverly Hills High School is also eligible for the NRHP.

The Century City (Santa Monica Boulevard) Station Option and its associated lay down areas would not affect any known cultural resources. It is expected that both station options would be designed to avoid significant impacts and would be acceptable under Section 4(f) and Section 106 requirements.

2.3.16 Noise and Vibration

Construction noise associated with the Century City (Constellation Boulevard) Station Option would be expected to affect more residential receivers than the Century City (Santa Monica Boulevard) Station Option. The station at Constellation Boulevard would be approximately 88 feet from future residences and 216 feet from the Hyatt Hotel. No other sensitive receivers are near the proposed station location. No sensitive receivers are within 200 feet of the Century City (Santa Monica Boulevard) Station Option.

The tunnel section to the east of the Century City (Constellation Boulevard) Station passes under Beverly Hills High School. Based on the tunnel depth and land uses at the surface, the Century City (Constellation Boulevard) Station along with the tunnels to the east and west of the station would result in higher ground vibration levels than would the Century City (Santa Monica Boulevard) Station. Predicted noise and vibration levels for both alignments are within FTA requirements.

2.3.17 Ridership

Ridership forecasts for the Century City Constellation and Century City Santa Monica Station options are shown in Table 2-6.

Table 2-6: Ridership Forecasts[6]

Station	Constellation Option	Santa Monica Option
Wilshire / La Brea	4,047	3,954
Wilshire / Fairfax	6,183	6,125
Wilshire / La Cienega	6,530	6,425
Wilshire / Rodeo	4,241	4,436
Century City Constellation	8,566	na
Century City / Santa Monica	na	5,492
Westwood / UCLA	11,967	11,926
Westwood / VA Hospital	7,807	7,631
Total Station Boardings	49,340	45,989

2.4 Summary

Table 2-3 summarizes the engineering considerations. The biggest difference between the sites is the presence of active faulting at the Santa Monica Station site. Cost is not presently a discriminator as costs overlap depending on which laydown and staging areas Metro is able to purchase and at what price. Traffic will be difficult at both locations. The Constellation site will require a longer alignment, extending the time to travel from Wilshire/Western to Westwood/VA Hospital by 23-27 seconds. Utility relocations will be more extensive at Constellation.

Table 2-7 summarizes environmental considerations relevant to the evaluation of the location options for the Century City Station. The greatest differences between the station sites are the number of jobs within a quarter mile of the portal, and the number of full-take parcels. On the first of these criteria, the Constellation Site has nearly double the number of jobs within a quarter of a mile of the portal. On the second, Constellation site has 17 less full take parcels if the businesses in the Santa Monica median have to be acquired for laydown and staging, but if the former Robinson –May parking area is available, then the two sites would be comparable in this regard.

[6] Technical Report Summarizing the Results of the Forecasted Alternatives – October 2011

Table 2-7: Evaluation Results for Century City Station Options

Relevant Goals, Objectives, and Criteria	Century City Constellation Boulevard	Century City Santa Monica Boulevard
Mobility Improvement		
Peak-period transit travel time from Wilshire/Rodeo to Century City (Santa Monica Boulevard)(in minutes)[7]	Westbound (WB)—2.4 Eastbound (EB)—2.4	Westbound (WB)—2.1 Eastbound (EB) —2.1
Peak-period transit travel time from Westwood/UCLA to Century City (Constellation Boulevard)(in minutes)	WB--2.8 EB—2.8	WB—2.7 EB—2.7
Number of residents within one-quarter mile of portal[8]	210	180
Number of jobs within one-quarter mile of portal[8]	20,170	10,310
Cost Effectiveness		
Capital cost difference in $ millions (2010 dollars)	See table 6-3	See table 6-3
Environmental Considerations		
Number of subsurface easements	122 to 137	93 to 108
Number of full-take parcels (projectwide)	35-40	36-57
Noise and vibration	Within FTA requirements.	Within FTA requirements.
Ridership Forecast[7]	49,340	45,989
Number of cultural resources adversely affected	None	None
Traffic impacts during construction	Yes – Temporary Traffic disruption due to station construction	Yes – Temporary Traffic disruption due to station construction

[7] Technical Report Summarizing the Results of the Forecasted Alternatives – October 2011

[8] Updated Direct Ridership Forecasting Report – September 2011

3.0 RECOMMENDATIONS

In light of the unsuitability of the Santa Monica Boulevard sites for a Century City station due to seismic considerations, and the conclusion of the Century City Area Tunneling Safety Report that tunnels to the Century City Constellation station site can be constructed safely and without adverse impact to the properties above, it is recommended that the Century City station be sited at Constellation Boulevard.