CHAPTER 3—TRANSPORTATION

This chapter presents information on potential transportation impacts for the No Build, Transportation System Management (TSM), five Build Alternatives, and two minimum operable segments (MOS) for the Westside Subway Extension. These alternatives are described in Chapter 2, Project Description. Potential transportation impacts include benefits such as improved transit times and reliability as well as impacts on traffic, parking, pedestrians, and bicycles.

The analysis presented includes both station area and regional transportation effects for the No Build, TSM, Build Alternatives, and MOSs. More detailed information on estimated transportation impacts are described in the *Transportation Impacts Report* and the *Traffic Handling and Construction Staging Report*.

3.1 Methodology

3.1.1 Analytical Tools and Data Sources

The estimate of transportation-related impacts is based on analytical tools and data such as the regional travel forecasting model that identifies major effects such as future transit ridership under each alternative. The *Study Methodology Technical* (Metro, December 2009) describes the approach to traffic forecasting and impact assessment for the transportation analysis. This approach was presented to and coordinated with all agencies affected by potential subway extensions in the Westside, including the Los Angeles Department of Transportation (LADOT), the County of Los Angeles, and the Cities of Beverly Hills, West Hollywood, and Santa Monica.

The analytical tools used to assess transportation impacts included comprehensive travel and traffic forecasting methods. These methods were coordinated with affected jurisdictions in the Study Area.

The travel forecasting model used was developed by Metro and is based on the Southern California Association of Governments' (SCAG) Regional Travel Demand Model. The travel demand forecast model includes the approved land use and financially constrained future highway and transit network for 2035. The model estimates future travel demand based on several input data, including the following:

- SCAG forecasts of population and employment growth
- SCAG forecasted changes in the socio-demographic characteristics of travelers
- Future characteristics of the roadway and transit systems, including travel times, costs, and capacity reflective of No Build, TSM, and Build Alternatives

To represent the affected environment from a traffic operations perspective, 192 intersections in the Study Area were analyzed. The intersections are located near potential rail stations along the proposed Project alignment and at intersections of major arterials in the Study Area. The jurisdictions affected by the Project were consulted throughout scoping process and assisted in the selection of study intersections. Detailed a.m. and p.m. peak period intersection turning movement counts were conducted in 2008 and 2009 to represent existing traffic volumes on a typical weekday throughout the Study Area.

An assessment of potential impacts of alternatives on parking, pedestrians, bicyclists, and transit facilities in the Study Area were also conducted. The results of these forecasting and assessments were documented in two reports, the *Parking Policy Plan Technical Report* and the *Transit Impacts Technical Report*.

3.1.2 Approach to Estimating Transportation Effects

The transportation impact analysis focused on two items: the regional transit system and station-area impacts. To assess impacts to the regional transportation system, changes in travel patterns were analyzed for each Build Alternative and compared to the No Build and TSM Alternatives. The regional performance measures of vehicle miles traveled (VMT), vehicle hours traveled (VHT), average vehicle speed, and peak hour variations of these metrics are derived from the Metro Travel Demand Model.

The impacts analysis also addressed estimated differences in transit characteristics resulting from the Build Alternatives and compared the results with the No Build and TSM Alternatives. These characteristics include peak-period travel times, travel speeds, service reliability (expressed in terms of the extent of exclusive guideway demand under each alternative), system expandability, passenger comfort and convenience such as extent of passenger transfers, and ridership expressed in terms of station-specific and zone-to-zone demand.

For the Westside Subway Extension, study intersections have been analyzed by applying the operational analysis methodology from the Highway Capacity Manual (HCM) (Transportation Research Board 2000). The traffic forecasting process used a combination of the updated Metro Travel Demand Model and the VISUM modeling software.

The underlying traffic impact methodology used includes the following analytical elements:

- Development of sub-area model (the Metro Travel Demand model derived from the regional SCAG model);
- Production of model outputs for each alternative;
- Development of Study Area VISUM roadway network;
- Calibration of VISUM model to existing conditions;
- Production of 2035 turning movement forecasts; and
- SYNCHRO 6.0 software suite for intersection analysis used to calculate the volume-to-capacity ratio, delay, and delay-based level-of-service (LOS) for each study location.

3.2 Affected Environment—Overview

The following sections describe existing transportation conditions in the Study Area. The transportation conditions discussed include the public transit system, street and highway systems, parking, and pedestrian and bicycle facilities.

Travel in the Westside Study Area is currently characterized by pronounced peak-period congestion that is exacerbated by large concentrations of jobs as compared to the region as a whole. The jobs-housing imbalance in the Study Area has reached a point where eastbound travel in the afternoon/early evening (3:00 to 7:00 p.m.) exceeds volumes for more traditional westbound peak travel. Typical travel speeds during these hours are less than 10 mph. By virtue of this congestion, all known options involving east-west arterials have lost their viability and any major traffic accident in the Study Area (or subregion) can result in area-wide gridlock. Accordingly, travel-time reliability has diminished dramatically over past years.

Travel in the Study Area is characterized by congested streets and highways in both directions during protracted periods. While bus service levels and ridership also are high, particularly along east-west arterials, transit vehicles must operate in the same conditions as general-purpose traffic.

Typical rush hours on the Westside of Los Angeles extend from 6:30 a.m. through 10:00 a.m. and 3:00 p.m. through 7:00 p.m. and beyond. For example, during a typical weekday evening, an auto trip along Wilshire Boulevard from Santa Monica to Beverly Hills takes up to 60 minutes to cover a distance of only 8 miles. Morning and evening peak-hour speeds along Santa Monica Boulevard in Beverly Hills average less than 7 mph.

While there are no fixed-guideway transit facilities on the Westside, there is a substantial demand for bus transit service, notably in the east-west direction, as demonstrated by the number of routes, the frequency of service, and the high levels of ridership. The Study Area includes a large number of existing intersecting bus lines and over one-half million customers ride the transit system each day.

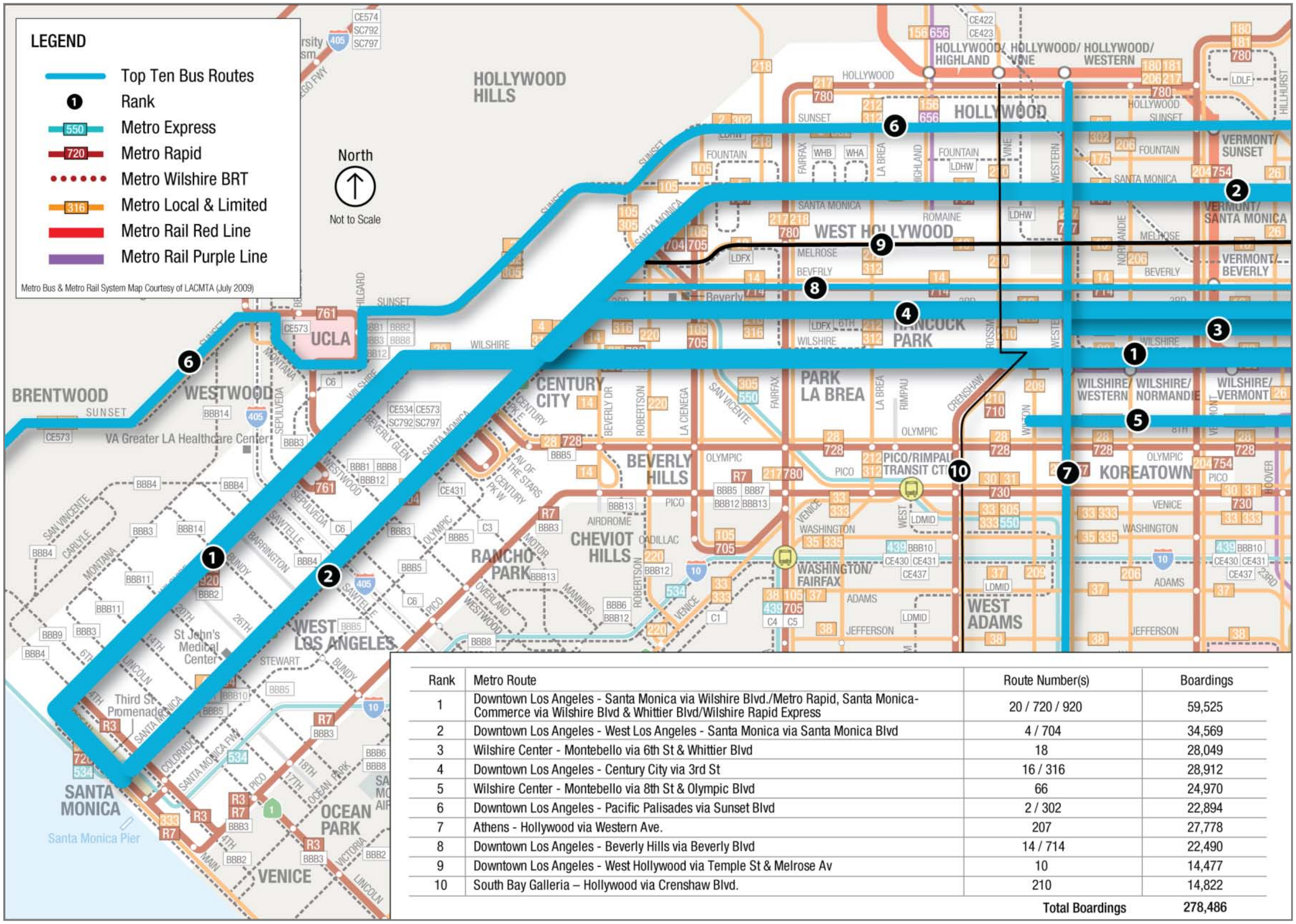
3.3 Public Transit

Since 1990, a regional fixed-guideway transit system serving Los Angeles County has been progressively implemented and includes 76 miles of rail transit (16 miles of heavy rail transit or HRT and 60 miles of light rail transit or LRT), 14 miles of dedicated bus rapid transit (BRT), and more than 500 miles of the 5-county Metrolink commuter rail line system. The existing and committed fixed guideway transit system is shown in Figure 3-1. As indicated by the figure, short sections of the Metro Red and Purple HRT Lines are located in the far eastern portions of the Study Area. The existing and committed public transit system is further described in this section.

3.3.1 Study Area Transit Network

Metro is the principal transit provider in the Study Area. The Study Area is also served by Santa Monica's Big Blue Bus, LADOT Downtown Area Shuttle (DASH), LADOT Commuter Express, Santa Clarita Transit Commuter Express Service, Culver City Bus, West Hollywood CityLine/DayLine, and Antelope Valley Transit Authority Commuter Services. Transit is provided on most major east-west and north-south arterials in the Study Area, as illustrated in Figure 3-2. This figure also shows the top 10 corridors in the Study Area as measured by weekday boardings. The volumes of weekday boardings represent passenger demand for the listed routes operating between major travel generators; for example, between Downtown Los Angeles and Century City. In some cases, more than one route provides these connections. The Study Area is well-served by bus transit lines, but all bus service in the Study Area must operate in mixed-flow conditions that are subject to the area's significant traffic congestion.

Figure 3-1. Fixed Guideway Regional Transit Network



Rank	Metro Route	Route Number(s)	Boardings
1	Downtown Los Angeles - Santa Monica via Wilshire Blvd./Metro Rapid, Santa Monica-Commerce via Wilshire Blvd & Whittier Blvd/Wilshire Rapid Express	20 / 720 / 920	59,525
2	Downtown Los Angeles - West Los Angeles - Santa Monica via Santa Monica Blvd	4 / 704	34,569
3	Wilshire Center - Montebello via 6th St & Whittier Blvd	18	28,049
4	Downtown Los Angeles - Century City via 3rd St	16 / 316	28,912
5	Wilshire Center - Montebello via 8th St & Olympic Blvd	66	24,970
6	Downtown Los Angeles - Pacific Palisades via Sunset Blvd	2 / 302	22,894
7	Athens - Hollywood via Western Ave.	207	27,778
8	Downtown Los Angeles - Beverly Hills via Beverly Blvd	14 / 714	22,490
9	Downtown Los Angeles - West Hollywood via Temple St & Melrose Av	10	14,477
10	South Bay Galleria – Hollywood via Crenshaw Blvd.	210	14,822
		Total Boardings	278,486

Figure 3-2. Existing Bus and Rail Service within the Study Area with Top 10 Ridership Corridors

Transit ridership in the Westside is more than half a million riders per weekday. A large portion of this demand, about 50 percent, occurs on a relatively small number of Metro bus routes.

Existing bus routes serving the Study Area as well as weekday ridership levels are shown in Figure 3-2. The highest number of boardings occurs on Metro Line 720, which provides limited stops service along Wilshire Boulevard with about 38,000 boardings per weekday. Local service on Wilshire Boulevard, provided by Metro Line 20 and Santa Monica Big Blue Bus Line 2, serves an additional 23,000 riders. With combined weekday boardings of about 64,000, Wilshire Boulevard represents the single heaviest used transit travel corridor in Southern California.

Other bus lines with some of the highest levels of ridership in the Study Area include Metro Line 2 on Sunset Boulevard (22,894 boardings), Metro Line 4 on Santa Monica Boulevard (21,509 boardings), and Metro Line 16 on 3rd Street (29,000 boardings). These bus lines all operate east-west in the Study Area along Sunset Boulevard, Santa Monica Boulevard, and Third Street, respectively, and travel parallel routes to potential subway extensions.

The 62 bus routes operating in the Study Area serve approximately 550,000 boardings or about 50 percent of total weekday bus ridership on all Metro bus lines. Of this total, ridership on seven east-west streets currently account for approximately 40 percent of total transit demand in the Study Area. Weekday ridership for service on these east-west streets is shown in Table 3-1. Bus ridership levels presented in Table 3-1 represent weekday boardings along the seven major east-west streets in the Study Area. The distribution of route-specific ridership for the Study Area is shown in Table 3-2.

Table 3-1. Major East-West Streets/Bus Lines in Study Area

Street/Bus Line	Weekday Ridership
Wilshire Boulevard/Metro 20, 720, 920, and Santa Monica Big Blue Bus 2	64,200
Pico Boulevard/Metro 30 and 730, Santa Monica Big Blue Bus 7	37,929
Santa Monica Boulevard/Metro 4, Santa Monica Big Blue Bus 1	30,143
3rd Street/Metro 16	28,912
Sunset Boulevard/Metro 2	22,894
Olympic Boulevard/Metro 28 and 728, Santa Monica Big Blue Bus 5	21,562
Beverly Boulevard/Metro 14	17,272

Major north-south/east-west transfer points within the Study Area are shown in Figure 3-3. Major transfer points are defined as locations where a Metro Rapid bus line, operating on weekday peak headways of 12 minutes or less, intersects with another bus line that is also operating on weekday peak headways of 12 minutes or less. Based on this criterion, there are 29 major transfer points in the Study Area. Eleven of these major transfer points are located in areas where Build Alternative stations are proposed.

3.3.2 Station-Area Transit Service

Each area with potential subway stations was reviewed to determine the characteristics of bus routes, including peak headway, and off-peak headway. The locations of stops were also determined to evaluate local bus access with respect to proposed station portals. Potential station locations would provide access to an average of six bus lines, with the highest number of connecting bus lines (16) occurring at the Westwood/UCLA

Station. The relatively high number of commuter bus lines at the Century City and Westwood/UCLA Stations reflects the importance of these locations in terms of regional employment centers.

Table 3-2. Existing Study Area Transit Service and Weekday Boardings

Provider	Line	Description	Riders
Metro	720	Metro Rapid (Santa Monica—Commerce via Wilshire Boulevard & Whittier Boulevard)	37,613
Metro	204	Athens—Hollywood via Vermont Avenue	30,396
Metro	16	Downtown Los Angeles—Century City via 3rd Street	28,912
Metro	18	Wilshire Center—Montebello via 6th Street & Whittier Boulevard	28,049
Metro	207	Athens—Hollywood via Western Avenue	27,778
Metro	754	Metro Rapid (Athens—Hollywood via Vermont Avenue)	22,964
Metro	2	Downtown Los Angeles—Pacific Palisades via Sunset Boulevard	22,894
Metro	4	Downtown Los Angeles—West Los Angeles—Santa Monica via Santa Monica Boulevard	21,509
Metro	30	Pico/Rimpau—Dozier/Rowan—Monterey Park via Pico Boulevard & East 1st Street	18,497
Metro	20	Downtown LA—Santa Monica via Wilshire Boulevard	18,268
Metro	14	Downtown Los Angeles—Beverly Hills via Beverly Boulevard	17,272
Metro	206	Athens—Hollywood via Normandie Avenue	17,025
Metro	210	South Bay Galleria—Hollywood via Crenshaw Boulevard	14,822
Metro	10	Downtown Los Angeles—West Hollywood via Temple Street & Melrose Avenue	14,477
Metro	212	Hawthorne—Hollywood via La Brea Avenue	13,910
SM	7	Pico Boulevard	13,639
Metro	704	Metro Rapid (Downtown Los Angeles—Santa Monica via Santa Monica Boulevard)	13,060
Metro	105	West Hollywood—Vernon via La Cienega Boulevard & Vernon Avenue.	11,808
Metro	761	Metro Rapid (Pacoima—Westwood via Van Nuys Boulevard)	11,675
Metro	163	West Hills Medical Center—Sun Valley/North Hollywood Station via Sherman Way & Lankershim Boulevard	11,642
Metro	180	Pasadena—Hollywood via Colorado Boulevard. and Hollywood Boulevard	10,940
Metro	217	Vermont/Sunset—Fairfax/Washington via Fairfax Avenue & Hollywood Boulevard	10,753
Metro	780	Pasadena—West Los Angeles via Colorado Boulevard. & Hollywood Boulevard	10,612
Metro	28	Downtown Los Angeles—Century City via Olympic Boulevard	9,721
CCB	6/Rapid 6	Sepulveda Boulevard	9,301
Metro	728	Metro Rapid (Downtown LA—Century City via Olympic Boulevard)	8,687
SM	1	Santa Monica Boulevard	8,634
SM	3	Montana Ave & Lincoln Boulevard	8,488
Metro	705	Metro Rapid (West Hollywood—Vernon via La Cienega Boulevard & Vernon Avenue)	8,295
Metro	710	Metro Rapid (South Bay Galleria—Wilshire Center via Crenshaw Boulevard)	7,755
SM	12	Westwood & Palms	6,419
Metro	730	Pico Boulevard	5,793
SM	8	Ocean Park Boulevard	5,120
SM	2	Wilshire Boulevard	4,650
SM	14	Bundy Drive & Centinela Avenue	4,094
Metro	920	Wilshire Rapid Express	3,644
SM	5	Olympic Boulevard	3,154
Metro	305	UCLA—Willowbrook via Sunset Boulevard , San Vicente Boulevard & Western Avenue	2,975

Table 3-2. Existing Study Area Transit Service and Weekday Boardings (continued)

Provider	Line	Description	Riders
Metro	550	Metro Express (San Pedro—West Hollywood via Harbor Transitway)	2,862
Metro	534	Metro Express (Malibu—Fairfax/Washington via Pacific Coast Hwy.)	2,814
LADOT	DASH	Wilshire/Koreatown	2,586
Metro	156	Van Nuys—Hollywood Panorama City—Hollywood	2,539
CCB	3	Crosstown	2,241
SM	R3	Rapid 3	2,239
SM	10	Freeway Express	2,028
LADOT	DASH	Hollywood	1,895
SM	9	Pacific Palisades	1,335
SM	R7	Rapid 7	1,259
LADOT	DASH	Fairfax	1,106
LADOT	DASH	West Hollywood	1,087
SM	4	San Vicente Boulevard & Carlyle Avenue	1,037
Metro	209	Athens—Wilshire Center via Van Ness Avenue & Arlington Avenue	980
SM	S12	UCLA Commuter	931
LADOT	CE 573	Mission Hills/Encino	813
SM	11	Campus Connector	699
LADOT	DASH	Midtown	369
SCT	797	Century City	313
WH	A/B	West Hollywood Loop	225
LADOT	CE 534	West Los Angeles/Century City/Westwood	181
LADOT	CE 431	Westwood/Rancho Park/Palms	175
AVTA	786	West Los Angeles	66
LADOT	CE 430	Pacific Palisades/Brentwood/Westwood	63
SCT	792	Century City	32
Total			**555,120**

Source: Metro 2009, Santa Monica Big Blue Bus 2007, Los Angeles Department of Transportation FY08-09, Antelope Valley Transit Authority 2009, Santa Clarita Transit 2009, West Hollywood CityLine 2009

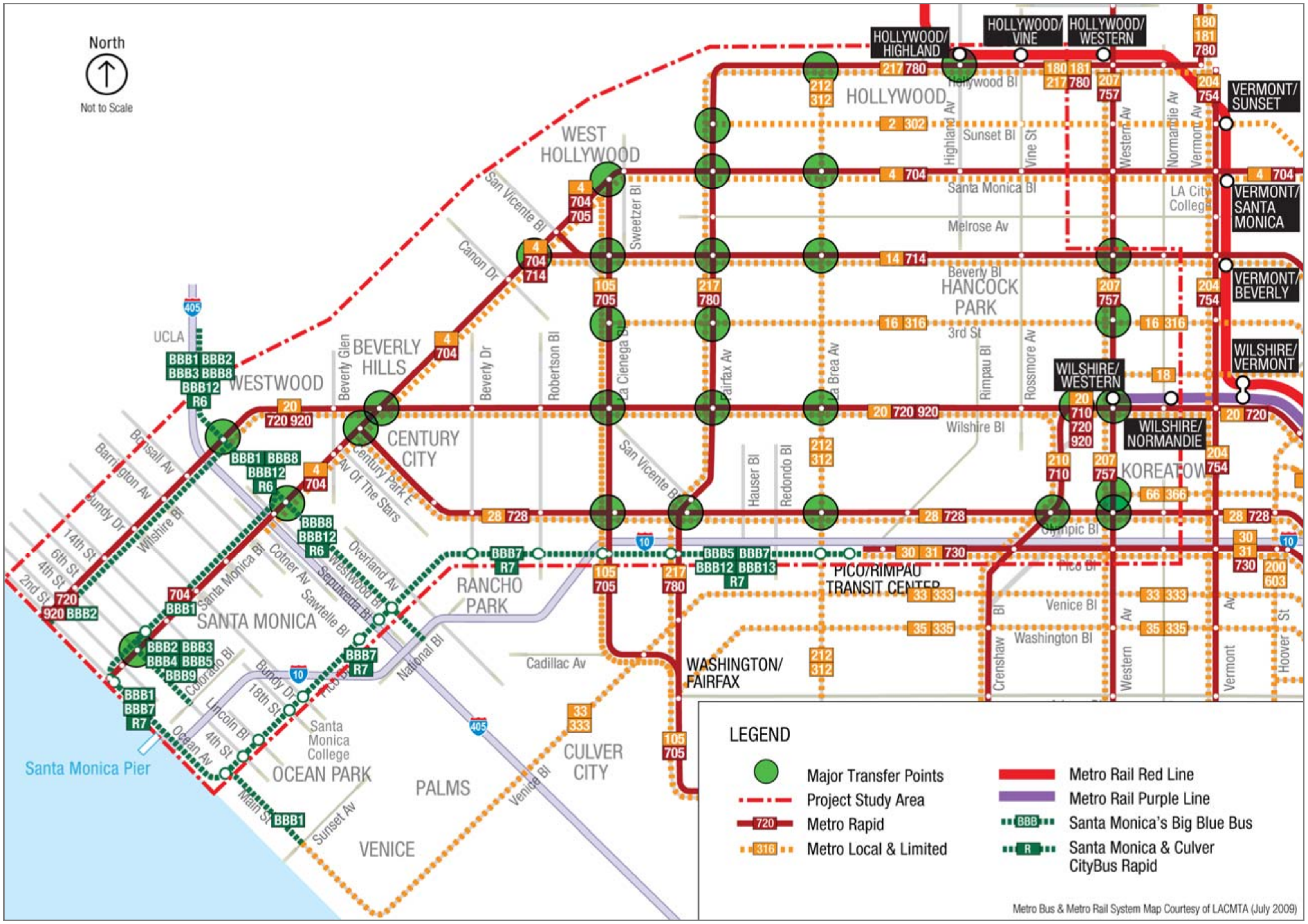


Figure 3-3. Major Transfer Points in Study Area

3.3.3 Conditions for Transit Operations

The Study Area contains some of the most congested traffic conditions in Los Angeles. However, transit service also must operate within these same conditions. With the exception of small segments of the Metro Rail Red and Purple Lines located in the far eastern portions of the Study Area, transit service is characterized by mixed-flow operations. Therefore, current traffic conditions such as long peak periods and congested traffic as described in Section 3.2 also affect transit service. Although ridership on Westside bus routes is high, congestion on arterial streets and freeways affect bus travel times and reliability, thereby resulting in less than optimal service conditions. With high passenger loads, congested roads make reduced bus service headways (improved frequency of service) difficult to maintain and result in overcrowded buses.

3.3.4 Planned Transit Program Improvements

There will be limited improvements affecting transit facilities in the Study Area. Under the No Build Alternative, possible improvements include a bus-only lane on Wilshire Boulevard (except in Beverly Hills and Santa Monica) to support Metro's Local and Rapid bus lines. Service frequency improvements will also occur on Metro Red and Purple Lines according to heavy rail transit (HRT) Plans.

3.4 Streets and Highways

The existing roadway system and traffic conditions in the Study Area are discussed and summarized in the following sections.

3.4.1 Freeways and Arterials

The Study Area is generally served by a mature roadway network of arterial streets and freeways, which provide options for north/south and east/west travel. Two freeways traverse the Study Area. The San Diego Freeway (I-405) is just west of Westwood and the University of California at Los Angeles (UCLA) and provides access to and from the north and south in the Study Area. The Santa Monica Freeway (I-10) is just outside the Study Area until it reaches the Santa Monica city limits, but it parallels major east-west arterials while providing regional freeway access from locations to the east, such as Downtown Los Angeles. Both freeways are widely recognized as some of the most congested in both the Los Angeles region and the nation, and experience high traffic volumes throughout the day, well beyond the traditional peak travel hours.

> The Study Area includes freeways and arterials that have some of the highest traffic volumes in the Los Angeles area. Other than an added HOV Lane on I-405, no major roadway system capacity expansion is anticipated.

The freeway network in the Study Area is further described below.

- I-10 Freeway (Santa Monica Freeway)—The Santa Monica Freeway is a major east/west freeway that traverses the southern portion of the Study Area. Near the proposed project alignment, the Santa Monica Freeway provides four lanes of travel in each direction, including auxiliary lanes. The ramps that lie in the Study Area include the Cloverfield Boulevard, 20th Street, Lincoln Boulevard and Centinela Avenue on- and off-ramps, the 4th/5th Street off-ramps, and the 4th Street on-ramps. Peak-hour conditions along the Santa Monica Freeway within or adjacent to the Study Area are generally congested in both directions, with a higher volume of traffic traveling west in the a.m. peak hours and east in the p.m. peak hours. In the Study Area, the average daily (weekday) traffic[1] on the Santa Monica Freeway varies between 148,000 vehicles at the Lincoln Boulevard interchange, 192,000 vehicles at the Cloverfield Boulevard interchange, and 244,000 vehicles at the Bundy Drive interchange. At key interchanges south of the Study Area, average daily traffic varies between 260,000 vehicles at the Overland Avenue interchange, 267,000 vehicles at the Robertson Boulevard interchange, 277,000 vehicles at the La Brea Avenue interchange, and 291,000 vehicles at the Crenshaw Boulevard interchange.

- I-405 Freeway (San Diego Freeway)—The San Diego Freeway is a major north/south freeway that connects the San Fernando Valley to West Los Angeles, the South Bay area, and Orange County. In the Study Area, the San Diego Freeway provides five to six lanes of travel in each direction, including a southbound carpool lane and auxiliary lanes. The ramps within the Study Area include the Sunset Boulevard, Wilshire Boulevard, Santa Monica Boulevard, and Olympic/Pico Boulevard on- and off-ramps and the Montana Ave off-ramp. Peak hour conditions along the San Diego Freeway are generally congested in both directions. Because the Study Area is jobs rich, the directional flow in the a.m. peak heavily favors the southbound direction north of the Study Area and the northbound direction south of the Study Area. In the Study Area, the average daily (weekday) traffic on the San Diego Freeway varies between 319,000 vehicles at the Olympic Boulevard interchange, 302,000 vehicles at the Santa Monica Boulevard interchange, 289,000 vehicles at the Wilshire Boulevard interchange, 281,000 vehicles at the Montana Avenue off-ramp, and 283,000 vehicles at the Sunset Boulevard interchange.

The Study Area contains some of the most congested streets in Los Angeles County. High population and employment densities in the Study Area have resulted in eastbound and westbound directional travel being congested during both the a.m. and p.m. peak periods. Study Area arterials serve major employment centers as well as local and regional travel. In addition, the arterials are used as alternatives to the I-10 and I-405 freeways during non-recurrent delays resulting from accidents, breakdowns, lane closures, and other random events.

Key east/west arterials include Hollywood, Sunset, Santa Monica, Beverly, Wilshire, Olympic, and Pico Boulevards and Melrose Avenue. Key north/south arterials include Crenshaw, La Cienega, San Vicente, Robertson, Beverly Glen, Westwood, Sepulveda, and Lincoln Boulevards; Western, La Brea, and Fairfax Avenues; and Bundy Drive. These key arterials can be classified as one of two street types: a Major Class II Highway or a Secondary Highway. A Major Class II Highway is defined as a 104-foot right-of-way (ROW), 12-foot sidewalks, 13-foot curb lanes (off-peak parking, peak through), four full-time through lanes, and one dedicated left-turn lane/median. A Secondary Highway is defined as a 90-foot ROW that included 10-foot sidewalks, 19-foot curb lanes (all day parking), four full-time through lanes, and one dedicated left-turn lane/median.

[1] 2008 Traffic Volumes on California State Highways, State of California Department of Transportation, Traffic Operations Division

3.4.2 Programmed Roadway Improvements

The only planned roadway improvement in the Study Area is the I-405 Northbound High Occupancy Vehicle (HOV) lane in the Sepulveda Pass. This project will consist of a 10-mile northbound HOV lane on I-405 through Sepulveda Pass from I-10 (Santa Monica Freeway) to US 101 (Ventura Freeway). A southbound HOV lane between US 101 and Sunset Boulevard opened for service in 2002. In 2009, a southbound lane was opened south of Sunset Boulevard.

Local jurisdictions are not planning any major roadway expansion projects through 2035. Because of the level of buildout and density in the Study Area, local jurisdictions have generally determined through their policies that congestion relief improvements should focus on travel demand management along with increased ride sharing and transit usage rather than highway/arterial physical improvements, such as road widening or new roadways. In a number of cases, local communities that desire to eliminate cut-through and neighborhood traffic to support more livable downtown or commercial areas are supporting initiatives to limit roadway capacity or to slow traffic flow, leaving transit improvements as the only viable alternative to reduce traffic volumes and congestion-related delays.

In the cities on the Westside, policy-makers have taken strong positions against the wholesale widening of streets and narrowing of sidewalks to accommodate more travel lanes. Localized Transportation System Management (TSM) improvements, such as additional turn lanes or signal phasing changes, have been supported, but the arterial network in the Westside is essentially built out. In this highly urbanized area, the types of transportation improvements that have the support of the policy makers include intelligent transportation systems projects and livable communities programs. Future increases in travel demand will have to be accommodated by making the existing highway network work better where possible in conjunction with increased usage of transit and other (i.e., non-motorized) modes of transportation.

3.4.3 Daily Traffic Volumes

Daily traffic volumes along the Study Area arterials vary by segment. The highest daily traffic volumes for the major east/west and north/south arterials are presented in Table 3-3. Among east-west arterials, Wilshire Boulevard heavily dominates with almost twice the traffic volumes of the next highest street, Santa Monica Boulevard. Sepulveda and Bundy Drive, with about 59,000 daily trips, are the major north/south streets in terms of traffic volumes.

Table 3-3. Traffic Volumes for Key Arterial Segments in the Study Area

Street Name	Count Location	Total Daily Volume
East/West Arterials		
Wilshire Boulevard	west of Veteran Avenue	122,618
Santa Monica Boulevard	east of Cotner Avenue	68,277
Sunset Boulevard	east of La Cienega Boulevard	66,043
Olympic Boulevard	west of Cotner Avenue	59,388
Pico Boulevard	west of Cotner Avenue	46,152
Hollywood Boulevard	at Laurel Canyon Boulevard	35,618 **
North/South Arterials		
Sepulveda Boulevard	at Pico Boulevard	59,081 *
Bundy Drive	south of Pico Boulevard	59,022
La Cienega Boulevard	south of Beverly Boulevard	48,774
La Brea Avenue	south of Beverly Boulevard	47,440
San Vicente Boulevard	east of La Cienega Boulevard	38,611
Western Avenue	south of Beverly Boulevard	38,245
Fairfax Avenue	south of Beverly Boulevard	36,724
Crenshaw Boulevard	at Olympic Boulevard	31,804 *
Beverly Glen Boulevard	at Wilshire Boulevard	20,429
Westwood Boulevard	at Holman Avenue	27,448

Source: LADOT 2009 traffic count database, unless noted.

*2007 count. **2008 count.

3.4.4 Study Intersections and Existing Levels-of-Service

Location of Study Intersections

This section describes existing conditions at Study Area intersections as well as the methodology used to conduct the impact analysis. In order to represent existing conditions from a traffic operations perspective, 192 key intersections in the Study Area—at locations in close proximity to potential new rail station locations as well as at the convergence of congested major arterials—were identified for analysis. The locations are shown on Figure 3-4. Jurisdictions affected by the Westside Subway Extension include the Cities of Los Angeles, Beverly Hills, West Hollywood, and Santa Monica, and the County of Los Angeles. Each jurisdiction was consulted throughout the scoping process and assisted in the selection of study intersections.

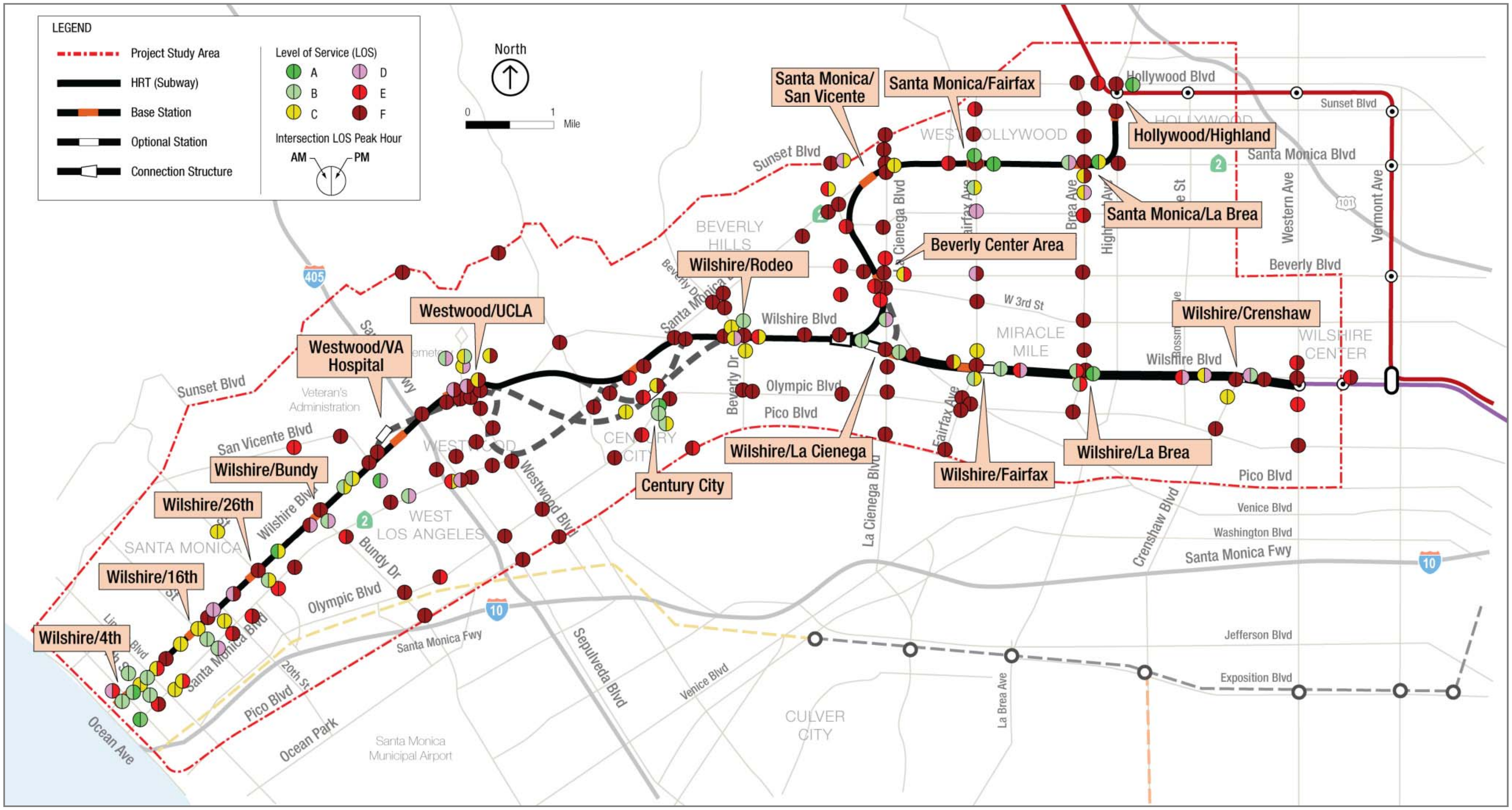


Figure 3-4. Existing Intersection Levels of Service in Study Area

Detailed a.m. and p.m. peak-period intersection turning movement counts were conducted in April and May 2009 and January 2010 to represent existing traffic volumes on a typical weekday throughout the Study Area. In addition to the collection of traffic data, pedestrian and bicycle activity was observed at study intersections in close proximity to potential station locations. Peak-period pedestrian and bicycle volumes were recorded at study intersections adjacent to and up to approximately one-quarter mile walking distance from each potential station location. Appendix A of the *Transportation Impact Technical Report* contains pedestrian and bicycle counts taken at the 65 study intersections that are in close proximity to potential station locations.

Level-of-Service at Study Intersections

The commonly accepted operational analysis methodology from *2000 Highway Capacity Manual* (HCM) (Transportation Research Board 2000) was used to estimate delay and corresponding level-of-service (LOS) at each study intersection. Using the operations analysis methodology, conditions of intersections can be graded based on average delay, measured in seconds, experienced by drivers.

LOS D serves as the minimum acceptable standard for the Westside Extension Transit Corridor Project. Under current conditions, most major intersections in the Study Area are operating at deficient levels of service during peak hours—LOS E and F.

LOS is a qualitative measure used to describe the condition of traffic flow, ranging from LOS A (free flow conditions) to LOS F (congested conditions), with LOS E representing the theoretical maximum capacity of a link or intersection before gridlock occurs. Table 3-4 provides LOS definitions for signalized intersections using the HCM methodology. Weekday a.m. and p.m. peak hours were selected for analysis because they represent the most critical periods of traffic congestion in the Study Area, compared to other periods such as weekday or weekend midday. The (LOS) definitions and ranges of delay shown in Table 3-4 represent average conditions for all vehicles at an intersection across an entire hour. However, during certain times within the peak hour and for certain vehicle movements, even longer delays are experienced by motorists.

Generally, the minimum acceptable LOS for any intersection in an urbanized area is LOS D. The affected Study Area jurisdictions all consider LOS D the minimum acceptable LOS. Therefore, LOS D serves as the minimum acceptable standard for the Project Study Area.

The analysis results of existing weekday morning and afternoon peak-hour conditions at the 192 study intersections are illustrated in Figure 3-4 and summarized in Appendix B-1 of the *Traffic Impact Assessment*. LOS calculations are provided in Appendix C-1 of the *Traffic Impacts Assessment Report.* Of the 192 analyzed intersections, 112 (58 percent) operate at an acceptable LOS D or better in the morning and afternoon peak hours. The remaining 80 intersections operate at LOS E or F (deficient level-of-service) during one or both analyzed peak hours. Under current conditions, most major intersections in the Study Area operate at deficient LOS during peak hours.

Table 3-4. Level-of-Service Definitions for Signalized Intersections

Level of Service	Control Delay (seconds/vehicle)	Interpretation*
A	≤10.0	This level-of-service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop. Short cycle lengths may also contribute to low density.
B	>10.0 and ≤20.0	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.
C	>20.0 and ≤35.0	These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many vehicles still pass through the intersection without stopping.
D	>35.0 and ≤55.0	At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	>55.0 and ≤80.0	These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	>80.0	This level, considered unacceptable by most drivers, often occurs with oversaturation; that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume-to-capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Source: Highway Capacity Manual, Transportation Research Board, 2000.

* Level-of-service interpretation was derived from *Highway Capacity Manual* 1994, Transportation Research Board, 1994.

3.4.5 Parking

While none of the stations in the Build Alternatives are proposed to have dedicated park-and-ride facilities, there could still be demand for park-and-ride spaces at some stations. Accordingly, a parking occupancy survey was conducted for on-street locations with unrestricted parking. The purpose of the survey was to determine existing parking use at these unrestricted locations during the peak period and to identify if there would be sufficient vacant parking spaces to accommodate potential Westside Subway Extension spillover parking. The review of potential parking availability also included off-street commercial area parking. The results of this review are presented in the following sections.

A parking inventory in areas with potential future rail stations indicated available capacity for accommodating some spillover parking that could be generated by the Build Alternatives.

On-Street Parking

Table 3-5 describes the results of the parking occupancy survey at unrestricted on-street locations. In general, the majority of unrestricted spaces within a one-half mile of each station were occupied, with most station locations exhibiting occupancy rates in the range of 70 to 100 percent. Only the Wilshire/Crenshaw Station (48 percent occupied) and Wilshire/26th Station (55 percent occupied) had lower occupancy rates. Because both station areas have single-family residential land uses, existing parking demand is lower than at most other station areas, which have more multifamily residential land uses.

Table 3-5. Parking Occupancy—Unrestricted On-Street Spaces within One-Half Mile of Stations

Station	Parked Vehicles	Vacant Spaces	Total Unrestricted Supply	Occupancy %
1. Wilshire/Crenshaw	1,009	1,091	2,115	48%
2. Wilshire/La Brea	408	120	528	77%
3. Wilshire/Fairfax	174	26	188	93%
Optional Station	128	18	134	96%
4. Wilshire/La Cienega	215	35	250	86%
Optional Station	416	61	477	87%
5. Wilshire/Rodeo Station	*	*	0	*
6. Century City	26	0	26	100%
Optional Station	*	*	0	*
7. Westwood/UCLA	353	3	356	99%
Optional Station	366	10	376	97%
8. Westwood/VA Hospital	16	2	18	89%
Optional Station	128	9	137	93%
9. Wilshire/Bundy	1,389	394	1,783	78%
10. Wilshire/26th	443	366	809	55%
11. Wilshire/16th	741	134	875	85%
12. Wilshire/4th	490	58	548	89%
13. Hollywood/Highland	469	53	522	90%
14. Santa Monica/La Brea	834	176	1,010	83%
15. Santa Monica/Fairfax	2,105	497	2,602	81%
16. Santa Monica/San Vicente	388	163	551	70%
17. Beverly Center Area	158	9	167	95%

Source: Fehr & Peers, January 2010

*No unrestricted spaces are located within one-half mile of these station locations.

Off-Street Parking

While parking is available on streets within a one-half mile walking distance of most station areas, a substantial amount of off-street parking is also provided at the commercial land uses within walking distance to each station. Parking facilities provided for these land uses may or may not be accessible to the public, and may or may not operate at or near capacity under existing conditions. However, because of the extensive supply of parking within these land uses, there is the potential for shared parking opportunities, enabling Westside Subway Extension riders to use already-built parking facilities.

Based on the commercial land use parcel data and the municipal code parking requirements, off-street parking that would be required by code was estimated for the one-half mile area around each potential station location. The results of the review, shown in Table 3-6, indicated that total commercial off-street parking supply ranges from approximately 2,250 spaces within one-half mile of the Westwood/VA Hospital

Optional Station to 36,060 spaces within one-half mile of the Century City Station/Santa Monica Boulevard.

Table 3-6. Commercial Land Uses and Parking Spaces within One-Half Mile of Stations

Station	Retail (sf)	Office (sf)	Hotel (sf)	Food Services (sf)	Total (sf)	Estimated Off-Street Parking Spaces
1. Wilshire/Crenshaw	65,850	1,275,000	74,650	4,650	1,420,150	3,010
2. Wilshire/La Brea	836,950	2,535,750	13,350	17,600	3,403,650	8,624
3. Wilshire/Fairfax	311,400	5,403,300	63,900	54,850	5,833,450	12,730
Optional Station	265,100	5,219,300	63,900	46,700	5,595,000	12,094
4. Wilshire/La Cienega	235,000	3,496,300	275,300	94,000	4,100,600	13,849
Optional Station	308,450	3,111,700	279,300	94,000	3,793,450	12,976
5. Wilshire/Rodeo	2,911,550	4,755,000	763,500	51,700	8,481,750	26,109
6. Century City	1,031,200	13,917,150	1,921,200	25,500	16,895,050	36,057
Optional Station	569,100	13,437,200	1,586,650	25,500	15,618,450	32,578
7. Westwood/UCLA	1,186,600	4,561,950	543,200	95,900	6,387,650	15,917
Optional Station	1,203,450	4,172,800	543,200	96,900	6,016,350	15,217
8. Westwood/VA Hospital	0	2,166,850	0	0	2,166,850	4,334
Optional Station	39,600	1,046,750	0	0	1,086,350	2,252
9. Wilshire/Bundy	559,600	2,797,200	36,300	56,650	3,449,750	8,472
10. Wilshire/26th	464,150	2,259,500	55,200	93,250	2,872,100	10,542
11. Wilshire/16th	626,650	577,000	39,450	56,600	1,299,700	4,927
12. Wilshire/4th	2,386,700	2,740,350	430,550	91,850	5,649,450	20,036
13. Hollywood/Highland	1,833,250	1,402,000	1,263,100	79,300	4,577,650	13,455
14. Santa Monica/La Brea	695,350	612,450	49,950	80,250	1,438,000	4,909
15. Santa Monica/Fairfax	512,100	167,350	3,500	34,950	717,900	2,624
16. Santa Monica/San Vicente	2,446,600	524,300	883,050	108,500	3,962,450	14,643
17. Beverly Center Area	4,046,650	1,625,400	608,000	103,500	6,383,550	21,688
Total Off-Street Parking in Station Areas (range reflects potential location of stations)					214,156 to 221,926	

Source: Terry A. Hayes & Associates, December 2009

The parking ratios used in the analysis are from current municipal codes of each city. However, land uses in the Study Area have been built over time, and may have been using parking ratios from earlier codes, or even prior to establishment of minimum parking requirements. Additionally, the current codes allow for some sharing of parking between land uses, and the payment of in-lieu fees to satisfy code parking requirements. Therefore, the actual off-street supply may vary from these estimates.

Because there are hundreds of individual commercial parcels within a ½ mile walking distance of station areas, conducting parking surveys at each parking facility was found to be infeasible. Therefore, parking requirements using municipal code parking ratios were estimated for commercial land uses within a one-half mile walking distance of potential station locations, based on land use parcel data analyzed in Geographic

Information System (GIS). Land uses were classified according to the following general categories:

- Retail
- Office (museum, hospital, and other institutional land uses also analyzed as office)
- Hotel
- Food Services

Non-commercial land uses, such as residential, were excluded from this analysis because they typically do not provide publicly accessible parking. Table 3-6 presents the commercial square feet for each type of land use located within a one-half mile walking distance of potential station locations.

3.4.6 Pedestrian and Bicycle Facilities

Pedestrian Facilities

There are high levels of pedestrian accessibility within the Study Area. The entire street network, excluding urban freeways, is generally considered open to pedestrian traffic. A continuous network of facilities connects every neighborhood and destination within the Cities of Los Angeles, West Hollywood, Beverly Hills, and Santa Monica. Pedestrian network variations, such as sidewalk widths, landscaping, and sidewalk amenities, vary by location, depending on the density and mix of land uses within the built environment and the circulation patterns of the vehicular transportation system.

In some station areas, there are physical barriers that would affect overall access to subway service. One example is I-405 and associated ramps in the vicinity of the Westwood/VA Hospital Station. However, for the subway stations, sidewalk access is available and major barriers would not be present between travel generators and subway station entrances.

High volumes of pedestrian activity (established as 500 or more pedestrians crossing at a study intersection during a peak hour) are shown in Figure 3-5 and were observed at these potential station locations:

- Wilshire/Fairfax
- Wilshire/Rodeo
- Century City
- Westwood/UCLA
- Wilshire/4th
- Santa Monica/La Brea
- Santa Monica/Fairfax
- Santa Monica/San Vicente
- Beverly Center

The Westside has a comprehensive network of pedestrian facilities connecting neighborhoods. Bicycle plans for Los Angeles and Santa Monica have been completed in draft form or are currently under development.

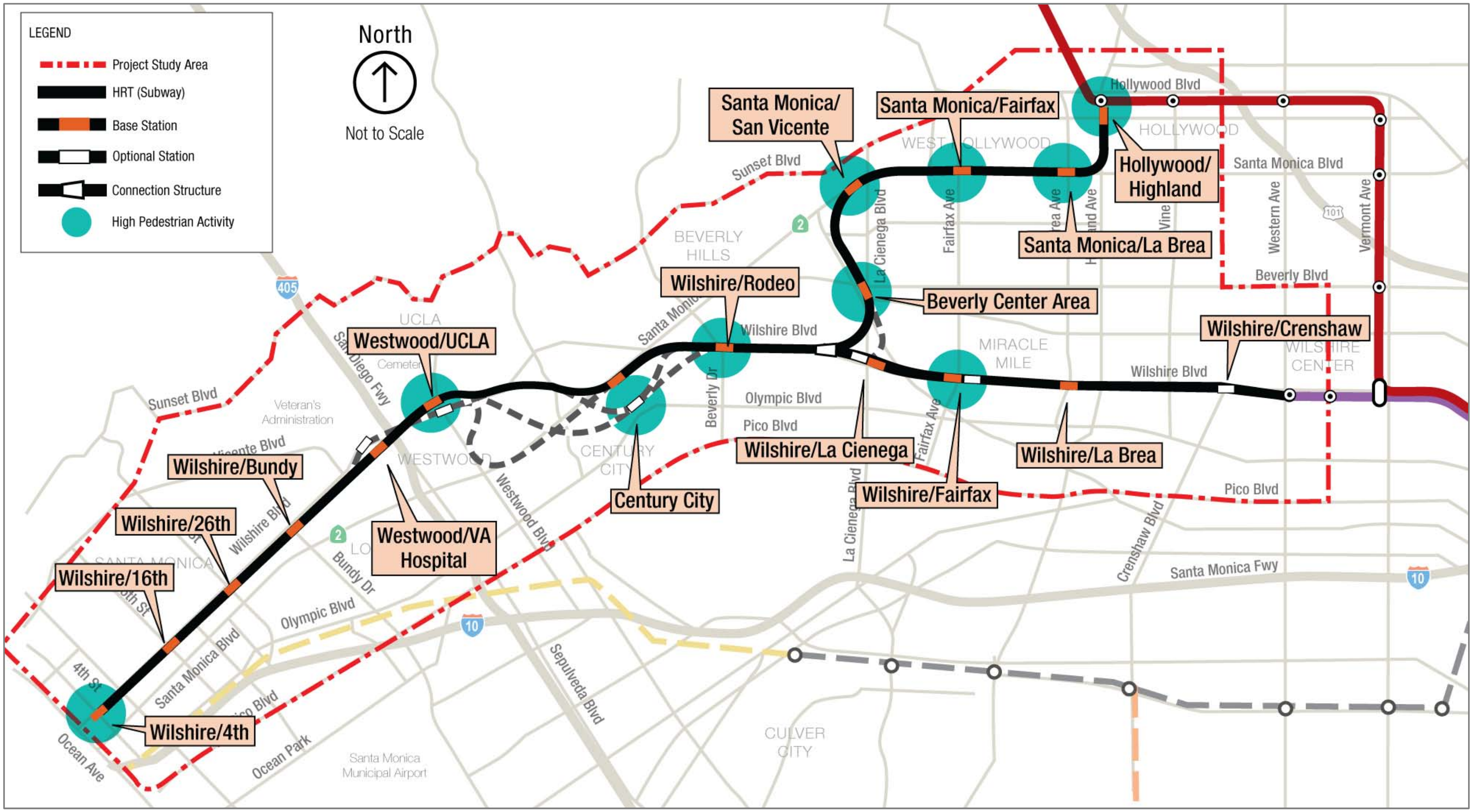


Figure 3-5. Potential Station Locations with High Volumes of Pedestrian Activity

The highest levels of pedestrian activity were recorded in the Westwood/UCLA station area, followed by Downtown Beverly Hills and Downtown Santa Monica. Westwood/UCLA is a major employment center. Students, faculty, staff, and campus visitors frequent the station area, resulting in the highest pedestrian activity in the Study Area. Pedestrian activity was also significant in Downtown Beverly Hills, Downtown Santa Monica, and along the Santa Monica Boulevard corridor in West Hollywood. Currently, pedestrians experience little difficulty crossing arterials in these areas, as all major intersections are signalized with pedestrian walk phases and crosswalks. A number of intersections have treatments that further enhance the pedestrian experience.

Bicycle Facilities

Existing and proposed bicycle facilities in the Study Area are identified in the City of Los Angeles Draft Bicycle Plan Update (2009) (LADOT 2009) and the proposed City of Santa Monica Land Use and Circulation Element (2010). (SM 2010) The facilities are shown in Figure 3-6. It should be noted that the City of Beverly Hills does not currently have a bicycle plan.

The highest density of existing and proposed bicycle facilities occurs within the City of Santa Monica. While there are few existing bicycle facilities within the City of Los Angeles, many bicycle-friendly streets and bicycle routes have been proposed, and several of these proposed bikeways will increase bicycle access to proposed station locations.

3.5 Environmental Impacts/Environmental Consequences

This section presents estimated transportation-related impacts and potential environmental consequences of the No Build, TSM, and Build Alternatives, including MOSs. Transit impacts and consequences include estimated benefits associated with each alternative, such as travel speeds and times, greater service reliability, and estimated higher ridership. Within station areas, the transit assessment involved indentifying potential impacts associated with station access and nearby pedestrian and bus stop locations.

The assessment of traffic-related impacts and consequences includes reviewing LOS at intersections in the Study Area to determine potential adverse effects. Parking impacts and consequences include potential loss of on- and off-street capacity to accommodate construction of rail stations. The parking analysis also addressed potential impacts associated with riders who could be looking for parking spaces in station areas. For potential pedestrian, bus rider, and bicycle impacts and consequences, a qualitative assessment was carried out in station areas.

If any adverse impacts and consequences are indicated, mitigation measures are identified as well as any impacts remaining after mitigation. The section also presents California Environmental Quality Act (CEQA) determination of any adverse impact.

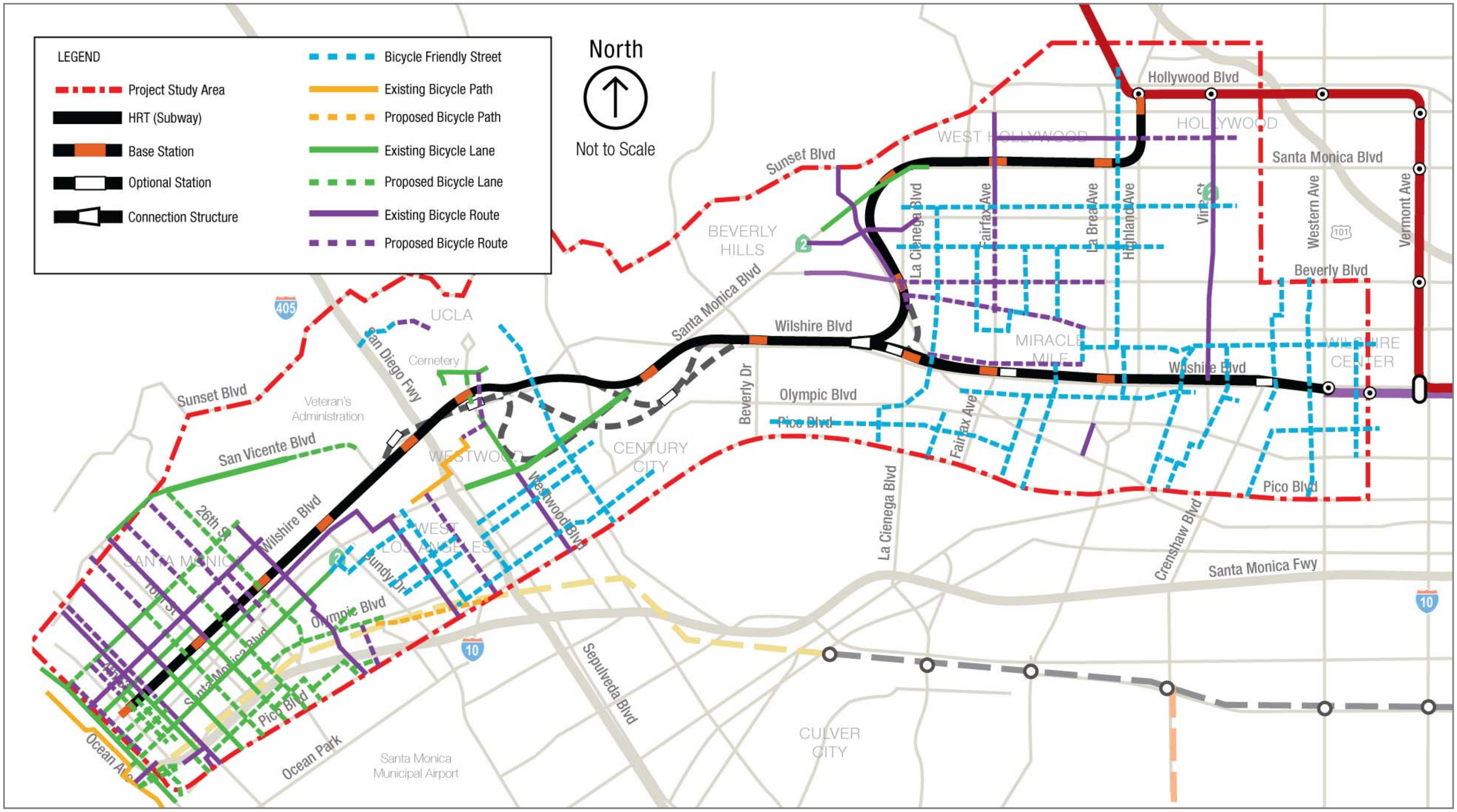


Figure 3-6. Existing and Proposed Bicycle Facilities in the Study Area

3.5.1 Public Transit

This section describes impacts and environmental consequences of the 2035 public transit network affecting the Study Area. Regional impacts are discussed first followed by those involving station areas; for example LOS at intersections. Within Los Angeles County, the discussion centers on selected origins and destinations or "zone pairs." Key transit characteristics, such as travel times between selected zone pairs and service reliability characteristics, are presented for each alternative. These characteristics provide an indication of potential impacts of alternatives in influencing transit demand.

Impacts of alternatives include changes in key transit service characteristics such as speed and reliability. Under the Build Alternatives, a substantial reduction in travel times and improved service reliability are anticipated as compared to the No Build and TSM Alternatives.

Transit Travel Times

Transit travel times are a major factor for determining transit demand. Several zone pairs were selected to show estimated a.m. peak hour travel times in 2035 under each alternative. The origin and destination locations are shown in Figure 3-7. The five destination zones, all located in the Study Area, encompass the four cities in the area: Los Angeles (including Century City and Westwood), West Hollywood, Beverly Hills, and Santa Monica. These zone pairs were selected based on several factors such as:

- The destination zones include major concentrations of employment in the Study Area.
- The seven origin zones are spread throughout Los Angeles County.
- Each origin includes an existing high capacity transit station on the Metro Red, Orange, Blue, and Purple lines or Metrolink commuter rail service. Figure 3-1 identifies each station on these rail lines.
- In addition to reflecting geographic diversity, the origin locations also involve a demographic mix, including household income levels and a variation of concentrations of minority communities.

The origin zones are:

- Pasadena (Del Mar Station), located on the existing Metro LRT Gold Line in Pasadena and northeast of the Study Area. From this location, access to the Westside is provided via transfer in Downtown Los Angeles at Union Station.
- Located in the central part of Downtown Los Angeles, the Pershing Square Station is due east of the Study Area and is served by the existing Metro Purple and Red HRT lines. Direct HRT service is currently provided from this station to Central Wilshire.
- South Los Angeles at the Florence Station is southeast of the Study Area on the existing LRT Metro Blue Line. Westside access can be provided with one transfer in Downtown Los Angeles.
- Reseda in the central part of the San Fernando Valley at the existing Metro Orange Line Station BRT Station. The station is north of the Westside Study Area
- Covina is located east of Downtown Los Angles and the Study Area at the existing Covina Metrolink commuter rail station. Access to the Westside from Covina can be provided with a transfer at Union Station in Downtown Los Angeles.

Figure 3-7. Origins and Destinations for Transit Travel Times

- Wilshire Center (Wilshire/Western Purple Line Station) is located at the east end of the Study Area. For potential Westside subway extensions, this would be the starting point for service along Wilshire Boulevard
- North Hollywood, at the Metro North Hollywood Red/Orange Line Station, is the terminus for the Orange BRT line and the Red HRT line. The station is located north and east of the Study Area.

Summary information on estimated 2035 a.m. peak-period transit travel times is presented in the following sections for the above zone pairs. There are very little travel-times differences for the No Build and TSM Alternatives (in most cases less than one minute). Accordingly, a single travel time (for the No Build Alternative) is identified in the following sections. The information presented in this section reflects complete implementation of the alternatives as defined in Chapter 2. Since the MOSs represent potential phasing of subway extensions, they are not included.

The estimated travel time variations among the alternatives reflect the extent of exclusive subway service that would be involved in making the trip. In several cases, such as travel from Pasadena to Century City or Downtown Los Angeles to Westwood, no variations in travel among Build Alternatives would occur. Similar travel times for these zone pairs would occur since the subway would be serving these destinations under each Build Alternative. In addition to the relative length of subway service under each alternative, variations in transit travel time would occur due to alignment options and number of station locations. However, most variations in travel time would be attributable to the extent of subway service for each alternative.

From Pasadena (Del Mar Gold Line Station)

Estimated transit travel times from Pasadena to various Westside destinations are shown in Figure 3-8. Under any alternative, a transfer would be necessary to complete the trip to the Westside. In the case of the Build Alternatives, the transfer would be at Union Station.

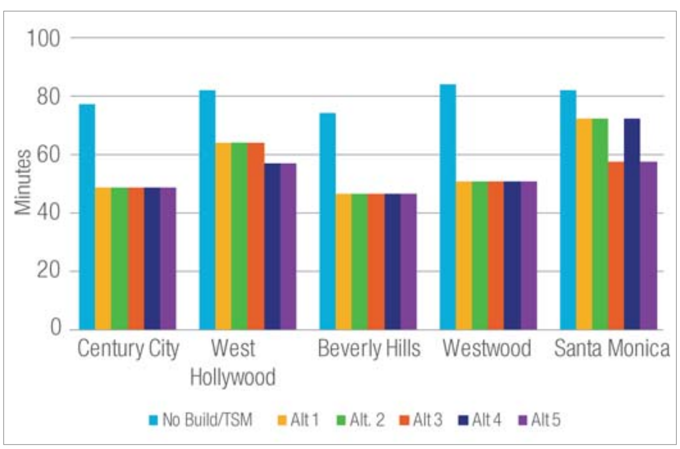


Figure 3-8. Transit Travel Times—Pasadena to Westside

The travel times with the Build Alternatives would be generally much lower than the No Build/TSM Alternatives. Particularly major reductions in times would occur for travel to Century City, Beverly Hills, and Westwood. For trips to Santa Monica under Alternatives 1, 2, and 4, travel time would involve a bus transfer to complete the trip.

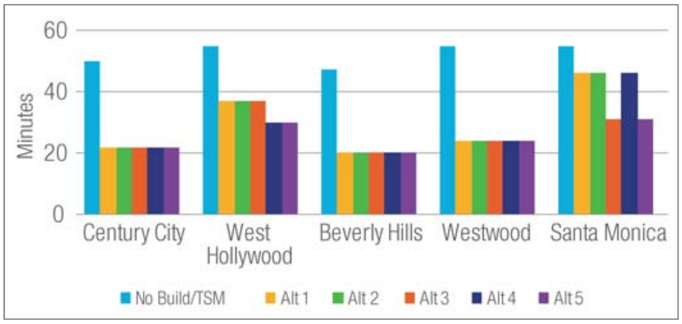


Figure 3-9. Transit Travel Times—Downtown Los Angeles to Westside

Figure 3-10. Transit Travel Times—South Central Los Angeles to Westside

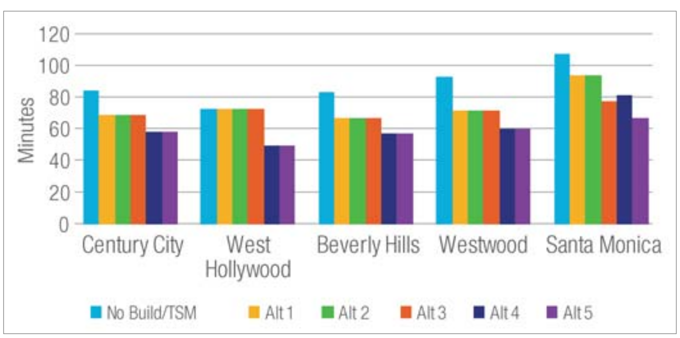


Figure 3-11. Transit Travel Times—Reseda to Westside

From Downtown Los Angeles (Pershing Square Station)

Estimated transit travel times from Downtown Los Angeles (Pershing Square Station) to various Westside destinations are shown in Figure 3-9. Under all alternatives, direct/no transfer transit access to the Westside would be available. However, even with direct bus access, the No Build/TSM Alternatives would have twice the travel time than the Build Alternatives for trips to Century City, Beverly Hills, and Westwood.

From South Los Angeles (Florence Blue Line Station)

The estimated transit travel times from South Los Angeles (Florence Blue Line Station) to various Westside destinations are shown in Figure 3-10. Under the Build Alternatives, transfers between the Blue and extended Purple Lines would be required in Downtown Los Angeles to complete the trip to Westside locations. Travel times to Santa Monica under the No Build/TSM Alternatives would be somewhat competitive with Alternatives 1 and 2. Because riders could use the planned Exposition LRT line that would provide quick transit access between South Los Angeles and the Westside.

From Reseda (Orange Line Station)

Estimated transit travel times from Reseda in the San Fernando Valley to Westside destinations are shown in Figure 3-11. Under all alternatives, transfers in either Hollywood or Wilshire/Vermont would be required to complete the trips. Under Alternatives 4 and 5, a potential subway extension to West Hollywood from the Hollywood/Highland Station would result in substantial travel time savings versus the No Build/TSM Alternatives. This would be particularly applicable to trips between Reseda and Westwood, West Hollywood, and Santa Monica. Under Alternatives 1, 2, and 4, transfers would occur at Wilshire and Vermont.

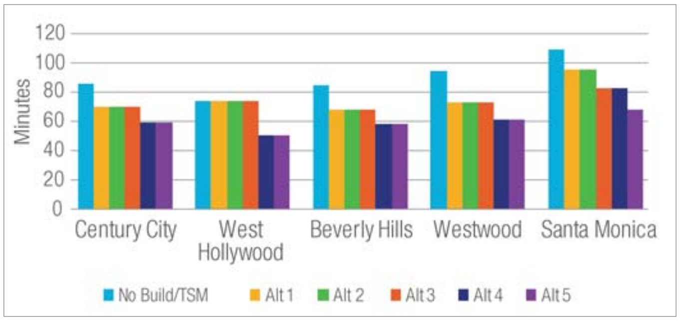


Figure 3-12. Transit Travel Times—Covina to Westside

Figure 3-13. Transit Travel Times—Wilshire Western to Westside

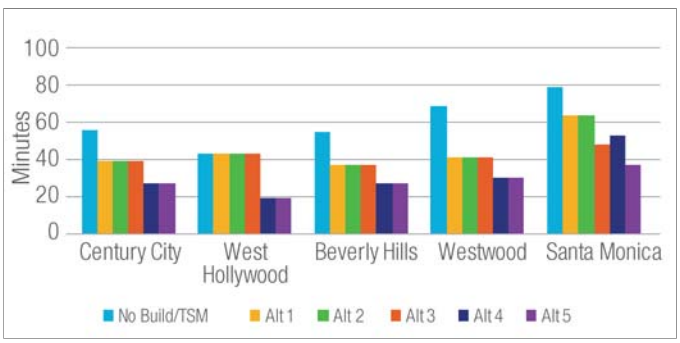


Figure 3-14. Transit Travel Times—North Hollywood to Westside

From Covina (Metrolink Station)

The estimated transit travel times from the Covina Metrolink Station to various Westside destinations are shown in Figure 3-12. Under all alternatives, transfers in Downtown Los Angeles at Union Station would be required to complete the trip to Westside locations. However, even with direct bus access from Downtown Los Angeles, the No Build/TSM Alternatives would have higher transit travel times than the Build Alternatives for all locations except West Hollywood under Alternatives 1, 2, and 3.

From Wilshire Center (Wilshire/Western Station)

The estimated transit travel times from the Wilshire/Western Purple Line Station reflect an extension of HRT service within the Study Area. The estimated travel times from this location to various Westside destinations are shown in Figure 3-13. Major variations can be seen between the No Build/TSM Alternatives travel times and each of the Build Alternatives. Particularly, major variations can be seen for trips to Century City, Beverly Hills, Westwood, and Santa Monica. For example, transit travel time to Westwood would be 12 minutes as compared to 46 minutes under the No Build/TSM Alternative.

From North Hollywood (Red Line Station)

Estimated transit travel times from the existing Red Line North Hollywood Station represent an extension of an existing HRT service. Estimated peak-hour transit travel times from North Hollywood to selected Westside destinations are shown in Figure 3-14.

Under all alternatives, transfers at Wilshire/Vermont or Hollywood/Highland would be required to complete the trip to Westside locations. Substantial travel time reductions would occur under Alternatives 4 and 5 as compared to the No Build/TSM Alternatives. These alternatives would include direct subway service from North Hollywood to the Westside.

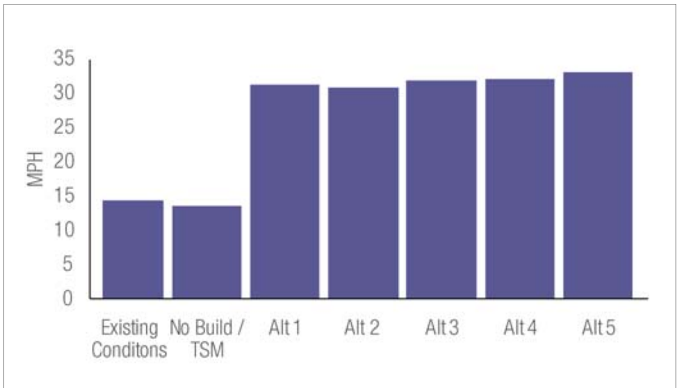


Figure 3-15. Transit Operating Speeds

Transit Speed and Reliability

The transit travel times presented above reflect estimated variations in transit speeds for the alternatives. As shown in Figure 3-15, transit speeds under the Build Alternatives would increase by over a factor of two versus the No Build/ TSM Alternatives and existing conditions. Even allowing time spent for accessing subway service (including vertical movement to platforms) under the Build Alternatives, the substantial increases in speeds versus the No Build and TSM Alternatives conditions would result in reduced travel times. Transit speeds under the Build Alternatives contrast with reduced speeds under the No Build/TSM Alternatives compared to existing conditions. The degrading conditions under the No Build/TSM Alternatives would result from transit service, heavily dominated by buses operating in mixed traffic conditions, being subject to increasingly poor conditions.

Reduced transit travel times directly reflect expected major increases in operating speeds as compared to the No Build and TSM Alternatives. Transit demand under the Build Alternative also would be influenced by improved service reliability. This would be achieved by increases in operations involving exclusive right-of-way.

In addition to higher transit speeds which result in reduced travel time, transit demand is highly influenced by reliability of service. Service reliability is measured in terms of actual service arrivals and transit travel times as compared to what is published in timetables. While some deviations could occur due to special conditions such as a traffic accident, close adherence between published and actual transit schedules and travel times should be expected.

Several factors can affect service reliability, including traffic incidences that can prevent adherence to bus schedules. However, the most dominant factor affecting transit service reliability is the extent of general-purpose traffic congestion on streets that are also used by buses. As is the case with existing conditions, the No Build and TSM Alternatives would involve mostly a mix of buses and general-purpose traffic. Only small segments of the Purple and Red HRT lines, located in the far eastern portions of the Study Area, provide transit operations in exclusive right-of-way. In addition, there may be a bus lane on Wilshire Boulevard that would improve service reliability as compared to current conditions. However, autos making right turns would still be mixed with buses and there also would be cross-traffic that buses would have to confront.

With the Build Alternatives, much higher levels of exclusive right-of-way service would be available to transit riders. As potential subway extensions proceed farther west, this level of exclusive transit operations versus exclusive-plus-mixed operations would gradually increase. The travel forecasting model can identify the extent of daily passenger miles that involve exclusive operations. The passenger miles information presented in this section involves service in the Study Area. But, for some routes, the coverage includes Downtown Los Angeles.

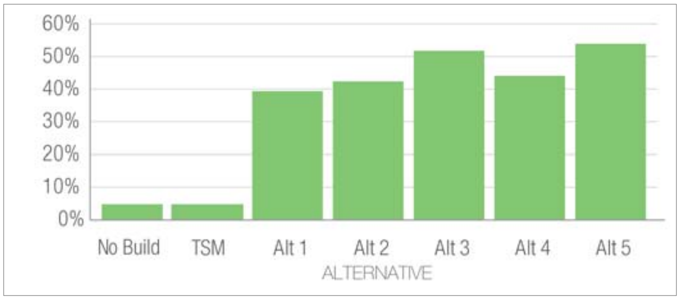


Figure 3-16. Extent of Passenger Miles in Exclusive Guideway Service

As indicated by Figure 3-16, there would be a relatively small share of passenger miles that involves exclusive operations under the No Build/ TSM Alternatives in 2035. With the Build Alternatives, the extent of passenger miles in exclusive operations would be substantially greater as compared to both the No Build and TSM Alternatives. As compared to about 5 percent under the No Build and TSM Alternatives, the shares under the Build Alternatives would range between 40 percent to over 50 percent. With these much larger shares of passenger miles involving exclusive right-of-way and congestion-free service, transit reliability in the Study Area would be affected in a very positive way.

Transit Ridership

This section describes ridership under the alternatives and the MOSs as well information on mode of access. The section also presents information on estimated net new additional riders that would result from the alternatives. Following the description of station ridership, information is presented on changes in transit mode shares as a result of the No Build/TSM and Build Alternatives. Table 3-7 presents daily station boardings for project stations under each Build Alternative, with total boardings varying from about 18,000 for MOS 1 to 90,000 for Alternative 5. The substantial transit ridership increase between MOS 2 and Alternative 1 is attributable to the fact that this Alternative includes the Westwood/UCLA Station. This station, under any Build Alternative, would generate the highest transit ridership in the system. The station would be located in an area that would attract to the subway students, workers, residents, and campus visitors.

Ridership for Build Alternatives would be dominated by walk and local bus access. This reflects the lack of park-and-ride facilities at stations and the extensive feeder bus and walk access to stations.

The travel forecasting model also provides information on net additional transit riders resulting from the alternatives. These would be daily trips in 2035 that would be attracted to public transportation with the Build Alternatives and compared to daily transit trips occurring under the TSM Alternative. New daily transit trips generated by the Build Alternatives when compared to the TSM Alternative are as follows:

- Alternative 1: 22,027
- Alternative 2: 25,500
- Alternative 3: 33,120
- Alternative 4: 29,109
- Alternative 5: 38,008
- MOS 1: 5,616
- MOS 2: 16,307

Some of the new trips will involve shifts from bus service to the rail systems. The travel demand model estimates that, for most Build Alternatives and MOSs, 43 percent of the new rail trips would be from buses. The exceptions involve Alternative 4 at 44 percent and MOS -2 at 42 percent. A majority of the new trips would come from autos.

Table 3-8 identifies the daily mode of access percentages for all project riders that arrive at or depart stations by foot, bus, private vehicle, or other modes. The private vehicle mode of access refers specifically to drop-off and pick-up activity because park-and-ride facilities are not planned at station locations. While not quantified explicitly by the Metro Travel Demand Model, some use of off-site public and private parking capacity is expected on a daily basis.

All Build Alternatives are forecast to have similar private vehicle usage for mode of access. Bus transit mode of access is expected to decline for MOS 2 and each subsequent Build Alternative as more subway stations are added to the network. This trend reflects an increase in pedestrian access to stations and will reduce the need for transfers between bus and rail.

Table 3-7. Daily Station Boardings

Station	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	MOS 1	MOS 2
1. Wilshire/Crenshaw	4,215	4,320	4,676	4,025	4,356	3,435	3,986
2. Wilshire/La Brea	3,722	3,808	4,064	3,239	3,423	3.937	3,569
3. Wilshire/Fairfax	6,071	6,209	6,629	5,031	5,361	3,435	5,792
4. Wilshire/La Cienega	6,433	6,608	7,072	5,088	5,418	—	6,114
5. Wilshire/Rodeo	4,642	4,585	4,857	6,386	6,649	—	7,682
6. Century City	6,681	6,498	6,568	6,424	6,390	—	8,333
7. Westwood/UCLA	14,313	12,629	11,039	13,894	11,978	—	—
8. Westwood/VA Hospital	—	8,010	6,120	8,762	6,662	—	—
9. Wilshire/Bundy	—	—	5,120	—	5,759	—	—
10. Wilshire/26th	—	—	5,034	—	5,630	—	—
11. Wilshire/16th	—	—	3,886	—	4,323	—	—
12. Wilshire/4th	—	—	5,872	—	6,639	—	—
13. Hollywood/Highland	—	—	—	5,957	7,360	—	—
14. Santa Monica/La Brea	—	—	—	2,438	2,628	—	—
15. Santa Monica/Fairfax	—	—	—	2,125	2,270	—	—
16. Santa Monica/San Vicente	—	—	—	1,829	1,905	—	—
17. Beverly Center Area	—	—	—	2,818	2,933	—	—
Total Station Boardings	46,075	52,665	70,936	68,013	89,684	17,506	35,475

Source: Metro Travel Demand Model

Table 3-8. Daily Mode of Access Percentages

Alternative	Walk	Bus Transit	Private Vehicle
Alternative 1	61%	37%	2%
Alternative 2	65%	33%	2%
Alternative 3	69%	28%	3%
Alternative 4	66%	32%	3%
Alternative 5	69%	29%	3%
MOS 1	44%	54%	2%
MOS 2	72%	26%	3%

Source: Metro Travel Demand Model

Impacts on Local Bus Services

No Build Alternative

The No Build Alternative includes all existing highway and transit services and facilities, and the committed highway and transit projects in the *2009 Metro Long Range Transportation Plan* (LRTP) (Metro 2009) and the *2008 Southern California Association of Governments'* (SCAG) *Regional Transportation Plan* (RTP) (SCAG 2008).[3] Under the No Build Alternative, no new infrastructure would be built within the Study Area, aside from projects currently under construction or funded for construction, environmentally cleared, planned to be in operation by 2035, and identified in the Metro LRTP.

TSM Alternative

The TSM Alternative enhances the No Build Alternative by expanding the Metro Rapid bus services operating in the Westside Transit Corridor. This alternative emphasizes more frequent service to reduce delay and enhance mobility. For the TSM Alternative, bus service would be increased to meet the rising demand for transit service in the Study Area. As indicated in Table 3-9, the frequency of the following Metro bus lines would be increased: 2, 4, 14, 16, and 720.

Table 3-9. Future Transit Network Changes between the No Build and TSM Alternatives

Operator	Route Group No.	Route ID and Description	No Build Peak Headway (min)	No Build Off-peak Headway (min)	TSM Peak Headway (min)	TSM Off-peak Headway (min)
Metro	2	Sunset Boulevard (Short Line, Westwood)	12	30	6	15
Metro	4	Santa Monica Boulevard (Short Line)	7	14	6	12
Metro	14	Beverly Boulevard (Short Line)	20	18	10	20
Metro	16	W 3rd St Ltd (WB)	12	24	6	12
Metro	720	EB-SM-Vermont	10	12	5	10
Metro	720	WB-Vermont-SM	5	11	2	6

Source: Metro

Build Alternatives

Under the Build Alternatives some changes in bus service levels would occur when compared to No Build. These involve Metro Lines 20, 720, and 920. These routes most closely parallel the service that would be provided by potential subway extensions in the Study Area. All other transit lines would provide the same service as defined under the

[3] Metro is working with SCAG to update the RTP, which would add the projects identified in Metro's LRTP into the RTP. It is anticipated that the update will be completed in May 2010.

No Build Alternative. Service for all Build Alternatives is expected to operate seven days per week 365 days per year, with hours of operation from 6:00 a.m. to 3:00 a.m. Peak-period headways of 5 minutes would be in effect during weekday non-holidays, from 6:00 a.m. to 9:00 a.m., and 3:00 p.m. to 7:00 p.m. Off-peak headways of 10 minutes would be in effect during the remaining weekday hours of operation and on weekends and holidays.

Expandability

With the TSM Alternative, some potential for system expandability could occur. This expandability would involve either adding new routes in the Study Area, improving frequencies on existing bus routes, or extending service span on existing routes. Under any approach to expandability, added service would occur in a transportation environment that hinders transit speed and reliability. A large majority of service hours involve mixed operations with general-purpose traffic. While some future enhancements will improve conditions (e.g. bus lane on Wilshire), most services in the Study Area would continue to operate in traffic conditions that will deteriorate over time.

With the Build Alternatives, expandability would involve added train consists (cars per train) and added frequency of train service. Also, for some alternatives, there is a potential for extended HRT service coverage through future extensions farther west in the study corridor. Any approach to expanded service under the Build Alternatives would occur within exclusive guideway operations. External factors, such as roadway conditions of surface streets, would not interfere with the expandability potential.

Passenger Comfort and Convenience

Under the No Build and TSM Alternatives, added bus service would be provided on some bus routes. However, because of the dominance of bus service involving mixed operations with general-purpose traffic, passengers would continue to be subject to delays and long travel times to reach Study Area destinations. Under the Build Alternatives, subway service would provide frequent and reliable service no matter the traffic conditions on Study Area streets.

For riders who need to stand, subway service would provide increased safety compared to frequent stop-and-go travel that occurs on buses that are operating in mixed traffic and on sometimes uneven road surfaces. Because station platforms would be at the same level as subway vehicles, they would accommodate quick and easy boarding for all passengers, especially those in wheelchairs or with strollers.

Another measure of passenger comfort and convenience is the number of transfers a traveler must take to get from origin to destination. Riders generally consider out-of-vehicle time—i.e. the time spent waiting for a bus or train to arrive—as being more onerous than time moving in a vehicle. All Build Alternatives would lead to a significant reduction in transfers.

Mitigation Measures

No Build Alternative

No mitigation measures are required since no adverse impacts are expected under the No Build Alternative.

TSM Alternative

No mitigation measures are required since no adverse impacts are expected under the TSM Alternative.

No adverse effects on regional travel are expected as a result of the Build Alternatives. Improved transit service times and reliability would provide regional benefits due to higher transit mode shares and corresponding reduced auto demand.

MOS and Build Alternatives

No mitigation measures would be required since impacts of subway extensions would provide transit benefits. Characteristics of the Build Alternatives would increase transit mode shares resulting in reduced auto demand on the transportation system.

CEQA Determination

The proposed MOS and Build Alternatives would have a positive impact on transit.

Impacts Remaining after Mitigation

No impacts are expected under any alternative.

3.5.2 Streets and Highways

Regional Traffic

This section discusses potential impacts of the alternatives in terms of the regional transportation system, including the countywide network of freeways and arterials. The assessment of potential impacts also examined potential adverse impacts on the regional transportation system.

With the transit service improvements under the Build Alternatives, regional traffic volumes, including VMT and auto trips would be reduced as compared to the No Build and TSM Alternatives.

Performance measures that were compared among the alternatives include both countywide and Study Area information as follows:

- Countywide—vehicle miles traveled (VMT), vehicle hours traveled (VHT), average vehicle speed (mph), AM peak vehicle trips, and PM peak vehicle trips
- Study Area—VMT, VHT, average speed (mph), AM peak VMT, AM peak VHT, AM peak average speed (mph), AM peak vehicle trips, PM peak VMT, PM peak VHT, PM peak average speed (mph), PM peak vehicle trips

By 2035, the population and employment density in the Study Area will increase by 10 and 12 percent, respectively. According to the transportation demand model, this will increase the overall delay of motorists attempting to travel within and through the Westside. Intersections currently operating at deficient levels-of-service will worsen as a result of increased vehicular traffic, few planned transportation improvements, and the lack of grade-separated transit alternatives throughout the Study Area.

Projected regional travel changes resulting from the alternatives are summarized in Table 3-10. This information is from the Metro Regional Travel Demand Model and addresses Los Angeles County and the Study Area. Compared to the 2035 No Build Alternative, the Build Alternatives would not result in major changes in countywide or Study Area performance measures. The data suggest that the Build Alternatives have a beneficial effect on the regional transportation network by reducing VMT, VHT, and peak-hour trips.

It also must be recognized that the relative changes in performance measures resulting from the alternatives reflect travel information at the county level. However, the characteristics under each alternative would affect only one corridor in a large multi-corridor, county-wide system. Accordingly, relative variations in performance measures would not be extensive among the alternatives. However, as discussed in the following section, absolute changes involving key measures, such as auto trips, are more significant.

Table 3-10. 2035 Performance Measures for Alternatives and MOSs

Measure	No Build	TSM	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	MOS 1	MOS 2
Regional									
VMT	504,651,236	504,622,466	504,510,630	504,478,371	504,478,074	499,379,904	504,281,492	504,315,228	504,563,698
VHT	29,204,905	29,182,039	29,150,448	29,176,362	29,167,001	28,920,955	29,150,499	29,177,868	29,147,101
Average vehicle speed (mph)	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
Study Area									
VMT	5,056,227	5,055,329	5,032,417	5,032,719	5,021,729	5,023,750	5,014,584	5,048,050	5,040,354
VHT	246,759	246,454	243,846	244,018	242,453	242,773	241,837	245,986	244,920
Average Speed (mph)	20.5	20.5	20.6	20.6	20.7	20.7	20.7	20.5	20.6
AM Peak VMT	1,143,472	1,142,863	1,137,069	1,136,954	1,131,944	1,132,786	1,130,979	1,140,207	1,138,340
AM Peak VHT	64,766	64,646	63,754	63,692	63,055	63,147	62,876	64,459	63,986
AM Peak Average Speed (mph)	17.7	17.7	17.8	17.9	18.0	17.9	18.0	17.7	17.8
AM Peak Vehicle Trips	214,110	213,617	212,321	211,885	211,636	211,693	211,336	213,257	212,517
PM Peak VMT	1,703,535	1,703,247	1,694,792	1,696,797	1,692,156	1,693,159	1,691,390	1,700,564	1,700,050
PM Peak VHT	108,494	108,308	106,863	107,165	106,360	106,530	106,141	108,048	107,671
PM Peak Average Speed (mph)	15.7	15.7	15.9	15.8	15.9	15.9	15.9	15.7	15.8
PM Peak Vehicle Trips	260,320	260,045	258,764	258,707	258,300	258,365	257,979	259,697	259,023

VMT = vehicle miles traveled VHT = vehicle hours traveled mph = miles per hour

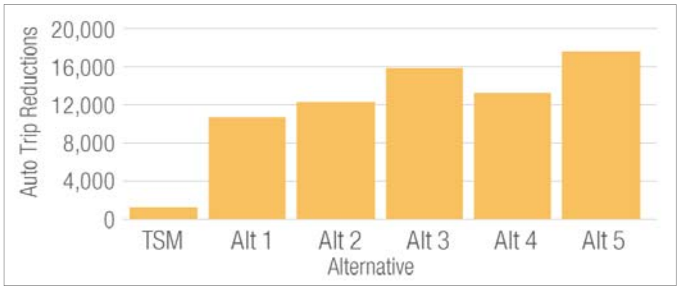


Figure 3-17. Reduction in Auto Trips by Alternative during Seven-hour Peak Period

With the Build Alternatives, some reductions in county-wide traffic would occur as reflected in VMT, VHT, and a.m./p.m. vehicle trips. A more detailed examination of model results for 2035 can provide further insight relating to potential impacts of the TSM and Build Alternatives, specifically in terms of reduced auto trips during the seven-hour peak period. The amount of reduced auto trips under the TSM and Build Alternatives for the seven-hour peak period is shown in Figure 3-17. Under the TSM Alternative, a relatively small number of auto trips, about 1,400, would be eliminated in comparison with the Build Alternative. With the Build Alternatives, at least 10,000 auto trips occurring in the seven-hour peak period would be reduced. At approximately 18,000 reduced peak-period auto trips, Alternative 5 would have the greatest impact.

The effects of the Build Alternatives can also be shown by the estimated transit mode share changes affecting the Study Area as compared to No Build and TSM. The Travel Demand Model provides information on 2035 transit mode shares during peak periods for travel pairs within Los Angeles County. These travel pairs involve origins located in the vicinity of existing rail stations in the region while the destinations are in the Study Area. In comparison to the county-wide performance measure changes, the transit mode share information presented below reflects characteristics of the alternatives (for example, travel time) that would more directly affect regional transit connections to the Study Area.

The following sections summarize estimated changes in transit mode shares during AM and PM peak periods for selected travel pairs between No Build/TSM and Build Alternatives.

Pasadena (Del Mar Gold Line Station) to Century City

- No Build/TSM: 18 percent
- Build Alternatives: 22 percent

South-Central Los Angeles (Florence Blue Line Station) to Westwood/UCLA

- No Build/TSM: 19 percent
- Build Alternatives: 24 percent

Wilshire District (Wilshire/Western Purple Line Station) to Santa Monica (Wilshire Boulevard /4th Street)

- No Build/TSM: 21 percent
- Build Alternatives: 29 percent

North Hollywood (Orange-Red Line Stations) to West Hollywood (Santa Monica Boulevard/San Vicente Boulevard)

- No Build/TSM: 13 percent
- Build Alternatives: 19 percent

Intersection Analysis

For the Westside Subway Extension, study intersections have been analyzed by applying the operational analysis methodology from the HCM (TRB, 2000). Table 3-11 summarizes estimated changes in LOS associated with the 2035 Build Alternatives as compared to the No Build Alternative. These changes in LOS are all improvements during the a.m. and p.m. peak hours (e.g., LOS E to LOS D) that would occur under the Build Alternatives.

Table 3-11. Level-of-Service Improvement as Compared with 2035 No Build Alternative

Level-of-Service Improvement	Alt 1		Alt 2		Alt 3		Alt 4		Alt 5		MOS 1		MOS 2	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
F to E	6	4	7	4	8	4	9	4	10	4	5	3	6	4
E to D	0	1	0	2	0	2	0	2	0	2	0	0	0	1
D to C	4	1	4	1	4	1	4	1	4	1	1	0	4	1
C to B	0	0	1	0	1	0	1	0	1	0	0	0	0	0
B to A	0	1	0	1	0	1	1	1	1	1	0	0	0	1
Total	**10**	**7**	**12**	**8**	**13**	**8**	**15**	**8**	**16**	**8**	**6**	**3**	**10**	**7**

Traffic Impact Determination

The projected year 2035 No Build Alternative LOSs were analyzed to determine baseline operating conditions of Study Area intersections. These LOS were compared to the TSM and Build Alternatives to identify potential impacts of the proposed project on the surrounding street system.

The analysis of potential level-of-service impacts in station areas indicated that one location in Santa Monica (Wilshire Boulevard/16th Street) would have adverse impacts.

For the traffic impact analysis, the evaluation of significance under CEQA and the description of impacts under the National Environmental Policy Act (NEPA) are defined by comparing the Build Alternatives to the 2035 No Build Alternative. The net change in delay at Study Area intersections is compared to thresholds of significance for determination of impacts. The criteria used to measure a significant impact are defined in Table 3-12.

Table 3-12. Westside Subway Extension Traffic Impact Criteria

Definition	Criteria
The intersection level-of-service analysis assumes that an intersection would be significantly impacted (CEQA)/ adversely affected (NEPA) by traffic volume changes if a project alternative causes an increase in average vehicle delay according to the following thresholds:	Final LOS C—a significant/adverse impact has occurred if the delay is increased by 10 or more seconds
	Final LOS D—a significant/adverse impact has occurred if the delay is increased by 7.5 or more seconds
	Final LOS E/F—a significant/adverse impact has occurred if the delay is increased by 5 or more seconds

Table 3-13 summarizes estimated traffic-related impacts using the above criteria. The results indicate that the Build Alternatives would not impact any location in the Study Area except Wilshire Boulevard and 16th Street in Santa Monica under Alternatives 3 and 5. The traffic impact analysis found that

LOS at this intersection exceeded the threshold for a significant/adverse traffic impact as compared to the 2035 No Build Alternative. This unsignalized intersection is adjacent to a potential station location under Alternatives 3 and 5. Projected traffic and pedestrian volumes with the Project would be expected to adversely affect the intersection at the northbound and southbound approaches during both the a.m. and p.m. peak hours. The LOS would continue to remain at F but further delay would be incurred. Therefore, the Project would result in one significant/adverse traffic impact under Alternatives 3 and 5.

Table 3-13. Impact Summary Table

Peak Hour	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	MOS 1	MOS 2
AM Peak Hour	None	None	Wilshire Boulevard and 16th Street	None	Wilshire Boulevard and 16th Street	None	None
PM Peak Hour	None	None	Wilshire Boulevard and 16th Street	None	Wilshire Boulevard and 16th Street	None	None

Consideration of Parking Spillover in Traffic Forecasts

The parking impact assessment for the Westside Subway Extension considered the potential for parking spillover to occur in residential neighborhoods surrounding potential station locations. Spillover potential was assessed because some riders of the Westside Subway Extension may still drive to stations to access the subway, even though park-and- ride facilities would not be provided. Without park-and-ride facilities, parking demand would be reduced, as more riders are picked-up or dropped-off, walk, bike, or take bus transit to access the subway. However, some riders with access to automobiles might still seek available unrestricted parking on neighborhood streets within a one-half mile walking distance of stations. The potential extent of riders who elect to park in station areas could be significant given the travel time, convenience, and reliability of rail service provided by grade-separated rail service to major employment areas. This contrasts with less reliable and congested traffic conditions in the Study Area along with parking charges at the destination end of the commute trip.

Mitigation Measures

Measure 1—Strategies to Address Traffic due to Parking Spillover

As identified in Section 3.5.3 below, the parking assessment discloses impacts related to spillover and recommended feasible mitigation measures. These measures include the creation of residential permit parking districts to prevent parking spillover and reduce those impacts to below significant levels. With parking mitigation measures in place, project-related peak-hour traffic entering neighborhoods would be nominal and no impacts are expected to occur.

Measure 2—Signalization at Affected Intersection

Physical mitigation measures to address the significant/adverse traffic impact of Alternatives 3 and 5 were evaluated. Using U.S. Federal Highway Administration (FHWA) criteria found in the *Manual of Uniform Traffic Control Devices* (FHWA 2003), the projected peak-hour volumes at the intersection (Wilshire Boulevard and 16th Street in Santa Monica) were found to warrant signalization. Signalization of the Wilshire Boulevard and 16th Street intersection is projected to mitigate the expected project impact. Using the Synchro network to test the proposed mitigation, signalization was found to fully mitigate the impacts of the Project. Based on the Synchro network analysis, level-of-service at the adversely affected intersection would improve to LOS B under the proposed mitigation measure. The new signal at Wilshire/16th would be synchronized with nearby/adjacent intersections in order to minimize traffic impacts and queuing on Wilshire.

CEQA Determination

The following identify the CEQA determination for each alternative.

No Build Alternative

No significant impacts should be anticipated under the No Build Alternative.

TSM Alternative

No mitigation measures are required since no adverse impacts are expected under the TSM Alternative.

MOS Alternatives

No mitigation measures are required since no adverse impacts are expected under the MOS Alternatives.

Alternatives 1, 2, and 4

No mitigation measures are required since no adverse impacts are expected under Alternatives 1, 2, and 4

Alternatives 3 and 5

Alternatives 3 and 5 would result in a significant impact at one location, Wilshire Boulevard and 16th Street in Santa Monica. Signalization of the Wilshire Boulevard and 16th Street intersection is projected to mitigate the expected impact of Alternatives 3 and 5.

Impacts Remaining After Mitigation

Alternatives 3 and 5

Signalization of the Wilshire Boulevard and 16th Street intersection is projected to mitigate the expected impacts of Alternatives 3 and 5.

3.5.3 Parking

This section describes future on- and off-street parking conditions in Study Area, specifically in station areas, and assesses potential parking-related impacts resulting from the Build Alternatives. This analysis assumes that parking conditions as identified in the existing conditions section of this chapter would still be maintained in 2035. To assess adverse/significant impacts, the assessment determined whether there would be potential permanent loss of existing parking supply as a result of the Build Alternatives. The assessment also examined possible effects on existing on-street and off-street parking that could occur as a result of subway riders who, despite the lack of park-and-ride facilities at any rail station, would still try to park in station areas.

Possible Loss of Parking

Alternatives 1 through 5, and MOSs 1 and 2 would be constructed below grade and would not result in permanent parking loss at most stations. At the Westwood/UCLA Off-Street and Westwood/VA Hospital Stations, there could be potential loss of existing off-street parking. At both locations, the spaces are not required by local parking codes.

Potential impacts at the Westwood/UCLA Off-Street Station would occur at Lot 36 with a current capacity of approximately 700 spaces. UCLA has plans to redevelop this lot. Total parking capacity at UCLA is approximately 24,000 with 1,000 more planned for implementation. Metro would work with UCLA to find relocated parking accommodations during the construction period. Upon completion of construction this lot would be returned to UCLA for parking or other use.

At the Westwood/VA Hospital Station, potential loss in parking would occur at a surface lot with 415 spaces. With subway extensions to Westwood/UCLA or a Westwood/VA Hospital Station and beyond, single occupant vehicle travel and the associated need for parking would be reduced. This would help address the potential temporary loss in parking near the Westwood/UCLA On-Street and Westwood/VA Hospital Stations. At the Westwood/VA Hospital Station, Metro would work with the Department of Veterans Affairs to find relocated parking accommodations during the construction period. Upon completion of construction, this lot would be turned over to the Department of Veterans Affairs for parking or other use.

Parking Demand Scenarios

Under the current project description, there would be no park-and-ride facilities provided at any rail station. As a result, the transportation demand model does not predict any park-and-ride access. However, even without park-and-ride facilities, neighborhood spillover by subway riders seeking free, unrestricted parking is still an impact concern. To estimate parking demand for the spillover impact analysis, the transportation demand model was run without parking demand being constrained. In light of the model's inability to estimate park-and-ride demand for free, on-street spaces in close proximity to the stations, the model run with parking "unconstrained" acts as a surrogate.

Since the parking demand estimates involve theoretical maximums, they would not be affected by demand variations under each Build Alternative.

Table 3-14 describes estimated theoretical maximum daily parking demand for each station location under the unconstrained parking scenario and compares this demand with vacant parking supply as identified in existing occupancy surveys. Using the unconstrained parking estimate to approximate the demand for free parking, demand would exceed available vacant parking supply at most stations. The inventory of vacant spaces had been identified as part of existing conditions in the Study Area, with results presented in Table 3-5 of this chapter.

As noted below under Mitigation Measures, considerations can be given to developing a shared parking program with operators of off-street parking facilities. This program would be one approach to satisfy potential latent demand by those riders who elect to drive to rail stations. Of course, off-street would not be provided free-of-charge and would likely reflect prevailing market rates.

Table 3-14. Estimated On-Street Parking Demand by Station

Station	Maximum Daily Parking Demand	Existing Vacant On-Street Supply	Demand Exceeds Vacant On-Street Supply?
1. Wilshire/Crenshaw	595	1,091	No
2. Wilshire/La Brea	277	120	Yes
3. Wilshire/Fairfax	238	26	Yes
Option 2: Wilshire/Fairfax East	238	18	Yes
4. Wilshire/La Cienega (East)	223	35	Yes
Option 3: Wilshire/La Cienega (west) with Connection Structure	223	61	Yes
5. Wilshire/Rodeo	155	0*	Yes
6. Century City (Santa Monica Boulevard)	164	0	Yes
Option 4: Century City (Constellation Boulevard)	164	0*	Yes
7. Westwood/UCLA Off-Street	266	3	Yes
Option 5: Westwood/UCLA On-Street	266	10	Yes
8. Westwood/VA Hospital	394	2	Yes
Option 6: Westwood/VA Hospital (North)	394	9	Yes
9. Wilshire/Bundy	334	394	No
10. Wilshire/26th	264	366	No
11. Wilshire/16th	303	134	Yes
12. Wilshire/4th	293	58	Yes
13. Hollywood/Highland	195	53	Yes
14. Santa Monica/La Brea	194	176	Yes
15. Santa Monica/Fairfax	123	497	No
16. Santa Monica/San Vicente	76	163	No
17. Beverly Center Area	77	9	Yes

Source: Fehr & Peers, January 2010

*No unrestricted spaces are located within one-half mile of these station locations.

Neighborhood Spillover Parking Impacts

A one-half mile distance is typically the farthest transit riders are willing to walk to access a rail station. Therefore, the potential for spillover parking impacts are assessed at this distance from each station.

The potential for spillover parking impacts are assessed according to the following criteria:

- Is there unrestricted parking located within a one-half mile walking distance of potential stations?
- If so, would maximum daily Westside Subway Extension parking demand exceed available supply?
- If not, is there unrestricted parking located in primarily residential areas ?

To be considered an impact, a station area would need to meet Criterion 1, and either Criterion 2 or Criterion 3. A station area that does not meet Criterion 1 would not be affected. It should be noted that the parking impact determination is very conservative. Available parking supply was determined based on the AM peak only. Yet demand is based on maximum daily demand. Parking supply may increase throughout the day and evening versus what is available in the AM peak.

No Build Alternative

By definition, the No Build Alternative would not result in adverse parking-related impacts.

TSM Alternative

Under the TSM Alternative, on- or off-street parking loss would not occur. The new Rapid route planned as part of the TSM Alternative would use the existing street system and would recognize any restrictions. Minimal neighborhood spillover parking would be expected above the No Build Alternative condition because the TSM Alternative would not change the mode of access for most riders—those that walk, bike, or are dropped off at bus stops are not expected to change their mode of access.

Build Alternatives

Using the spillover parking impact criteria, the Westside Subway Extension's potential to incur impacts has been assessed for areas within a one-half mile walking distance of potential station locations, as identified for each Build Alternative. The estimated parking spillover impacts are shown in Table 3-15.

Mitigation Measures

The following mitigation measures, which can be regarded as deferred mitigation, would be implemented in areas adjacent to potential station locations to reduce impacts of patrons of Westside Subway Extension patrons parking in neighborhoods:

Measure 1—Parking Monitoring and Community Outreach

In the one-half mile area surrounding each station where unrestricted parking is located, a program would be established to monitor on-street parking activity in the area prior to the opening of service and monitor the availability of parking monthly for six months following the opening of service. If a parking shortage is identified due to the parking activity of the Westside Subway Extension patrons, Metro would work with the appropriate local jurisdiction and affected communities to assess the need for specific elements of a residential permit parking (RPP) program for the affected neighborhoods.

Table 3-15. Parking Impact Summary

Station	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	MOS 1	MOS 2
1. Wilshire/Crenshaw	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted
2. Wilshire/La Brea	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted
3. Wilshire/Fairfax	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted
Option 2: Wilshire/Fairfax East	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted	Impacted
4. Wilshire/La Cienega (East)	Impacted	Impacted	Impacted	Impacted	Impacted	-	Impacted
Option 3: Wilshire/La Cienega (west) with Connection Structure	Impacted	Impacted	Impacted	Impacted	Impacted	-	Impacted
5. Wilshire/Rodeo	None	None	None	None	None	-	None
6. Century City (Santa Monica Boulevard)	Impacted	Impacted	Impacted	Impacted	Impacted	-	Impacted
Option 4: Century City (Constellation Boulevard)	None	None	None	None	None	-	None
7. Westwood/UCLA Off-Street	Impacted	Impacted	Impacted	Impacted	Impacted	-	-
Option 5: Westwood/UCLA On-Street	Impacted	Impacted	Impacted	Impacted	Impacted	-	-
8. Westwood/VA Hospital	-	Impacted	Impacted	Impacted	Impacted	-	-
Option 6: Westwood/VA Hospital (North)	-	Impacted	Impacted	Impacted	Impacted	-	-
9. Wilshire/Bundy	-	-	Impacted	-	Impacted	-	-
10. Wilshire/26th	-	-	Impacted	-	Impacted	-	-
11. Wilshire/16th	-	-	Impacted	-	Impacted	-	-
12. Wilshire/4th	-	-	Impacted	-	Impacted	-	-
13. Hollywood/Highland	-	-	-	Impacted	Impacted	-	-
14. Santa Monica/La Brea	-	-	-	Impacted	Impacted	-	-
15. Santa Monica/Fairfax	-	-	-	Impacted	Impacted	-	-
16. Santa Monica/San Vicente	-	-	-	Impacted	Impacted	-	-
17. Beverly Center Area	-	-	-	Impacted	Impacted	-	-
Total Impacted Station Areas (with Base Station Locations)	6	7	11	12	16	3	5
Total Impacted Station Areas (with Optional Station Locations)	5	6	10	11	15	3	4

Source: Fehr & Peers, January 2010

In general, RPP districts are created to ensure that neighborhood residents have access to on-street parking. These programs are in effect across the United States, including Los Angeles County. They are commonly used to address spillover parking concerns, such as those that arise when residential neighborhoods are in close proximity to commercial districts that do not provide sufficient parking. Patrons of the commercial districts, who are non-residents, tend to “spillover” into adjacent residential neighborhoods to find parking. The impact that spillover parking causes is adverse, and restricting parking to residents only, or limiting the time non-residents can park, is one way to mitigate these adverse impacts.

Additionally, Metro could conduct outreach meetings for the affected communities to gauge the interest of residents to participate in an RPP program, regardless of whether parking shortages have been identified. RPP programs would be implemented according to guidelines established by each local jurisdiction. Metro would reimburse local jurisdictions for costs associated with developing both the RPP programs and installing parking restriction signs in neighborhoods within a one-half mile walking distance of each affected station. Metro would not be responsible for the costs of permits for residents desiring to park on streets in RPP districts. For locations where station spillover parking cannot be addressed through a RPP program, alternative mitigation options would include the implementation of time restrictions. Metro would work with local jurisdictions to determine which option(s) would be preferable.

Measure 2—Consideration of Shared Parking Program

Metro could consider developing a shared parking program with operators of off-street parking facilities to accommodate Westside Subway Extension parking demand, thereby allowing subway riders to use excess capacity in these facilities. It is estimated that several thousand off-street parking spaces serve commercial land uses within a one-half mile walking distance of each potential station. While off-street parking spaces for office land uses would be expected to be fully occupied during daytime work hours, some opportunities for shared parking facilities may be feasible for retail and food service uses. For six months following the opening of service, Metro would monitor off-street parking activity in station areas through communication with parking facility owners/managers to qualitatively gauge the effects on parking demand as a result of the introduction of the Westside Subway Extension. It is anticipated that the Westside Subway Extension would reduce parking demand in station areas, as employees use the subway to commute to work rather than driving.

Because the development of a shared parking program would be contingent on the willingness of parking facility owners/managers to participate, as well as the availability of parking supply at their facilities, it may be infeasible to implement this measure at some or all station areas where spillover parking impacts have been identified.

CEQA Determination

No Build Alternative

No significant impacts should be anticipated under the No Build Alternative.

TSM Alternative

No mitigation measures are required since no adverse impacts are expected under the TSM Alternative.

Build Alternatives

Each of the Build Alternatives would result in a significant impact at one or more locations in the Study Area. The impacts would involve spillover parking in station areas at locations identified in Table 3-15.

Impacts Remaining after Mitigation

After implementation of the above mitigation measures, the Westside Subway Extension spillover parking impacts would be mitigated to less than significant levels.