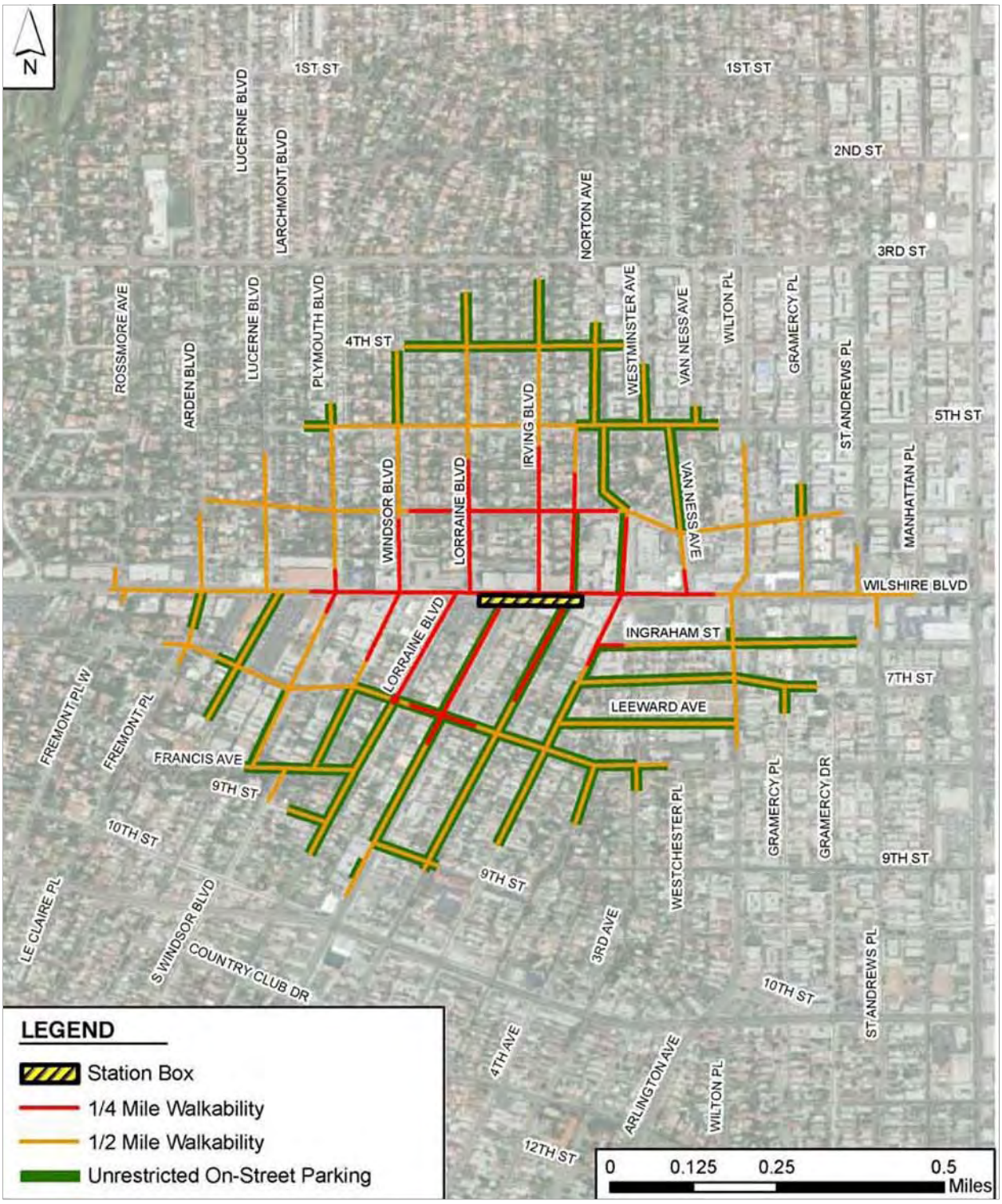


Figure 4-30. Unrestricted On-Street Parking—Wilshire/Crenshaw Station

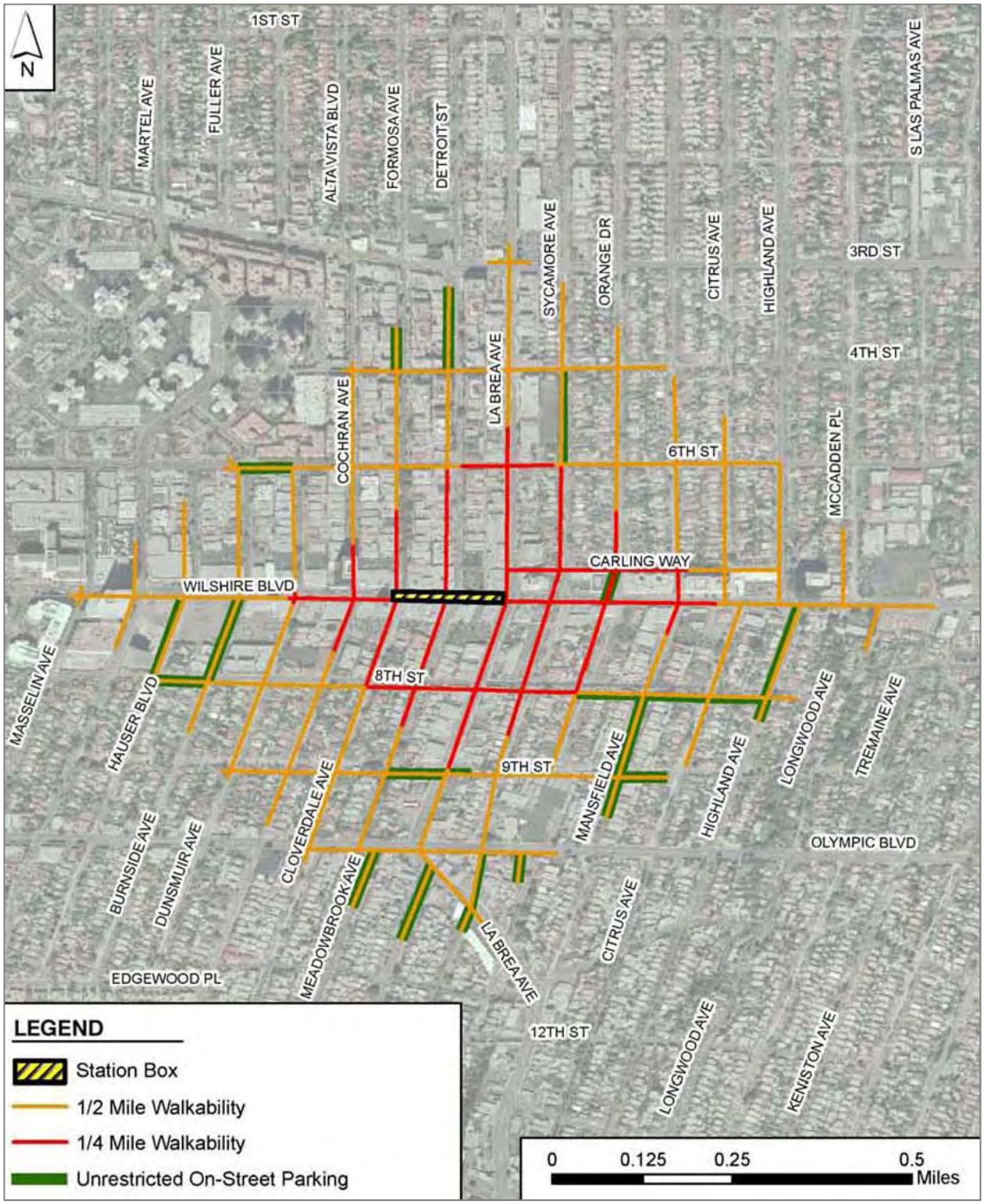


Figure 4-31. Unrestricted On-Street Parking—Wilshire/La Brea Station

Figure 4-32. Unrestricted On-Street Parking—Wilshire/Fairfax Station

Figure 4-33. Unrestricted On-Street Parking—Wilshire/Fairfax Optional Station

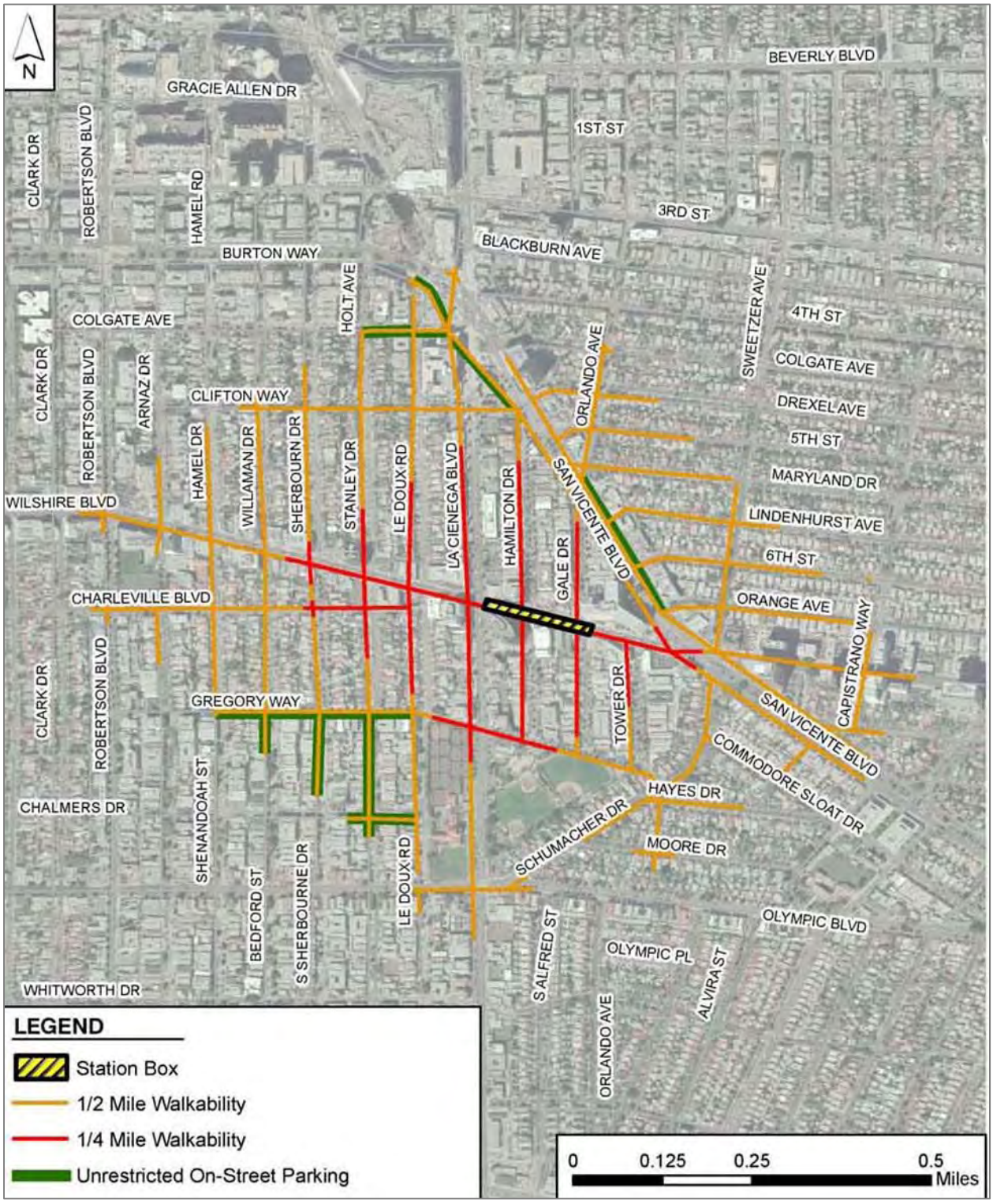


Figure 4-34. Unrestricted On-Street Parking—Wilshire/La Cienega Station

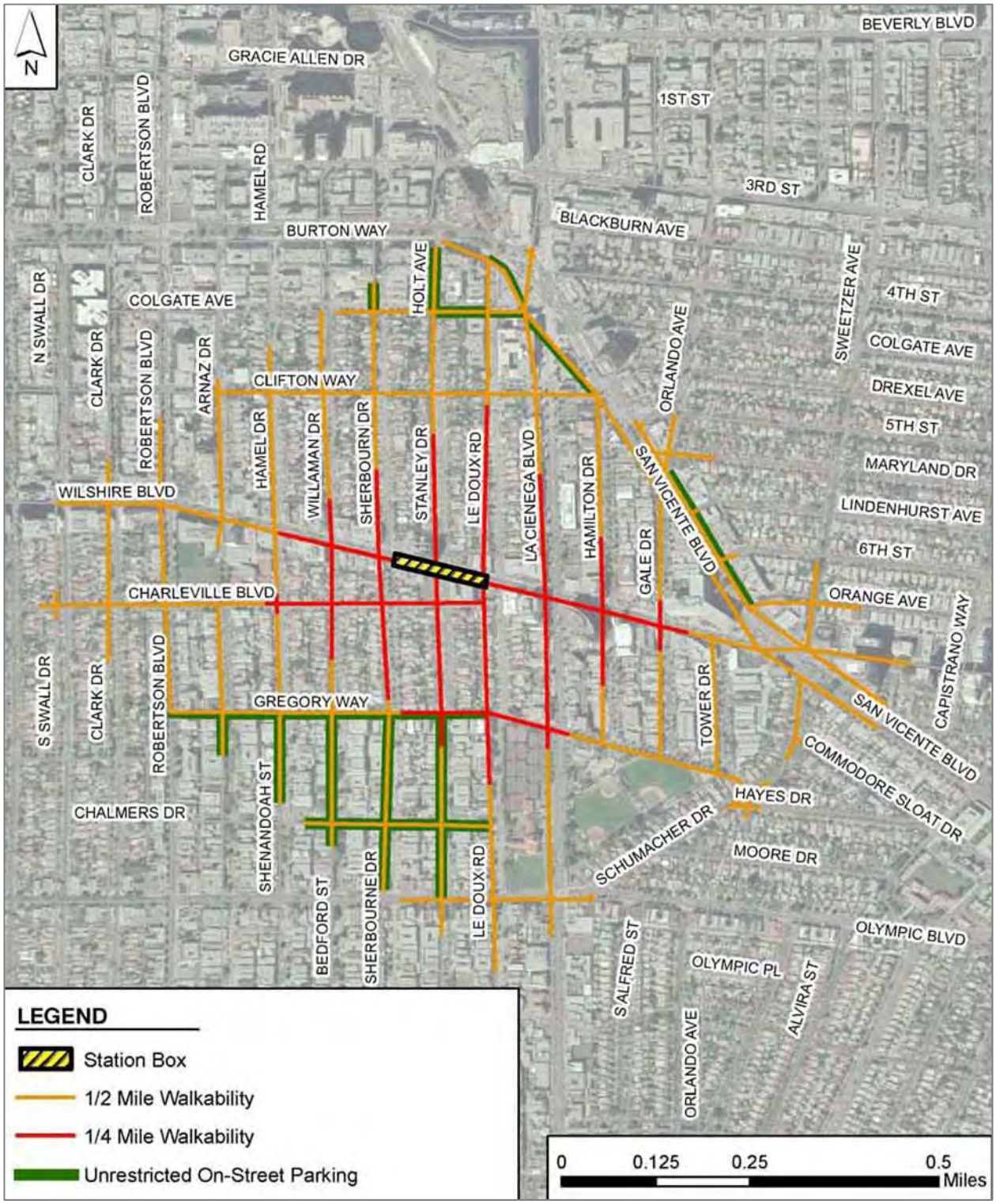


Figure 4-35. Unrestricted On-Street Parking—Wilshire/La Cienega Optional Station

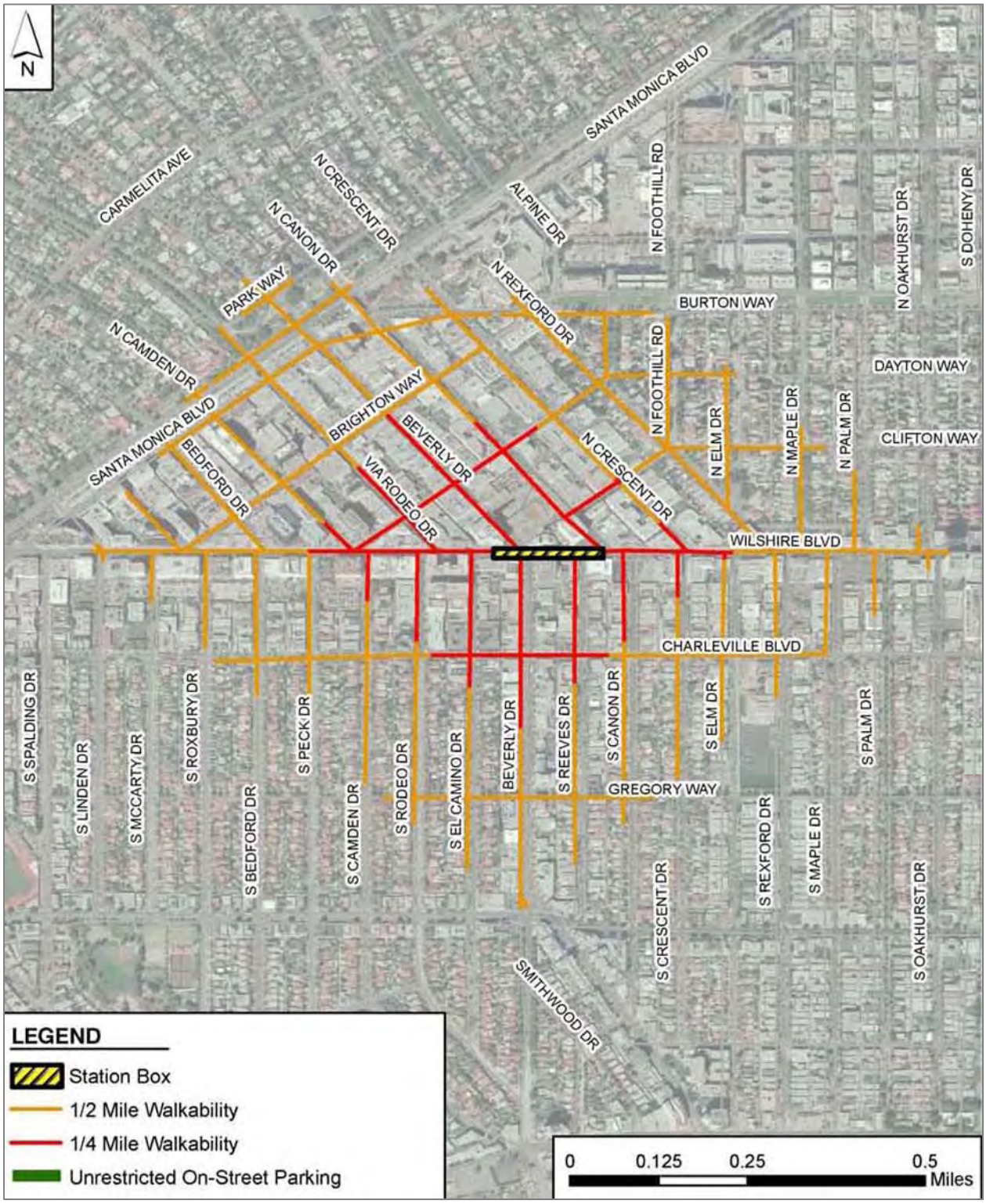


Figure 4-36. Unrestricted On-Street Parking—Wilshire/Rodeo Station

Figure 4-37. Unrestricted On-Street Parking—Century City Station

Figure 4-38. Unrestricted On-Street Parking—Century City Optional Station

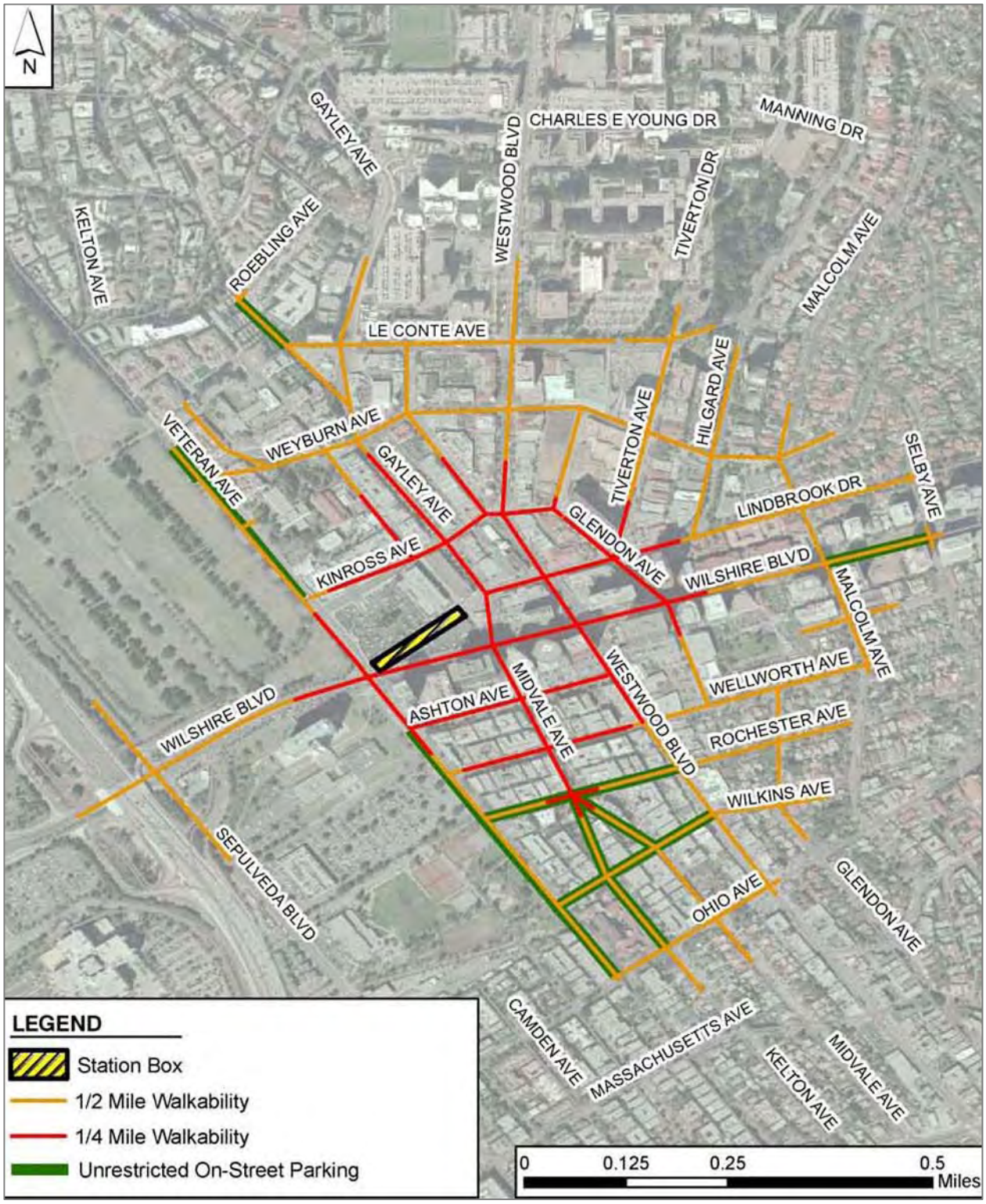


Figure 4-39. Unrestricted On-Street Parking—Westwood/UCLA Station

Figure 4-40 Unrestricted On-Street Parking—Westwood/UCLA Optional Station

Figure 4-41. Unrestricted On-Street Parking—Westwood/VA Hospital Station

Figure 4-42 Unrestricted On-Street Parking— Westwood/VA Hospital Optional Station

Figure 4-43. Unrestricted On-Street Parking—Wilshire/Bundy Station

Figure 4-44. Unrestricted On-Street Parking—Wilshire/26th Station

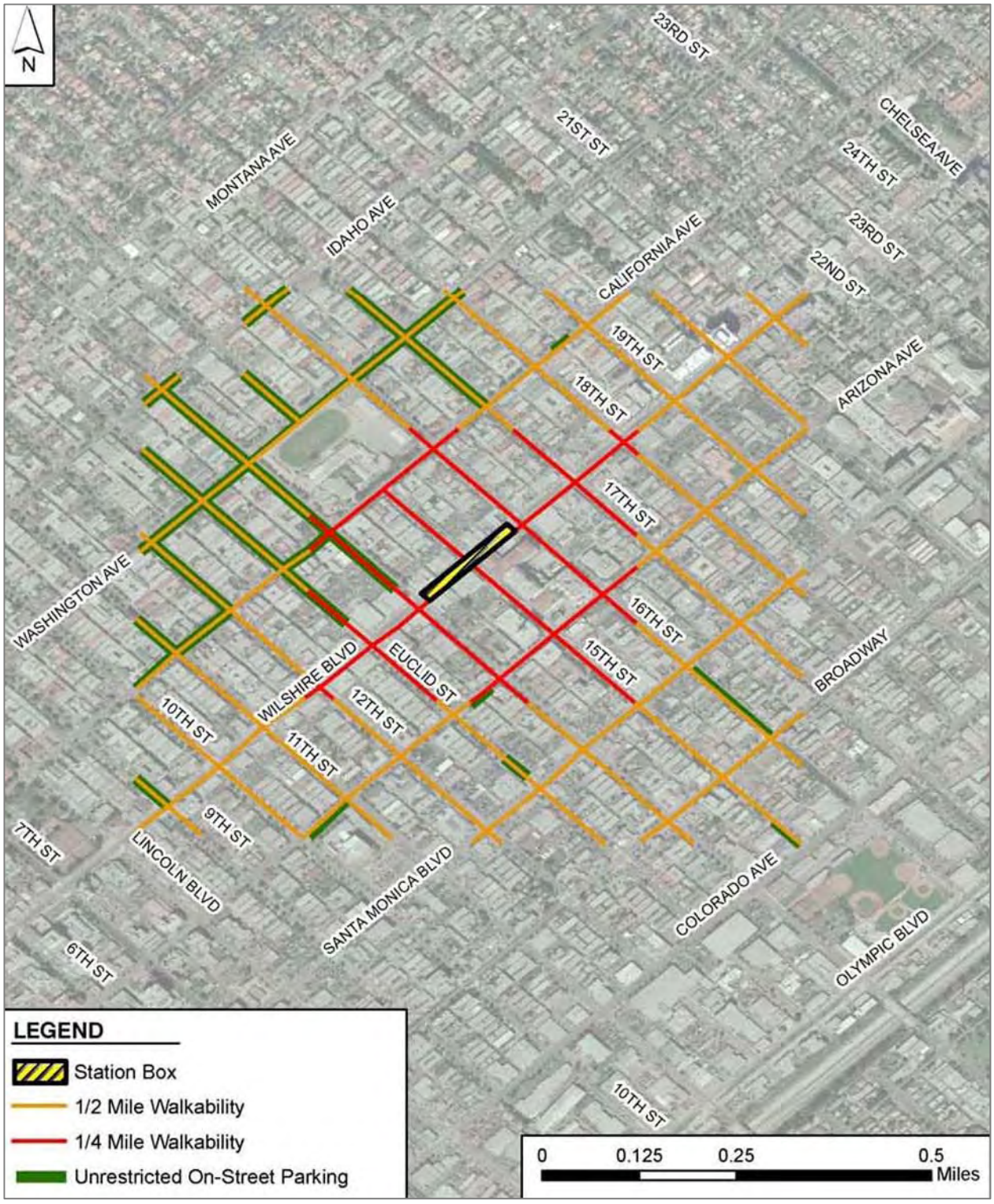


Figure 4-45. Unrestricted On-Street Parking—Wilshire/16th Station

Figure 4-46. Unrestricted On-Street Parking—Wilshire/4th Station

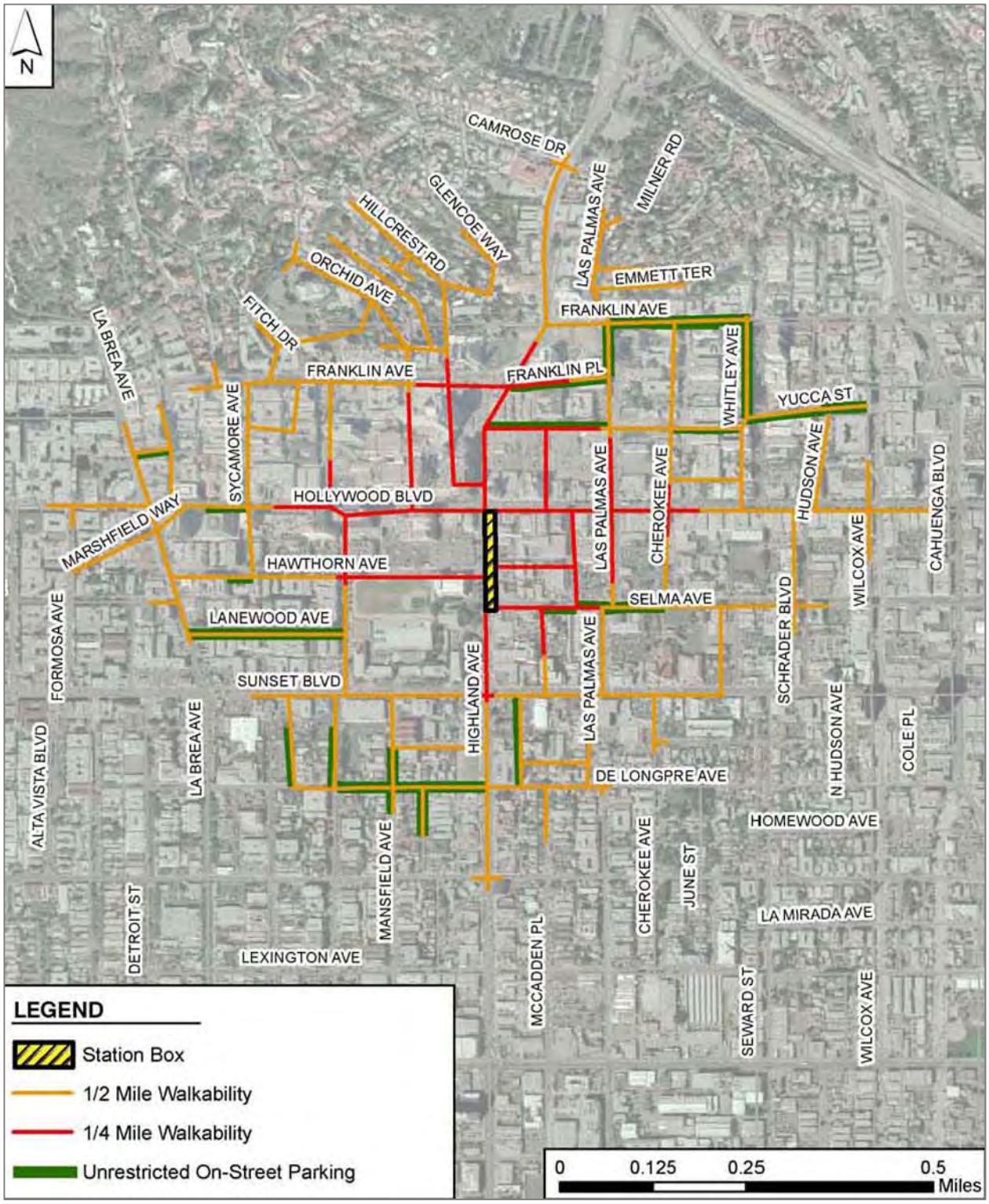


Figure 4-47. Unrestricted On-Street Parking—Hollywood/Highland Station

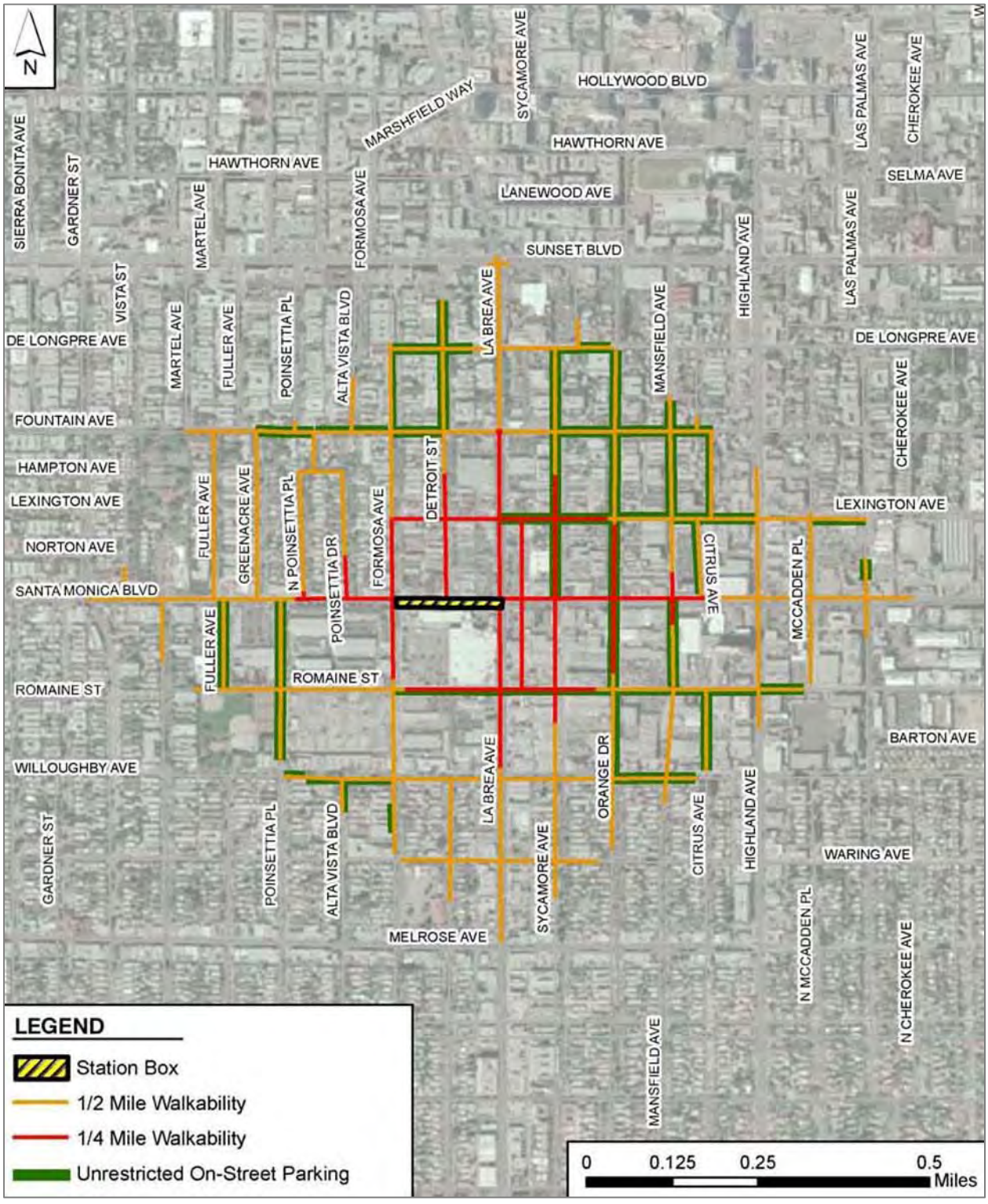


Figure 4-48. Unrestricted On-Street Parking—Santa Monica/La Brea Station

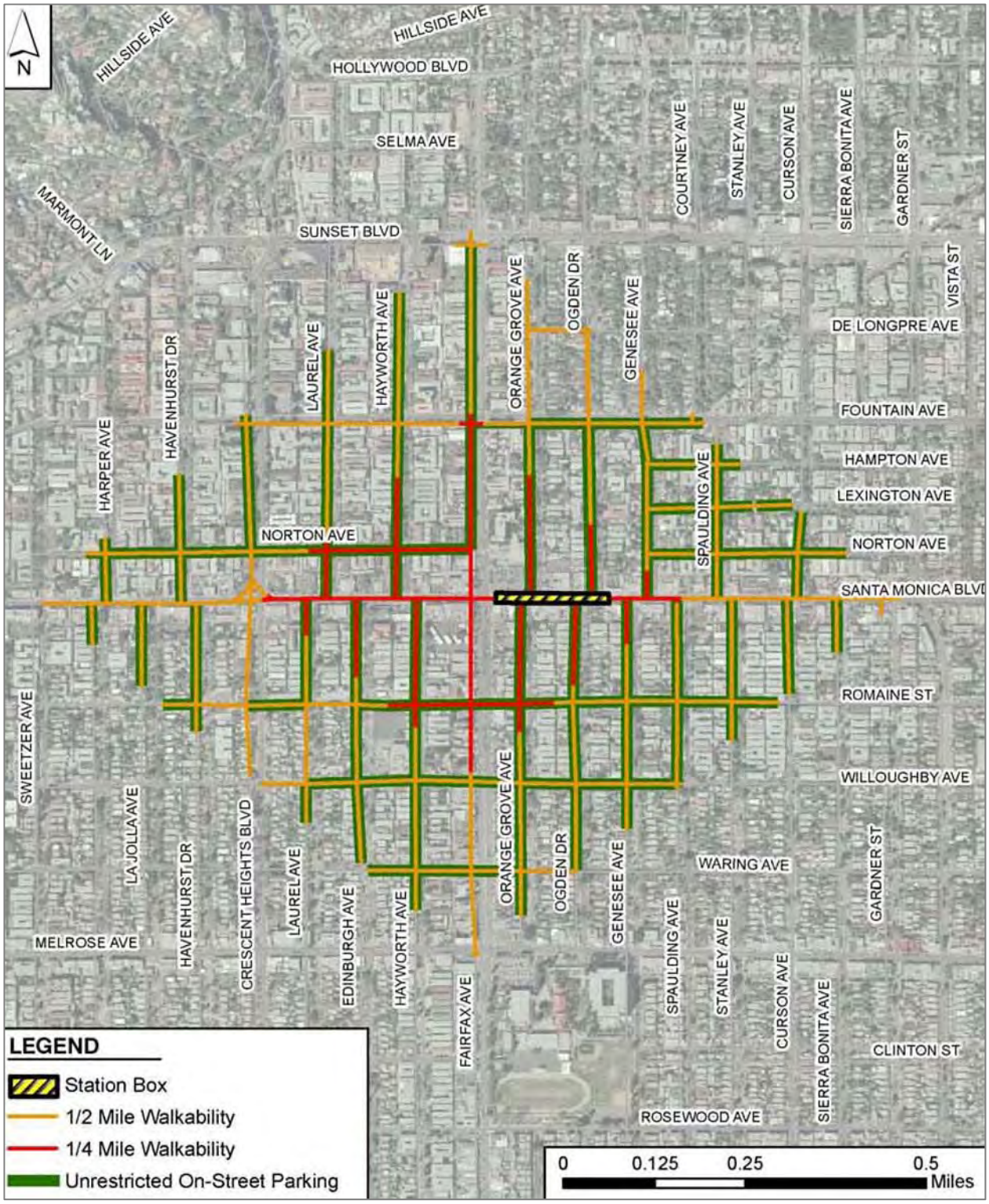


Figure 4-49. Unrestricted On-Street Parking—Santa Monica/Fairfax Station

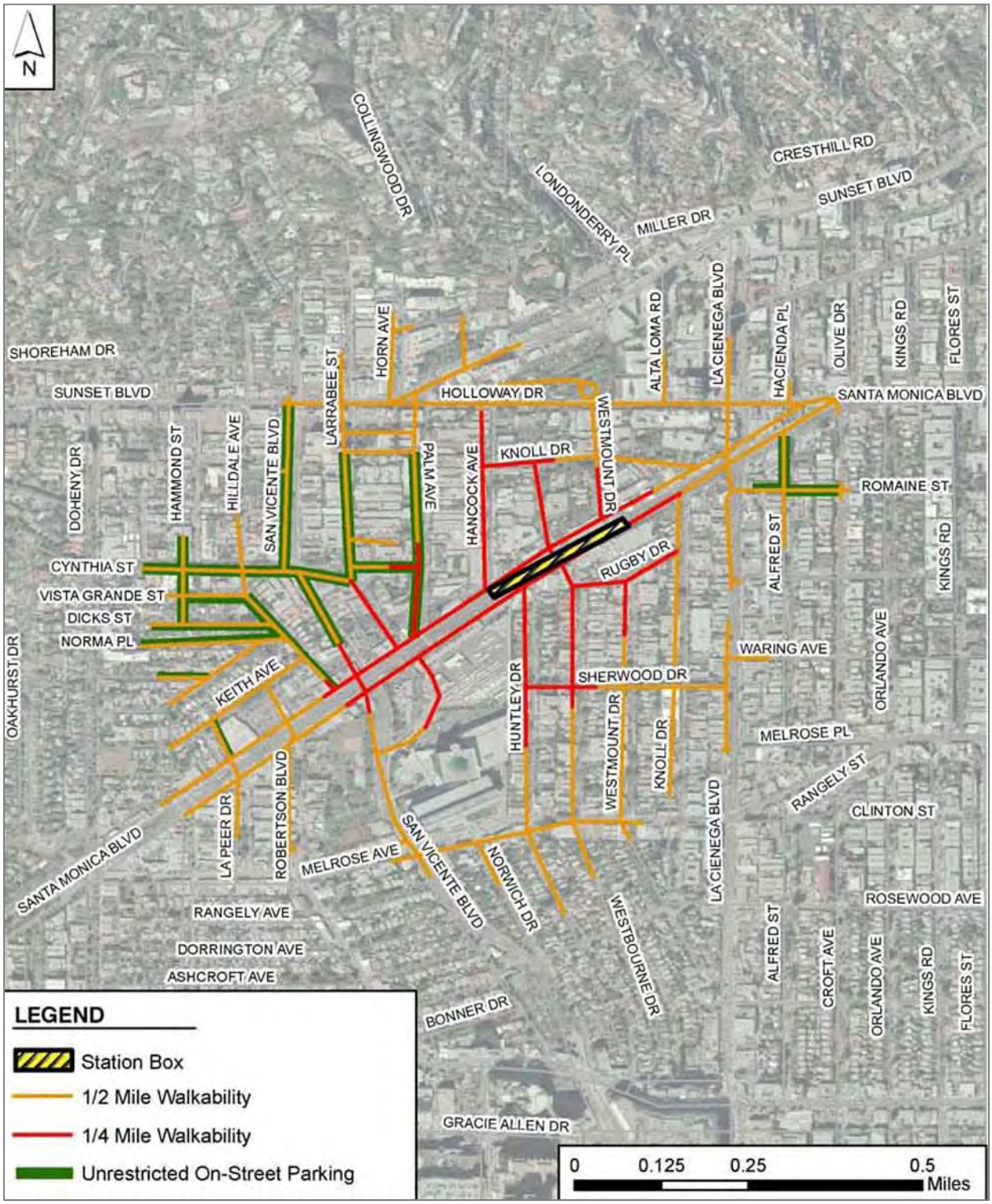


Figure 4-50. Unrestricted On-Street Parking—Santa Monica/San Vicente Station

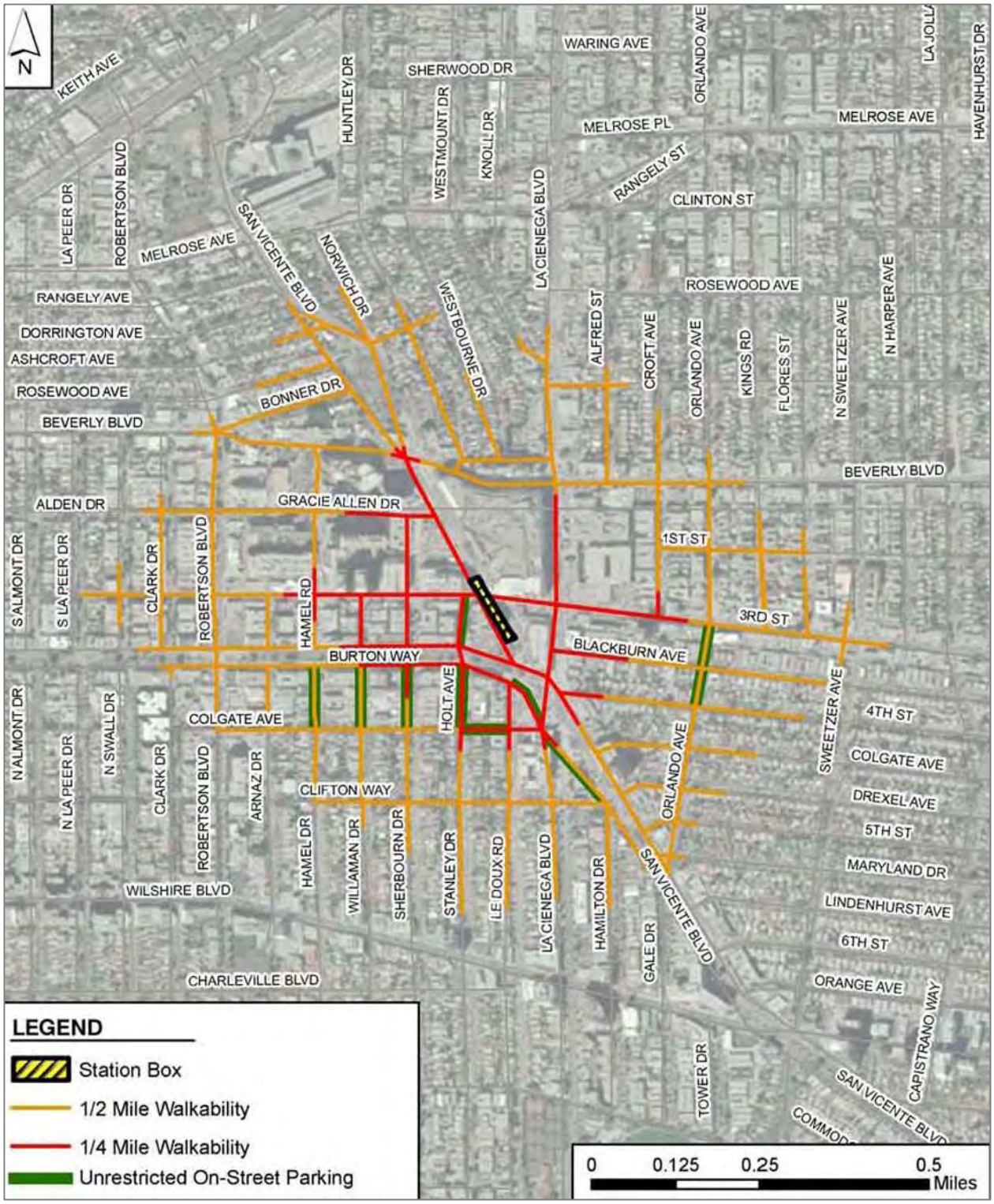


Figure 4-51. Unrestricted On-Street Parking—Beverly Center Area Station

- **Century City Station**—As illustrated in Figure 4-37, there is minimal unrestricted parking provided at the western edge of the one-half mile walking distance to this station location. Parking at anytime is prohibited on most streets within a one-half mile walking distance of this station, but several streets have residential daily parking restrictions. Parking meters with time-limit restrictions are installed along Santa Monica Boulevard. As illustrated in Figure 4-38, there are no unrestricted spaces provided around the optional station location.

- **Westwood/UCLA Station**—As illustrated in Figure 4-39 for this station location, and Figure 4-40 for the optional station location, parking is unrestricted on some blocks northwest, southwest, and east of each potential station. A variety of parking restrictions are in place on the remaining streets within a one-half mile walking distance of this station, including time-limit restrictions, peak-period restrictions, and residential permit-restrictions. Parking meters with time-limit restrictions are installed throughout the Westwood Village area north of Wilshire Boulevard, as well as along Westwood Boulevard south of Wilshire Boulevard.

- **Westwood/VA Hospital Station**—As illustrated in Figure 4-41 for this station location, and Figure 4-42 for the optional station location, minimal unrestricted parking is provided on Federal Avenue and Sepulveda Boulevard south of Wilshire Boulevard. Parking at anytime is prohibited on most of the remaining streets, since they are contained within the campus of the VA. However, a few blocks have time-limit parking restrictions.

- **Wilshire/Bundy Station**—As illustrated in Figure 4-43, parking is generally unrestricted on most streets within a one-half mile walking distance, with the exception of the neighborhood to the northwest of the potential station location. A variety of parking restrictions are in place to the northwest, including time-limit restrictions, peak-period restrictions, and residential permit restrictions. Parking meters with time-limit restrictions are installed along Wilshire Boulevard.

- **Wilshire/26th Station**—As illustrated in Figure 4-44, some unrestricted parking is located in the neighborhood north of Washington Avenue. A variety of parking restrictions are in place on the remaining streets within a one-half mile walking distance of this station, including time-limit restrictions, peak-period restrictions, and residential permit restrictions. Parking meters with time-limit restrictions are installed along Wilshire Boulevard, portions of the blocks closest to Wilshire Boulevard on north-south running streets, and certain blocks along Arizona Avenue.

- **Wilshire/16th Station**—As illustrated in Figure 4-8, unrestricted parking is provided on several blocks north of Wilshire Boulevard and a few blocks to the south. A variety of parking restrictions are in place on the remaining streets within a one-half mile walking distance of this station, including time-limit restrictions, peak-period restrictions, and residential permit restrictions. Parking meters with time-limit restrictions are installed along Wilshire Boulevard, the portions of the blocks closest to Wilshire Boulevard on north-south streets, and certain blocks of Arizona Avenue.

- **Wilshire/4th Station**—As illustrated in Figure 4-46, unrestricted parking is provided on some residential blocks north of California Avenue. Metered spaces with time-limit restrictions are installed on most of the remaining streets within a one-half mile walking

distance of the potential station location, including Wilshire Boulevard, all blocks south of Wilshire Boulevard, and along Ocean Avenue.

- **Hollywood/Highland Station**—As illustrated in Figure 4-47, unrestricted parking is available on some blocks located between a ¼ and one-half mile walking distance of this station. A variety of parking restrictions are in place on the remaining streets, including time-limit restrictions and peak-period restrictions. Parking meters with time-limit restrictions are installed along Hollywood Boulevard, Highland Avenue, La Brea Avenue, as well as on blocks of the smaller north-south and east-west streets adjacent to metered parking on the major streets.
- **Santa Monica/La Brea Station**—As illustrated in Figure 4-48, unrestricted parking is available on some blocks located between a ¼ and one-half mile walking distance of this station. A variety of parking restrictions are in place on the remaining streets within a one-half mile walking distance of this station, including time-limit restrictions, and daily-restrictions. Parking meters with time-limit restrictions are installed along Santa Monica Boulevard and the portions of the blocks closest to Santa Monica Boulevard on north-south streets, and along La Brea Avenue and the portions of the blocks closest to La Brea Avenue Boulevard on east-west streets.
- **Santa Monica/Fairfax Station**—As illustrated in Figure 4-49, parking is generally unrestricted on most streets within a one-half mile walking distance of this potential station. A variety of parking restrictions are in place on the remaining streets within a one-half mile walking distance of this station, including time-limit restrictions, peak-period restrictions, and residential permit-restrictions. Parking meters with time-limit restrictions are installed along Santa Monica Boulevard and the portions of the blocks closest to Santa Monica Boulevard on north-south running streets, and Fairfax Avenue.
- **Santa Monica/San Vicente Station**—As illustrated in Figure 4-50, parking is generally unrestricted on most streets in the neighborhood to the northwest of the potential station location. A variety of parking restrictions are in place on the remaining streets within a one-half mile walking distance of this station, including time-limit restrictions, peak-period restrictions, daily restrictions, and residential permit-restrictions. Parking meters with time-limit restrictions are installed along Santa Monica Boulevard and the portions of the blocks closest to Santa Monica Boulevard on north-south running streets.
- **Beverly Center Area Station**—As illustrated in Figure 4-51, parking is unrestricted on several blocks south of 3rd Street. A variety of parking restrictions are in place on the remaining streets within a one-half mile walking distance of this station, including time-limit restrictions and residential permit-restrictions. Parking meters with time-limit restrictions are installed along San Vicente Boulevard, Beverly Boulevard, 3rd Street, La Cienega Boulevard, Rosewood Avenue, and Curson Avenue.

4.3.1.2 Unrestricted Parking Occupancy Survey

A parking occupancy survey was conducted at the unrestricted locations described in Section 4.3.1.1. The purpose of the survey was to determine existing parking use at these unrestricted locations during the peak period to identify if there would be sufficient vacant parking spaces to accommodate potential Westside Subway Extension spillover parking. The AM peak period was selected for the survey because the greatest potential for spillover parking would be generated by commuters using the Westside Subway Extension to travel to work. Additionally, during the AM peak period, more station area

residents would be at home and parked on streets than during midday or PM peak periods, when residents would likely be at work, running errands, or participating in social activities. Therefore, a parking occupancy survey conducted during the AM peak period represents the most conservative estimate of existing parking availability at unrestricted locations.

■—Table 4-6

~~Table 4-6~~ describes the results of the parking occupancy survey at unrestricted on-street locations. In general, the majority of unrestricted spaces within 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 around them, existing parking demand is lower than at most other station areas, which have more multifamily residential land uses.

For each station, the amount of unrestricted parking availability is summarized below.

- **Wilshire/Crenshaw Station**—Approximately 2,115 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 1,009 vehicles were parked in these spaces (48% occupancy rate).
- **Wilshire/La Brea Station**—Approximately 530 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 408 vehicles were parked in these spaces (77% occupancy rate).
- **Wilshire/Fairfax Station**—Approximately 190 unrestricted parking spaces are located within a one-half mile walking distance of this station location. During the parking survey, 174 vehicles were parked in these spaces (93% occupancy rate). Approximately 135 spaces are located within a one-half mile walking distance of the optional station location, and 128 vehicles were parked in those spaces (96% occupancy rate).
- **Wilshire/La Cienega Station**—Approximately 250 unrestricted parking spaces are located within a one-half mile walking distance of this station location. During the parking survey, 215 vehicles were parked in these spaces (86% occupancy rate). Approximately 475 spaces are located within a one-half mile walking distance of the optional station location, and 416 vehicles were parked in those spaces (87% occupancy rate).
- **Wilshire/Rodeo Station**—There are no unrestricted parking spaces located within a one-half mile walking distance of this station. Therefore, no parking occupancy surveys were conducted.
- **Century City Station**—Approximately 25 unrestricted parking spaces are located within a one-half mile walking distance of this station location. During the parking survey, 100% of these spaces were occupied. No unrestricted parking spaces are located within a one-half mile walking distance of the optional station location.

Table 4-6. Parking Occupancy—Unrestricted Spaces within One-half Mile of Stations

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

Source: Fehr & Peers, January 2010

[a] No unrestricted spaces are located within one-half mile of these station locations.

- **Westwood/UCLA Station**—Approximately 355 unrestricted parking spaces are located within a one-half mile walking distance of this station location. During the parking survey, 353 vehicles were parked in these spaces (99% occupancy rate). Approximately 375 spaces are located within a one-half mile walking distance of the optional station location, and 366 vehicles were parked in those spaces (97% occupancy rate).
- **Westwood/VA Hospital Station**—Approximately 20 unrestricted parking spaces are located within a one-half mile walking distance of this station location. During the parking survey, 16 vehicles were parked in these spaces (89% occupancy rate). Approximately 135 spaces are located within a one-half mile walking distance of the optional station location, and 128 vehicles were parked in those spaces (93% occupancy rate).
- **Wilshire/Bundy Station**—Approximately 1,785 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 1,389 vehicles were parked in these spaces (78% occupancy rate).

- **Wilshire/26th Station**—Approximately 810 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 443 vehicles were parked in these spaces (55% occupancy rate).
- **Wilshire/16th Station**—Approximately 875 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 741 vehicles were parked in these spaces (85% occupancy rate).
- **Wilshire/4th Station**—Approximately 550 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 490 vehicles were parked in these spaces (89% occupancy rate).
- **Hollywood/Highland Station**—Approximately 520 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 469 vehicles were parked in these spaces (90% occupancy rate).
- **Santa Monica/La Brea Station**—Approximately 1,010 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 834 vehicles were parked in these spaces (83% occupancy rate).
- **Santa Monica/Fairfax Station**—Approximately 2,600 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 2,105 vehicles were parked in these spaces (81% occupancy rate).
- **Santa Monica/San Vicente Station**—Approximately 550 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 388 vehicles were parked in these spaces (70% occupancy rate).
- **Beverly Center Area Station**—Approximately 165 unrestricted parking spaces are located within a one-half mile walking distance of this station. During the parking survey, 158 vehicles were parked in these spaces (95% occupancy rate).

4.3.2 Off-Street Parking

4.3.2.1 Off-Street Municipal Code Parking Requirements

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.

Because there are hundreds of individual commercial parcels within a one-half 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 uses, were excluded from this analysis because they typically do not provide publicly accessible parking. Table 4-7 presents the commercial square-footage (sf) for each type of land use located within a one-half mile walking distance of potential station locations.

Table 4-7. Commercial Land Uses within one-half Mile of Stations

Station	Retail (sf)	Office (sf)	Hotel (sf)	Food Services (sf)	Total (sf)
1. Wilshire/Crenshaw Station	65,850	1,275,000	74,650	4,650	1,420,150
2. Wilshire/La Brea Station	836,950	2,535,750	13,350	17,600	3,403,650
3. Wilshire/Fairfax Station	311,400	5,403,300	63,900	54,850	5,833,450
Optional Station	265,100	5,219,300	63,900	46,700	5,595,000
4. Wilshire/La Cienega Station	235,000	3,496,300	275,300	94,000	4,100,600
Optional Station	308,450	3,111,700	279,300	94,000	3,793,450
5. Wilshire/Rodeo Station	2,911,550	4,755,000	763,500	51,700	8,481,750
6. Century City Station	1,031,200	13,917,150	1,921,200	25,500	16,895,050
Optional Station	569,100	13,437,200	1,586,650	25,500	15,618,450
7. Westwood/UCLA Station	1,186,600	4,561,950	543,200	95,900	6,387,650
Optional Station	1,203,450	4,172,800	543,200	96,900	6,016,350
8. Westwood/VA Hospital Station	0	2,166,850	0	0	2,166,850
Optional Station	39,600	1,046,750	0	0	1,086,350
9. Wilshire/Bundy Station	559,600	2,797,200	36,300	56,650	3,449,750
10. Wilshire/26th Station	464,150	2,259,500	55,200	93,250	2,872,100
11. Wilshire/16th Station	626,650	577,000	39,450	56,600	1,299,700
12. Wilshire/4th Station	2,386,700	2,740,350	430,550	91,850	5,649,450
13. Hollywood/Highland Station	1,833,250	1,402,000	1,263,100	79,300	4,577,650
14. Santa Monica/La Brea Station	695,350	612,450	49,950	80,250	1,438,000
15. Santa Monica/Fairfax Station	512,100	167,350	3,500	34,950	717,900
16. Santa Monica/San Vicente Station	2,446,600	524,300	883,050	108,500	3,962,450
17. Beverly Center Area Station	4,046,650	1,625,400	608,000	103,500	6,383,550

Source: Terry A. Hayes & Associates, December 2009

4.3.2.2 Calculation of Off-Street Municipal Code Parking Requirements

To estimate off-street parking inventory, municipal code parking requirements for the Cities of Los Angeles, West Hollywood, Beverly Hills, and Santa Monica were applied to the four general commercial land use categories. Table 4-8 details the parking ratios required by each city for retail, office, hotel, and food service land uses. Where parking ratios vary, such as in the City of West Hollywood, which requires 3.5 spaces per 1,000 sf of office space up until the first 25,000 sf, and 3.0 spaces per 1,000 sf for space beyond 25,000 sf, the lower parking ratio was used to produce a more conservative estimate of total parking supply available.

Table 4-8. Municipal Code Parking Requirements

Commercial Land Use Type	City of Los Angeles	City of West Hollywood	City of Beverly Hills	City of Santa Monica
Retail	1 space/250 sf	3.5 spaces/1,000 sf	1 space/350 sf	1 space/300 sf
Office	1 space/500 sf	3 spaces/1,000 sf	1 space/350 sf	1 space/300 sf
Hotel	1 space/2 rooms	1 space/room	1 space/room	1 space/room
Food Service	1 space/100 sf	9 spaces/1,000 sf	1 space/45 sf	1 space/75 sf

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 4-9, 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.

The parking ratios used are from the current municipal code of each city. However, land uses in the Study Area have been built over time, and may have been parked at ratios from earlier codes. 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. To verify these estimates, the station area land uses from Table 4-7 were input into the shared parking model.

4.3.3 Calculation of Commercial Land Use Parking Demand Using Shared Parking Model

The shared parking methodology recognizes that parking spaces in commercial districts may often serve two or more individual land uses without conflict because peak parking demand for land uses occurs at different times of day, days of the week, and seasons of the year. Additionally, in commercial districts, people will often visit two or more land uses on a single automobile trip, further reducing required parking.

Because the Westside Subway Extension station areas are mixed-use districts, the shared parking model, developed out of research on mixed-use developments and districts by the Urban Land Institute (ULI) and the International Council of Shopping Centers (ICSC), is an appropriate tool for estimating peak demand of the combined land uses in each station area. The model was calibrated to include a 15% reduction from ULI base parking ratios to account for the high transit ridership currently in the Study Area (specifically the Wilshire and Santa Monica Boulevards Rapid Bus lines). An additional factor was applied to the calibrated model to account for the internalization of parking demand (people visiting two or more land uses on a single automobile trip, or visitors or employees who live close enough to walk, bike, or take public transit). An internalization factor of 20% was applied to customer parking ratios, and a 5% factor for employee parking ratios.

Table 4-9 also presents the results of the shared parking demand estimates. In general, the results of the shared parking analysis are within approximately 25% of the municipal code required parking estimates. The shared parking model, in many station areas, predicts peak parking demand lower than municipal code parking requirements because parking demand for some land uses, such as restaurants, peaks in the evening, whereas parking demand for

other uses, such as office peaks during the day. However, with the exception of station areas with higher proportions of restaurant land uses, the shared parking model results confirm that the municipal code parking estimates are a relatively accurate measure of the potential parking demand in station areas.

Table 4-9. Estimated Off-Street Parking Spaces within One-half Mile of Stations

Station	Municipal Code Estimates (spaces)					Shared Parking Estimates (spaces)
	Retail	Office	Hotel	Food Services	Total	
1. Wilshire/Crenshaw Station	263	2,550	150	47	3,010	3,242
2. Wilshire/La Brea Station	3,348	5,072	28	176	8,624	8,234
3. Wilshire/Fairfax Station	1,246	10,807	128	549	12,730	13,573
Optional Station	1,060	10,439	128	467	12,094	12,972
4. Wilshire/La Cienega Station	671	9,989	1,100	2,089	13,849	9,737
Optional Station	881	8,891	1,115	2,089	12,976	9,045
5. Wilshire/Rodeo Station	8,319	13,586	3,055	1,149	26,109	20,749
6. Century City Station	4,125	27,834	3,843	255	36,057	39,213
Optional Station	2,276	26,874	3,173	255	32,578	36,286
7. Westwood/UCLA Station	4,746	9,124	1,088	959	15,917	15,315
Optional Station	4,814	8,346	1,088	969	15,217	14,492
8. Westwood/VA Hospital Station	0	4,334	0	0	4,334	4,899
Optional Station	158	2,094	0	0	2,252	2,479
9. Wilshire/Bundy Station	2,238	5,594	73	567	8,472	8,342
10. Wilshire/26th Station	1,547	7,532	220	1,243	10,542	7,130
11. Wilshire/16th Station	2,089	1,923	160	755	4,927	3,517
12. Wilshire/4th Station	7,956	9,135	1,720	1,225	20,036	14,342
13. Hollywood/Highland Station	7,333	2,804	2,525	793	13,455	11,245
14. Santa Monica/La Brea Station	2,781	1,225	100	803	4,909	3,964
15. Santa Monica/Fairfax Station	1,792	502	15	315	2,624	2,069
16. Santa Monica/San Vicente Station	8,563	1,573	3,530	977	14,643	10,464
17. Beverly Center Area Station	16,187	3,251	1,215	1,035	21,688	16,915

Source: Fehr & Peers, January 2010

4.4 Pedestrian and Bicycle Facilities

4.4.1 Pedestrian Facilities

The existing pedestrian-oriented infrastructure provides good 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 sidewalks 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.

Pedestrian and bicycle activity was observed as part of the data collection effort for assessing traffic impacts in the Study Area. Peak period pedestrian and bicycle volumes were recorded at the 65 study intersections close to potential station locations.

Intersections with greater than 500 pedestrians crossing during a peak hour were classified as intersections with high pedestrian activity. High pedestrian activity was observed near the following proposed 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

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.

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.

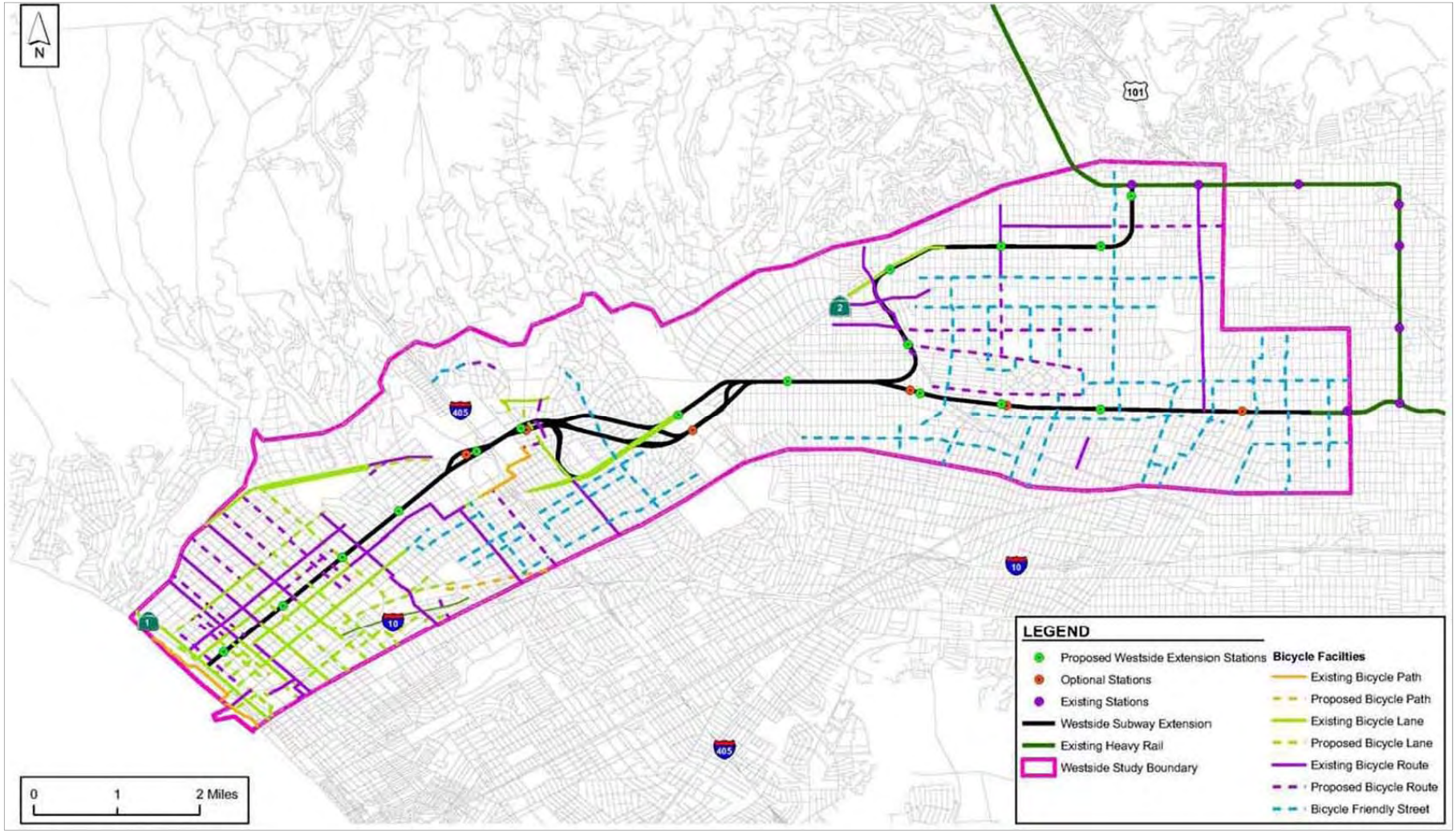
4.4.2 Bicycle Facilities

Bicycle facilities are classified based on a standard typology, described in further detail below.

- Class I Bikeway (Bike Path)—A completely separate right-of-way designated for the exclusive use of bicycles and pedestrians, with vehicle and pedestrian cross-flows minimized.
- Class II Bikeway (Bike Lane)—A restricted right-of-way designated for the use of bicycles, with a striped lane on a street or highway. Bicycle lanes are generally five feet wide. Vehicle parking and vehicle and pedestrian cross-flows are permitted.
- Class III Bikeway (Bike Route)—A right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.

- Bicycle Friendly Streets—Streets where physical changes have been made to decrease the speed and volume of motor vehicle traffic; also referred to as a bicycle boulevard.

Existing and proposed bicycle facilities in the Study Area, based on bicycle networks in the City of Los Angeles Draft Bicycle Plan Update (2009) and the proposed City of Santa Monica Land Use and Circulation Element (LUCE) (2010), are shown in Figure 4-52. 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.



Source: Los Angeles Bicycle Plan, Santa Monica LUCE

Figure 4-52. Existing and Proposed Bicycle Facilities in the Study Area

5.0 ENVIRONMENTAL CONSEQUENCES—MITIGATION MEASURES

This section uses defined impact mitigation criteria to assess how the operation of the Westside Subway Extension would affect the transportation system. For each section—5.1 Transit (including non-motorized modes), 5.2 Traffic, and 5.3 Parking—future conditions are reviewed, followed by an analysis of impacts and a discussion of proposed mitigation measures.

5.1 Transit

5.1.1 Future Conditions

This section describes the future transit operating conditions of each Project Alternative, including regional performance as measured by linked trips, a review of ridership estimates, mode of access to subway stations, and travel time comparisons. These measures are used to assess the transportation advantages of each Build Alternative. The Metro Travel Demand Model was used to forecast boardings and mode of access data for Year 2035. This section also compares transit travel times, transit speed, transit reliability, and variations in transit mode share for each of the Build Alternatives.

5.1.1.1 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) and the *2008 Southern California Association of Governments'* (SCAG) *Regional Transportation Plan* (RTP).[5] Under the No Build Alternative, no new infrastructure would be built within the Study Area, aside from projects currently under construction or projects funded for construction, environmentally cleared, planned to be in operation by 2035, and identified in the Metro LRTP.

5.1.1.2 TSM Alternative

The TSM Alternative emphasizes more frequent bus service than the No Build Alternative to reduce delay and enhance mobility. As such, the TSM meets some aspect of the Purpose and Need to provide enhanced transit service and improved mobility in the Study Area. The TSM Alternative contains all elements of the highway, transit, Metro Rail, and bus service described under the No Build Alternative. For the TSM Alternative, bus service would be increased to meet the rising demand for transit service in the Study Area. The frequency of the following Metro bus lines would be increased: 2, 4, 14, 16, and 720.

5.1.1.3 Build Alternatives

For this analysis, the change between the No Build Alternative and the Build Alternatives occurs for Metro Lines 20, 720, and 920. These Metro lines provide Local (Line 20), Rapid (Line 720), and Rapid Express (Line 920) service along Wilshire Boulevard between Downtown Los Angeles and Santa Monica. In addition, Sunday service on Metro Line 704, which provides service between Downtown Los Angeles and Santa Monica on Santa Monica Boulevard, is expected to be cut. These routes most closely parallel the service

[5] 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.

that would be provided by the proposed subway. All other transit lines are assumed to offer equivalent service between existing and future scenarios.

In the future transit network, Line 920 would be eliminated and Line 720 would operate less frequently. In the City of Los Angeles, headways for Line 720 are expected to increase from 3 to 5 minutes under the existing network to 5 to 11.5 minutes under the Build Alternatives. In the City of Santa Monica, headways for Line 720 are expected to remain essentially unchanged. Future headways for Line 20 would remain unchanged within the City of Los Angeles, but in the City of Santa Monica, Line 20 service would be eliminated.

Service Characteristics

Service for all Build Alternatives is expected to operate seven days per week 365 days per year, with hours of operation from 6:00 AM to 3:00 AM. Peak-period headways of 5 minutes would be in effect during weekday non-holidays, from 6:00 AM to 9:00 AM, and 3:00 PM to 7:00 PM. Off-peak headways of 10 minutes would be in effect during the remaining weekday hours of operation, and on weekends and holidays.

5.1.1.4 Regional Performance Measures

Table 5-1 provides a summary of countywide transit performance measures for all scenarios based on linked trips for all modes. Linked trips are a measure of transit trips that assumes transfers between vehicles to reach a single destination as part of the same trip. The data includes all Metro buses and rail activity as well as municipal transit operations (for transit statistics) and trip activity across all travel modes (for daily linked trips). While this section addresses countywide performance measures, further information on ridership, including transit mode share changes, is presented in Section 5.1.1.9—Variations in Transit Mode Shares.

Alternative 5 is forecast to have the highest regional daily transit mode share (2.30% compared with 2.25% under the No Build), and have the fewest auto trips (70,018,121 compared with 70,051,026 under the No Build, a reduction of 32,905 daily auto trips).Overall, there is a net gain of 40,118 daily linked transit trips between the No Build and Alternative 5.

Table 5-1. Regional Performance Measures—Los Angeles County

Countywide Statistics	Daily Fixed-Guideway Trips *	Daily Linked Bus Trips	Total Daily Linked Transit Trips	Auto Trips	Non-Motorized Trips	Daily Linked Trips (Total All Modes)	Total Transit Mode Share
No-Build	536,814	1,244,442	1,781,256	70,051,026	7,386,552	79,218,834	2.25%
TSM	536,992	1,246,383	1,783,375	70,049,499	7,385,962	79,218,836	2.25%
MOS 1	550,049	1,238,930	1,788,979	70,044,911	7,384,937	79,218,827	2.26%
MOS 2	568,170	1,231,494	1,799,664	70,036,297	7,382,861	79,218,822	2.27%
Alt 1	577,925	1,227,466	1,805,391	70,031,220	7,382,217	79,218,828	2.28%
Alt 2	583,728	1,225,139	1,808,867	70,028,522	7,381,448	79,218,837	2.28%
Alt 3	596,539	1,219,943	1,816,482	70,021,634	7,380,711	79,218,827	2.29%
Alt 4	589,844	1,222,628	1,812,472	70,026,076	7,380,284	79,218,832	2.29%
Alt 5	604,530	1,216,844	1,821,374	70,018,121	7,379,336	79,218,831	2.30%

Source: Metro Travel Demand Model

* Inclusive of Orange Line BRT trips and Metrolink Commuter Rail

5.1.1.5 Build Alternatives Ridership Analysis

Project Trips

Table 5-2 compares the project trips for each Build Alternative. Project trips represent the number of trips that can be credited to the Build Alternatives. Project trips are the sum of the following: inbound boardings (eastbound) at project stations, plus outbound boardings (westbound) at project stations, plus outbound boardings at non-project stations, minus outbound alightings at non-project stations. Essentially, the project trips estimate is comprised of riders who either begin or end at project stations. Alternative 5, with nearly 100,000 daily project trips, is forecast to generate the highest number of project trips.

While only one additional station is involved, 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.

Table 5-2. Build Alternative Project Trips Comparison

Alternative	Description	Stations	Project Trips
MOS 1	Fairfax Station Terminus	3	30,049
MOS 2	Century City Station Terminus	6	56,713
Alt 1	Westwood/UCLA Extension	7	72,242
Alt 2	Westwood/VA Hospital Extension	8	80,757
Alt 3	Santa Monica Extension	12	105,421
Alt 4	Westwood/VA Hospital Extension + West Hollywood Extension	13	93,009
Alt 5	Santa Monica Extension + West Hollywood Extension	17	120,039

Source: Metro Travel Demand Model

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.

Station Boardings

As a more detailed metric than project trips, station boarding estimates add location-specific information about the origins and destinations of riders. Boardings data can be used to estimate the viability of project stations in terms of ridership. It can also be compared across the multiple scenarios to demonstrate a network effect; as more stations are added to the subway line, a greater number of riders are attracted to existing stations. The number of total daily boardings differs from project trips in that boardings data does not count riders who board at a non-project station and alight at project stations.

Table 5-3 presents daily station boardings for project stations under each Build Alternative, with total boardings varying from 17,500 for MOS 1 to 89,700 for Alternative 5. In general, ridership increases at initial stations as more stations are added. In cases where an added station provides a preferred alternative to a previously identified station, the previously identified station may show a slight decline, but the combined total of the two stations shows a net gain in boardings. Further information on ridership under each project alternative is presented below in Section 5.1.1.9—Variations in Transit Mode Shares.

5.1.1.6 Mode of Access

Table 5-4 details 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 no park-and-ride facilities are planned at the station locations. While not quantified explicitly by the Metro Travel Demand Model, some utilization 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 progressively decline for MOS 2 and each subsequent 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. Alternatives 4 and 5 are forecast to have higher mode of access in the "Other" category, which includes urban rail transfers, because both alternatives provide an additional connection to the existing Metro Red Line through the West Hollywood Branch at the Hollywood/Highland Station.

Alternative 5 has the highest share of other mode of access (16%), suggesting the highest share of rail-to-rail transfers. It also has a high share of walk access (58%) and a low share of bus access (24%). Alternative 3 predicts more people accessing subway stations on foot compared to Alternative 5 (64%), with a slightly greater amount of bus access (26%), and a much lower share of other access (8%). Compared to Alternative 5, Alternative 4 has lower shares of walk access (55%) and other access (15%) and a higher share of bus access (28%).

Table 5-3. Daily Station Boardings

Station	MOS 1	MOS 2	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
1. Wilshire/Crenshaw Station	3,435	3,986	4,215	4,320	4,676	4,025	4,356
2. Wilshire/La Brea Station	3,937	3,569	3,722	3,808	4,064	3,239	3,423
3. Wilshire/Fairfax Station	10,135	5,792	6,071	6,209	6,629	5,031	5,361
4. Wilshire/La Cienega Station	—	6,114	6,433	6,608	7,072	5,088	5,418
5. Wilshire/Rodeo Station	—	7,682	4,642	4,585	4,857	6,386	6,649
6. Century City Station	—	8,333	6,681	6,498	6,568	6,424	6,390
7. Westwood/UCLA Station	—	—	14,313	12,629	11,039	13,894	11,978
8. Westwood/VA Hospital Station	—	—	—	8,010	6,120	8,762	6,662
9. Wilshire/Bundy Station	—	—	—	—	5,120	—	5,759
10. Wilshire/26th Station	—	—	—	—	5,034	—	5,630
11. Wilshire/16th Station	—	—	—	—	3,886	—	4,323
12. Wilshire/4th Station	—	—	—	—	5,872	—	6,639
13. Hollywood/Highland Station	—	—	—	—	—	5,957	7,360
14. Santa Monica/La Brea Station	—	—	—	—	—	2,438	2,628
15. Santa Monica/Fairfax Station	—	—	—	—	—	2,125	2,270
16. Santa Monica/San Vicente Station	—	—	—	—	—	1,829	1,905
17. Beverly Center Area Station	—	—	—	—	—	2,818	2,933
Total Station Boardings	**17,506**	**35,475**	**46,075**	**52,665**	**70,936**	**68,013**	**89,680**

Source: Metro Travel Demand Model

Table 5-4. Daily Mode of Access Percentages

Alternative	Walk	Bus Transit	Private Vehicle	Other
MOS 1	39%	47%	2%	12%
MOS 2	54%	35%	2%	9%
Alternative 1	56%	34%	2%	8%
Alternative 2	60%	30%	2%	8%
Alternative 3	64%	26%	2%	8%
Alternative 4	55%	28%	2%	15%
Alternative 5	58%	24%	2%	16%

Source: Metro Travel Demand Model

5.1.1.7 Study Corridor Travel Time Comparison

Table 5-5 compares estimated corridor-specific travel times during the peak period for MOSs and Build Alternatives. Longer subway extensions increase travel time benefits for transit riders. For example, traveling westbound by bus from Wilshire/Western to Wilshire/4th would take more than an hour under No Build or TSM. Even by car, driving the same distance would be only 15 minutes faster. By comparison, taking the subway from Wilshire/Western to Wilshire/4th under Alternatives 3 or 5 would result in travel time savings over 42 minutes compared to the bus and 28 minutes compared to driving.

Figure 5-6 shows travel time comparisons during the off-peak period. The subway provides a notable improvement over bus service even during the off-peak because bus wait times are greater during the off-peak period than during the peak period. Traveling from

Wilshire/Western to Wilshire/4th under the No Build or TSM Alternatives would take more than an hour by bus but only 25 minutes by subway under Alternatives 3 and 5. Traffic congestion is lower during the off-peak, but even with improved auto times, the subway is still faster than driving for all Build Alternatives.

Transit travel times to the Westside from origins outside the Study Area are presented in Section 5.1.1.8 Transit Travel Times.

Table 5-5. Project Alternative Peak Travel Time Comparison

Alt	From	To	Subway Time (min)	No Build Bus Time (min)	TSM Bus Time (min)	Auto Time (min)
Westbound						
MOS 1	Wilshire/Western	Wilshire/Fairfax	6.6	16.7	15.9	12.6
MOS 2	Wilshire/Western	Wilshire/Century City	11.9	34.4	33.6	25.2
Alt 1	Wilshire/Western	Wilshire/Westwood	14.2	45.7	44.9	33.8
Alt 2	Wilshire/Western	Westwood/VA	15.5	53.5	52.7	39.8
Alt 3	Wilshire/Western	Wilshire/4th	21.1	64.2	63.4	48.8
Alt 4	Wilshire/Western	Westwood/VA	15.5	53.5	52.7	39.8
	Hollywood/Highland	Westwood/VA	19.5	65.1	64.3	40.1
Alt 5	Wilshire/Western	Wilshire/4th	21.1	64.2	63.4	48.8
	Hollywood/Highland	Wilshire/4th	25.1	75.8	75.0	49.0
Eastbound						
MOS 1	Wilshire/Fairfax	Wilshire/Western	6.6	14.0	10.7	7.7
MOS 2	Wilshire/Century City	Wilshire/Western	11.9	24.7	21.4	15.3
Alt 1	Wilshire/Westwood	Wilshire/Western	14.2	31.8	28.5	20.9
Alt 2	Westwood/VA	Wilshire/Western	15.5	40.9	37.6	28.4
Alt 3	Wilshire/4th	Wilshire/Western	21.1	49.6	46.3	35.5
Alt 4	Westwood/VA	Wilshire/Western	15.5	40.9	37.6	28.4
	Westwood/VA	Hollywood/Highland	19.5	47.8	44.5	27.6
Alt 5	Wilshire/4th	Wilshire/Western	21.1	49.6	46.3	35.5
	Wilshire/4th	Hollywood/Highland	25.1	56.5	53.2	34.7

Source: Metro Travel Demand Model; Note: Transit times include wait times equal to half of headways

Table 5-6. Project Alternative Off-Peak Travel Time Comparison

	From	To	Subway Time (min)	No Build Bus Time (min)	TSM Bus Time (min)	Auto Time (min)
Westbound						
MOS 1	Wilshire/Western	Wilshire/Fairfax	9.9	16.2	16.2	7.3
MOS 2	Wilshire/Western	Wilshire/Century City	15.3	29.2	29.2	14.3
Alt 1	Wilshire/Western	Wilshire/Westwood	17.6	38.7	38.7	19.4
Alt 2	Wilshire/Western	Westwood/VA	18.9	50.1	50.1	23.5
Alt 3	Wilshire/Western	Wilshire/4th	24.5	61.9	61.9	30.5
Alt 4	Wilshire/Western	Westwood/VA	18.9	50.1	50.1	23.5
	Hollywood/Highland	Westwood/VA	22.0	64.4	64.4	23.1
Alt 5	Wilshire/Western	Wilshire/4th	24.5	61.9	61.9	30.5
	Hollywood/Highland	Wilshire/4th	27.6	76.2	76.2	30.0
Eastbound						
MOS 1	Wilshire/Fairfax	Wilshire/Western	9.9	16.4	16.4	7.2
MOS 2	Wilshire/Century City	Wilshire/Western	15.3	29.4	29.4	14.3
Alt 1	Wilshire/Westwood	Wilshire/Western	17.6	38.3	38.3	19.1
Alt 2	Westwood/VA	Wilshire/Western	18.9	50.2	50.2	23.5
Alt 3	Wilshire/4th	Wilshire/Western	24.5	61.9	61.9	30.4
Alt 4	Westwood/VA	Wilshire/Western	18.9	50.2	50.2	23.5
	Westwood/VA	Hollywood/Highland	22.0	65.0	65.0	23.3
Alt 5	Wilshire/4th	Wilshire/Western	24.5	61.9	61.9	30.4
	Wilshire/4th	Hollywood/Highland	27.6	76.7	76.7	30.2

Source: Metro Travel Demand Model; Note: Transit times include wait times equal to half of headways

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.

5.1.2 Regional Transit Travel Times, Speed, and Reliability

5.1.2.1 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 5-1. 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.

Figure 5-1. Origins and Destinations for Transit Travel Times

- 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.
- 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.

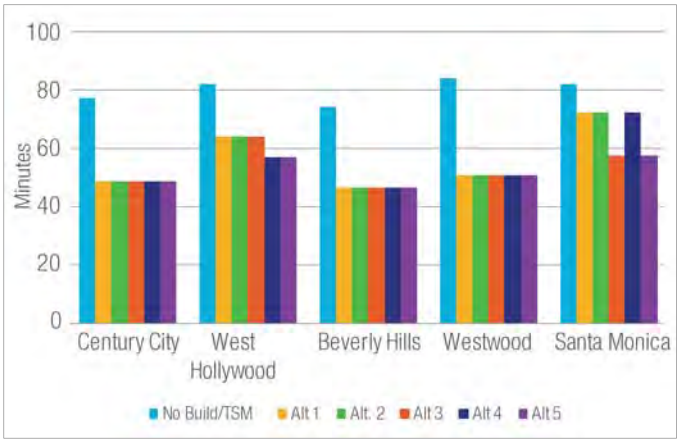


Figure 5-2. Transit Travel Times—Pasadena to Westside

Figure 5-3. Transit Travel Times—Downtown Los Angeles to Westside

Figure 5-4. Transit Travel Times—South Central Los Angeles to Westside

From Pasadena (Del Mar Gold Line Station)
Estimated transit travel times from Pasadena to various Westside destinations are shown in Figure 5-2. 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.

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 include a bus transfer to complete the trip.

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 5-3. 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 5-4. 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, since riders could use the planned Exposition LRT line that would provide quick transit access between South Los Angeles and the Westside.

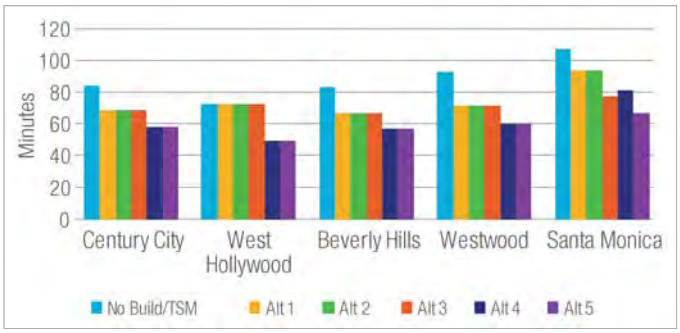


Figure 5-5. Transit Travel Times—Reseda to Westside

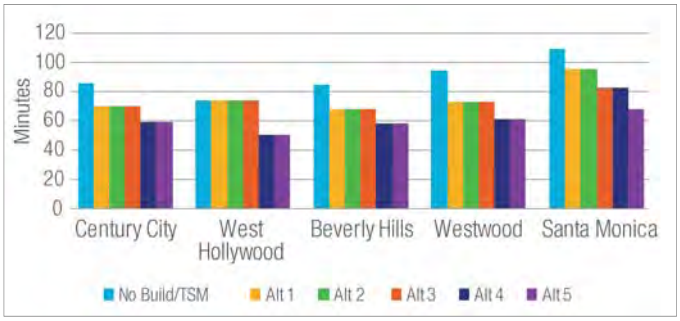


Figure 5-6. Transit Travel Times—Covina to Westside

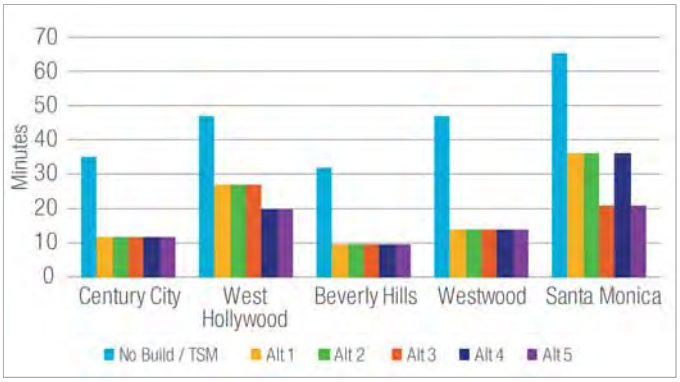


Figure 5-7. Transit Travel Times—Wilshire Western to Westside

From Reseda (Orange Line Station)

Estimated transit travel times from Reseda in the San Fernando Valley to Westside destinations are shown in Figure 5-5. Under Alternatives 1 through 3, transfers at 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.

From Covina (Metrolink Station)

The estimated transit travel times from the Covina Metrolink Station to various Westside destinations are shown in Figure 5-6. 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 5-7. 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.

Figure 5-8. Transit Travel Times—North Hollywood to Westside

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 5-8.

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.

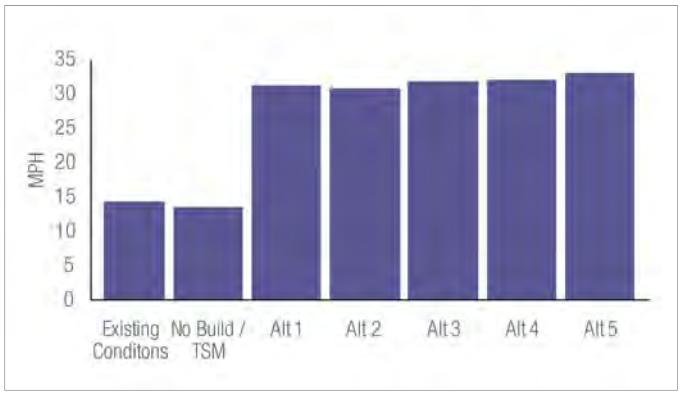


Figure 5-9. Transit Operating Speeds

5.1.2.2 Transit Speed and Reliability

The transit travel times presented above reflect estimated variations in transit speeds for the alternatives. As shown in Figure 5-9 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.

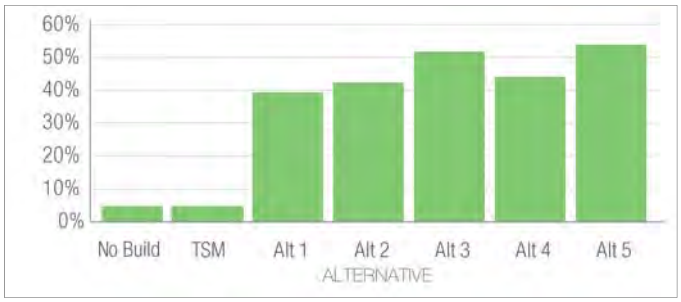


Figure 5-10. Extent of Passenger Miles in Exclusive Guideway Service

As indicated by Figure 5-10, 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 greatly improve.

5.1.2.3 Reduction in Auto Trips

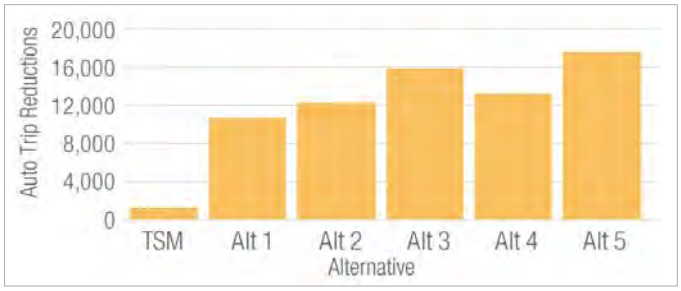


Figure 5-11. Reduction in Auto Trips by Alternative during Seven-hour Peak Period

With the Build Alternatives, some reductions in county-wide traffic would occur as reflected in VMT, VHT, and AM/PM auto 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 5-11. 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 within the Study Area as compared to the No Build and TSM Alternatives. 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 while the destinations are located 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 the Study Area.

The following summarize estimated changes in transit mode shares during AM and PM peak periods for selected travel pairs between the 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

5.1.3 Impact Assessment

5.1.3.1 No Build Alternative

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

5.1.3.2 TSM Alternative

Impacts from the TSM Alternative would be beneficial as increased levels of transit service would be provided.

5.1.3.3 MOS and Build Alternatives

Impacts from MOS and Build Alternatives would be beneficial as levels of transit service would increase, and transit speed and reliability would improve.

5.1.4 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.

MOS and Build Alternatives

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

5.1.5 CEQA Determination

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

5.1.5.1 Impacts Remaining After Mitigation

No impacts are expected under any alternative.

5.1.6 Station Area Assessment—Pedestrian/Bicycle/Bus to Rail Interface

The purpose of this section is to describe the connections between Westside Subway Extension stations and the other transportation modes that interface with these stations. The interface between the Westside Subway Extension and other modes is important because no trip begins or ends directly at a station. Subway riders will walk, bicycle, take a bus, or be picked up/dropped off in private vehicles to continue or complete their trips. Providing efficient and safe connections between the Westside Subway Extension and the transportation modes that interface with it will ensure the best possible service for subway riders.

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.

The interfacing transportation modes evaluated in this section include bus transit (specifically the location of bus stops), and pedestrian and bicycle facilities (pedestrian crossings and bicycle lanes). The possibility of pedestrian constriction at station locations was carefully reviewed, but the width of station area sidewalks is sufficient to dismiss this concern.

5.1.6.1 Wilshire/Crenshaw Station

The following MOSs and Build Alternatives include this station:

- MOS 1
- MOS 2
- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4
- Alternative 5

The pedestrian, bicycle, and bus transit interface discussion for this station detailed below is applicable to all of the above listed MOSs and Build Alternatives.

Pedestrian and Bicycle Interface

This optional station is located between Bronson Avenue and Lorraine Boulevard, with a potential station entrance on the south side of Wilshire Boulevard on the Metro-owned property between Crenshaw and Lorraine Boulevards (see Figure 5-12).

The intersection of Crenshaw and Wilshire Boulevards is signalized with protected/permissive left-turn phasing on westbound Wilshire Boulevard. Marked crosswalks are currently provided on the south leg and the east leg of the intersection. There is no crosswalk across Wilshire Boulevard on the west leg of the intersection where the potential entrance is located. The intersection of Lorraine and Wilshire Boulevards is unsignalized. No marked crosswalks are provided at this intersection.

Arden Boulevard north of Wilshire Boulevard is designated as a bicycle route. 4th Street, Lucerne Boulevard, Norton Avenue and Saint Andrews Place are designated as bicycle friendly streets. No bicycle facilities are located on either Crenshaw or Wilshire Boulevards.

Bus Interface

Figure 5-12 also illustrates bus stop locations. Bus stops for Metro Rapid Line 720 are on the north side of Wilshire Boulevard, just east of Lorraine Boulevard (westbound buses) and on the south side of Wilshire Boulevard east of Crenshaw Boulevard (eastbound buses). Bus stops for Metro Rapid Line 710 are on the west side of Crenshaw Boulevard, just south of Wilshire Boulevard (southbound buses) and at the eastbound Rapid Line 720 bus stop on the south side of Wilshire Boulevard east of Crenshaw Boulevard (northbound buses). Bus stops for Metro Line 20 are on the north side of Wilshire Boulevard, west of Lorraine Boulevard (westbound bus), and on the south side of Wilshire Boulevard, west of Crenshaw Boulevard and directly in front of the potential station entrance (eastbound bus). Bus stops for Metro Line 210 are at the Rapid Line 710 bus stop on the west side of Crenshaw Boulevard, just south of Wilshire Boulevard (southbound buses) and on the east side of Crenshaw Boulevard just south of Wilshire Boulevard (northbound buses).

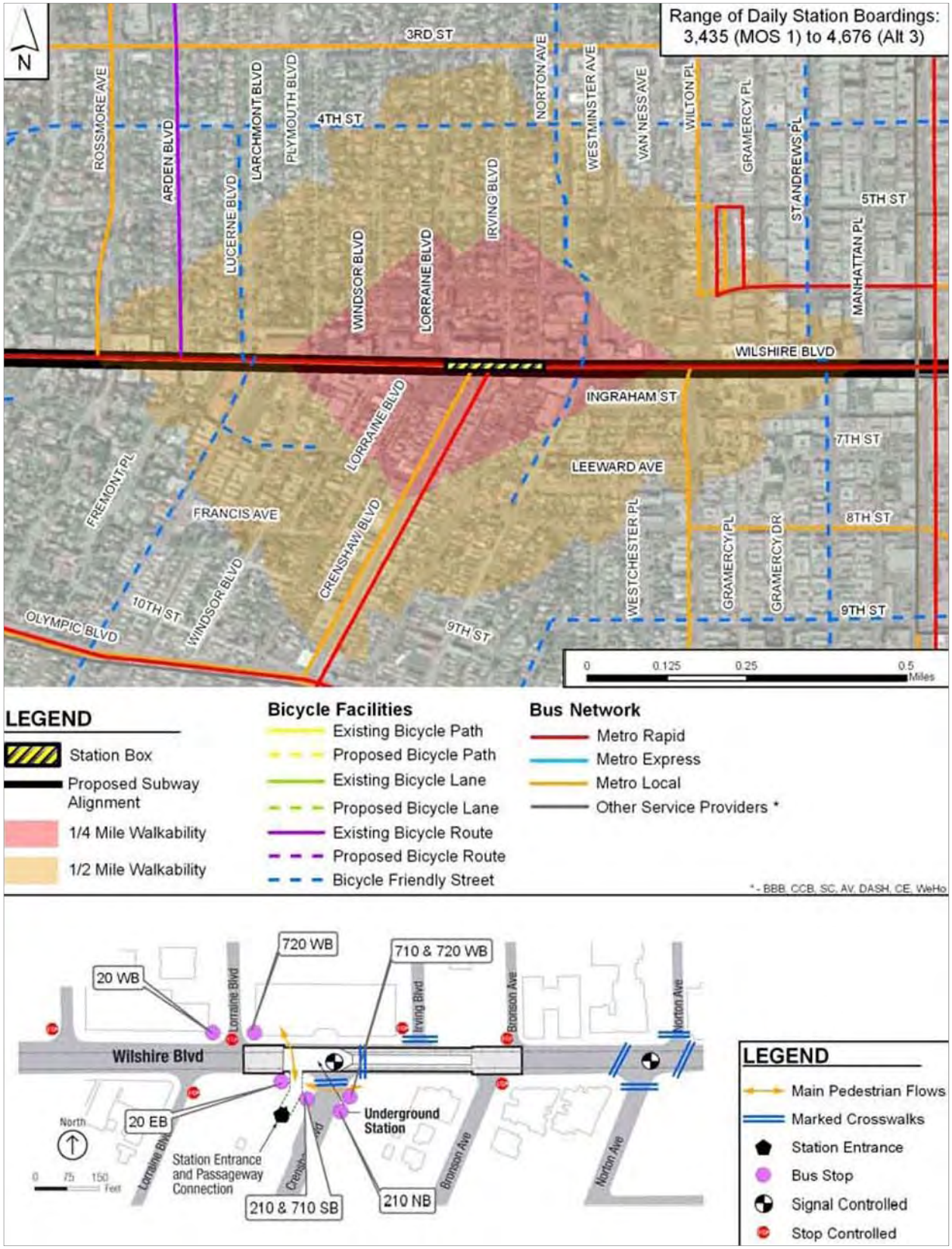


Figure 5-12. Wilshire/Crenshaw Station

5.1.6.2 Wilshire/La Brea Station

The following MOSs and Build Alternatives include this station:

- MOS 1
- MOS 2
- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4
- Alternative 5

The pedestrian, bicycle, and bus transit interface discussion for this station detailed below is applicable to all of the above listed MOSs and Build Alternatives.

Pedestrian and Bicycle Interface

This station is between La Brea and Cloverdale Avenues with three potential station entrances: on the northwest, southwest, and southeast corners of the intersection of La Brea Avenue and Wilshire Boulevard (see Figure 5-13).

The intersection of La Brea Avenue and Wilshire Boulevard is signalized with protected/permissive phasing on Wilshire Boulevard and northbound on La Brea Boulevard and with protected left-turn phasing southbound on La Brea Boulevard. Marked crosswalks are provided on all legs of the intersection. The intersection of Detroit Street and Wilshire Boulevard is signalized with permissive phasing in all four directions. Marked crosswalks are currently provided on all legs of the intersection. Raised medians are provided on Wilshire Boulevard both east and west of Detroit Street.

4th Street, 8th Street, Sierra Bonita Avenue, Cochran Avenue, and Mansfield Avenue are designated as bicycle friendly streets. In the Draft Los Angeles Bicycle Plan Update, bicycle routes are proposed for 3rd Street and 6th Street west of Cochran Avenue. No bicycle facilities are located on either La Brea Avenue or Wilshire Boulevard.

Bus Interface

Figure 5-13 also illustrates bus stop locations. Bus stops for Metro Rapid Line 720 are on the north side of Wilshire Boulevard, just west of La Brea Avenue (westbound bus) and on the south side of Wilshire Boulevard east of La Brea Avenue (eastbound buses). Bus stops for Metro Line 20 are on the north side of Wilshire Boulevard, west of La Brea Avenue immediately adjacent to the Rapid stop, (westbound bus), and on the south side of Wilshire Boulevard, west of La Brea Avenue (eastbound buses). Bus stops for Metro Lines 212 and 312 are on the west side of La Brea Avenue just north of Wilshire Boulevard (southbound buses) and on the east side of La Brea Avenue just south of Wilshire Boulevard (northbound buses). The bus stop for the DASH Fairfax Line (clockwise buses) is located at the southbound Metro Lines 212/312 stop.

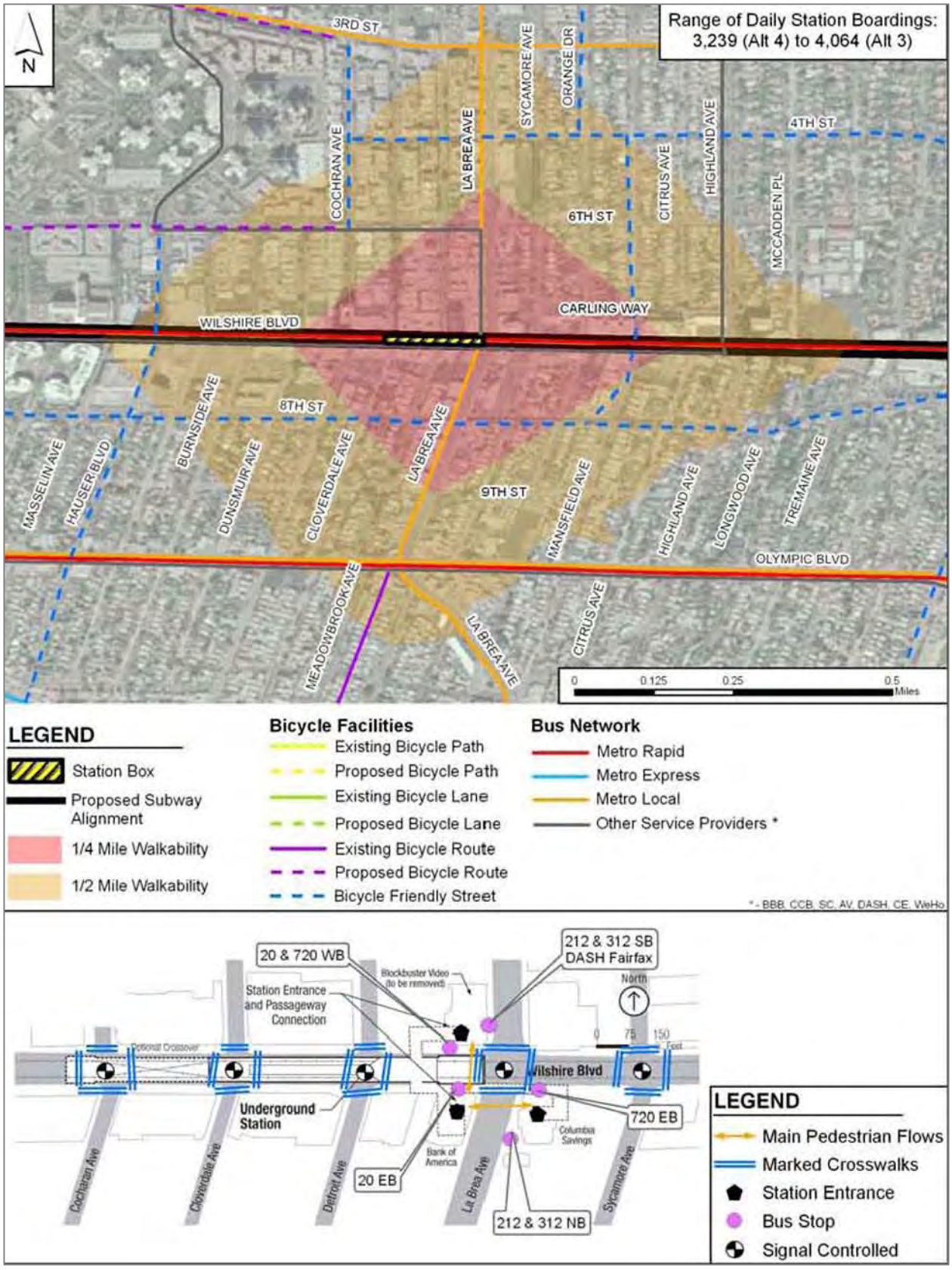


Figure 5-13. Wilshire/La Brea Station

5.1.6.3 Wilshire/Fairfax Station

Pedestrian and Bicycle Interface

This station is under the center of Wilshire Boulevard, immediately west of Fairfax Avenue, extending almost to the intersection with Crescent Heights (see Figure 5-14). There are two potential station entrances: on the northwest and north east corner of the intersection of Wilshire Boulevard and Fairfax Avenue The intersection of Fairfax Avenue and Wilshire Boulevard is signalized with protected/permissive phasing on Wilshire Boulevard and northbound on Fairfax Avenue and with protected left-turn phasing southbound on Fairfax Avenue. Marked crosswalks are currently provided on all legs of the intersection. A raised median is provided on Wilshire Boulevard east of Fairfax Avenue.

Del Valle Drive, Curson Avenue, Sierra Bonita Avenue, 4th Street, 8th Street, and Mansfield Avenue are designated as bicycle friendly streets. In the Draft Los Angeles Bicycle Plan Update, bicycle routes are proposed for 3rd Street and 6th Street west of Cochran Avenue. No bicycle facilities are located on either La Brea Avenue or Wilshire Boulevard.

Bus Interface

Figure 5-14 also illustrates bus stop locations. Bus stops for Metro Rapid Lines 720 and 920 are on the north side of Wilshire Boulevard, east of Fairfax Avenue (westbound buses) and on the south side of Wilshire Boulevard east of Fairfax Avenue (eastbound buses). Bus stops for Metro Rapid Line 780 and Line 217 are located on the west side of Fairfax Avenue, south of Wilshire Boulevard (southbound buses) and on the east side of Fairfax Avenue, north of Wilshire Boulevard (northbound buses). Bus stops for Metro Line 20 are on the north side of Wilshire Boulevard, west of Fairfax Avenue (westbound buses), and on the south side of Wilshire Boulevard, west of Fairfax Avenue (eastbound buses). The bus stop for the DASH Fairfax Line (clockwise buses), is located at the westbound Metro Rapid 720/920 bus stop. Commuter service provided by Antelope Valley Transit Line 786 also serves this station area. Interface between the Westside Subway Extension and commuter transit services is expected to be minimal, because commuter services typically serve the end destination for riders.

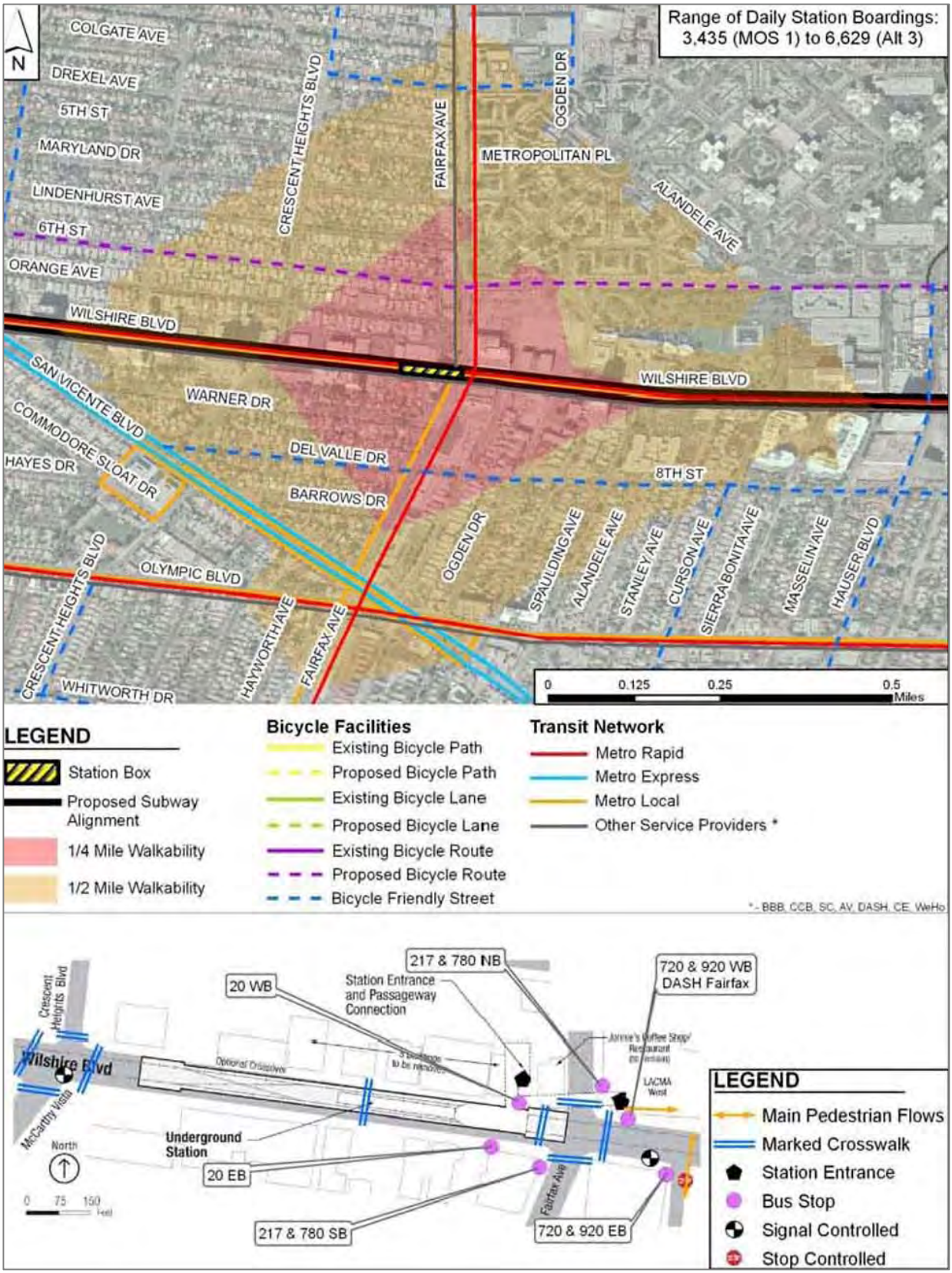


Figure 5-14. Wilshire/Fairfax Station

5.1.6.4 Wilshire/Fairfax Optional Station (Option B)

The following MOSs and Build Alternatives include this station:

- MOS 1
- MOS 2
- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4
- Alternative 5

The pedestrian, bicycle, and bus transit interface discussion for this station detailed below is applicable to all of the above listed MOSs and Build Alternatives.

Pedestrian and Bicycle Interface

The Wilshire/Fairfax Optional Station would be located east of the base Wilshire/Fairfax Station, underneath the intersection of Wilshire Boulevard and Fairfax Avenue (see Figure 5-15). There are three potential station entrances: on the northwest corner of the intersection of Wilshire Boulevard and Fairfax Avenue; on the northeast corner of the intersection of Wilshire Boulevard and Fairfax Avenue on the LACMA property; and on the southeast corner of the intersection of Orange Grove Avenue and Wilshire Boulevard, across from LACMA.

The signal controls and crosswalk facilities of the intersection of Fairfax Avenue and Wilshire Boulevard have been described above for the Wilshire/Fairfax Station location. The intersection of Orange Grove Avenue and Wilshire Boulevard is unsignalized, with stop controls on the south leg of the intersection. No marked crosswalks are currently provided on any legs of the intersection.

The bicycle facilities have been described above for the Wilshire/Fairfax Station location.

Bus Interface

Bus stop locations have been described above for the Wilshire/Fairfax Station location.

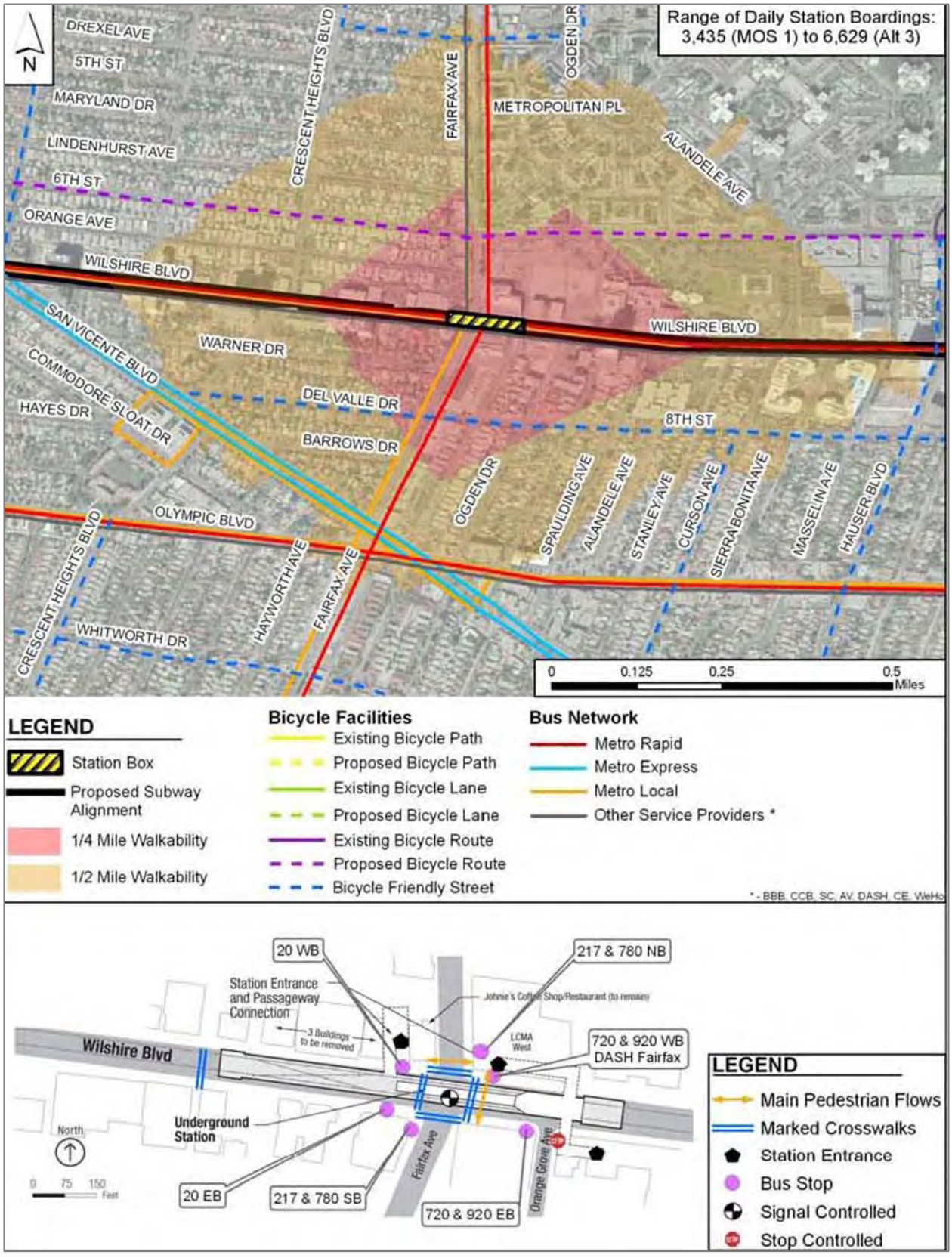


Figure 5-15. Wilshire/Fairfax Optional Station

5.1.6.5 Wilshire/La Cienega Station

The following MOSs and Build Alternatives include this station:

- MOS 2
- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4
- Alternative 5

The pedestrian, bicycle, and bus transit interface discussion for this station detailed below is applicable to all of the above listed MOSs and Build Alternatives.

Pedestrian and Bicycle Interface

This station is under the center of Wilshire Boulevard, immediately east of La Cienega Boulevard (see Figure 5-16). There are two potential station entrances: on the northeast corner of the intersection of La Cienega and Wilshire Boulevards and on the southwest corner of the intersection of Hamilton Drive and Wilshire Boulevard, in front of the Flynt building. A transfer to the West Hollywood alignment is not provided with this station; a track connection to West Hollywood is provided via a separate connection structure at Robertson Boulevard.

The intersection of La Cienega and Wilshire Boulevard is signalized with protected/ permissive phasing in all four directions. Marked crosswalks are provided on all legs of the intersection. The intersection of Hamilton Drive and Wilshire Boulevard is unsignalized, with stop controls on the north and south legs of the intersection. No marked crosswalks are currently provided on any legs of the intersection.

Sweetzer Avenue is designated as a bicycle friendly street. In the Draft Los Angeles Bicycle Plan Update, bicycle routes are proposed for 3rd Street and 6th Street. No bicycle facilities are located on either La Cienega or Wilshire Boulevards.

Bus Interface

Figure 5-16 also illustrates bus stop locations. The bus stops for Metro Rapid Line 720 and Metro Line 20 are located on the north side of Wilshire Boulevard, west of La Cienega Boulevard (westbound buses) and on the south side of Wilshire Boulevard east of La Cienega Boulevard (eastbound buses). Bus stops for Metro Rapid Line 705 are on the west side of La Cienega Boulevard, just south of Wilshire Boulevard (southbound buses) and on the east side of La Cienega Boulevard, north of Wilshire Boulevard (northbound bus). Bus stops for Metro Line 105 are on the west side of La Cienega Boulevard, north of Wilshire Boulevard (southbound buses) and on the east side of La Cienega Boulevard, south of Wilshire Boulevard (northbound buses). Commuter service provided by Antelope Valley Transit Line 786 also serves this station area. Interface between the Westside Subway Extension and commuter transit services is expected to be minimal, because commuter services typically serve the end destination for riders.

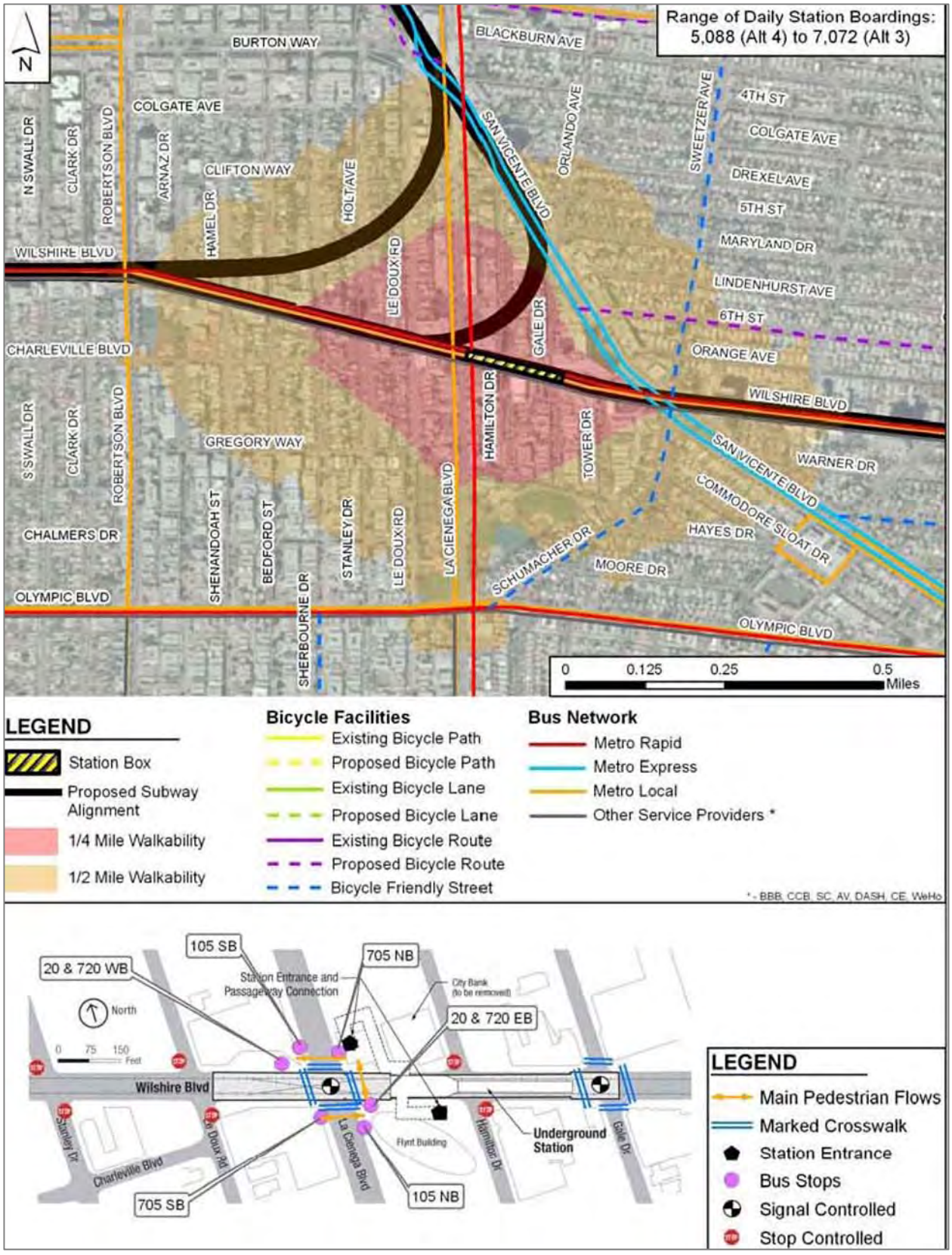


Figure 5-16. Wilshire/La Cienega Station

5.1.6.6 Wilshire/La Cienega Optional Station (Option C)

The following MOSs and Build Alternatives include this station:

- MOS 2
- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4
- Alternative 5

The pedestrian, bicycle, and bus transit interface discussion for this station detailed below is applicable to all of the above listed MOS and Build Alternatives.

Pedestrian and Bicycle Interface

The station box extends from the intersection of Le Doux Road and Wilshire Boulevard on the east to just west of the intersection of Carson Road and Wilshire Boulevard on the west (see Figure 5-17). There are two potential station entrances: on the northwest corner of the intersection of Le Doux Road and Wilshire Boulevard, and on the northwest corner of the intersection of La Cienega and Wilshire Boulevards in front of Cedars-Sinai Medical Group. The location of this station farther west of the Wilshire/La Cienega intersection allows it to be a transfer station with the West Hollywood alignment.

The signal controls and crosswalk facilities of the intersection of La Cienega and Wilshire Boulevards have been described above for the preferred station location.

The intersection of Le Doux Road and Wilshire Boulevard is unsignalized with stop controls on the south leg of the intersection. No marked crosswalks are currently provided on any legs of the intersection. Further to the west, the intersection of Stanley Drive and Wilshire Boulevard is unsignalized with stop controls on the south leg of the intersection. No marked crosswalks are currently provided on any legs of the intersection.

No marked bicycle lanes or other bicycle facilities are provided in the vicinity of this optional station location.

Bus Interface

Bus stops at the intersection of La Cienega and Wilshire Boulevards are described above under the Wilshire/La Cienega Station location. Additional bus stops (illustrated in Figure 5-17) for Metro Line 20 are on the north side of Wilshire Boulevard, west of Stanley Drive (westbound buses) and on the south side of Wilshire Boulevard west of Stanley Drive (eastbound buses).

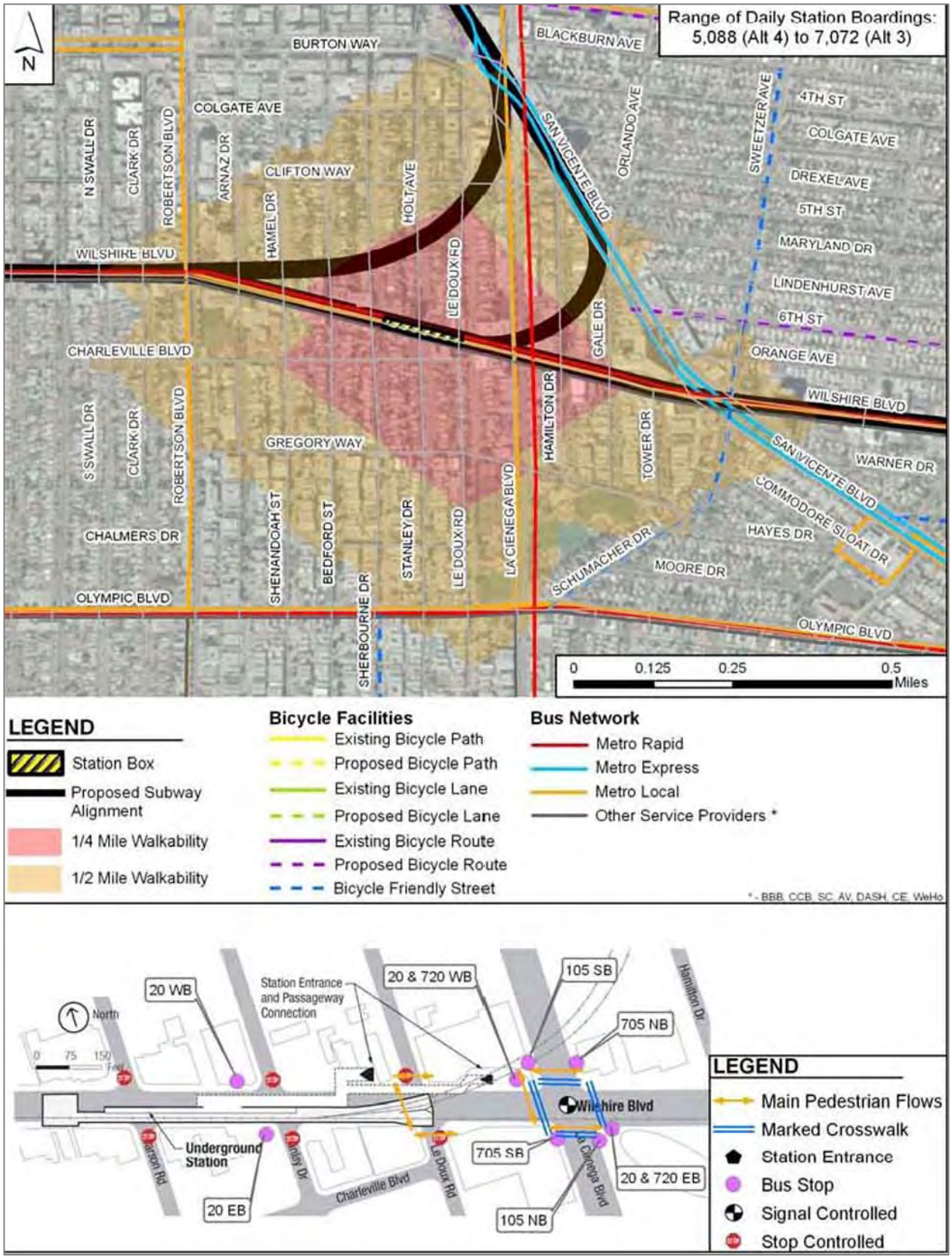


Figure 5-17. Wilshire/La Cienega Optional Station