3.0 TRANSPORTATION IMPACTS

This chapter of the Draft Environmental Impact Statement/Draft Environmental Impact Report (DEIS/DEIR) describes the existing transportation conditions in the study area and analyzes the potential transportation impacts associated with the implementation of the Transportation Systems Management (TSM) Alternative, Bus Rapid Transit (BRT) Alternative, and Light Rail Transit (LRT) Alternative (described in Chapter 2) by comparing these alternatives to the conditions anticipated with the implementation of the No-Build Alternative. Mitigation measures intended to address project-related adverse impacts that comply with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) are recommended in this chapter. The potential for construction period impacts is also assessed and mitigation measures are recommended.

The analysis of transportation-related impacts and mitigation measures follows the NEPA process. While CEQA requires that only "significant impacts" be identified in an Environmental Impact Report, NEPA requires that all adverse impacts of a proposed project be analyzed. Accordingly, in this joint federal and state environmental document, reference to "significant impacts" is made to fulfill this requirement under CEQA, pursuant to standards of California law. However, regardless of level of significance, all potentially adverse environmental impacts have been analyzed and mitigation proposed where feasible to reduce identified adverse effects.

Analysis of the environmental issue areas is organized under three structural headings:

Affected Environment

- This discussion describes the existing physical environment or baseline setting wherein the proposed project would be sited

Environmental Consequences and Mitigation Measures

- Each environmental issue area is given a separate subsection and begins with a description of the methodology used to assess adverse impacts
- Future No-Build conditions are then developed to be used as a basis for which the impact assessment will be conducted
- For each project alternative, future conditions are developed and compared to the No-Build conditions
- Adverse impacts are identified and mitigation measures that would reduce or eliminate them are discussed
- As this document is a joint federal and state environmental document, thresholds are presented for both CEQA and NEPA purposes. The final discussion states the effectiveness of mitigation measures in reducing the identified impacts. Under CEQA, a final determination is made as to whether an identified impact can be reduced to a less-than-significant level, or remains significant and unavoidable.

Construction Impacts

- For the BRT and LRT Alternative construction periods, impacts to the transportation network are identified and mitigation measures that would reduce or eliminate them are discussed

3.1 Affected Environment/Existing Conditions

This section presents information about the affected environment and existing transportation conditions in the study area. The transportation conditions discussed include: transit systems, street and highway systems, parking, and pedestrian and bicycle facilities.

3.1.1 Transit

3.1.1.1 Existing Transit Service

The Crenshaw Transit Corridor Project study area is served by local transit agencies, with both bus and rail (northern and southern ends of the corridor only) services. Metro (see Figure 3-1), Los Angeles Department of Transportation (LADOT), Santa Monica's Big Blue Bus, Culver CityBus, Beach Cities Transit, and Torrance Transit provide public transit service in the study area. Table 3-1 summarizes the transit service in the study area, and Figure 3-2 illustrates the major transit routes.

Figure 3-1. Metro Rapid on City Streets

Source: Metro 2008

Table 3-1. Existing Transit Services

Route	Service Area and Approximate Limit	Average Peak Hour Headway (min)
Rail		
Metro Purple Line	Downtown Los Angeles to the Wilshire/Western Station	10
Metro Green Line	Service along the I-105 Freeway between the Cities of Norwalk and Redondo Beach. Stations in the study area include the Aviation/LAX, Hawthorne, and Crenshaw Stations.	7.5
Rapid/Express Bus Service		
Metro Rapid Line 705	Service between the Cities of Vernon and West Hollywood with stops in the City of Beverly Hills and the communities of Leimert Park and Crenshaw.	10-15
Metro Rapid Line 710	Service between the City of Redondo Beach and the community of Hollywood with stops in the City of Hawthorne and the community of Hyde Park. In the study area, this line travels along Crenshaw Boulevard between Wilshire Boulevard and the I-105 Freeway.	10
Metro Rapid Line 711	Service between the Cities of Inglewood and Bell Gardens with stops in the City of Huntington Park and the communities of Hyde Park and Vermont Knolls. This line operates along Florence Avenue between Crenshaw Boulevard and La Brea Avenue, and along La Brea Avenue between Florence Avenue and Kelso Avenue.	12
Metro Rapid Line 720	Service between the Cities of Commerce and Santa Monica, operating along Whittier Boulevard east of downtown Los Angeles, and Wilshire Boulevard west of downtown Los Angeles. In the study area, this line operates along Wilshire Boulevard at the northern edge of the study area.	4-7
Metro Rapid Line 740	Service between the City of Redondo Beach and downtown Los Angeles with stops in the City of Hawthorne and the communities of Hyde Park and Exposition Park. In the study area, this line operates along Crenshaw Boulevard, from Martin Luther King Jr. Boulevard to Florence Avenue; along Florence Avenue, from Crenshaw Boulevard to La Brea Avenue; and, along La Brea Avenue and Hawthorne Boulevard, from Florence Avenue to El Segundo Boulevard.	10
Metro Rapid Line 757	Service between the City of Hawthorne and the Hollywood community with stops in the Wilshire Center and Athens. In the study area, this line operates along Western Avenue and Crenshaw Boulevard between the Imperial Highway and the Metro Green Line Crenshaw Station at the I-105 Freeway.	20
Metro Rapid Express Line 920	Service between the Wilshire/Vermont Station, of the Metro Red and Purple Lines, and the City of Santa Monica. This line follows the same route as Metro Rapid Line 720, but with fewer stops. In the study area, this line operates along Wilshire Boulevard at the northern edge of the study area.	10

Table 3-1. Existing Transit Services (continued)

Route	Service Area and Approximate Limit	Average Peak Hour Headway (min)
Metro Rapid Express Line 940	Express BRT line that operates on weekdays proceeding northbound during the a.m. peak period and southbound during the p.m. peak period, between the City of Redondo Beach and Downtown Los Angeles with stops in the City of Hawthorne and the communities of Hyde Park and Exposition Park. In the study area, this line provides stops at: Crenshaw/Martin Luther King Jr. Boulevards, La Brea Avenue/Manchester Boulevard, and at the Metro Green Line Hawthorne Station at the I-105 Freeway.	30
Santa Monica Big Blue Bus Rapid Line 3	Service between the City of Santa Monica and LAX. In the study area, this line operates along Aviation Boulevard between Century Boulevard and the Metro Green Line Aviation/LAX Station at the I-105 Freeway.	15
Limited Stop Service/Express Bus Service		
Metro Limited Line 305	Service between the communities of Willowbrook and Westwood with stops in the community of Watts, the Cities of West Hollywood and Beverly Hills, and the communities of South Los Angeles, Crenshaw and Mid-City Los Angeles. In the study area, this line operates along Crenshaw Boulevard between Pico Boulevard and Vernon Avenue, and along San Vicente Boulevard between La Brea Avenue and Crenshaw Boulevard.	30
Metro Limited Line 312	Service northbound in the a.m. peak period and southbound in the p.m. peak period on weekdays between the City of Hawthorne and the Hollywood community with stops in the City of Inglewood and the communities of Baldwin Hills and Mid-City Los Angeles. In the study area, this line operates along La Brea Avenue between Wilshire Boulevard and Manchester Boulevard, and along Prairie Avenue between Manchester Boulevard and Lennox Boulevard.	13
Metro Limited Line 315	Service between the City of Norwalk and the Playa del Rey community with stops at LAX, the Cities of Inglewood, South Gate, and Downey, and the communities of Westchester and Florence. In the study area, this line operates along Manchester Boulevard.	15
Metro Limited Line 328	Service between downtown Los Angeles and Century City. In the study area, this line operates along Olympic Boulevard.	10
Metro Limited Line 330	Service between the Pico/Rimpau Transit Center and East Los Angeles with stops in Boyle Heights and downtown Los Angeles. In the study area, this line operates along Pico Boulevard.	10
Metro Limited Line 333	Service between downtown Los Angeles and the City of Santa Monica with stops in the communities of Venice and Century City. In the study area, this line operates along Venice Boulevard.	11
Metro Limited Line 368	Service during weekday a.m. and p.m. peak periods only between the West Los Angeles Transit Center and the City of Montebello with stops in Downtown Los Angeles, East Los Angeles, and the City of Monterey Park. In the study area, this line operates along Washington Boulevard.	12 (a.m.) 15 (p.m.)

Table 3-1. Existing Transit Services (continued)

Route	Service Area and Approximate Limit	Average Peak Hour Headway (min)
Metro Express Line 439	Service between downtown Los Angeles and LAX with stops in Culver City. In the study area, this line operates along Aviation Boulevard between Century Boulevard and the Metro Green Line Aviation/LAX Station at the I-105 Freeway.	40 (a.m.) 30 (p.m.)
Metro Express Line 442	Provides northbound a.m. peak period service and southbound p.m. peak period service between the City of Hawthorne and downtown Los Angeles with stops in the City of Inglewood and South Los Angeles. In the study area, this line operates along Manchester Boulevard and along La Brea Avenue/Hawthorne Boulevard, between Manchester Boulevard and the Metro Green Line Hawthorne Station at the I-105 Freeway.	30
Metro Express Line 550	Service between San Pedro and the City of West Hollywood with stops in the communities of Harbor City, Exposition Park, and Mid-City and the City of Beverly Hills. In the study area, this line operates along Venice Boulevard.	30
Local Service		
Culver CityBus Line 6	Service between Westwood and LAX. In the study area, this line operates along Aviation Boulevard between Century Boulevard and the Metro Green Line Aviation/LAX Station at the I-105 Freeway.	10-12
DASH Crenshaw Line	Local shuttle service that circulates in the Crenshaw community. In the study area, this line operates along Crenshaw Boulevard between Coliseum Street and Stocker Street.	30
DASH Leimert/Slauson Line	Local shuttle service that circulates in the Leimert Park community. In the study area, this line operates along Crenshaw Boulevard between Martin Luther King Jr. Boulevard and Slauson Avenue.	25
DASH Midtown Line	Local shuttle service that circulates between the Crenshaw and Mid-City communities. In the study area, this line operates along Washington Boulevard, Adams Boulevard, and along Crenshaw Boulevard, from Jefferson Boulevard to Martin Luther King Jr. Boulevard.	30
Metro Local Line 28	Service between downtown Los Angeles and the community of Mid-City, at Olympic Boulevard & Fairfax Avenue. In the study area, this line operates along Olympic Boulevard.	10
Metro Local Lines 30 and 31	Service between the Pico/Rimpau Transit Center and the City of Monterey Park with stops in East Los Angeles, Boyle Heights, and downtown Los Angeles. In the study area, these lines operate along Pico Boulevard.	9
Metro Local Line 33	Service between downtown Los Angeles and the City of Santa Monica with stops in the communities of Venice and Century City. In the study area, this line operates along Venice Boulevard.	11
Metro Local Line 37	Service between downtown Los Angeles and the West Los Angeles Transit Center with stops in the West Adams District and North University Park communities. In the study area, this line operates along Adams Boulevard.	7

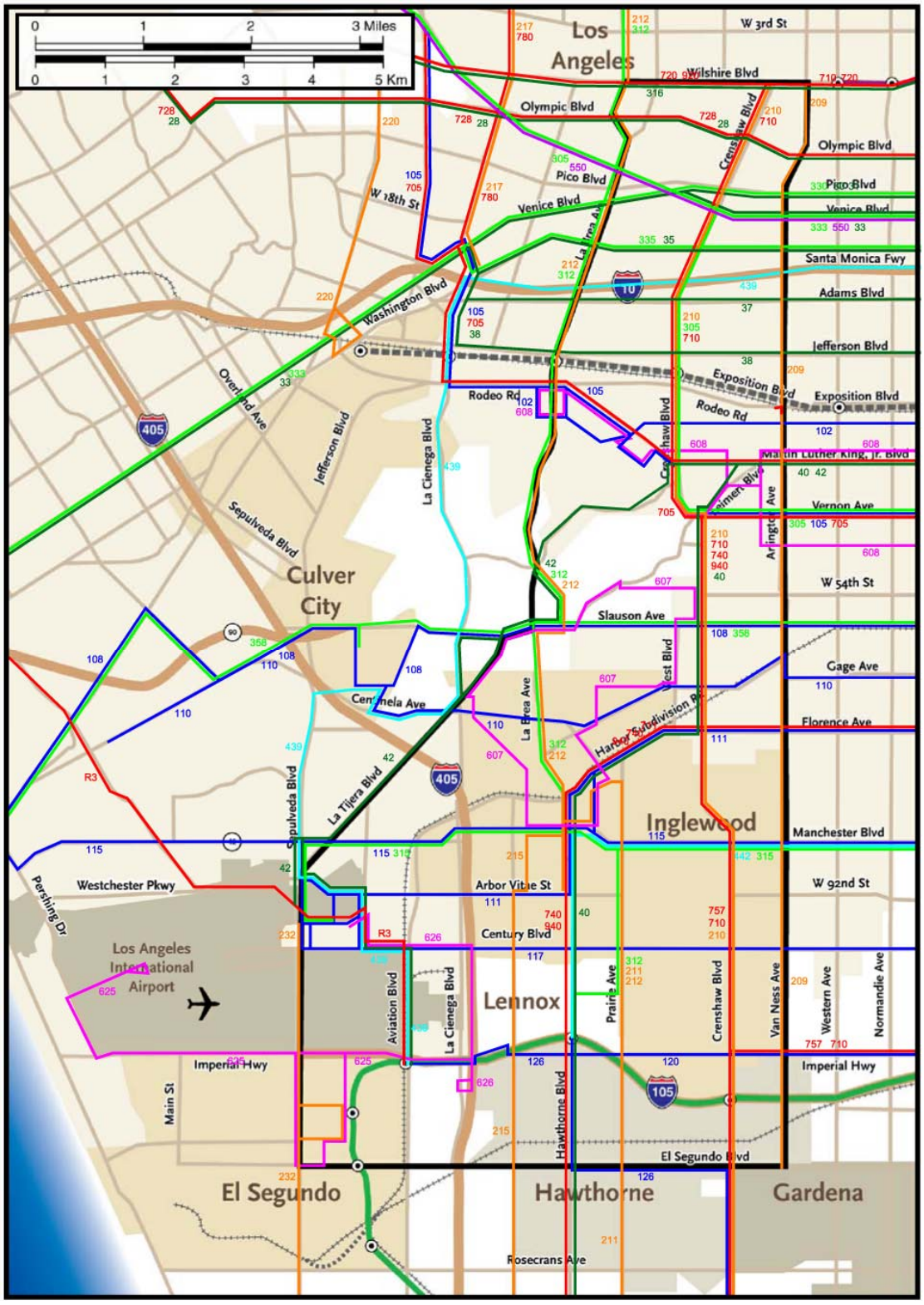
Table 3-1. Existing Transit Services (continued)

Route	Service Area and Approximate Limit	Average Peak Hour Headway (min)
Metro Local Line 38	Service between the West Los Angeles Transit Center and Downtown Los Angeles. In the study area, this line operates along Jefferson Boulevard.	10
Metro Local Line 40	Service between the City of Redondo Beach and downtown Los Angeles with stops in the City of Hawthorne and the communities of Hyde Park and Leimert Park. In the study area, this line operates along Crenshaw Boulevard between Martin Luther King Jr. Boulevard and Florence Avenue, along Florence Avenue between Crenshaw Boulevard and La Brea Avenue, and along La Brea Avenue/Hawthorne Boulevard between Florence Avenue and El Segundo Boulevard.	10
Metro Local Line 42	Service between downtown Los Angeles and LAX with stops in the communities of Baldwin Park and Leimert Park and the City of Inglewood. In the study area, this line operates along Crenshaw Boulevard between Stocker Street and 43rd Street.	12 (a.m.) 17 (p.m.)
Metro Local Line 68	Service between the West Los Angeles Transit Center and the City of Montebello with stops in downtown Los Angeles, East Los Angeles and the City of Monterey Park. In the study area, this line operates along Washington Boulevard.	12 (a.m.) 15 (p.m.)
Metro Local Line 102	Service between Baldwin Village and Southgate with stops in the Crenshaw community. In the study area, this line operates along Coliseum Street.	30
Metro Local Line 105	Service between the Cities of Vernon and West Hollywood with stops in the City of Beverly Hills and in the communities of Leimert Park and Crenshaw. In the study area, this line operates along Crenshaw Boulevard between Martin Luther King Jr. Boulevard and Vernon Avenue.	15
Metro Local Line 111	Service between the City of Norwalk and LAX with stops in the Cities of Downey, Bell, Huntington Park and Inglewood, and the communities of Hyde Park and Florence. In the study area, this line operates along Florence Avenue between Crenshaw Boulevard and La Brea Avenue, and along La Brea Avenue between Florence Avenue and Arbor Vitae Street.	12 (a.m.) 10 (p.m.)
Metro Local Line 115	Service between the City of Norwalk and the Playa Del Rey community with stops at LAX, the Cities of Inglewood, South Gate, and Downey, and the communities of Westchester and Florence. In the study area, this line operates along Manchester Boulevard.	15
Metro Local Line 117	Service between LAX and the City of Downey with stops in the City of Inglewood, the Watts community, City of South Gate, and the community of Vermont Knolls. In the study area, this line operates along Century Boulevard between Crenshaw Boulevard and Aviation Boulevard.	17
Metro Local Line 120	Service between the City of El Segundo and the Willowbrook community with stops in the Cities of Hawthorne, Inglewood and Los Angeles. In the study area, this line operates along the Imperial Highway.	30

Table 3-1. Existing Transit Services (continued)

Route	Service Area and Approximate Limit	Average Peak Hour Headway (min)
Metro Local Line 124	Service between the City of El Segundo and the Willowbrook community with stops in the Cities of Hawthorne and Gardena. In the study area, this line operates along El Segundo Boulevard.	45 - 60
Metro Local Line 126	Weekday service between the Cities of Manhattan Beach and Hawthorne with stops in Lawndale. In the study area, this line operates along Hawthorne Boulevard between Century Boulevard and 120th Street.	60
Metro Local Line 210	Service between downtown Redondo Beach and Hollywood with stops in the Cities of Torrance, Hawthorne, and Inglewood, and communities of Hancock Park and Crenshaw. In the study area, this line operates along Crenshaw Boulevard between Wilshire Boulevard and the I-105 Freeway.	12
Metro Local Line 211	Weekday peak period service between the Cities of Redondo Beach and Inglewood with stops in the City of Hawthorne. In the study area, this line operates along Prairie Avenue between Manchester Boulevard and El Segundo Boulevard.	30
Metro Local Line 212	Service between the City of Hawthorne and the Hollywood community with stops in the City of Inglewood and the communities of Baldwin Hills and Mid-City. In the study area, this line operates along La Brea Avenue between Wilshire Boulevard and Manchester Boulevard, and along Prairie Avenue, between Manchester Boulevard and Lennox Boulevard.	13 (a.m.) 12 (p.m.)
Metro Local Line 215	Service between the Cities of Hawthorne and Inglewood. In the study area, this line operates along Manchester Boulevard.	30
Metro Line 607	Community shuttle service operating during peak weekday hours in the Inglewood and Windsor Hills areas. In the study area, this line operates along Crenshaw Boulevard, between 54th Street and Slauson Avenue, along Florence Avenue between Centinela Avenue and Locust Street, and along La Brea Avenue between Regent Street and Kelso Avenue.	30
Metro Line 608	Community shuttle service operating in the Baldwin Village, Crenshaw, and Leimert Park communities. In the study area, this line operates along Crenshaw Boulevard between 39th Street and Homeland Drive.	60
Metro Line 625	Service operating near LAX and in the City of El Segundo. In the study area, this line operates along the Imperial Highway and at the Metro Green Line Aviation/LAX Station at the I-105 Freeway.	17
Santa Monica Big Blue Bus Line 3	Service between the City of Santa Monica and LAX. In the study area, this line operates along Aviation Boulevard between Century Boulevard and the Metro Green Line Aviation/LAX Station at the I-105 Freeway.	15
Santa Monica Big Blue Bus Line 7 (Super 7 express service included)	Service between the City of Santa Monica and the Rimpau Transit Center. In the study area, this line operates along Pico Boulevard.	10 (a.m.) 5 or 10 (p.m.)

Figure 3-2. Existing Transit Service



3.1.1.2 Programmed Transit Improvement

The Exposition LRT Line (see Figure 3-3) will provide service along the Exposition right-of-way from downtown Los Angeles to Culver City (Phase 1). It will share track and two stations (the 7th Street/Metro Center Station and the Pico Station) with the Metro Blue Line as it leaves downtown Los Angeles. It will then travel along the Metro-owned right-of-way to the Phase I terminus at Washington/National Boulevards. Eight new stations will be constructed along the Exposition LRT Line. In addition to the station at Washington/National Boulevards, new stations will be constructed at: Flower/23rd Streets, Jefferson Boulevard, Exposition Boulevard/Vermont Avenue, Western Avenue, Crenshaw Boulevard, La Brea Avenue, and La Cienega Boulevard. The Crenshaw Boulevard and La Brea Avenue Stations would be located within the study area. The Exposition LRT line will be approximately nine miles long. It parallels the heavily congested Interstate 10 (I-10) Freeway and is scheduled to open in 2010.

A second phase extends this line to the west with a terminus in the City of Santa Monica. This extension, however, was not yet assumed during the DEIS/DEIR analysis for the Crenshaw Transit Corridor.

Figure 3-3. Construction of the Metro Exposition LRT Line

Source: Metro 2008

3.1.1.3 Existing Transit Ridership

Daily ridership (from Fiscal Year 2007 1st Quarter data) for some of the key north-south and east-west Metro routes are detailed in Table 3-2.

3.1.2 Traffic

The following is a summary of the existing roadway system and traffic conditions in the study area. Descriptions of existing conditions are provided for major arterials and for the Interstate 105 (I-105), Interstate 405 (I-405) and I-10 Freeways, and for the selected on- and off-ramps.

Table 3-2. Daily Ridership on Select Metro Bus Lines

Metro Bus Line	Street/Arterial	Daily Boardings
North-South Metro Bus Lines		
Route 40	Crenshaw Blvd and Hawthorne Blvd	20,000
Metro Rapid 740	Crenshaw Blvd and Hawthorne Blvd	9,000
Route 210	Crenshaw Blvd	14,000
Metro Rapid 710	Crenshaw Blvd	10,000
East-West Metro Bus Lines		
Metro Rapid 720	Wilshire Blvd	48,000
Route 28	Olympic Blvd	34,000
Route 30	Pico Blvd	30,000
Route 33	Venice Blvd	27,000
Route 35	Washington Blvd	24,000
Route 105	La Cienega Blvd and Vernon Ave.	12,000
Route 108	Slauson Ave.	14,000
Route 111	Florence Ave.	16,000
Route 115	Manchester Ave. and Firestone Blvd.	15,000
Route 117	Century Blvd. and Imperial Hwy	10,000

3.1.2.1 Regional Transportation Network

The study area is generally well served by a roadway network of arterial streets and freeways, which provide options for travel both north-south and east-west.

Freeways

The study area freeway network is described below.

- The I-10 Freeway (Santa Monica Freeway) – The Santa Monica Freeway is a major east-west freeway that traverses the northern portion of the study area. It extends from the Pacific Ocean and the City of Santa Monica on the west to downtown Los Angeles and beyond, on the east. The Santa Monica Freeway crosses Crenshaw Boulevard south of Washington Boulevard and north of Adams Boulevard. Near the proposed project alignment, the Santa Monica Freeway provides five lanes of travel in each direction, including auxiliary lanes. The ramps that lie in the study area include the La Brea Avenue, Crenshaw Boulevard and Arlington Avenue on- and off-ramps. In the study area, the average daily traffic[1] on the Santa Monica Freeway varies between 285,000 vehicles at the La Brea Avenue interchange, 301,000 vehicles at the Crenshaw Boulevard interchange, and 311,000 vehicles at the Arlington Avenue interchange. Peak hour conditions along the Santa Monica Freeway are generally congested in both directions, with a slightly higher volume of traffic traveling west in the a.m. peak and east in the p.m. peak. For this reason, observations of eastbound and westbound on-ramps indicate greater congestion in the peak direction.

[1] *2006 Traffic Volumes on California State Highways*, State of California Department of Transportation, Traffic Operations Division.

- The I-105 Freeway (Century Freeway) – The Century Freeway is an east-west freeway that extends from the Los Angeles International Airport (LAX) east to the City of Norwalk. Near the proposed project alignment, the Century Freeway provides four lanes of travel eastbound and three lanes of travel westbound. In addition to these lanes, a single carpool lane is provided in each direction. The median of the Century Freeway services the Metro Green Line, which enhances the availability of transit options to and from the study area. The ramps that provide regional access to the study area include the Crenshaw Boulevard, Prairie Avenue, Hawthorne and Aviation Boulevards on- and off-ramps. In the study area, the average daily traffic on the Century Freeway varies between 199,000 vehicles at the I-405 Freeway junction, 247,000 vehicles at the Crenshaw Boulevard interchange, and 223,000 vehicles at the Hawthorne Boulevard interchange. The a.m. peak hour traffic volumes are greater traveling west, and the p.m. peak hour traffic volumes are greater traveling east. For this reason, observations of eastbound and westbound on-ramps indicate greater congestion in the peak direction.
- The 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 vicinity of the proposed project alignment, the San Diego Freeway provides four to six lanes of travel in each direction, including northbound and southbound carpool lanes and auxiliary lanes. The ramps that lie in the study area include the Imperial Highway, Century Boulevard, Manchester Boulevard/Florence Avenue, and La Cienega Boulevard on- and off-ramps. In the study area, the average daily traffic on the San Diego Freeway varies between 283,000 vehicles at the La Tijera Boulevard/Howard Hughes Parkway interchange, 305,000 vehicles at the I-105 Freeway junction and the Century Boulevard interchange, 263,000 vehicles at the Manchester Boulevard interchange, and 231,000 vehicles at the El Segundo Boulevard interchange. Although the I-405 freeway parallels the corridor through a portion of the study area, there are no north/south freeway corridors fully within the study area.
- The I-110 Freeway (Harbor Freeway) – The Harbor Freeway is a major north-south freeway that connects the community of San Pedro with Downtown Los Angeles. The I-110 Freeway is outside the study area, but serves many corridor trips through its connections with the I-10 and I-105 freeways, and east/west arterial streets.

Arterial Network

The list below describes the key arterials in the study area.

Major North/South Arterials (Listed from west to east)

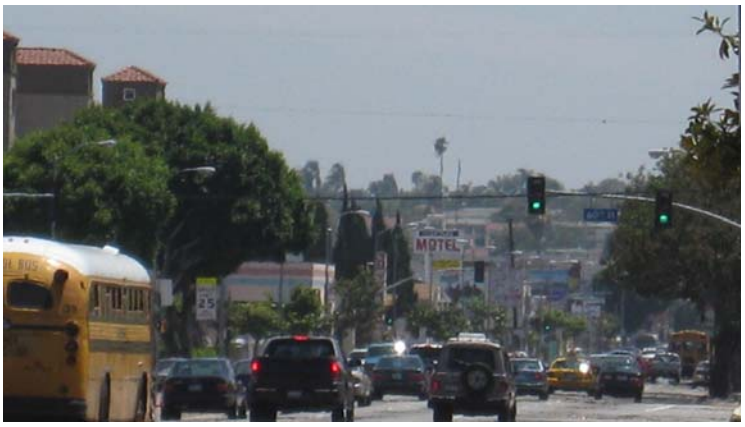
- Aviation Boulevard (Cities of Los Angeles and Inglewood) – Between Florence Avenue and the Metro Green Line Aviation Station, Aviation Boulevard provides two travel lanes in each direction with raised medians or two-way left-turn lanes.

  La Brea Avenue/ Hawthorne Boulevard (Cities of Los Angeles and Inglewood) – Between Wilshire Boulevard and Coliseum Street, La Brea Avenue provides two to three travel lanes in each direction with a center left-turn lane. South of Coliseum Street, La Brea Avenue provides three travel lanes in each direction, separated by a median until Stocker Street. Between Stocker Street and Slauson Avenue, La Brea Avenue provides three travel lanes in each direction with a two-way center turn lane. Between Slauson Avenue and Spruce Avenue, La Brea Avenue provides two travel lanes in each direction with a two-way left-turn median. Between Spruce Avenue and

the Century Freeway, La Brea Avenue, which becomes Hawthorne Boulevard south of Century Boulevard, provides three travel lanes in each direction with a landscaped raised median. Between the Century Freeway and El Segundo Boulevard, Hawthorne Boulevard provides four travel lanes in each direction with a landscaped raised median. Left-turn channelization is provided at all major intersections.

- Crenshaw Boulevard (City of Los Angeles) – Crenshaw Boulevard (shown in Figure 3-4) is the most commonly used north-south arterial in the study area and is often used to access the I-10 Freeway. Many retail and commercial uses line along Crenshaw Boulevard, making it a destination as well as a major arterial serving the study area. Crenshaw Boulevard is narrower in the northern portion of the study area, between Washington Boulevard and Wilshire Boulevard, than it is in the remainder of the corridor. Observations indicate that motorists on Crenshaw Boulevard experience significant delay during the peak hours, particularly between the Santa Monica Freeway and Wilshire Boulevard. Peak hour traffic congestion can also be observed in the middle portion of the study area, although, since Crenshaw Boulevard is wider south of the I-10 Freeway, the congestion is not as severe as in the northern portion.

Figure 3-4. Looking South from 60th Street on Crenshaw Boulevard



Source: Metro 2008

Between Wilshire and Washington Boulevards, Crenshaw Boulevard provides two lanes of travel in each direction separated by a double yellow line. Between Washington Boulevard and 60th Street, Crenshaw Boulevard widens to three travel lanes in each direction with a combination of a two-way left-turn median and a landscaped raised median. The segment of Crenshaw Boulevard between Coliseum Street and Martin Luther King Jr. Boulevard and between Brynhurst Avenue and Slauson Avenue is flanked by either one or two frontage roads, providing one lane of travel in each direction. Between 80th Street and 84th Street, Crenshaw Boulevard narrows to two travel lanes in each direction with a landscaped raised median. Continuing south, between 84th Street and the I-105 Freeway, Crenshaw Boulevard widens again to three travel lanes in each direction with either a two-way left-turn median or a landscaped raised median. Exclusive left-turn lanes are provided at all major intersections.

- Arlington Avenue (City of Los Angeles) – Between Olympic and Pico Boulevards, Arlington Avenue provides two travel lanes in each direction with exclusive left-turn lanes at all major intersections. South of Pico Boulevard to the I-10 Freeway ramps, one travel lane in each direction is provided. From the I-10 Freeway ramps south to West 27th Street, Arlington Avenue provides two travel lanes. One travel lane in each direction is provided south of 27th Street until Arlington Avenue becomes South Van Ness Avenue.

Major East/West Arterials (Listed from north to south)

- Wilshire Boulevard (City of Los Angeles) – Between Western and La Brea Avenues, Wilshire Boulevard provides two to three travel lanes in each direction with a two-way left-turn median along most of this segment. Parking is generally prohibited along Wilshire Boulevard during peak hours. Exclusive left-turn lanes are provided at all major intersections. Field observations suggest that Wilshire Boulevard experiences significant congestion during both peak hours. Observations of the La Brea Avenue/Wilshire Boulevard intersection show that completing a left turn onto La Brea Avenue can take up to three cycles. Through movements at many major intersections along Wilshire Boulevard also take more than one cycle in the peak hours.
- San Vicente Boulevard (City of Los Angeles) – Between La Brea Avenue and Venice Boulevard, San Vicente Boulevard provides two to three travel lanes in each direction with a landscaped raised median west of Pico Boulevard. Parking is generally permitted on both sides of San Vicente Boulevard west of Pico Boulevard and is generally prohibited east of Pico Boulevard. Exclusive left-turn lanes are provided at all major intersections.
- Venice Boulevard (City of Los Angeles) – Between San Vicente and Crenshaw Boulevards, Venice Boulevard provides three travel lanes in each direction. Parking is generally permitted on both sides of Crenshaw Boulevard. Exclusive left-turn lanes are provided at all major intersections.
- Florence Avenue (City of Inglewood) – Between Crenshaw and Aviation Boulevards, Florence Avenue provides two travel lanes in each direction (except between Redondo Boulevard and La Brea Avenue, which has three travel lanes in each direction), with a two-way left-turn median. Parking is generally prohibited on both sides of Florence Avenue. Exclusive left-turn lanes are provided at all major intersections.
- Century Boulevard (City of Los Angeles) – Between Aviation and La Cienega Boulevards, Century Boulevard provides four travel lanes in each direction (except between La Cienega and Crenshaw Boulevards, which has three travel lanes in each direction), with a two-way left-turn median. Parking is generally prohibited on both sides of Century Boulevard west of La Cienega Boulevard, but is permitted east of La Cienega Boulevard. Exclusive left-turn lanes are provided at all major intersections.
- Imperial Highway (City of Los Angeles) – Between Aviation and Crenshaw Boulevards, Imperial Highway provides three travel lanes in each direction with a two-way left-turn median. Parking is generally prohibited. Left-turn channelization is provided at all major intersections.
- Olympic, Washington, Martin Luther King Jr., and Manchester Boulevards – Three travel lanes are provided in each direction at the respective intersections with Crenshaw Boulevard.
- Pico, Adams, and Jefferson Boulevards, Stocker Street, and Slauson Avenue (City of Los Angeles) – Two travel lanes are provided in each direction at the respective intersections with Crenshaw Boulevard.
- Exposition Boulevard (City of Los Angeles) – Exposition Boulevard provides one to two travel lanes in each direction at the intersection with Crenshaw Boulevard.

Daily traffic volumes along the study area arterials vary by segment. The highest daily traffic volumes for select major east-west and north-south arterials in the immediate

vicinity of the proposed corridor alignment are presented in Table 3-3 for the City of Los Angeles and Table 3-4 for the City of Inglewood.

Table 3-3. Traffic Volumes for Key Arterial Segments in the City of Los Angeles

Primary Street	Cross Street/Segment	Count Date	Eastbound	Westbound	Total
East-West Arterials					
Wilshire Blvd	Western Blvd	9/28/2005	18,000	15,000	33,000
North-South Arterials					
Crenshaw Blvd	Adams Blvd	11/29/2005	28,000	26,000	54,000
Crenshaw Blvd	Florence Ave	3/30/2005	17,000	19,000	36,000
Crenshaw Blvd	MLK, Jr. Blvd	3/8/2006	24,000	22,000	46,000
Crenshaw Blvd	Slauson Ave	3/31/2005	21,000	18,000	39,000
Crenshaw Blvd	Stocker Ave	3/15/2006	21,000	21,000	42,000
La Brea Ave	Olympic Blvd	6/11/2004	25,000	22,000	47,000
La Brea Ave	Venice Blvd	1/26/2004	28,000	29,000	57,000

Source: Traffic counts conducted by LADOT's Traffic Survey Section.

Table 3-4. Traffic Volumes for Key Arterial Segments in the City of Inglewood

Street	Segment	24-Hour Traffic Volumes
Prairie Ave	Florence Ave to Regent St	29,000
Prairie Ave	Arbor Vitae St to Century Blvd	33,000
Crenshaw Blvd	Arbor Vitae St to Century Blvd	35,000
Crenshaw Blvd	Manchester Blvd to 90th St	34,000
La Brea Ave	Florence Ave to Manchester Blvd	32,000
La Brea Ave	Arbor Vitae St to Century Blvd	30,000
Century Blvd	Prairie Ave to La Brea Ave	33,000
Century Blvd	La Brea Ave to Inglewood Ave	42,000

Source: City of Inglewood Department of Public Works, 2005 Traffic Counts.

Monitoring Locations

The 2004 Congestion Management Program (CMP) for Los Angeles County lists the following locations in the study area as the freeway mainline or arterial intersection monitoring stations for the countywide congestion management analysis:

- Santa Monica Freeway east of La Brea Avenue
- Century Freeway east of Sepulveda Boulevard (Junction Route 1)
- Century Freeway east of Crenshaw Boulevard and west of Vermont Avenue
- San Diego Freeway north of La Tijera Boulevard
- San Diego Freeway north of Venice Boulevard
- Sepulveda Boulevard at El Segundo Boulevard (City of El Segundo)

- Manchester Avenue at Crenshaw Boulevard (City of Inglewood)
- Manchester Avenue at La Brea Avenue (City of Inglewood)
- Wilshire Boulevard at La Brea Avenue (City of Los Angeles)

All of the locations listed above, except Wilshire Boulevard at La Brea Avenue, experienced poor operating conditions (level of service [LOS] E or worse) during one or both peak hours according to year 2003 volumes in the CMP.

Planned Roadway Improvements

A total of 13 roadway improvements, ranging from the I-10 Freeway ramp widening to traffic signal actuation to bus-only lanes, have been proposed by Metro and Caltrans. Because these proposed improvements are only in the concept or preliminary planning stages, they were not assumed in the No-Build project alternative for future baseline conditions.

3.1.2.2 Study Intersections and Baseline Levels of Service

A total of 46 key intersections in the study area – in close proximity to and along the proposed project alignment – were included to represent the affected environment from a traffic operations perspective. This section describes the existing conditions at the study intersections and details the methodology used to conduct the analysis. The 46 study intersections are shown in Figure 3-5. The jurisdictions affected by the Project were consulted throughout the scoping process and assisted in the selection of study intersections. LADOT and City of Inglewood are satisfied that the 46 study intersections represent those intersections most likely to be affected by the Project.

Data Collection and Analysis Methodology

Detailed a.m. and p.m. peak period intersection turning movement counts were conducted in January, April and June 2008 to represent existing traffic volumes on a typical weekday throughout the study area. Counts were taken during typical weekday peak hours from 7:00 to 10:00 a.m. and 3:00 to 7:00 p.m.

The 46 analyzed (Figure 3-5) intersections are in the Cities of Los Angeles (33 intersections) and Inglewood (13 intersections). The LADOT requires that the Critical Movement Analysis (CMA) method (Transportation Research Board, 1980) be used to determine the intersection volume-to-capacity ratio (V/C) and the corresponding LOS for the given turning movements and intersection characteristics at signalized intersections. The City of Inglewood has not developed any guidelines or criteria for traffic analysis. Because of the differing criteria among jurisdictions, a single methodology was selected to represent existing conditions. The commonly accepted operational analysis methodology from the *2000 Highway Capacity Manual* (HCM) (Transportation Research Board, 2000) was used to estimate delay and corresponding LOS at each study intersection. For comparison purposes, the V/C ratio using the CMA method was also presented for each study intersection.

The operations analysis methodology rates intersection conditions based on the average delay, measured in seconds, experienced by drivers. 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 theoretical capacity. Weekday a.m. and p.m. peak hours were selected for analysis because they represent the most critical

Figure 3-5. Analyzed Intersections in the Study Area

periods of traffic congestion in the study area, compared to other time periods such as weekday or weekend midday.

Existing Levels of Service

The results of the analysis of existing weekday morning and afternoon peak hour conditions at the 46 study intersections are summarized in Appendix F. Thirty-one of the 46 analyzed intersections (67 percent) are operating at an acceptable LOS D or better in the morning and afternoon peak hours. The remaining 15 intersections (33 percent) operate at LOS E or F (deficient LOS) during one or both analyzed peak hours. Morning and afternoon peak period delay and corresponding LOS at each study intersection is shown in Appendix F.

3.1.2.3 Highway System Level of Service

Heavy traffic congestion exists in the study area along the I-10 Freeway, the I-405 Freeway, the I-105 Freeway, Crenshaw Boulevard, La Brea Avenue/Hawthorne Boulevard, and Prairie Avenue. Typical rush hours in the corridor extend from approximately 6:30 a.m. through 10:00 a.m. in the morning and 3:30 p.m. to 7:00 p.m. in the evening.

One measure of performance for traffic operations is the volume-to-capacity (V/C) ratio, which evaluates the traffic volume on a roadway compared to its available capacity. V/C ratios approaching or above 1.00 reflect congested conditions and restricted traffic movements.

Considering all roadways in the study area, including freeways and ramps, the total number of lane miles that experience V/C ratios above 0.90 (corresponding to a LOS E or F) during the a.m. and p.m. peak periods is expected to increase by approximately 121 and 142 percent, respectively, between 2006 and 2030, as shown in Table 3-5. Table 3-6 and Table 3-7 show that travel times and delays on certain arterial segments in the study area will increase from 2006 to 2030 without transit improvements. At the same time, roadway capacity will remain approximately the same, with only approximately 1 percent additional lane miles provided in the study area.

Table 3-5. 2006 and 2030 Peak Period Congestion Miles and Lanes in the Study Area

	2006		2030	
	AM Peak Period	PM Peak Period	AM Peak Period	PM Peak Period
STUDY AREA MILES /a/				
Total	291	291	297	297
Congested Miles /b/	34	61	76	143
Percent Congested	12	21	26	48
STUDY AREA LANE MILES /c/				
Total Number of Lane Miles	671	671	679	679
Congested Lane Miles /b/	72	129	159	312
Percent Congested	11	19	23	46

/a/ Highway ramps and centroid connectors are not included.
/b/ Congested corresponds to LOS E or F.
/c/ Lane miles equal the distance in miles times the number of lanes; highway ramps and centroid connectors are not included.
Source: Parsons Brinckerhoff, October 2007.

Table 3-6. 2006 Peak Period Congestion on Key Study Area Roadway Segments

From	To	Distance (miles)	AM Peak Period		PM Peak Period	
			Congested Time (Min.)	Speed (mph)	Congested Time (Min.)	Speed (mph)
Crenshaw Blvd/ Wilshire Blvd	Crenshaw Blvd / I-10	1.8	5.6	19.5	6.0	18.3
La Brea Ave/ Wilshire Blvd	San Vicente Blvd/ Pico Blvd	1.2	2.9	24.1	3.2	22.2
La Brea Ave/ Stocker Street	La Brea Ave/I-10	2.6	6.3	24.8	6.7	23.5
Crenshaw Blvd/I-10	Crenshaw Blvd/ ML King Blvd	1.6	3.5	26.4	4.3	21.6
Century Blvd/ Prairie Ave	Century Blvd/ Aviation Blvd	2.0	4.1	29.3	4.0	30.4
La Brea Ave/ Florence Ave	Hawthorne/I-105	2.1	4.6	27.2	5.7	22.1

Source: Parsons Brinckerhoff, October 2007.

Table 3-7. 2030 Peak Period Congestion on Key Study Area Roadway Segments

From	To	Distance (miles)	AM Peak Period		PM Peak Period	
			Congested Time (Min.)	Speed (mph)	Congested Time (Min.)	Speed (mph)
Crenshaw Blvd/ Wilshire Blvd.	Crenshaw Blvd/ I-10	1.8	6.7	16.5	7.2	15.3
La Brea Ave/ Wilshire Blvd	San Vicente Blvd/Pico Blvd	1.2	3.7	19.2	3.7	19.0
La Brea Ave / Stocker St	La Brea/I-10	2.6	7.1	22.2	9.1	17.3
Crenshaw Blvd /I-10	Crenshaw Blvd/ ML King Blvd	1.6	4.2	22.4	5.4	17.3
Century Blvd/ Prairie Ave	Century Blvd/ Aviation Blvd	2.0	4.6	26.1	4.2	28.4
La Brea Ave/ Florence Ave	Hawthorne Blvd/ I-105	2.1	5.1	24.7	6.7	18.8

Source: Parsons Brinckerhoff, October 2007.

Figure 3-6 through Figure 3-9 illustrate that the Crenshaw Transit Corridor currently has and is forecasted to have numerous segments with LOS E and F. By 2030, V/C ratios at or above 0.90 during the a.m. peak period are expected for all segments of Crenshaw Boulevard north of Manchester Boulevard. In addition, La Brea Avenue/Hawthorne Boulevard and Prairie Avenue, between Manchester Boulevard and the I-105 Freeway would continue to experience heavy traffic conditions, with most segments having V/C ratios above 0.90 during the a.m. peak period. The increased traffic congestion will also result in lower peak period travel speeds along these corridors, generally below 30 miles per hour and below 20 miles per hour along certain sections of Crenshaw Boulevard.

Figure 3-6. 2006 AM Peak Period Level of Service E and F

Source: Parsons Brinckerhoff.

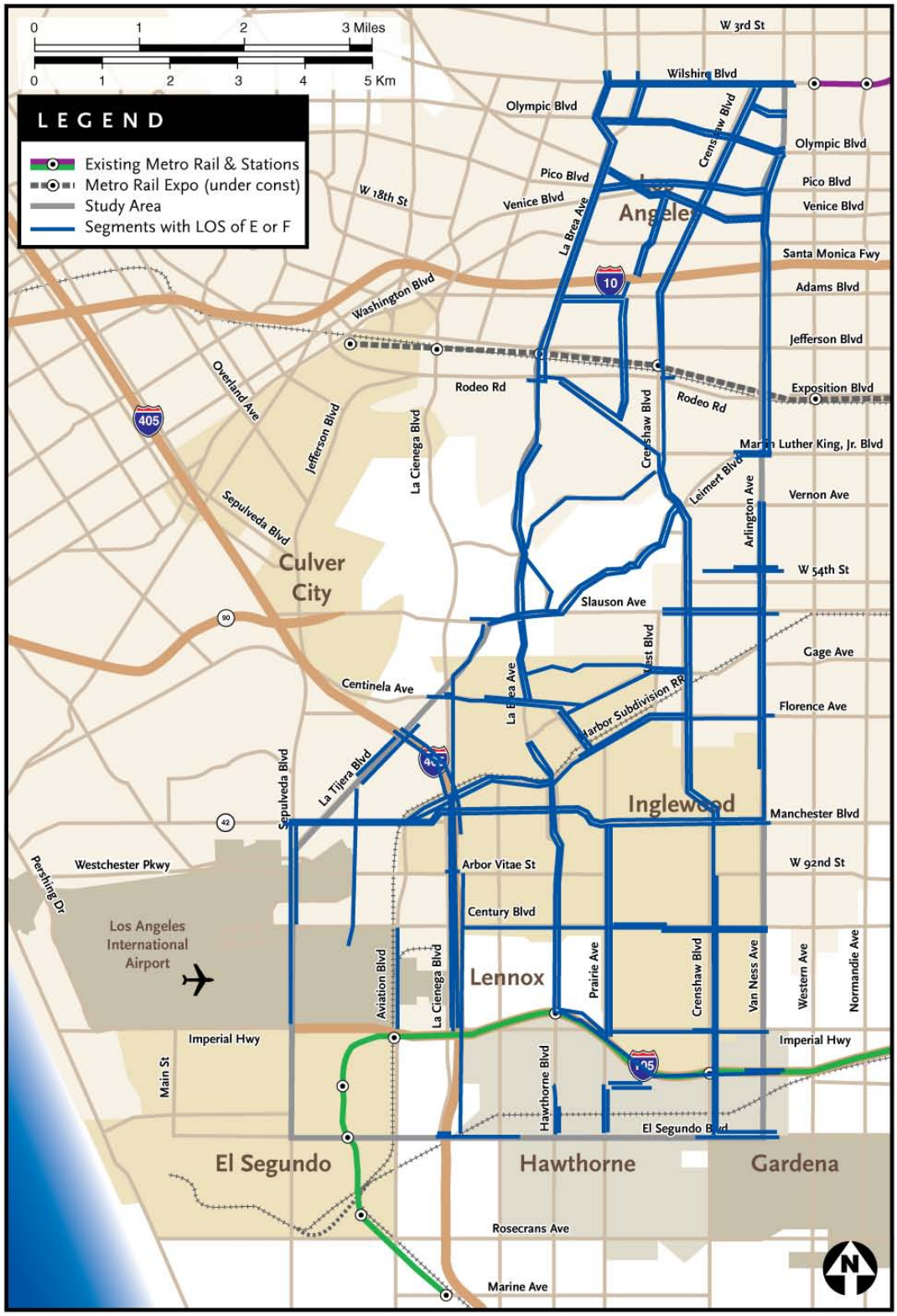
Figure 3-7. 2006 PM Peak Period Level of Service E and F

Source: Parsons Brinckerhoff.

Figure 3-8. 2030 AM Peak Period Level of Service E and F

Source: Parsons Brinckerhoff.

Figure 3-9. 2030 PM Peak Period Level of Service E and F

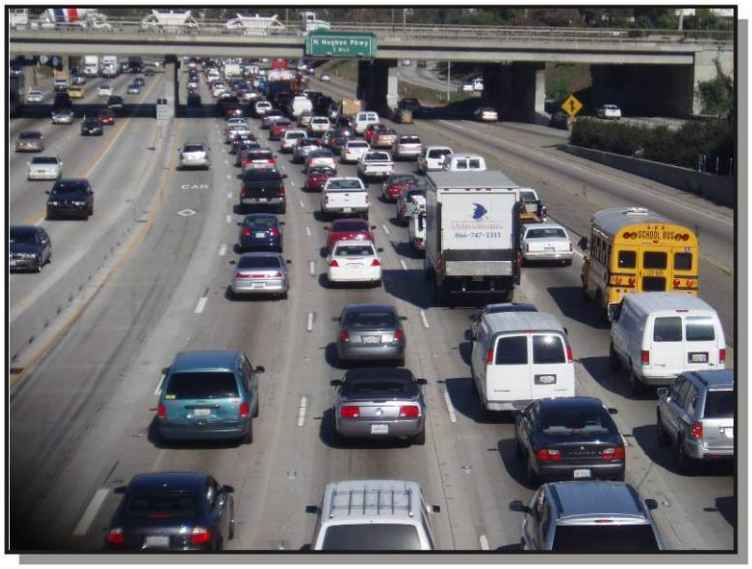


Source: Parsons Brinckerhoff.

The I-10 Freeway has peak period congestion levels rated at F3,[2] meaning that the freeway operates at LOS "F" conditions for more than three hours (for each peak period direction of travel) in each peak travel period. Figure 3-10 illustrates typical a.m. peak period congestion on the I-10 and I-405 Freeways.

Figure 3-10. AM Peak Period Congestion - I-10 and I-405 Freeways

On the I-10 looking west from Crenshaw Boulevard, the commute toward the West Los Angeles area is particularly congested during the AM Peak Period.



During the AM Peak Period, the commute northbound on the I-405 towards the West Los Angeles area, is more congested than the southbound commute.

Source: Terry A. Hayes Associates LLC, 2007

[2] California Department of Transportation, 1998.

In the coming years, LOS is not expected to improve and may significantly worsen as a result of population growth and increased trip making.

Table 3-8 shows the peak period travel times and average speeds for vehicles traveling southbound in the corridor for 2006 and 2030. Overall, the southbound travel time for vehicles in major segments of the corridor during the a.m. and p.m. peak periods would increase by 28 and 30 percent, respectively. The southbound average speed during the a.m. and p.m. peak periods would decrease by 20 and 23 percent, respectively.

Table 3-8. Southbound Peak Period Travel Times and Average Vehicle Speed 2006 and 2030

From	To	2006				2030			
		AM Peak Period		PM Peak Period		AM Peak Period		PM Peak Period	
		Time (Min.)	Average Speed (Mph)	Time (Min.)	Average Speed (Mph)	Time (Min.)	Average Speed (Mph)	Time (Min.)	Average Speed (Mph)
Wilshire Blvd/ Western Ave	Wilshire Blvd/ Crenshaw Blvd	1.9	18.3	2.1	16.5	2.9	12.2	2.7	13.0
Wilshire Blvd/ Crenshaw Blvd	Pico Blvd/ Crenshaw Blvd	3.9	16.7	4.2	15.2	5.2	12.3	5.5	11.8
Pico Blvd/ Crenshaw Blvd	Adams Blvd/ Crenshaw Blvd	3.5	20.5	4.6	15.3	4.4	16.2	6.3	11.3
Adams Blvd/ Crenshaw Blvd	Exposition Blvd/ Crenshaw Blvd	1.9	24.6	2.9	16.0	2.4	19.3	4.3	11.0
Exposition Blvd/ Crenshaw Blvd	MLK Blvd/ Crenshaw Blvd	1.5	28.6	1.7	24.3	1.7	25.0	2.2	19.4
MLK Blvd/ Crenshaw Blvd	Slauson Ave/ Crenshaw Blvd	4.0	23.6	5.9	16.0	5.2	18.2	7.5	12.6
Slauson Ave/ Crenshaw Blvd	West Blvd/ Florence Ave	3.8	20.7	4.7	16.6	5.6	14.1	6.4	12.3
West Blvd/ Florence Ave	La Brea Ave/ Florence Ave	3.1	23.5	2.7	27.6	3.9	18.8	3.1	23.9
La Brea Ave/ Florence Ave	Manchester Ave/ Aviation Blvd	3.9	23.1	3.9	23.2	5.0	18.2	4.5	20.3
Manchester Ave/ Aviation Blvd	Century Blvd/ Aviation Blvd	2.2	28.3	2.5	24.1	2.3	26.7	3.2	19.4
Century Blvd/ Aviation Blvd	Imperial Hwy/ Aviation Blvd	2.2	29.9	2.6	24.9	2.3	29.1	3.9	16.7
Total		31.8	22.7	38.0	19.0	40.8	17.7	49.4	14.6

Metro Model 2006, 2030

Table 3-9 shows the peak period travel times and average speeds for vehicles traveling northbound in the corridor for 2006 and 2030. Overall, the northbound travel time for vehicles in major segments of the corridor during the a.m. and p.m. peak periods would increase by 22 and 35 percent, respectively. The northbound average speed during the a.m. and p.m. peak periods would decrease by 18 and 26 percent, respectively.

Table 3-9. Northbound Peak Period Travel Times and Average Vehicles Speed 2006 and 2030

From	To	2006				2030			
		AM Peak Period		PM Peak Period		AM Peak Period		PM Peak Period	
		Time (Min.)	Average Speed (Mph)	Time (Min.)	Average Speed (Mph)	Time (Min.)	Average Speed (Mph)	Time (Min.)	Average Speed (Mph)
Wilshire Blvd/ Crenshaw Blvd	Wilshire Blvd/ Western Ave	1.8	19.7	2.1	16.5	2.1	16.9	3.0	11.5
Pico Blvd/ Crenshaw Blvd	Wilshire Blvd/ Crenshaw Blvd	3.8	16.7	4.2	15.1	4.8	13.5	6.2	10.4
Adams Blvd/ Crenshaw Blvd	Pico Blvd/ Crenshaw Blvd	4.3	16.7	4.0	17.9	5.6	12.7	5.8	12.2
Exposition Blvd/ Crenshaw Blvd	Adams Blvd/ Crenshaw Blvd	2.5	18.9	2.1	22.3	3.3	14.4	3.0	15.6
MLK Blvd/ Crenshaw Blvd	Exposition Blvd/ Crenshaw Blvd	1.6	26.1	1.6	26.8	1.9	22.5	1.9	22.2
Slauson Ave/ Crenshaw Blvd	MLK Blvd/ Crenshaw Blvd	5.4	17.3	4.6	20.5	6.6	14.3	6.0	15.7
West Blvd/ Florence Ave	Slauson Ave/ Crenshaw Blvd	4.3	18.1	4.3	18.2	5.2	15.1	6.6	11.9
La Brea Ave/ Florence Ave	West Blvd/ Florence Ave	2.4	31.0	3.2	23.3	2.5	29.2	4.0	18.3
Manchester Ave/ Aviation Blvd	La Brea Ave/ Florence Ave	3.4	26.6	4.3	21.3	3.7	24.4	5.5	16.7
Century Blvd/ Aviation Blvd	Manchester Ave/ Aviation Blvd	2.5	24.9	2.3	27.2	3.0	20.4	2.5	24.6
Imperial Hwy/ Aviation Blvd	Century Blvd/ Aviation Blvd	2.5	26.3	2.3	28.8	3.4	19.1	2.6	25.3
Total		34.5	21.0	34.9	20.7	42.0	17.2	47.1	15.3

Metro Model 2006, 2030

3.1.3 Parking

The availability of parking throughout the study area varies significantly depending on location. Below is a summary of the approximately 2,000 curbside and off-street parking spaces in the vicinity of the proposed project alignment.

3.1.3.1 Off-Street Parking

Because of the built-out nature of Crenshaw Boulevard, few areas along the proposed corridor offer off-street parking. The following discusses off-street parking constraints that exist near the stations proposed for the Crenshaw Transit Corridor Project, beginning at the northern end of the study area.

- Crenshaw/Wilshire Boulevards – Three undeveloped parcels lie in close proximity to this potential BRT station. Metro owns the parcels at the southwest and southeast

corners of the Crenshaw/Wilshire intersection. An office building at the north side of the T-intersection provides off-street parking for its tenants. Because of the residential uses immediately outside of the intersection, no other off-street parking facilities of any considerable size are available near this station.

- Crenshaw/Pico Boulevards – Because of the considerable density of community-serving retail and residential uses, no off-street parking facilities of any appreciable size are available near this potential station.
- Crenshaw/Adams Boulevards – Near this potential station, limited off-street parking is provided by the commercial offices along Victoria Avenue one block west of Crenshaw Boulevard; however, since this area is built-out with community-serving retail and residential uses, no other off-street parking facilities are available.
- Crenshaw/Exposition Boulevards – The largest concentration of off-street parking near the Crenshaw/Exposition Boulevards intersection is owned by the West Angeles Church, on the northeast corner of Crenshaw/Exposition Boulevards. East of this site, large maintenance facilities are provided for public utility vehicles and public services vehicles. Parking for the West Angeles Church is not open to the public, except during times of worship. It is expected that an agreement to share the parking facilities will be reached between the church and Metro for daytime use by Expo LRT park-and-ride patrons. The vehicle maintenance facilities are not open to the public. Between Rodeo Road and Coliseum Street (one to two blocks south of Exposition Boulevard), large public parking lots are provided for various "box retail" commercial uses along Crenshaw Boulevard.
- Crenshaw/Martin Luther King Jr. Boulevards – A large supply of off-street parking is available near this potential station at the Baldwin Hills Crenshaw Plaza Shopping Center, which provides parking for its customers. An aerial view of the existing mall and its off-street parking supply is shown in Figure 3-11. A remodel of the mall will change the amount and configuration of mall parking in the future. Because of the built-out nature of the neighborhood surrounding this intersection, no other sizable off-street parking facilities are available.
- Crenshaw Boulevard/Vernon Avenue – A substantial supply of City-owned off-street parking is available for the retail uses in the immediate vicinity of this potential station. There are no undeveloped parcels on which to provide new off-street parking.
- Crenshaw Boulevard/Slauson Avenue – The largest concentration of off-street parking available near this intersection is set aside for a community-serving grocery store and strip mall on the southeast corner. There are also city-owned lots to the immediate north of this intersection. Because of the built-out commercial nature of the area, limited off-street parking facilities are available. However, north of Slauson Avenue, one-way frontage roads flank either side of Crenshaw Boulevard. These frontage roads provide curbside parking, although not directly on Crenshaw Boulevard.
- West Boulevard/Florence Avenue – A strip of off-street parking (approximately 100 spaces) is available adjacent to the proposed station. Because of the considerable density of industrial and residential uses in the area, no further off-street parking facilities of any appreciable size are available near this station.

Figure 3-11. Baldwin Hills Crenshaw Plaza and Off-Street Parking

Source: Metro 2008

- La Brea/Florence Avenues – Near this potential station, limited off-street parking is provided by the commercial uses east of Market Street. An undeveloped parcel immediately south of the station location could be developed into a station serving parking facility.
- Florence Avenue/Aviation Boulevard/Manchester Boulevard – Because of the considerable density of industrial and residential uses in the area, no off-street parking facilities of any appreciable size are available near this station. There are no undeveloped parcels on which to provide new off-street parking.
- Aviation/Century Boulevards – Because of the considerable density of industrial and residential uses in the area, no off-street parking facilities of any appreciable size are available near this station. There are no undeveloped parcels on which to provide new off-street parking.
- Aviation Boulevard/Imperial Highway – Near the Aviation Boulevard/Imperial Highway intersection, the Metro Green Line Aviation/LAX Station provides a park-and-ride facility and a transit station served by multiple bus lines and the Metro Green Line LRT. Large surface parking facilities are also provided for nearby industrial land uses.

3.1.3.2 On-Street Parking

Curbside parking availability varies considerably throughout the proposed corridor alignment. This section describes the type of parking available beginning at the northern end of the study area. Along Crenshaw Boulevard between Wilshire Boulevard and

Olympic Boulevard, curbside parking is generally available with no posted parking restrictions. Between Olympic Boulevard and Pico Boulevard along Crenshaw Boulevard, curbside parking is generally prohibited.

South of Pico Boulevard to the I-10 Freeway crossing, and south of the I-10 Freeway crossing to Exposition Boulevard, parking is permitted along Crenshaw Boulevard during off-peak hours. Parking is prohibited during the peak periods from 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. in both directions. Curbside parking is prohibited on the bridge that crosses the I-10 Freeway. Between Exposition Boulevard and Rodeo Road, parking is permitted along Crenshaw Boulevard during off-peak hours. Parking is prohibited during the peak periods from 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., in both directions.

One-way frontage roads flank both sides of Crenshaw Boulevard south of Rodeo Road to Martin Luther King Jr. Boulevard. Curbside parking is prohibited in both directions along this stretch of Crenshaw Boulevard; however, curbside parking is available on both sides of the frontage roads, with no visible parking restrictions (see Figure 3-12). From Martin Luther King Jr. Boulevard to Vernon Avenue, limited curbside parking is provided. Parking meters along this stretch provide for two-hour parking, with peak period restrictions that prohibit curbside parking from 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.

Figure 3-12. Crenshaw Boulevard On-Street Parking

Source: Metro 2008

No curbside parking is permitted along the stretch between Vernon Avenue and Leimert Boulevard. South of Leimert Boulevard, Crenshaw Boulevard is flanked by frontage roads similar to those present north of Martin Luther King Jr. Boulevard. From Leimert Boulevard to Slauson Avenue, curbside parking is prohibited on both sides of Crenshaw

Boulevard, but available along the frontage roads with no posted parking restrictions. Between Slauson Avenue and Florence Avenue, parking is generally available on both sides of the street; however, it is restricted during one or both peak periods from 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.

Curbside parking along Florence Avenue between Crenshaw Boulevard and Aviation Boulevard is generally prohibited on both sides of the street. Some segments between La Brea Avenue and Hillcrest Boulevard and Brynhurst Avenue and Crenshaw Boulevard provide curbside parking during non-peak periods on the south side of the street. Other segments of Florence Avenue prohibit curbside parking at all times.

Curbside parking along Aviation Boulevard is generally prohibited between Florence Avenue and Imperial Highway. Parking is prohibited on both sides of the street between Imperial Highway and Arbor Vitae Street. Meter parking is provided on the eastern side of Aviation Boulevard, between Arbor Vitae Street and Manchester Boulevard. Parking is prohibited along the entire western side of Aviation Boulevard.

Table 3-10 summarizes the roadway and curb parking characteristics (from south to north in the study area) for key arterials near the proposed project alignment.

Table 3-10. Existing Surface Street Characteristics

Segment	From	To	Lane		Median	Parking Restrictions		Speed Limit
			NB/EB	SB/WB	Type	NB/EB	SB/WB	
Aviation Blvd	Florence Ave	Arbor Vitae St	2	2	2DY	NP	Meter Parking	40
	Arbor Vitae St	Century Blvd	2	2	2DY	NSAT	NP	40
	Century Blvd	Transit Hub	2	2	2LT	NSAT	NSAT	40
Florence Ave	La Brea Ave	Aviation Blvd	2	2	RM	NSAT	NSAT	40
	La Brea Ave	Hillcrest Blvd	2	3	RM	PA	NSAT	40
	Hillcrest Blvd	Redondo Blvd	3	3	RM	NSAT	NSAT	40
	Redondo Blvd	Brynhurst Ave	2	2	2DY	NPAT	NSAT	40
	Brynhurst Ave	Crenshaw Blvd	2	2	2LT	NS 7:00 to 9:00 a.m., 4:00 to 7:00 p.m.		40

Table 3-10. Existing Surface Street Characteristics (continued)

Segment	From	To	Lane		Median	Parking Restrictions		Speed Limit
			NB/EB	SB/WB	Type	NB/EB	SB/WB	
Crenshaw Blvd	Florence Ave	66th St	3	3	2LT	NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.	1HR 8:00 to 4:00 p.m.; NS 4:00 to 6:00 p.m.	35
	66th St	60th St	3	3	2LT	NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.; 1HR 9:00 to 4:00	NS 4:00 to 6:00 p.m.; 1HR	35
	60th St	Slauson Ave	3	3	RM	NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.; 1HR 9:00 to 4:00	NS 4:00 to 6:00 p.m.; 1HR	35
	Slauson Ave (begin frontage)	Leimert Split	3	3	RM	RZ	RZ	35
	Leimert Split	43rd St	3	3	2LT	Meter 2HR; NS 7:00 to 9:00 a.m., 4-6 p.m.	Meter 2HR; NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.	35
	43rd St	Stocker St	3	3	2LT	Meter 2HR; NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.	Meter 2HR; NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.	35
	Stocker St	MLK, Jr. Blvd	3	3	2LT	Meter; NS 7:00 to 9:00 a.m.; 2HR meter	NSAT	35
	MLK, Jr. Blvd	Rodeo Rd (frontage rd)	3	3	2LT	NSAT	NSAT	35
	Rodeo Rd (frontage rd)	Coliseum St (no frontage)	3	3	2LT	NSAT	NSAT	35
	Coliseum St	30th St	3	3	2LT	NSAT	1HR 9-4; NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.	35
	30th St	Adams Blvd	3	3	2LT	1HR 9-4; NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.	1HR 9-4; NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.	35

Table 3-10. Existing Surface Street Characteristics (continued)

Segment	From	To	Lane		Median	Parking Restrictions		Speed Limit
			NB/EB	SB/WB	Type	NB/EB	SB/WB	
Crenshaw Blvd (continued)	Adams Blvd	I-10 Freeway	3	3	2LT	NS	NS	35
	I-10 Freeway	1 block south of St. Charles Pl	3	3	DY	NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.	NS 7:00 to 9:00 a.m. 4:00 to 6:00 p.m.	35
	Washington Blvd	Country Club Dr	2	2	DY	NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.	NS 7:00 to 9:00 a.m., 4:00 to 6:00 p.m.	35
	Country Club Dr	Olympic Blvd	2	2	2LT	NSAT	NSAT	35
	Olympic Blvd	Wilshire Blvd	2	2	DY	PA	PA	35

Notes:

MEDIAN TYPE: DY=Double Yellow Centerline; SDY=Single Dashed Yellow Centerline; 2DY=Two Double Yellow Centerlines; 2LT= Two-way left turn lane; RM=Raised Median; UD=Undivided Lane

LANES: # = Number of lanes

NSAT = No Stopping Anytime; RZ = Red zone - No parking allowed

NS = No Stopping; NP = No Parking; PA = Parking Allowed

Source: Fehr & Peers field observations, January 2008.

3.1.4 Pedestrian and Bicycle Facilities

3.1.4.1 Pedestrian Facilities

Figure 3-13. Pedestrian Activity at the Intersection of Crenshaw and Martin Luther King, Jr. Boulevards

Source: Metro 2008

The pedestrian system varies across the study area depending on the density, mix of land uses, and vehicular circulation patterns. The entire street network, excluding the urban freeways, is generally considered open to pedestrian traffic, either on the sidewalks or road shoulders. Figure 3-13 shows pedestrians crossing at an enhanced pedestrian crosswalk in the study area. In some areas, pedestrian flow is impeded

because of missing, inadequate, or unattractive sidewalks and crossings. The locations where pedestrian movements are difficult have been identified and are listed below.

- The intersection of Crenshaw and Exposition Boulevards contains a railroad right-of-way that follows Exposition Boulevard. The elongation of the intersection crossing at both the North and South Exposition Boulevard roadways results in a lengthy and unappealing pedestrian crossing along Crenshaw Boulevard. The pedestrian environment will be improved with the introduction of the Metro Expo LRT Line Phase I.
- The section of Crenshaw Boulevard between West Vernon Avenue and Slauson Avenue contains frontage roads. Merging vehicles from the frontage roads near the crosswalks increases the potential for conflicts between pedestrians and vehicles. This part of the corridor is vehicle-oriented and provides unattractive pedestrian amenities. However, the frontage roads slow traffic adjacent to sidewalks and provide a buffer from the wide boulevard. Landscaping and facilities for pedestrians are limited.
- Sidewalks are not present on the north side of East Florence Avenue between Aviation Boulevard and North Cedar Avenue. Throughout this segment, Florence Avenue runs adjacent to railroad tracks. In addition, two intersections, at Aviation/Century Boulevards and Aviation Boulevard/Imperial Highway, do not have crosswalks, which impede the flow of pedestrian connectivity. Parallel facilities do accommodate pedestrian traffic on the east side of Aviation Boulevard; however, overall pedestrian appeal is reduced by inconsistent and lengthy crossings.

3.1.4.2 Bicycle Facilities

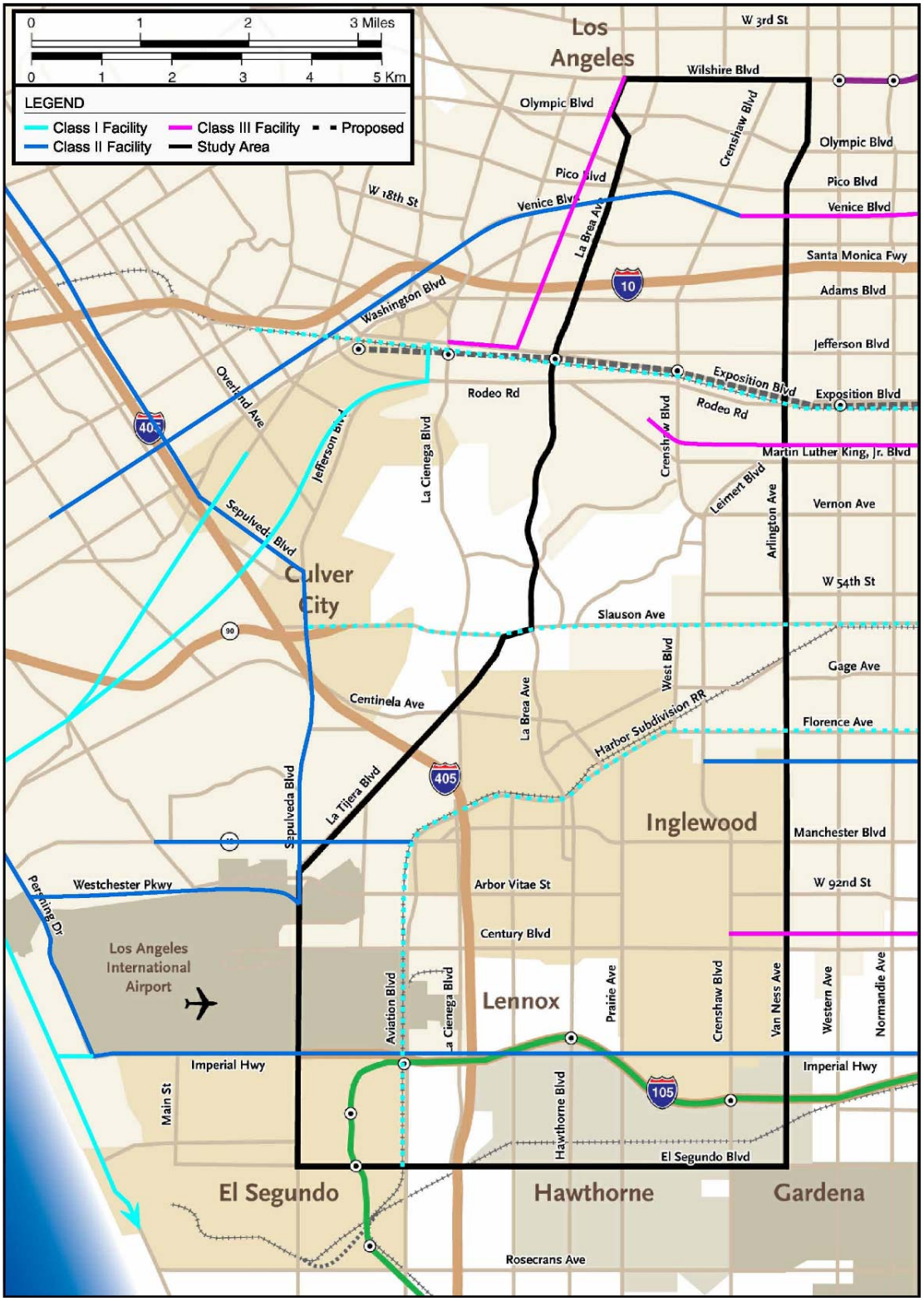
Bicycle facilities are classified based on a standard typology, described in further detail below.

- 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.

In the study area, shown in Figure 3-14, existing bicycle facilities include:

- Class II facilities are available on Venice Boulevard starting just east of Crenshaw Boulevard and continuing to the western edge of the study area; along Manchester Avenue from the western edge of the study area to Aviation Boulevard; and along Imperial Highway throughout the study area.
- Class III facilities are available on 39th Street starting just west of Crenshaw Boulevard and continuing east to the edge of the study area, as well as on 76th Street from Crenshaw Boulevard to Vermont Avenue.

Figure 3-14. Existing and Proposed Bicycle Facilities



The most recent *City of Los Angeles Bicycle Plan*[3] includes several proposed bicycle facility improvements in the study area. These improvements, as shown in Figure 3-14, include:

- Class I bike paths along Aviation Boulevard and Florence Avenue throughout the study area, Exposition Boulevard as part of the Metro Exposition Line LRT project, and on Slauson Avenue throughout the study area.
- *The City of Los Angeles Bicycle Plan* also recommends further study for potential bicycle facilities on Crenshaw Boulevard between Pico Boulevard and Slauson Avenue, and Arlington Avenue between Pico Boulevard and Slauson Avenue.
- Bicycle parking facilities are also recommended at the Lot C Transit Center. Metro currently provides bicycle lockers and racks at the Green Line Aviation/LAX Station.

3.2 Environmental Consequences and Mitigation Measures

3.2.1 Transit

This section describes the future transit network affecting the Crenshaw Transit Corridor and assesses the potential for impacts resulting from new and/or modified service.

3.2.1.1 Methodology

To analyze the effects of the various alternative Project scenarios on the transit system as a whole, the following transit performance measures were derived from Metro travel demand forecasting model and summarized for each scenario:

- Daily Linked Fixed Guideway Trips- A trip from origin to destination on the Metro Rail system. Even if a person must make several transfers during a journey, the trip is counted as one linked trip on the Metro Rail system;
- Daily Linked Bus Trips-A trip from origin to destination on the countywide bus system. Even if a person must make several transfers during a journey, the trip is counted as one linked trip on the countywide bus system;
- Daily Linked Transit Trips-A trip from origin to destination on the countywide transit system (includes bus and rail modes). Even if a person must make several transfers during a journey, the trip is counted as one linked trip on the countywide transit system;
- Daily Linked Trips (from all travel modes)-A trip from origin to destination utilizing any travel mode. Even if a person used multiple modes or transfers within (bus to bus) or between modes (car to rail), the trip is counted as one linked trip on the system; and
- Total Transit Mode Share-The percentage share that transit has in relation to all modes of travel.

[3] *City of Los Angeles Bicycle Plan,* City of Los Angeles Planning Department, adopted August 6, 1996.

Table 3-11 provides a summary of countywide transit performance measures for all scenarios. Because the LRT alternative terminates farther south at Exposition Boulevard, the TSM Alternative was modified to provide a baseline with a terminus at Exposition Boulevard to provide a comparable result for the ridership modeling outputs.

Table 3-11. Los Angeles County Transit Performance Measures (Year 2030) By Project Alternative

Countywide Statistics	No-Build	TSM-BRT	TSM-LRT	BRT	LRT
Daily Linked Fixed Guideway Trips *	331,994	332,247	332,	333,141	336,425
Daily Linked Bus Trips	1,183,824	1,185,767	1,184,5	1,189,733	1,183,190
Daily Linked Transit Trips	1,515,818	1,518,014	1,516,81	1,522,874	1,519,615
Daily Linked Trips (Total All Modes)	77,856,299	77,856,293	77,856,29	77,856,289	77,856,300
Total Transit Mode Share	1.95%	1.95%	1.95	1.96%	1.95%

Source: 2008 Metro Travel Demand Model
* Inclusive of Orange Line BRT trips

Outputs of linked daily transit trips, daily fixed guideway boardings, daily bus boardings, and daily linked trips are all systemwide (throughout Los Angeles County) statistics. This 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. With over 1.5 million transit trips and nearly 80 million total trips projected daily in 2030, the Crenshaw Transit Corridor build alternatives are only able to affect minimal change on the transportation system as a whole, and generate similar countywide statistics when compared to one another.

3.2.1.2 Future Conditions

This section describes the future transit operating conditions of each project alternative. Ridership for each of the three build alternatives is summarized in Table 3-12 below. The BRT alternative is expected to have the highest total ridership because it terminates at Western Avenue and Wilshire Boulevard, and it serves more activity centers than other project alternatives. The common section between the Metro Exposition Line and the Metro Green Line, the LRT Alternative with Design Options is expected to have the highest ridership.

Table 3-13 Compares the estimated travel times (southbound runs) beginning at the Exposition Line Station of the TSM (peak and off-peak), BRT, LRT Alternatives, and the LRT Alternative with Design Options. The estimated average southbound travel times for automobiles through the corridor are also compared. Under the No-Build Alternative, no direct route would exist between the Exposition Station and the Metro Green Line Aviation/LAX Station. To travel between these two stations, a rider would take Metro Rapid 710 and transfer to the Metro Green Line. Total in-vehicle travel time would likely exceed 36 minutes (according to current Metro timetables). Factoring in walk and transfer wait time, the journey could surpass 45 minutes which would exceed the TSM Alternative travel time by approximately 30 percent. No-Build and TSM Alternatives would exhibit comparable travel times from the Exposition Station to Slauson Station because they would travel along the same route.

Table 3-12. Daily Boardings Based on Year 2030 Forecast

	TSM-BRT	TSM-LRT	BRT	LRT	LRT-Design Options
Segment Boardings					
Wilshire/Western Station	905		1,759		
Crenshaw/Wilshire Station	1,273		2,881		
Crenshaw/Pico Station	815		1,444		
Crenshaw/Adams Station	498		939		
North of Exposition	3,491		7,023		
Crenshaw/Exposition Station	968	1,035	1,324	3,103	3,086
Crenshaw/Martin Luther King Jr. Station	634	376	934	1,386	1,246
Crenshaw/Vernon Station	553	375	851		841
Crenshaw/Slauson Station	578	354	863	1,002	925
Florence/West Station	238	181	460	716	661
Florence/La Brea Station	870	649	1,475	1,446	1,451
Aviation/Manchester Station	786	680	1,058	752	754
Aviation/Century Station	388	310	1,325	1,386	1,398
Crenshaw/Exposition to Aviation/Century	5,015	3,960	8,290	9,791	10,362
Aviation/ LAX Metro-Green Line Station	909	752	1,370		
Mariposa/Nash				703	662
El Segundo/Nash				270	267
Douglas/Rosecrans				942	940
Redondo Beach (Marine)				922	917
From Metro Green Line	909	752	1,370	2,837	2,786
Daily Boardings	**9,415**	**4,712**	**16,683**	**12,628**	**13,148**

Source: 2008 Metro Travel Demand Model. Ridership estimates do not yet assume the development of the Exposition Line Phase II, or transit projects funded through Measure R (such as the Westside Extension, Regional Connector, or Gold Line Foothill Extension)

Table 3-13. Project Alternative Travel Time Comparison (2030)

Station Name	Cumulative Travel Time (Mins.)					
	Average Auto Peak	TSM Peak	TSM Off-Peak	BRT	LRT	LRT Design Options
Exposition Line Station to:						
Martin Luther King Station to:	1.9	2.4	2.7	2.6	3.5	1.5
Vernon Station (Optional LRT) to:	5.4	5.7	5.7	4.6	-	3.2
Slauson Station to:	8.2	8.6	9.0	8.3	6.6	6.6
West Station to:	14.2	14.6	14.3	12.3	9.7	9.7
La Brea Station to:	17.7	19.6	18.7	16.5	12.1	12.1
Manchester Station to:	22.5	27.1	25.3	21.0	14.8	14.7
Century Station to:	25.2	30.6	29.3	23.6	16.6	16.5
Metro Green Line Aviation/LAX Station to:	28.3	34.5	33.8	27.8	-	-
Metro Green Line Mariposa Station		-	-	-	21.4	21.4

Source: Metro Travel Demand Model & BRT/LRT Operating Plans. Travel times for the peak and off-peak BRT and LRT Alternatives are the same.

The TSM, BRT, and LRT Alternatives would share the same route from the Exposition Station to the Metro Green Line Aviation/LAX Station, with the exception of the LRT Alternative stopping at the Metro Green Line Mariposa Station instead of the Metro Green Line Aviation/LAX Station. The travel time comparison demonstrates the improved speed and reliability of the BRT and LRT Alternatives over the TSM Alternative. The BRT Alternative is 20 percent faster than the TSM Alternative during peak periods and the LRT Alternative and LRT Alternative with Design Options are more than 30 percent faster than the TSM Alternative during peak periods.

No-Build Alternative

The starting point for assessing the potential for impacts is to define a future year "No-Build" transit network. Typically, this network consists of existing transit services, plus improvements that are planned or committed.

The definition of No-Build alternative includes the following:

- Expo LRT Phase I
- LAX Automated People Mover (APM), which connects the Metro Green Line Aviation/LAX Station to LAX terminals, to be developed and operated by others.
- Completion of the Metro Rapid Bus Program

These projects and programs provide improvements that serve the study area. According to Table 3-11, total linked transit trips on a weekday basis are expected to exceed 1.5 million countywide. Transit mode share under the No-Build Alternative expected in 2030 is 1.95 percent.

TSM Alternative

The next step from No-Build is a TSM alternative, which attempts to address the Project needs by optimizing transit operations short of a major capital investment. The TSM Alternative enhances the No-Build Alternative by expanding the Metro Rapid bus services operating in the Crenshaw Transit Corridor between the Metro Green Line at LAX and Metro Purple Line at Wilshire Boulevard. The TSM serves as the baseline alternative for the BRT Alternative with a terminus at Wilshire Boulevard. Because the LRT alternative terminates farther south at Exposition Boulevard, the TSM Alternative was modified to provide a baseline with a terminus at Exposition Boulevard to provide a comparable result for the ridership modeling outputs. The TSM Alternative is shown in Figure 3-15.

Under the TSM Alternative, a new Metro Rapid line would be added to complement the existing services provided by Metro Rapid Lines 710 and 740 along Crenshaw Boulevard, La Brea Avenue, and Hawthorne Boulevard. The new Metro Rapid line would operate from the Metro Purple Line Wilshire/Western Station to the Metro Green Line Aviation/LAX Station on the Metro Green Line. It would operate along Wilshire and Crenshaw Boulevards to Florence Avenue and then along Florence Avenue and Aviation Boulevard to the Metro Green Line Station at the Aviation Boulevard/Imperial Highway intersection.

The proposed new Metro Rapid line would have the same stop locations on Crenshaw Boulevard as the Metro Rapid Lines 710 and 740. On Florence Avenue and Aviation Boulevard, the new Metro Rapid line would have stops at West Boulevard, La Brea Avenue, Manchester Boulevard, Century Boulevard, and Imperial Highway at the Metro Green Line Aviation/LAX Station. The new Metro Rapid line included under the TSM Alternative would operate at 10 minute headways during peak periods and 15 minute headways during off-peak periods. The new route is expected to generate 9,400 total daily boardings by 2030, with 5,013 daily boardings between the Metro Exposition Line and the Metro Green Line.

As shown in Table 3-11, the TSM Alternative is expected to increase countywide transit trips by about 3,000 per day compared to the No-Build Alternative. While TSM may lead to an increase in transit use, its effects would not substantially change the overall county transit mode share (the proportion of trips made using transit) because only one new bus route would be added when compared to No-Build.

BRT Alternative

The BRT Alternative provides for new transit services in the Crenshaw Transit Corridor, which would travel in mixed-traffic, semi-exclusive curb lanes allowing non-transit right turns along Crenshaw Boulevard, and on exclusive right- of-way in the Harbor Subdivision. As shown in Figure 3-16, the BRT alignment would extend approximately 12 miles from the Metro Purple Line Wilshire/Western Station to the Metro Green Line Aviation/LAX Station. The BRT alternative includes a total of 12 stations. The background bus network is assumed to remain the same as the alternatives proceed from No-Build to BRT. BRT ridership is the highest among the project alternatives since it does have a connection with Wilshire Boulevard. 16,680 total daily boardings are projected for the BRT Alternative in 2030. 8,289 daily boardings are expected for the BRT Alternative between the Metro Exposition Line and the Metro Green Line. As shown in Table 3-11, the BRT Alternative is projected to increase countywide transit trips by approximately 7,000 per day compared to the No-Build Alternative. Fixed guideway trips

Figure 3-15. Transportation Systems Management Alternative

Figure 3-16. Bus Rapid Transit Alternative

are expected to increase by 1,147 trips compared to the No-Build Alternative. Total transit mode share is expected to increase from 1.95 to 1.96 percent compared to No-Build.

According to travel time comparison, the BRT Alternative is 20 percent faster than the TSM Alternative during peak periods and 18 percent faster during off-peak periods, in part due to signal priority. Along the Crenshaw Transit Corridor, the BRT Alternative would offer improved transit service in terms of faster and more reliable service than the No-Build or TSM Alternatives.

LRT Alternative

The LRT Alternative would provide new LRT services in the Crenshaw Transit Corridor. As shown in Figure 3-17, the LRT alignment would extend approximately 8.5 miles from the Expo LRT line (under construction) at the Crenshaw/Exposition Boulevards intersection to the Metro Green Line Aviation/LAX Station. The new services would operate along a new bi-directional, fixed guideway in a combination of grade-separated and at-grade alignments. Transit signal prioritization would be provided at all grade crossings along the Harbor Subdivision alignment and would not be provided at the at-grade crossings along the Crenshaw Boulevard alignment. Along the Crenshaw Boulevard alignment, LRT trains would progress with the northbound/southbound through-traffic signal phase at intersections. The background bus network is assumed to remain the same as the alternatives proceed from No-Build to LRT. Total ridership is estimated at 12,628 boardings for the LRT Alternative. 9,791 daily boardings are expected for the LRT Alternative between the Exposition Line and the Metro Green Line. LRT ridership is expected to be lower than BRT ridership because its route is shorter-terminating at the Exposition Line Crenshaw station rather than at the Metro Purple Line Wilshire/Western Station. However, for the comparable segment between the Exposition Line and the Metro Green Line, the LRT Alternative has higher ridership (9,781 compared to 8,290 for the BRT Alternative). The LRT Alternative also has a higher number of passengers transferring from the Metro Green Line (2,837 compared to 1,370 for the BRT Alternative).

As shown in Table 3-11, the LRT Alternative is expected to increase countywide transit trips by about 4,000 trips compared to the No-Build Alternative. Fixed guideway trips are estimated to increase by 4,431 trips (1.3 percent) over the No-Build Alternative. Total transit mode share would remain essentially constant at 1.95 percent because the increase in transit trips expected from the LRT is not of sufficient size to increase the county-wide transit mode share.

According to the travel time comparison, the LRT Alternative is 32 percent faster than the TSM Alternative during peak periods and 31 percent faster during off-peak periods.

According to the travel time comparison, the BRT Alternative is 20 percent faster than the TSM Alternative during peak periods and 18 percent faster during off-peak periods. Along the Crenshaw Transit Corridor, the LRT Alternative would offer improved transit service in terms of faster and more reliable service than the No-Build or TSM Alternatives.

Figure 3-17. LRT Alignment Alternative and Stations

LRT Alternative with Design Options

Four LRT design options were considered for the project, including an aerial crossing over Manchester that would replace the at-grade LRT alignment proposed under the LRT Alternative, an LRT under crossing at Centinela Avenue that would replace the at-grade LRT alignment proposed under the LRT Alternative, a below-grade alignment between South Victoria Avenue and 60th Street that would replace the aerial alignment LRT alignment proposed under the LRT Alternative, and a below-grade alignment between 39th Street and Exposition Boulevard that would replace the at-grade alignment proposed under the LRT Alternative and would extend the tunnel east of Martin Luther King Jr. Boulevard to Exposition Boulevard with a subway station.

Two additional design options are proposed:

- Aerial station at Century Boulevard
- Optional station at Crenshaw Boulevard and Vernon Avenue

The aerial station at Century Boulevard would not have an effect on the transportation impact analysis discussed below. The optional Crenshaw/Vernon Station would add approximately 2 minutes of travel time.

The LRT Alternative with Design Options is expected to have 13,144 total daily boardings, with 10,359 boardings expected between the Metro Exposition Line and the Metro Green Line. Ridership is higher under the LRT Alternative with Design Options due to the inclusion of the Crenshaw/Vernon Station. Travel times for the LRT Alternative and LRT Alternative with Design Options will be the same. While the Exposition below grade alignment will save two minutes of travel time, the addition of the Crenshaw/Vernon Station will offset the time savings of the below-grade segment. Table 3-14 details the travel time impacts of each design option. Along the Crenshaw Transit Corridor, the LRT Alternative with Design Options would offer improved transit service in terms of faster and more reliable service than the No-Build and TSM Alternatives.

Table 3-14. LRT Alternative with Design Options Travel Time Comparison

Design Option	Impact on Travel Time
Exposition Below Grade Alignment	- 2 min
Crenshaw/Vernon Station	+ 2 min
Hyde Park Grade Separation	0 min
Centinela Grade Separation	0 min
Manchester Grade Separation	0 min
Century Boulevard Station	0 min

Maintenance and Operations Facility Sites

The two options associated with the location of the BRT or LRT maintenance and operations facility would not have an effect on transit ridership.

3.2.1.3 Impact Assessment

This section describes the impacts to the transit system caused by the proposed Project. To better understand the potential for impacts, Table 3-11 and Table 3-12 in the previous section estimate countywide and corridor transit ridership.

No-Build Alternative

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

TSM Alternative

Impacts from the TSM Alternative would be beneficial as increased levels of transit service would be provided by a new Metro Rapid line.

BRT Alternative

Impacts from the BRT Alternative would be beneficial as increased levels of transit service would be provided by a new BRT line along the Crenshaw Transit Corridor. Benefits accrue to transit travel time with a 19 percent reduction to the equivalent Metro Rapid Travel time.

LRT Alternative

Impacts from the LRT Alternative would be beneficial as increased levels of transit service would be provided by a new LRT line along the Crenshaw Transit Corridor. Significant benefits accrue to transit travel time with a 31 percent reduction to the equivalent Metro Rapid Travel time.

Maintenance and Operations Facility Sites

The two options associated with the location of the BRT or LRT maintenance and operations facility would not result in adverse impacts because they would not affect ridership.

3.2.1.4 Mitigation Measures

No mitigation measures would be required as Project impacts would be beneficial.

3.2.1.5 CEQA Determination

The proposed Project would have a beneficial impact on transit.

3.2.2 Regional Transportation

This subsection considers the potential for the project to generate adverse impacts on the regional transportation system, including the countywide network of freeways and arterials.

3.2.2.1 Methodology

To assess impacts to the regional transportation system, changes in travel patterns were analyzed for each project alternative and compared to the No-Build alternative. 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.

3.2.2.2 Future Conditions

Table 3-15 illustrates the projected regional travel changes that would result from the different Project Alternatives compared to the 2030 baseline condition both for Los Angeles County as a whole as well as for the study area. Compared to the No-Build Alternative, the project build Alternatives are not able to affect noticeable change on countywide or study area performance measures. The data suggest that the build alternatives have a beneficial effect on regional transportation network by reducing VMT, VHT, and peak hour trips. Compared to the No-Build Alternative, the project build alternatives are not able to affect noticeable change on countywide or study area performance measures. The data suggest that the build alternatives have a beneficial effect on regional transportation network by reducing VMT, VHT, and peak hour trips. Overall, there is little percentage change between the TSM, BRT and LRT Alternatives when compared to the No-Build Alternative because total travel demand within the county and study area remains significantly greater than any reduction affected by a project alternative. However, implementation of the TSM, BRT or LRT Alternatives would have a more pronounced affect in the study area than countywide.

3.2.2.3 Impact Assessment

This section describes the impacts to the regional travel patterns caused by the proposed Project.

Table 3-15. Performance Measures for Project Alternatives (2030)

	No-Build	TSM-BRT	TSM-LRT	BRT	LRT
Regional					
Vehicle Miles Traveled (VMT)	454,428,000	454,401,000	454,387,000	454,304,000	454,402,000
Vehicle Hours Traveled (VHT)	20,189,000	20,199,000	20,194,462	20,194,000	20,192,000
Average Vehicle Speed (mph)	22.5	22.5	22.5	22.5	22.5
AM Peak Vehicle Trips	9,192,500	9,192,200	9,192,300	9,190,900	9,191,500
PM Peak Vehicle Trips	15,781,100	15,780,600	15,780,900	15,779,300	15,780,000
Study Area					
VMT	5,128,000	5,124,000	5,126,000	5,088,000	5,126,000
VHT	210,000	210,000	210,000	209,000	210,000
Average Speed (mph)	24.4	24.4	24.4	24.3	24.4
AM Peak VMT	1,147,000	1,146,000	1,147,000	1,134,000	1,147,000
AM Peak VHT	55,000	54,900	55,000	54,600	55,000
AM Peak Average Speed (mph)	20.8	20.9	20.9	20.8	20.8
AM Peak Vehicle Trips	153,400	153,100	153,100	152,800	152,900
PM Peak VMT	1,737,000	1,736,000	1,737,000	1,721,000	1,736,000
PM Peak VHT	92,400	92,300	92,400	92,000	92,300
PM Peak Average Speed (mph)	18.8	18.8	18.8	18.7	18.8
PM Peak Vehicle Trips	263,600	263,300	263,500	262,950	263,100

Source: 2008 Metro Travel Demand Model

No-Build Alternative
By definition, the No-Build Alternative would not result in adverse regional transportation impacts either countywide or in the study area.

TSM Alternative
Although minimal, impacts from the TSM Alternative would be beneficial on both a countywide and study area level. Countywide, reductions in overall VMT and vehicle trips can be seen. Peak vehicle trips would be reduced by 0.2 percent in the a.m. peak and 0.1 percent in the p.m. peak compared to the No-Build Alternative. In the study area, the TSM alternative generates reductions in peak hour VMT, VHT and vehicle trips compared to the No-Build Alternative.

BRT Alternative
Although minimal, impacts from the BRT Alternative would be beneficial on both a countywide and study area level. Countywide, reductions in overall VMT and vehicle trips can be seen. Peak vehicle trips would be reduced by 0.4 percent in the a.m. peak and 0.2 percent in the p.m. peak compared to the No-Build Alternative. In the study area, additional improvements are seen in the performance measures such as the peak hour VMT, VHT and vehicle trips compared to the No-Build Alternative.

LRT Alternative
Although minimal, impacts from the LRT Alternative would be beneficial on both a countywide and study area level. Countywide, reductions in overall VMT and vehicle trips can be seen. Peak vehicle trips would be reduced by 0.3 percent in the a.m. peak and 0.2 percent in the p.m. peak compared to the No-Build Alternative. In the study area, additional improvements are seen in the performance measures such as the peak hour VMT, VHT and vehicle trips compared to the No-Build Alternative.

Maintenance and Operations Facility Sites
The two optional locations associated with the LRT maintenance and operations facilities would not result in adverse impacts to the regional transportation system.

3.2.2.4 Mitigation Measures
No mitigation measures would be required as Project impacts would be beneficial.

3.2.2.5 CEQA Determination
Because small decreases in countywide and study area VMT and VHT are found when the TSM, BRT and LRT Alternatives are compared to the No-Build Alternative, the proposed Project would have a beneficial impact on the regional transportation patterns.

3.2.3 Intersection Analysis

3.2.3.1 Methodology
The underlying traffic impact methodology used in the Draft EIS/EIR includes the following analytical elements described below:

Travel Demand Forecast Model Data. The measures of transportation supply and demand in the Study Area are based on the results of the Metro Travel Demand Forecasting Model and its database. Travel forecasting models are mathematical models, which describe the relationships between land use and demographics, causes of personal travel, and the resultant amount and location of that travel. These models are statistically derived from observations of individual travel choices obtained by extensive surveys of the region's travel characteristics of travelers and their households. The travel-forecasting model used in the study area was developed by Metro and is based on and receives its demographic inputs from 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 year 2030. The model predicts future travel demand based on several input data items that include:

- SCAG forecasts of growth in population and employment
- SCAG forecast changes in the socio-demographic characteristics of travelers
- Future characteristics of the roadway and transit systems including travel times, costs, and system capacity reflective of the planned system (No-Build Alternative) and Project alternatives

Using data generated by the Metro travel demand forecast model, detailed travel pattern information was collected and summarized for future 2030 conditions. For purposes of regional planning, the Los Angeles County area has been subdivided by Metro into areas called Community Statistical Areas (CSA). This study also utilized the CSA geographies in the Corridor in particular and Los Angeles County in general, as well as whole counties outside Los Angeles County to develop detailed origin/destination and travel pattern information. Integrated highway and transit forecasts were developed by the Metro Model for all Project alternatives for year 2030 conditions. The Metro model has been peer-reviewed by a panel of experts with nationwide modeling expertise and has been found to incorporate appropriate procedures and inputs to serve as a basis for evaluating the effects of fixed-guideway projects under Federal Transit Administration (FTA) processes. The model provides forecasts of highway and transit loadings including both bus and rail ridership.

The TSM and BRT Alternatives were coded into the network as a Metro Rapid route including the line segment and stations/stops. For the TSM alternative, the station to station travel time is not hard coded. The travel time of the TSM routes is determined by the congested speed on the street where the TSM routes runs and the percentage ratio which varies by area type (Central Business District, Urban, Suburb, etc) and facility type (principle arterials, minor arterials, major connectors, etc).

The BRT Alternative was coded slightly different from the TSM Alternative to capture the benefits of traveling in exclusive lanes. For the BRT Alternative, the station to station travel time is hard coded according to the operation plan. The travel time of the BRT route is fixed and does not depend on the speed on Crenshaw Boulevard.

The LRT Alternative was coded into the network as a rail line including the line segment, stations and park-and-ride sites.

Screenline Analysis. The integrated highway and transit forecasts were then post-processed to yield screenline-based growth factors for specific portions of the study area for each project alternative. Growth factors were used to account for the increase in future base traffic volumes as a result of areawide or regional growth and development in the project corridor. Considering that topography and land use characteristics vary throughout the project corridor, growth factors were developed for the study corridor by four geographical subareas. Each subarea is bordered by selected screenlines. Screenlines are imaginary lines drawn across the major roadways in the vicinity of the project corridor and are used to assess the traffic volumes arriving and departing the project corridor. Each screenline is analyzed by direction (north, south, east or west) to ensure that the analysis of traffic volumes (which may be more congested in one direction than the other depending on the time of day) reflects appropriate peak hour conditions rather than an average condition. The subareas and the screenlines bordering the subareas are listed below:

- Subarea 1: Wilshire Boulevard, Jefferson Boulevard, La Brea Avenue, Western Avenue
- Subarea 2: Jefferson Boulevard, Slauson Boulevard, La Brea Avenue, Western Avenue
- Subarea 3: Slauson Boulevard, Florence Avenue, Aviation Boulevard, Western Avenue
- Subarea 4: Manchester Avenue, El Segundo Boulevard, Aviation Boulevard, La Brea Avenue

A comparison of year 2005 and forecast 2030 traffic volumes from the Metro Travel Demand model indicates that the overall traffic growth in the vicinity of the Project corridor by year 2030 is projected to be about 0.2 percent to 2 percent per year depending on the travel direction. These growth factors were then applied to existing 2008 count data to yield future 2030 volumes for the study intersections for all future scenarios.

Corridor-Level Traffic Volume Forecasts. The traffic count data collected for the existing conditions analysis data was used in conjunction with the most recent travel model forecast data to estimate year 2030 traffic volumes. As a result, the DEIS/DEIR uses a refined methodology that incorporates the most recent travel model forecast data, as well as the most consistent ground count data.

For the LRT Alternative, Metro's policy for *Grade Crossing for Light Rail Transit* (December, 2003) was used to assist in the development of 2030 traffic volumes at intersections within 200 feet of proposed at-grade roadway crossings. Initial screening results of LRT operations at the proposed at-grade crossing locations are detailed in a technical memorandum *Implications of Metro Grade Crossing Policy in the Proposed Crenshaw Transit Corridor Project Study Area* (Fehr & Peers, October 2008).

Park-and-ride Traffic Volume Forecasts. Park-and-ride projections were used to develop a trip generation and trip distribution for the LRT Alternative. Park and ride data was obtained from the Metro Travel Demand Model which only provides data for riders that access stations on fixed guideways (LRT and heavy rail transit (HRT)). Therefore, no park-and-ride forecasts were projected for the BRT Alternative, which was coded as a Metro Rapid Route. The park-and-ride trips were added to 2030 traffic volume forecasts to estimate the total traffic volumes.

Impact Determination. The intersection LOS analysis assumes that an intersection would be adversely affected by traffic volume changes if the Project Alternative will cause an increase in average vehicle delay according to the following thresholds that were developed in consultation with local jurisdictions:

- Final LOS C – an adverse impact has occurred if the delay is increased by 10 or more seconds
- Final LOS D - an adverse impact has occurred if the delay is increased by 7.5 or more seconds
- Final LOS E/F - an adverse impact has occurred if the delay is increased by 5 or more seconds

3.2.3.2 Future Conditions

This key subsection of the Traffic Analysis Section presents the year 2030 intersection LOS, delay, and V/C ratio calculations for the Project Alternatives in comparison to year 2030 No-Build conditions.

No-Build Alternative

In order to determine the potential changes in traffic conditions in the study area with the different Project Alternatives, future conditions were first assessed without the Project.

The results of the analysis of existing weekday morning and afternoon peak hour conditions at the 46 study intersections are presented in Figure 3-5. Twelve of the analyzed intersections are projected to operate at an acceptable LOS D or better in the morning and afternoon peak hours. Thirty-four of the 46 study intersections are projected to operate at LOS E or F during one or more analyzed peak hours as shown in Appendix F. Eighteen intersections that operate at an acceptable LOS D or better under existing conditions are estimated to deteriorate to LOS E or F under future No-Build conditions. Appendix F also illustrates the year 2030 cumulative No-Build peak hour traffic volumes at the 46 study intersections.

TSM Alternative

The results of TSM Alternative Analysis, including morning and afternoon peak hour conditions at the 46 study intersections, are summarized in Appendix F. Compared to the No-Build Alternative, the overall results indicate that the delay would generally decrease or remain the same in the study area, resulting in an overall improvement in traffic conditions. Forty-one of the 46 study intersections would operate better or the same as the No-Build Alternative in both the a.m. and p.m. peak hours. Five of the 46 intersections would experience a slight increase in delay (one second) in either the a.m. or p.m. peak hour. Under the TSM Alternative, 12 of the 46 intersections would operate at acceptable levels of service. Appendix F also illustrates the year 2030 cumulative TSM Alternative peak hour traffic volumes at the 46 study intersections.

BRT Alternative

The BRT Alternative analysis results of the weekday morning and afternoon peak hour conditions at the 46 study intersections are summarized in Appendix F. Compared to the No-Build Alternative, 36 of the 46 study intersections either experience a decrease in overall

delay or remain the same in the a.m. and p.m. peak hours. Ten of the 46 study intersections are projected to experience an increase in delay in either or both the a.m. and p.m. peak hours.

The BRT Alternative's peak period semi-exclusive lanes that allow non-transit right turns would result in a decrease in peak period through movement vehicular capacity along Crenshaw Boulevard from Rodeo Road to Slauson Avenue and 60th Street to 67th Street. This loss of peak period capacity would result in deteriorated roadway operating conditions at ten of the study intersections in this corridor, seven of which deteriorate to LOS D, E or F and experience a delay increase of 5 seconds or more in one or both peak hours.

To be conservative in the analysis of intersection impacts of the BRT Alternative, it was assumed that the operation of the BRT would not cause any existing traffic to divert from corridor roadways to other parallel routes in the study area. While some minor traffic shifts may occur, the limited number of equivalent north/south routes in the study area will limit traffic diversions away from corridor roadways, despite the operation of the BRT. Under the BRT Alternative, 13 of the 46 intersections would operate at acceptable levels of service.

Appendix F also illustrates the year 2030 BRT Alternative peak hour traffic volumes at the 46 study intersections.

LRT Alternative

The LRT Alternative includes nine intersections that are within 200 feet of the proposed at-grade roadway crossings and 37 intersections where the LRT train is below grade or where the train operates in conjunction with the flow of traffic. For intersections affected by at-grade crossings, Metro's Grade Crossing Policy was used to refine traffic forecasts. At all gated crossings within 200 feet of a signalized intersection, a gate motion time of 20 seconds is factored into the LOS analysis. The exception to this rule is where Crenshaw intersects Exposition Boulevard and Rodeo Road. These two intersections are clustered together and were coded with a gate motion time of 40 seconds to allow the LRT train to turn into or out of the Exposition right-of-way. A second common factor used in the development of grade-crossing traffic forecasts is that left turns are not permitted while the train is crossing through the median. Finally, at the intersection of Florence Avenue and Centinela Avenue, the westbound movement is coded in the network as three through lanes and one right-turn lane (not an optional through/right-turn lane). During the LRT train phase, right-turn movements are not permitted.

The results of the analysis of the LRT Alternative weekday morning and afternoon peak hour conditions at the 46 study intersections are summarized in Appendix F. Compared to the No-Build Alternative, 29 of the 46 study intersections either experience a decrease in overall delay or exhibit no change in the a.m. and p.m. peak hours. 12 of the 46 study intersections are projected to experience a slight increase in delay (less than five seconds), and five intersections are projected to experience a greater amount delay (5 seconds or more) in either or both the a.m. and p.m. peak hours.

Most of the intersections which experience a decrease (or no change) in delay are located along sections where the alignment is above grade or underground. For this analysis, it was assumed that trains would operate on five-minute headways, which reduces operational efficiency at intersections with at-grade crossings.

To be conservative in the analysis of intersection impacts of the LRT Alternative, it was assumed that the operation of the LRT would not cause any existing traffic to divert from corridor roadways to other parallel routes in the study area. While some minor traffic shifts may occur, the limited number of equivalent north/south routes in the study area will limit traffic diversions away from corridor roadways, despite the operation of the LRT.

Appendix F also illustrates the year 2030 LRT Alternative peak hour traffic volumes at the 46 study intersections. Under the Base LRT Alternative, 14 of the 46 intersections would operate at acceptable levels of service.

LRT Alternative with Design Options

Three LRT Alternative Design Options describe potential grade separation at five additional study intersections compared with the Base LRT Alternative. The remaining 41 study intersections will operate the same under the Base LRT Alternative and the LRT Alternative with Design Options.

The results of the analysis of weekday morning and afternoon peak hour conditions at the five study intersections affected by the LRT Alternative with Design Options is summarized in Appendix F. All but one of these intersections is expected to experience either a decrease in overall delay or exhibit no change in delay during the a.m. and p.m. peak hours. These intersections experience a decrease (or no change) in delay because the LRT Alternative with Design Options provides alignments above-grade or below-grade. The intersection of Florence Avenue and Manchester Avenue is expected to experience three additional seconds of delay during the morning peak hour and one additional second of delay in the afternoon peak hour, when compared with the No-Build Alternative. However, delay is significantly reduced compared with the LRT Alternative.

Maintenance and Operations Facility Sites

There are two options advanced in this environmental review for the BRT or LRT maintenance and operations facility: north of the Manchester Station and to the south in El Segundo. The addition of traffic to the street system as a result of staffing at these facilities is not projected to cause any increase in intersection delay. This conclusion was reached because the principal arrival and departure times for employees are outside of typical weekday peak travel periods. The impact analysis considers peak periods for adverse impacts; therefore, no further analysis is required.

3.2.3.3 Impact Assessment

A summary of impacts associated with the Project Alternatives is presented in Table 3-16.

No-Build Alternative

The No-Build Alternative is the future baseline from which Project Alternatives are compared to for assessment of adverse impacts. Therefore, by definition, the No-Build Alternative would not result in adverse traffic impacts at any of the 46 study intersections.

TSM Alternative

The TSM Alternative would not generate adverse traffic impacts at any of the 46 study intersections. The addition of transit service along the corridor would result in a small shift in travel mode from automobile to bus. The result is a general improvement in

Table 3-16. Intersection Impacts by Project Alternative

Int #	N/S Street	E/W Street	Peak Period	TSM	BRT	LRT	LRT Design Options
11	Crenshaw Blvd	Jefferson Blvd	AM	NO	NO	NO	NO
			PM	NO	NO	NO	NO
12	Crenshaw Blvd	Exposition Blvd	AM	NO	NO	**YES**	NO
			PM	NO	NO	**YES**	NO
13	Crenshaw Blvd	Rodeo Rd	AM	NO	**YES**	**YES**	NO
			PM	NO	**YES**	NO	NO
14	Crenshaw Blvd	Coliseum St	AM	NO	**YES**	NO	NO
			PM	NO	NO	NO	NO
15	Crenshaw Blvd	MLK, Jr. Blvd.	AM	NO	**YES**	NO	NO
			PM	NO	**YES**	NO	NO
16	Crenshaw Blvd	Stocker St	AM	NO	**YES**	NO	NO
			PM	NO	**YES**	NO	NO
17	Crenshaw Blvd	Vernon Ave	AM	NO	**YES**	NO	NO
			PM	NO	**YES**	NO	NO
18	Crenshaw Blvd	48th St	AM	NO	NO	NO	NO
			PM	NO	NO	NO	NO
19	Crenshaw Blvd	54th St	AM	NO	**YES**	**YES**	**YES**
			PM	NO	**YES**	**YES**	**YES**
20	Crenshaw Blvd	Slauson Ave	AM	NO	**YES**	NO	NO
			PM	NO	**YES**	NO	NO
25	Centinela Blvd	Florence Ave	AM	NO	NO	**YES**	NO
			PM	NO	NO	**YES**	NO
32	Florence Ave	Manchester Ave	AM	NO	NO	**YES**	NO
			PM	NO	NO	**YES**	NO

Source: Fehr & Peers

traffic operating conditions at the study intersections as fewer automobile trips are being made compared to the No-Build condition.

BRT Alternative

The BRT Alternative would result in adverse traffic impacts at seven of the 46 study intersections based on the impact criteria depicted in Section 3.2.1.1. The impacted intersections under the BRT Alternative are shown in Table 3-16. The impacts would occur where semi-exclusive peak hour bus lanes (allowing non-transit right turns only) reduce the capacity of through traffic on Crenshaw Boulevard.

LRT Alternative

The LRT Alternative would result in adverse traffic impacts at five of the 46 study intersections based on the impact criteria depicted in Section 3.2.1.1. The impacted

intersections under the LRT Alternative are shown in Table 3-16. The impacts would occur at intersections where at-grade crossings are present or in station areas where park-and-ride demand increases traffic volumes.

LRT Alternative with Design Options
The LRT Alternative with Design Options would avoid adverse traffic impacts at all but one of the 46 study intersections based on the impact criteria shown in Section 3.2.1.1 and depicted in Table 3-16. The remaining impact would occur at an intersection where an at-grade crossing is proposed.

3.2.3.4 Mitigation Measures

No-Build Alternative
No mitigation measures would be required because no adverse impacts are expected under the No-Build Alternative.

TSM Alternative
No mitigation measures would be required because no adverse impacts are expected under the TSM Alternative.

BRT Alternative
The adverse impacts generated by the BRT Alternative all occur at intersections where semi-exclusive peak period bus lanes (right turns allowed) reduce through capacity on Crenshaw Boulevard:

- Crenshaw Boulevard and Rodeo Road
- Crenshaw Boulevard and Coliseum Street
- Crenshaw Boulevard and Martin Luther King Jr. Boulevard
- Crenshaw Boulevard and Stocker Street
- Crenshaw Boulevard and Vernon Avenue
- Crenshaw Boulevard and 54th Street
- Crenshaw Boulevard and Slauson Avenue

Grade separation (below-grade BRT tunnel) could fully mitigate all project impacts by returning Crenshaw Boulevard capacity to a before Project level. This mitigation measure was determined not to be cost-effective for the purposes of hosting a single BRT line, since BRT vehicles can also operate in mixed-flow traffic. Therefore, the impacts associated with the semi-exclusive lanes would be significant and unavoidable. However, an additional mitigation measure has been identified for two of the impacted intersections:

T1 Between 48th Street and 60th Street the existing frontage road would be narrowed to provide one travel lane and one parking lane (eliminating parking on the inside lane of the frontage road). Crenshaw Boulevard would be widened to provide a

semi-exclusive curb lane for buses, without any loss in northbound and southbound through traffic capacity on Crenshaw Boulevard.

Mitigation Measure **T1** would eliminate the project-related impacts at Crenshaw Boulevard and 54th Street as well as Crenshaw Boulevard and Slauson Avenue. Since parking would be lost on the inside lane of each frontage road, this mitigation measure would result in significant secondary impacts.

LRT Alternative

The five impacted locations under the LRT Alternative occur as a result of at-grade rail crossings that reduce the operational efficiency of the intersection:

- Crenshaw Boulevard and Exposition Boulevard
- Crenshaw Boulevard and Rodeo Road
- Crenshaw Boulevard and 54th Street
- Centinela Avenue and Florence Avenue
- Manchester Avenue and Florence Avenue

While the intersection of Centinela Avenue and Florence Avenue is impacted under the LRT Alternative, the intersection will still operate at an acceptable LOS D. If mitigation is determined to be necessary, the following mitigation measure would reduce the project-related impact at this intersection to less than significant levels:

T2 Provide a southbound right turn overlap phase on Centinela Avenue or provide a second eastbound left turn lane in Florence Avenue.

The following mitigation measure would reduce the project-related impact at the intersection of Manchester Avenue and Florence Avenue to less than significant levels:

T3 Extend the Florence Avenue southbound right turn bay by 415 feet, add a southbound right turn overlap phase, and add a protected phase for the westbound left turn movement on Manchester Boulevard.

Grade separation of the LRT proposed with several LRT Alternative Design Options would avoid project-related impacts at all impacted intersections with the exception of the intersection of Crenshaw Boulevard and 54th Street.

The following mitigation measure would reduce the project-related impact at the intersection of Crenshaw Boulevard and 54th Street to less than significant levels:

T4 Prohibit northbound and southbound left turns from Crenshaw Boulevard to 54th Street.

Increasing headways from five to ten minutes would also improve intersection operations and reduce project-related impacts. If headways were increased, fewer train crossings per hour would occur and operational efficiency would not be as adversely affected as under a five-minute headway scenario.

3.2.3.5 CEQA Determination

This CEQA determination is based on the following thresholds of significance for traffic impacts:

- Final LOS C - impact is significant if the delay is increased by 10 or more seconds
- Final LOS D - impact is significant if the delay is increased by 7.5 or more seconds
- Final LOS E/F - impact is significant if the delay is increased by 5 or more seconds

No-Build Alternative

No significant impacts would be anticipated under the No-Build Alternative.

TSM Alternative

No significant impacts would be anticipated under the TSM Alternative.

BRT Alternative

The BRT Alternative would result in significant impacts at seven of the 46 study intersections. The impacted intersections under the BRT Alternative are the same as for the NEPA analysis and depicted in Table 3-16. The impacts would occur where semi-exclusive peak hour bus lanes (allowing non-transit right turns only) reduce the capacity of through traffic on Crenshaw Boulevard.

Grade separation (below-grade BRT tunnel) could fully mitigate all project impacts by returning Crenshaw Boulevard capacity to a before Project level. This mitigation measure was determined not to be cost-effective for the purposes of hosting a single BRT line, since BRT vehicles can also operate in mixed-flow traffic. Therefore, the impacts associated with the semi-exclusive lanes would be significant and unavoidable. However, Mitigation Measure **T1** would eliminate the project-related impacts at Crenshaw Boulevard and 54th Street as well as Crenshaw Boulevard and Slauson Avenue. Since parking would be lost on the inside lane of each frontage road, this mitigation measure would result in significant secondary impacts.

LRT Alternative

The five impacted locations under the LRT Alternative occur as a result of at-grade rail crossings that reduce the operational efficiency of the intersection:

- Crenshaw Boulevard and Exposition Boulevard
- Crenshaw Boulevard and Rodeo Road
- Crenshaw Boulevard and 54th Street
- Centinela Avenue and Florence Avenue
- Manchester Avenue and Florence Avenue

While the intersection of Centinela Avenue and Florence Avenue is impacted under the LRT Alternative, the LOS at the intersection will still operate at an acceptable LOS D. If mitigation is determined to be necessary, Mitigation Measure **T2** would reduce the project-related impact at this intersection to less than significant levels. Mitigation Measure **T3** would reduce the project-related impact at the intersection of Manchester

Avenue and Florence Avenue to less than significant levels. Grade separation of the LRT proposed with several LRT Alternative Design Options would avoid four of these five project-related impacts. Mitigation Measure **T4** would reduce the project-related impact of the intersection of Crenshaw Boulevard and 54th Street to less than significant levels. Increasing headways from five to ten minutes would also improve intersection operations and reduce project-related impacts. If headways were increased, fewer train crossings per hour would occur and operational efficiency would not be as adversely affected as under a five-minute headway scenario.

3.2.4 Parking

This section describes the future on- and off-street parking conditions along the corridor and assesses the potential for parking-related impacts resulting from the project alternatives.

3.2.4.1 Methodology

The methodology for evaluating the impacts of removing on-street parking, off-street parking and station area spillover to accommodate the proposed Project considers a number of factors. The evaluation addresses such issues as convenience, access, safety, business disruption, and the need for parking replacement. The evaluation also reflects field observations on the utilization of on-street parking along the corridor, as well as the availability of supplemental off-street parking and/or on-street parking in the immediate vicinity of the corridor.

3.2.4.2 Future Conditions

On-Street Parking

Construction of the Crenshaw Transit Project would result in the removal of on-street parking spaces along the Crenshaw Boulevard portion of the transit corridor under the BRT and LRT Project Alternatives. In the Harbor Subdivision portion of the transit corridor, the Metro-owned right-of-way that would be used as the guideway for BRT or LRT alternatives precludes any on-street loss in that area. Thus, on-street parking loss would be limited to BRT and LRT alternatives along Crenshaw Boulevard. No on-street parking loss would occur under the No-Build and TSM Project Alternatives.

Table 3-17 summarizes the number of existing spaces along the transit corridor from Exposition Boulevard to 67th Street and how many spaces would be removed under the BRT and LRT Project Alternatives. The summary includes spaces on either side of the street and if applicable, frontage road.

BRT Alternative

Under the BRT Alternative, a total of four on-street spaces would be permanently lost on southbound Crenshaw Boulevard between Exposition Boulevard and Rodeo Road. Peak period parking loss would occur on Crenshaw Boulevard between Rodeo Road and Coliseum Street, Martin Luther King Jr. Boulevard and Brynhurst Avenue, and 60th Street and 67th Street. A total of 118 northbound and 129 southbound Crenshaw Boulevard on-street spaces would be subject to new or extended peak hour parking restrictions as a result of the BRT Alternative. Except for the four spaces permanently

Table 3-17. Crenshaw Boulevard Corridor On-Street Parking and Spaces Lost by Alternative

From	To	Parking Restrictions		# of Metered Spaces		# Non-Metered Spaces		Spaces Lost by Alternative	
		Northbound (East Side)	Southbound (West Side)	NB (East)	SB (West)	NB (East)	SB (West)	BRT	LRT
Adams Blvd	28th St	NS 7a-9a, 4p-7p & 1 HR PA 9a-4p	AGZ: NS 7a-9a, 4p-7p & 1 hr PA 9a-4p			12	7	0 NB & 0 SB	N/A
28th St	29th St	NS 7a-9a, 4p-7p & 1 HR PA 9a-4p	AGZ: NS 7a-9a, 4p-7p & 1 hr PA 9a-4p			10	12	0 NB & 0 SB	N/A
29th St	30th St	NS 7a-9a, 4p-7p & 1 HR PA 9a-4p	AGZ: NS 7a-9a, 4p-7p & 1 hr PA 9a-4p			7	16	0 NB & 0 SB	N/A
30th St	W Jefferson Blvd	NS 7a-9a, 4p-7p & 1 HR PA 9a-4p	AGZ: NS 7a-9a, 4p-7p			8	13	0 NB & 0 SB	N/A
W Jefferson Blvd	36th St	NSAT	AGZ: NS 7a-9a, 4p-7p; 1 HR PA 9a-4p				8	0 NB & 0 SB	N/A
36th St	Exposition Blvd	NSAT	AGZ: NS 7a-9a, 4p-7p; 1 HR PA 9a-4p				10 / 1 LZ	0 NB & 0 SB	N/A
Exposition Blvd	Rodeo Rd	NSAT	AGZ: NS 7a-9a, 4p-7p; 1 HR PA 9a-4p				4	0 NB; 4 SB	0 NB & 0 SB
Rodeo Rd	Rodeo Pl	NS 7a-9a, 4p-7p ; 1 HR PA 9a-4p	AGZ: NS 7a-9a, 4p-7p; 1 HR PA 9a-4p			8	12	8 NB 9-10a; 12 SB 9-10a & 3-7p	8 NB; 12 SB
Rodeo Pl	Coliseum St	PA	NSAT			9		9 NB 7-10a & 3-7p; 0 SB	9 NB
Coliseum St	Coliseum Pl	[FR]: NS 7p Sat - 6a Mon	[FR]: NS 7p Sat - 6a Mon			40 (inner) & 44 (outer) / 2 HC (outer)	14 (outer), 17 (inner) / 1 LZ (outer)	0 NB & 0 SB	40 NB
Coliseum Pl	39th St		[FR]: NS 7p Sat - 6a Mon				12(outer) & 17(inner) / 2 LZ (outer)	0 NB & 0 SB	
39th St	W MLK, Jr. Blvd	[FR]: PA	NSAT			32 (inner) & 32 (outer)		0 NB & 0 SB	N/A

Table 3-17. Crenshaw Boulevard Corridor On-Street Parking and Spaces Lost by Alternative (continued)

From	To	Parking Restrictions		# of Metered Spaces		# Non-Metered Spaces		Spaces Lost by Alternative	
		Northbound (East Side)	Southbound (West Side)	NB (East)	SB (West)	NB (East)	SB (West)	BRT	LRT
W MLK, Jr Blvd	Stocker St	NS 7a-9a ; 2 HR PA 9a-6p ; NS 6p Sun - 6a Mon	NSAT	16				16 NB 9-10a & 3-7p; 0 SB	N/A
Stocker St	Homeland Dr/W 43rd St	NS 7a-9a, 4p-7p ; 2 HR PA 9a-4p ; NS 6p Sun - 6a Mon	NS 7a-9a, 4p-6p ; 2 HR PA 9a-4p ; NS 6p Sun - 6a Mon	14	25			14 NB 9-10a & 3-4p; 25 SB 9-10a & 3-4p, 6-7p	N/A
Homeland Dr/W 43rd St	W 43rd Pl	NS 7a-9a, 4p-7p ; 2 HR PA 9a-4p ; NS 6p Sun - 6a Mon	PA	11	15			11 NB 9-10a & 3-4p; 25 SB 7-10a & 3-7p	N/A
W 43rd Pl	Vernon Ave	NSAT	NSAT					0 NB & 0 SB	N/A
Vernon Ave	Brynhurst Ave	NS 7a-9a, 4p-6p ; 2 HR PA 9a-4p ; NS 6p Sun-6a Mon	NS 7a-9a, 4p-6p ; 2 HR PA 9a-4p	7	7		1 LZ	7 NB 9-10a & 3-4p, 6-7p; 8 SB 9-10a & 3-4p, 6-7p	N/A
Brynhurst Ave	48th St	[FR]: 2 HR PA 9a-6p	[FR]: NS 7a-9a, 4p-6p ; 2 HR PA 9a-4p / 4 HR PA 8a-6p		19 (outer) & 12 (inner)	12 (inner)	2 LZ (outer)	0 NB & 0 SB	12 NB & 12 SB
48th St	West-mount Ave	[FR]: NS 7a-9a, 4p-6p ; 2 HR PA 9a-4p; NS 6p Sun-6a Mon	[FR]: NS 9p Sun - 6a Mon ; 2 HR PA 8a-6p			24 (inner) & 15 (outer)	11(outer) & 14(inner) / 3 LZ (outer)	0 NB & 0 SB	50 NB & 55 SB
Westmount Ave	W 50th St	[FR]: NS 7a-9a, 4p-6p ; 2 HR PA 8a-6p ; NS 6p Sun-6a Mon	[2 FR]: NS Sat - Sun				2nd Crenshaw Bl: 19(outer) & 23(inner) frontage rd: 28(outer) & 41(inner) / 6 HC	0 NB & 0 SB	
W 50th St	52nd St	[FR]: NS 10p Sun - 6 p Mon ; PA / 2 HR PA 8a-6p				36 (inner) & 18 (outer)		0 NB & 0 SB	

Table 3-17. Crenshaw Boulevard Corridor On-Street Parking and Spaces Lost by Alternative (continued)

From	To	Parking Restrictions		# of Metered Spaces		# Non-Metered Spaces		Spaces Lost by Alternative	
		Northbound (East Side)	Southbound (West Side)	NB (East)	SB (West)	NB (East)	SB (West)	BRT	LRT
52nd St	54th St	[FR]: 2 HR PA 8a-6p	[FR]: NS 9p Sun - 6a Mon ; 2 HR PA 8a-6p	15 (inner) & 12 (outer) / 3 HC	11 (outer)	2 LZ (outer)	17(inner) / 4 LZ (outer)	0 NB & 0 SB	15 NB & 17 SB
54th St	57th St	[FR]: 2 HR PA 8a-6p	[FR]: NS 9p Sun - 6a Mon ; 2 HR PA 8a-6p	19 (outer)	18 (outer)	22 (inner) / 1 LZ (outer)	19(inner) / 2 LZ (outer)	0 NB & 0 SB	22 NB & 19 SB
57th St	Slauson Ave	[FR]: NS 6p Sun - 6a Mon / loading zone	[FR]: Loading 6:30a-9a, 1:30p-4p / 2 HR PA 9a-1:30p	6 (outer)		7 (inner) & 4 (outer) / 2 LZ (outer)	23(outer) & 17(inner)	0 NB & 0 SB	7 NB & 17 SB
Slauson Ave	58th St	NSAT	NSAT					0 NB & 0 SB	0 NB & 0 SB
58th St	59th St	NSAT / 1 HR PA 8a-6p	NS 6p Sun - 6a Mon ; 2 HR PA 8a-6p			5	3	0 NB & 0 SB	0 NB & 0 SB
59th St	59th Pl	NS 6p Sun-6a Mon ; 2HR PA 8a-6p	2 HR PA 8a-6p ; NS 6p Sun-6a Mon			5	7	0 NB & 0 SB	0 NB & 0 SB
59th Pl	60th St	NS 6p Sun-6a Mon ; 2HR PA 8a-6p	2 HR 8a-6p			5	6	0 NB & 0 SB	0 NB & 0 SB
60th St	63rd St	NS 7a-9a, 4p-7p ; 1 HR PA 9a-4p	AGZ: 2 HR PA 8a-6p ; NS 6p Sun-6a Mon			21	21	21 NB 9-10a & 3-4p; 21 SB 7-10a & 3-7p	0 NB & 0 SB
63rd St	Hyde Park	NS 7a-9a, 4p-7p ; NS 6p Sun - 6a Mon	NS 4p-6p, 6p Sun - 6a Mon			18	17	18 NB 9-10a & 3-4p; 17 SB 7-10a & 3-4p, 6-7p	0 NB & 0 SB
Hyde Park	66th St	NS 7a-9a, 4p-7p ; NS 6p Sun - 6a Mon	NS 4p-6p, 6p Sun - 6a Mon ; 1 HR PA 8a-4p			6	7	6 NB 9-10a & 3-4p; 7 SB 7-10a & 3-4p, 6-7p	0 NB & 0 SB

Table 3-17. Crenshaw Boulevard Corridor On-Street Parking and Spaces Lost by Alternative (continued)

From	To	Parking Restrictions		# of Metered Spaces		# Non-Metered Spaces		Spaces Lost by Alternative	
		Northbound (East Side)	Southbound (West Side)	NB (East)	SB (West)	NB (East)	SB (West)	BRT	LRT
66th St	66th Pl	NS 7a-9a, 4p-7p ; 1 HR PA 9a-4p ; NS 6p Sun - 6a Mon				8	7	8 NB 9-10a & 3-4p; 7 SB 7-10a & 3-4p, 6-7p	0 NB & 0 SB
66th Pl	67th St	NSAT					7	0 NB; 7 SB 7-10a & 3-4p, 6-7p	0 NB & 0 SB
Totals				**91**	**107**	**415**	**437**	**4 SB (permanent); 118 NB & 129 SB (peak)**	**163 NB & 132 SB (permanent)**

Source: Fehr & Peers
Key: AGZ = anti-gridlock zone, FR = frontage road, HC = handicap, LZ = loading zone, PA = parking allowed, NS = no stopping, NSAT = no stopping anytime, ";" = both restrictions throughout segment, "/" = restriction a in one section of the segment / restriction b in different section of segment

lost between Exposition Boulevard and Rodeo Road, on-street parking along Crenshaw Boulevard would be restored to future No-Build conditions during off-peak hours as a result of the operation of BRT buses in mixed-flow traffic outside of 7:00 to 10:00 a.m. and 3:00 to 7:00 p.m.

LRT Alternative

On-street parking loss would be most pronounced under the LRT Alternative. As a result of the inclusion of a rail right-of-way in the center of Crenshaw Boulevard, permanent parking loss would take place on a number of blocks between Rodeo Road and Slauson Avenue. Between Rodeo Road and 39th Street, the LRT Alternative would result in the permanent loss of 57 northbound and 12 southbound Crenshaw Boulevard on-street parking spaces. Between Brynhurst Avenue and Slauson Avenue, the LRT Alternative would result in the permanent loss of 106 northbound and 120 southbound Crenshaw Boulevard on-street parking spaces. This on-street parking loss would occur on the inner portion of the frontage road that borders both sides of Crenshaw Boulevard. The frontage road would be eliminated to accommodate the center-running rail right-of-way.

Off-Street Parking

No off-street parking loss would occur under the No-Build and TSM Project Alternatives. Comparatively, the project is expected to result in only a minor loss of off-street parking under each of the BRT and LRT Alternatives. This loss would occur in the Harbor Subdivision portion of the transit corridor and be limited to private off-street lots where the land would be used for station development. The land used for private off-street parking would be acquired by Metro prior to construction of the BRT or LRT Project Alternative.

Addition of Station Area Parking

No park-and-ride lots would be provided under the No-Build and TSM Alternatives. Under the BRT and LRT Alternatives, park-and-ride lots would be provided at four of the nine proposed stations: Crenshaw/Exposition Station (shared with Metro Exposition LRT Line), Crenshaw/Martin Luther King Jr. Station (minimum 100 spaces), Florence/La Brea Station (minimum 100 spaces), and Aviation/Manchester Station (minimum 100 spaces). The park-and-ride lots at Crenshaw/Exposition Station and Crenshaw/Martin Luther King Jr. Station would be shared with adjacent land uses. While the final number of parking spaces provided at each lot will be determined at a later time, it is assumed that the proposed station parking would provide sufficient capacity to accommodate the anticipated (year 2030) LRT parking demand as indicated in the Metro Travel Demand Model. Parking demand for BRT, while not included in the Metro Travel Demand Model, is expected to be approximately 100 spaces per station.

Impact Assessment

This section describes the adverse impacts to on- and off-street parking and parking spillover along the project corridor generated by the project alternatives.

No-Build Alternative

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

TSM Alternative

Under the TSM Alternative, no on- or off-street parking loss would occur. The new Rapid route planned as part of the TSM alternative would utilize the existing street system and restrictions. Minimal neighborhood spillover parking is expected above the No-Build condition as the improved transit service induces choice riders to utilize the system. Parking demand at the Crenshaw/Exposition Station and Aviation/Century Station park-and-ride lots is expected to increase slightly with the introduction of the TSM Alternative. No adverse impacts are expected because the projected increase in on- and off-street parking demand would be minor.

BRT Alternative

The BRT Alternative would result in the permanent loss of four on-street spaces on southbound Crenshaw Boulevard between Exposition Boulevard and Rodeo Road. The permanent loss of four spaces could result in an adverse impact as parking supply is reduced in the corridor.

The BRT Alternative will expand upon existing or introduce new peak hour parking restrictions along the Crenshaw Boulevard portion of the route from Exposition Boulevard to 67th Street. In order for the BRT Alternative to benefit from travel time savings compared to mixed-flow traffic, peak period parking restrictions would be in effect from 7:00 and 10:00 a.m. and 3:00 and 7:00 p.m. Under existing conditions, the majority of curb parking in this corridor is restricted during the AM and PM peak periods, typically from 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. (or 7:00 p.m.). The semi-exclusive bus lanes would extend these restrictions by one hour in the AM peak period and one to two hours in the PM peak period. The new or extended peak hour parking restrictions that would allow for the creation of semi-exclusive bus lanes would reduce available supply on the Crenshaw corridor by 118 spaces northbound and 129 spaces southbound. Because of the temporary nature of the parking loss, it would not be considered an adverse impact.

Parking facilities are proposed at four stations along the BRT route: Crenshaw/Exposition Station, Crenshaw/Martin Luther King Jr. Station, Florence/La Brea Station, and Aviation/Manchester Station. The facilities would be designed to accommodate both vehicular and bicycle parking. No more than 100 vehicles are expected to park at the Crenshaw/Martin Luther King Jr. Station, Florence/La Brea Station, and the Aviation/Manchester Station. Therefore, impacts associated with spillover parking to the adjacent streets would be minimal. However, parking restrictions and pricing strategies along the adjacent streets are recommended to discourage long-term parking by transit patrons.

At other stations along the corridor where off-street parking would not be provided, spillover parking to the adjacent streets may occur, but is likely to be minimal based on parking demand at stations with park-and-ride facilities. Although the lack of parking supply may result in slightly reduced ridership, it may also encourage transit patrons to use other modes of access such as walking, bicycling, transit and kiss-and-ride (drop-off).

LRT Alternative

To accommodate the LRT right-of-way along the Crenshaw Boulevard corridor, the permanent removal of on-street parking between Exposition Boulevard and 67th Street would be required. The future conditions analysis determined that the LRT Alternative would result in the loss of 57 northbound and 12 southbound on-street parking spaces between Rodeo Road and 39th Street and 106 northbound and 120 southbound on-street parking spaces between Brynhurst Avenue and Slauson Avenue. The permanent loss of 163 northbound and 132 southbound on-street spaces could result in an adverse impact as parking supply is reduced in the corridor.

Parking facilities are proposed at four stations along the LRT route: Crenshaw/Exposition Station, Crenshaw/Martin Luther King Jr. Station, Florence/La Brea Station, and Aviation/Manchester Station. No more than 100 vehicles are expected to park at the Crenshaw/Martin Luther King Jr. Station, Florence/La Brea Station, and the Aviation/Manchester Station. Therefore, impacts associated with spillover parking to the adjacent streets would be minimal. However, parking restrictions and pricing strategies along the adjacent streets are recommended to discourage long-term parking by transit patrons.

At other stations along the corridor where off-street parking would not be provided, spillover parking to the adjacent streets may occur, but is likely to be minimal based on parking demand at stations with park-and-ride facilities. Although the lack of parking supply may result in slightly reduced ridership, it may also encourage transit patrons to use other modes of access such as walking, bicycling, transit and kiss-and-ride (drop-off).

Maintenance and Operations Facility Sites

The two options associated with the location of the BRT or LRT maintenance and operations facility would not result in adverse impacts because they would not affect on- or off-street parking along the corridor.

3.2.4.3 Mitigation Measures

No-Build Alternative

No mitigation measures would be required as no Project impacts are expected.

TSM Alternative

No mitigation measures would be required as no Project impacts are expected.

BRT Alternative

The permanent loss of four on-street spaces on southbound Crenshaw Boulevard between Exposition Boulevard and Rodeo Road would occur in a commercial area. The parking loss can be mitigated by the use of off-street parking provided by the businesses immediately adjacent to the loss.

Because of the temporary nature of the parking loss resulting from the new or extended peak period parking restrictions along the Crenshaw corridor, the impact to the parking supply would not be considered adverse. The costs of replacing parking, which include private land acquisition, construction costs, outweigh this temporary loss. However, the

off-street parking supply in this corridor was examined to determine if displaced demand could be satisfied in the immediate vicinity of where the temporary loss would occur:

- From Rodeo Road to Coliseum Street, sufficient off-street parking immediately adjacent to the peak period on-street parking loss exists to absorb any displaced demand.
- Along the stretch of Crenshaw Boulevard from Martin Luther King Jr. Boulevard to Brynhurst Avenue, a small supply of off-street parking exists to absorb any displaced demand. To further increase off-street supply, Metro should coordinate with property owners of adjacent underutilized parcels or parking lots in this area to add additional surface parking spaces.
- From 60th Street to 67th Street, the land uses neighboring Crenshaw Boulevard are largely residential in nature and sufficient on-street parking is available on the cross streets to absorb any displaced demand. Also, because the area is residential, parking demand is less during peak morning and afternoon periods than it is during weekday off-peak and all day during weekends when the parking restrictions would not be in effect.

The following mitigation measure shall be implemented in the areas adjacent to BRT stations where no station parking facility is provided, and local jurisdictions determine that spillover parking is causing a significant impact.

T5 A combination of the following four basic control approaches shall be recommended by Metro to political jurisdictions along the alignment to reduce impacts of Metro patron parking in neighborhoods:

- Prohibit on-street parking
- Time-limited parking
- Resident permit parking
- Non-resident permits for registered carpools who work in the zone

LRT Alternative

Mitigation measures to offset the on-street parking loss that would occur under the LRT Alternative focus around two sections of the Crenshaw Boulevard Corridor from Exposition Boulevard to Slauson Avenue.

Sufficient off-street parking exists adjacent to the 57 northbound and 12 southbound on-street parking spaces between Rodeo Road and 39th Street that would be lost to mitigate the adverse impact. The businesses on Crenshaw Boulevard all maintain plentiful supplies of off-street parking.

There are 106 northbound and 120 southbound on-street parking spaces between Brynhurst Avenue and Slauson Avenue that would be lost following reconfiguration of Crenshaw Boulevard eliminating the frontage roads that border the north and southbound sides of the street. The parking loss would include those on-street spaces on the inside of the frontage roads. The LRT Alternative would maintain curb parking along

this stretch of Crenshaw Boulevard, although total supply would decrease. However, the curb parking supply along this corridor will be sufficient to satisfy demand for both the inner and outer portions of the frontage road as neither is fully occupied, according to existing observations. Side street parking is also available to motorists. This adverse impact can be mitigated by the shift of parking demand to available on-street supply in the corridor.

The following mitigation measure shall be implemented in the areas adjacent to LRT stations where no station parking facility is provided and local jurisdictions determine that spillover parking is causing a significant impact.

T6 A combination of the following four basic control approaches shall be recommended by Metro to political jurisdictions along the alignment to reduce impacts of Metro patron parking in neighborhoods:

- Prohibit on-street parking
- Time-limited parking
- Resident permit parking
- Non-resident permits for registered carpools who work in the zone

The Hyde Park below-grade option of the LRT Alternative with Design Options would result in no parking loss along this segment of the corridor.

Maintenance and Operations Facility Sites

No mitigation measures would be required as no impacts are expected with the location of either of these facilities.

3.2.4.4 CEQA Determination

CEQA guidelines state that a significant impact would occur if the proposed Project results in inadequate parking supply.

No-Build

The parking analysis presented above indicates that the No-Build Alternative would not remove existing parking and would not result in inadequate parking. Therefore, no significant impacts would occur under this alternative.

TSM Alternative

The parking analysis presented above indicates that the TSM Alternative would not remove existing parking and would not result in inadequate parking. Therefore, no significant impacts would occur under this alternative.

BRT Alternative

The BRT Alternative may result in inadequate parking supply along Crenshaw Boulevard from Martin Luther King Jr. Boulevard to Brynhurst Avenue during peak weekday periods. However, because of the temporary nature of the parking loss resulting from the new or extended peak period parking restrictions along the Crenshaw corridor, the impact to the parking supply would not be considered adverse. The costs of replacing parking, which

include private land acquisition, construction costs, outweigh this temporary loss. The off-street parking supply in this corridor was examined to determine if displaced demand could be satisfied in the immediate vicinity of where the temporary loss would occur. The loss of four on-street spaces on southbound Crenshaw Boulevard between Exposition Boulevard and Rodeo Road and peak period parking restrictions on Crenshaw Boulevard from 60th Street to 67th Street would occur in areas where the parking loss would be easily replaced in off-street commercial lots or on nearby cross-streets.

LRT Alternative

The parking analysis presented above indicates that the LRT Alternative would not result in inadequate parking. The parking loss that would occur on two sections of the Crenshaw Boulevard Corridor from Exposition Boulevard to Slauson Avenue would not impact the remaining supply such that demand would exceed supply.

Sufficient off-street parking exists adjacent to the 57 northbound and 12 southbound on-street parking spaces between Rodeo Road and 39th Street that would be lost under the LRT Alternative. The businesses on Crenshaw Boulevard all maintain plentiful supplies of off-street parking; therefore no significant impact would occur on this stretch of Crenshaw Boulevard with respect to on-street parking loss.

There are 106 northbound and 120 southbound on-street parking spaces between Brynhurst Avenue and Slauson Avenue that would be lost following reconfiguration of Crenshaw Boulevard eliminating the frontage roads that border the north and southbound sides of the street. The parking loss would include those on-street spaces that exist on the inside of the frontage roads. The LRT Alternative would maintain curb parking along this stretch of Crenshaw Boulevard, although total supply would decrease. However, the curb parking supply along this corridor will be sufficient to satisfy demand for both the inner and outer portions of the frontage road as neither is fully occupied according to existing observations; therefore no significant impact would occur on this stretch of Crenshaw Boulevard with respect to on-street parking loss. The Hyde Park below-grade option of the LRT Alternative with Design Options would result in no parking loss along this segment of the corridor.

3.2.5 Pedestrian Circulation

This section describes the potential for impacts to the pedestrian circulation system under each project alternative. An adverse impact would occur if the project would result in substantial overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the project corridor or adjacent areas.

3.2.5.1 Methodology

Pedestrian activity along the Crenshaw Transit Corridor is light compared to other locations in Los Angeles County with heavy foot traffic, such as downtown Los Angeles, Hollywood Boulevard in Hollywood, or downtown Long Beach. The corridor consistently operates at a pedestrian LOS A, which is defined in the *HCM Chapter 18*: "At a walkway LOS A, pedestrians move in desired paths without altering their movements in response

to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely."

For impact assessment, two qualitative analyses were performed. First, the project generated pedestrian trips to and from project stations/stops was assessed to determine if sidewalk overcrowding could occur. Second, the project design was assessed to determine if the design could create potentially hazardous conditions or interfere with pedestrian access.

3.2.5.2 Future Conditions

For the LRT Alternative, the number of daily pedestrian trips to and from the project stations/stops was projected using the Metro Travel Demand Model. Walk trips are drawn from the surrounding neighborhood and typically start or end within 1/2 mile of a station/stop. The No-Build scenario is what would typically happen without an investment in the corridor and thus would not generate additional walk trips above the baseline. Walk trips for the TSM and BRT Alternatives were not projected using the Metro Travel Demand Model. Instead, walk trips for these two alternatives were estimated based on total daily station ridership and the ratio of boardings to walk trips for the LRT Alternative. For those stations without a light rail component, the ratio of boardings to walk trips for the LRT Alternative of the nearest LRT station was used. These walk trips are summarized by project alternative in Table 3-18.

Table 3-18. Walk Trip Projections by Project Alternative (Daily Pedestrian Trips/Station)

Station Name	TSM-BRT	TSM-LRT	BRT	LRT
Mariposa/Nash Station (Green Line)	N/A	N/A	N/A	68
Aviation/Imperial/LAX Station (Green Line)	128	105	192	N/A
Aviation/Century Station	55	43	186	208
Aviation/Manchester Station	142	122	191	138
Florence/La Brea Station	244	182	413	408
Florence/West Station	271	206	525	748
Crenshaw/Slauson Station	278	170	414	452
Crenshaw/Vernon Station(Optional)	377	255	579	578
Crenshaw/M.LK Jr. Station	241	143	355	462
Crenshaw/Exposition Station (Expo Line)	194	207	265	642
Crenshaw/Adams Station	100	N/A	188	N/A
Crenshaw/Pico Station	163	N/A	289	N/A
Crenshaw/Wilshire Station	255	N/A	577	N/A
Wilshire/Western Station	181	N/A	352	N/A

Source: Metro Travel Demand Model

Under the TSM alternative, new Rapid stops are planned along the corridor, but no pedestrian improvements are expected. The BRT and LRT alternatives are expected to result in improved pedestrian facilities adjacent to stations. Sidewalk and crosswalk treatments are expected, which would enhance pedestrian access and mobility.

3.2.5.3 Impact Assessment

This section describes the adverse impacts to pedestrian access and circulation caused by the proposed Project.

No-Build Alternative

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

TSM Alternative

For the TSM Alternative, walk trips were not modeled separately. Instead, walk trips were estimated based on total daily station ridership and the ratio of boardings to walk trips for the LRT Alternative. For those stations without a light rail component, the ratio of boardings to walk trips for the LRT Alternative of the nearest LRT station was used. Under the TSM Alternative, a daily maximum of 380 walk trips per station are expected in 2030 (Crenshaw/Vernon Station). A daily total of 380 or less walk trips per station would add only a few trips per minute even during the morning and evening peak periods. A small increase in daily walk trips throughout the corridor is expected as a result of pedestrian travel to and from the new Rapid stops. These trips would not result in sidewalk congestion. Therefore, no adverse impact would occur with respect to sidewalk overcrowding. Under the TSM Alternative, the sidewalks along the corridor would not be changed.

BRT Alternative

For the BRT Alternative, walk trips were not modeled separately. Instead, walk trips were estimated based on total daily station ridership and the ratio of boardings to walk trips for the LRT Alternative. For those stations without a light rail component, the ratio of boardings to walk trips for the LRT Alternative of the nearest LRT station was used. Under the BRT Alternative, a daily maximum of 580 walk trips per station are expected in 2030 (Optional Crenshaw/Vernon Station). A daily total of 580 or less walk trips per station would add only a few trips per minute even during the morning and evening peak periods. The increase in daily walk trips throughout the corridor as a result of pedestrian travel to and from the project stations would not result in sidewalk congestion. Therefore, no adverse impact would occur with respect to sidewalk overcrowding.

Because station construction would also improve the pedestrian system immediately adjacent to BRT stations, the BRT Alternative would have a beneficial impact when compared to potential hazardous conditions or interference with pedestrian access.

LRT Alternative

Under each LRT Alternative, a daily maximum of 750 walk trips are expected in 2030 (Florence/West Station). A daily total of 750 or less walk trips per station would add only a few trips per minute even during the morning and evening peak periods. The increase in daily walk trips throughout the corridor as a result of pedestrian travel to and from the project stations would not result in sidewalk congestion. Therefore, no adverse impact would occur with respect to sidewalk overcrowding.

Station construction would improve the pedestrian system immediately adjacent to LRT stations. Enhanced sidewalks, upgraded disabled access, and new landscaping are some station-area pedestrian improvements expected as a result of the LRT Alternative. Because

of these expected improvements, the LRT Alternative would have a beneficial impact when compared to potential hazardous conditions or interference with pedestrian access.

Maintenance and Operations Facility Sites
The two options associated with the location of the BRT or LRT maintenance and operations facility would not result in adverse impacts because they would not affect pedestrian access or circulation.

3.2.5.4 Mitigation Measures
No mitigation measures would be required as no Project impacts are expected.

3.2.5.5 CEQA Determination
The proposed Project would not result in significant pedestrian impacts.

3.2.6 Bicycle Circulation

This section describes the potential for impacts to the bicycle network under each project alternative. An adverse impact would occur if the project would create potentially hazardous conditions for bicyclists or otherwise interfere with bicycle accessibility to the project corridor or adjacent areas.

3.2.6.1 Methodology
There are no existing bicycle routes on portions of the project corridor. Existing bike routes, however intersect the project corridor and new corridor and corridor intersecting routes are planned as part of the *City of Los Angeles Bicycle Plan*, as shown in Figure 3-14. To determine the potential for adverse bicycle impacts, a qualitative assessment of the effects of each project alternative on the corridor and corridor bicycle network was performed. If the project alternative was found to result in potentially hazardous conditions or interfere with bicycle access, an impact would occur.

3.2.6.2 Future Conditions
The bike routes planned as part of the *City of Los Angeles Bicycle Plan* are assumed for all project alternatives. Under future conditions, Class I bike paths would exist along Aviation Boulevard and Florence Avenue throughout the study area, and on Slauson Avenue throughout the study area. Class II bike lanes would exist along Venice Boulevard east of Crenshaw Boulevard and along Pico Boulevard from Crenshaw Boulevard to Rimpau Boulevard. Class II bike lanes will exist along Exposition Boulevard as part of the Metro Expo Line Project.

3.2.6.3 Impact Assessment
This section describes the adverse impacts to bicycle access and circulation caused by the proposed Project.

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

TSM Alternative
The TSM Alternative would have the same effect on bicycle access as the No-Build Alternative. Therefore the TSM Alternative would not result in adverse bicycle impacts.

BRT Alternative
The BRT Alternative would not interfere with the planned or existing bicycle routes and thus would not adversely affect bicycle operating conditions in the corridor. In the busway segment of the project corridor, the potential to integrate a bike path into the right-of-way exists, which would have a beneficial impact on the bicycle network.

The parking facilities proposed at four locations along the BRT route would also provide bicycle parking. The addition of bicycle parking at park-and-ride stations would have a beneficial impact on the bicycle network.

LRT Alternative
The LRT Alternative would not interfere with the planned or existing bicycle routes and thus would not adversely affect bicycle operating conditions in the corridor. The Crenshaw Boulevard center-running LRT guideway would not impact any bicycle access along the corridor. The at-grade guideway would have only a minimal effect on bike travel that intersects the corridor, as a result of at-grade train crossings increasing the delay when crossing Crenshaw Boulevard. In the Harbor Subdivision right-of-way, the potential to integrate a bike path into the ROW exists, which would have a beneficial impact on the bicycle network.

The parking facilities proposed at four locations along the LRT route would also provide bicycle parking. The addition of bicycle parking at park-and-ride stations would have a beneficial impact on the bicycle network.

Maintenance and Operations Facility Sites
The two options associated with the location of the BRT or LRT maintenance and operations facility would not result in adverse impacts because they would not affect bicycle access or circulation.

3.2.6.4 Mitigation Measures
No mitigation measures would be required as no Project impacts are expected.

3.2.6.5 CEQA Determination
The proposed Project would not result in significant bicycle impacts.

3.2.7 Summary of Mitigation Measures

Intersection Analysis
BRT Alternative

T1 Between 48th Street and 60th Street the existing frontage road would be narrowed to provide one travel lane and one parking lane (eliminating parking on the inside lane of the frontage road). Crenshaw Boulevard would be widened to provide a semi-exclusive curb lane for buses, without any loss in northbound and southbound through traffic capacity on Crenshaw Boulevard.

LRT Alternative

T2 Provide a southbound right turn overlap phase on Centinela Avenue or provide a second eastbound left turn lane in Florence Avenue.

T3 Extend the Florence Avenue southbound right turn bay by 415 feet, add a southbound right turn overlap phase, and add a protected phase for the westbound left turn movement on Manchester Boulevard.

T4 Prohibit northbound and southbound left turns from Crenshaw Boulevard to 54th Street.

Parking

BRT Alternative

T5 A combination of the following four basic control approaches shall be recommended by Metro to political jurisdictions along the alignment to reduce impacts of Metro patron parking in neighborhoods:

- Prohibit on-street parking
- Time-limited parking
- Resident permit parking
- Non-resident permits for registered carpools who work in the zone

LRT Alternative

T6 A combination of the following four basic control approaches shall be recommended by Metro to political jurisdictions along the alignment to reduce impacts of Metro patron parking in neighborhoods:

- Prohibit on-street parking
- Time-limited parking
- Resident permit parking
- Non-resident permits for registered carpools who work in the zone

3.2.8 Impacts Remaining After Mitigation

Intersection Analysis

BRT Alternative

Grade separation (below-grade BRT tunnel) could fully mitigate all project impacts by returning Crenshaw Boulevard capacity to a before Project level. This mitigation measure was determined not to be cost-effective for the purposes of hosting a single BRT line, since BRT vehicles can also operate in mixed-flow traffic. Therefore, the impacts associated with the semi-exclusive lanes would be significant and unavoidable. However, Mitigation Measure **T1** would eliminate the project-related impacts at Crenshaw Boulevard and 54th Street as well as Crenshaw Boulevard and Slauson Avenue. Since parking would be lost on the inside lane of each frontage road, this mitigation measure would result in significant secondary impacts.

LRT Alternative

There are five impacted locations that occur under the LRT Alternative as a result of at-grade rail crossings that reduce the operational efficiency of the intersections.

- Crenshaw Boulevard and Exposition Boulevard
- Crenshaw Boulevard and Rodeo Road
- Crenshaw Boulevard and 54th Street
- Centinela Avenue and Florence Avenue
- Manchester Avenue and Florence Avenue

While the intersection of Centinela Avenue and Florence Avenue is impacted under the LRT Alternative, the LOS at the intersection will still operate at an acceptable LOS D. If mitigation is determined to be necessary, Mitigation Measure **T2** would reduce the project-related impact at this intersection to less than significant levels. Mitigation Measure **T3** would reduce the project-related impact at the intersection of Manchester Avenue and Florence Avenue to less than significant levels. Mitigation Measure **T4** would reduce the project-related impact of the intersection of Crenshaw Boulevard and 54th Street to less than significant levels. Without grade separations at the intersections of Crenshaw and Exposition Boulevards and Crenshaw Boulevard and Rodeo Road, a significant and unavoidable impact would result. Increasing headways from five to ten minutes would also improve intersection operations and reduce project-related impacts. If headways were increased, fewer train crossings per hour would occur and operational efficiency would not be as adversely affected as under a five-minute headway scenario.

LRT Alternative with Design Options

Grade separation proposed under the LRT Alternative with Design Options would avoid four of the five project-related impacts at intersections found under the LRT Alternative. A final decision on the LRT Alternative with Design Options would be dependent on further traffic analysis and cost evaluation. Mitigation Measure **T4** proposed at the intersection of Crenshaw Boulevard and 54th Street would eliminate the remaining project-related impact. Therefore, after mitigation, no impacts would remain.

Parking

BRT Alternative

Under the BRT Alternative, parking loss due to peak period parking restrictions is temporary, and would not be a significant impact. The implementation of Mitigation Measure **T5** would further reduce impacts of Metro patron parking in neighborhoods to station locations.

LRT Alternative

The parking analysis presented above indicates that the LRT Alternative would not result in inadequate parking. Impacts associated with spillover parking to the adjacent streets would be minimal. However, parking restrictions and pricing strategies along the adjacent streets are recommended to discourage long-term parking by transit patrons. The implementation of Mitigation Measure **T6** would further reduce impacts of Metro patron parking in neighborhoods to station locations.

3.3 Construction Impacts

This section examines the potential for adverse impacts to occur during the construction period for the BRT and LRT Alternatives. Implementation of the No-Build or TSM Alternative would not result in potential disruption to the roadway network and are thus not analyzed as part of the impact analysis. Chapter 4 (Section 4.15) describes the regulatory framework governing the assessment of construction-related impact analysis and the general construction scenario for each Project Alternative.

3.3.1 BRT Alternative

As described, construction of the BRT Alternative would consist of four section types: busway aerial, mixed traffic, busway at-grade, and exclusive right-of-way. The particular construction impacts for the BRT Alternative are varied among the sections. All BRT-related construction would result in adverse impacts at all grade crossings along the Harbor Subdivision right-of-way. Table 3-19 and the following discuss the other potential impacts related to construction of the BRT alignment.

Table 3-19. BRT Alternative Construction Impacts

Segment or Station	Alternative	Construction Type	Impact
104th St to Arbor Vitae St	BRT	Aerial	• Lane reductions (9 months) • Off-peak intermittent closures (9 months) • Parking reductions (6 months)
Hindry Avenue to Oak St	BRT	Aerial	• Off-peak intermittent closures (16 months) • Parking reductions (16 months)
Oak St to Inglewood Ave	BRT	At-Grade	• Off-peak intermittent closures (8 months) • Parking reductions (8 months)
Inglewood Ave to Hillcrest Blvd	BRT	Aerial	• Off-peak intermittent closures (22 months)
Centinela Ave to Victoria Ave	BRT	At-Grade	• Off-peak intermittent closures (6 months) • Parking reductions (6-12 months)

Source: Fehr & Peers

3.3.1.1 Busway Aerial Impacts

Construction of the busway aerial sections would primarily affect three portions of the corridor parallel to the Harbor Subdivision right-of-way: Aviation Boulevard between 104th Street and Arbor Vitae Street; Florence Avenue between Hindry Avenue and Oak Street; and Florence Avenue between Inglewood Avenue and Hillcrest Boulevard.

Aviation Boulevard: 104th Street to Arbor Vitae Street - This portion of the alignment is in a primarily commercial area adjacent to LAX; the major street crossing the Harbor Subdivision right-of-way is Century Boulevard in the east-west direction. In order to construct the aerial structure, a temporary lane and/or street closure may be necessary across Century Boulevard for up to nine months. Century Boulevard currently consists of five eastbound lanes, a raised median, and four westbound lanes, both east and west of Aviation Boulevard. Construction of the aerial structure would require the closure of at

least one lane along Century Boulevard, thereby reducing vehicular capacity and potentially disrupting east-west traffic traveling through this intersection. These closures are projected to occur during the off-peak and nighttime hours. Because of the limited number of east-west crossings along the Harbor Subdivision right-of-way, displaced traffic may divert to other routes, including Arbor Vitae Street to the north or Imperial Highway to the south. Lane closures are not anticipated along this portion of Aviation Boulevard. On-street parking is currently not available either on Aviation Boulevard or Century Boulevard. Off-street parking for adjacent commercial land uses would be lost during construction for up to six months. The location of the aerial structure may result in permanent loss of parking.

Florence Avenue: Hindry Avenue to Oak Street - This portion of the alignment spans the I- 405 Freeway. East of the I-405 Freeway, industrial land uses are north of Florence Avenue, with residential land uses to the south and west of the I-405 Freeway. There are industrial land uses adjacent to Florence Avenue with some residential to the north. Major facilities crossing the Harbor Subdivision include La Cienega Boulevard and the I-405 Freeway; minor facilities include Hyde Park Boulevard and Oak Street. Construction of the BRT aerial structure through this section of the alignment would likely require intermittent off-peak and nighttime lane closures along La Cienega Boulevard and/or complete closures of Hyde Park Boulevard and Oak Street for up to 16 months. These lane closures may cause adverse impacts at La Cienega Boulevard, with possible diversion of southbound traffic to 83rd Street and through a residential neighborhood. Because of the limited number of north-south crossings of the Harbor Subdivision and Florence Avenue, potential adverse impacts may be associated with closures at Hyde Park Boulevard and Oak Street. Traffic may divert to Eucalyptus Avenue; however, construction of the aerial section just to the east may affect this routing and cause other diversions. Depending on the construction methods, the I-405 Freeway may also require temporary lane closures and/or lane/shoulder width reductions to construct the aerial structure for up to 12 months. On-street parking is not available along Florence Avenue. On Augusta Street, adjacent to the Harbor Subdivision and north of Florence Avenue, removal of on-street parking is likely during the construction period of 16 months. The location of the aerial structure may ultimately lead to permanent loss of parking.

Florence Avenue: Inglewood Avenue to Hillcrest Boulevard - This portion of the alignment runs parallel to Florence Avenue and spans Eucalyptus Avenue, Fir Avenue/Ivy Avenue, and La Brea Avenue. North of the Harbor Subdivision, the area is primarily commercial/industrial. South of the Harbor Subdivision, the area is a mix of commercial and residential uses. Construction of the BRT aerial structure through this section of the alignment would likely require intermittent off-peak and nighttime lane closures at the aforementioned crossings for up to 22 months. La Brea Avenue at Florence Avenue consists of three southbound lanes and two northbound lanes; closure of any lanes on La Brea Avenue would result in reduced vehicular capacity and possible impacts to local circulation. Because of the limited number of crossings at the Harbor Subdivision (between the I-405 Freeway and La Brea Avenue), diversion of local traffic may be anticipated, with routing through the residential neighborhoods east of La Brea Avenue. No on-street parking is available along this section of the alignment. However, off-street parking loss may occur to off-street parking lots between Inglewood Avenue and Ivy Avenue for up to 22 months. This loss of parking would become permanent as a

result of the additional ROW required by completion of this alternative. Off-street parking loss may also be experienced between approximately 500 feet west of La Brea Avenue and 800 feet east of La Brea Avenue. In this stretch, there are several off-street parking lots that will experience parking loss because of construction, leading to a permanent loss because of the aerial structure.

Adverse impacts to local traffic and circulation are expected with construction of the BRT aerial structures. In the industrial areas, commercial traffic may require diversion to more convenient routes; residential neighborhoods may be impacted by the diversion of commercial and arterial traffic to more attractive routes. Temporary parking loss is also anticipated as a result of construction; several locations are expected to lose on- and off-street parking permanently.

3.3.1.2 Mixed Traffic Impacts

Construction of the mixed traffic sections would primarily affect each end of the corridor: 104th Street to Imperial Highway and Exposition Boulevard to Wilshire Boulevard. The BRT is planned to operate in mixed flow traffic without special lanes in these sections. Construction is not anticipated with this type of operation; therefore, no impacts are anticipated with mixed traffic operations of the BRT alternative.

3.3.1.3 Busway At-Grade Impacts

Construction of the busway at-grade sections would primarily affect the Harbor Subdivision right-of-way. All at-grade crossings along the Harbor Subdivision would be affected by construction of the BRT and include the following locations: Arbor Vitae Street, Manchester Avenue, Hindry Avenue, Oak Street, Cedar Avenue, Centinela Avenue, Redondo Boulevard, West Boulevard, Brynhurst Avenue, Victoria Avenue, and Crenshaw Boulevard. Each location would require intermittent street closures during the off-peak and nighttime hours for up to six months in order to complete the grade crossings. Because of the limited number of crossings along the Harbor Subdivision, traffic is expected to divert to more attractive routes during the street closures.

The issues related to these diversions are identical to those identified for busway aerial construction. Commercial traffic diversion would primarily be affected by the closures at Arbor Vitae Street, Manchester Avenue, and Hindry Avenue. Limited on-street parking is available at both Manchester Avenue and Hindry Avenue. Construction of the grade crossings would likely result in the temporary loss of on-street parking adjacent to these crossings for six to twelve months; a permanent loss of on-street parking is expected at the Manchester Avenue crossing because of the alignment.

There is a mixture of commercial/industrial and residential communities between the Oak Street and Crenshaw Boulevard crossings. Street/lane closures in the vicinity of Oak Street would result in the diversion of traffic to other crossings. The Oak Street crossing would result in the temporary loss of on-street parking, as well as off-street parking during the construction period. Some off-street parking may be permanently lost because of the requirements of the alignment. Construction of the Cedar Street crossing may result in temporary closure of this crossing; this is expected to adversely impact the adjacent industrial uses (north of the alignment and accessed via Cedar Street). Some

parking may also be lost as a result of construction. However, the most adverse impact is the disruption of normal business operations because of intermittent site access. At Centinela Avenue, a lane/street closure during the off-peak or nighttime periods may severely disrupt traffic operations. The limited number of Harbor Subdivision crossings exacerbates the potential impacts of street closures; local and arterial traffic would divert through adjacent neighborhoods to access an available route. Access to the adjacent residential neighborhood on La Colina Drive may be severely disrupted because of the construction closures. Limited on-street parking is available along the eastside of Centinela Avenue; this parking supply is expected to be temporarily lost during the construction phase. Additionally, on-street parking along the south side of La Colina Drive is expected to be lost to the construction phase. Alignment requirements could result in permanent loss of parking.

The crossings at Redondo Boulevard, West Boulevard, Brynhurst Avenue, Victoria Avenue, and Crenshaw Boulevard would require intermittent off-peak closures of up to eight months to complete the grade crossings, and adverse impacts are anticipated in relation to these closures. There are both commercial and residential land uses adjacent to this area; a predominantly residential concentration is north of the Harbor Subdivision. As with other grade crossings along the alignment, traffic could divert through the adjacent neighborhoods. On-street parking exists at these crossings and would be temporarily lost as a result of construction. Therefore, the busway at grade sections of the BRT Alternative are anticipated to have adverse impacts in relation to diverted traffic and circulation patterns.

3.3.1.4 Exclusive Right-of-Way Impacts

Construction of the exclusive right-of-way portions would mainly affect the corridor between 67th Street and the Exposition Right-of-way. Construction of the exclusive right-of-way would likely result in both the temporary closure of travel lanes and a temporary loss of on-street parking. These temporary losses can be attributed to the installation of new signage and the re-striping of the roadway to indicate exclusive lane operations of the BRT. Therefore, the exclusive right-of-way portion of the BRT is not anticipated to have adverse impacts to traffic, circulation, or parking.

The BRT Alternative would experience varying levels of adverse impacts along the alignment as a result of construction of the BRT. While most of the identified impacts would be temporary, some impacts will become permanent because of physical requirements of the BRT Alternative. Adverse impacts are identified where applicable and mitigation measures will need to be identified to minimize these impacts.

3.3.2 LRT Alternative

As described, construction of the LRT Alternative would consist of three section types: aerial, below-grade, and at-grade (shown in Figure 3-18). The particular construction impacts for the LRT Alternative are varied among the sections and unique to the affected areas. It is anticipated that all LRT-related construction would result in adverse impacts at all locations. Table 3-20 summarizes, and the following discusses the potential impacts related to construction of the LRT alignment.

Figure 3-18. At-Grade LRT Construction

Source: Metro 2008

Table 3-20. LRT Alternative Construction Impacts

Segment or Station	Alternative	Construction Type	Impact
Metro Green Line Mariposa Station to 111th St	LRT	Aerial	• Lane reductions (9 months) • Off-peak intermittent closures (9 months) • Parking reductions (20 months)
111th St to 104th St	LRT	Below Grade	• Access closures (8 months)
102nd St to Arbor Vitae St	LRT	Aerial	• Lane reductions (9 months) • Off-peak intermittent closures (9 months) • Parking reductions (6 months)
Arbor Vitae St to Hindry Ave	LRT	At-Grade	• Intermittent lane reductions (6 months) • Off-peak intermittent closures (6 months) • Parking reductions (6 months)
Hindry Avenue to Oak St	LRT	Aerial	• Off-peak intermittent closures (16 months) • Parking reductions (16 months)
Oak St to Inglewood Ave	LRT	At-Grade	• Access closure (8 months) • Off-peak intermittent closures (8 months) • Parking reductions (8 months)
Eucalyptus Ave to La Brea Ave	LRT	Aerial	• Off-peak intermittent closures (22 months)

Table 3-20. LRT Alternative Construction Impacts (continued)

Segment or Station	Alternative	Construction Type	Impact
Centinela Ave to Victoria Ave	LRT	At-Grade	• Off-peak intermittent closures (12 months) • Parking reductions (6 to 12 months)
Victoria Ave to 60th St	LRT	Aerial	• Lane reductions (24 months) • Turn prohibitions (24 months) • Off-peak intermittent closures (24 months) • Parking reductions (24 months)
59th St to 48th St	LRT	At-Grade	• Lane reductions (12 months) • Turn prohibitions (12 months) • Access closure (12 months) • Off-peak intermittent closures (12 months) • Parking reductions (12 months)
48th St to Coliseum Pl	LRT	Below Grade	• Lane reductions (12 months) • Turn prohibitions (6 months) • Off-peak closures (4 months) • Parking reductions (36 months)
39th St to Rodeo Rd	LRT	At-Grade	• Lane reductions (12 months) • Turn prohibitions (12 months)
Rodeo Rd to Exposition Blvd	LRT	At-Grade	• Lane reductions (6 months)
Crenshaw/MLK Jr. Station	LRT	Below Grade	• Lane reductions (3 months) • Intermittent closures (3 months) • Parking reductions (12 months)
Crenshaw/Vernon Station (Optional)	LRT Design Options	Below Grade	• Intermittent closures (3 months) • Possibility of long term closures • Parking reductions (12 months)
Centinela Ave at Florence Ave	LRT Design Options	Under Crossing	• Off-peak intermittent closures (15 months)
Aviation Blvd at Manchester Ave	LRT Design Options	Aerial	• Lane reductions (9 months) • Off-peak intermittent closures (9 months)
Victoria Ave to 60th St	LRT Design Options	Below Grade	• Lane reductions (24 months) • Turn prohibitions (24 months) • Off-peak intermittent closures (24 months) • Parking reductions (24 months)
39th St to Exposition Blvd	LRT Design Options	Below Grade	• Lane reductions (12 months) • Turn prohibitions (6 months) • Off-peak closures (4 months) • Parking reductions (12 months)
Crenshaw/Exposition Station	LRT Design Options	Below Grade	• Lane reductions (12 months) • Turn prohibitions (6 months) • Off-peak closures (4 months) • Parking reductions (12 months)

Source: Fehr & Peers

3.3.2.1 Aerial Impacts

Five locations along the LRT alignment are identified as operating the LRT in an aerial structure under the LRT Alternative. One additional location would operate the LRT in an aerial structure under the LRT Alternative with Design Options. Typical impacts with the aerial structure include temporary to long-term lane closure, temporary removal of parking, and secondary impacts to adjacent streets. The following identifies the construction related impacts to traffic, circulation, and parking.

At Imperial Highway, construction of the aerial structure (between 111th Street and Metro Green Line) would result in the closure of left-turn pockets (complete or partial) on Aviation Boulevard, as well as lane closures during off-peak and nighttime hours on both Aviation Boulevard and Imperial Highway for a duration of approximately nine months. The turn lane closures would result in reduced capacity in the lanes and may also result in the diversion of arterial traffic to nearby arterials such as Sepulveda Boulevard or La Cienega Boulevard. No on-street parking is available along Aviation Boulevard or Imperial Highway; the off-street Metro Green Line Park and Ride parking lot may require some partial closures as a result of construction of the aerial structures for an approximate duration of 20 months. These impacts are temporary as the standard operational phase would have restored the lane closures.

At Century Boulevard, an aerial structure is planned between 102nd Street and Arbor Vitae Street. A temporary lane closure may be necessary. Century Boulevard currently consists of five eastbound lanes, a raised median, and four westbound lanes, both east and west of Aviation Boulevard. Construction of the aerial structure/station would require the closure of one eastbound lane along Century Boulevard for a duration of approximately nine months, thereby reducing vehicular capacity and potentially disrupting east-west traffic traveling through this intersection. Additional intermittent off- peak and nighttime closures may be needed for the same duration. Because of the limited number of east-west crossings along the Harbor Subdivision right-of-way, displaced traffic may divert to other routes, including Arbor Vitae Street to the north or Imperial Highway to the south. Lane closures are not anticipated along this portion of Aviation Boulevard. On-street parking is not available either on Aviation Boulevard or Century Boulevard under existing conditions. Off-street parking to adjacent commercial land uses would be lost during construction because of construction staging. Completion of the aerial structure/station may result in permanent loss of parking.

At La Cienega Boulevard, an aerial structure is planned between Hindry Avenue and Oak Street. This portion of the alignment spans the I-405 Freeway. East of the I-405 Freeway, industrial land uses are north of Florence Avenue. There are residential land uses to the south and west of the I-405 Freeway, and industrial land uses are adjacent to Florence Avenue with some residential to the north. The major facilities crossing the Harbor Subdivision include La Cienega Boulevard and the I-405 Freeway; minor facilities include Hyde Park Boulevard and Oak Street. Construction of the LRT aerial structure through this section of the alignment would likely require intermittent off-peak and nighttime lane closures along La Cienega Boulevard in combination with lane narrowings for up to 16 months. The crossings at Hyde Park Boulevard and Oak Street would be intermittent requiring off-peak and nighttime closures for up to 16 months. These lane closures may cause adverse impacts at La Cienega Boulevard with possible diversion of southbound traffic

to 83rd Street and through a residential neighborhood. Because of the limited number of north-south crossings of the Harbor Subdivision and Florence Avenue, potential adverse impacts may be associated with closures at Hyde Park Boulevard and Oak Street. Traffic may divert to Eucalyptus Avenue; however, construction of the aerial section just to the east may affect this routing and cause other diversions. Construction over the I-405 Freeway may also require off-peak temporary lane closures in conjunction with lane/shoulder width reductions. On-street parking is not available along Florence Avenue. On Augusta Street, adjacent to the Harbor Subdivision and north of Florence Avenue, removal of on-street parking is likely during the construction period and could ultimately lead to the permanent loss of on-street parking because of the necessity to acquire a small amount of right-of-way for the aerial structure.

At La Brea Avenue, the LRT structure is planned to span Eucalyptus Avenue, Fir Avenue/Ivy Avenue, and La Brea Avenue. North of the Harbor Subdivision, the area is primarily commercial/industrial. South of the Harbor Subdivision, the area is a mix of commercial and residential uses. Construction of the LRT aerial structure through this section of the alignment would likely require intermittent off-peak and nighttime lane closures at the aforementioned crossings, as well as lane narrowing and restriping for up to 22 months. La Brea Avenue at Florence Avenue consists of three southbound lanes and two northbound lanes; closure of any lanes on La Brea Avenue would result in reduced vehicular capacity and possible impacts to local circulation. Because of the limited number of crossings at the Harbor Subdivision (between the I-405 Freeway and La Brea Avenue), diversion of local traffic may be anticipated, with routing through the residential neighborhoods east of La Brea Avenue. No on-street parking is available along this section of the alignment. However, off-street parking loss may occur in parking lots between Inglewood Avenue and Ivy Avenue. This loss of parking would become permanent as a result of the physical requirements of this alternative. Off-street parking loss may also be experienced between approximately 500 feet west of La Brea Avenue and 800 feet east of La Brea Avenue. In this stretch, there are several off-street parking lots that would experience parking loss because of construction. The aerial structure/station could lead to a permanent loss of parking.

The last section of aerial structure under the LRT Alternative is the Crenshaw Boulevard Viaduct between the Harbor Subdivision and 59th Street/Crenshaw Boulevard. Mainly industrial uses abut the Harbor Subdivision, with residential communities directly to the north and south of the alignment and along Crenshaw Boulevard. Each intersection between 63rd Street and 59th Street would be affected by the Viaduct. Construction would require the closure of one lane in each direction on Crenshaw Boulevard and the temporary loss of on-street parking. There are three travel lanes in each direction with on-street parking along this section of Crenshaw Boulevard. The closures would reduce overall capacity to two lanes in each direction. Additional closures would include the restriction of left turns from/onto Crenshaw Boulevard from side streets. These closures and lane reductions would be in effect for up to 24 months. These reductions in traffic capacity and circulation may result in diverted traffic and adversely impact the surrounding residential neighborhoods. The construction may also adversely impact access to adjacent institutional land uses.

Under the LRT Alternative with Design Options, an additional aerial structure would be provided to cross over Manchester Avenue, extending in an aerial alignment

approximately 1,300 feet within the Harbor Subdivision right-of-way. The aerial alignment would return to grade on the north side of Manchester Avenue before the at-grade station proposed on the north side of Hindry Avenue. Construction would require the closure of one through lane on eastbound Manchester Avenue for approximately nine months. Additional intermittent off-peak hour and night closures may be needed for the same duration, and the temporary loss of on-street parking along Manchester Avenue would be likely.

3.3.2.2 Below-Grade Impacts

Two locations along the LRT Alternative alignment are designated as below-grade facilities: 111th Street to 104th Street and 48th Street to 39th Street. Two additional below-grade locations are designated under the LRT Alternative with Design Options: South Victoria Avenue to 60th Street, and 39th Street to Exposition Boulevard.

The southern section from 111th Street to 104th Street is designated for cut and cover construction. All east-west crossings would be prohibited for approximately eight months. Arterial through traffic would not be affected by these closures, although the adjacent industrial activities would require re-routing their access to avoid the Harbor Subdivision crossings. This would cause diversion of local traffic to alternate routes. The limited number of crossings available may compound street closures in the area. On-street parking is not available along this section of Aviation Boulevard, and off-street parking (to the west of the Harbor Subdivision) may be lost during construction for up to 15 months.

The section of Crenshaw Boulevard between 48th Street and 39th Street is identified for subway construction. The neighborhood immediately surrounding this location is primarily residential. The construction period impacts would affect the portals of the subway section; the cut and cover method would be used at the subway portals. The cut and cover construction would severely reduce the northbound movements along Crenshaw Boulevard over the open cut sections. A temporary bridge, which would take approximately four months to complete, would be used to minimize the impacts of this construction method. Off-peak and night closures would be required during the four month construction period of the temporary bridge. The construction of the cut and cover box below the temporary bridge would take 12 months. Full off-peak or weekend closures of Crenshaw Boulevard northbound may be necessary on a short term basis. The number of traffic lanes on Crenshaw Boulevard would be reduced as a result, and local circulation would be impacted. Traffic may divert to Victoria Avenue to the west or 11th Avenue to the east, causing impacts to the residential street system. On-street parking would be lost for up to 36 months during the construction phase to make way for displaced travel lanes. The 39th Street portal is also planned as a cut and cover section. The alignment returns to grade in the commercial corridor, just north of the Baldwin Hills Crenshaw Plaza; the neighborhoods immediately to the east and west are residential. Temporary lane closures are anticipated during off-peak and nighttime periods, this may require temporary street closures during the off-peak periods for up to six months. The median left-turn lanes would likely be closed during the construction period, prohibiting left turns onto 39th Street; additionally, all east-west traffic on 39th Street would be unable to cross Crenshaw Boulevard for up to six months. Traffic is

expected to divert to alternate routes including Victoria Avenue and Bronson Avenue; these routes travel through residential neighborhoods and residents may experience an increase of pass-through traffic during the construction phase for up to six months. While on-street parking is not available on Crenshaw Boulevard, on-street parking is available on the frontage roads immediately to the east and west. This parking may be temporarily lost because of staging of construction equipment.

For the LRT Alternative, one subway station, the Crenshaw/Martin Luther King Jr. Station, is planned along this section of the LRT alignment. This station is at a critical juncture in the alignment, and both Crenshaw Boulevard and Martin Luther King Jr. Boulevard serve as major thoroughfares for this community. Construction of the station would use the cut and cover method. Construction may require intermittent closures of Crenshaw Boulevard in the northbound direction and a reduction to one lane in the southbound direction from the station for up to three months. Additionally, lane closures may be necessary on Martin Luther King Jr. Boulevard to accommodate construction. On-street parking may be lost because of construction equipment and staging for up to 12 months. On-street parking is limited through this section of the corridor; construction may require temporary displacement of this parking. Adjacent businesses may be affected by this loss of parking. Again, traffic may divert because of the multiple closures anticipated at this intersection. Alternate north-south routes could consist of Bronson Avenue/Norton Avenue to the east and Victoria Avenue/Buckingham Road to the west. Traffic diverting to these routes would travel through residential neighborhoods and may impact these communities. Access to the Baldwin Hills Crenshaw Plaza Mall will be maintained during construction. The mall provides ample off-street parking in this area. Because the parking supply of malls are typically designed for the 20th highest hour of parking demand, which usually occurs in mid-December, there will likely be excess parking supply during non-holiday periods that could accommodate any temporary parking displacement in this area.

For the LRT Alternative one subway station is planned along this section of the LRT alignment. Construction of the below-grade station would use the cut and cover method This section of the alignment would be susceptible to the impacts caused by the traffic diversions related to the work up and downstream of this location. On-street parking is limited through this part of the corridor; construction of the station may result in the temporary loss of on-street parking for up to 12 months. This may affect adjacent businesses that rely on the on-street parking supply; there is also a limited supply of off-street parking in this area.

Under the LRT Alternative with Design Options, the construction of the Crenshaw/Vernon Station would require intermittent closure of the southbound lanes of Crenshaw Boulevard at Vernon Avenue for up to three months as the cut and cover sections are prepared. Longer term closures may be considered. This would disrupt traffic through the most physically constrained section of the corridor and divert traffic to adjacent routes including, but not limited to Victoria Avenue/11th Avenue in the north-south direction and 43rd Street/Stocker Street in the east-west direction. On-street parking is limited through this part of the corridor; construction of the station may result in the temporary loss of on-street parking for up to 12 months. This may affect adjacent

businesses that rely on the on-street parking supply; there is also a limited supply of off-street parking in this area.

Under the LRT Alternative with Design Options, a below-grade alignment between South Victoria Avenue and 60th Street would replace the aerial alignment proposed under the LRT Alternative starting on Crenshaw Boulevard and extending into the Harbor Subdivision. The below-grade alignment would be built as a cover and cover tunnel. Mainly industrial uses abut the Harbor Subdivision, with residential communities directly to the north and south of the alignment and along Crenshaw Boulevard. Construction would require the closure of one lane in each direction on Crenshaw Boulevard and the temporary loss of on-street parking. There are three travel lanes in each direction with on-street parking along this section of Crenshaw Boulevard. The closures would reduce overall capacity to two lanes in each direction. Additional closures would include the restriction of left turns from/onto Crenshaw Boulevard from side streets. These closures and lane reductions would be in effect for up to 24 months. These reductions in traffic capacity and circulation may result in diverted traffic and adversely impact the surrounding residential neighborhoods. The construction may also adversely impact access to adjacent institutional land uses.

A below-grade alignment between 39th Street and Exposition Boulevard would replace the at-grade alignment proposed under the LRT Alternative and would extend the tunnel east of Martin Luther King Jr. Boulevard to Exposition Boulevard with a subway station. The subway station would provide street level access for transferring to the Metro Exposition Line. Due to the depth of the tunnel segment, the below-grade alignment would be built as a bored tunnel. The construction period impacts would affect the portals of the subway section; the cut and cover method would be used at the subway portals. A temporary bridge, which would take approximately four months to complete, would be used to minimize the impacts of this construction method. Off-peak and night closures would be required during the four month construction period of the temporary bridge. The construction of the cut and cover box below the temporary bridge would take 12 months. Full off-peak or weekend closures of Crenshaw Boulevard northbound may be necessary on a short term basis. The number of traffic lanes on Crenshaw Boulevard would be reduced as a result, and local circulation would be impacted. Traffic may divert to Victoria Avenue to the west or Norton Avenue to the east, causing impacts to the residential street system. On-street parking would be lost for up to 36 months during the construction phase to make way for displaced travel lanes.

An LRT under crossing at Centinela Avenue would replace the at-grade LRT alignment proposed under the LRT Alternative and would extend approximately 2,000 feet within the Harbor Subdivision. The undercrossing would consist of a 200 foot bridge with a 700 foot depressed LRT alignment sections on the west and an 1,100 depressed section on the east side of Centinela Avenue. Construction would require the intermittent closure of Centinela Avenue at Crenshaw Boulevard for up to 15 months.

3.3.2.3 At-Grade Impacts

The remainder of the LRT alignment is designated as operating at-grade and includes the following sections: between Arbor Vitae Street and Hindry Avenue; between Oak Street and Inglewood Avenue; between Centinela Avenue and Victoria Avenue; and between

59th Street and 48th Street. All remaining crossings within the Harbor Subdivision would be at-grade.

In the Harbor Subdivision between Arbor Vitae Street and Hindry Avenue and Oak Street and Inglewood Avenue, there are five grade crossing locations. Construction of the LRT would require intermittent off-peak lane reductions and closures of these crossings for up to six months and cause traffic to divert to other locations. The issues related to these diversions are identical to those identified for BRT construction. Commercial traffic diversion would primarily be affected by the closures at Arbor Vitae Street, Manchester Avenue, and Hindry Avenue. Limited on-street parking is available at both Manchester Avenue and Hindry Avenue. Construction of the grade crossings would likely result in the temporary loss of on-street parking adjacent to these crossings for up to six months; a permanent loss of on-street parking is anticipated at the Manchester Avenue crossing because of the alignment.

The Oak Street crossing would result in the temporary loss of on-street parking, as well as off-street parking during the eight-month construction period. Some off-street parking may be permanently lost as a result of the requirements of the alignment. Construction of the Cedar Street crossing may result in temporary closure of this crossing for up to eight months; this is expected to adversely impact the adjacent industrial uses (north of the alignment and accessed via Cedar Street). Some parking may also be lost as a result of construction. However, the most adverse impact is the disruption of normal business operations as a result of intermittent site access.

Between Centinela Avenue and Victoria Avenue, there are a limited number of Harbor Subdivision crossings; this may exacerbate the potential impacts of off-peak or nighttime street closures for up to 12 months. Local and arterial traffic would divert through adjacent residential neighborhoods to access available routes. At Centinela Avenue, a lane/street closure during the off-peak or nighttime periods may severely disrupt traffic operations. Access to the adjacent residential neighborhood on La Colina Drive may be severely disrupted as a result of the construction closures. Limited on-street parking is available along the east side of Centinela Avenue; this parking supply is expected to be temporarily lost during the construction phase. Additionally, on-street parking along the south side of La Colina Drive is expected to be lost to the construction phase for six to 12 months. The LRT alignment requirements may result in permanent loss of parking.

The crossings at Redondo Boulevard, West Boulevard, Brynhurst Avenue and Victoria Avenue would require closures to complete the grade crossings for up to eight months and adverse impacts are anticipated in relation to these closures. There are both commercial and residential land uses adjacent to this area; a predominantly residential concentration is north of the Harbor Subdivision. As with other grade crossings along the alignment, there is a potential for traffic to divert through the adjacent neighborhoods. On-street parking exists at these crossings and will be temporarily lost as a result of construction for six to 12 months.

Between 59th Street and 48th Street along Crenshaw Boulevard, construction of the center running alignment would require the temporary loss of travel and parking lanes along Crenshaw Boulevard for up to 12 months. Left-turn lanes would be closed and

lanes shifted to accommodate construction equipment and staging; the number of travel lanes would also be reduced to accommodate construction for up to 12 months. Access from minor streets crossing Crenshaw Boulevard would be temporarily prohibited during construction for up to 12 months; several locations may experience a permanent ban on these movements. On-street parking is not available on Crenshaw Boulevard in this stretch of the corridor, and frontage roads to the east and west may experience a temporary loss of parking as a result of construction for up to 12 months.

Although construction of the LRT Alternative would require the loss of on-street parking and reduction in travel lanes, in most instances these are temporary conditions during the construction phase. The operational phase of the LRT Alternative would result in the restoration of these parking and travel lanes at select locations. In general, adverse impacts are anticipated in relation to LRT construction at several locations on the alignment.

3.3.3 Maintenance and Storage Facility Sites

As identified, there are two sites under consideration as maintenance and storage facilities: Site B and Site D. Traffic, circulation, and parking may be adversely impacted as a result of construction-related traffic; the following discusses these potential impacts.

3.3.3.1 Site B – Westchester Impacts

This site is generally bound by 83rd Street to the north, La Cienega Boulevard to the east, Harbor Subdivision to the south, and Osage Avenue to the west. The adjacent land uses are a mixture of commercial/industrial and residential neighborhoods. The site itself is on industrial land with adjacent industrial uses to the south; immediately to the west is the Los Angeles Police Department Recruit Training Center; the community of Westchester is located north of 83rd Street. Access to this site would be along 83rd Street, Osage Avenue, and Hindry Avenue. Adverse impacts are anticipated related to the circulation of local traffic; Hindry Avenue would be closed during construction and permanently closed upon completion of this facility. Construction traffic may access the site via 83rd Street and potentially add to normal neighborhood traffic. Related to this loss in circulation, traffic may divert to Osage Avenue. On-street parking along 83rd Street may be temporarily restricted during the construction phase. In general, it is anticipated that the construction of Site B would have adverse impacts related to traffic and circulation; no adverse impacts are anticipated in relation to on-street parking.

3.3.3.2 Site D – El Segundo Impacts

This site is along the Metro Green Line right-of-way and is bordered by two railroad tracks. Douglas Street lies to the east and the Plaza El Segundo Center lies to the west. This site is in a primarily industrial area, with a retail center to the west. This site would likely be accessed from Douglas Street or Chapman Way. Construction-related traffic would add additional vehicles to the street system; however, as this is an industrial area, this is not expected to cause impacts to local traffic or circulation patterns. On-street parking is not available at this location and would not be displaced or restricted as a result of construction. Therefore, there are no adverse impacts to traffic, circulation, or parking anticipated with the construction of Site D.

The intensity of the impacts related to the maintenance and storage facility sites varies between Site B and Site D. Adverse impacts are anticipated with Site B and mitigation measures would need to be identified to minimize the impact of this site. No adverse impacts are anticipated with the selection of Site D; no mitigation measures are necessary.

3.3.4 Mitigation Measures

Mitigation measures are only proposed for the BRT and LRT Alternatives to avoid, minimize, and mitigate adverse effects related to traffic, circulation, and parking due to construction.

T7 Metro shall coordinate with the local jurisdictions to designate and identify haul routes for trucks and to establish hours of operation. The selected routes should minimize noise, vibration, and other impacts.

T8 Metro shall prepare a traffic management plan to facilitate the flow of traffic in and around the construction zone. This traffic management plan should include the following measures:

- Schedule a majority of construction-related travel (i.e., deliveries, hauling, and worker trips) during the off-peak hours;
- Develop detour routes to facilitate traffic movement through construction zones without significantly increasing cut-through traffic in adjacent residential areas;
- Where feasible, temporarily re-stripe roadway to maximize the vehicular capacity at those locations affected by construction closures;
- Where feasible, temporarily remove on-street parking to maximize the vehicular capacity at those locations affected by construction closures;
- Where feasible, station traffic control officers at major intersections during peak hours to minimize delays related to construction activities;
- Develop and implement an outreach program to inform the general public about the construction process and planned roadway closures;
- Develop and implement a program with business owners to minimize impacts to businesses during construction activity, including but not limited to signage programs.

T9 Metro shall include in the traffic management plan measures that minimize any potential adverse effects to pedestrian movement in the corridor and to maximize pedestrian safety to the extent feasible.

T10 Metro shall coordinate with local school districts to disclose potential impacts to school bus routes.

T11 Project contractors shall provide alternate off-street parking for their employees during the construction period, in order to minimize the loss of parking to adjacent commercial districts.

T12 Project contractors shall prohibit parking for their employees in adjacent residential neighborhoods, in order to minimize the impacts to nearby residents.

3.3.5 Impacts Remaining After Mitigation

With the implementation of Mitigation Measures T7 through T12, the adverse effects of construction activity would be reduced for adjacent commercial districts and residential neighborhoods. Because these effects are associated with the construction phases and are short-term in nature, no adverse effects are anticipated.

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