Submitted by:

ITERIS

Metro

WILSHIRE BOULEVARD
BUS RAPID TRANSIT PROJECT
TRAFFIC IMPACT ANALYSIS

Administrative Draft

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EXECUTIVE SUMMARY

This report describes the potential traffic impacts of the Wilshire Boulevard Bus Rapid Transit (BRT) Project in the City and County of Los Angeles. The Wilshire Boulevard BRT Project generally consists of converting the existing eastbound and westbound curb lanes along Wilshire Boulevard to weekday peak-period bus lanes, thus restricting these lanes to buses and right-turning vehicles only, within the Los Angeles City limits from Centinela Avenue on the west to Valencia Street on the east, as well as within Los Angeles County limits from Federal Avenue on the west to Veteran Avenue on the east, excluding the City of Beverly Hills. The bus lane is expected to begin operations in 2012, therefore 2012 was chosen to represent opening year conditions. Two project variations are evaluated, the "Proposed Project" and the "Project Alternative", as well as a "no project" alternative for year 2012 and year 2020 conditions.

The Proposed Project is as described above. The three key differences between the Project Alternative and the Proposed Project are summarized, from east to west, as follows:

- Removal of the bus lane east of South Park View Street;
- Retaining the jut-outs between Comstock Avenue and Malcolm Avenue; and
- Removal of the bus lane from approximately 300 feet east of Veteran Avenue to the I-405 northbound ramps.

In consultation with Los Angeles County Metropolitan Transportation Agency (LACMTA) and Los Angeles Department of Transportation (LADOT), a study area of 74 intersections was determined, consisting of intersections along Wilshire Boulevard as well as parallel corridors such as Sunset Boulevard, Santa Monica Boulevard, Olympic Boulevard, Pico Boulevard, 3rd Street, 6th Street, and 8th Street. Traffic volume forecasts for year 2012 and 2020 conditions (without project and with project scenarios) were based upon the results of the Southern California Association of Governments (SCAG) 2008 Regional Transportation Plan (RTP) travel demand model.

The *Proposed Project* results in significant traffic impacts at 18 intersections in 2012 and 19 intersections in 2020. Since several intersections are impacted in one year but not in the other, a total of 21 intersections are significantly impacted by the Proposed Project in at least one of the years. With implementation of the recommended mitigation measures, 12 of the 21 significantly impacted intersections are reduced to a level considered less than significant with Proposed Project conditions. Signal upgrades at five of the remaining nine significantly impacted intersections further reduce the project's impact during a.m. and/or p.m. peak hour conditions, but not enough to fully mitigate the project's impact. The following nine intersections are forecast to remain significantly impacted in either year 2012 or 2020 with Proposed Project conditions since no feasible mitigation measure that fully mitigates the project's impact could be identified:

- Veteran Avenue/Sunset Boulevard;
- Bundy Drive/Wilshire Boulevard (partial mitigation measure);
- Veteran Avenue/Santa Monica Boulevard (partial mitigation measure);
- Overland Avenue/Santa Monica Boulevard;
- Westwood Boulevard/Olympic Boulevard (partial mitigation measure);
- Westwood Boulevard/Pico Boulevard;

- Overland Avenue/Pico Boulevard;
- Fairfax Avenue/Wilshire Boulevard (partial mitigation measure); and
- La Brea Avenue/Wilshire Boulevard (partial mitigation measure).

The *Project Alternative* results in significant traffic impacts at 15 intersections in 2012 and 14 intersections in 2020. Since several intersections are impacted in one year but not in the other, a total of 19 intersections are significantly impacted by the Project Alternative in at least one of the years. With implementation of the recommended mitigation measures, 10 of the 19 significantly impacted intersections are reduced to a level considered less than significant with Project Alternative conditions. Signal upgrades at five of the remaining nine significantly impacted intersections further reduce the project's impact during a.m. and/or p.m. peak hour conditions, but not enough to fully mitigate the project's impact. The following nine intersections are forecast to remain significantly impacted in either year 2012 or year 2020 with Project Alternative conditions since no feasible mitigation measure that fully mitigates the project's impact could be identified:

- Veteran Avenue/Sunset Boulevard;
- Bundy Drive/Wilshire Boulevard (partial mitigation measure);
- Veteran Avenue/Santa Monica Boulevard (partial mitigation measure);
- Overland Avenue/Santa Monica Boulevard;
- Beverly Glen Boulevard/Santa Monica Boulevard;
- Westwood Boulevard/Olympic Boulevard (partial mitigation measure);
- Westwood Boulevard/Pico Boulevard;
- Fairfax Avenue/Wilshire Boulevard (partial mitigation measure); and
- La Brea Avenue/Wilshire Boulevard (partial mitigation measure).

1.0 INTRODUCTION

This report describes the potential traffic impacts of the Wilshire Boulevard Bus Rapid Transit (BRT) Project in the City and County of Los Angeles, comparing the base year of 2008, year 2012 and year 2020 conditions. The bus lane is expected to begin operations in 2012, therefore 2012 was chosen to represent opening year conditions. The Wilshire Boulevard BRT Project generally consists of converting the existing eastbound and westbound curb lanes along Wilshire Boulevard to weekday peak-period bus lanes, thus restricting these lanes to buses and right-turning vehicles only, within the Los Angeles City limits from Centinela Avenue on the west to Valencia Street on the east, as well as within Los Angeles County limits from Federal Avenue on the west to Veteran Avenue on the east. This report presents data and discussion on existing travel conditions in the corridor and the expected effects of projected growth in travel demand and impacts of the Wilshire Boulevard BRT project on the future transportation system and traffic conditions. Two project alternatives are evaluated as well as a No Project alternative. A detailed project description is provided below.

1.1 PROJECT DESCRIPTION

The Wilshire Boulevard Bus Rapid Transit (BRT) Project is within a 12.5 mile corridor of Wilshire Boulevard between downtown Los Angeles and the City of Santa Monica and includes approximately 9.7 miles of weekday peak period curbside bus lanes. A number of general improvements are required as part of the Proposed Project. These general improvements include restriping of traffic lanes, as

necessary; conversion of existing curb lanes to bus lanes in each direction during weekday peak periods; upgrade of the existing transit signal priority system; selective street widening and/or street reconstruction/repaving; and installation of traffic/transit signage and pavement markings, as necessary, to implement dedicated weekday peak period bus lanes.

A variety of activities are proposed along the entire length of the Proposed Project within the City of Los Angeles's boundaries (approximately 9.1 miles). Most of the existing curb lanes on Wilshire Boulevard in the City of Los Angeles would be "converted" to a bus and right-turn only operation in the peak periods (7 a.m. to 9 a.m. and 4 p.m. to 7 p.m.) on weekdays. In these segments, the curb lanes would be repaired or reconstructed, where necessary, and restriped and signed as peak period bus lanes. In other areas, curbside bus lanes would be added as new lanes to Wilshire Boulevard by widening or restriping. Upgrades to the transit signal priority system would also be implemented including, (1) addition of bus signal priority at intersections with near-side bus stops (a recently developed and successfully tested concept), (2) increase in maximum available time for transit signal priority from 10 percent to 15 percent of the traffic signal cycle at minor intersections, and (3) reduction in the number of traffic signal recovery cycles from two to one at key intersections along the corridor.

A portion of the Proposed Project is under County jurisdiction, between Federal Avenue and Veteran Avenue (approximately 0.8 miles) near the Veterans Administration facilities. Key elements of the County's project scope include widening Wilshire Boulevard between Bonsall Avenue and Federal Avenue, reduction of adjacent sidewalks to a uniform width of 10 feet, traffic lane restriping, adjustments to geometrics and traffic signals, signage and markings, and a 470-foot extension of an eastbound left-turn pocket at Sepulveda Boulevard.

1.1.1 PROPOSED PROJECT

Geographically, the key elements of the Proposed Project can be discussed based upon specific segments of the Wilshire Boulevard corridor under consideration. From east to west, these project segments can be summarized as follows:

- From Valencia Street to Western Avenue (approximately 2.5 miles), existing curb lanes would be converted to peak period bus lanes.
- From Western Avenue to Fairfax Avenue (approximately 3.0 miles), curb lanes would be repaved/resurfaced and converted to peak period bus lanes. The curb lanes in this segment have deteriorated to the point that both buses and vehicles seldom use the lanes because of extreme rough and uneven pavement conditions. Reconstruction of the roadway base (below the pavement surface) and curb and gutters, where damaged, would not only allow buses to consistently use the curb lanes but also improve the traffic capacity of the two adjacent lanes (in each direction) by moving buses from the curb-adjacent lanes to the curb lanes, thereby improving both the vehicular and transit levels of service in this segment.
- From Valencia Street to Fairfax Avenue, approximately 11 parking spaces would be eliminated to accommodate larger or relocated bus stops.
- From Fairfax Avenue to the Beverly Hills city limits at the intersection of San Vicente Boulevard and Wilshire Boulevard (approximately 0.6 miles), existing curb lanes would be converted to peak period bus lanes. The lanes in this segment need only minor surface repairs.

- From the Beverly Hills city limits, west of the intersection of Wilshire Boulevard and Santa Monica Boulevard, to Comstock Avenue (approximately 0.5 miles), existing curb lanes would be converted to peak period bus lanes.
- From Comstock Avenue to Malcolm Avenue (approximately 1.0 miles), various curb improvements, including jut-out removal and realignment of curbs, would be necessary. This would allow the realignment of curbs to create new curb lanes, thereby adding peak period bus lanes. A number of parking spaces would be removed in this segment as a result of the removal of the curb jut-outs.
- From Malcolm Avenue to Sepulveda Boulevard (approximately 0.8 miles), existing mixed flow curb lanes would be converted to peak period bus lanes.
- From Sepulveda Boulevard to Federal Avenue (approximately 0.6 miles), the Wilshire BRT Project consists of all work to accommodate roadway and traffic modifications, including transitions back to existing roadway approaches, on the portion of Wilshire Boulevard on County/Federal land. Wilshire Boulevard between Interstate 405 and Federal Avenue is bordered by the Veterans Administration (VA) property. The sidewalk widths on both sides of Wilshire Boulevard in this segment vary between 10 and 15 feet. In order to create a new eastbound peak period bus lane, the sidewalk widths on both sides of Wilshire Boulevard would be reduced to a uniform width of 10 feet. At Sepulveda Boulevard, the eastbound left-turn pocket would be lengthened by approximately 470 feet to accommodate a greater number of vehicles that are currently queued in the No. 1 eastbound traffic lane, resulting in full use of the No. 1 lane for through traffic movements.
- From Federal Avenue to Barrington Avenue (approximately 0.1 miles), Wilshire Boulevard would be widened by reducing existing sidewalk on the north and south sides, in order to accommodate the addition of a new eastbound bus lane and convert an existing westbound traffic lane to a bus lane. The intersection of Wilshire Boulevard and Federal Avenue is extremely congested in the eastbound direction. The widening of this two-block segment would allow buses to pass safely and quickly through the intersection of Wilshire Boulevard and Federal Avenue and provide a contiguous eastbound bus lane from Centinela Avenue to Bonsall Avenue.
- From Barrington Avenue to Centinela Avenue (approximately 0.8 miles), existing curb lanes would be converted to peak period bus lanes.

These improvements are presented in **Figure 1-1**, which shows the different segments of Wilshire Boulevard between Valencia Street on the east and Centinela Avenue on the west, excluding the portion in the City of Beverly Hills.

1.1.2 PROJECT ALTERNATIVE

The three key differences between the Project Alternative and the Proposed Project, are summarized, from east to west, as follows:

- Removal of the bus lane east of South Park View Street;
- Retaining the jut-outs between Comstock Avenue and Malcolm Avenue; and

- Removal of the bus lane from approximately 300 feet east of Veteran Avenue to the I-405 northbound ramps.

These improvements are presented in **Figure 1-2.**

1.2 STUDY AREA

The study area for the traffic analysis was developed in conjunction with Los Angeles County Metropolitan Transportation Agency (LACMTA) and Los Angeles Department of Transportation (LADOT) and is intended to include all locations at which geometric changes or changes in traffic patterns, as a result of the project, might impact traffic operations. The general boundary of the traffic study area is illustrated in **Figure 1-3.** To define the traffic study intersections, Iteris conducted preliminary traffic model runs conservatively assuming the loss of a full lane's capacity along Wilshire Boulevard within the project limits due to implementation of the BRT project. The model runs are considered conservative because the existing curb lanes along Wilshire Boulevard are not as fully utilized as the adjacent lanes based on observed traffic counts, which are discussed later in the report. The results of the model runs showed traffic diversion off Wilshire Boulevard onto parallel east-west corridors. The corridors showing a potentially significant increase in traffic upon implementation of the project include portions of Sunset Boulevard, Santa Monica Boulevard, Olympic Boulevard, Pico Boulevard, 3rd Street, 6th Street, and 8th Street. Therefore, in consultation with LACMTA and LADOT, a final study area consisting of 74 study intersections was determined, as illustrated in **Figure 1-4**. Minimal traffic diversion was seen in the City of Beverly Hills due to the fact that the peak hour bus lane does not run through the city. However, the Wilshire Boulevard/Santa Monica Boulevard intersection, located in the City of Beverly Hills, was included in the study area because of the potential for changes in turning movements at this location.

Comstock to Malcolm - 1.0 miles
Remove jut-outs, realign curbs, add peak period bus lanes.

Beverly Hills to Comstock - 0.5 miles
Convert existing curb lanes to peak period bus lanes.

Sepulveda to Federal - 0.6 miles
Reduce sidewalk on both sides of Wilshire to a uniform width of 10 ft. Restripe east and westbound lanes. Lengthen eastbound left-turn pocket at Sepulveda. Add eastbound peak period bus lane.

Fairfax to Beverly Hills - 0.6 miles
Convert existing curb lanes to peak period bus lanes.

Valencia to Western - 2.5 miles
Convert existing curb lanes to peak period bus lanes.

Western to Fairfax - 3.0 miles
Reconstruct curb lanes, convert existing curb lanes to peak period bus lanes.

City of Beverly Hills - 2.6 miles
Not included in BRT project.

Malcolm to Sepulveda - 0.8 miles
Convert existing curb lanes to peak period bus lanes.

Federal to Barrington – Widen both sides of Wilshire by reducing sidewalk widths. Add eastbound peak period bus lane. Convert westbound curb lane to peak period bus lane.

Barrington to Centinela - 0.8 miles
Convert existing curb lanes to peak period bus lanes.

West Hollywood

Beverly Hills

Santa Monica

BEVERLY GLEN BLVD
SEPULVEDA BLVD
WILSHIRE BLVD
SAN VICENTE BLVD
VETERAN AVE
SANTA MONICA BLVD
OLYMPIC BLVD
PICO BLVD
FEDERAL AVE
BARRINGTON AVE
BUNDY DR
CENTINELA AVE
26th
405
WESTWOOD BLVD
OVERLAND AVE
FAIRFAX AVE
LA BREA AVE
HIGHLAND AVE
LA CIENEGA BLVD
3RD ST
6TH ST
WILSHIRE BLVD
8TH ST
SAN VICENTE BLVD
OLYMPIC BLVD
CRENSHAW BLVD
VENICE BLVD
WESTERN AVE
VERMONT AVE
ALVARADO ST
101
5
10
110

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Wilshire Blvd BRT Project
Traffic Impact Analysis

Figure 1-1
Centinela to Valencia - Proposed Project

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Sepulveda to Federal - 0.6 miles
Reduce sidewalk on both sides of Wilshire to a uniform width of 10 ft.
Restripe east and westbound lanes.
Lengthen eastbound left-turn pocket at Sepulveda. Add eastbound peak period bus lane.

Beverly Hills to mid-block Gayley/Veteran - 2.0 miles
Convert existing curb lanes to peak period bus lanes.

Park View to San Vicente - 5.4 miles
Reconstruct curb lanes, convert existing curb lanes to peak period bus lanes.

Mid-Block Gayley/Veteran to Sepulveda - 0.3 miles
No bus lane in this segment.

City of Beverly Hills - 2.6 miles
Not included in BRT project.

Barrington to Centinela - 0.8 miles
Convert existing curb lanes to peak period bus lanes.

Federal to Barrington – Widen both sides of Wilshire by reducing sidewalk widths. Add eastbound peak period bus lane. Convert westbound curb lane to peak period bus lane.

West Hollywood
Beverly Hills
Santa Monica

SEPULVEDA BLVD
BEVERLY GLEN BLVD
WILSHIRE BLVD
SAN VICENTE BLVD
VETERAN AVE
SANTA MONICA BLVD
OLYMPIC BLVD
PICO BLVD
FEDERAL AVE
BARRINGTON AVE
CENTINELA AVE
BUNDY DR
26th
WESTWOOD BLVD
OVERLAND AVE
FAIRFAX AVE
LA BREA AVE
HIGHLAND AVE
LA CIENEGA BLVD
3RD ST
6TH ST
8TH ST
OLYMPIC BLVD
VENICE BLVD
CRENSHAW BLVD
WESTERN AVE
VERMONT AVE
ALVARADO ST

405
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Wilshire Blvd BRT Project
Traffic Impact Analysis

Figure 1-2
Centinela to Park View - Project Alternative

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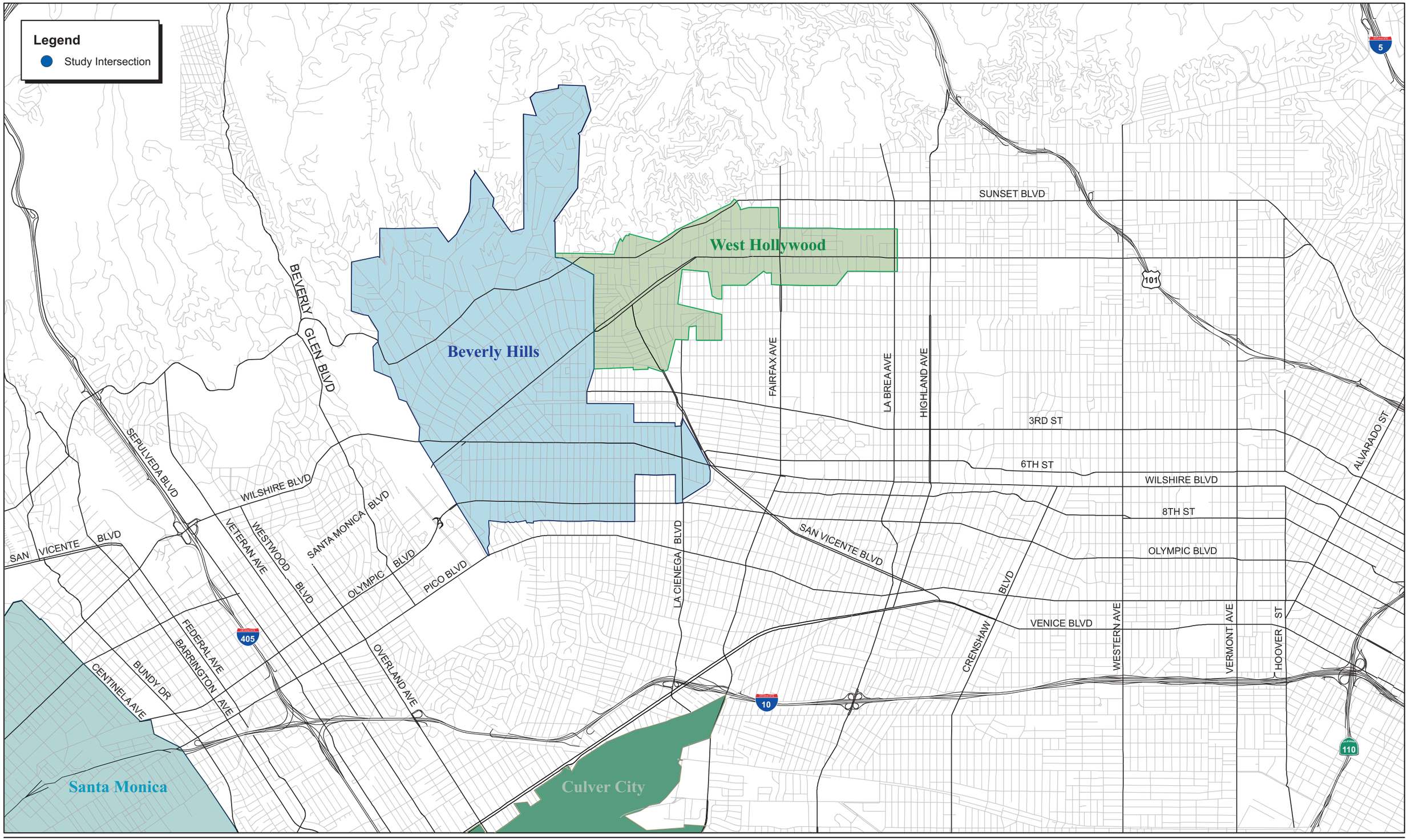

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Wilshire Blvd BRT Project
Traffic Impact Analysis

Figure 1-3
Study Area

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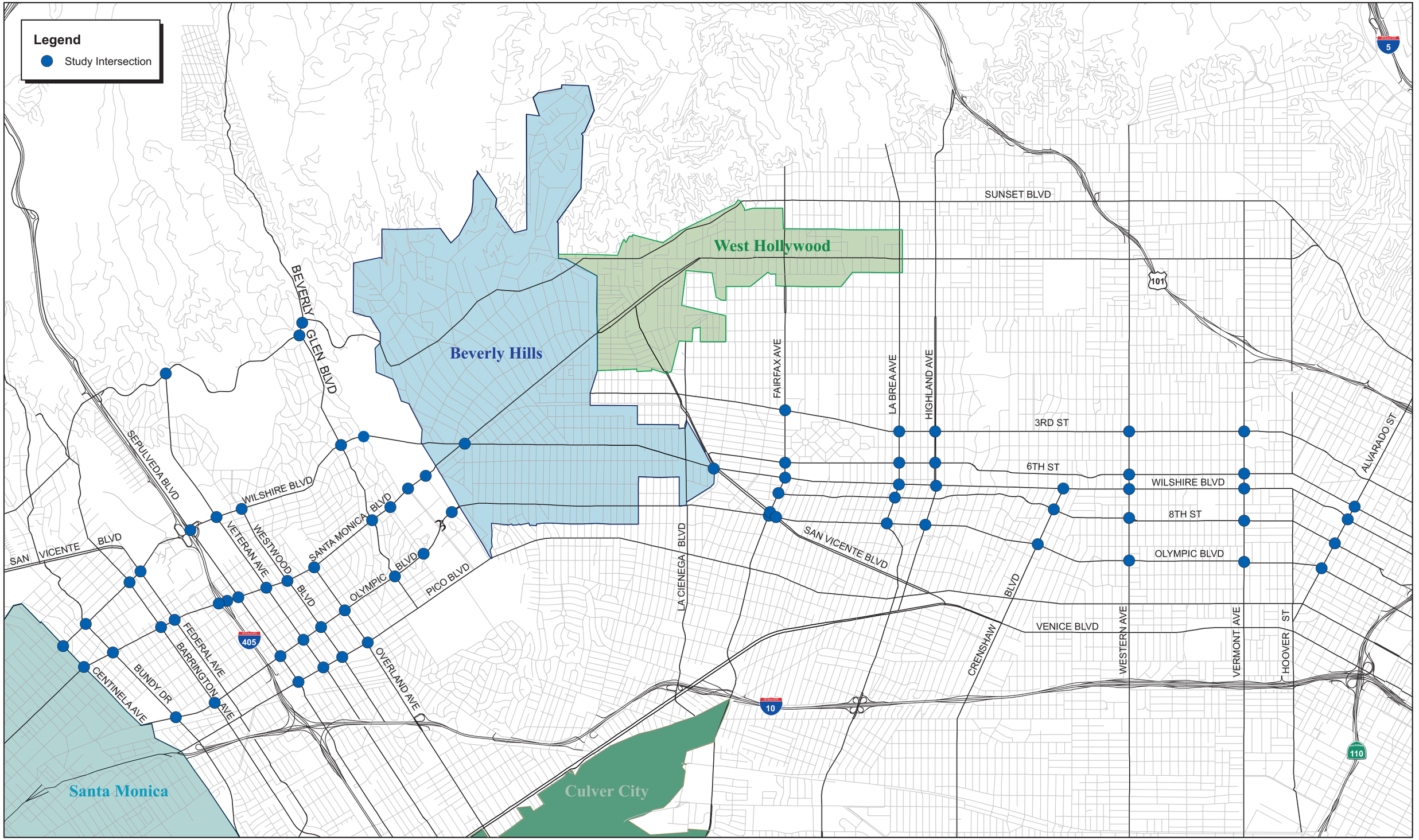

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Wilshire Blvd BRT Project
Traffic Impact Analysis

Figure 1-4
Study Intersections

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2.0 EXISTING CONDITIONS

2.1 AFFECTED ENVIRONMENT

This section presents an overview of the transportation system within the Wilshire Boulevard BRT study area. The roadway system in the study area is comprised of a grid pattern of arterials and collectors generally following a northeast-to-southwest orientation in the western part of the study area (west of the City of Beverly Hills) and an east-to-west orientation in the eastern part of the study area (east of the City of Beverly Hills).

2.2 FREEWAY NETWORK

The following is a description of the freeway network that provides regional access to the study area.

Santa Monica Freeway (I-10) is a major east-west freeway that parallels Wilshire Boulevard, south of the study area. This freeway is one of the busiest in the nation and carries some of the highest daily traffic volumes in the country. Based on annual counts conducted by California Department of Transportation (Caltrans), the existing (2007) average daily traffic (ADT) on I-10 ranges from 199,000 (east of Centinela Avenue) to 323,000 (east of Vermont Avenue). The I-10 Freeway varies between three and five general-purpose lanes in each direction, with several sections having additional lanes within the auxiliary lanes and/or collector/distributor roadways. Access ramps to/from the I-10 Freeway serving the study area include the following:

- Centinela Avenue (westbound on and off/eastbound on);
- Bundy Drive (westbound off/eastbound on);
- Overland Avenue/National Boulevard;
- National Boulevard (westbound off/eastbound on);
- Robertson Boulevard;
- La Cienega Boulevard;
- Fairfax Avenue;
- La Brea Avenue;
- Crenshaw Boulevard;
- Western Avenue;
- Vermont Avenue;
- Hoover Street.

San Diego Freeway (I-405) is a major north-south freeway that connects the San Fernando Valley and points north to the west side of Los Angeles and south to Long Beach and Orange County. The freeway varies between four and five lanes in each direction with several sections having auxiliary lanes. Based on annual counts conducted by Caltrans, the existing (2007) ADT on I-405 ranges from 280,000 (south of Venice Boulevard) to 308,000 (between Venice Boulevard and Olympic Boulevard). The I-405 Freeway has a high-occupancy vehicle (HOV) lane southbound from the north to Santa Monica Boulevard. Construction is scheduled for completion in 2012 on an extension of the HOV lanes southbound between Santa Monica Boulevard and the Marina (SR-90) Freeway, and northbound between the Marina (SR-90)

Freeway and the Santa Monica (I-10) Freeway. Access ramps to/from the I-405 Freeway serving the study area include the following:

- Sunset Boulevard;
- Montana Avenue (northbound off-ramp only);
- Wilshire Boulevard;
- Santa Monica Boulevard;
- Olympic Boulevard/Pico Boulevard (southbound off/northbound on).

2.3 ARTERIAL NETWORK

Most daily travel (in terms of vehicle miles traveled, or VMT) in the study area occurs on surface streets. The entire corridor study area is within the jurisdiction of the City of Los Angeles, County of Los Angeles, or City of Beverly Hills. Roadways in these jurisdictions have functional classifications that include Major Highway, Secondary Highway, Collector Street and Local Street. A brief description of each of these types of roadways is provided below:

- A Major Highway (Class I) has three full-time through lanes in each direction, one part time parking lane in each direction and one median/left turn lane with 12' sidewalks on both sides.
- A Major Highway (Class II) has two full-time through lanes in each direction, one part time parking lane in each direction and one median/left turn lane with 12' sidewalks on both sides.
- A Secondary Highway has two full-time through lanes in each direction, all-day permitted parking and one median/left turn lane with 10' sidewalks on both sides.
- A standard Collector Street has one full time lane in each direction, one full-time parking lane in each direction and 10' sidewalks on both sides.

These descriptions are the "ultimate" configuration expected for each roadway classification. In practice, roadways are generally not built-out to their ultimate classification.

The existing configurations of the significant roadways within the study corridor are described below:

2.3.1 MAJOR EAST/WEST ROADWAYS

- ***Sunset Boulevard*** is a major highway class II with two lanes in each direction. On-street parking is prohibited along Sunset Boulevard within the study area.
- ***Wilshire Boulevard*** is a major highway class II with three lanes in each direction in most areas. In the Westwood area between I-405 and Glendon Avenue, Wilshire Boulevard has four lanes in each direction. In the Westlake area east of Park View Street, Wilshire Boulevard has two lanes in each direction. Within the City of Los Angeles limits, on-street parking is permitted on both sides of the street except during peak periods (7 a.m. to 9 a.m., 4 p.m. to 7 p.m.) in most areas on Wilshire Boulevard.
- ***Santa Monica Boulevard*** is a major highway class II that generally has two lanes in each direction. Between Bundy Drive and Sawtelle Boulevard, morning and evening peak period parking restrictions provide for a third travel lane in each direction. On-street parking is permitted on both sides of the street except during peak periods (7 a.m. to 9 a.m., 4 p.m. to 7

p.m.) between Bundy Drive and Sawtelle Boulevard. Between the I-405 Freeway and the Beverly Hills City limits, Santa Monica Boulevard has three lanes in each direction.

- ***Olympic Boulevard*** is a major highway class II with three to four lanes in each direction. In the City of Los Angeles, on-street parking is permitted on both sides of the street between Centinela Avenue and Sawtelle Boulevard. On-street parking is permitted on the south side of the street except between 7 a.m. to 7 p.m. and on the north side of the street between 3 p.m. to 7 p.m. east of Sawtelle Boulevard.
- ***Pico Boulevard*** is a major highway class II with two lanes in each direction. In the City of Los Angeles, morning and evening peak-hour parking restrictions provide a third lane in each direction east of Gateway Boulevard. On-street parking is permitted west of Gateway Boulevard and is permitted except between 3 p.m. and 7 p.m. east of Gateway Boulevard.
- ***3rd Street*** is a secondary highway with two lanes in each direction. On-street parking is permitted on both sides of the street.
- ***6th Street*** is a secondary highway with two lanes in each direction east of Fairfax Avenue and a collector street with two lanes in each direction west of Fairfax Avenue. On-street parking is permitted on both sides of the street at most locations west of La Brea Avenue and at some locations east of La Brea Avenue within the study area.
- ***8th Street*** is a secondary highway with two lanes in each direction east of Crenshaw Boulevard within the study area. Between Crenshaw Boulevard and Fairfax Avenue, 8th Street is a collector street with one lane in each direction. On-street parking is permitted on both sides of the street.
- ***San Vicente Boulevard***, in the western part of the study area, is a secondary highway with two lanes in each direction, with on-street parking permitted on both sides of the street. In the eastern part of the study area, San Vicente Boulevard is a major highway class II with three lanes in each direction. On-street parking is permitted on both sides of the street.

2.3.2 *Major North/South Roadways*

- ***Centinela Avenue*** is a collector street with one lane in each direction north of Pico Boulevard and two lanes in each direction between Pico Boulevard and Ocean Park Boulevard. A separate segment of Centinela Avenue is a major highway class II with two lanes in each direction south of National Boulevard and is the southern continuation of Bundy Drive. On-street parking is permitted on both sides of the street.
- ***Bundy Drive*** is a major highway with two lanes in each direction south of Pico Boulevard and a secondary highway with one lane in each direction north of Pico Boulevard. During weekdays between 7 a.m. and 7 p.m., curbside parking is prohibited allowing for a second lane in each direction. On-street parking is permitted on both sides of the street south of the I-10 eastbound on-ramp.
- ***Barrington Avenue*** is a secondary highway with two lanes in each direction between Olympic Boulevard and Navy Street and one lane in each direction north of Olympic Boulevard. It is a collector street south of Navy Street with one lane in each direction. On-street parking is permitted on both sides of the street.

- ***Federal Avenue*** is a collector street with one lane in each direction. On-street parking is permitted on both sides of the street in most areas.
- ***Sepulveda Boulevard*** is a major highway with two lanes in each direction. On-street parking is permitted on both sides of the street except on the west side between Santa Monica Boulevard and Exposition Boulevard.
- ***Veteran Avenue*** is a collector street with one lane in each direction between Ohio Avenue and Pico Boulevard with on-street parking permitted on both sides of the street. It is a secondary highway north of Ohio Avenue, with two lanes in each direction north of Wilshire Boulevard.
- ***Westwood Boulevard*** is a secondary highway with one lane northbound and two southbound lanes. During peak hours, an additional northbound lane is provided north of Pico Boulevard. On-street parking is permitted on both sides of the street south of Pico Boulevard and on the west side north of Pico Boulevard. On-street parking is permitted on the east side of the street north of Pico Boulevard except during peak hours.
- ***Overland Avenue*** is a major highway class II with two lanes in each direction south of Pico Boulevard and a secondary highway with one lane in each direction north of Pico Boulevard. On-street parking is permitted on both sides of the street except in the vicinity of the I-10 Freeway.
- ***Beverly Glen Boulevard*** is a major highway class II with two lanes in each direction south of Wilshire Boulevard and a secondary highway with one lane in each direction between Wilshire Boulevard and Sunset Boulevard. On-street parking is permitted on both sides of the street.
- ***Century Park West*** is a secondary highway with two to three lanes in each direction. On-street parking is permitted on the east side of the street at some locations.
- ***Avenue of the Stars*** is a major highway class II with three lanes in each direction. On-street parking is prohibited on both sides of the street.
- ***Century Park East*** is a secondary highway with three lanes in each direction between Santa Monica Boulevard and Constellation Boulevard. South of Constellation Boulevard, Century Park East consists of two southbound lanes and three northbound lanes. On-street parking is prohibited on both sides of the street in most areas.
- ***Comstock Avenue*** is a collector street with one lane in each direction with on-street parking permitted on both sides of the street.
- ***Fairfax Avenue*** is a secondary highway with two lanes in each direction. On-street parking is permitted on both sides of the street at some locations.
- ***La Brea Avenue*** is a major highway class II with three lanes in each direction. On-street parking is permitted on both sides of the street at some locations.
- ***Highland Avenue*** is a secondary highway with two lanes in each direction north of Wilshire Boulevard and one lane in each direction south of Wilshire Boulevard. On-street parking is permitted on both sides of the street.
- ***Crenshaw Boulevard*** is a major highway class II with two lanes in each direction. On-street parking is permitted on both sides of the street at some locations.

- ***Western Avenue*** is a major highway class II with two lanes in each direction. On-street parking is permitted on both sides of the street.
- ***Vermont Avenue*** is a major highway class II with three lanes in each direction north of Wilshire Boulevard and two lanes in each direction south of Wilshire Boulevard. On-street parking is permitted on both sides of the street south of Wilshire Boulevard.
- ***Alvarado Street*** is a major highway class II with three lanes in each direction north of Olympic Boulevard and two lanes in each direction south of Olympic Boulevard. North of Olympic Boulevard, on-street parking is prohibited on the west side of the street during the a.m. peak period (7 a.m. to 9 a.m.) to allow for a third southbound travel lane and prohibited on the east side of the street during the p.m. peak period (4 p.m. to 7 p.m.) to allow for a third northbound travel lane.

2.4 TRANSIT SERVICES

The transit system serving the study area is comprised of an integrated system of bus and rail transit services provided by several operators including LACMTA and LADOT. The following transit lines currently serve the study area:

- Santa Monica Big Blue Bus Line 2
- Metro Local 20
- Metro Rapid 710, 720, 761, 920
- Metro Purple Line (Wilshire/Vermont, Wilshire/Western, Wilshire/Alvarado)
- LADOT Commuter Express 431, 534, 573
- Antelope Valley Transit 786

3.0 ANALYSIS METHODOLOGY AND SIGNIFICANCE CRITERIA

3.1 INTERSECTION ANALYSIS

The analysis of traffic operations at intersections in this study utilizes the *Highway Capacity Manual* (HCM) Operations Analysis Methodology to quantify existing conditions and future (2012 and 2020) conditions at all intersections with and without the Proposed Project. The Operations Analysis Methodology yields a rating of conditions at an intersection based on the average number of seconds of delay experienced by vehicles traveling through the intersection. Levels of service range from LOS A (free flow conditions) to LOS F (extreme congestion with very significant delay) as shown in **Table 3-1**.

TABLE 3-1: LOS CRITERIA FOR INTERSECTIONS

Level of Service	Control Delay Per Vehicle (sec) – Signalized Intersections	Control Delay Per Vehicle (sec) – UnSignalized Intersections
A	≤10	<10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

For this study, the threshold of significance is based on the amount of change in average vehicular delay experienced by vehicles through the intersection. This methodology provides a more accurate assessment of the impact of signal operational changes, such as signal timing and phasing, as well as changes in lane configurations, than would a measure based on V/C ratios. The City of Los Angeles employs the Critical Movement Analysis (CMA) methodology for traffic impact studies for development projects using increase in V/C ratio to determine a significant impact. However, for analysis of transit projects, the City has an established history of using HCM. The relation between increase in V/C and its comparable increase in delay is discussed in the following paragraphs.

The seconds of delay in the impact threshold criteria used in this study were derived from the relative change in the V/C ratio from the comparable City thresholds under the CMA methodology. That is, the traditional impact threshold of 0.01 change in V/C at LOS E (which has a range of V/Cs of 0.10) is 10 percent of the range for that LOS. This is equivalent to a 2.5 second change at LOS E (which has a 25 second range, from 55 to 80 seconds) for signalized intersections. The traditional impact threshold of 0.02 change in V/C at LOS D (which has a range of V/Cs of 0.10) is 20 percent of the range for that LOS, which is equivalent to a 4.0 second change at LOS D (which has a 20 second range, from 35 to 55 seconds). The traditional impact threshold of 0.04 change in V/C at LOS C (which has a range of V/Cs of 0.10) is 40 percent of the range for that LOS, which is equivalent to a 6.0 second change at LOS C (which has a 15 second range, from 20 to 35 seconds) using the 2000 HCM methodology shown in **Table 3-1**. These thresholds of significance were reviewed and approved by LADOT.

Accordingly, the definition of a significant impact is as follows:

- At level of service C under with project conditions, the project related increase is equal to or greater than 6.0 seconds, or
- At level of service D under with project conditions, the project related increase is equal to or greater than 4.0 seconds, or
- At level of service E and F under with project conditions, the project related increase is equal to or greater than 2.5 seconds.

This methodology is used to evaluate the impacts of project-related traffic, as well as the effects of transit operations on signalized intersections. Mitigation of impacts based on these guidelines would

likely require traffic signal modifications and/or physical improvements, such as additional through or turn lanes at intersections, new traffic signals and possible road widening.

In the analysis of future conditions, there are instances where the average intersection delay is reduced with implementation of the project. In most cases, these reductions are caused by a shift of traffic from high-delay movements (generally left-turns) to lower-delay movements. In addition, with implementation of the project, utilization of the through lanes on Wilshire Boulevard will become more balanced, which also tends to reduce overall delay. However, this does not mean that all vehicles traveling through intersections showing lower average delays will experience reduced delays, simply that the average delay per vehicle would be reduced. Some vehicles are likely to experience an increased delay.

3.2 Local Residential Street Analysis

A local residential street is deemed significantly impacted based on an increase in the projected average daily traffic (ADT) volumes as shown in **Table 3-2**.

Table 3-2: Significant Impact Criteria on Local Residential Streets

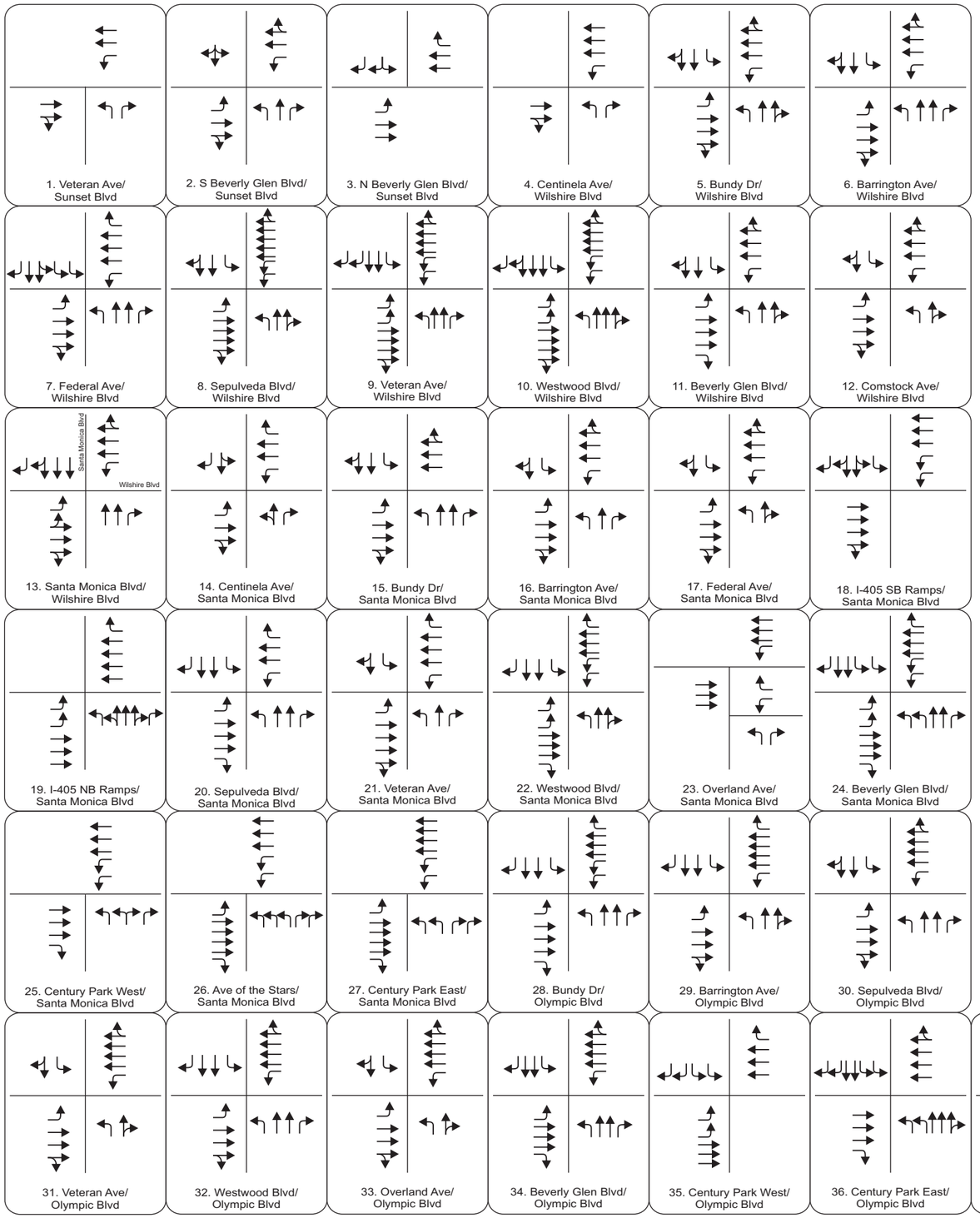
Projected Average Daily Traffic with Project (Final ADT)	Project-Related Increase in ADT
0 to 999	16 percent or more of final ADT*
1,000 or more	12 percent or more of final ADT
2,000 or more	10 percent or more of final ADT
3,000 or more	8 percent or more of final ADT

* For projects in West Los Angeles Transportation Improvement and Mitigation Specific Plan area, use 120 or more trips.

4.0 EXISTING INTERSECTION LEVELS OF SERVICE

A total of 74 intersections in the vicinity of the Wilshire Boulevard corridor were selected for detailed level of service (LOS) analysis in this study. The intersections were chosen in consultation with the City of Los Angeles Department of Transportation (LADOT) based on the preliminary traffic model runs as described earlier. They represent key intersections along the Wilshire Boulevard corridor as well as intersections along parallel corridors that may be potentially affected by traffic diversion upon implementation of the BRT project. The existing lane configurations of these intersections are illustrated in **Figure 4-1.**

Detailed weekday a.m. peak period (7:00-10:00 a.m.) and p.m. peak period (4:00-7:00 p.m.) turning movement traffic counts were collected at most of the study intersections during October 2008. At the Sepulveda Boulevard/Wilshire Boulevard and Westwood Boulevard/Wilshire Boulevard intersections, traffic count data from February 2008 was used. At the Santa Monica Boulevard/Wilshire Boulevard intersection in the City of Beverly Hills, traffic count data collected for the *Beverly Hills Gateway Project EIR (Fehr and Peers, June 2008)* was used. Because of concerns over accuracy of October 2008 count data at these three intersections, previous traffic counts were used. Traffic count sheets are included in **Appendix A**. **Figure 4-2** shows the existing peak hour volumes at the study intersections.



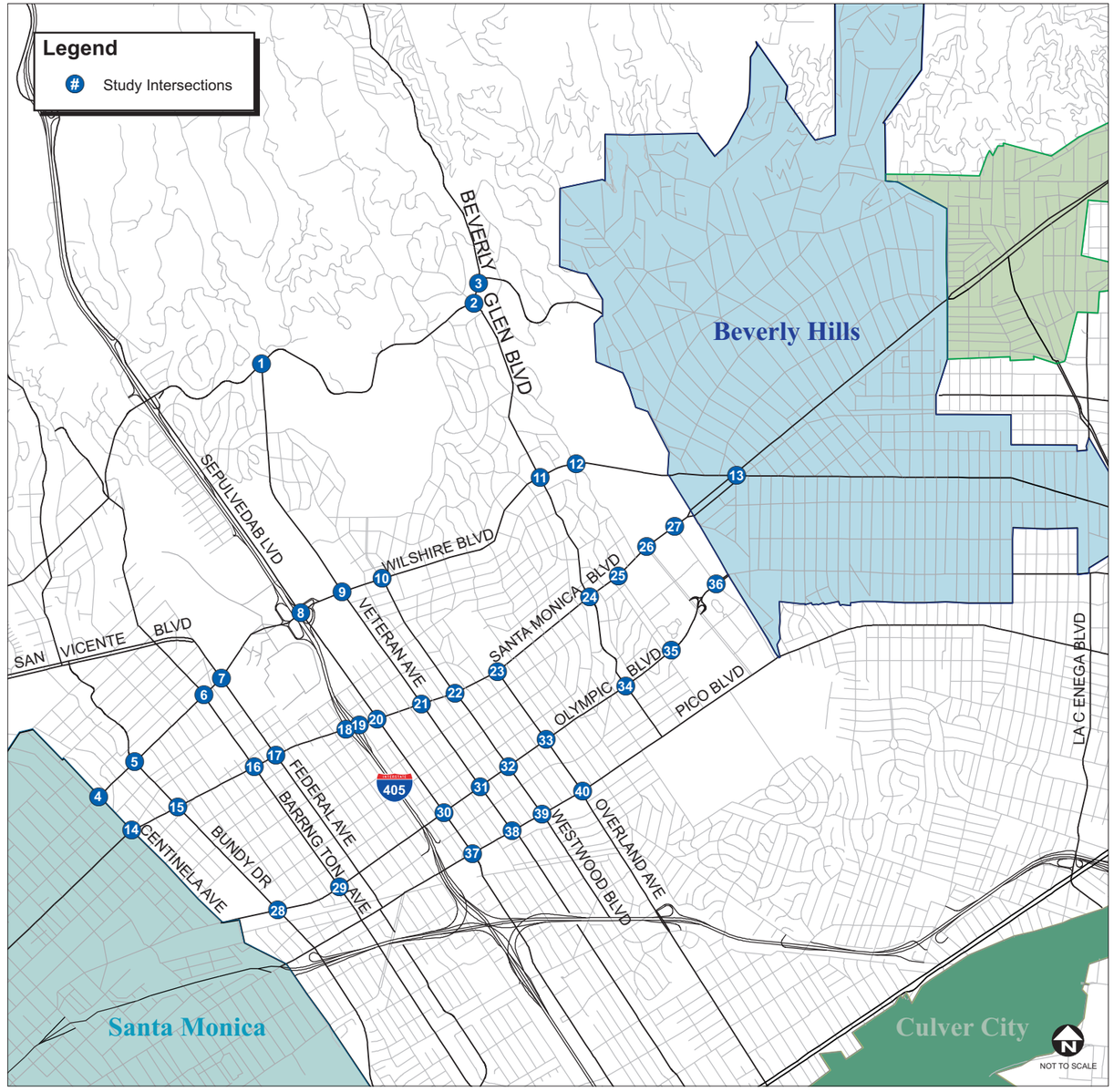


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FIGURE 4-1A
Existing Lane Configuration

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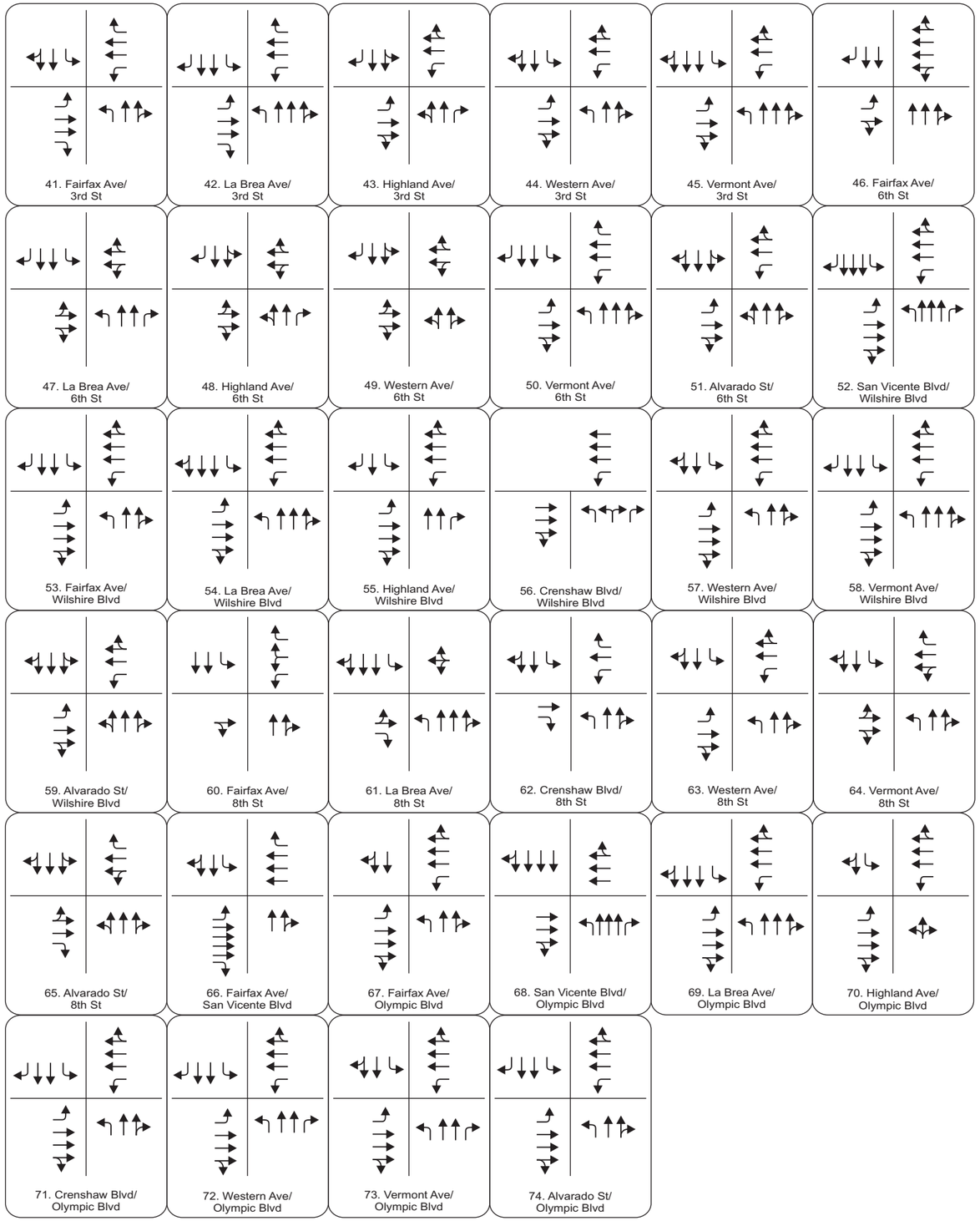

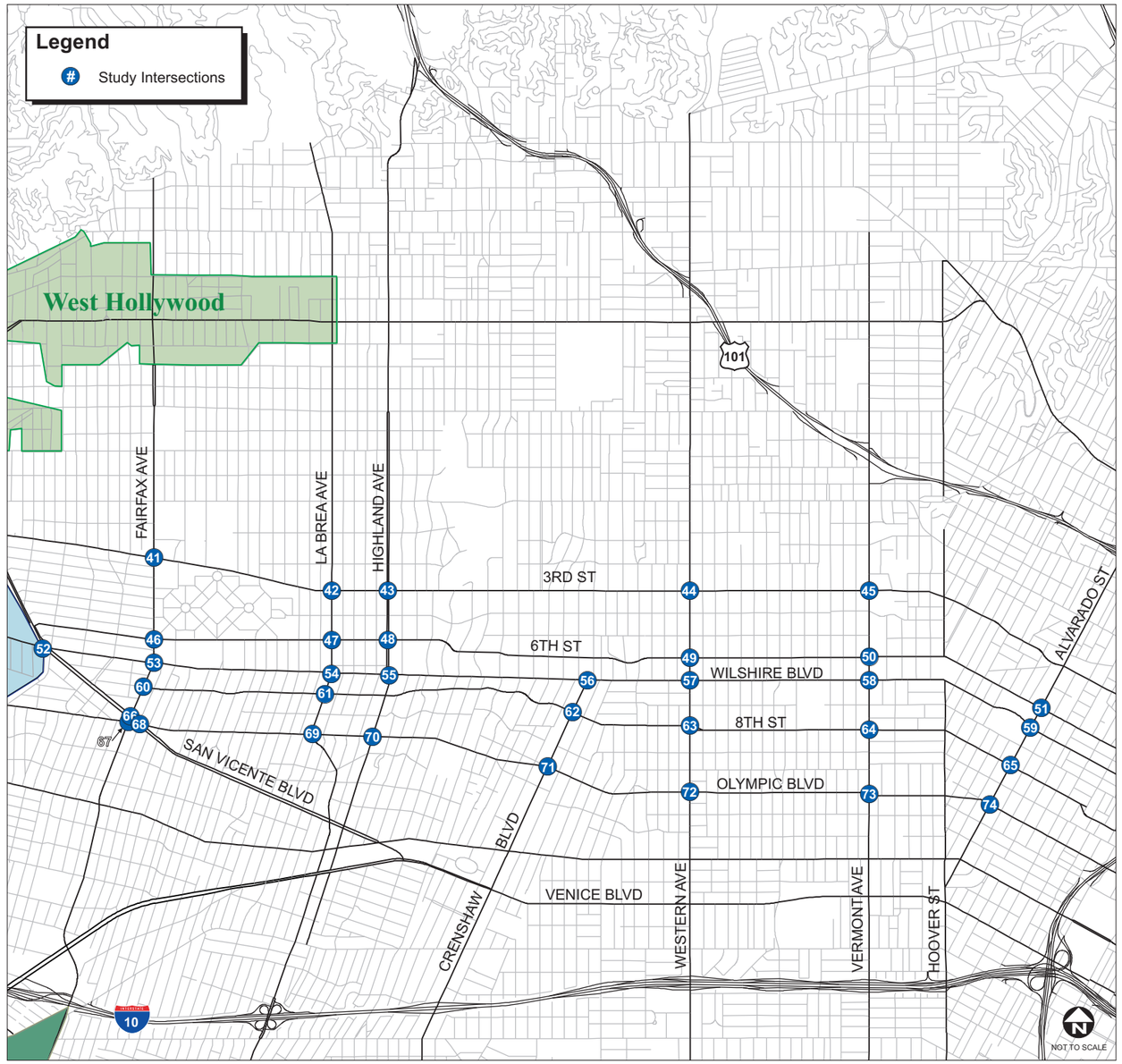

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FIGURE 4-1B
Existing Lane Configuration

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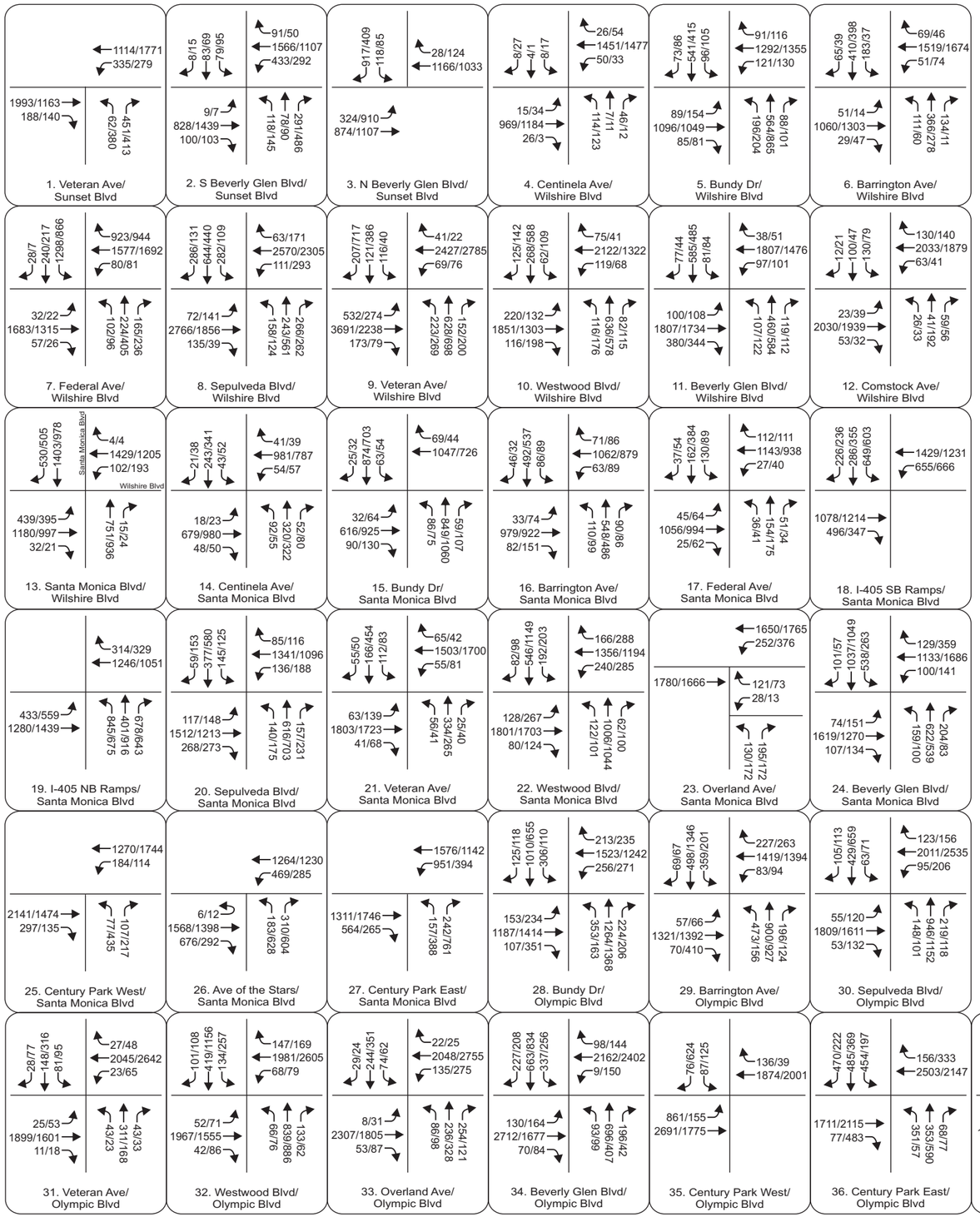

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FIGURE 4-2A
Existing Peak Hour Volumes

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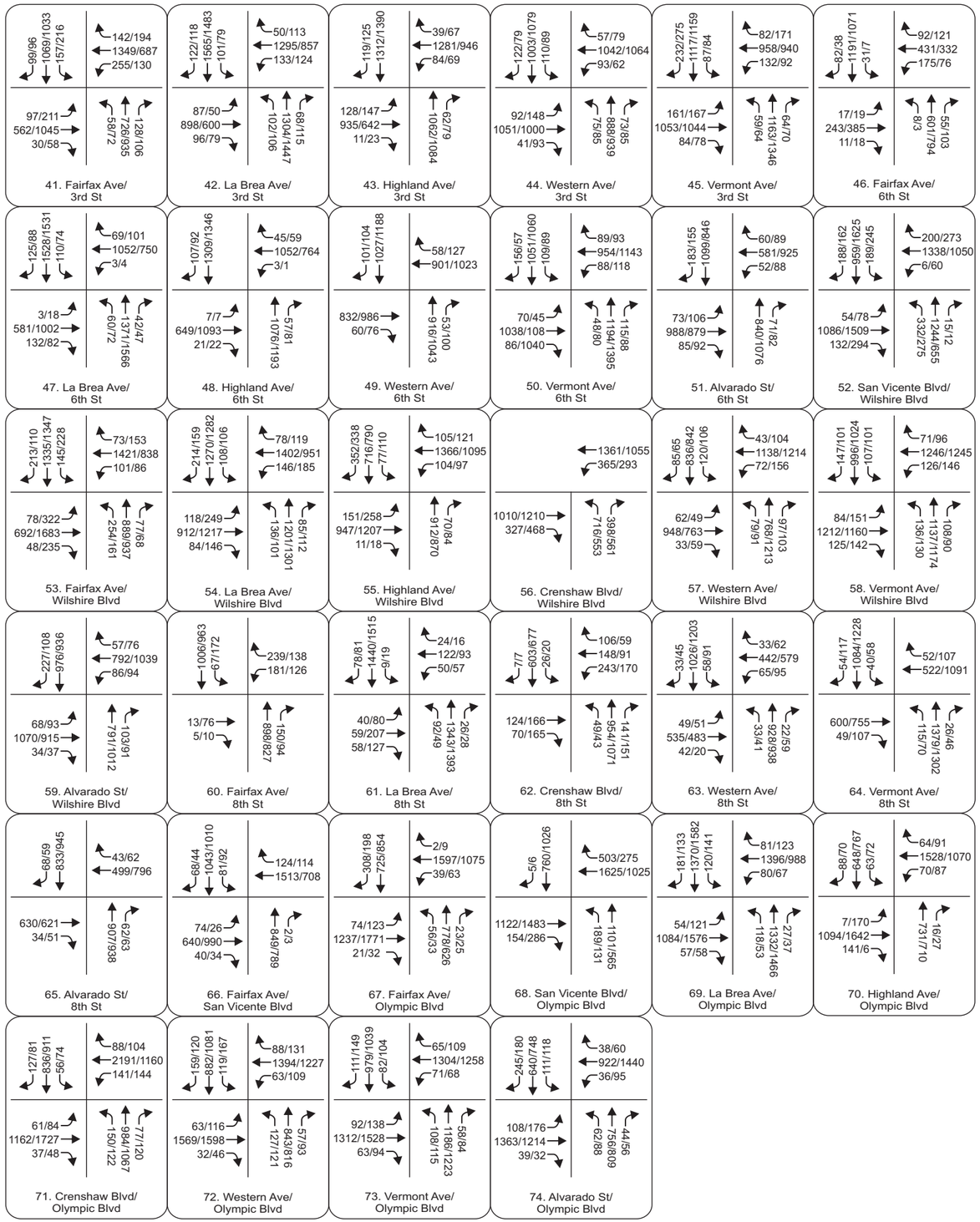

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FIGURE 4-2B
Existing Peak Hour Volumes

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As part of the analysis, signal timing data at all City of Los Angeles study intersections and lane widths along Wilshire Boulevard were provided by LADOT. Peak hour factors at each intersection were calculated from existing count data. The peak hour factor defines the relationship between the peak 15 minutes of traffic volume within the peak hour and the traffic volume over the entire peak hour. Peak hour factors generally range from 0.25 (highly concentrated traffic within 15-minute peak period) to 1.00 (evenly spread out traffic over the course of the hour). Additionally, truck classification counts were collected at select intersections along each corridor and converted to passenger car equivalent (PCE) volumes. In order to accurately model the utilization of the existing curb lanes along Wilshire Boulevard in comparison to adjacent travel lanes, lane utilization factors were calculated at Wilshire Boulevard intersections based on observing LADOT traffic cameras at select locations during peak hour conditions. In order to calculate lane utilization factors, traffic volumes were counted in each travel lane.

Detailed level of service calculation sheets can be found in **Appendix B**. **Table 4-1** presents the existing 2008 intersection operating conditions for the a.m. and p.m. peak hours at the 74 study intersections.

TABLE 4-1: EXISTING INTERSECTION LOS

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
1. Veteran Ave/Sunset Blvd	69.9	E	29.4	C
2. S Beverly Glen Blvd/Sunset Blvd	24.1	C	35.4	D
3. N Beverly Glen Blvd/Sunset Blvd	81.9	F	43.9	D
4. Centinela Ave/Wilshire Blvd	7.8	A	7.2	A
5. Bundy Dr/Wilshire Blvd	45.2	D	57.2	E
6. Barrington Ave/Wilshire Blvd	34.5	C	29.9	C
7. Federal Ave/Wilshire Blvd	55.9	E	42.6	D
8. Sepulveda Blvd/Wilshire Blvd	197.8	F	76.6	E
9. Veteran Ave/Wilshire Blvd	201.7	F	74.5	E
10. Westwood Blvd/Wilshire Blvd	43.1	D	48.9	D
11. Beverly Glen Blvd/Wilshire Blvd	35.2	D	33.7	C
12. Comstock Ave/Wilshire Blvd	16.5	B	22.9	C
13. Santa Monica Blvd/Wilshire Blvd	57.5	E	69.8	E
14. Centinela Ave/Santa Monica Blvd	14.9	B	15.7	B
15. Bundy Dr/Santa Monica Blvd	16.0	B	15.5	B
16. Barrington Ave/Santa Monica Blvd	15.1	B	13.7	B
17. Federal Ave/Santa Monica Blvd	27.7	C	30.6	C
18. I-405 SB Ramps/Santa Monica Blvd	26.4	C	25.3	C
19. I-405 NB Ramps/Santa Monica Blvd	47.7	D	47.5	D
20. Sepulveda Blvd/Santa Monica Blvd	37.7	D	45.3	D
21. Veteran Ave/Santa Monica Blvd	19.4	B	50.0	D
22. Westwood Blvd/Santa Monica Blvd	88.5	F	63.4	E
23. Overland Ave/Santa Monica Blvd	27.2	C	56.8	E
24. Beverly Glen Blvd/Santa Monica Blvd	48.8	D	39.8	D
25. Century Park W/Santa Monica Blvd	18.8	B	20.7	C
26. Ave of the Stars/Santa Monica Blvd	47.2	D	27.7	C
27. Century Park E/Santa Monica Blvd	30.2	C	17.2	B
28. Bundy Dr/Olympic Blvd	86.5	F	67.0	E
29. Barrington Ave/Olympic Blvd	44.0	D	52.1	D
30. Sepulveda Blvd/Olympic Blvd	29.4	C	41.1	D
31. Veteran Ave/Olympic Blvd	17.4	B	10.0	A
32. Westwood Blvd/Olympic Blvd	27.3	C	36.3	D
33. Overland Ave/Olympic Blvd	28.6	C	47.7	D
34. Beverly Glen Blvd/Olympic Blvd	49.0	D	39.2	D
35. Century Park W/Olympic Blvd	14.1	B	18.5	B
36. Century Park E/Olympic Blvd	40.7	D	40.2	D
37. Sepulveda Blvd/Pico Blvd	43.4	D	48.8	D
38. Veteran Ave/Pico Blvd	6.0	A	14.6	B
39. Westwood Blvd/Pico Blvd	27.1	C	53.5	D
40. Overland Ave/Pico Blvd	33.0	C	104.1	F
41. Fairfax Ave/3rd St	43.3	D	36.3	D
42. La Brea Ave/3rd St	29.7	D	19.8	B
43. Highland Ave/3rd St	56.4	E	22.9	C
44. Western Ave/3rd St	37.6	D	44.6	D
45. Vermont Ave/3rd St	34.9	C	36.4	D
46. Fairfax Ave/6th St	14.1	B	12.6	B
47. La Brea Ave/6th St	22.1	C	33.5	C
48. Highland Ave/6th St	15.3	B	14.7	B
49. Western Ave/6th St	25.5	C	28.4	C
50. Vermont Ave/6th St	33.6	C	35.3	D

51. Alvarado St/6th St	17.7	B	17.5	B
52. San Vicente Blvd/Wilshire Blvd	60.7	E	77.6	E
53. Fairfax Ave/Wilshire Blvd	78.0	E	124.9	F
54. La Brea Ave/Wilshire Blvd	28.4	C	28.9	C
55. Highland Ave/Wilshire Blvd	25.9	C	26.9	C
56. Crenshaw Blvd/Wilshire Blvd	23.5	C	19.4	B
57. Western Ave/Wilshire Blvd	35.3	D	67.1	E
58. Vermont Ave/Wilshire Blvd	42.7	D	48.7	D
59. Alvarado St/Wilshire Blvd	17.1	B	25.7	C
60. Fairfax Ave/8th St	11.1	B	10.6	B
61. La Brea Ave/8th St	7.3	A	10.0	B
62. Crenshaw Blvd/8th St	11.1	B	14.7	B
63. Western Ave/8th St	15.8	B	15.9	B
64. Vermont Ave/8th St	19.3	B	22.7	C
65. Alvarado St/8th St	12.7	B	13.3	B
66. Fairfax Ave/San Vicente Blvd	25.6	C	23.2	C
67. Fairfax Ave/Olympic Blvd	27.3	C	31.3	C
68. San Vicente Blvd/Olympic Blvd	25.9	C	19.5	B
69. La Brea Ave/Olympic Blvd	29.3	C	46.4	D
70. Highland Ave/Olympic Blvd	40.4	D	57.3	E
71. Crenshaw Blvd/Olympic Blvd	54.3	D	32.6	C
72. Western Ave/Olympic Blvd	27.6	C	40.6	D
73. Vermont Ave/Olympic Blvd	31.6	C	44.7	D
74. Alvarado St/Olympic Blvd	19.9	B	27.6	B

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

5.0 TRAFFIC FORECAST METHODOLOGY

Traffic volumes for year 2012 and year 2020 were forecast for the without project and with project scenarios. The without project scenario represents the projected traffic volumes in the study area in the absence of the Wilshire Boulevard BRT project.

Traffic volume forecasts for year 2012 and 2020 conditions (without project and with project scenarios) are based upon the results of the Southern California Association of Governments (SCAG) 2008 Regional Transportation Plan (RTP) travel demand model. The model was updated and refined specifically for use in this study. This included modifying locations of centroid connectors, which are locations on the roadway network where local streets intersect with arterial streets. Also, adjustments to roadway speeds and capacities were made based on configuration of roadways in the model and traffic patterns in the area. The model was calibrated to 2008 conditions specifically for this project and then used to forecast travel characteristics and ridership for the analysis years of 2012 and 2020.

Within the study area, major projects that the travel demand model includes as listed in the 2008 Regional Transportation Improvement Program (RTIP) are the High Occupancy Vehicle (HOV) lane on I-405 from I-10 to SR-101 (RTIP ID# LA0B408) in 2012 and 2020, the Exposition Line Phase 1 in 2012, and the Exposition Line Phase 2 in 2020. The HOV project includes the removal of the Montana Avenue off-ramp from the northbound I-405.

SCAG's travel demand forecasting model predicts future travel demand based upon several input data items that include:

- SCAG forecasts of regional growth in population and employment in the six-county region;
- SCAG forecast changes in the socio-demographic characteristics of travelers; and
- 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.

The socioeconomic data in the model were further refined to include large known future development projects provided by LADOT. These projects are listed in **Table 5-1**.

TABLE 5-1: FUTURE DEVELOPMENT PROJECTS

Area	Location	Project Description
West LA	11122 W Pico Blvd	538 Apartments, 212 tsf Target, 54 tsf Supermarket
Westwood	Glendon Ave/Kinross Ave	50 tsf Shopping Center, 350 Apartments
Central LA	Wilshire Blvd/Hoover St	156 tsf Shopping Ctr
Downtown	Figueroa St/8th Pl	836 Condos, 988.255 tsf Office, 480 Hotel Rooms, 46 tsf Retail
Downtown	Figueroa St/7th St	Korean Air project to replace Wilshire Grand Hotel with new Hotel and Office space

tsf = thousand square feet.

The travel demand model was used to generate future traffic volume projections for without project and with project scenarios. The with project scenarios incorporate a capacity reduction on Wilshire Boulevard within the project limits to reflect implementation of the peak period bus lanes. In order to determine the appropriate capacity reduction to apply to the model, p.m. peak period lane utilization counts were collected during a typical weekday at five intersections along the Wilshire Boulevard corridor with the use of City of Los Angeles intersection cameras. This was the same data used for lane utilization factor calculations described earlier.

Year 2012 and 2020 turning movement volumes at the study intersections were developed from existing turning movement volumes and year 2012 and 2020 approach and departure volumes using the methodology described in National Cooperative Highway Research Program Report (NCHRP) 255, *Highway Traffic Data for Urbanized Area Project Planning and Design* (Transportation Research Board, 1982).

The forecast traffic model is a dynamic system in which drivers respond to changes in the speed and capacity of the roadway network. If a roadway's capacity is reduced, as is the case along Wilshire Boulevard, traffic will divert to other routes that may offer faster travel times, which will cause a ripple effect through the entire system. Thus, traffic volumes on Wilshire Boulevard with implementation of the project are generally lower than without project volumes. Future volume development worksheets are provided in **Appendix C**.

6.0 YEAR 2012 CONDITIONS

This section analyzes year 2012 traffic conditions, with and without the Proposed Project. Year 2012 traffic volumes were developed as described above in the "Analysis Methodology" section. The year 2012 transportation network assumes construction of the Exposition Line Phase 1 project and the I-405 HOV lane project. In addition, year 2012 intersection configurations include the addition of a second northbound left-turn lane at the San Vicente Boulevard/Wilshire Boulevard intersection as the result of a

project funded by Cedars-Sinai Medical Center and signal phasing modifications at the Beverly Glen Boulevard/Wilshire Boulevard intersection planned by LADOT.

6.1 Year 2012 Without Project Levels of Service

Year 2012 without project peak hour volumes are shown in **Figure 6-1**. A level of service analysis was conducted to evaluate year 2012 without project intersection operations. Detailed level of service calculations can be found in **Appendix B**. **Table 6-1** presents the year 2012 without project intersection operating conditions during the a.m. and p.m. peak hours at the 74 study intersections.

Table 6-1: Year 2012 Without Project Intersection LOS

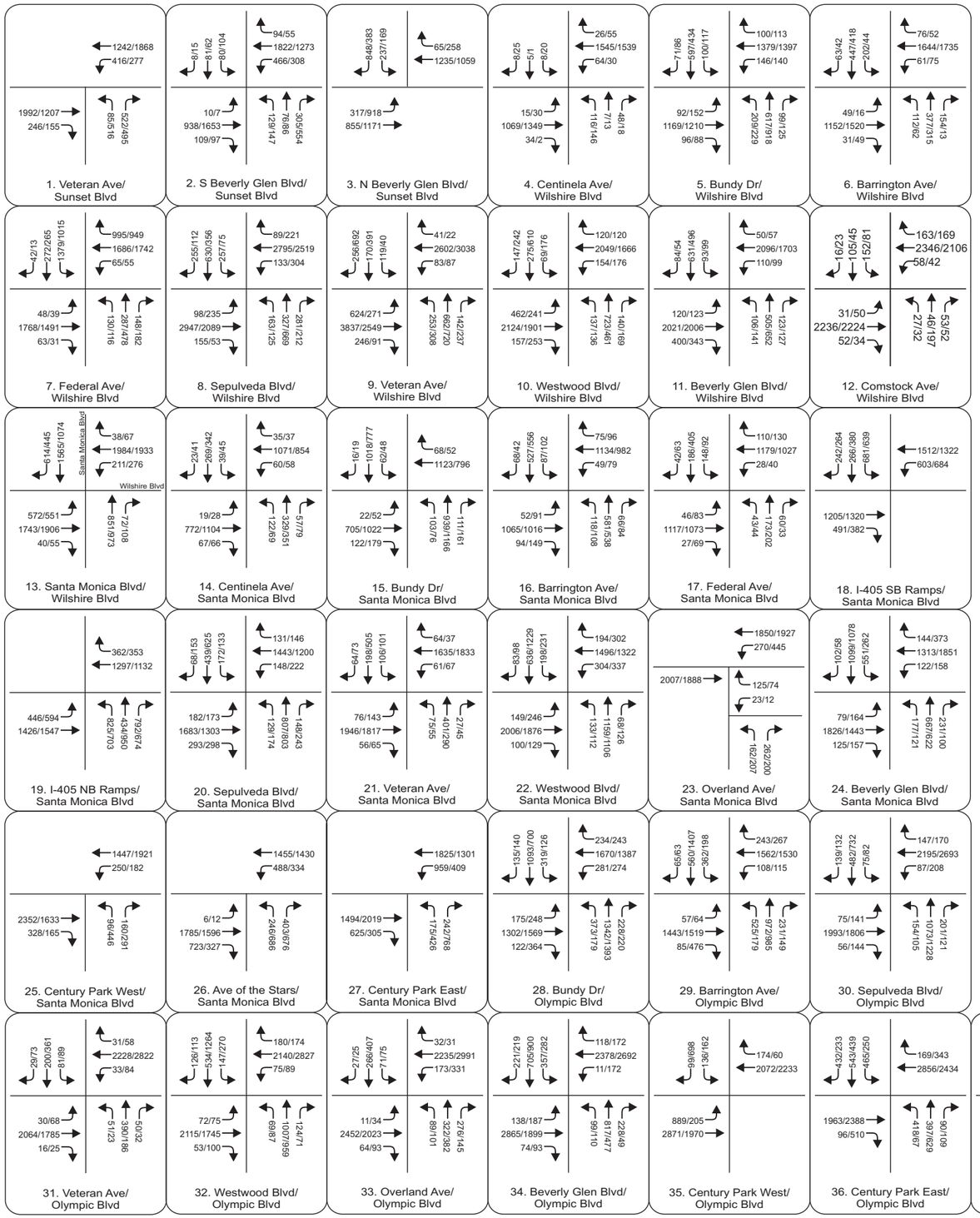
Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
1. Veteran Ave/Sunset Blvd	92.3	F	41.5	D
2. S Beverly Glen Blvd/Sunset Blvd	26.9	C	53.1	D
3. N Beverly Glen Blvd/Sunset Blvd	118.0	F	46.0	D
4. Centinela Ave/Wilshire Blvd	8.0	A	8.3	A
5. Bundy Dr/Wilshire Blvd	60.3	E	77.2	E
6. Barrington Ave/Wilshire Blvd	38.1	D	32.9	C
7. Federal Ave/Wilshire Blvd	67.8	E	49.9	D
8. Sepulveda Blvd/Wilshire Blvd	207.8	F	111.5	F
9. Veteran Ave/Wilshire Blvd	236.4	F	114.9	F
10. Westwood Blvd/Wilshire Blvd	66.8	E	62.7	E
11. Beverly Glen Blvd/Wilshire Blvd	34.5	C	38.1	D
12. Comstock Ave/Wilshire Blvd	20.6	C	25.7	C
13. Santa Monica Blvd/Wilshire Blvd	87.3	F	91.6	F
14. Centinela Ave/Santa Monica Blvd	16.6	B	16.9	B
15. Bundy Dr/Santa Monica Blvd	16.9	B	16.0	B
16. Barrington Ave/Santa Monica Blvd	16.5	B	15.1	B
17. Federal Ave/Santa Monica Blvd	27.8	C	31.0	C
18. I-405 SB Ramps/Santa Monica Blvd	26.8	C	26.3	C
19. I-405 NB Ramps/Santa Monica Blvd	48.9	D	52.4	D
20. Sepulveda Blvd/Santa Monica Blvd	46.4	D	46.6	D
21. Veteran Ave/Santa Monica Blvd	20.6	C	61.2	E
22. Westwood Blvd/Santa Monica Blvd	122.9	F	90.7	F
23. Overland Ave/Santa Monica Blvd	30.0	C	72.9	E
24. Beverly Glen Blvd/Santa Monica Blvd	60.7	E	48.9	D
25. Century Park W/Santa Monica Blvd	20.5	C	23.2	C
26. Ave of the Stars/Santa Monica Blvd	46.8	D	27.8	C
27. Century Park E/Santa Monica Blvd	28.5	C	18.0	B
28. Bundy Dr/Olympic Blvd	99.5	F	73.3	E
29. Barrington Ave/Olympic Blvd	51.1	D	56.3	E
30. Sepulveda Blvd/Olympic Blvd	33.9	C	51.5	D
31. Veteran Ave/Olympic Blvd	23.8	C	13.6	B
32. Westwood Blvd/Olympic Blvd	38.7	D	44.6	D
33. Overland Ave/Olympic Blvd	37.6	D	65.4	E
34. Beverly Glen Blvd/Olympic Blvd	67.2	E	49.0	D
35. Century Park W/Olympic Blvd	15.0	B	20.6	C
36. Century Park E/Olympic Blvd	42.6	D	44.9	D
37. Sepulveda Blvd/Pico Blvd	53.0	D	65.6	E

38. Veteran Ave/Pico Blvd	12.2	B	19.1	B
39. Westwood Blvd/Pico Blvd	39.1	D	70.1	E
40. Overland Ave/Pico Blvd	60.1	E	122.9	F
41. Fairfax Ave/3rd St	69.9	E	44.8	D
42. La Brea Ave/3rd St	34.5	C	26.2	C
43. Highland Ave/3rd St	69.6	E	29.9	C
44. Western Ave/3rd St	47.1	D	54.8	D
45. Vermont Ave/3rd St	42.3	D	43.8	D
46. Fairfax Ave/6th St	15.5	B	13.9	B
47. La Brea Ave/6th St	58.9	E	78.5	E
48. Highland Ave/6th St	18.9	B	18.2	B
49. Western Ave/6th St	27.2	C	30.8	C
50. Vermont Ave/6th St	39.6	D	47.2	D
51. Alvarado St/6th St	17.5	B	20.3	C
52. San Vicente Blvd/Wilshire Blvd	76.2	E	116.6	F
53. Fairfax Ave/Wilshire Blvd	104.0	F	151.5	F
54. La Brea Ave/Wilshire Blvd	37.5	D	34.8	C
55. Highland Ave/Wilshire Blvd	44.2	D	38.6	D
56. Crenshaw Blvd/Wilshire Blvd	31.9	C	21.5	C
57. Western Ave/Wilshire Blvd	51.0	D	100.0	F
58. Vermont Ave/Wilshire Blvd	60.1	E	65.8	E
59. Alvarado St/Wilshire Blvd	23.0	C	30.4	C
60. Fairfax Ave/8th St	11.7	B	13.6	B
61. La Brea Ave/8th St	8.4	A	10.9	B
62. Crenshaw Blvd/8th St	11.4	B	15.5	B
63. Western Ave/8th St	16.2	B	16.8	B
64. Vermont Ave/8th St	21.4	C	30.7	C
65. Alvarado St/8th St	13.4	B	14.1	B
66. Fairfax Ave/San Vicente Blvd	27.0	C	23.0	C
67. Fairfax Ave/Olympic Blvd	37.0	D	60.9	E
68. San Vicente Blvd/Olympic Blvd	31.2	C	22.8	C
69. La Brea Ave/Olympic Blvd	46.6	D	68.0	E
70. Highland Ave/Olympic Blvd	48.2	D	71.0	E
71. Crenshaw Blvd/Olympic Blvd	68.5	E	51.8	D
72. Western Ave/Olympic Blvd	31.6	C	48.0	D
73. Vermont Ave/Olympic Blvd	37.5	D	63.7	E
74. Alvarado St/Olympic Blvd	23.9	C	33.2	C

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

6.2 Year 2012 With Proposed Project Levels of Service

Year 2012 with Proposed project peak hour volumes are shown in **Figure 6-2**. The Proposed Project lane configurations of the study intersections are illustrated in **Figure 6-3.** A level of service analysis was conducted to evaluate year 2012 with Proposed Project intersection operations. Detailed level of service calculation sheets can be found in **Appendix B**. **Table 6-2** presents the year 2012 with Proposed Project intersection operating conditions for the a.m. peak hour at the 74 study intersections.



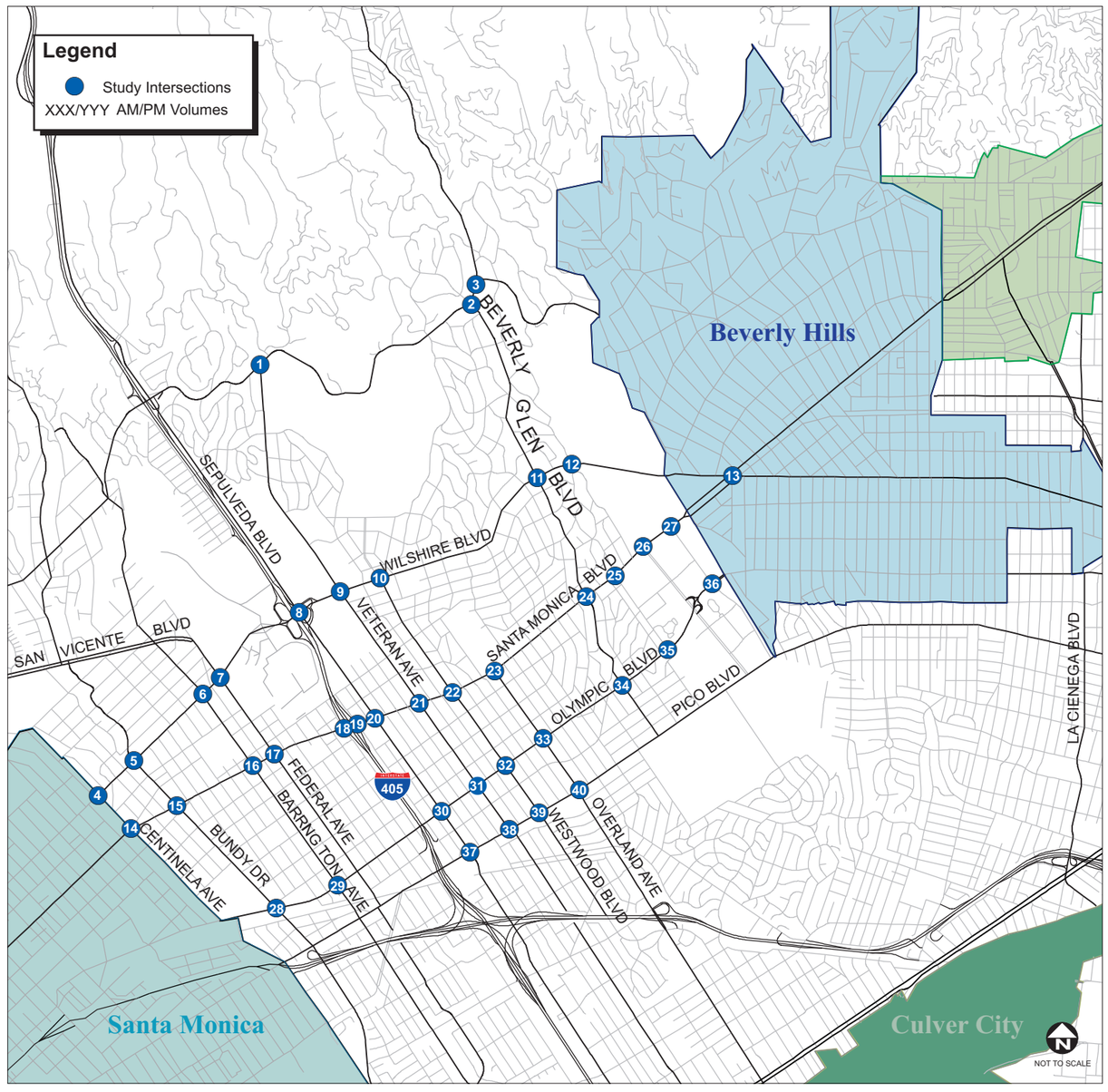


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FIGURE 6-1A
Year 2012 Without Project Volumes

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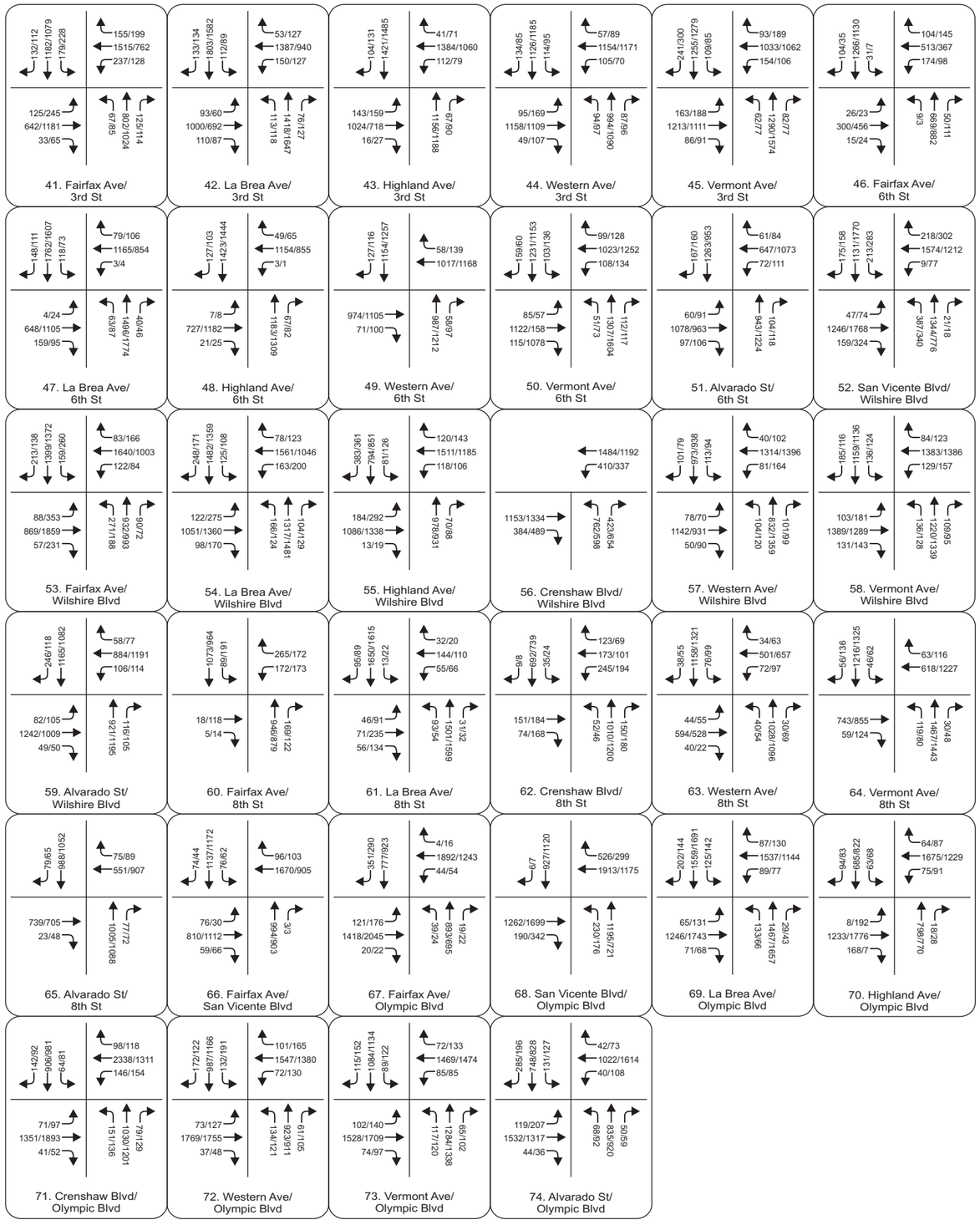

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Wilshire Blvd BRT Project
Traffic Impact Analysis

FIGURE 6-1B
Year 2012 Without Project Volumes

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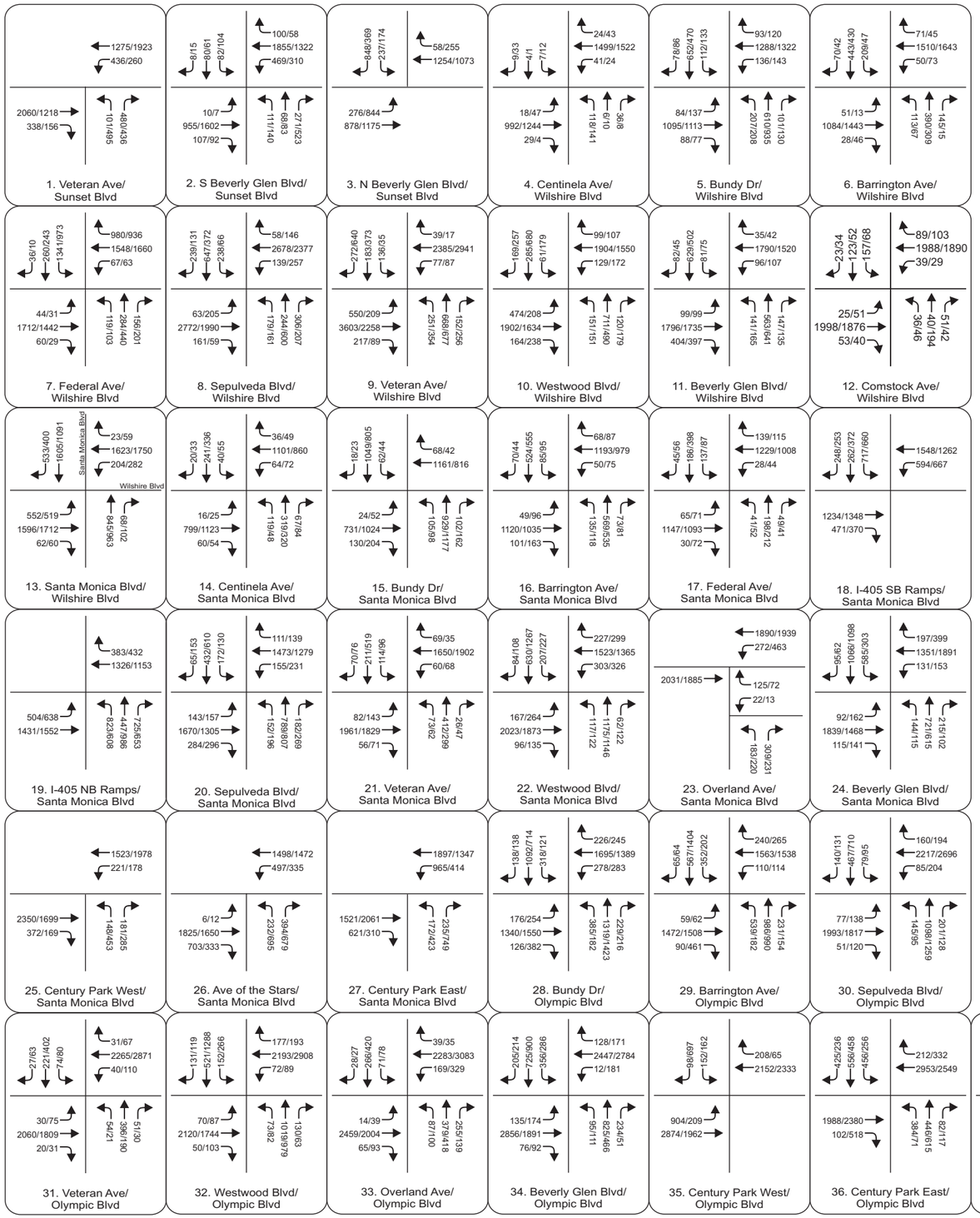

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Wilshire Blvd BRT Project
Traffic Impact Analysis

FIGURE 6-2A
Year 2012 With Proposed Project Volumes

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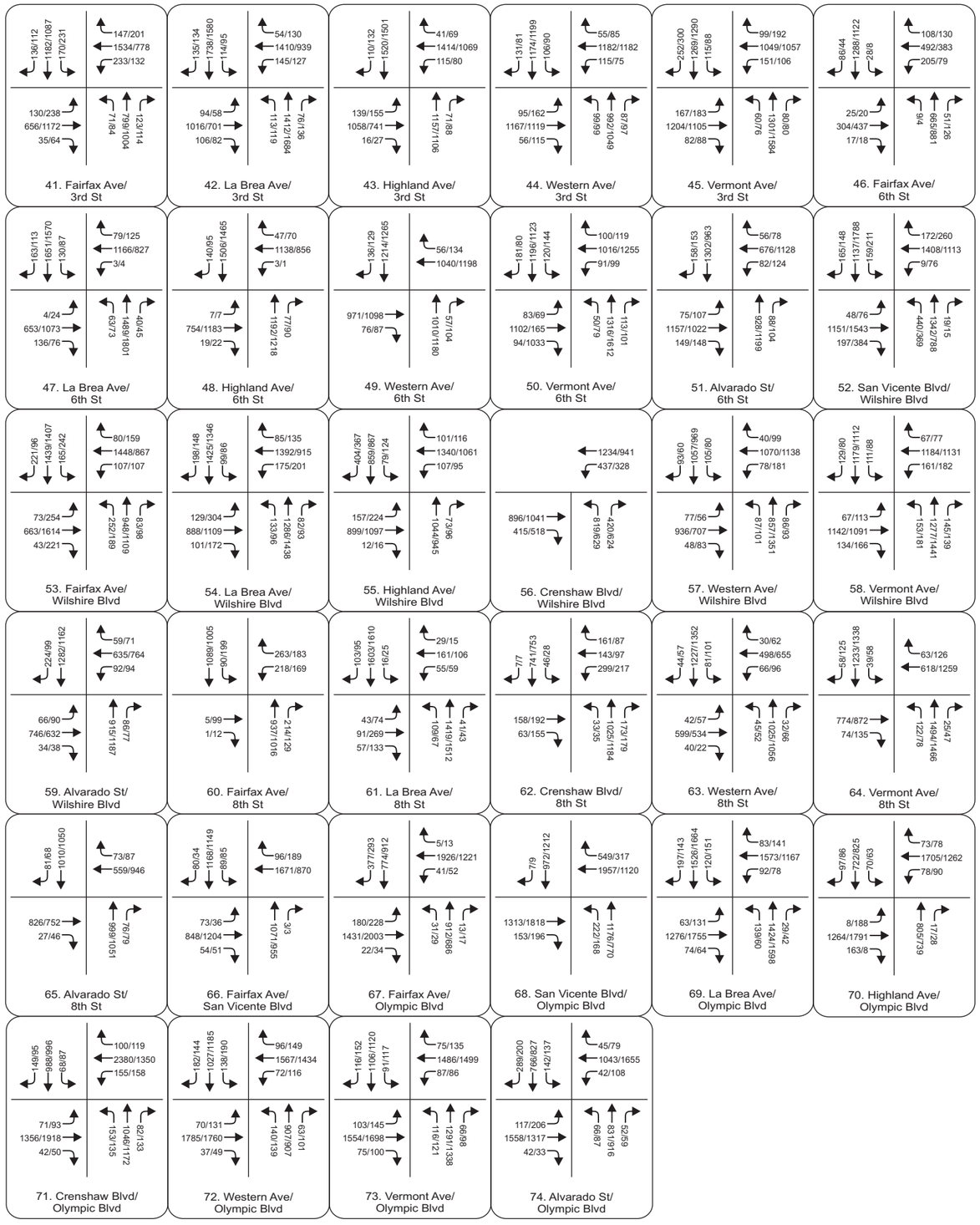

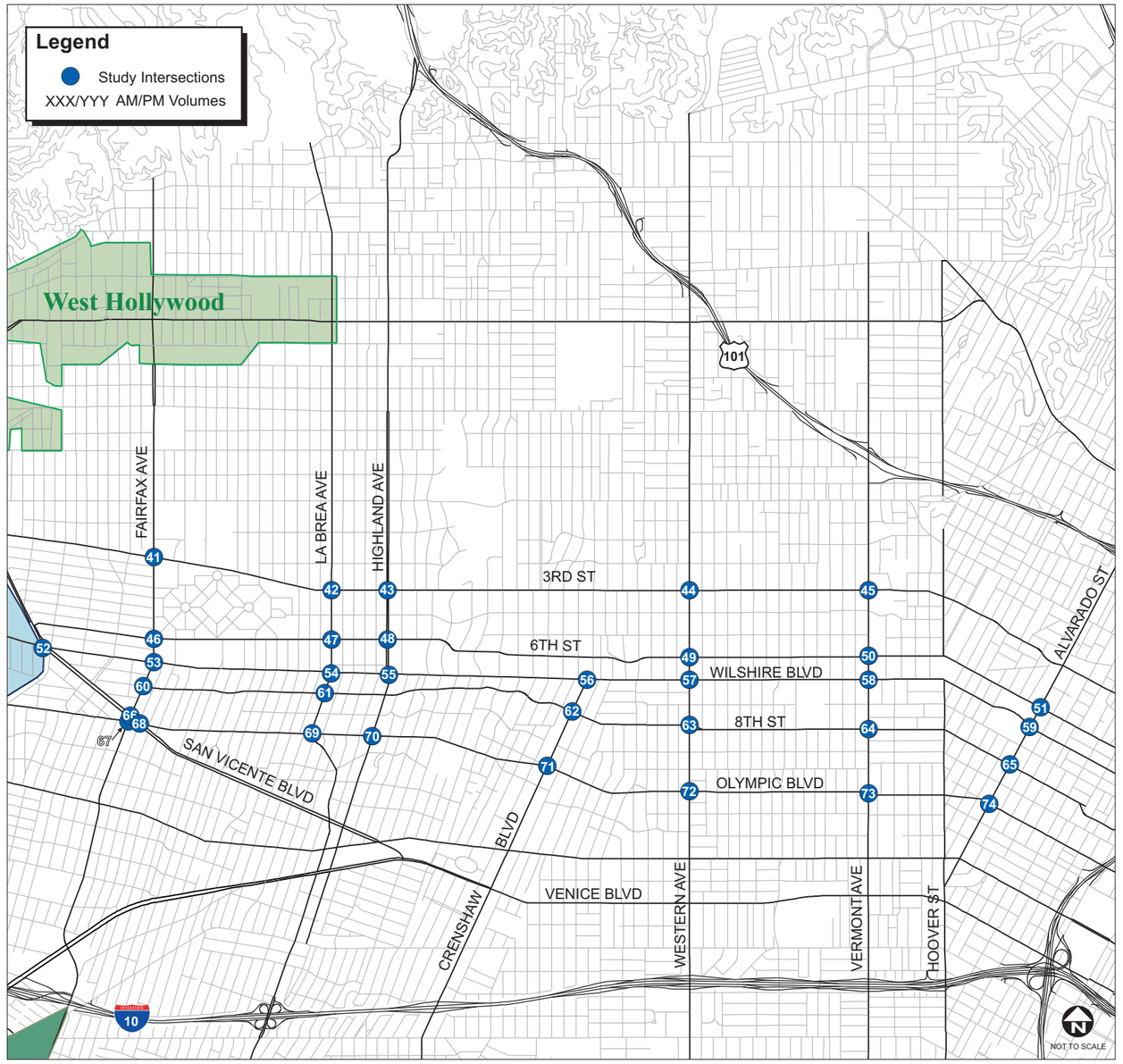

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Wilshire Blvd BRT Project
Traffic Impact Analysis

FIGURE 6-2B
Year 2012 With Proposed Project Volumes

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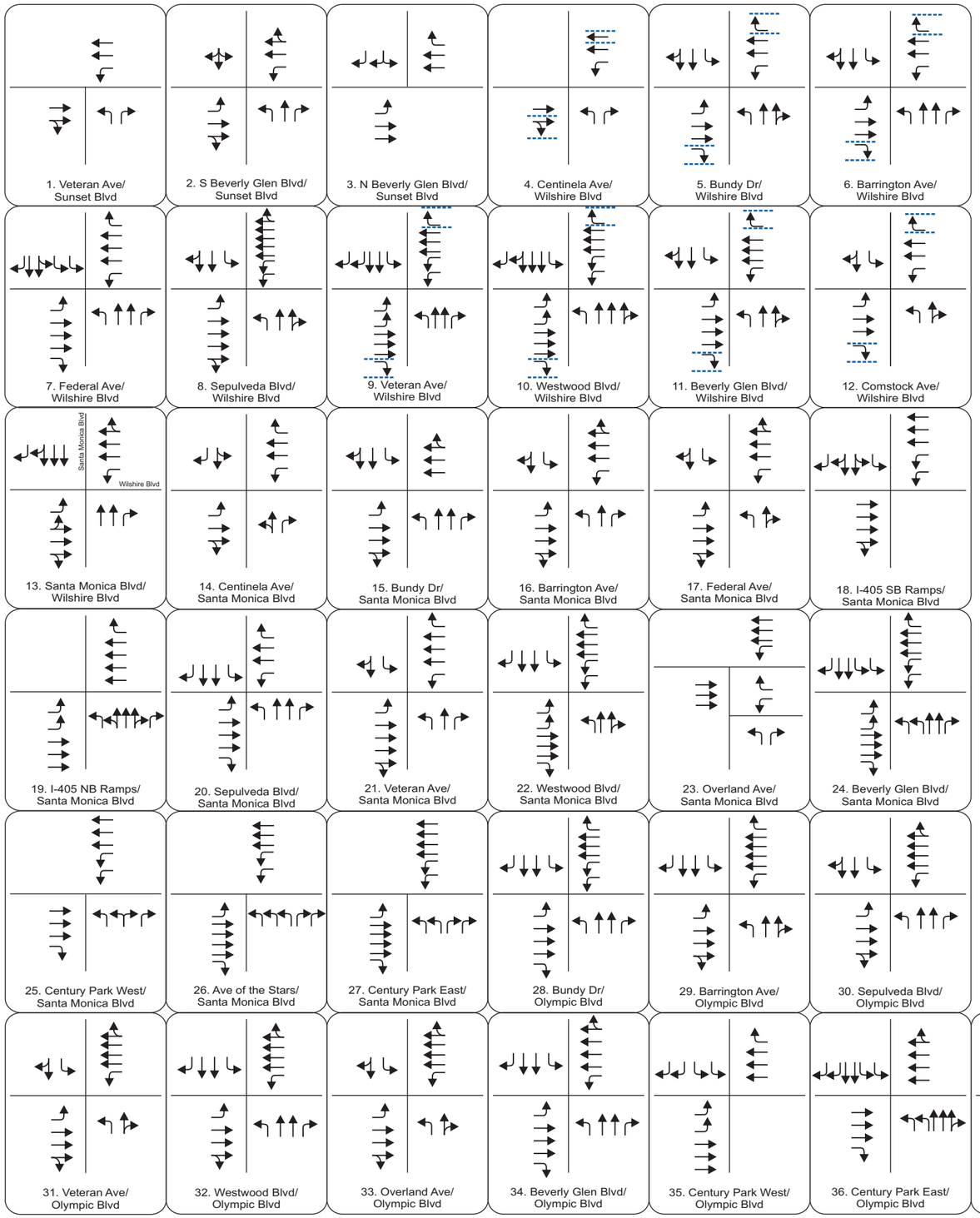

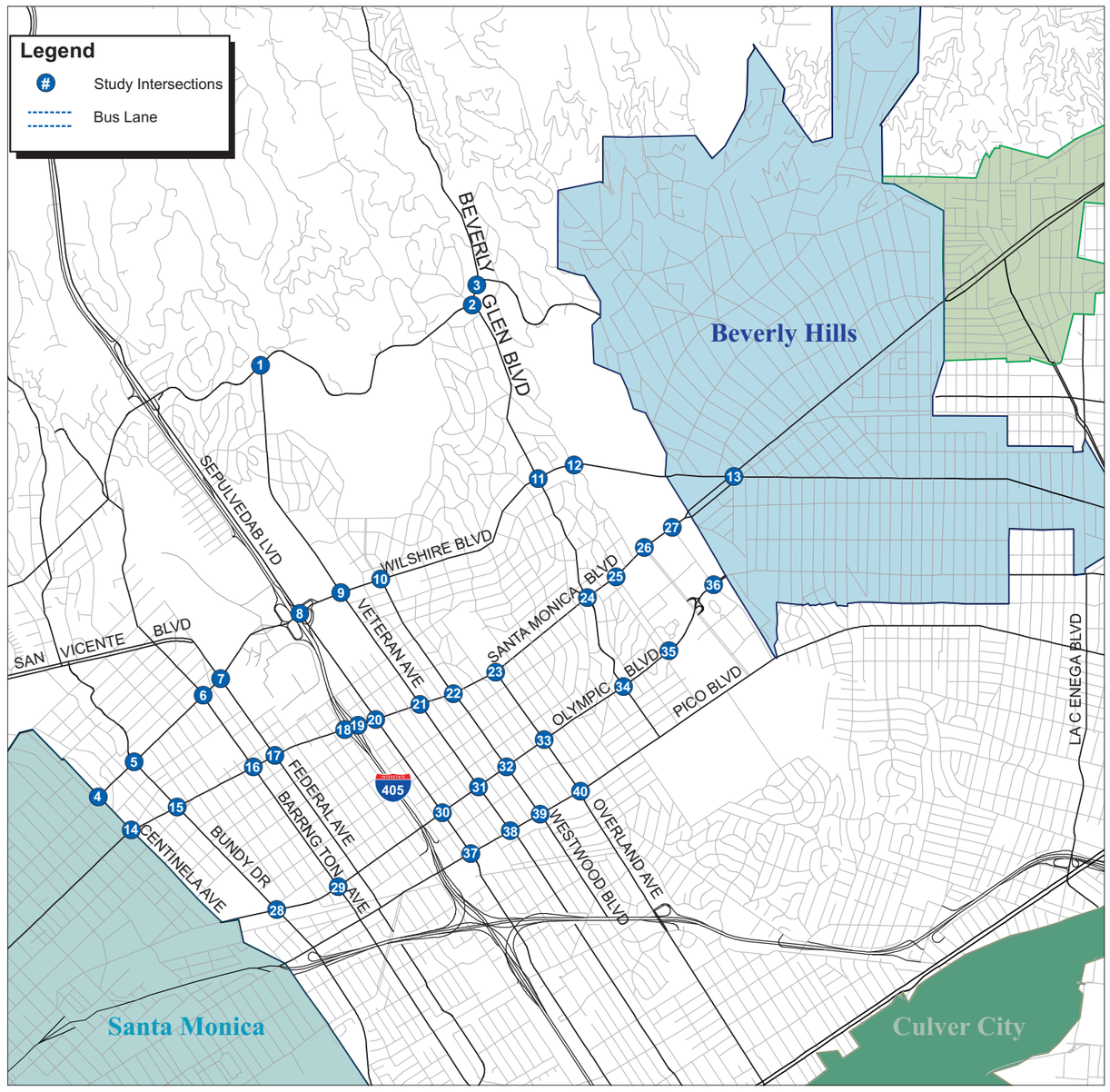

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Wilshire Blvd BRT Project
Traffic Impact Analysis

FIGURE 6-3A
Proposed Project Lane Configurations

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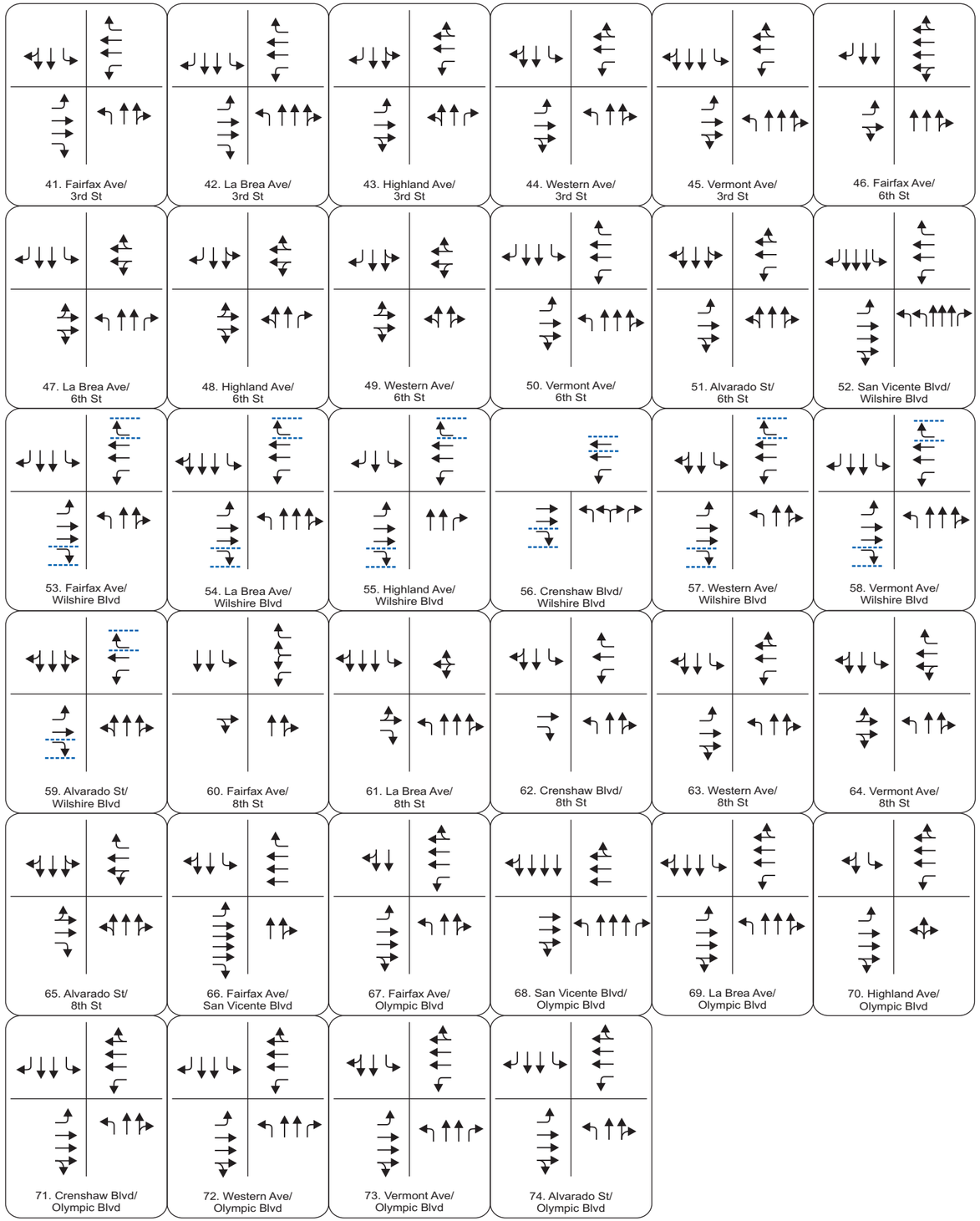

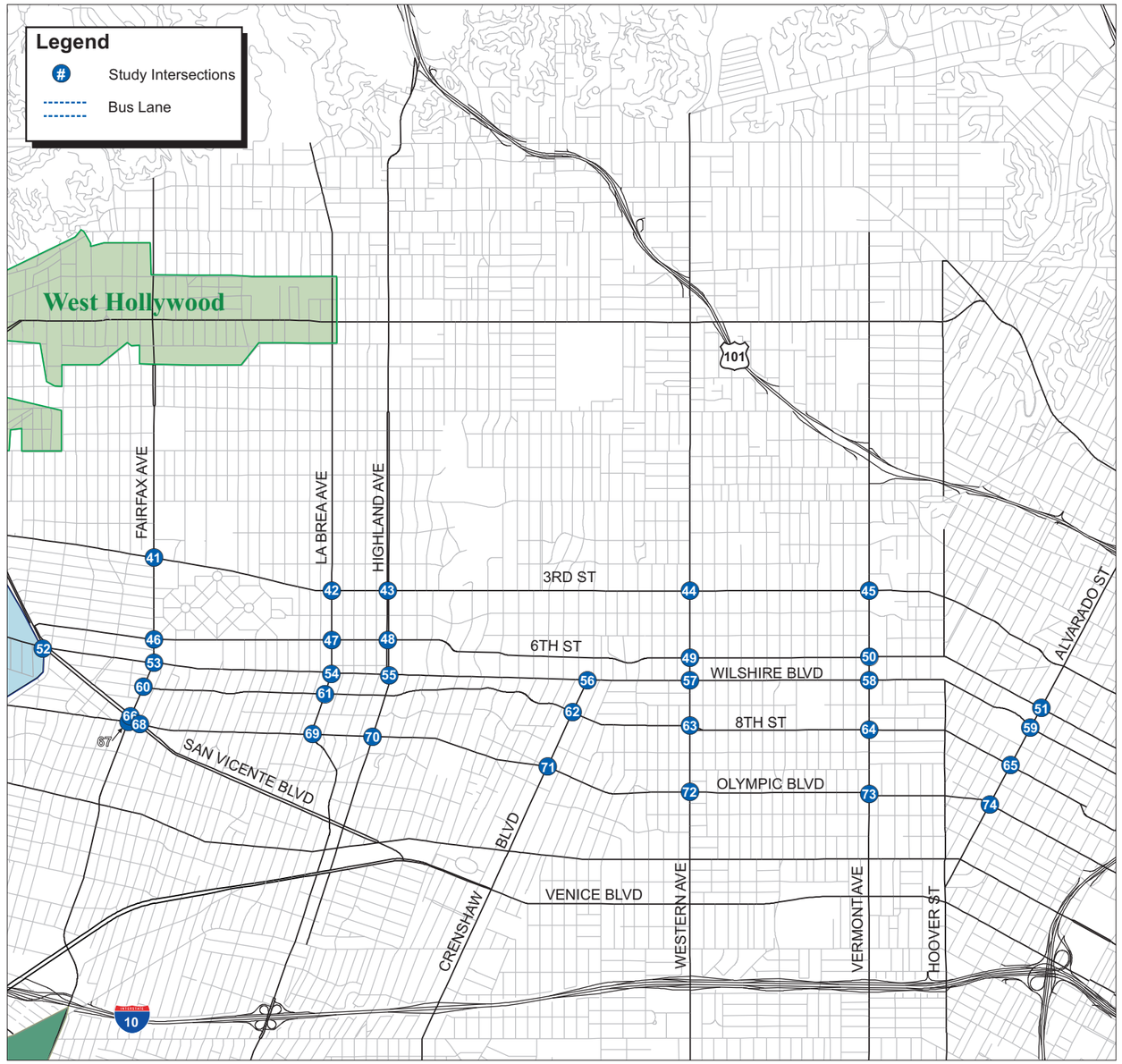

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Wilshire Blvd BRT Project
Traffic Impact Analysis

FIGURE 6-3B
Proposed Project Lane Configurations

Q:\2008\16\Jobs\J08-1643 Wilshire Bus Lane\gra\BaseMap.cdr

TABLE 6-2: YEAR 2012 WITH PROPOSED PROJECT AM PEAK HOUR INTERSECTION LOS

Intersection	2012 Without Project		2012 With Proposed Project		Change in Delay	Threshold	Impact?
	Delay (sec)	LOS	Delay (sec)	LOS			
1. Veteran Ave/Sunset Blvd	92.3	F	117.2	F	24.9	2.5	Yes
2. S Beverly Glen Blvd/Sunset Blvd	26.9	C	25.0	C	*	6.0	-
3. N Beverly Glen Blvd/Sunset Blvd	118.0	F	118.0	F	0.0	2.5	-
4. Centinela Ave/Wilshire Blvd	8.0	A	9.7	A	1.7	-	-
5. Bundy Dr/Wilshire Blvd	60.3	E	90.5	F	30.2	2.5	Yes
6. Barrington Ave/Wilshire Blvd	38.1	D	43.3	D	5.2	4.0	Yes
7. Federal Ave/Wilshire Blvd	67.8	E	56.1	E	*	2.5	-
8. Sepulveda Blvd/Wilshire Blvd	207.8	F	191.8	F	*	2.5	-
9. Veteran Ave/Wilshire Blvd	236.4	F	201.9	F	*	2.5	-
10. Westwood Blvd/Wilshire Blvd	66.8	E	47.6	D	*	4.0	-
11. Beverly Glen Blvd/Wilshire Blvd	34.5	C	33.4	C	*	6.0	-
12. Comstock Ave/Wilshire Blvd	20.6	C	20.6	C	0.0	6.0	-
13. Santa Monica Blvd/Wilshire Blvd	87.3	F	53.2	D	*	4.0	-
14. Centinela Ave/Santa Monica Blvd	16.6	B	16.2	B	-0.4	-	-
15. Bundy Dr/Santa Monica Blvd	16.9	B	17.0	B	0.1	-	-
16. Barrington Ave/Santa Monica Blvd	16.5	B	17.1	B	0.6	-	-
17. Federal Ave/Santa Monica Blvd	27.8	C	28.4	C	0.6	6.0	-
18. I-405 SB Ramps/Santa Monica Blvd	26.8	C	27.1	C	0.3	6.0	-
19. I-405 NB Ramps/Santa Monica Blvd	48.9	D	47.3	D	-1.6	4.0	-
20. Sepulveda Blvd/Santa Monica Blvd	46.4	D	40.5	D	-5.9	4.0	-
21. Veteran Ave/Santa Monica Blvd	20.6	C	21.3	C	0.7	6.0	-
22. Westwood Blvd/Santa Monica Blvd	122.9	F	126.8	F	3.9	2.5	Yes
23. Overland Ave/Santa Monica Blvd	30.0	C	30.8	C	0.8	6.0	-
24. Beverly Glen Blvd/Santa Monica Blvd	60.7	E	61.6	E	0.9	2.5	-
25. Century Park W/Santa Monica Blvd	20.5	C	20.4	C	-0.1	6.0	-
26. Ave of the Stars/Santa Monica Blvd	46.8	D	46.8	D	0.0	4.0	-
27. Century Park E/Santa Monica Blvd	28.5	C	27.4	C	-1.1	6.0	-
28. Bundy Dr/Olympic Blvd	99.5	F	100.4	F	0.9	2.5	-
29. Barrington Ave/Olympic Blvd	51.1	D	52.1	D	1.0	4.0	-
30. Sepulveda Blvd/Olympic Blvd	33.9	C	34.0	C	0.1	6.0	-
31. Veteran Ave/Olympic Blvd	23.8	C	23.0	C	-0.8	6.0	-
32. Westwood Blvd/Olympic Blvd	38.7	D	39.5	D	0.8	4.0	-
33. Overland Ave/Olympic Blvd	37.6	D	41.0	D	3.4	4.0	-
34. Beverly Glen Blvd/Olympic Blvd	67.2	E	66.7	E	-0.5	2.5	-
35. Century Park W/Olympic Blvd	15.0	B	15.3	B	0.3	-	-
36. Century Park E/Olympic Blvd	42.6	D	42.0	D	-0.6	4.0	-
37. Sepulveda Blvd/Pico Blvd	53.0	D	59.5	E	6.5	2.5	Yes
38. Veteran Ave/Pico Blvd	12.2	B	10.8	B	-1.4	-	-
39. Westwood Blvd/Pico Blvd	39.1	D	48.4	D	9.3	4.0	Yes
40. Overland Ave/Pico Blvd	60.1	E	63.6	E	3.5	2.5	Yes
41. Fairfax Ave/3rd St	69.9	E	71.7	E	1.8	2.5	-
42. La Brea Ave/3rd St	34.5	C	34.3	C	-0.2	6.0	-
43. Highland Ave/3rd St	69.6	E	75.0	E	5.4	2.5	Yes
44. Western Ave/3rd St	47.1	D	48.5	D	1.4	4.0	-
45. Vermont Ave/3rd St	42.3	D	42.4	D	0.1	4.0	-
46. Fairfax Ave/6th St	15.5	B	15.6	B	0.1	-	-
47. La Brea Ave/6th St	58.9	E	48.4	D	-10.5	4.0	-

48. Highland Ave/6th St	18.9	B	19.9	B	1.0	-	-
49. Western Ave/6th St	27.2	C	27.6	C	0.4	6.0	-
50. Vermont Ave/6th St	39.6	D	39.7	D	0.1	4.0	-
51. Alvarado St/6th St	17.5	B	18.1	B	0.6	-	-
52. San Vicente Blvd/Wilshire Blvd	76.2	E	72.3	E	*	2.5	-
53. Fairfax Ave/Wilshire Blvd	104.0	F	121.8	F	17.8	2.5	Yes
54. La Brea Ave/Wilshire Blvd	37.5	D	46.4	D	8.9	4.0	Yes
55. Highland Ave/Wilshire Blvd	44.2	D	54.4	D	10.2	4.0	Yes
56. Crenshaw Blvd/Wilshire Blvd	31.9	C	32.8	C	0.9	6.0	-
57. Western Ave/Wilshire Blvd	51.0	D	49.3	D	*	4.0	-
58. Vermont Ave/Wilshire Blvd	60.1	E	56.4	E	*	2.5	-
59. Alvarado St/Wilshire Blvd	23.0	C	21.6	C	*	6.0	-
60. Fairfax Ave/8th St	11.7	B	11.6	B	-0.1	-	-
61. La Brea Ave/8th St	8.4	A	9.5	A	1.1	-	-
62. Crenshaw Blvd/8th St	11.4	B	14.6	B	3.2	-	-
63. Western Ave/8th St	16.2	B	16.2	B	0.0	-	-
64. Vermont Ave/8th St	21.4	C	22.5	C	1.1	6.0	-
65. Alvarado St/8th St	13.4	B	13.7	B	0.3	-	-
66. Fairfax Ave/San Vicente Blvd	27.0	C	29.6	C	2.6	6.0	-
67. Fairfax Ave/Olympic Blvd	37.0	D	51.5	D	14.5	4.0	Yes
68. San Vicente Blvd/Olympic Blvd	31.2	C	30.9	C	-0.3	6.0	-
69. La Brea Ave/Olympic Blvd	46.6	D	43.7	D	-2.9	4.0	-
70. Highland Ave/Olympic Blvd	48.2	D	49.7	D	1.5	4.0	-
71. Crenshaw Blvd/Olympic Blvd	68.5	E	75.3	E	6.8	2.5	Yes
72. Western Ave/Olympic Blvd	31.6	C	33.6	C	2.0	6.0	-
73. Vermont Ave/Olympic Blvd	37.5	D	38.6	D	1.1	4.0	-
74. Alvarado St/Olympic Blvd	23.9	C	25.2	C	1.3	6.0	-

***** Average delay reduced, see explanation in "Analysis Methodology" section.
Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

Table 6-3 presents the year 2012 with Proposed Project intersection operating conditions during the p.m. peak hour at the 74 study intersections.

TABLE 6-3: YEAR 2012 WITH PROPOSED PROJECT PM PEAK HOUR INTERSECTION LOS

Intersection	2012 Without Project		2012 With Proposed Project		Change in Delay	Threshold	Impact?
	Delay (sec)	LOS	Delay (sec)	LOS			
1. Veteran Ave/Sunset Blvd	41.5	D	38.4	D	-3.1	4.0	-
2. S Beverly Glen Blvd/Sunset Blvd	53.1	D	44.9	D	-8.2	4.0	-
3. N Beverly Glen Blvd/Sunset Blvd	46.0	D	40.0	D	-6.0	4.0	-
4. Centinela Ave/Wilshire Blvd	8.3	A	7.8	A	*	-	-
5. Bundy Dr/Wilshire Blvd	77.2	E	109.1	F	31.9	2.5	Yes
6. Barrington Ave/Wilshire Blvd	32.9	C	30.9	C	*	6.0	-
7. Federal Ave/Wilshire Blvd	49.9	D	46.0	D	*	4.0	-
8. Sepulveda Blvd/Wilshire Blvd	111.5	F	97.4	F	*	2.5	-
9. Veteran Ave/Wilshire Blvd	114.9	F	130.8	F	15.9	2.5	Yes
10. Westwood Blvd/Wilshire Blvd	62.7	E	49.2	D	*	4.0	-
11. Beverly Glen Blvd/Wilshire Blvd	38.1	D	35.1	D	*	4.0	-
12. Comstock Ave/Wilshire Blvd	25.7	C	24.4	C	*	6.0	-
13. Santa Monica Blvd/Wilshire Blvd	91.6	F	69.4	E	*	2.5	-
14. Centinela Ave/Santa Monica Blvd	16.9	B	16.9	B	0.0	-	-
15. Bundy Dr/Santa Monica Blvd	16.0	B	16.1	B	0.1	-	-
16. Barrington Ave/Santa Monica Blvd	15.1	B	15.2	B	0.1	-	-
17. Federal Ave/Santa Monica Blvd	31.0	C	30.8	C	-0.2	6.0	-
18. I-405 SB Ramps/Santa Monica Blvd	26.3	C	25.4	C	-0.9	6.0	-
19. I-405 NB Ramps/Santa Monica Blvd	52.4	D	48.8	D	-3.6	4.0	-
20. Sepulveda Blvd/Santa Monica Blvd	46.6	D	44.9	D	-1.7	4.0	-
21. Veteran Ave/Santa Monica Blvd	61.2	E	67.6	E	6.4	2.5	Yes
22. Westwood Blvd/Santa Monica Blvd	90.7	F	89.2	F	-1.5	2.5	-
23. Overland Ave/Santa Monica Blvd	72.9	E	78.9	E	6.0	2.5	Yes
24. Beverly Glen Blvd/Santa Monica Blvd	48.9	D	52.8	D	3.9	4.0	-
25. Century Park W/Santa Monica Blvd	23.2	C	23.3	C	0.1	6.0	-
26. Ave of the Stars/Santa Monica Blvd	27.8	C	28.2	C	0.4	6.0	-
27. Century Park E/Santa Monica Blvd	18.0	B	18.4	B	0.4	-	-
28. Bundy Dr/Olympic Blvd	73.3	E	75.6	E	2.3	2.5	-
29. Barrington Ave/Olympic Blvd	56.3	E	56.3	E	0.0	2.5	-
30. Sepulveda Blvd/Olympic Blvd	51.5	D	52.0	D	0.5	4.0	-
31. Veteran Ave/Olympic Blvd	13.6	B	19.5	B	5.9	-	-
32. Westwood Blvd/Olympic Blvd	44.6	D	46.7	D	2.1	4.0	-
33. Overland Ave/Olympic Blvd	65.4	E	65.1	E	-0.3	2.5	-
34. Beverly Glen Blvd/Olympic Blvd	49.0	D	53.4	D	4.4	4.0	Yes
35. Century Park W/Olympic Blvd	20.6	C	21.1	C	0.5	6.0	-
36. Century Park E/Olympic Blvd	44.9	D	45.7	D	0.8	4.0	-
37. Sepulveda Blvd/Pico Blvd	65.6	E	67.5	E	1.9	2.5	-
38. Veteran Ave/Pico Blvd	19.1	B	19.8	B	0.7	-	-
39. Westwood Blvd/Pico Blvd	70.1	E	73.4	E	3.3	2.5	Yes
40. Overland Ave/Pico Blvd	122.9	F	113.2	F	-9.7	2.5	-
41. Fairfax Ave/3rd St	44.8	D	44.0	D	-0.8	4.0	-
42. La Brea Ave/3rd St	26.2	C	26.9	C	0.7	6.0	-
43. Highland Ave/3rd St	29.9	C	31.4	C	1.5	6.0	-
44. Western Ave/3rd St	54.8	D	52.5	D	-2.3	4.0	-
45. Vermont Ave/3rd St	43.8	D	43.1	D	-0.7	4.0	-
46. Fairfax Ave/6th St	13.9	B	12.4	B	-1.5	-	-
47. La Brea Ave/6th St	78.5	E	70.0	E	-8.5	2.5	-

48. Highland Ave/6th St	18.2	B	18.3	B	0.1	-	-
49. Western Ave/6th St	30.8	C	31.0	C	0.2	6.0	-
50. Vermont Ave/6th St	47.2	D	43.6	D	-3.6	4.0	-
51. Alvarado St/6th St	20.3	C	26.9	C	6.6	6.0	Yes
52. San Vicente Blvd/Wilshire Blvd	116.6	F	96.7	F	*	2.5	-
53. Fairfax Ave/Wilshire Blvd	151.5	F	150.8	F	*	2.5	-
54. La Brea Ave/Wilshire Blvd	34.8	C	36.8	D	2.0	4.0	-
55. Highland Ave/Wilshire Blvd	38.6	D	34.3	C	*	6.0	-
56. Crenshaw Blvd/Wilshire Blvd	21.5	C	24.8	C	3.3	6.0	-
57. Western Ave/Wilshire Blvd	100.0	F	83.0	F	*	2.5	-
58. Vermont Ave/Wilshire Blvd	65.8	E	55.6	E	*	2.5	-
59. Alvarado St/Wilshire Blvd	30.4	C	27.2	C	*	6.0	-
60. Fairfax Ave/8th St	13.6	B	14.4	B	0.8	-	-
61. La Brea Ave/8th St	10.9	B	11.0	B	0.1	-	-
62. Crenshaw Blvd/8th St	15.5	B	16.6	B	1.1	-	-
63. Western Ave/8th St	16.8	B	16.5	B	-0.3	-	-
64. Vermont Ave/8th St	30.7	C	33.1	C	2.4	6.0	-
65. Alvarado St/8th St	14.1	B	14.4	B	0.3	-	-
66. Fairfax Ave/San Vicente Blvd	23.0	C	24.4	C	1.4	6.0	-
67. Fairfax Ave/Olympic Blvd	60.9	E	68.5	E	7.6	2.5	Yes
68. San Vicente Blvd/Olympic Blvd	22.8	C	25.4	C	2.6	6.0	-
69. La Brea Ave/Olympic Blvd	68.0	E	66.2	E	-1.8	2.5	-
70. Highland Ave/Olympic Blvd	71.0	E	68.1	E	-2.9	2.5	-
71. Crenshaw Blvd/Olympic Blvd	51.8	D	52.1	D	0.3	4.0	-
72. Western Ave/Olympic Blvd	48.0	D	48.7	D	0.7	4.0	-
73. Vermont Ave/Olympic Blvd	63.7	E	62.6	E	-1.1	2.5	-
74. Alvarado St/Olympic Blvd	33.2	C	34.7	C	1.5	6.0	-

***** Average delay reduced, see explanation in "Analysis Methodology" section.
Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

As shown in **Tables 6-2 and 6-3**, the following 18 intersections are forecast to be significantly impacted by the Proposed Project for year 2012 with Proposed Project conditions:

- Veteran Avenue/Sunset Boulevard (a.m. peak hour);
- Bundy Drive/Wilshire Boulevard (a.m. and p.m. peak hours);
- Barrington Avenue/Wilshire Boulevard (a.m. peak hour);
- Veteran Avenue/Wilshire Boulevard (p.m. peak hour);
- Veteran Avenue/Santa Monica Boulevard (p.m. peak hour);
- Westwood Boulevard/Santa Monica Boulevard (a.m. peak hour);
- Overland Avenue/Santa Monica Boulevard (p.m. peak hour);
- Beverly Glen Boulevard/Olympic Boulevard (p.m. peak hour);
- Sepulveda Boulevard/Pico Boulevard (a.m. peak hour);
- Westwood Boulevard/Pico Boulevard (a.m. and p.m. peak hours);
- Overland Avenue/Pico Boulevard (a.m. peak hour);
- Highland Avenue/3rd Street (a.m. peak hour);
- Alvarado Street/6th Street (p.m. peak hour);
- Fairfax Avenue/Wilshire Boulevard (a.m. peak hour);
- La Brea Avenue/Wilshire Boulevard (a.m. peak hour);
- Highland Avenue/Wilshire Boulevard (a.m. peak hour);

- Fairfax Avenue/Olympic Boulevard (a.m. and p.m. peak hours); and
- Crenshaw Boulevard/Olympic Boulevard (a.m. peak hour).

6.3 YEAR 2012 WITH PROJECT ALTERNATIVE LEVELS OF SERVICE

Year 2012 with Project Alternative peak hour volumes are shown in **Figure 6-4**. The Project Alternative lane configurations of the study intersections are illustrated in **Figure 6-5.** A level of service analysis was conducted to evaluate year 2012 with Project Alternative intersection operations. Detailed level of service calculation sheets can be found in **Appendix B**. **Table 6-4** presents the year 2012 with Project Alternative intersection operating conditions during the a.m. peak hour at the 74 study intersections. occasionally

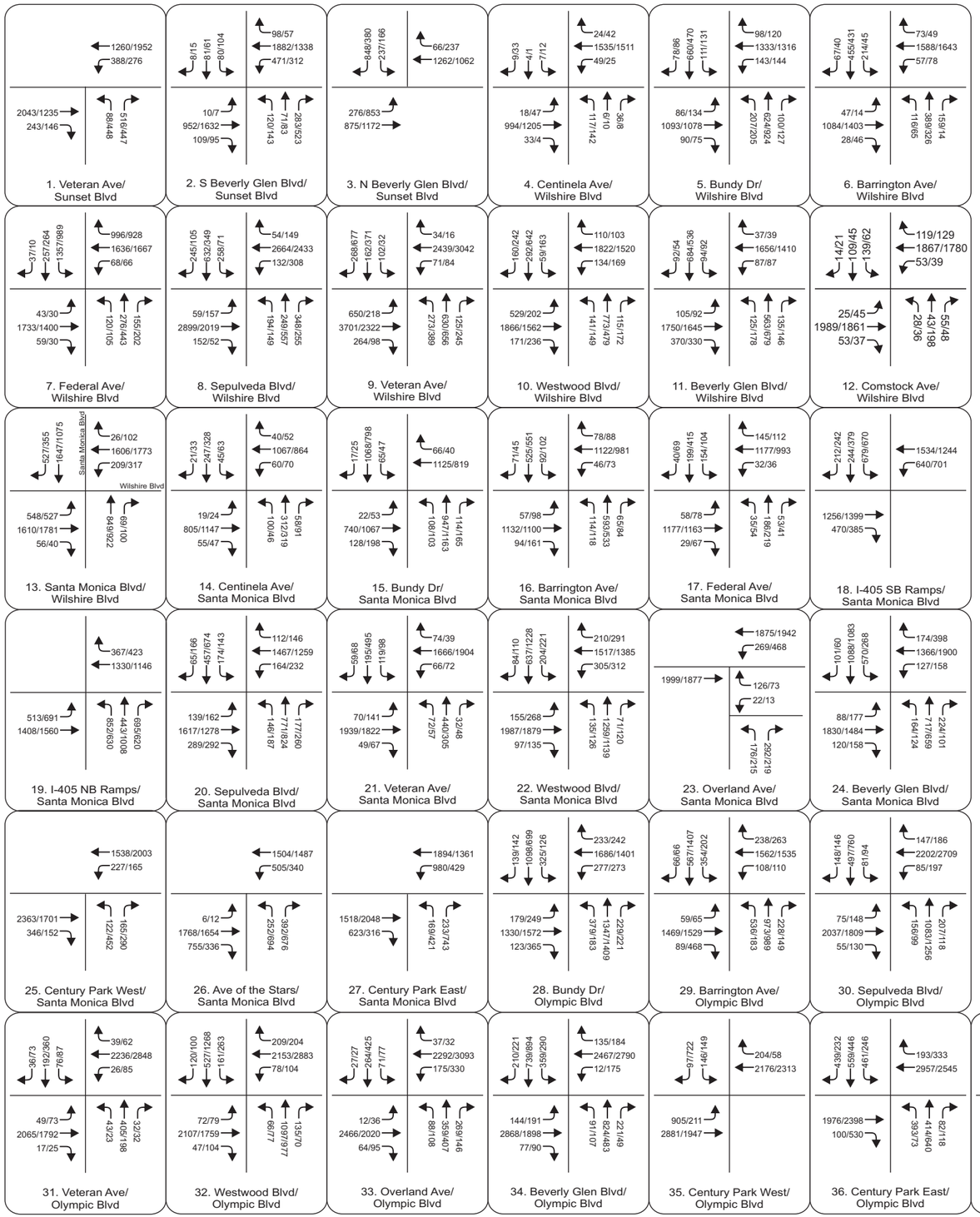
TABLE 6-4: YEAR 2012 WITH PROJECT ALTERNATIVE AM PEAK HOUR INTERSECTION LOS

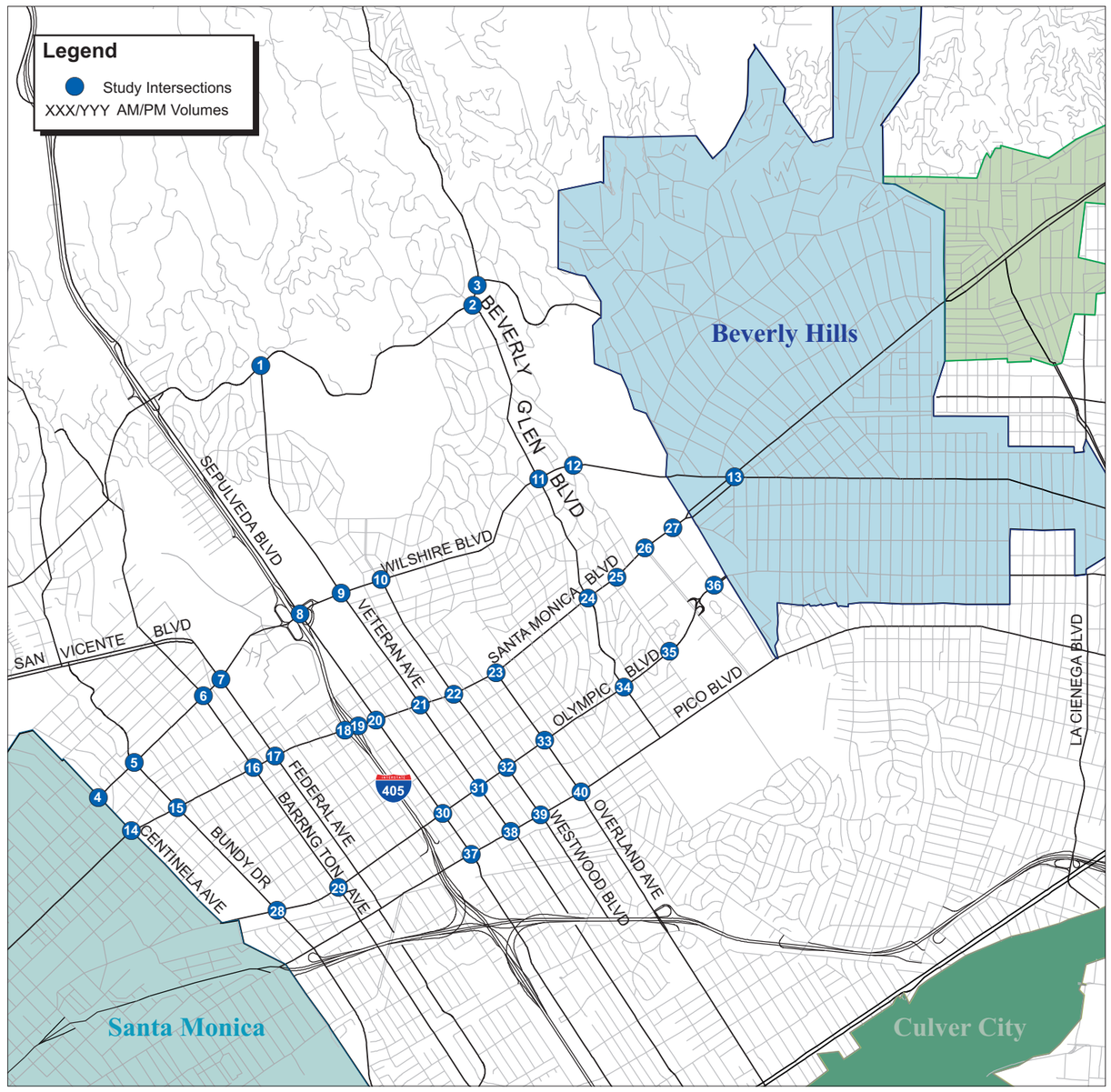
Intersection	2012 Without Project		2012 With Project Alternative		Change in Delay	Threshold	Impact?
	Delay (sec)	LOS	Delay (sec)	LOS			
1. Veteran Ave/Sunset Blvd	92.3	F	90.8	F	-1.5	2.5	-
2. S Beverly Glen Blvd/Sunset Blvd	26.9	C	26.5	C	-0.4	6.0	-
3. N Beverly Glen Blvd/Sunset Blvd	118.0	F	117.7	F	-0.3	2.5	-
4. Centinela Ave/Wilshire Blvd	8.0	A	9.9	A	1.9	-	-
5. Bundy Dr/Wilshire Blvd	60.3	E	96.9	F	36.6	2.5	Yes
6. Barrington Ave/Wilshire Blvd	38.1	D	45.8	D	7.7	4.0	Yes
7. Federal Ave/Wilshire Blvd	67.8	E	57.4	E	*	2.5	-
8. Sepulveda Blvd/Wilshire Blvd	207.8	F	208.3	F	0.5	2.5	-
9. Veteran Ave/Wilshire Blvd	236.4	F	218.9	F	*	2.5	-
10. Westwood Blvd/Wilshire Blvd	66.8	E	49.7	D	*	4.0	-
11. Beverly Glen Blvd/Wilshire Blvd	34.5	C	38.7	D	4.2	4.0	Yes
12. Comstock Ave/Wilshire Blvd	20.6	C	20.7	C	0.1	6.0	-
13. Santa Monica Blvd/Wilshire Blvd	87.3	F	54.1	D	*	4.0	-
14. Centinela Ave/Santa Monica Blvd	16.6	B	15.6	B	-1.0	-	-
15. Bundy Dr/Santa Monica Blvd	16.9	B	17.1	B	0.2	-	-
16. Barrington Ave/Santa Monica Blvd	16.5	B	16.8	B	0.3	-	-
17. Federal Ave/Santa Monica Blvd	27.8	C	28.4	C	0.6	6.0	-
18. I-405 SB Ramps/Santa Monica Blvd	26.8	C	26.9	C	0.1	6.0	-
19. I-405 NB Ramps/Santa Monica Blvd	48.9	D	47.2	D	-1.7	4.0	-
20. Sepulveda Blvd/Santa Monica Blvd	46.4	D	40.1	D	-6.3	4.0	-
21. Veteran Ave/Santa Monica Blvd	20.6	C	21.7	C	1.1	6.0	-
22. Westwood Blvd/Santa Monica Blvd	122.9	F	122.4	F	-0.5	2.5	-
23. Overland Ave/Santa Monica Blvd	30.0	C	29.6	C	-0.4	6.0	-
24. Beverly Glen Blvd/Santa Monica Blvd	60.7	E	61.2	E	0.5	2.5	-
25. Century Park W/Santa Monica Blvd	20.5	C	20.0	C	-0.5	6.0	-
26. Ave of the Stars/Santa Monica Blvd	46.8	D	47.1	D	0.3	4.0	-
27. Century Park E/Santa Monica Blvd	28.5	C	27.9	C	-0.6	6.0	-
28. Bundy Dr/Olympic Blvd	99.5	F	102.1	F	2.6	2.5	Yes
29. Barrington Ave/Olympic Blvd	51.1	D	51.3	D	0.2	4.0	-
30. Sepulveda Blvd/Olympic Blvd	33.9	C	35.0	C	1.1	6.0	-
31. Veteran Ave/Olympic Blvd	23.8	C	22.8	C	-1.0	6.0	-
32. Westwood Blvd/Olympic Blvd	38.7	D	46.9	D	8.2	4.0	Yes
33. Overland Ave/Olympic Blvd	37.6	D	40.7	D	3.1	4.0	-

34. Beverly Glen Blvd/Olympic Blvd	67.2	E	67.3	E	0.1	2.5	-
35. Century Park W/Olympic Blvd	15.0	B	15.4	B	0.4	-	-
36. Century Park E/Olympic Blvd	42.6	D	42.5	D	-0.1	4.0	-
37. Sepulveda Blvd/Pico Blvd	53.0	D	54.5	D	1.5	4.0	-
38. Veteran Ave/Pico Blvd	12.2	B	11.2	B	-1.0	-	-
39. Westwood Blvd/Pico Blvd	39.1	D	39.4	D	0.3	4.0	-
40. Overland Ave/Pico Blvd	60.1	E	60.0	E	-0.1	2.5	-
41. Fairfax Ave/3rd St	69.9	E	67.9	E	-2.0	2.5	-
42. La Brea Ave/3rd St	34.5	C	34.3	C	-0.2	6.0	-
43. Highland Ave/3rd St	69.6	E	71.6	E	2.0	2.5	-
44. Western Ave/3rd St	47.1	D	48.6	D	1.5	4.0	-
45. Vermont Ave/3rd St	42.3	D	41.8	D	-0.5	4.0	-
46. Fairfax Ave/6th St	15.5	B	15.4	B	-0.1	-	-
47. La Brea Ave/6th St	58.9	E	50.2	D	-8.7	4.0	-
48. Highland Ave/6th St	18.9	B	19.2	B	0.3	-	-
49. Western Ave/6th St	27.2	C	27.6	C	0.4	6.0	-
50. Vermont Ave/6th St	39.6	D	41.5	D	1.9	4.0	-
51. Alvarado St/6th St	17.5	B	17.4	B	-0.1	-	-
52. San Vicente Blvd/Wilshire Blvd	76.2	E	73.1	E	*	2.5	-
53. Fairfax Ave/Wilshire Blvd	104.0	F	119.3	F	15.3	2.5	Yes
54. La Brea Ave/Wilshire Blvd	37.5	D	41.7	D	4.2	4.0	Yes
55. Highland Ave/Wilshire Blvd	44.2	D	49.9	D	5.7	4.0	Yes
56. Crenshaw Blvd/Wilshire Blvd	31.9	C	32.5	C	0.6	6.0	-
57. Western Ave/Wilshire Blvd	51.0	D	47.9	D	*	4.0	-
58. Vermont Ave/Wilshire Blvd	60.1	E	59.1	E	*	2.5	-
59. Alvarado St/Wilshire Blvd	23.0	C	22.0	C	*	6.0	-
60. Fairfax Ave/8th St	11.7	B	12.2	B	0.5	-	-
61. La Brea Ave/8th St	8.4	A	10.2	B	1.8	-	-
62. Crenshaw Blvd/8th St	11.4	B	12.5	B	1.1	-	-
63. Western Ave/8th St	16.2	B	16.3	B	0.1	-	-
64. Vermont Ave/8th St	21.4	C	23.1	C	1.7	6.0	-
65. Alvarado St/8th St	13.4	B	13.5	B	0.1	-	-
66. Fairfax Ave/San Vicente Blvd	27.0	C	29.8	C	2.8	6.0	-
67. Fairfax Ave/Olympic Blvd	37.0	D	42.7	D	5.7	4.0	Yes
68. San Vicente Blvd/Olympic Blvd	31.2	C	30.9	C	-0.3	6.0	-
69. La Brea Ave/Olympic Blvd	46.6	D	46.8	D	0.2	4.0	-
70. Highland Ave/Olympic Blvd	48.2	D	51.1	D	2.9	4.0	-
71. Crenshaw Blvd/Olympic Blvd	68.5	E	71.3	E	2.8	2.5	Yes
72. Western Ave/Olympic Blvd	31.6	C	33.5	C	1.9	6.0	-
73. Vermont Ave/Olympic Blvd	37.5	D	38.9	D	1.4	4.0	-
74. Alvarado St/Olympic Blvd	23.9	C	23.7	C	-0.2	6.0	-

***** Average delay reduced, see explanation in "Analysis Methodology" section.
Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

Table 6-5 presents the year 2012 with Project Alternative intersection operating conditions during the p.m. peak hour at the 74 study intersections.





Wilshire Blvd BRT Project
Traffic Impact Analysis

FIGURE 6-4A
Year 2012 With Project Alternative Volumes

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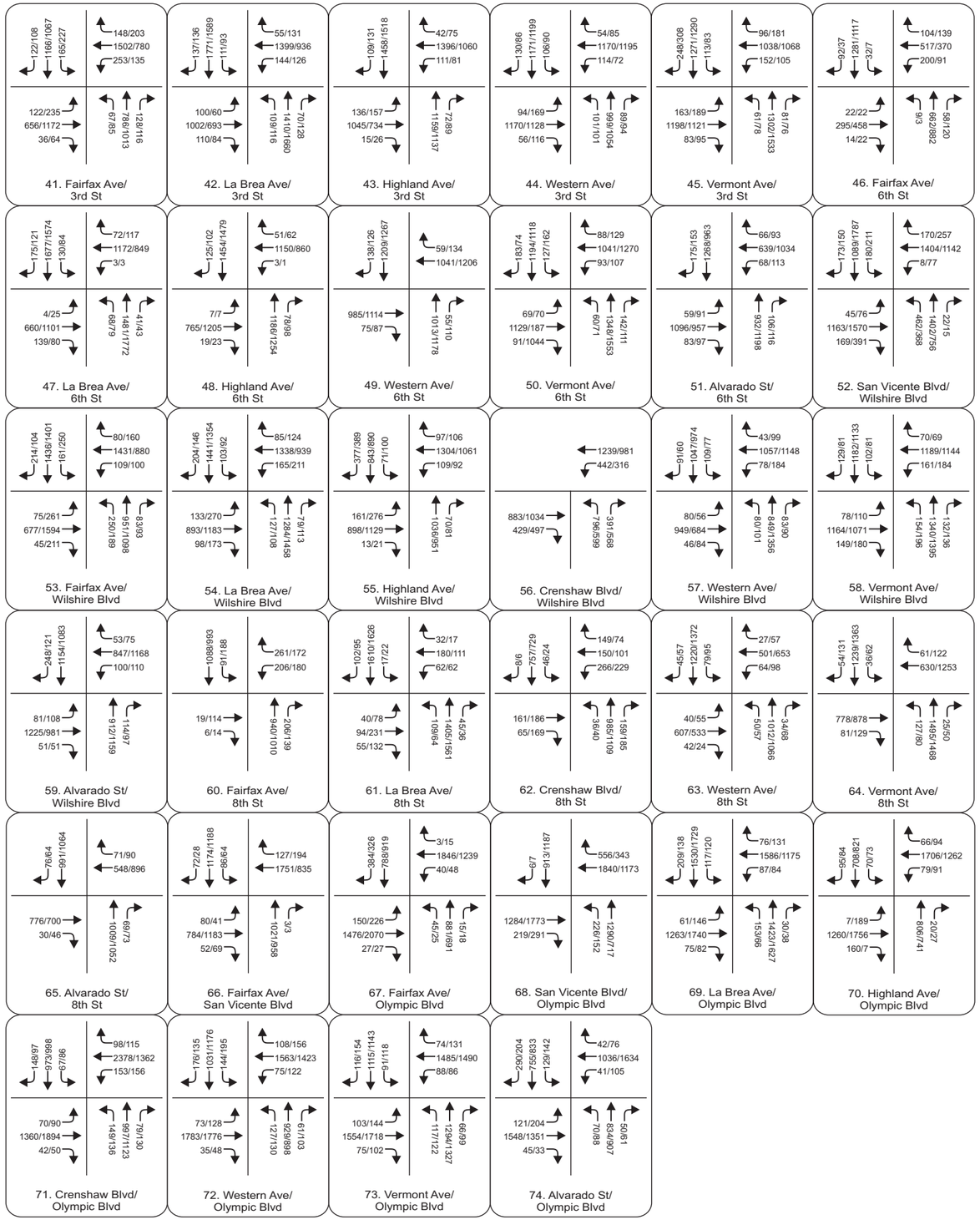

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Traffic Impact Analysis

FIGURE 6-4B
Year 2012 With Project Alternative Volumes

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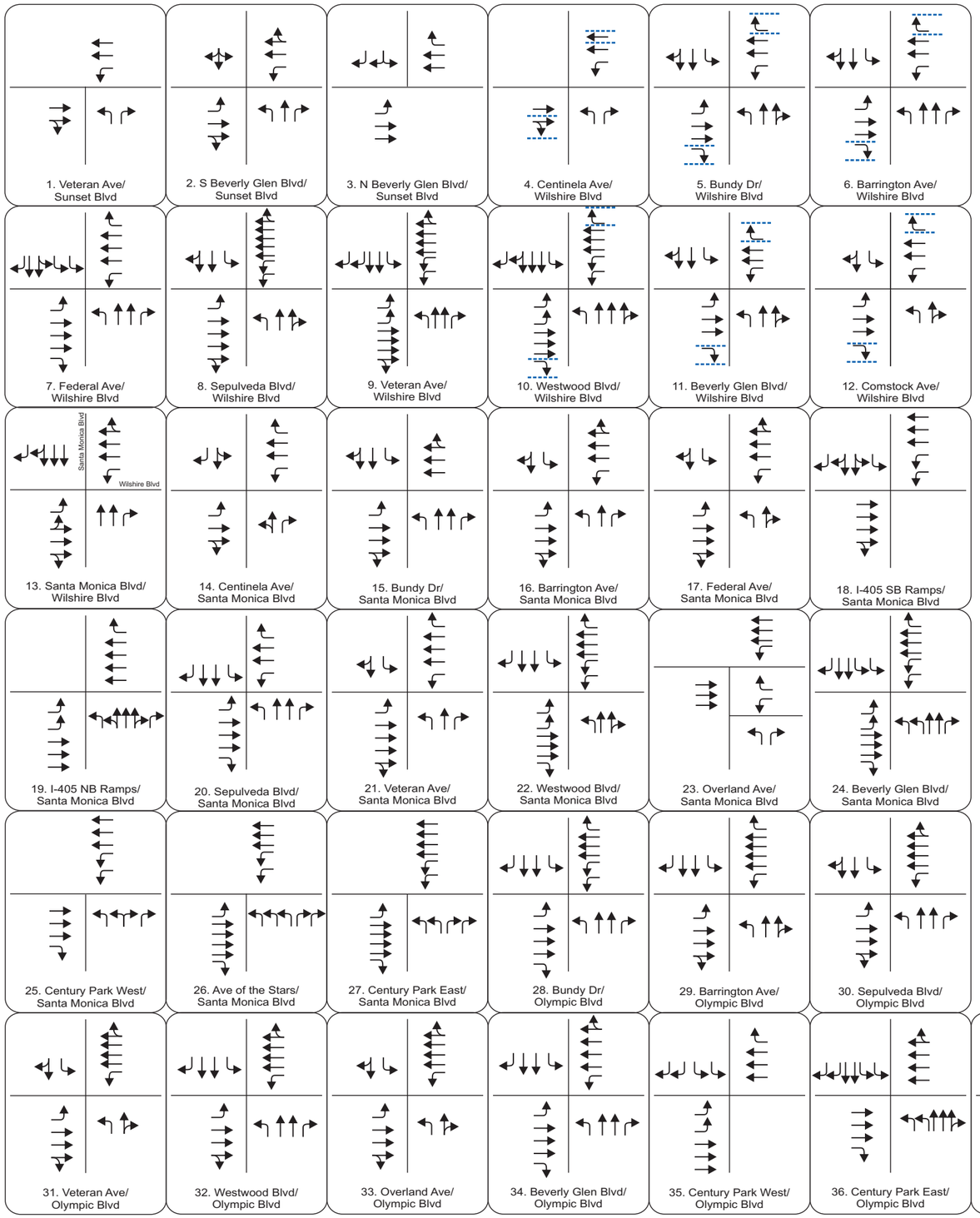

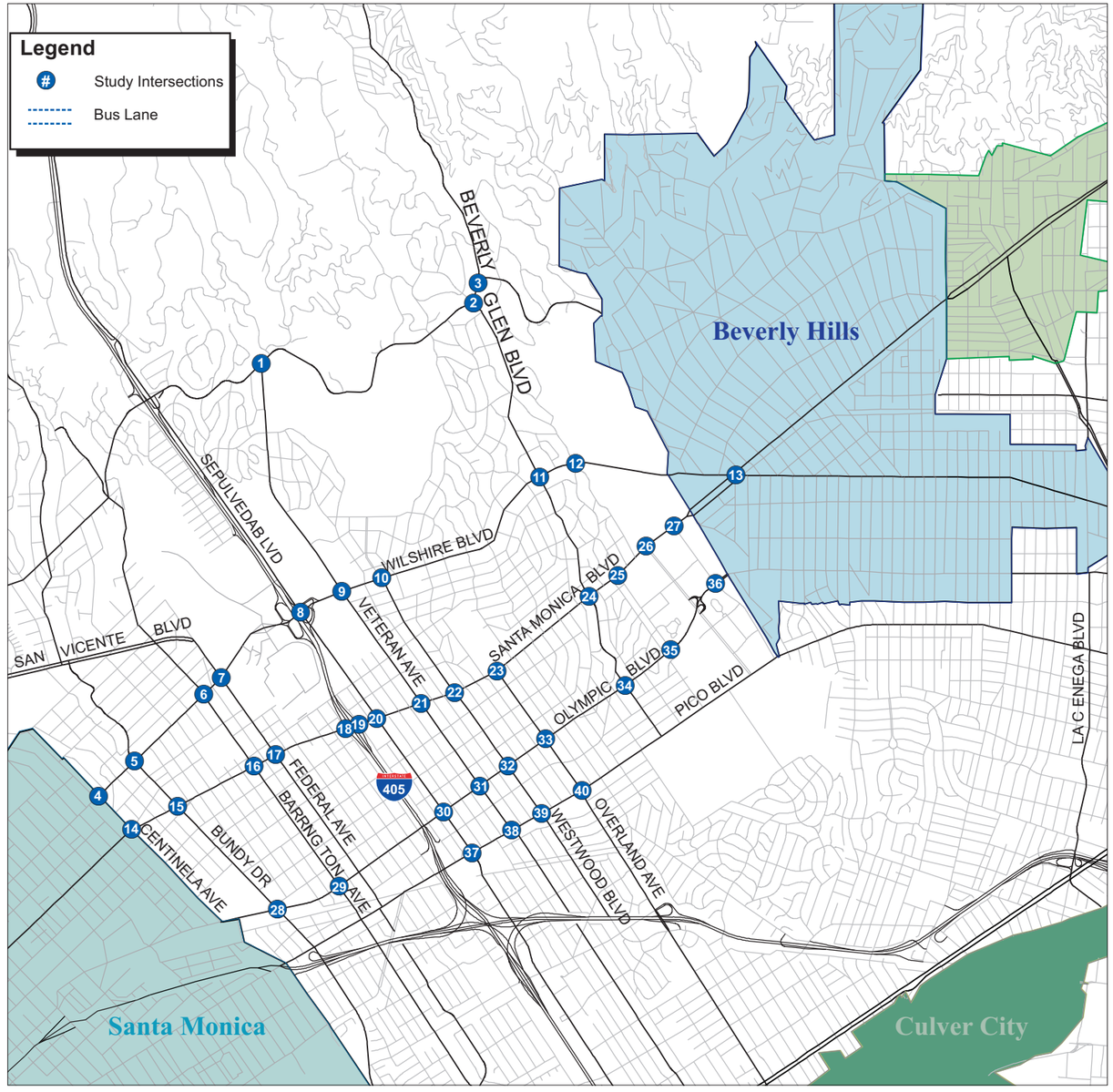

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Traffic Impact Analysis

FIGURE 6-5A
Project Alternative Lane Configurations

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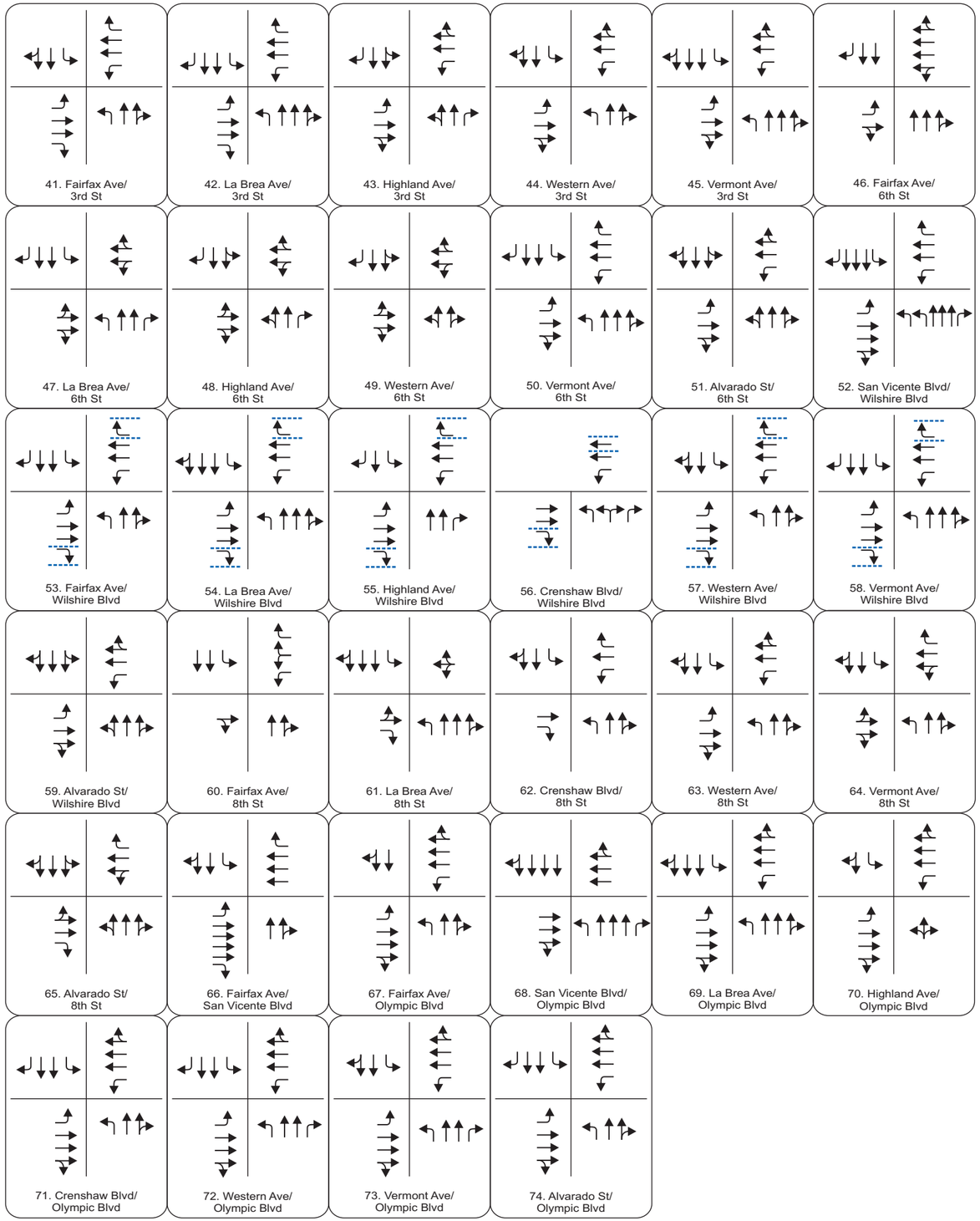

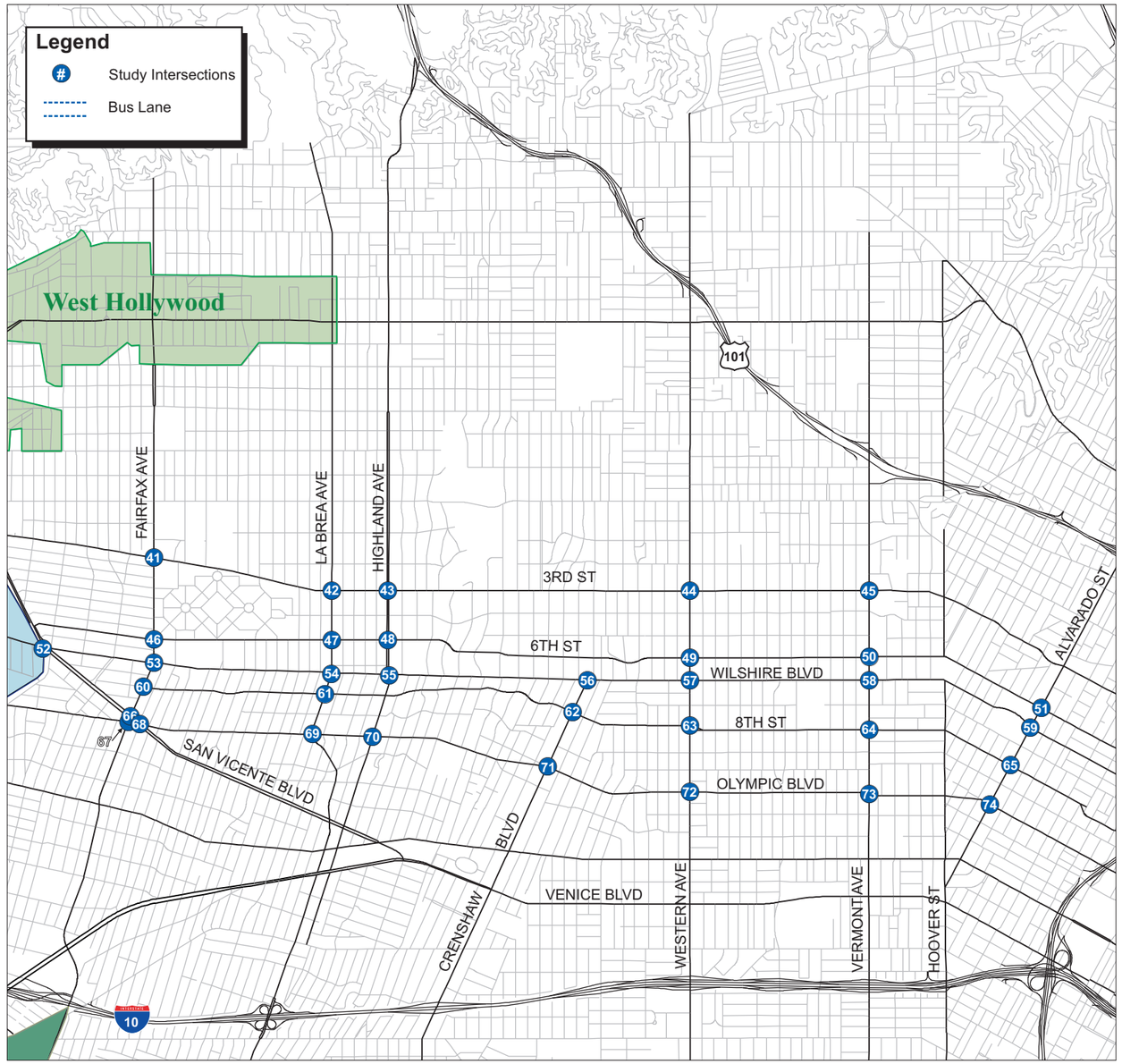

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Wilshire Blvd BRT Project
Traffic Impact Analysis

FIGURE 6-5B
Project Alternative Lane Configurations

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TABLE 6-5: YEAR 2012 WITH PROJECT ALTERNATIVE PM PEAK HOUR INTERSECTION LOS

Intersection	2012 Without Project		2012 With Project Alternative		Change in Delay	Threshold	Impact?
	Delay (sec)	LOS	Delay (sec)	LOS			
1. Veteran Ave/Sunset Blvd	41.5	D	34.7	C	-6.8	6.0	-
2. S Beverly Glen Blvd/Sunset Blvd	53.1	D	46.9	D	-6.2	4.0	-
3. N Beverly Glen Blvd/Sunset Blvd	46.0	D	39.4	D	-6.6	4.0	-
4. Centinela Ave/Wilshire Blvd	8.3	A	7.8	A	*	-	-
5. Bundy Dr/Wilshire Blvd	77.2	E	103.9	F	26.7	2.5	Yes
6. Barrington Ave/Wilshire Blvd	32.9	C	30.9	C	*	6.0	-
7. Federal Ave/Wilshire Blvd	49.9	D	46.2	D	*	4.0	-
8. Sepulveda Blvd/Wilshire Blvd	111.5	F	93.0	F	*	2.5	-
9. Veteran Ave/Wilshire Blvd	114.9	F	107.8	F	*	2.5	-
10. Westwood Blvd/Wilshire Blvd	62.7	E	45.7	D	*	4.0	-
11. Beverly Glen Blvd/Wilshire Blvd	38.1	D	41.8	D	3.7	4.0	-
12. Comstock Ave/Wilshire Blvd	25.7	C	25.1	C	*	6.0	-
13. Santa Monica Blvd/Wilshire Blvd	91.6	F	76.4	E	*	2.5	-
14. Centinela Ave/Santa Monica Blvd	16.9	B	17.0	B	0.1	-	-
15. Bundy Dr/Santa Monica Blvd	16.0	B	16.2	B	0.2	-	-
16. Barrington Ave/Santa Monica Blvd	15.1	B	15.1	B	0.0	-	-
17. Federal Ave/Santa Monica Blvd	31.0	C	31.1	C	0.1	6.0	-
18. I-405 SB Ramps/Santa Monica Blvd	26.3	C	26.1	C	-0.2	6.0	-
19. I-405 NB Ramps/Santa Monica Blvd	52.4	D	49.5	D	-2.9	4.0	-
20. Sepulveda Blvd/Santa Monica Blvd	46.6	D	45.1	D	-1.5	4.0	-
21. Veteran Ave/Santa Monica Blvd	61.2	E	67.4	E	6.2	2.5	Yes
22. Westwood Blvd/Santa Monica Blvd	90.7	F	88.6	F	-2.1	2.5	-
23. Overland Ave/Santa Monica Blvd	72.9	E	80.8	F	7.9	2.5	Yes
24. Beverly Glen Blvd/Santa Monica Blvd	48.9	D	53.9	D	5.0	4.0	Yes
25. Century Park W/Santa Monica Blvd	23.2	C	23.1	C	-0.1	6.0	-
26. Ave of the Stars/Santa Monica Blvd	27.8	C	28.0	C	0.2	6.0	-
27. Century Park E/Santa Monica Blvd	18.0	B	18.0	B	0.0	-	-
28. Bundy Dr/Olympic Blvd	73.3	E	74.9	E	1.6	2.5	-
29. Barrington Ave/Olympic Blvd	56.3	E	55.7	E	-0.6	2.5	-
30. Sepulveda Blvd/Olympic Blvd	51.5	D	53.8	D	2.3	4.0	-
31. Veteran Ave/Olympic Blvd	13.6	B	14.1	B	0.5	-	-
32. Westwood Blvd/Olympic Blvd	44.6	D	44.9	D	0.3	4.0	-
33. Overland Ave/Olympic Blvd	65.4	E	66.2	E	0.8	2.5	-
34. Beverly Glen Blvd/Olympic Blvd	49.0	D	53.9	D	4.9	4.0	Yes
35. Century Park W/Olympic Blvd	20.6	C	21.5	C	0.9	6.0	-
36. Century Park E/Olympic Blvd	44.9	D	46.2	D	1.3	4.0	-
37. Sepulveda Blvd/Pico Blvd	65.6	E	65.5	E	-0.1	2.5	-
38. Veteran Ave/Pico Blvd	19.1	B	21.9	C	2.8	6.0	-
39. Westwood Blvd/Pico Blvd	70.1	E	74.6	E	4.5	2.5	Yes
40. Overland Ave/Pico Blvd	122.9	F	119.0	F	-3.9	2.5	-
41. Fairfax Ave/3rd St	44.8	D	43.8	D	-1.0	4.0	-
42. La Brea Ave/3rd St	26.2	C	26.2	C	0.0	6.0	-
43. Highland Ave/3rd St	29.9	C	30.8	C	0.9	6.0	-
44. Western Ave/3rd St	54.8	D	54.7	D	-0.1	4.0	-
45. Vermont Ave/3rd St	43.8	D	43.6	D	-0.2	4.0	-
46. Fairfax Ave/6th St	13.9	B	13.2	B	-0.7	-	-
47. La Brea Ave/6th St	78.5	E	72.9	E	-5.6	2.5	-

48. Highland Ave/6th St	18.2	B	19.0	B	0.8	-	-
49. Western Ave/6th St	30.8	C	31.2	C	0.4	6.0	-
50. Vermont Ave/6th St	47.2	D	48.7	D	1.5	4.0	-
51. Alvarado St/6th St	20.3	C	19.7	B	-0.6	-	-
52. San Vicente Blvd/Wilshire Blvd	116.6	F	101.7	F	*	2.5	-
53. Fairfax Ave/Wilshire Blvd	151.5	F	148.7	F	*	2.5	-
54. La Brea Ave/Wilshire Blvd	34.8	C	37.0	D	2.2	4.0	-
55. Highland Ave/Wilshire Blvd	38.6	D	37.6	D	*	4.0	-
56. Crenshaw Blvd/Wilshire Blvd	21.5	C	24.0	C	2.5	6.0	-
57. Western Ave/Wilshire Blvd	100.0	F	84.4	F	*	2.5	-
58. Vermont Ave/Wilshire Blvd	65.8	E	57.9	E	*	2.5	-
59. Alvarado St/Wilshire Blvd	30.4	C	31.8	C	1.4	6.0	-
60. Fairfax Ave/8th St	13.6	B	14.9	B	1.3	-	-
61. La Brea Ave/8th St	10.9	B	10.6	B	-0.3	-	-
62. Crenshaw Blvd/8th St	15.5	B	17.1	B	1.6	-	-
63. Western Ave/8th St	16.8	B	16.5	B	-0.3	-	-
64. Vermont Ave/8th St	30.7	C	32.8	C	2.1	6.0	-
65. Alvarado St/8th St	14.1	B	14.1	B	0.0	-	-
66. Fairfax Ave/San Vicente Blvd	23.0	C	25.2	C	2.2	6.0	-
67. Fairfax Ave/Olympic Blvd	60.9	E	72.9	E	12.0	2.5	Yes
68. San Vicente Blvd/Olympic Blvd	22.8	C	23.2	C	0.4	6.0	-
69. La Brea Ave/Olympic Blvd	68.0	E	70.3	E	2.3	2.5	-
70. Highland Ave/Olympic Blvd	71.0	E	68.6	E	-2.4	2.5	-
71. Crenshaw Blvd/Olympic Blvd	51.8	D	46.9	D	-4.9	4.0	-
72. Western Ave/Olympic Blvd	48.0	D	49.9	D	1.9	4.0	-
73. Vermont Ave/Olympic Blvd	63.7	E	64.7	E	1.0	2.5	-
74. Alvarado St/Olympic Blvd	33.2	C	35.5	D	2.3	4.0	-

***** Average delay reduced, see explanation in "Analysis Methodology" section.
Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

As shown in **Tables 6-4 and 6-5**, the following 15 intersections are forecast to be significantly impacted in year 2012 with Project Alternative conditions:

- Bundy Drive/Wilshire Boulevard (a.m. and p.m. peak hours);
- Barrington Avenue/Wilshire Boulevard (a.m. peak hour);
- Beverly Glen Boulevard/Wilshire Boulevard (a.m. peak hour);
- Veteran Avenue/Santa Monica Boulevard (p.m. peak hour);
- Overland Avenue/Santa Monica Boulevard (p.m. peak hour);
- Beverly Glen Boulevard/Santa Monica Boulevard (p.m. peak hour);
- Bundy Drive/Olympic Boulevard (a.m. peak hour);
- Westwood Boulevard/Olympic Boulevard (a.m. peak hour);
- Beverly Glen Boulevard/Olympic Boulevard (p.m. peak hour);
- Westwood Boulevard/Pico Boulevard (p.m. peak hour);
- Fairfax Avenue/Wilshire Boulevard (a.m. peak hour);
- La Brea Avenue/Wilshire Boulevard (a.m. peak hour);
- Highland Avenue/Wilshire Boulevard (a.m. peak hour);
- Fairfax Avenue/Olympic Boulevard (a.m. and p.m. peak hours); and
- Crenshaw Boulevard/Olympic Boulevard (a.m. peak hour).

7.0 YEAR 2020 CONDITIONS

This section analyzes year 2020 traffic conditions, with and without the Proposed Project. Year 2020 traffic volumes were developed as described above in the "Analysis Methodology" section. The year 2020 transportation network assumes construction of the Exposition Line Phase 2 project and the I-405 HOV lane project. In addition, year 2020 intersection configurations include the addition of a second northbound left-turn lane at the San Vicente Boulevard/Wilshire Boulevard intersection as the result of a project funded by Cedars-Sinai Medical Center and signal phasing modifications at the Beverly Glen Boulevard/Wilshire Boulevard intersection planned by LADOT.

7.1 YEAR 2020 WITHOUT PROJECT LEVELS OF SERVICE

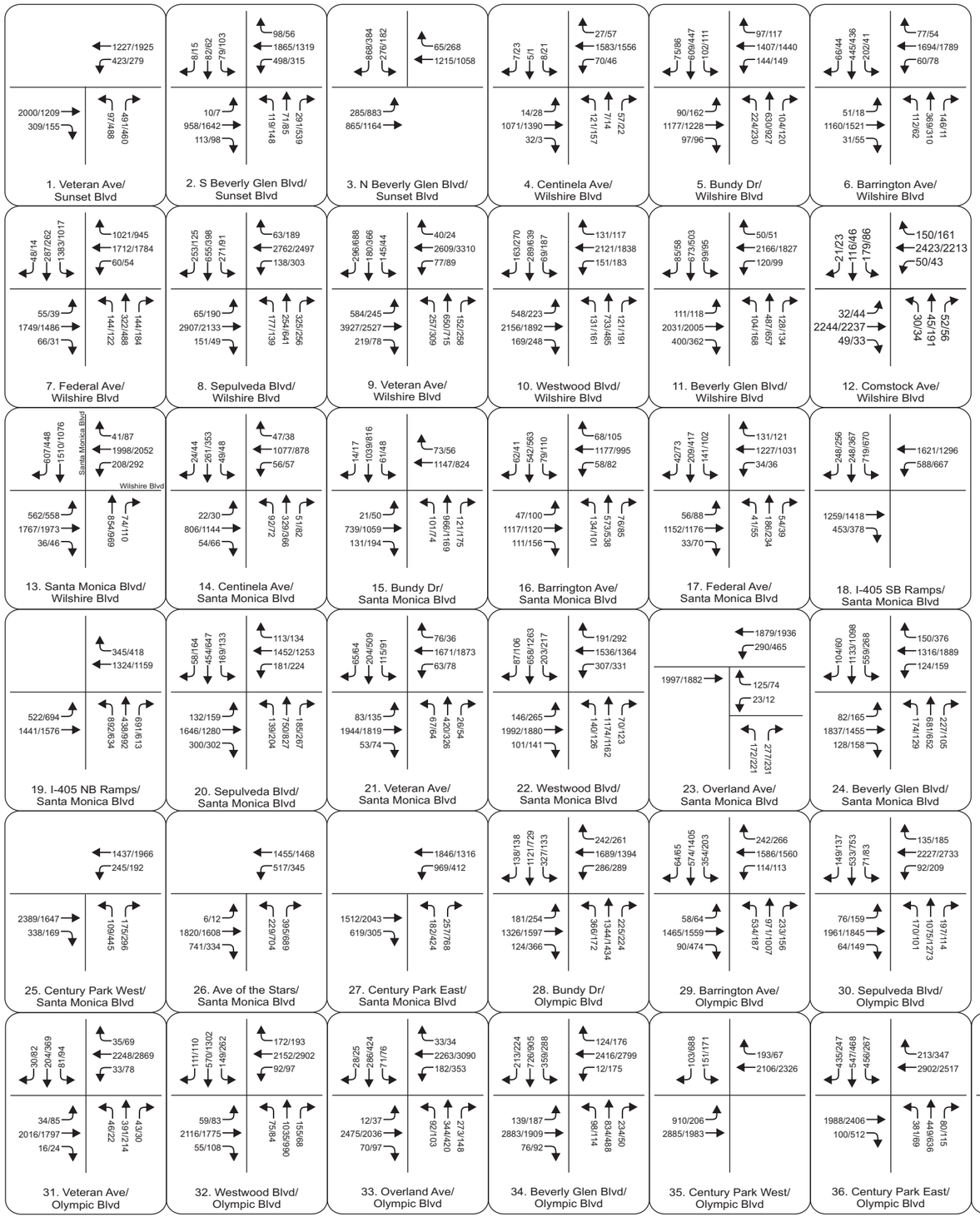
Year 2020 without project peak hour volumes are shown in **Figure 7-1**. A level of service analysis was conducted to evaluate year 2020 without project intersection operations. Detailed level of service calculations can be found in **Appendix B**. **Table 7-1** presents the year 2020 without project intersection operating conditions during the a.m. and p.m. peak hours at the 74 study intersections.

TABLE 7-1: YEAR 2020 WITHOUT PROJECT INTERSECTION LOS

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
1. Veteran Ave/Sunset Blvd	103.4	F	38.2	D
2. S Beverly Glen Blvd/Sunset Blvd	26.8	C	50.0	D
3. N Beverly Glen Blvd/Sunset Blvd	147.0	F	43.6	D
4. Centinela Ave/Wilshire Blvd	8.3	A	8.9	A
5. Bundy Dr/Wilshire Blvd	63.7	E	80.4	F
6. Barrington Ave/Wilshire Blvd	38.1	D	33.8	C
7. Federal Ave/Wilshire Blvd	68.4	E	49.9	D
8. Sepulveda Blvd/Wilshire Blvd	208.4	F	110.0	F
9. Veteran Ave/Wilshire Blvd	243.7	F	126.6	F
10. Westwood Blvd/Wilshire Blvd	75.2	E	64.0	E
11. Beverly Glen Blvd/Wilshire Blvd	36.1	D	39.4	D
12. Comstock Ave/Wilshire Blvd	23.3	C	26.9	C
13. Santa Monica Blvd/Wilshire Blvd	88.0	F	109.1	F
14. Centinela Ave/Santa Monica Blvd	15.7	B	17.5	B
15. Bundy Dr/Santa Monica Blvd	17.0	B	16.1	B
16. Barrington Ave/Santa Monica Blvd	17.1	B	15.7	B
17. Federal Ave/Santa Monica Blvd	28.5	C	31.3	C
18. I-405 SB Ramps/Santa Monica Blvd	26.9	C	25.7	C
19. I-405 NB Ramps/Santa Monica Blvd	48.0	D	48.5	D
20. Sepulveda Blvd/Santa Monica Blvd	39.9	D	44.6	D
21. Veteran Ave/Santa Monica Blvd	21.7	C	63.5	E
22. Westwood Blvd/Santa Monica Blvd	122.2	F	91.3	F
23. Overland Ave/Santa Monica Blvd	32.8	C	78.9	E
24. Beverly Glen Blvd/Santa Monica Blvd	63.2	E	53.8	D
25. Century Park W/Santa Monica Blvd	20.9	C	23.3	C
26. Ave of the Stars/Santa Monica Blvd	47.3	D	28.0	C
27. Century Park E/Santa Monica Blvd	29.0	C	18.3	B
28. Bundy Dr/Olympic Blvd	100.3	F	77.9	E
29. Barrington Ave/Olympic Blvd	52.5	D	56.7	E

30. Sepulveda Blvd/Olympic Blvd	34.6	C	58.2	E
31. Veteran Ave/Olympic Blvd	22.7	C	15.0	B
32. Westwood Blvd/Olympic Blvd	41.3	D	47.2	D
33. Overland Ave/Olympic Blvd	40.1	D	69.0	E
34. Beverly Glen Blvd/Olympic Blvd	69.0	E	54.7	D
35. Century Park W/Olympic Blvd	15.2	B	20.9	C
36. Century Park E/Olympic Blvd	41.7	D	46.2	D
37. Sepulveda Blvd/Pico Blvd	54.4	D	73.8	E
38. Veteran Ave/Pico Blvd	11.0	B	24.9	C
39. Westwood Blvd/Pico Blvd	39.6	D	77.3	E
40. Overland Ave/Pico Blvd	62.8	E	122.1	F
41. Fairfax Ave/3rd St	78.5	E	47.4	D
42. La Brea Ave/3rd St	34.8	C	27.4	C
43. Highland Ave/3rd St	74.2	E	34.5	C
44. Western Ave/3rd St	49.7	D	56.6	E
45. Vermont Ave/3rd St	46.3	D	45.4	D
46. Fairfax Ave/6th St	16.1	B	13.9	B
47. La Brea Ave/6th St	71.2	E	96.1	F
48. Highland Ave/6th St	22.2	C	20.0	C
49. Western Ave/6th St	27.9	C	31.8	C
50. Vermont Ave/6th St	42.8	D	50.0	D
51. Alvarado St/6th St	18.6	B	21.9	C
52. San Vicente Blvd/Wilshire Blvd	81.5	F	127.9	F
53. Fairfax Ave/Wilshire Blvd	111.2	F	158.4	F
54. La Brea Ave/Wilshire Blvd	39.0	D	40.7	D
55. Highland Ave/Wilshire Blvd	48.2	D	40.9	D
56. Crenshaw Blvd/Wilshire Blvd	37.4	D	24.8	C
57. Western Ave/Wilshire Blvd	59.2	E	111.1	F
58. Vermont Ave/Wilshire Blvd	72.5	E	77.6	E
59. Alvarado St/Wilshire Blvd	22.9	C	34.9	C
60. Fairfax Ave/8th St	12.5	B	15.1	B
61. La Brea Ave/8th St	10.1	B	11.4	B
62. Crenshaw Blvd/8th St	15.7	B	16.0	B
63. Western Ave/8th St	16.4	B	17.2	B
64. Vermont Ave/8th St	24.7	C	35.2	D
65. Alvarado St/8th St	13.9	B	14.7	B
66. Fairfax Ave/San Vicente Blvd	32.4	C	24.7	C
67. Fairfax Ave/Olympic Blvd	35.0	D	67.4	E
68. San Vicente Blvd/Olympic Blvd	28.3	C	26.5	C
69. La Brea Ave/Olympic Blvd	53.7	D	79.5	E
70. Highland Ave/Olympic Blvd	50.7	D	67.1	E
71. Crenshaw Blvd/Olympic Blvd	73.5	E	57.2	E
72. Western Ave/Olympic Blvd	37.4	D	53.8	D
73. Vermont Ave/Olympic Blvd	39.8	D	70.2	E
74. Alvarado St/Olympic Blvd	29.9	C	37.8	D

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service



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Wilshire Blvd BRT Project
Traffic Impact Analysis

FIGURE 7-1A
Year 2020 Without Project Volumes

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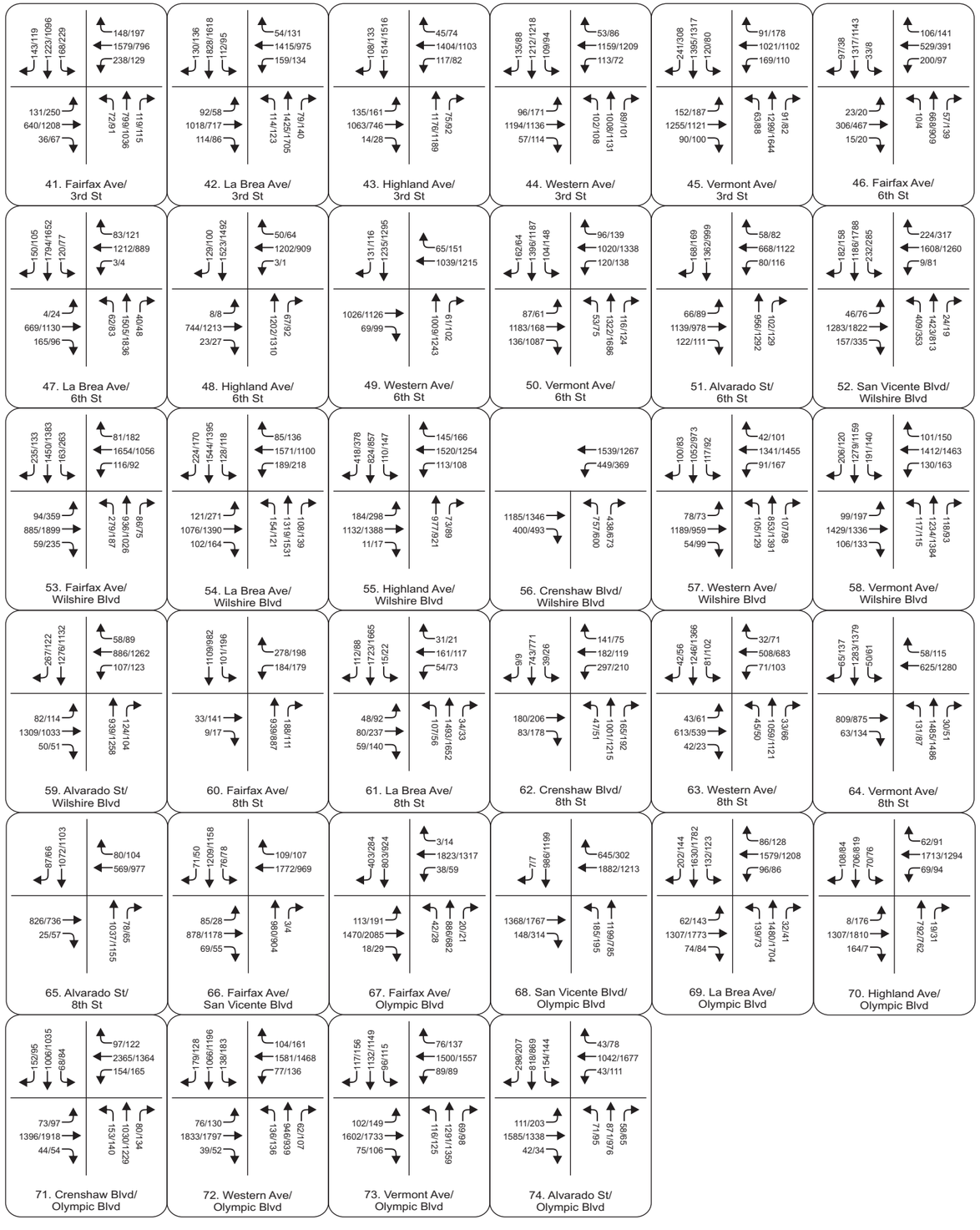

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Wilshire Blvd BRT Project
Traffic Impact Analysis

FIGURE 7-1B
Year 2020 Without Project Volumes

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7.2 YEAR 2020 WITH PROPOSED PROJECT LEVELS OF SERVICE

Year 2020 with Proposed Project peak hour volumes are shown in **Figure 7-2**. A level of service analysis was conducted to evaluate year 2020 with Proposed Project intersection operations. Detailed level of service calculation sheets can be found in **Appendix B**. **Table 7-2** presents the year 2020 with Proposed Project intersection operating conditions for the a.m. peak hour at the 74 study intersections.

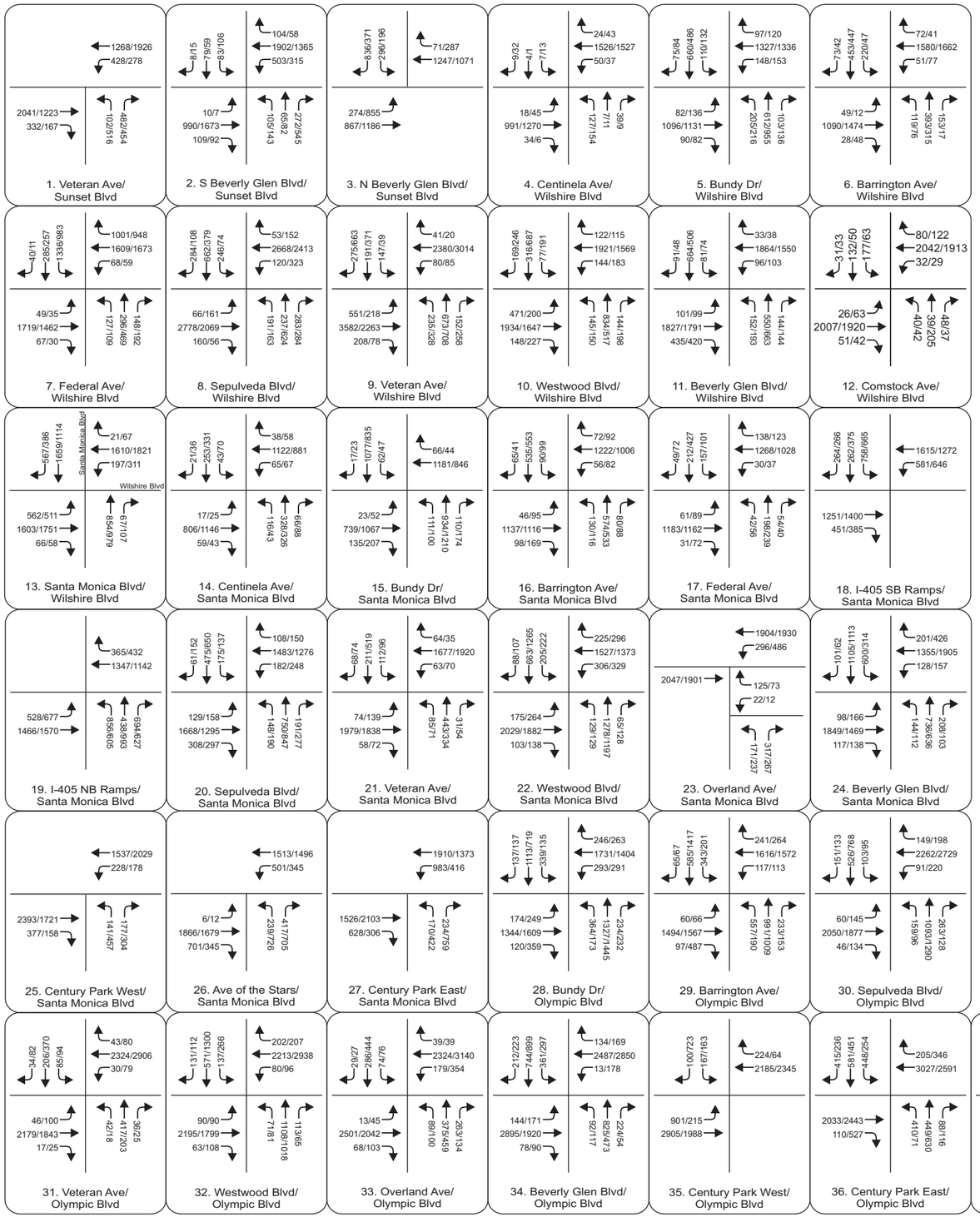
TABLE 7-2: YEAR 2020 WITH PROPOSED PROJECT AM PEAK HOUR INTERSECTION LOS

Intersection	2020 Without Project		2020 With Proposed Project		Change in Delay	Threshold	Impact?
	Delay (sec)	LOS	Delay (sec)	LOS			
1. Veteran Ave/Sunset Blvd	103.4	F	114.0	F	10.6	2.5	Yes
2. S Beverly Glen Blvd/Sunset Blvd	26.8	C	26.0	C	-0.8	6.0	-
3. N Beverly Glen Blvd/Sunset Blvd	147.0	F	141.4	F	-5.6	2.5	-
4. Centinela Ave/Wilshire Blvd	8.3	A	11.3	B	3.0	-	-
5. Bundy Dr/Wilshire Blvd	63.7	E	96.6	F	32.9	2.5	Yes
6. Barrington Ave/Wilshire Blvd	38.1	D	47.4	D	9.3	4.0	Yes
7. Federal Ave/Wilshire Blvd	68.4	E	57.1	E	*	2.5	-
8. Sepulveda Blvd/Wilshire Blvd	208.4	F	196.9	F	*	2.5	-
9. Veteran Ave/Wilshire Blvd	243.7	F	201.7	F	*	2.5	-
10. Westwood Blvd/Wilshire Blvd	75.2	E	62.3	E	*	2.5	-
11. Beverly Glen Blvd/Wilshire Blvd	36.1	D	34.8	C	*	6.0	-
12. Comstock Ave/Wilshire Blvd	23.3	C	22.0	C	*	6.0	-
13. Santa Monica Blvd/Wilshire Blvd	88.0	F	54.4	D	*	4.0	-
14. Centinela Ave/Santa Monica Blvd	15.7	B	16.5	B	0.8	-	-
15. Bundy Dr/Santa Monica Blvd	17.0	B	17.1	B	0.1	-	-
16. Barrington Ave/Santa Monica Blvd	17.1	B	17.4	B	0.3	-	-
17. Federal Ave/Santa Monica Blvd	28.5	C	28.8	C	0.3	6.0	-
18. I-405 SB Ramps/Santa Monica Blvd	26.9	C	27.3	C	0.4	6.0	-
19. I-405 NB Ramps/Santa Monica Blvd	48.0	D	47.3	D	-0.7	4.0	-
20. Sepulveda Blvd/Santa Monica Blvd	39.9	D	40.0	D	0.1	4.0	-
21. Veteran Ave/Santa Monica Blvd	21.7	C	21.5	C	-0.2	6.0	-
22. Westwood Blvd/Santa Monica Blvd	122.2	F	128.7	F	6.5	2.5	Yes
23. Overland Ave/Santa Monica Blvd	32.8	C	34.7	C	1.9	6.0	-
24. Beverly Glen Blvd/Santa Monica Blvd	63.2	E	63.0	E	-0.2	2.5	-
25. Century Park W/Santa Monica Blvd	20.9	C	20.4	C	-0.5	6.0	-
26. Ave of the Stars/Santa Monica Blvd	47.3	D	46.9	D	-0.4	4.0	-
27. Century Park E/Santa Monica Blvd	29.0	C	27.9	C	-1.1	6.0	-
28. Bundy Dr/Olympic Blvd	100.3	F	101.6	F	1.3	2.5	-
29. Barrington Ave/Olympic Blvd	52.5	D	54.5	E	2.0	2.5	-
30. Sepulveda Blvd/Olympic Blvd	34.6	C	37.1	D	2.5	4.0	-
31. Veteran Ave/Olympic Blvd	22.7	C	24.8	C	2.1	6.0	-
32. Westwood Blvd/Olympic Blvd	41.3	D	52.1	D	10.8	4.0	Yes
33. Overland Ave/Olympic Blvd	40.1	D	42.5	D	2.4	4.0	-
34. Beverly Glen Blvd/Olympic Blvd	69.0	E	69.3	E	0.3	2.5	-
35. Century Park W/Olympic Blvd	15.2	B	15.4	B	0.2	-	-
36. Century Park E/Olympic Blvd	41.7	D	42.1	D	0.4	4.0	-
37. Sepulveda Blvd/Pico Blvd	54.4	D	58.1	E	3.7	2.5	Yes
38. Veteran Ave/Pico Blvd	11.0	B	12.3	B	1.3	-	-

39. Westwood Blvd/Pico Blvd	39.6	D	45.6	D	6.0	4.0	Yes
40. Overland Ave/Pico Blvd	62.8	E	68.2	E	5.4	2.5	Yes
41. Fairfax Ave/3rd St	78.5	E	76.0	E	-2.5	2.5	-
42. La Brea Ave/3rd St	34.8	C	36.0	D	1.2	4.0	-
43. Highland Ave/3rd St	74.2	E	74.6	E	0.4	2.5	-
44. Western Ave/3rd St	49.7	D	52.0	D	2.3	4.0	-
45. Vermont Ave/3rd St	46.3	D	46.1	D	-0.2	4.0	-
46. Fairfax Ave/6th St	16.1	B	15.6	B	-0.5	-	-
47. La Brea Ave/6th St	71.2	E	70.9	E	-0.3	2.5	-
48. Highland Ave/6th St	22.2	C	20.7	C	-1.5	6.0	-
49. Western Ave/6th St	27.9	C	28.3	C	0.4	6.0	-
50. Vermont Ave/6th St	42.8	D	44.3	D	1.5	4.0	-
51. Alvarado St/6th St	18.6	B	18.6	B	0.0	-	-
52. San Vicente Blvd/Wilshire Blvd	81.5	F	79.9	F	*	2.5	-
53. Fairfax Ave/Wilshire Blvd	111.2	F	128.1	F	16.9	2.5	Yes
54. La Brea Ave/Wilshire Blvd	39.0	D	49.2	D	10.2	4.0	Yes
55. Highland Ave/Wilshire Blvd	48.2	D	51.8	D	3.6	4.0	-
56. Crenshaw Blvd/Wilshire Blvd	37.4	D	39.1	D	1.7	4.0	-
57. Western Ave/Wilshire Blvd	59.2	E	56.5	E	*	2.5	-
58. Vermont Ave/Wilshire Blvd	72.5	E	62.6	E	*	2.5	-
59. Alvarado St/Wilshire Blvd	22.9	C	22.6	C	*	6.0	-
60. Fairfax Ave/8th St	12.5	B	12.9	B	0.4	-	-
61. La Brea Ave/8th St	10.1	B	12.8	B	2.7	-	-
62. Crenshaw Blvd/8th St	15.7	B	14.0	B	-1.7	-	-
63. Western Ave/8th St	16.4	B	16.8	B	0.4	-	-
64. Vermont Ave/8th St	24.7	C	24.2	C	-0.5	6.0	-
65. Alvarado St/8th St	13.9	B	14.2	B	0.3	-	-
66. Fairfax Ave/San Vicente Blvd	32.4	C	32.7	C	0.3	6.0	-
67. Fairfax Ave/Olympic Blvd	35.0	D	43.1	D	8.1	4.0	Yes
68. San Vicente Blvd/Olympic Blvd	28.3	C	30.6	C	2.3	6.0	-
69. La Brea Ave/Olympic Blvd	53.7	D	62.5	E	8.8	2.5	Yes
70. Highland Ave/Olympic Blvd	50.7	D	49.7	D	-1.0	4.0	-
71. Crenshaw Blvd/Olympic Blvd	73.5	E	78.7	E	5.2	2.5	Yes
72. Western Ave/Olympic Blvd	37.4	D	39.7	D	2.3	4.0	-
73. Vermont Ave/Olympic Blvd	39.8	D	40.8	D	1.0	4.0	-
74. Alvarado St/Olympic Blvd	29.9	C	31.6	C	1.7	6.0	-

***** Average delay reduced, see explanation in "Analysis Methodology" section.
Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

Table 7-3 presents the year 2020 with Proposed Project intersection operating conditions for the p.m. peak hour at the 74 study intersections.



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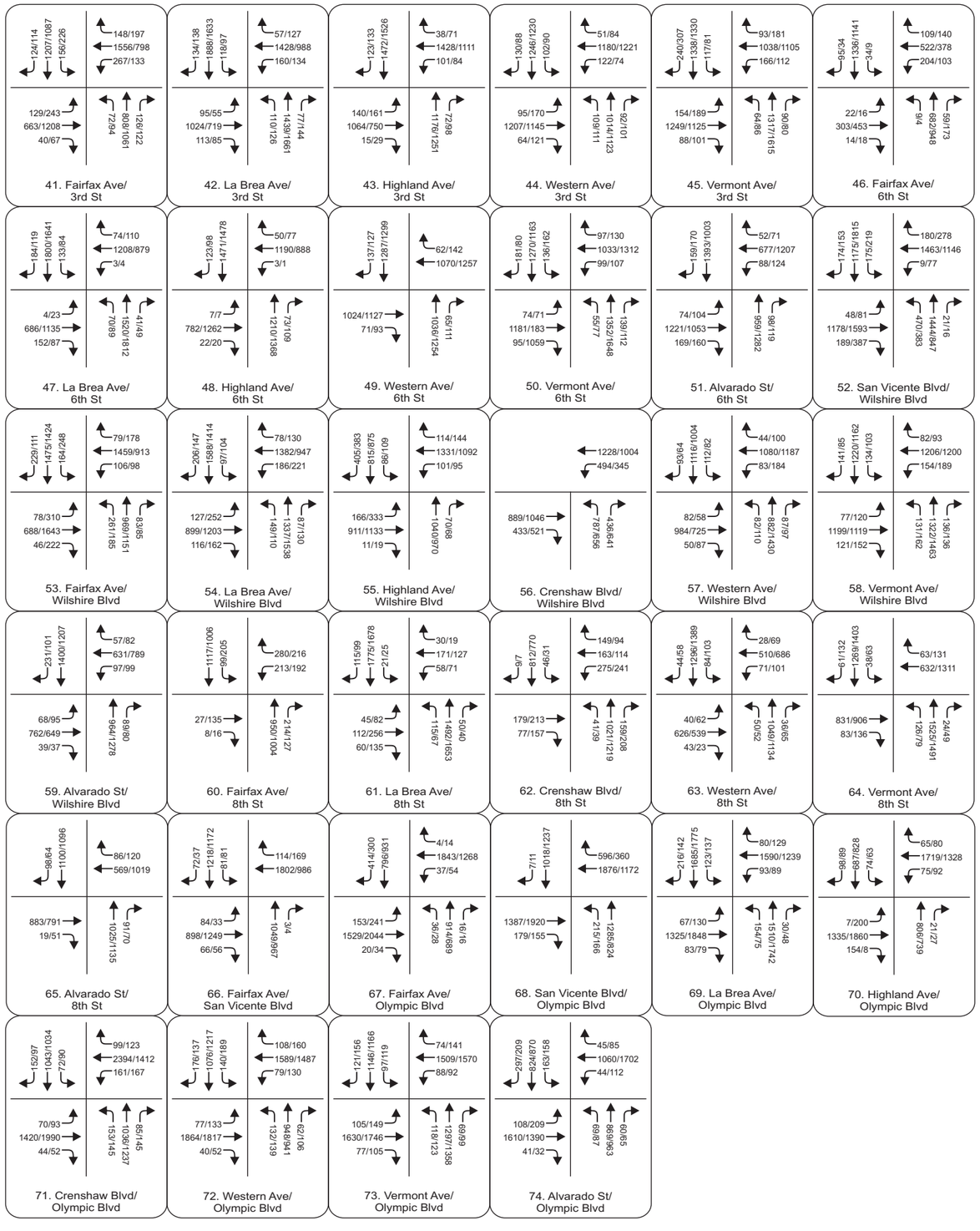
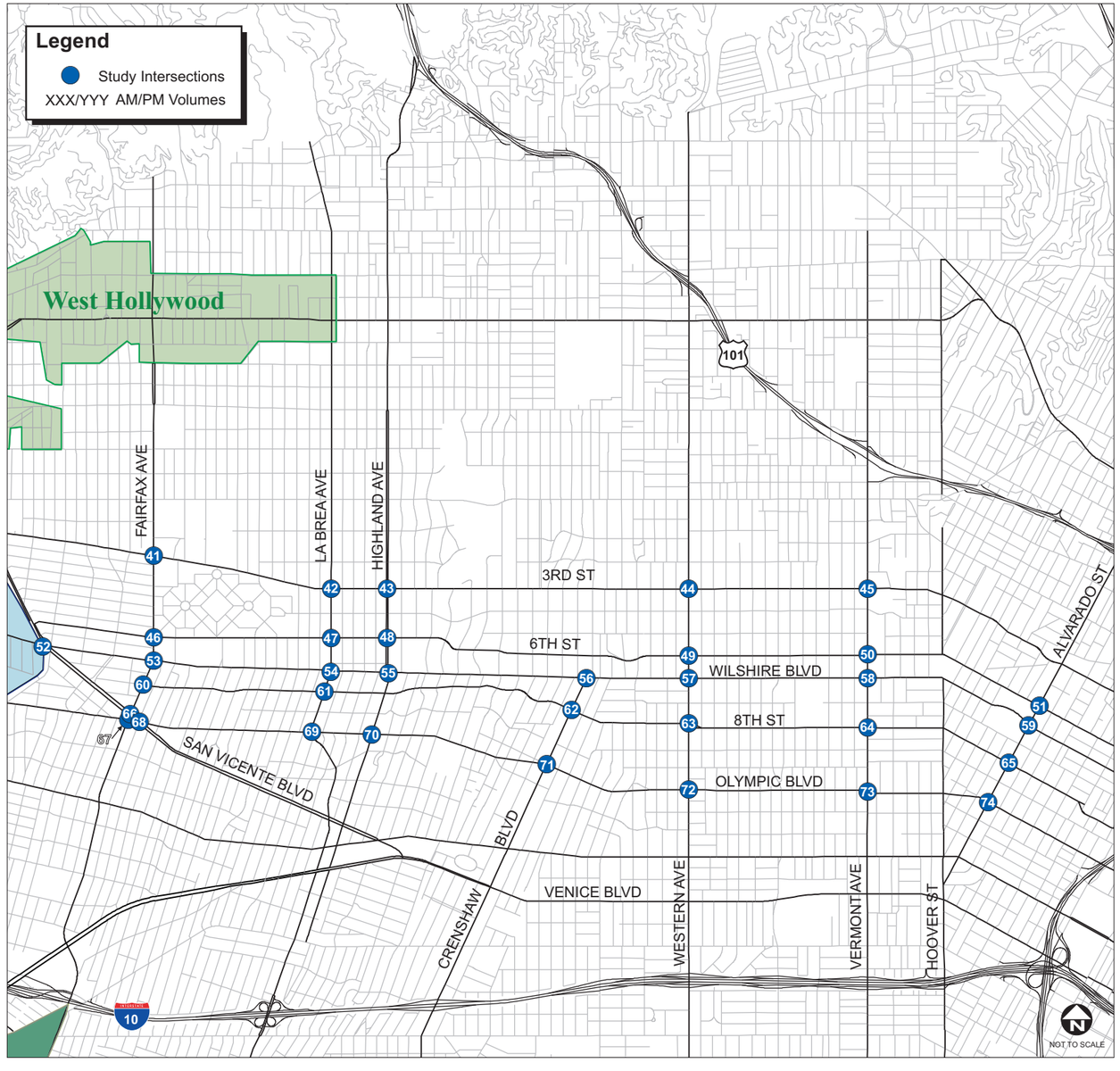
Traffic Impact Analysis

FIGURE 7-2A
Year 2020 With Proposed Project Volumes

Q:\2008\16\Jobs\J08-1643 Wilshire Bus Lane\gra\BaseMap_Volumes_2020.cdr





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Traffic Impact Analysis

FIGURE 7-2B
Year 2020 With Proposed Project Volumes

Q:\2008\16\Jobs\J08-1643 Wilshire Bus Lane\gra\BaseMap_Volumes_2020.cdr

TABLE 7-3: YEAR 2020 WITH PROPOSED PROJECT PM PEAK HOUR INTERSECTION LOS

Intersection	2020 Without Project		2020 With Proposed Project		Change in Delay	Threshold	Impact?
	Delay (sec)	LOS	Delay (sec)	LOS			
1. Veteran Ave/Sunset Blvd	38.2	D	41.7	D	3.5	4.0	-
2. S Beverly Glen Blvd/Sunset Blvd	50.0	D	52.8	D	2.8	4.0	-
3. N Beverly Glen Blvd/Sunset Blvd	43.6	D	43.3	D	-0.3	4.0	-
4. Centinela Ave/Wilshire Blvd	8.9	A	8.4	A	*	-	-
5. Bundy Dr/Wilshire Blvd	80.4	F	113.1	F	32.7	2.5	Yes
6. Barrington Ave/Wilshire Blvd	33.8	C	32.1	C	*	6.0	-
7. Federal Ave/Wilshire Blvd	49.9	D	47.2	D	*	4.0	-
8. Sepulveda Blvd/Wilshire Blvd	110.0	F	103.2	F	*	2.5	-
9. Veteran Ave/Wilshire Blvd	126.6	F	134.6	F	8.0	2.5	Yes
10. Westwood Blvd/Wilshire Blvd	64.0	E	52.0	D	*	4.0	-
11. Beverly Glen Blvd/Wilshire Blvd	39.4	D	36.4	D	*	4.0	-
12. Comstock Ave/Wilshire Blvd	26.9	C	24.2	C	*	6.0	-
13. Santa Monica Blvd/Wilshire Blvd	109.1	F	77.6	E	*	2.5	-
14. Centinela Ave/Santa Monica Blvd	17.5	B	17.1	B	-0.4	-	-
15. Bundy Dr/Santa Monica Blvd	16.1	B	16.3	B	0.2	-	-
16. Barrington Ave/Santa Monica Blvd	15.7	B	15.4	B	-0.3	-	-
17. Federal Ave/Santa Monica Blvd	31.3	C	31.4	C	0.1	6.0	-
18. I-405 SB Ramps/Santa Monica Blvd	25.7	C	25.4	C	-0.3	6.0	-
19. I-405 NB Ramps/Santa Monica Blvd	48.5	D	48.0	D	-0.5	4.0	-
20. Sepulveda Blvd/Santa Monica Blvd	44.6	D	45.4	D	0.8	4.0	-
21. Veteran Ave/Santa Monica Blvd	63.5	E	68.7	E	5.2	2.5	Yes
22. Westwood Blvd/Santa Monica Blvd	91.3	F	93.2	F	1.9	2.5	-
23. Overland Ave/Santa Monica Blvd	78.9	E	86.0	F	7.1	2.5	Yes
24. Beverly Glen Blvd/Santa Monica Blvd	53.8	D	55.0	E	1.2	2.5	-
25. Century Park W/Santa Monica Blvd	23.3	C	23.6	C	0.3	6.0	-
26. Ave of the Stars/Santa Monica Blvd	28.0	C	28.4	C	0.4	6.0	-
27. Century Park E/Santa Monica Blvd	18.3	B	19.2	B	0.9	-	-
28. Bundy Dr/Olympic Blvd	77.9	E	79.1	E	1.2	2.5	-
29. Barrington Ave/Olympic Blvd	56.7	E	56.8	E	0.1	2.5	-
30. Sepulveda Blvd/Olympic Blvd	58.2	E	57.4	E	-0.8	2.5	-
31. Veteran Ave/Olympic Blvd	15.0	B	17.4	B	2.4	-	-
32. Westwood Blvd/Olympic Blvd	47.2	D	50.0	D	2.8	4.0	-
33. Overland Ave/Olympic Blvd	69.0	E	71.2	E	2.2	2.5	-
34. Beverly Glen Blvd/Olympic Blvd	54.7	D	57.2	E	2.5	2.5	Yes
35. Century Park W/Olympic Blvd	20.9	C	21.5	C	0.6	6.0	-
36. Century Park E/Olympic Blvd	46.2	D	48.8	D	2.6	4.0	-
37. Sepulveda Blvd/Pico Blvd	73.8	E	73.7	E	-0.1	2.5	-
38. Veteran Ave/Pico Blvd	24.9	C	21.4	C	-3.5	6.0	-
39. Westwood Blvd/Pico Blvd	77.3	E	80.6	F	3.3	2.5	Yes
40. Overland Ave/Pico Blvd	122.1	F	116.5	F	-5.6	2.5	-
41. Fairfax Ave/3rd St	47.4	D	48.4	D	1.0	4.0	-
42. La Brea Ave/3rd St	27.4	C	28.0	C	0.6	6.0	-
43. Highland Ave/3rd St	34.5	C	35.3	D	0.8	4.0	-
44. Western Ave/3rd St	56.6	E	56.4	E	-0.2	2.5	-
45. Vermont Ave/3rd St	45.4	D	45.7	D	0.3	4.0	-
46. Fairfax Ave/6th St	13.9	B	12.7	B	-1.2	-	-
47. La Brea Ave/6th St	96.1	F	91.1	F	-5.0	2.5	-

48. Highland Ave/6th St	20.0	C	24.1	C	4.1	6.0	-
49. Western Ave/6th St	31.8	C	32.6	C	0.8	6.0	-
50. Vermont Ave/6th St	50.0	D	48.2	D	-1.8	4.0	-
51. Alvarado St/6th St	21.9	C	28.9	C	7.0	6.0	Yes
52. San Vicente Blvd/Wilshire Blvd	127.9	F	105.1	F	*	2.5	-
53. Fairfax Ave/Wilshire Blvd	158.4	F	163.2	F	4.8	2.5	Yes
54. La Brea Ave/Wilshire Blvd	40.7	D	41.2	D	0.5	4.0	-
55. Highland Ave/Wilshire Blvd	40.9	D	43.5	D	2.6	4.0	-
56. Crenshaw Blvd/Wilshire Blvd	24.8	C	25.2	C	0.4	6.0	-
57. Western Ave/Wilshire Blvd	111.1	F	101.5	F	*	2.5	-
58. Vermont Ave/Wilshire Blvd	77.6	E	62.2	E	*	2.5	-
59. Alvarado St/Wilshire Blvd	34.9	C	29.2	C	*	6.0	-
60. Fairfax Ave/8th St	15.1	B	19.9	B	4.8	-	-
61. La Brea Ave/8th St	11.4	B	11.9	B	0.5	-	-
62. Crenshaw Blvd/8th St	16.0	B	18.6	B	2.6	-	-
63. Western Ave/8th St	17.2	B	17.2	B	0.0	-	-
64. Vermont Ave/8th St	35.2	D	37.5	D	2.3	4.0	-
65. Alvarado St/8th St	14.7	B	15.1	B	0.4	-	-
66. Fairfax Ave/San Vicente Blvd	24.7	C	25.2	C	0.5	6.0	-
67. Fairfax Ave/Olympic Blvd	67.4	E	81.0	F	13.6	2.5	Yes
68. San Vicente Blvd/Olympic Blvd	26.5	C	26.5	C	0.0	6.0	-
69. La Brea Ave/Olympic Blvd	79.5	E	87.5	F	8.0	2.5	Yes
70. Highland Ave/Olympic Blvd	67.1	E	70.4	E	3.3	2.5	Yes
71. Crenshaw Blvd/Olympic Blvd	57.2	E	66.6	E	9.4	2.5	Yes
72. Western Ave/Olympic Blvd	53.8	D	55.0	E	1.2	2.5	-
73. Vermont Ave/Olympic Blvd	70.2	E	71.8	E	1.6	2.5	-
74. Alvarado St/Olympic Blvd	37.8	D	40.3	D	2.5	4.0	-

***** Average delay reduced, see explanation in "Analysis Methodology" section.
Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

As shown in **Tables 7-2** and **7-3**, the following 19 intersections are forecast to be significantly impacted by the Proposed Project for year 2020 with project conditions:

- Veteran Avenue/Sunset Boulevard (a.m. peak hour);
- Bundy Drive/Wilshire Boulevard (a.m. and p.m. peak hours);
- Barrington Avenue/Wilshire Boulevard (a.m. peak hour);
- Veteran Avenue/Wilshire Boulevard (p.m. peak hour);
- Veteran Avenue/Santa Monica Boulevard (p.m. peak hour);
- Westwood Boulevard/Santa Monica Boulevard (a.m. peak hour);
- Overland Avenue/Santa Monica Boulevard (p.m. peak hour);
- Westwood Boulevard/Olympic Boulevard (a.m. peak hour);
- Beverly Glen Boulevard/Olympic Boulevard (p.m. peak hour);
- Sepulveda Boulevard/Pico Boulevard (a.m. peak hour);
- Westwood Boulevard/Pico Boulevard (a.m. and p.m. peak hours);
- Overland Avenue/Pico Boulevard (a.m. peak hour);
- Alvarado Street/6th Street (p.m. peak hour);
- Fairfax Avenue/Wilshire Boulevard (a.m. and p.m. peak hours);
- La Brea Avenue/Wilshire Boulevard (a.m. peak hour);
- Fairfax Avenue/Olympic Boulevard (a.m. and p.m. peak hours);

- La Brea Avenue/Olympic Boulevard (a.m. and p.m. peak hours);
- Highland Avenue/Olympic Boulevard (p.m. peak hour); and
- Crenshaw Boulevard/Olympic Boulevard (a.m. and p.m. peak hours).

7.3 Year 2020 With Project Alternative Levels of Service

Year 2020 with Project Alternative peak hour volumes are shown in **Figure 7-3**. A level of service analysis was conducted to evaluate year 2020 with Project Alternative intersection operations. Detailed level of service calculation sheets can be found in **Appendix B**. **Table 7-4** presents the year 2020 with Project Alternative intersection operating conditions for the a.m. peak hour at the 74 study intersections.

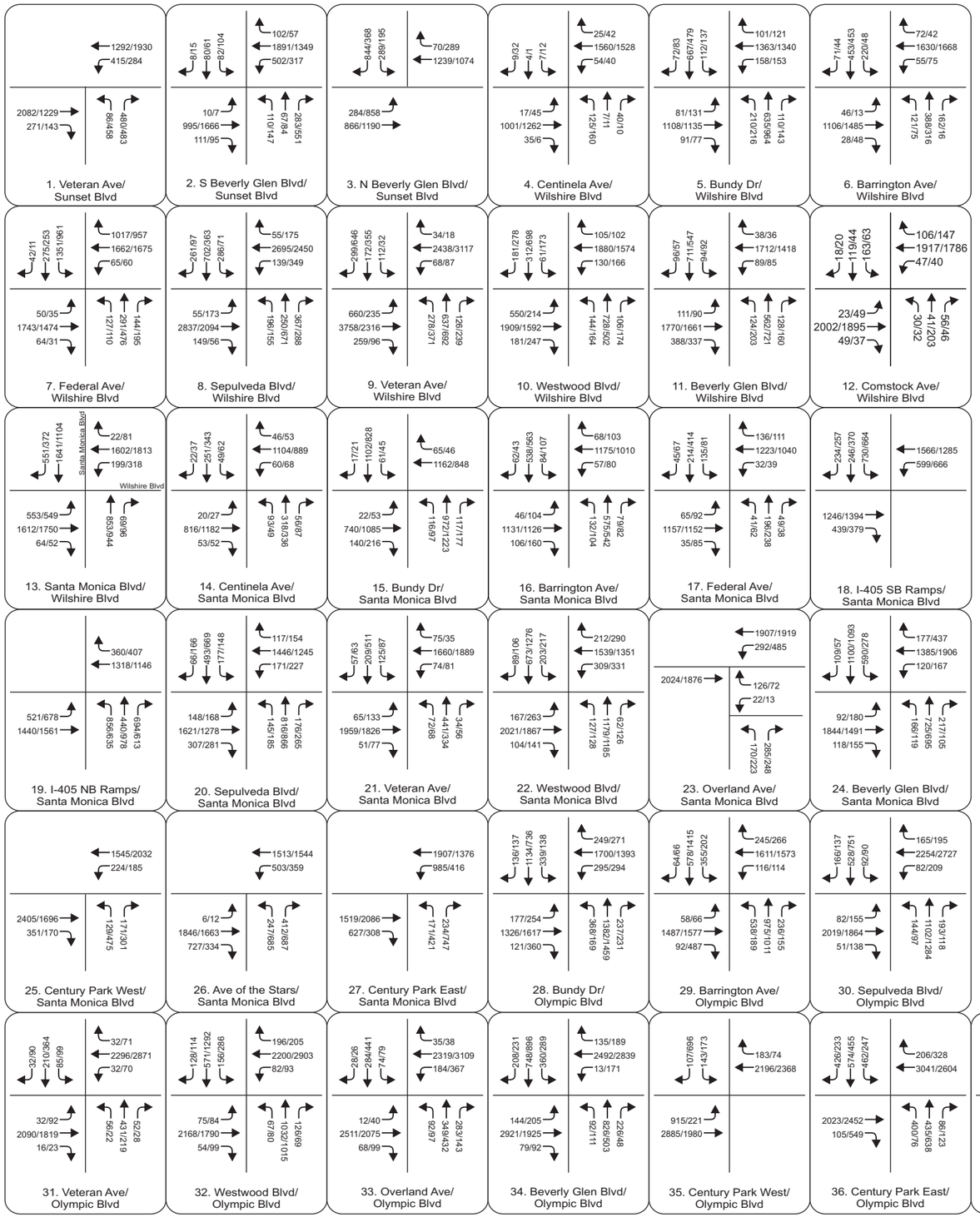
Table 7-4: Year 2020 With Project Alternative AM Peak Hour Intersection LOS

Intersection	2020 Without Project		2020 With Project Alternative		Change in Delay	Threshold	Impact?
	Delay (sec)	LOS	Delay (sec)	LOS			
1. Veteran Ave/Sunset Blvd	103.4	F	107.0	F	3.6	2.5	Yes
2. S Beverly Glen Blvd/Sunset Blvd	26.8	C	26.4	C	-0.4	6.0	-
3. N Beverly Glen Blvd/Sunset Blvd	147.0	F	142.4	F	-4.6	2.5	-
4. Centinela Ave/Wilshire Blvd	8.3	A	11.5	B	3.2	-	-
5. Bundy Dr/Wilshire Blvd	63.7	E	103.6	F	39.9	2.5	Yes
6. Barrington Ave/Wilshire Blvd	38.1	D	48.1	D	10.0	4.0	Yes
7. Federal Ave/Wilshire Blvd	68.4	E	58.3	E	*	2.5	-
8. Sepulveda Blvd/Wilshire Blvd	208.4	F	208.6	F	0.2	2.5	-
9. Veteran Ave/Wilshire Blvd	243.7	F	225.7	F	*	2.5	-
10. Westwood Blvd/Wilshire Blvd	75.2	E	51.4	D	*	4.0	-
11. Beverly Glen Blvd/Wilshire Blvd	36.1	D	41.1	D	5.0	4.0	Yes
12. Comstock Ave/Wilshire Blvd	23.3	C	23.0	C	*	6.0	-
13. Santa Monica Blvd/Wilshire Blvd	88.0	F	53.5	D	*	4.0	-
14. Centinela Ave/Santa Monica Blvd	15.7	B	15.7	B	0.0	-	-
15. Bundy Dr/Santa Monica Blvd	17.0	B	17.7	B	0.7	-	-
16. Barrington Ave/Santa Monica Blvd	17.1	B	17.1	B	0.0	-	-
17. Federal Ave/Santa Monica Blvd	28.5	C	28.6	C	0.1	6.0	-
18. I-405 SB Ramps/Santa Monica Blvd	26.9	C	26.8	C	-0.1	6.0	-
19. I-405 NB Ramps/Santa Monica Blvd	48.0	D	47.2	D	-0.8	4.0	-
20. Sepulveda Blvd/Santa Monica Blvd	39.9	D	41.4	D	1.5	4.0	-
21. Veteran Ave/Santa Monica Blvd	21.7	C	21.6	C	-0.1	6.0	-
22. Westwood Blvd/Santa Monica Blvd	122.2	F	127.2	F	5.0	2.5	Yes
23. Overland Ave/Santa Monica Blvd	32.8	C	33.0	C	0.2	6.0	-
24. Beverly Glen Blvd/Santa Monica Blvd	63.2	E	63.1	E	-0.1	2.5	-
25. Century Park W/Santa Monica Blvd	20.9	C	20.3	C	-0.6	6.0	-
26. Ave of the Stars/Santa Monica Blvd	47.3	D	47.2	D	-0.1	4.0	-
27. Century Park E/Santa Monica Blvd	29.0	C	27.9	C	-1.1	6.0	-
28. Bundy Dr/Olympic Blvd	100.3	F	105.5	F	5.2	2.5	Yes
29. Barrington Ave/Olympic Blvd	52.5	D	53.4	D	0.9	4.0	-
30. Sepulveda Blvd/Olympic Blvd	34.6	C	36.9	D	2.3	4.0	-
31. Veteran Ave/Olympic Blvd	22.7	C	25.7	C	3.0	6.0	-
32. Westwood Blvd/Olympic Blvd	41.3	D	43.8	D	2.5	4.0	-
33. Overland Ave/Olympic Blvd	40.1	D	42.7	D	2.6	4.0	-
34. Beverly Glen Blvd/Olympic Blvd	69.0	E	70.8	E	1.8	2.5	-

35. Century Park W/Olympic Blvd	15.2	B	15.2	B	0.0	-	-
36. Century Park E/Olympic Blvd	41.7	D	43.4	D	1.7	4.0	-
37. Sepulveda Blvd/Pico Blvd	54.4	D	56.0	E	1.6	2.5	-
38. Veteran Ave/Pico Blvd	11.0	B	14.0	B	3.0	-	-
39. Westwood Blvd/Pico Blvd	39.6	D	43.0	D	3.4	4.0	-
40. Overland Ave/Pico Blvd	62.8	E	63.2	E	0.4	2.5	-
41. Fairfax Ave/3rd St	78.5	E	75.2	E	-3.3	2.5	-
42. La Brea Ave/3rd St	34.8	C	35.0	D	0.2	4.0	-
43. Highland Ave/3rd St	74.2	E	73.4	E	-0.8	2.5	-
44. Western Ave/3rd St	49.7	D	52.2	D	2.5	4.0	-
45. Vermont Ave/3rd St	46.3	D	46.5	D	0.2	4.0	-
46. Fairfax Ave/6th St	16.1	B	15.8	B	-0.3	-	-
47. La Brea Ave/6th St	71.2	E	69.0	E	-2.2	2.5	-
48. Highland Ave/6th St	22.2	C	21.2	C	-1.0	6.0	-
49. Western Ave/6th St	27.9	C	28.4	C	0.5	6.0	-
50. Vermont Ave/6th St	42.8	D	44.3	D	1.5	4.0	-
51. Alvarado St/6th St	18.6	B	18.6	B	0.0	-	-
52. San Vicente Blvd/Wilshire Blvd	81.5	F	75.4	E	*	2.5	-
53. Fairfax Ave/Wilshire Blvd	111.2	F	130.1	F	18.9	2.5	Yes
54. La Brea Ave/Wilshire Blvd	39.0	D	50.8	D	11.8	4.0	Yes
55. Highland Ave/Wilshire Blvd	48.2	D	49.1	D	0.9	4.0	-
56. Crenshaw Blvd/Wilshire Blvd	37.4	D	36.4	D	*	4.0	-
57. Western Ave/Wilshire Blvd	59.2	E	56.3	E	*	2.5	-
58. Vermont Ave/Wilshire Blvd	72.5	E	68.4	E	*	2.5	-
59. Alvarado St/Wilshire Blvd	22.9	C	22.6	C	*	6.0	-
60. Fairfax Ave/8th St	12.5	B	13.5	B	1.0	-	-
61. La Brea Ave/8th St	10.1	B	11.3	B	1.2	-	-
62. Crenshaw Blvd/8th St	15.7	B	15.8	B	0.1	-	-
63. Western Ave/8th St	16.4	B	16.6	B	0.2	-	-
64. Vermont Ave/8th St	24.7	C	23.4	C	-1.3	6.0	-
65. Alvarado St/8th St	13.9	B	14.0	B	0.1	-	-
66. Fairfax Ave/San Vicente Blvd	32.4	C	31.9	C	-0.5	6.0	-
67. Fairfax Ave/Olympic Blvd	35.0	D	46.4	D	11.4	4.0	Yes
68. San Vicente Blvd/Olympic Blvd	28.3	C	31.4	C	3.2	6.0	-
69. La Brea Ave/Olympic Blvd	53.7	D	58.4	E	4.7	2.5	Yes
70. Highland Ave/Olympic Blvd	50.7	D	52.0	D	1.3	4.0	-
71. Crenshaw Blvd/Olympic Blvd	73.5	E	79.3	F	5.8	2.5	Yes
72. Western Ave/Olympic Blvd	37.4	D	39.2	D	1.8	4.0	-
73. Vermont Ave/Olympic Blvd	39.8	D	40.1	D	0.3	4.0	-
74. Alvarado St/Olympic Blvd	29.9	C	32.1	C	2.2	6.0	-

***** Average delay reduced, see explanation in "Analysis Methodology" section.
Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

Table 7-5 presents the year 2020 with Project Alternative intersection operating conditions for the p.m. peak hour at the 74 study intersections.



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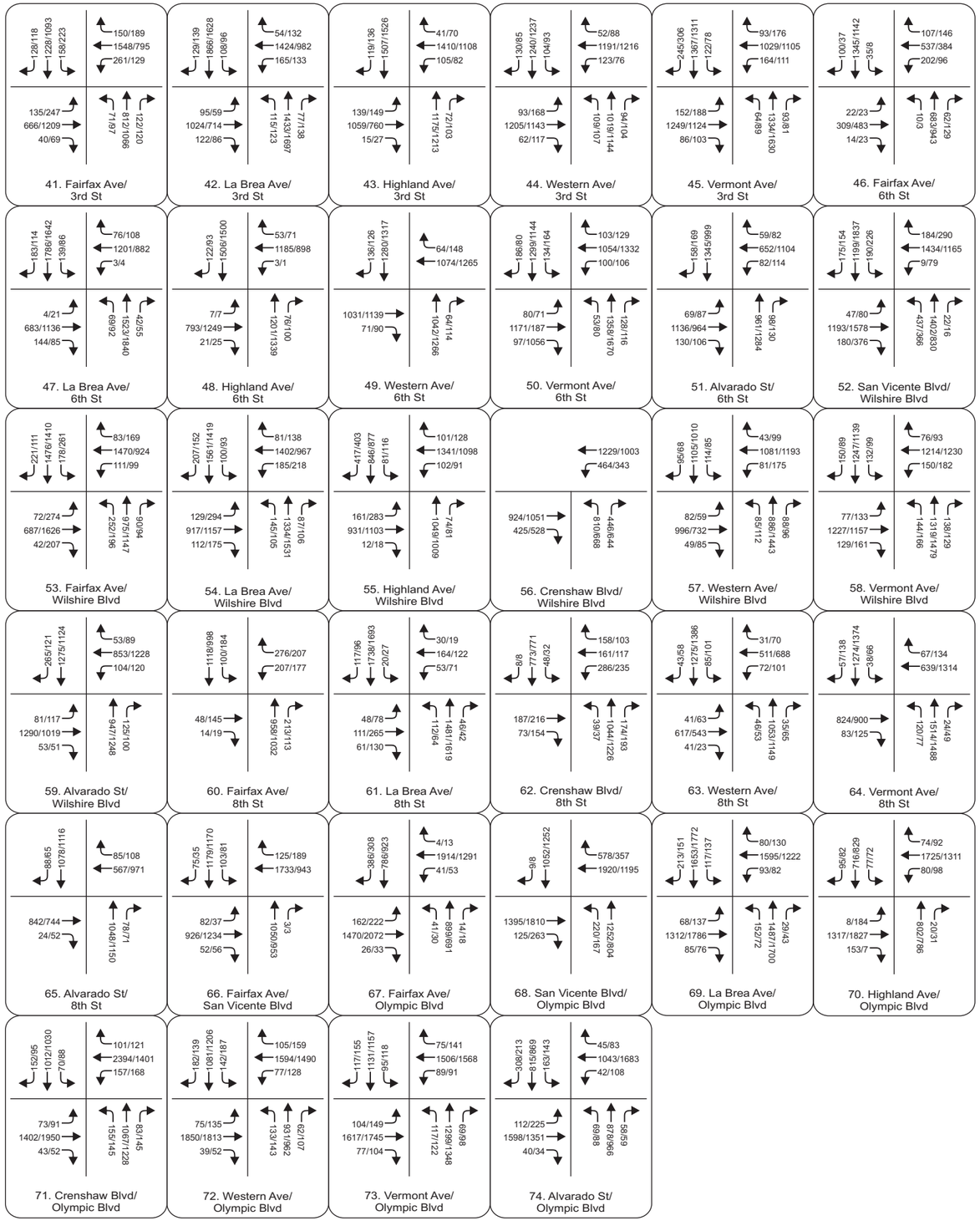
Traffic Impact Analysis

FIGURE 7-3A
Year 2020 With Project Alternative Volumes

Q:\2008\16\Jobs\J08-1643 Wilshire Bus Lane\gra\BaseMap_Volumes_2020.cdr



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Wilshire Blvd BRT Project
Traffic Impact Analysis

FIGURE 7-3B
Year 2020 With Project Alternative Volumes

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TABLE 7-5: YEAR 2020 WITH PROJECT ALTERNATIVE PM PEAK HOUR INTERSECTION LOS

Intersection	2020 Without Project		2020 With Project Alternative		Change in Delay	Threshold	Impact?
	Delay (sec)	LOS	Delay (sec)	LOS			
1. Veteran Ave/Sunset Blvd	38.2	D	35.7	D	-2.5	4.0	-
2. S Beverly Glen Blvd/Sunset Blvd	50.0	D	53.1	D	3.1	4.0	-
3. N Beverly Glen Blvd/Sunset Blvd	43.6	D	43.5	D	-0.1	4.0	-
4. Centinela Ave/Wilshire Blvd	8.9	A	8.7	A	*	-	-
5. Bundy Dr/Wilshire Blvd	80.4	F	117.4	F	37.0	2.5	Yes
6. Barrington Ave/Wilshire Blvd	33.8	C	32.2	C	*	6.0	-
7. Federal Ave/Wilshire Blvd	49.9	D	47.5	D	*	4.0	-
8. Sepulveda Blvd/Wilshire Blvd	110.0	F	110.2	F	0.2	2.5	-
9. Veteran Ave/Wilshire Blvd	126.6	F	106.9	F	*	2.5	-
10. Westwood Blvd/Wilshire Blvd	64.0	E	49.2	D	*	4.0	-
11. Beverly Glen Blvd/Wilshire Blvd	39.4	D	45.1	D	5.7	4.0	Yes
12. Comstock Ave/Wilshire Blvd	26.9	C	25.5	C	-1.4	6.0	-
13. Santa Monica Blvd/Wilshire Blvd	109.1	F	78.1	E	*	2.5	-
14. Centinela Ave/Santa Monica Blvd	17.5	B	17.4	B	-0.1	-	-
15. Bundy Dr/Santa Monica Blvd	16.1	B	16.3	B	0.2	-	-
16. Barrington Ave/Santa Monica Blvd	15.7	B	15.7	B	0.0	-	-
17. Federal Ave/Santa Monica Blvd	31.3	C	31.2	C	-0.1	6.0	-
18. I-405 SB Ramps/Santa Monica Blvd	25.7	C	25.5	C	-0.2	6.0	-
19. I-405 NB Ramps/Santa Monica Blvd	48.5	D	47.8	D	-0.7	4.0	-
20. Sepulveda Blvd/Santa Monica Blvd	44.6	D	45.2	D	0.6	4.0	-
21. Veteran Ave/Santa Monica Blvd	63.5	E	64.5	E	1.0	2.5	-
22. Westwood Blvd/Santa Monica Blvd	91.3	F	91.3	F	0.0	2.5	-
23. Overland Ave/Santa Monica Blvd	78.9	E	86.2	F	7.3	2.5	Yes
24. Beverly Glen Blvd/Santa Monica Blvd	53.8	D	55.1	E	1.3	2.5	-
25. Century Park W/Santa Monica Blvd	23.3	C	24.0	C	0.7	6.0	-
26. Ave of the Stars/Santa Monica Blvd	28.0	C	28.0	C	0.0	6.0	-
27. Century Park E/Santa Monica Blvd	18.3	B	18.6	B	0.3	-	-
28. Bundy Dr/Olympic Blvd	77.9	E	81.1	F	3.2	2.5	Yes
29. Barrington Ave/Olympic Blvd	56.7	E	57.1	E	0.4	2.5	-
30. Sepulveda Blvd/Olympic Blvd	58.2	E	58.0	E	-0.2	2.5	-
31. Veteran Ave/Olympic Blvd	15.0	B	15.2	B	0.2	-	-
32. Westwood Blvd/Olympic Blvd	47.2	D	50.3	D	3.1	4.0	-
33. Overland Ave/Olympic Blvd	69.0	E	70.3	E	1.3	2.5	-
34. Beverly Glen Blvd/Olympic Blvd	54.7	D	57.4	E	2.7	2.5	Yes
35. Century Park W/Olympic Blvd	20.9	C	21.5	C	0.6	6.0	-
36. Century Park E/Olympic Blvd	46.2	D	48.8	D	2.6	4.0	-
37. Sepulveda Blvd/Pico Blvd	73.8	E	74.0	E	0.2	2.5	-
38. Veteran Ave/Pico Blvd	24.9	C	21.6	C	-3.3	6.0	-
39. Westwood Blvd/Pico Blvd	77.3	E	77.1	E	-0.2	2.5	-
40. Overland Ave/Pico Blvd	122.1	F	119.6	F	-2.5	2.5	-
41. Fairfax Ave/3rd St	47.4	D	48.8	D	1.4	4.0	-
42. La Brea Ave/3rd St	27.4	C	27.7	C	0.3	6.0	-
43. Highland Ave/3rd St	34.5	C	33.6	C	-0.9	6.0	-
44. Western Ave/3rd St	56.6	E	55.8	E	-0.8	2.5	-
45. Vermont Ave/3rd St	45.4	D	45.5	D	0.1	4.0	-

46. Fairfax Ave/6th St	13.9	B	13.7	B	-0.2	-	-
47. La Brea Ave/6th St	96.1	F	93.1	F	-3.0	2.5	-
48. Highland Ave/6th St	20.0	C	20.8	C	0.8	6.0	-
49. Western Ave/6th St	31.8	C	33.0	C	1.2	6.0	-
50. Vermont Ave/6th St	50.0	D	49.1	D	-0.9	4.0	-
51. Alvarado St/6th St	21.9	C	20.8	C	-1.1	6.0	-
52. San Vicente Blvd/Wilshire Blvd	127.9	F	105.5	F	*	2.5	-
53. Fairfax Ave/Wilshire Blvd	158.4	F	159.0	F	0.6	2.5	-
54. La Brea Ave/Wilshire Blvd	40.7	D	40.9	D	0.2	4.0	-
55. Highland Ave/Wilshire Blvd	40.9	D	40.1	D	*	4.0	-
56. Crenshaw Blvd/Wilshire Blvd	24.8	C	25.6	C	0.8	6.0	-
57. Western Ave/Wilshire Blvd	111.1	F	103.7	F	*	2.5	-
58. Vermont Ave/Wilshire Blvd	77.6	E	65.9	E	*	2.5	-
59. Alvarado St/Wilshire Blvd	34.9	C	36.8	D	1.9	4.0	-
60. Fairfax Ave/8th St	15.1	B	18.3	B	3.2	-	-
61. La Brea Ave/8th St	11.4	B	11.9	B	0.5	-	-
62. Crenshaw Blvd/8th St	16.0	B	18.4	B	2.4	-	-
63. Western Ave/8th St	17.2	B	17.3	B	0.1	-	-
64. Vermont Ave/8th St	35.2	D	36.3	D	1.1	4.0	-
65. Alvarado St/8th St	14.7	B	14.7	B	0.0	-	-
66. Fairfax Ave/San Vicente Blvd	24.7	C	24.9	C	0.2	6.0	-
67. Fairfax Ave/Olympic Blvd	67.4	E	77.2	E	9.8	2.5	Yes
68. San Vicente Blvd/Olympic Blvd	26.5	C	27.2	C	0.7	6.0	-
69. La Brea Ave/Olympic Blvd	79.5	E	80.6	F	1.1	2.5	-
70. Highland Ave/Olympic Blvd	67.1	E	71.4	E	4.3	2.5	Yes
71. Crenshaw Blvd/Olympic Blvd	57.2	E	60.5	E	3.3	2.5	Yes
72. Western Ave/Olympic Blvd	53.8	D	54.6	D	0.8	4.0	-
73. Vermont Ave/Olympic Blvd	70.2	E	70.5	E	0.3	2.5	-
74. Alvarado St/Olympic Blvd	37.8	D	38.2	D	0.4	4.0	-

***** Average delay reduced, see explanation in "Analysis Methodology" section.

Notes:

HCM 2000 Operations Methodology

Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

As shown in **Tables 7-4** and **7-5**, the following 14 intersections are forecast to be significantly impacted in year 2020 with Project Alternative conditions:

- Veteran Avenue/Sunset Boulevard (a.m. peak hour);
- Bundy Drive/Wilshire Boulevard (a.m. and p.m. peak hours);
- Barrington Avenue/Wilshire Boulevard (a.m. peak hour);
- Beverly Glen Boulevard/Wilshire Boulevard (a.m. peak hour);
- Westwood Boulevard/Santa Monica Boulevard (a.m. peak hour);
- Overland Avenue/Santa Monica Boulevard (p.m. peak hour);
- Bundy Drive/Olympic Boulevard (a.m. and p.m. peak hours);
- Beverly Glen Boulevard/Olympic Boulevard (p.m. peak hour);
- Fairfax Avenue/Wilshire Boulevard (a.m. peak hour);
- La Brea Avenue/Wilshire Boulevard (a.m. peak hour);
- Fairfax Avenue/Olympic Boulevard (a.m. and p.m. peak hours);
- La Brea Avenue/Olympic Boulevard (a.m. peak hour);
- Highland Avenue/Olympic Boulevard (p.m. peak hour); and
- Crenshaw Boulevard/Olympic Boulevard (a.m. and p.m. peak hours).

8.0 BUS LANE TRANSITION LOCATIONS

Along the Wilshire Boulevard BRT route, LACMTA buses will transition into and out of mixed-flow travel lanes at certain locations, depending on downstream roadway capacity changes and jurisdictional boundaries. This section describes these locations and recommendations to provide a smooth transition between buses and mixed-flow traffic. These locations vary between the Proposed Project and the Project Alternative, and are discussed below. At each of these locations, it is proposed that signage such as fixed message signs or Changeable Message Signs (CMS) be installed.

8.1 PROPOSED PROJECT CONDITIONS

The following summarizes the transitional locations along the BRT route in the eastbound direction under Proposed Project conditions:

- Between the I-405 Northbound Off-ramps and Veteran Avenue, mixed-flow capacity will drop from four lanes to three lanes as the bus lane occupies the curb lane. It is proposed that appropriate signage be installed along Wilshire Boulevard in the vicinity of Veteran Avenue to inform motorists of bus lane operation during peak hours.
- At Comstock Avenue, the mixed-flow capacity will drop from three lanes of traffic west of Comstock Avenue to two lanes of traffic east of Comstock Avenue. Along the curb lane east of Comstock Avenue, a transition area of approximately 300 feet will be provided to allow through traffic to exit the bus lane. It is proposed that appropriate signage be installed along Wilshire Boulevard near Comstock Avenue to inform motorists of bus lane operation during peak hours.
- At the western Beverly Hills City limits (approximately 500 feet west of the Whittier Drive/Merv Griffin Way intersection), the bus lane transitions to a mixed flow lane. Therefore, three eastbound through lanes will remain at the Whittier Drive/Merv Griffin Way intersection. The

Proposed Project will not reduce capacity at this intersection, nor will the number of queued vehicles increase. However, the length of queues may increase because vehicles will be traveling in two lanes instead of three as they enter the City of Beverly Hills.

- East of San Vicente Boulevard (City of Beverly Hills boundary), a transition area of approximately 300 feet will be provided to allow through traffic to exit the bus lane. It is proposed that appropriate signage be installed along Wilshire Boulevard near San Vicente Boulevard to inform motorists of bus lane operation during peak hours.
- At Park View Street, the mixed-flow capacity will drop from two lanes of traffic west of Park View Street to one lane of traffic east of Park View Street. It is proposed that appropriate signage be installed along Wilshire Boulevard near Park View Street to inform motorists of bus lane operation during peak hours

The following summarizes the transitional locations along the peak hour bus lane route in the westbound direction under Proposed Project conditions:

- At Valencia Street, mixed-flow capacity will drop from two lanes to one lane as the bus lane occupies the curb lane. It is proposed that appropriate signage be installed along Wilshire Boulevard in the vicinity of Valencia Street to inform motorists of bus lane operation during peak hours.
- At the western City of Beverly Hills boundary, the mixed-flow capacity will drop from three lanes of traffic to two lanes of traffic as the bus lane occupies the curb lane. It is proposed that appropriate signage be installed along Wilshire Boulevard west of the City of Beverly Hills boundary to inform motorists of bus lane operation during peak hours.
- Between Federal Avenue and Barrington Avenue, the curb lane will be used as a bus as well as right-turn only lane along the entire segment. It is proposed that appropriate signage be installed along Wilshire Boulevard west of the Federal Avenue to inform motorists of bus lane operation during peak hours.

8.2 PROJECT ALTERNATIVE CONDITIONS

Under Project Alternative conditions, the following summarizes the transitional locations along the peak hour bus lane route in the eastbound direction:

- East of Veteran Avenue, mixed-flow capacity will drop from four lanes to three lanes as the bus lane occupies the curb lane. It is proposed that appropriate signage be installed along Wilshire Boulevard in the vicinity of Veteran Avenue to inform motorists of bus lane operation during peak hours.
- At Glendon Avenue, the mixed-flow capacity will drop from three lanes of traffic west of Glendon Avenue to two lanes of traffic east at Malcolm Avenue. It is proposed that appropriate signage be installed along Wilshire Boulevard east of Glendon Avenue to inform motorists of bus lane operation during peak hours.
- At the western Beverly Hills City limits (approximately 500 feet west of the Whittier Drive/Merv Griffin Way intersection), the bus lane transitions to a mixed flow lane. Therefore, three eastbound through lanes will remain at the Whittier Drive/Merv Griffin Way intersection. The Project Alternative will not reduce capacity at this intersection, nor will the number of queued

vehicles increase. However, the length of queues might increase because vehicles will be traveling in two lanes instead of three as they enter the City of Beverly Hills.

- East of San Vicente Boulevard (City of Beverly Hills boundary), a transition area of approximately 300 feet will be provided to allow through traffic to exit the bus lane. It is proposed that appropriate signage be installed along Wilshire Boulevard east of San Vicente Boulevard to inform motorists of bus lane operation during peak hours.

The following summarizes the transitional locations along the peak hour bus lane route in the westbound direction under Project Alternative conditions:

- At South Park View Street, it is proposed that appropriate signage be installed along Wilshire Boulevard to inform motorists of bus lane operation during peak hours.
- At the western City of Beverly Hills boundary, the mixed-flow capacity will drop from three lanes of traffic to two lanes of traffic as the bus lane occupies the curb lane. It is proposed that appropriate signage be installed along Wilshire Boulevard west of the City of Beverly Hills boundary to inform motorists of bus lane operation during peak hours.
- Between Federal Avenue and Barrington Avenue, the curb lane will be used as a bus as well as right-turn only lane along the entire segment. It is proposed that appropriate signage be installed along Wilshire Boulevard west of Federal Avenue to inform motorists of bus lane operation during peak hours.

9.0 MITIGATION MEASURES

At intersections at which the Proposed Project has a significant impact on traffic operations, mitigation measures have been identified to improve traffic operations and reduce the impact to a level considered less than significant. These mitigation measures generally fall into the following categories:

- Reduction in the project scope—By eliminating the bus lane at certain locations and allowing other through vehicles into the curb lane, the project impact may be eliminated.
- Traffic signal phasing modifications—By adding “protected” left-turn phasing (a left-turn arrow) or “protected plus permitted” left-turn phasing (a left-turn arrow, and left turners can also turn on green) for heavy turning movements, traffic operations can be improved and delay reduced, and the project impact may be eliminated.
- Additional turn lanes—By providing an additional turn lane for heavy left-turn or right-turn movements, traffic operations can be improved and delay reduced, and the project impact may be eliminated.
- Traffic signal upgrades—The traffic signals at many of the intersections within the City of Los Angeles currently operate using older Type 170 traffic signal controllers. Newer Model 2070 controllers provide for enhanced and real-time operation of the traffic signal timing. Type 2070 controllers allow LADOT to provide instant adjustments to the signal’s timing parameters based on real-time traffic conditions. The upgrade of the controllers, when supplemented by the installation of strategically placed closed-circuit television (CCTV) cameras and additional vehicle detector loops, can reduce delay at the intersection. These traffic signal hardware upgrades are needed to provide for enhanced operation of the City’s Automated Traffic Surveillance and Control System (ATSAC) signal system, and to allow LADOT to manage traffic in direct response to real-time traffic flow. The strategic placement of a CCTV camera affords LADOT the ability to

monitor vehicles and buses, and to respond to incidents that cause excessive delays. If an impact is identified at one intersection, signal upgrades at other intersections in the immediate vicinity may also improve operations and reduce delay at the impacted intersection by improving overall traffic flow. The expected benefit to traffic flow is a reduction of the volume-to-capacity (V/C) ratio at the impacted intersection of 0.01, which corresponds to a 2.5 second reduction in overall intersection delay, as explained in Section 3.1.

- Traffic control system upgrades—The traffic signals at many of the intersections within the City of Los Angeles currently operate as part of the ATSAC system. The Adaptive Traffic Control System (ATCS) is a personal computer based program that provides a fully-responsive method to accommodate real-time (actual) traffic conditions. ATCS is designed to further enhance the existing ATSAC system, but goes beyond the limitations of ATSAC to provide a traffic adaptive system of control.

  Studies show that the current ATSAC system can reduce travel times by 13%, intersection delay by 20%, and stops by 35%. However, ATSAC is limited in its effectiveness because it operates from pre-developed traffic signal cycle plans based on different anticipated traffic conditions for each intersection. ATSAC implements the appropriate timing plan for each signal based on the time of day and prevailing conditions determined by sensors on the streets. As not all conditions can be anticipated, situations may occur where even the best pre-determined plan is inadequate for the existing traffic. Under ATCS, continuous alterations are made to the signal timing (unless conditions remain constant) to adapt to changes in traffic conditions. ATCS can adapt and rapidly respond to virtually any prevailing traffic condition and thereby reduce congestion and delay and maximize traffic flow.

  When ATCS is controlling traffic signals in adaptive mode, the entire signal network is continuously analyzed, and the most appropriate signal timing for the existing conditions is implemented at each signalized intersection. Thus, as traffic conditions are affected by the morning, midday, or evening hours of travel – or perhaps weather, accidents, construction, or holiday shopping – the signal timing is constantly being updated. Any unusual occurrences that would otherwise cause congestion in a fixed-time, ATSAC, traffic signal system are automatically accommodated by ATCS. The result is fewer stops and less delay for motorists, along with improved traffic signal coordination throughout the signal network.

  As ATCS is a fully responsive, real-time system, it must be provided with sufficient data to be effective and to make appropriate decisions regarding signal timing. Therefore, ATCS would require additional vehicle sensors; additional closed-circuit television cameras for better video coverage; computers, hardware and networking; and an upgrade in the communication links to fiber optic cable. The ideal system design would have vehicle sensors on all approaches to all intersections in the system. With the pertinent traffic data (number of cars) obtained from these sensors placed in advance of the intersection, the signal timing is adjusted to accommodate the prevailing conditions. The expected benefit to traffic flow is a reduction of the volume-to-capacity (V/C) ratio at the upgraded intersection of 0.03, which corresponds to a 7.5 second reduction in overall intersection delay, as explained in Section 3.1.

The Proposed Project results in significant impacts at 18 intersections in 2012 and 19 intersections in 2020. Since several intersections are impacted in one year but not in the other, a total of 21 intersections are significantly impacted by the Proposed Project in at least one of the years. **Table 9-1** summarizes the significantly impacted intersections under the Proposed Project during all time periods. The following mitigation measures have been identified at the 21 locations at which the Proposed Project has a significant impact:

- Veteran Avenue/Sunset Boulevard – No feasible mitigation measure is available at this location.
- Bundy Drive/Wilshire Boulevard – Install system loops at three locations on Wilshire Boulevard at Brockton Avenue, Westgate Avenue, and Granville Avenue. The system loop upgrades will improve traffic operations but do not fully mitigate the project's impact at this intersection.
- Barrington Avenue/Wilshire Boulevard – Modify the traffic signal to include a westbound "Protected plus Permitted" phase.
- Veteran Avenue/Wilshire Boulevard – Truncate the eastbound and westbound bus lane west of Veteran Avenue.
- Veteran Avenue/Santa Monica Boulevard – Install 2070 controllers on Veteran Avenue at Massachusetts Avenue and Ohio Avenue. The traffic signal controller upgrades will improve traffic operations but do not fully mitigate the project's impact at this intersection.
- Westwood Boulevard/Santa Monica Boulevard – Re-stripe the southbound approach to add a second left-turn lane. Modify the southbound left-turn signal phasing to "Protected" phasing. A conceptual plan of this improvement is provided in **Appendix D**.
- Overland Avenue/Santa Monica Boulevard – No feasible mitigation measure is available at this location.
- Westwood Boulevard/Olympic Boulevard – Install a 2070 controller at Overland Avenue/Olympic Boulevard. The traffic signal controller upgrade will improve traffic operations but does not fully mitigate the project's impact at this intersection.
- Beverly Glen Boulevard/Olympic Boulevard – Modify the traffic signal to include a northbound "Protected plus Permitted" phase.
- Sepulveda Boulevard/Pico Boulevard – Modify the traffic signal to include eastbound and southbound "Protected plus Permitted" phases.
- Westwood Boulevard/Pico Boulevard – No feasible mitigation measure is available at this location.
- Overland Avenue/Pico Boulevard – No feasible mitigation measure is available at this location.
- Highland Avenue/3rd Street – Modify the traffic signal to include a westbound "Protected plus Permitted" phase.
- Alvarado Street/6th Street – Modify the traffic signal to include eastbound and westbound "Protected plus Permitted" phases.
- Fairfax Avenue/Wilshire Boulevard – Install 2070 controllers on 6th Street at Curson Avenue, Hauser Boulevard, Burnside Avenue, Cochran Avenue, Detroit Street, and La Brea Avenue. The traffic signal controller upgrades will improve traffic operations but do not fully mitigate the project's impact at this intersection.
- La Brea Avenue/Wilshire Boulevard – Install system loops on Wilshire Boulevard at Courtyard, Masselin Avenue, Dunsmuir Avenue, Cochran Avenue, Cloverdale, and Detroit Street. The system loop upgrades will improve traffic operations but do not fully mitigate the project's impact at this intersection.

- Highland Avenue/Wilshire Boulevard – Modify the traffic signal to include a westbound "Protected plus Permitted" phase.
- Fairfax Avenue/Olympic Boulevard – Modify the traffic signal phasing to improve efficiency and install ATCS at eight intersections on Olympic Boulevard between Fairfax Avenue and La Brea Avenue.
- La Brea Avenue/Olympic Boulevard – Modify the traffic signal to include an eastbound "Protected plus Permitted" phase.
- Highland Avenue/Olympic Boulevard – Modify the traffic signal to include a westbound "Protected plus Permitted" phase.
- Crenshaw Boulevard/Olympic Boulevard – Install ATCS at six intersections along Olympic Boulevard between La Brea Avenue and Crenshaw Boulevard.

TABLE 9-1: PROPOSED PROJECT SIGNIFICANT IMPACT SUMMARY

Intersection	Year 2012 AM Peak Hour				Year 2012 PM Peak Hour				Year 2020 AM Peak Hour				Year 2020 PM Peak Hour				Overall Results				
	Significant Impact	Fully Mitigated	Partially Mitigated	No Feasible Mitigation	Significant Impact	Fully Mitigated	Partially Mitigated	No Feasible Mitigation	Significant Impact	Fully Mitigated	Partially Mitigated	No Feasible Mitigation	Significant Impact	Fully Mitigated	Partially Mitigated	No Feasible Mitigation	Significant Impact	Fully Mitigated	Partially Mitigated	No Feasible Mitigation	Significant Impact after Mitigation
1. Veteran Ave/Sunset Blvd	X			X					X			X					X			X	X
5. Bundy Dr/Wilshire Blvd	X		X		X		X		X		X		X		X		X		X		X
6. Barrington Ave/Wilshire Blvd	X	X							X	X							X	X			
9. Veteran Ave/Wilshire Blvd					X	X							X	X			X	X			
21. Veteran Ave/ Santa Monica Blvd					X		X						X		X		X		X		X
22. Westwood Blvd/Santa Monica Blvd	X	X							X	X							X	X			
23. Overland Ave/Santa Monica Blvd					X			X					X			X	X			X	X
32. Westwood Blvd/Olympic Blvd									X		X						X		X		X
34. Beverly Glen Blvd/Olympic Blvd					X	X							X	X			X	X			
37. Sepulveda Blvd/Pico Blvd	X	X							X	X							X	X			
39. Westwood Blvd/Pico Blvd	X			X	X			X	X			X	X			X	X			X	X
40. Overland Ave/Pico Blvd	X			X					X			X					X			X	X
43. Highland Ave/3rd St	X	X															X	X			
51. Alvarado St/6th St					X	X							X	X			X	X			
53. Fairfax Ave/Wilshire Blvd	X		X						X		X		X	X			X		X		X
54. La Brea Ave/Wilshire Blvd	X		X						X		X						X		X		X
55. Highland Ave/Wilshire Blvd	X	X															X	X			
67. Fairfax Ave/Olympic Blvd	X	X			X	X			X	X			X	X			X	X			
69. La Brea Ave/Olympic Blvd									X	X			X	X			X	X			
70. Highland Ave/Olympic Blvd													X	X			X	X			
71. Crenshaw Blvd/Olympic Blvd	X	X							X	X			X	X			X	X			
TOTAL	**13**	**7**	**3**	**3**	**8**	**4**	**2**	**2**	**13**	**6**	**4**	**3**	**12**	**8**	**2**	**2**	**21**	**12**	**5**	**4**	**9**

The Project Alternative results in significant impacts at 15 intersections in 2012 and 14 intersections in 2020. Since several intersections are impacted in one year but not in the other, a total of 19 intersections are significantly impacted by the Project Alternative in at least one of the years. **Table 9-2** summarizes the significantly impacted intersections under the Project Alternative during all time periods. The following mitigation measures have been identified at the 19 locations at which the Project Alternative has a significant impact:

- Veteran Avenue/Sunset Boulevard – No feasible mitigation measure is available at this location.
- Bundy Drive/Wilshire Boulevard – Install system loops at three locations on Wilshire Boulevard at Brockton Avenue, Westgate Avenue, and Granville Avenue. The system loop upgrades will improve traffic operations but do not fully mitigate the project's impact at this intersection.
- Barrington Avenue/Wilshire Boulevard – Modify the traffic signal to include a westbound "Protected plus Permitted" phase.
- Beverly Glen Boulevard/Wilshire Boulevard – Widen the northbound curb lane and re-stripe to create a dedicated right-turn lane. Modify intersection signal timing. A conceptual plan of this improvement is provided in **Appendix D.**
- Veteran Avenue/Santa Monica Boulevard – Install 2070 controllers on Veteran Avenue at Massachusetts Avenue and Ohio Avenue. The traffic signal controller upgrades will improve traffic operations but do not fully mitigate the project's impact at this intersection.
- Westwood Boulevard/Santa Monica Boulevard – Re-stripe the southbound approach to add a second left-turn lane. Modify the southbound left-turn signal phasing to "Protected" phasing. A conceptual plan of this improvement is provided in **Appendix D**.
- Overland Avenue/Santa Monica Boulevard – No feasible mitigation measure is available at this location.
- Beverly Glen Boulevard/Santa Monica Boulevard – No feasible mitigation measure is available at this location.
- Bundy Drive/Olympic Boulevard – Re-stripe the southbound approach to add a second left-turn lane. Install additional signal head as required. A conceptual plan of this improvement is provided in **Appendix D**.
- Westwood Boulevard/Olympic Boulevard – Install a 2070 controller at Overland Avenue/Olympic Boulevard. The traffic signal controller upgrade will improve traffic operations but does not fully mitigate the project's impact at this intersection.
- Beverly Glen Boulevard/Olympic Boulevard – Modify the traffic signal to include a northbound "Protected plus Permitted" phase.
- Westwood Boulevard/Pico Boulevard – No feasible mitigation measure is available at this location.
- Fairfax Avenue/Wilshire Boulevard – Install 2070 controllers on 6th Street at Curson Avenue, Hauser Boulevard, Burnside Avenue, Cochran Avenue, Detroit Street, and La Brea Avenue. The traffic signal controller upgrades will improve traffic operations but do not fully mitigate the project's impact at this intersection.
- La Brea Avenue/Wilshire Boulevard – Install system loops on Wilshire Boulevard at Courtyard, Masselin Avenue, Dunsmuir Avenue, Cochran Avenue, Cloverdale, and Detroit Street. The system loop upgrades will improve traffic operations but do not fully mitigate the project's impact at this intersection.
- Highland Avenue/Wilshire Boulevard – Modify the traffic signal to include a westbound "Protected plus Permitted" phase.

- Fairfax Avenue/Olympic Boulevard – Modify the traffic signal phasing to improve efficiency and install ATCS at eight intersections on Olympic Boulevard between Fairfax Avenue and La Brea Avenue.
- La Brea Avenue/Olympic Boulevard – Modify the traffic signal to include an eastbound "Protected plus Permitted" phase.
- Highland Avenue/Olympic Boulevard – Modify the traffic signal to include a westbound "Protected plus Permitted" phase.
- Crenshaw Boulevard/Olympic Boulevard – Install ATCS at six intersections along Olympic Boulevard between La Brea Avenue and Crenshaw Boulevard.

TABLE 9-2: PROJECT ALTERNATIVE SIGNIFICANT IMPACT SUMMARY

Intersection	Year 2012 AM Peak Hour				Year 2012 PM Peak Hour				Year 2020 AM Peak Hour				Year 2020 PM Peak Hour				Overall Results				
	Significant Impact	Fully Mitigated	Partially Mitigated	No Feasible Mitigation	Significant Impact	Fully Mitigated	Partially Mitigated	No Feasible Mitigation	Significant Impact	Fully Mitigated	Partially Mitigated	No Feasible Mitigation	Significant Impact	Fully Mitigated	Partially Mitigated	No Feasible Mitigation	Significant Impact	Fully Mitigated	Partially Mitigated	No Feasible Mitigation	Significant Impact after Mitigation
1. Veteran Ave/Sunset Blvd									X			X					X			X	X
5. Bundy Dr/Wilshire Blvd	X		X		X		X		X		X		X		X		X		X		X
6. Barrington Ave/Wilshire Blvd	X	X							X	X							X	X			
11. Beverly Glen Blvd/Wilshire Blvd	X	X							X	X			X	X			X	X			
21. Veteran Ave/ Santa Monica Blvd					X		X										X		X		X
22. Westwood Blvd/Santa Monica Blvd									X	X							X	X			
23. Overland Ave/Santa Monica Blvd					X			X					X			X	X			X	X
24. Beverly Glen Blvd/Santa Monica Blvd	X	X			X			X									X			X	X
28. Bundy Dr/Olympic Blvd	X	X							X	X			X	X			X	X			
32. Westwood Blvd/Olympic Blvd	X		X														X		X		X
34. Beverly Glen Blvd/Olympic Blvd					X	X							X	X			X	X			
39. Westwood Blvd/Pico Blvd					X			X									X			X	X
53. Fairfax Ave/Wilshire Blvd	X		X						X		X						X		X		X
54. La Brea Ave/Wilshire Blvd	X	X							X		X						X		X		X
55. Highland Ave/Wilshire Blvd	X	X															X	X			
67. Fairfax Ave/Olympic Blvd	X	X			X	X			X	X			X	X			X	X			
69. La Brea Ave/Olympic Blvd									X	X							X	X			
70. Highland Ave/Olympic Blvd													X	X			X	X			
71. Crenshaw Blvd/Olympic Blvd	X	X							X	X			X	X			X	X			
TOTAL	**11**	**8**	**3**	**0**	**7**	**2**	**2**	**3**	**11**	**7**	**3**	**1**	**8**	**6**	**1**	**1**	**19**	**10**	**5**	**4**	**9**

9.1 MITIGATED LEVELS OF SERVICE

9.1.1 PROPOSED PROJECT CONDITIONS

Table 9-3 presents the mitigated year 2012 with Proposed Project intersection operating conditions for the a.m. peak hour at the mitigated intersections.

TABLE 9-3: YEAR 2012 WITH PROPOSED PROJECT
AM PEAK HOUR LOS AT IMPACTED INTERSECTIONS WITH MITIGATION

Intersection	2012 Without Project		Mitigated 2012 With Proposed Project		Change in Delay	Threshold	Significant Impact?	Percent of Impact Mitigated
	Delay (sec)	LOS	Delay (sec)	LOS				
1. Veteran Ave/Sunset Blvd	92.3	F	117.2	F	24.9	2.5	Yes	0%
5. Bundy Dr/Wilshire Blvd	60.3	E	88.0	F	27.7	2.5	Yes	9%
6. Barrington Ave/Wilshire Blvd	38.1	D	38.4	D	0.3	4.0	No	100%
9. Veteran Ave/Wilshire Blvd	236.4	F	146.3	F	-90.1	2.5	No	100%
21. Veteran Ave/ Santa Monica Blvd	20.6	C	18.8	B	-1.8	6.0	No	100%
22. Westwood Blvd/Santa Monica Blvd	122.9	F	121.6	F	-1.3	2.5	No	100%
34. Beverly Glen Blvd/Olympic Blvd	67.2	E	65.7	E	-1.5	2.5	No	100%
37. Sepulveda Blvd/Pico Blvd	53.0	D	55.4	E	2.4	2.5	No	100%
39. Westwood Blvd/Pico Blvd	39.1	D	48.4	D	9.3	4.0	Yes	0%
40. Overland Ave/Pico Blvd	60.1	E	63.6	E	3.5	2.5	Yes	0%
43. Highland Ave/3rd St	69.6	E	47.6	D	-22.0	4.0	No	100%
51. Alvarado St/6th St	17.5	B	21.8	C	4.3	6.0	No	100%
53. Fairfax Ave/Wilshire Blvd	104.0	F	119.3	F	15.3	2.5	Yes	16%
54. La Brea Ave/Wilshire Blvd	37.5	D	43.9	D	6.4	4.0	Yes	51%
55. Highland Ave/Wilshire Blvd	44.2	D	43.4	D	-0.8	4.0	No	100%
67. Fairfax Ave/Olympic Blvd	37.0	D	40.5	D	3.5	4.0	No	100%
71. Crenshaw Blvd/Olympic Blvd	68.5	E	67.8	E	-0.7	2.5	No	100%

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

Table 9-4 presents the mitigated year 2012 with Proposed Project intersection operating conditions for the p.m. peak hour at the mitigated intersections.

TABLE 9-4: YEAR 2012 WITH PROPOSED PROJECT PM PEAK HOUR LOS AT IMPACTED INTERSECTIONS WITH MITIGATION

Intersection	2012 Without Project		Mitigated 2012 With Proposed Project		Change in Delay	Threshold	Significant Impact?	Percent of Impact Mitigated
	Delay (sec)	LOS	Delay (sec)	LOS				
5. Bundy Dr/Wilshire Blvd	77.2	E	106.6	F	29.4	2.5	Yes	9%
6. Barrington Ave/Wilshire Blvd	32.9	C	26.1	C	-6.8	6.0	No	100%
9. Veteran Ave/Wilshire Blvd	114.9	F	74.4	E	-40.5	2.5	No	100%
21. Veteran Ave/ Santa Monica Blvd	61.2	E	65.1	E	3.9	2.5	Yes	64%
22. Westwood Blvd/Santa Monica Blvd	90.7	F	89.8	F	-0.9	2.5	No	100%
23. Overland Ave/Santa Monica Blvd	72.9	E	78.9	E	6.0	2.5	Yes	0%
34. Beverly Glen Blvd/Olympic Blvd	49.0	D	45.5	D	-3.5	4.0	No	100%
37. Sepulveda Blvd/Pico Blvd	65.6	E	56.8	E	-8.8	2.5	No	100%
39. Westwood Blvd/Pico Blvd	70.1	E	73.4	E	3.3	2.5	Yes	0%
43. Highland Ave/3rd St	29.9	C	24.8	C	-5.1	6.0	No	100%
51. Alvarado St/6th St	20.3	C	23.9	C	3.6	6.0	No	100%
53. Fairfax Ave/Wilshire Blvd	151.5	F	148.3	F	-3.2	2.5	No	100%
54. La Brea Ave/Wilshire Blvd	34.8	C	34.3	C	-0.5	4.0	No	100%
55. Highland Ave/Wilshire Blvd	38.6	D	32.2	C	-6.4	6.0	No	100%
67. Fairfax Ave/Olympic Blvd	60.9	E	54.2	E	-6.7	2.5	No	100%
71. Crenshaw Blvd/Olympic Blvd	51.8	D	44.6	D	-7.2	4.0	No	100%

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

As shown in **Tables 9-3 and 9-4**, 10 of the 18 significantly impacted intersections are reduced to a level considered less than significant with implementation of the mitigation measures for year 2012 with Proposed Project conditions.

As also shown in **Tables 9-3 and 9-4**, the project's impact is reduced at the following four significantly impacted intersections during a.m. and/or p.m. peak hour conditions, but not enough to fully mitigate the project's impact:

- Bundy Drive/Wilshire Boulevard;
- Veteran Avenue/Santa Monica Boulevard;
- Fairfax Avenue/Wilshire Boulevard; and
- La Brea Avenue/Wilshire Boulevard.

The following four intersections are also forecast to remain significantly impacted in year 2012 with Proposed Project conditions since no feasible mitigation measure could be identified:

- Veteran Avenue/Sunset Boulevard;
- Overland Avenue/Santa Monica Boulevard;
- Westwood Boulevard/Pico Boulevard; and
- Overland Avenue/Pico Boulevard.

Table 9-5 presents the mitigated year 2020 with Proposed Project intersection operating conditions for the a.m. peak hour at the mitigated intersections.

TABLE 9-5: YEAR 2020 WITH PROPOSED PROJECT AM PEAK HOUR LOS AT IMPACTED INTERSECTIONS WITH MITIGATION

Intersection	2020 Without Project		Mitigated 2020 With Proposed Project		Change in Delay	Threshold	Significant Impact?	Percent of Impact Mitigated
	Delay (sec)	LOS	Delay (sec)	LOS				
1. Veteran Ave/Sunset Blvd	103.4	F	114.0	F	10.6	2.5	Yes	0%
5. Bundy Dr/Wilshire Blvd	63.7	E	94.1	F	30.4	2.5	Yes	8%
6. Barrington Ave/Wilshire Blvd	38.1	D	41.4	D	3.3	4.0	No	100%
9. Veteran Ave/Wilshire Blvd	243.7	F	114.8	F	-128.9	2.5	No	100%
21. Veteran Ave/ Santa Monica Blvd	21.7	C	19.0	B	-2.7	6.0	No	100%
22. Westwood Blvd/Santa Monica Blvd	122.2	F	120.8	F	-1.4	2.5	No	100%
32. Westwood Blvd/Olympic Blvd	41.3	D	49.6	D	8.3	4.0	Yes	37%
34. Beverly Glen Blvd/Olympic Blvd	69.0	E	69.9	E	0.9	2.5	No	100%
37. Sepulveda Blvd/Pico Blvd	54.4	D	55.6	E	1.2	2.5	No	100%
39. Westwood Blvd/Pico Blvd	39.6	D	45.6	D	6.0	4.0	Yes	0%
40. Overland Ave/Pico Blvd	62.8	E	68.2	E	5.4	2.5	Yes	0%
51. Alvarado St/6th St	18.6	B	23.1	C	4.5	6.0	No	100%
53. Fairfax Ave/Wilshire Blvd	111.2	F	125.6	F	14.4	2.5	Yes	17%
54. La Brea Ave/Wilshire Blvd	39.0	D	46.7	D	7.7	4.0	Yes	40%
67. Fairfax Ave/Olympic Blvd	35.0	D	37.5	D	2.5	4.0	No	100%
69. La Brea Ave/Olympic Blvd	53.7	D	43.4	D	-10.3	2.5	No	100%
70. Highland Ave/Olympic Blvd	50.7	D	33.2	C	-17.5	6.0	No	100%
71. Crenshaw Blvd/Olympic Blvd	73.5	E	71.2	E	-2.3	2.5	No	100%

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

Table 9-6 presents the mitigated year 2020 with Proposed Project intersection operating conditions for the p.m. peak hour at the mitigated intersections.

TABLE 9-6: YEAR 2020 WITH PROPOSED PROJECT PM PEAK HOUR LOS AT IMPACTED INTERSECTIONS WITH MITIGATION

Intersection	2020 Without Project		Mitigated 2020 With Proposed Project		Change in Delay	Threshold	Significant Impact?	Percent of Impact Mitigated
	Delay (sec)	LOS	Delay (sec)	LOS				
5. Bundy Dr/Wilshire Blvd	80.4	F	110.6	F	30.2	2.5	Yes	8%
6. Barrington Ave/Wilshire Blvd	33.8	C	27.2	C	-6.6	6.0	No	100%
9. Veteran Ave/Wilshire Blvd	126.6	F	73.5	E	-53.1	2.5	No	100%
21. Veteran Ave/ Santa Monica Blvd	63.5	E	66.2	E	2.7	2.5	Yes	93%
22. Westwood Blvd/Santa Monica Blvd	91.3	F	53.8	D	-37.5	2.5	No	100%
23. Overland Ave/Santa Monica Blvd	78.9	E	86.0	F	7.1	2.5	Yes	0%
32. Westwood Blvd/Olympic Blvd	47.2	D	47.5	D	0.3	4.0	No	100%
34. Beverly Glen Blvd/Olympic Blvd	54.7	D	48.5	D	-6.2	4.0	No	100%
37. Sepulveda Blvd/Pico Blvd	73.8	E	62.4	E	-11.4	2.5	No	100%
39. Westwood Blvd/Pico Blvd	77.3	E	80.6	F	3.3	2.5	Yes	0%
51. Alvarado St/6th St	21.9	C	25.8	C	3.9	6.0	No	100%
53. Fairfax Ave/Wilshire Blvd	158.4	F	160.7	F	2.3	2.5	No	100%
54. La Brea Ave/Wilshire Blvd	40.7	D	38.7	D	-2.0	4.0	No	100%
67. Fairfax Ave/Olympic Blvd	67.4	E	64.2	E	-3.2	2.5	No	100%
69. La Brea Ave/Olympic Blvd	79.5	E	60.0	E	-19.5	2.5	No	100%
70. Highland Ave/Olympic Blvd	67.1	E	40.9	D	-26.2	4.0	No	100%
71. Crenshaw Blvd/Olympic Blvd	57.2	E	59.1	E	1.9	2.5	No	100%

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

As shown in **Tables 9-5 and 9-6**, 10 of the 19 significantly impacted intersections are reduced to a level considered less than significant with implementation of the mitigation measures for year 2020 with Proposed Project conditions.

As also shown in **Tables 9-5 and 9-6**, the project's impact is reduced at the following five significantly impacted intersections during a.m. and/or p.m. peak hour conditions, but not enough to fully mitigate the project's impact:

- Bundy Drive/Wilshire Boulevard;
- Veteran Avenue/Santa Monica Boulevard;
- Westwood Boulevard/Olympic Boulevard;
- Fairfax Avenue/Wilshire Boulevard; and
- La Brea Avenue/Wilshire Boulevard.

The following four intersections are forecast to remain significantly impacted in year 2020 with Proposed Project conditions since no feasible mitigation measure could be identified:

- Veteran Avenue/Sunset Boulevard;
- Overland Avenue/Santa Monica Boulevard;
- Westwood Boulevard/Pico Boulevard; and
- Overland Avenue/Pico Boulevard;

The following nine intersections are forecast to remain significantly impacted in either year 2012 or year 2020 with Proposed Project conditions since no feasible mitigation measure could be identified:

- Veteran Avenue/Sunset Boulevard;
- Bundy Drive/Wilshire Boulevard (partial mitigation measure);
- Veteran Avenue/Santa Monica Boulevard (partial mitigation measure);
- Overland Avenue/Santa Monica Boulevard;
- Westwood Boulevard/Olympic Boulevard (partial mitigation measure);
- Westwood Boulevard/Pico Boulevard;
- Overland Avenue/Pico Boulevard;
- Fairfax Avenue/Wilshire Boulevard (partial mitigation measure); and
- La Brea Avenue/Wilshire Boulevard (partial mitigation measure).

9.1.2 PROJECT ALTERNATIVE CONDITIONS

Table 9-7 presents the mitigated year 2012 with Project Alternative intersection operating conditions for the a.m. peak hour at the mitigated intersections.

TABLE 9-7: YEAR 2012 WITH PROJECT ALTERNATIVE AM PEAK HOUR LOS AT IMPACTED INTERSECTIONS WITH MITIGATION

Intersection	2012 Without Project		Mitigated 2012 With Project Alternative		Change in Delay	Threshold	Significant Impact?	Percent of Impact Mitigated
	Delay (sec)	LOS	Delay (sec)	LOS				
5. Bundy Dr/Wilshire Blvd	60.3	E	94.4	F	34.1	2.5	Yes	7%
6. Barrington Ave/Wilshire Blvd	38.1	D	41.9	D	3.8	4.0	No	100%
11. Beverly Glen Blvd/Wilshire Blvd	34.5	C	38.1	D	3.6	4.0	No	100%
21. Veteran Ave/ Santa Monica Blvd	20.6	C	19.2	B	-1.4	6.0	No	100%
28. Bundy Drive/Olympic Blvd	99.5	F	88.2	F	-11.3	2.5	No	100%
32. Westwood Blvd/Olympic Blvd	38.7	D	44.4	D	5.7	4.0	Yes	60%
34. Beverly Glen Blvd/Olympic Blvd	67.2	E	66.4	E	-0.8	2.5	No	100%
53. Fairfax Ave/Wilshire Blvd	104.0	F	116.7	F	12.7	2.5	Yes	20%
54. La Brea Ave/Wilshire Blvd	37.5	D	39.2	D	1.7	4.0	No	100%
55. Highland Ave/Wilshire Blvd	44.2	D	39.9	D	-4.3	4.0	No	100%
67. Fairfax Ave/Olympic Blvd	37.0	D	39.4	D	2.4	4.0	No	100%
71. Crenshaw Blvd/Olympic Blvd	68.5	E	63.8	E	-4.7	2.5	No	100%

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

Table 9-8 presents the mitigated year 2012 with Project Alternative intersection operating conditions for the p.m. peak hour at the mitigated intersections.

TABLE 9-8: YEAR 2012 WITH PROJECT ALTERNATIVE PM PEAK HOUR LOS AT IMPACTED INTERSECTIONS WITH MITIGATION

Intersection	2012 Without Project		Mitigated 2012 With Project Alternative		Change in Delay	Threshold	Significant Impact?	Percent of Impact Mitigated
	Delay (sec)	LOS	Delay (sec)	LOS				
5. Bundy Dr/Wilshire Blvd	77.2	E	101.4	F	24.2	2.5	Yes	10%
6. Barrington Ave/Wilshire Blvd	32.9	C	27.0	C	-5.9	6.0	No	100%
11. Beverly Glen Blvd/Wilshire Blvd	38.1	D	39.5	D	1.4	4.0	No	100%
21. Veteran Ave/ Santa Monica Blvd	61.2	E	64.9	E	3.7	2.5	Yes	68%
23. Overland Ave/Santa Monica Blvd	72.9	E	80.8	F	7.9	2.5	Yes	0%
28. Bundy Drive/Olympic Blvd	73.3	E	69.2	E	-4.1	2.5	No	100%
32. Westwood Blvd/Olympic Blvd	44.6	D	42.3	D	-2.4	4.0	No	100%
34. Beverly Glen Blvd/Olympic Blvd	49.0	D	47.5	D	-1.5	4.0	No	100%
39. Westwood Blvd/Pico Blvd	70.1	E	74.6	E	4.5	2.5	Yes	0%
53. Fairfax Ave/Wilshire Blvd	151.5	F	146.2	F	-5.3	2.5	No	100%
54. La Brea Ave/Wilshire Blvd	34.8	C	34.5	C	-0.3	4.0	No	100%
55. Highland Ave/Wilshire Blvd	38.6	D	36.3	D	-2.3	4.0	No	100%
67. Fairfax Ave/Olympic Blvd	60.9	E	56.7	E	-4.2	2.5	No	100%
71. Crenshaw Blvd/Olympic Blvd	51.8	D	39.4	D	-12.4	4.0	No	100%

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

As shown in **Tables 9-7 and 9-8**, 8 of the 15 significantly impacted intersections are reduced to a level considered less than significant with implementation of the mitigation measures for year 2012 with Project Alternative conditions.

As also shown in **Tables 9-7 and 9-8**, the project's impact is reduced at the following four significantly impacted intersections during a.m. and/or p.m. peak hour conditions, but not enough to fully mitigate the project's impact:

- Bundy Drive/Wilshire Boulevard;
- Veteran Avenue/Santa Monica Boulevard;
- Westwood Boulevard/Olympic Boulevard; and
- Fairfax Avenue/Wilshire Boulevard.

The following three intersections are forecast to remain significantly impacted in year 2012 with Project Alternative conditions since no feasible mitigation measure could be identified:

- Overland Avenue/Santa Monica Boulevard;
- Beverly Glen Boulevard/Santa Monica Boulevard; and
- Westwood Boulevard/Pico Boulevard.

Table 9-9 presents the mitigated year 2020 with Project Alternative intersection operating conditions for the a.m. peak hour at the mitigated intersections.

TABLE 9-9: YEAR 2020 WITH PROJECT ALTERNATIVE AM PEAK HOUR LOS AT IMPACTED INTERSECTIONS WITH MITIGATION

Intersection	2020 Without Project		Mitigated 2020 With Project Alternative		Change in Delay	Threshold	Significant Impact?	Percent of Impact Mitigated
	Delay (sec)	LOS	Delay (sec)	LOS				
1. Veteran Ave/Sunset Blvd	103.4	F	107.0	F	3.6	2.5	Yes	0%
5. Bundy Dr/Wilshire Blvd	63.7	E	101.1	F	37.4	2.5	Yes	7%
6. Barrington Ave/Wilshire Blvd	38.1	D	40.3	D	2.2	4.0	No	100%
11. Beverly Glen Blvd/Wilshire Blvd	36.1	D	39.9	D	3.8	4.0	No	100%
22. Westwood Blvd/Santa Monica Blvd	122.2	F	118.1	F	-4.1	2.5	No	100%
28. Bundy Dr/Olympic Blvd	100.3	F	90.1	F	-10.2	2.5	No	100%
34. Beverly Glen Blvd/Olympic Blvd	69.0	E	71.1	E	2.1	2.5	No	100%
53. Fairfax Ave/Wilshire Blvd	111.2	F	127.5	F	16.3	2.5	Yes	15%
54. La Brea Ave/Wilshire Blvd	39.0	D	48.3	D	9.3	4.0	Yes	32%
67. Fairfax Ave/Olympic Blvd	35.0	D	37.8	D	2.8	4.0	No	100%
69. La Brea Ave/Olympic Blvd	53.7	D	42.7	D	-11.0	2.5	No	100%
70. Highland Ave/Olympic Blvd	50.7	D	33.5	C	-17.2	6.0	No	100%
71. Crenshaw Blvd/Olympic Blvd	73.5	E	71.8	E	-1.7	2.5	No	100%

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

Table 9-10 presents the mitigated year 2020 with Project Alternative intersection operating conditions for the p.m. peak hour at the mitigated intersections.

TABLE 9-10: YEAR 2020 WITH PROJECT ALTERNATIVE PM PEAK HOUR LOS AT IMPACTED INTERSECTIONS WITH MITIGATION

Intersection	2020 Without Project		Mitigated 2020 With Project Alternative		Change in Delay	Threshold	Significant Impact?	Percent of Impact Mitigated
	Delay (sec)	LOS	Delay (sec)	LOS				
5. Bundy Dr/Wilshire Blvd	80.4	F	114.9	F	34.5	2.5	Yes	7%
6. Barrington Ave/Wilshire Blvd	33.8	C	27.8	C	-6.0	6.0	No	100%
11. Beverly Glen Blvd/Wilshire Blvd	39.4	D	42.3	D	2.9	4.0	No	100%
22. Westwood Blvd/Santa Monica Blvd	91.3	F	89.6	F	-1.7	2.5	No	100%
23. Overland Ave/Santa Monica Blvd	78.9	E	86.2	F	7.3	2.5	Yes	0%
28. Bundy Dr/Olympic Blvd	77.9	E	73.5	E	-4.4	2.5	No	100%
34. Beverly Glen Blvd/Olympic Blvd	54.7	D	50.8	D	-3.9	4.0	No	100%
53. Fairfax Ave/Wilshire Blvd	158.4	F	156.6	F	-1.8	2.5	No	100%
54. La Brea Ave/Wilshire Blvd	40.7	D	38.4	D	-2.3	4.0	No	100%
67. Fairfax Ave/Olympic Blvd	67.4	E	61.4	E	-6.0	2.5	No	100%
69. La Brea Ave/Olympic Blvd	79.5	E	55.3	E	-24.2	2.5	No	100%
70. Highland Ave/Olympic Blvd	67.1	E	44.5	D	-22.6	4.0	No	100%
71. Crenshaw Blvd/Olympic Blvd	57.2	E	53.0	D	-4.2	2.5	No	100%

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

As shown in **Tables 9-9 and 9-10**, 9 of the 14 significantly impacted intersections are reduced to a level considered less than significant with implementation of the mitigation measures for year 2020 with Project Alternative conditions.

As also shown in **Tables 9-9 and 9-10**, the project's impact is reduced at following three significantly impacted intersections during a.m. and/or p.m. peak hour conditions, but not enough to fully mitigate the project's impact:

- Bundy Drive/Wilshire Boulevard;
- Fairfax Avenue/Wilshire Boulevard; and
- La Brea Avenue/Wilshire Boulevard.

The following two intersections are forecast to remain significantly impacted in year 2020 with Project Alternative conditions since no feasible mitigation measure that could be identified:

- Veteran Avenue/Sunset Boulevard; and
- Overland Avenue/Santa Monica Boulevard.

The following nine intersections are forecast to remain significantly impacted in either year 2012 or year 2020 with Project Alternative conditions since no feasible mitigation measure could be identified:

- Veteran Avenue/Sunset Boulevard;
- Bundy Drive/Wilshire Boulevard (partial mitigation measure);
- Veteran Avenue/Santa Monica Boulevard (partial mitigation measure);
- Overland Avenue/Santa Monica Boulevard;
- Beverly Glen Boulevard/Santa Monica Boulevard;
- Westwood Boulevard/Olympic Boulevard (partial mitigation measure);
- Westwood Boulevard/Pico Boulevard;
- Fairfax Avenue/Wilshire Boulevard (partial mitigation measure); and
- La Brea Avenue/Wilshire Boulevard (partial mitigation measure).

10.0 LOCAL RESIDENTIAL STREET ANALYSIS

This section discusses potential impacts to local residential streets along the Wilshire corridor caused by possible traffic diversion during bus lane operations. In the western part of the study area, the following three local residential streets run parallel and are adjacent to Wilshire Boulevard:

- Goshen Avenue between Bundy Drive and San Vicente Boulevard;
- Lindbrook Drive between Malcolm Avenue and Comstock Avenue; and
- Ashton Avenue between Malcolm Avenue and Comstock Avenue.

Texas Avenue also runs parallel to Wilshire Boulevard, but is designated as a collector road and therefore not subject to a local residential street analysis.

In the eastern part of the study area, 6th, 7th, and 8th Streets run parallel and are adjacent to Wilshire Boulevard. However, these streets are designated as either collector or secondary roads between Fairfax Avenue and Lucas Avenue, and therefore not subject to a local residential street analysis.

Under Proposed Project conditions and Project Alternative conditions, study intersections on Wilshire Boulevard in the vicinity of Lindbrook Drive and Ashton Avenue operate at LOS D or better in 2012 and 2020. Therefore, it is not expected that a significant amount of traffic would divert from Wilshire Boulevard to these local residential streets. In the vicinity of Goshen Avenue, the Bundy Drive/Wilshire Boulevard and Federal Avenue-San Vicente Boulevard/Wilshire Boulevard intersections are projected to operate at LOS E or F in 2012 and 2020. However, traffic diversion onto Goshen Avenue is unlikely since Goshen Avenue runs for only a short distance, eastbound left-turn movements from Wilshire Boulevard to Bundy Drive are relatively high-delay movements during peak hours, and northbound left-turn movements from San Vicente Boulevard to Goshen Avenue are prohibited. Therefore, no significant impacts to local residential streets are expected.

11.0 CURB LANE ACCESS ISSUES

11.1 PASSENGER AND COMMERCIAL LOADING FOR BUILDINGS FRONTING WILSHIRE BOULEVARD

Outside of peak hours, when the bus lanes are not in operation, neither the Proposed Project nor the Project Alternative will result in a change to loading areas for residential or commercial properties on Wilshire Boulevard. In locations where parking or stopping is currently allowed, parking and stopping will continue to be allowed under both the Proposed Project and the Project Alternative, with the exception of the approximately 11 parking spaces that will be eliminated between Fairfax Avenue and Valencia Street, as described in Section 14.

During peak hours, when the bus lanes are in operation, there will also be no modification to loading areas available for buildings along most of the corridor under either alternative, with the exception being the segment with "jut-outs" between Malcolm Avenue and Comstock Avenue under the Proposed Project. Outside of the jut-out area, the curb lane is generally marked as "No Stopping" during peak hours. With the implementation of the bus lane, the curb lane will effectively remain "No Stopping" for private vehicles, so there will be no change.

In the jut-out area, under current conditions, vehicles are allowed to stop and/or park in the curb lane during peak hours. Under the Proposed Project, the curb lane will be used as a bus lane during peak hours, and vehicles will no longer be able to stop or park during those hours. Thus, passenger and business loading will be prohibited from the curb lane during peak hours. The majority of the buildings in this area have on-site semi-circular driveways or porte-cochères that can be used for passenger vehicles, taxis, or small deliveries. Large moving vans that cannot be accommodated on-site will have to arrange loading and unloading during off-peak hours, as is done elsewhere in the City where on-street peak-period parking is prohibited.

Under the Proposed Project, schools and day-care facilities in the jut-out area that may currently utilize the public right-of-way for vehicular queuing will have to accommodate queuing for student drop-off and pick-up on-site. The City generally does not permit such facilities to use the public rights-of-way for queuing and has required numerous schools to develop transportation plans incorporating such elements as assigned drop-off/pick-up times for students, limitations on vehicular trips, and school staff assistance to parents in facilitating loading and unloading to minimize vehicle dwell time.

Under the Proposed Project, access to the Belmont Village assisted living facility will not be affected during peak hours, as there is currently a jut-out along its entire frontage, so no stopping is currently permitted in front of the buildings during peak hours. During off-peak hours, stopping and parking could be permitted in front of this facility, since the jut-out would be removed. Currently, stopping is not permitted from 7 a.m. to 7 p.m. This recently constructed building also has underground parking and vehicular access.

Under the Project Alternative, in the jut-out area, vehicles will continue to be allowed to stop and/or park in the curb lane during peak hours. Under this alternative, there will be no change to loading areas available to buildings in the jut-out area.

11.2 EMERGENCY ACCESS

Emergency vehicles will be permitted to use the bus lanes when they are in operation. Because these lanes will be free of most other vehicular traffic, emergency response time will be no worse than under current conditions, and will likely be improved.

11.3 RIGHT-TURNS TO/FROM WILSHIRE BOULEVARD

California Vehicle Code Section 22100(a) requires, "Both the approach for a right-hand turn and a right-hand turn shall be made as close as practicable to the right-hand curb or edge of the roadway." Thus, right-turning vehicles both onto and off of Wilshire Boulevard will be expected to use the curb (bus) lane during peak hours when the bus lanes are in operation. Vehicles other than buses must transition to the adjacent, non-bus lane, within a reasonable distance. Drivers turning onto Wilshire Boulevard will be expected to wait to begin their turning maneuver until a reasonable gap is available in the first travel lane next to the bus lane.

12.0 PARKING

There are currently a total of 218 metered parking spaces on Wilshire Boulevard between Fairfax Avenue and Western Avenue, a distance of approximately three miles. Under both the Proposed Project and the Project Alternative, approximately 11 parking spaces within this area would be removed to accommodate larger or relocated bus stops. The removed parking spaces would be spread throughout this segment of the project, with no more than three spaces being removed on any single block. The removed parking spaces would have a small effect on parking supply during off-peak hours. During peak periods, parking is prohibited under current conditions, so the removal of these parking spaces would not affect parking supply at all.

Under the Proposed Project, parking in approximately 85 existing on-street parking spaces between Selby Avenue and Comstock Avenue would be prohibited during peak hours, 53 on the north side of the street and 32 on the south side. Of these spaces, 36 are currently restricted to 2-hour parking between 8 a.m. and 6 p.m., and 49 (35 on the north side and 14 on the south side) are not restricted. (An inventory of the parking spaces on Wilshire Boulevard in this area is included in **Appendix E**). Parking supply during off-peak hours would not be reduced and, in fact, would likely be increased under the Proposed Project because the removal of the jut-outs would create room for additional on-street parking in the curb lanes.

In this area, there are three preferential parking districts bordering Wilshire Boulevard, Districts 4, 6, and 11 (A figure is provided in **Appendix E**). Preferential Parking District 4 borders Wilshire Boulevard and covers a residential area south of Wilshire Boulevard between Malcolm Avenue and Manning Avenue. Preferential Parking District 6 borders Wilshire Boulevard and covers a residential area south of

Wilshire Boulevard between Beverly Glen Boulevard and Club View Drive. Preferential Parking District 11 borders Wilshire Boulevard and covers a residential area north of Wilshire Boulevard between Malcolm Avenue and Beverly Glen Boulevard. Residents within these parking districts, including those living on the side of Wilshire Boulevard within the district, are eligible to receive guest permits for their visitors. Therefore, guests of residents within these districts would be able to park on any street within their district.

Residences south of Wilshire Boulevard between Manning Avenue and Beverly Glen Boulevard are not included in a preferential parking district. Residents of these buildings are not eligible to park in adjacent preferential districts. This segment includes 51 spaces (on both sides of the street) at which parking would be prohibited during peak hours under the Proposed Project. On February 2, 2010 an on-street parking occupancy count was collected along this segment during a.m. and p.m. peak periods. The results of the count indicate that a maximum of 35 vehicles occupied parking spaces during the a.m. peak period and a maximum of 34 vehicles occupied parking spaces during the p.m. peak period. Guests of residents in this area would have to use off-street visitor parking spaces during peak periods.

Additionally, residences north of Wilshire Boulevard between Beverly Glen Boulevard and Comstock Avenue are not included in a preferential parking district. Residents of these buildings are not eligible to park in adjacent preferential districts. This segment includes 27 spaces (on both sides of the street) at which parking would be prohibited during peak periods under the Proposed Project. Results of the parking occupancy count on this segment indicate that a maximum of 26 vehicles occupied parking spaces during the a.m. peak period and a maximum of 16 vehicles occupied parking spaces during the p.m. peak period. Guests of residents in this area would have to use off-street visitor parking spaces during peak periods.

As a result of the peak hour parking restrictions under the Proposed Project, guests of certain residents may be required to either park in spaces on adjacent streets within a preferential parking district or use off-street visitor parking spaces. CEQA, however, does not require an analysis of parking adequacy as part of a project's environmental review process. A project's potential impact on parking supply is considered a *social* impact, and an EIR needs to only address the *secondary physical impacts* that could be triggered by a social impact (CEQA Guidelines, section 15131(a)). In other words, the social inconvenience of having to search for parking spaces is not an environmental impact; however, the secondary effect of a lack of parking on traffic and air quality may result in an environmental impact under CEQA.

In this case, the potential secondary effects of searching for parking spaces that may result from the Proposed Project are too speculative to determine. First, an adequate supply of guest parking for those who can no longer park on Wilshire Boulevard in residential areas may be available on adjacent streets within a preferential parking district or in off-street parking lots of residential buildings. If such parking is available, air quality or traffic impacts associated with guest vehicles would be negligible. Even if such parking is not readily available when the Proposed Project is implemented, drivers would likely, in time, adjust their driving routes to find available parking, and the amount of resulting air pollution or traffic congestion associated with vehicles searching for scarce parking spaces is likely to be short-term and minimal. Further, if parking is not available, guests may choose to take public transportation instead of private vehicles, thus reducing air quality or traffic impacts associated with these vehicles. Regardless, it is impossible to determine with reasonable certainty whether secondary physical effects, if any, may

result from the Proposed Project. Therefore, the removal or restriction of parking spaces on Wilshire Boulevard would not result in significant impacts on the environment.

Under the Project Alternative, parking supply would be unchanged between Selby Avenue and Comstock Avenue.

13.0 BUS LANE ENFORCEMENT

The success of bus lanes in other cities has been heavily dependent on enforcement to prevent automobiles from using the bus lanes and blocking bus traffic. Thus, both passive and active enforcement measures will be required so that the bus lanes can meet their goals of improving transit reliability and increasing transit ridership.

Passive enforcement measures will include signage and pavement markings to educate and guide drivers regarding the proper use of the bus lanes and the penalties for violations. Signage could consist of fixed signs providing information about the bus lane restrictions and hours of operation, or it could include changeable message signs that would be activated during peak hours to provide a more visible notification to drivers.

Active enforcement measures could include aggressive police enforcement during the first months of implementation of the bus lanes to change driver behavior and warn or cite violators. On-going police enforcement will also be required after the initial months.

Less labor intensive, technological solutions could also be developed that would assist with enforcement, although no "off-the-shelf" enforcement tools currently exist. The most promising tool would be a technology similar to red light enforcement cameras that would detect vehicles other than buses traveling through an intersection in the right lane, take a photograph, and transmit it to a processing center for issuance of a citation to the driver. The currently missing step in this technology is a means to classify vehicle types in real time; this could be achieve either through a video detection algorithm or through radio transmission of an identifying signal by authorized vehicles (buses). Under current state law, such photo enforcement could likely only be used to provide a warning to violators. State authorization would most likely be required to permit a local jurisdiction to implement such an enforcement system.

14.0 "OPENING DAY" ANALYSIS

An "opening day" scenario was performed for the Wilshire BRT project in which the bus lanes are implemented in 2012 and there is no change in automobile traffic patterns. Prior to the actual implementation of the project, there will be a period of public notification about the project and education about the rules of operation. Portions of the curb lane of Wilshire Boulevard will be repaved, and the mitigation measures identified in this study will be implemented. Since all of these items will in fact occur prior to the implementation of the project, the traveling public will be able to adjust travel patterns in anticipation. In the first weeks after project implementation, drivers will continue to adjust their travel routes, times, and modes in response to observed traffic conditions, just as they do during any event that changes roadway capacity. Drivers will continue to shift their behavior gradually until a

new equilibrium is reached across alternative travel routes and modes, likely after a period of a few months.

The year 2012 transportation network assumed in the "opening day" scenario is the same as that for the other year 2012 analyses.

Since this scenario by definition assumes that there will be no traffic diversion to other corridors, it produces no potential for increased delays at intersections other than those on Wilshire Boulevard itself. Therefore, the intersections analyzed for this scenario are limited to the 17 study intersections on Wilshire Boulevard.

Analysis of this scenario is not required under the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA). Results of this analysis do not constitute project impacts because this scenario is not a realistic assessment of traffic conditions with implementation of the project, nor would "impacts" on a single day (or even during a short transition period) constitute significant impacts under the requirements of either of these laws.

14.1 Year 2012 "Opening Day" With Proposed Project Levels of Service

A level of service analysis of Wilshire Boulevard intersections was conducted to evaluate year 2012 "opening day" with Proposed Project intersection operations. Detailed level of service calculations can be found in **Appendix B**. **Table 14-1** presents the year 2012 "opening day" with Proposed Project intersection operating conditions during the a.m. peak hour at the 17 study intersections along Wilshire Boulevard.

TABLE 14-1: YEAR 2012 "OPENING DAY" WITH PROPOSED PROJECT AM PEAK HOUR INTERSECTION LOS

Intersection	2012 Without Project		2012 "Opening Day" With Proposed Project		Decrease in LOS
	Delay (sec)	LOS	Delay (sec)	LOS	
4. Centinela Ave/Wilshire Blvd	8.0	A	10.0	A	No
5. Bundy Dr/Wilshire Blvd	60.3	E	96.2	F	Yes
6. Barrington Ave/Wilshire Blvd	38.1	D	55.5	E	Yes
7. Federal Ave/Wilshire Blvd	67.8	E	62.2	E	No
8. Sepulveda Blvd/Wilshire Blvd	207.8	F	208.0	F	No
9. Veteran Ave/Wilshire Blvd	236.4	F	351.3	F	No
10. Westwood Blvd/Wilshire Blvd	66.8	E	122.4	F	Yes
11. Beverly Glen Blvd/Wilshire Blvd	34.5	C	31.6	C	No
12. Comstock Ave/Wilshire Blvd	20.6	C	29.0	C	No
52. San Vicente Blvd/Wilshire Blvd	76.2	E	115.4	F	Yes
53. Fairfax Ave/Wilshire Blvd	104.0	F	166.4	F	No
54. La Brea Ave/Wilshire Blvd	37.5	D	86.7	F	Yes
55. Highland Ave/Wilshire Blvd	44.2	D	100.6	F	Yes
56. Crenshaw Blvd/Wilshire Blvd	31.9	C	35.2	D	Yes
57. Western Ave/Wilshire Blvd	51.0	D	136.6	F	Yes
58. Vermont Ave/Wilshire Blvd	60.1	E	135.1	F	Yes
59. Alvarado St/Wilshire Blvd	23.0	C	95.1	F	Yes

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

Table 14-2 presents the year 2012 "opening day" with Proposed Project intersection operating conditions during the p.m. peak hour at the 17 study intersections along Wilshire Boulevard.

TABLE 14-2: YEAR 2012 "OPENING DAY" WITH PROPOSED PROJECT PM PEAK HOUR INTERSECTION LOS

Intersection	2012 Without Project		2012 "Opening Day" With Proposed Project		Decrease in LOS
	Delay (sec)	LOS	Delay (sec)	LOS	
4. Centinela Ave/Wilshire Blvd	8.3	A	8.2	A	No
5. Bundy Dr/Wilshire Blvd	77.2	E	90.9	F	Yes
6. Barrington Ave/Wilshire Blvd	32.9	C	74.4	E	Yes
7. Federal Ave/Wilshire Blvd	49.9	D	49.7	D	No
8. Sepulveda Blvd/Wilshire Blvd	111.5	F	111.5	F	No
9. Veteran Ave/Wilshire Blvd	114.9	F	218.2	F	No
10. Westwood Blvd/Wilshire Blvd	62.7	E	84.1	F	Yes
11. Beverly Glen Blvd/Wilshire Blvd	38.1	D	34.5	C	No
12. Comstock Ave/Wilshire Blvd	25.7	C	31.5	C	No
52. San Vicente Blvd/Wilshire Blvd	116.6	F	131.3	F	No
53. Fairfax Ave/Wilshire Blvd	151.5	F	209.8	F	No
54. La Brea Ave/Wilshire Blvd	34.8	C	65.3	E	Yes
55. Highland Ave/Wilshire Blvd	38.6	D	60.0	E	Yes
56. Crenshaw Blvd/Wilshire Blvd	21.5	C	25.2	C	No
57. Western Ave/Wilshire Blvd	100.0	F	161.1	F	No
58. Vermont Ave/Wilshire Blvd	65.8	E	129.4	F	Yes
59. Alvarado St/Wilshire Blvd	30.4	C	120.5	F	Yes

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

14.2 YEAR 2012 "OPENING DAY" WITH PROJECT ALTERNATIVE LEVELS OF SERVICE

A level of service analysis of Wilshire Boulevard intersections was conducted to evaluate year 2012 "opening day" with Project Alternative intersection operations. Detailed level of service calculations can be found in **Appendix B**. **Table 14-3** presents the year 2012 "opening day" with Project Alternative intersection operating conditions during the a.m. peak hour at the 17 study intersections along Wilshire Boulevard.

TABLE 14-3: YEAR 2012 "OPENING DAY" WITH PROJECT ALTERNATIVE AM PEAK HOUR INTERSECTION LOS

Intersection	2012 Without Project		2012 "Opening Day" With Project Alternative		Decrease in LOS
	Delay (sec)	LOS	Delay (sec)	LOS	
4. Centinela Ave/Wilshire Blvd	8.0	A	10.0	B	Yes
5. Bundy Dr/Wilshire Blvd	60.3	E	156.5	F	Yes
6. Barrington Ave/Wilshire Blvd	38.1	D	55.5	E	Yes
7. Federal Ave/Wilshire Blvd	67.8	E	61.6	E	No
8. Sepulveda Blvd/Wilshire Blvd	207.8	F	208.0	F	No
9. Veteran Ave/Wilshire Blvd	236.4	F	236.6	F	No
10. Westwood Blvd/Wilshire Blvd	66.8	E	122.4	F	Yes
11. Beverly Glen Blvd/Wilshire Blvd	34.5	C	126.9	F	Yes
12. Comstock Ave/Wilshire Blvd	20.6	C	25.4	C	No
52. San Vicente Blvd/Wilshire Blvd	76.2	E	115.4	F	Yes
53. Fairfax Ave/Wilshire Blvd	104.0	F	166.4	F	No
54. La Brea Ave/Wilshire Blvd	37.5	D	86.7	F	Yes
55. Highland Ave/Wilshire Blvd	44.2	D	100.6	F	Yes
56. Crenshaw Blvd/Wilshire Blvd	31.9	C	35.2	D	Yes
57. Western Ave/Wilshire Blvd	51.0	D	136.6	F	Yes
58. Vermont Ave/Wilshire Blvd	60.1	E	136.3	F	Yes
59. Alvarado St/Wilshire Blvd	23.0	C	23.1	C	No

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

Table 14-4 presents the year 2012 "opening day" with Project Alternative intersection operating conditions during the p.m. peak hour at the 17 study intersections along Wilshire Boulevard.

TABLE 14-4: YEAR 2012 "OPENING DAY" WITH PROJECT ALTERNATIVE PM PEAK HOUR INTERSECTION LOS

Intersection	2012 Without Project		2012 "Opening Day" With Project Alternative		Decrease in LOS
	Delay (sec)	LOS	Delay (sec)	LOS	
4. Centinela Ave/Wilshire Blvd	8.3	A	8.2	A	No
5. Bundy Dr/Wilshire Blvd	77.2	E	163.2	F	Yes
6. Barrington Ave/Wilshire Blvd	32.9	C	74.4	E	Yes
7. Federal Ave/Wilshire Blvd	49.9	D	49.2	D	No
8. Sepulveda Blvd/Wilshire Blvd	111.5	F	111.6	F	No
9. Veteran Ave/Wilshire Blvd	114.9	F	114.3	F	No
10. Westwood Blvd/Wilshire Blvd	62.7	E	84.1	F	Yes
11. Beverly Glen Blvd/Wilshire Blvd	38.1	D	119.7	F	Yes
12. Comstock Ave/Wilshire Blvd	25.7	C	29.5	C	No
52. San Vicente Blvd/Wilshire Blvd	116.6	F	131.3	F	No
53. Fairfax Ave/Wilshire Blvd	151.5	F	209.8	F	No
54. La Brea Ave/Wilshire Blvd	34.8	C	65.3	E	Yes
55. Highland Ave/Wilshire Blvd	38.6	D	60.0	E	Yes
56. Crenshaw Blvd/Wilshire Blvd	21.5	C	25.2	C	No
57. Western Ave/Wilshire Blvd	100.0	F	161.1	F	No
58. Vermont Ave/Wilshire Blvd	65.8	E	130.9	F	Yes
59. Alvarado St/Wilshire Blvd	30.4	C	30.0	C	No

Notes:
HCM 2000 Operations Methodology
Delay = Average Vehicle Delay (Seconds), LOS = Level of Service

15.0 ALTERNATIVES NOT CONSIDERED FOR FURTHER EVALUATION

As part of the project development process, LACMTA, in coordination with LADOT and based on community input, developed two additional project alternatives that are not being further evaluated. These alternatives are briefly discussed below.

15.1 TRUNCATED BUS LANES ENDING AT PARK VIEW STREET ON THE EAST, WITH JUT-OUT REMOVAL

At the eastern end, this alternative is similar to the Project Alternative, in that it deletes the bus lanes where Wilshire Boulevard is currently only two lanes in each direction. At the western end, it is similar to the Proposed Project, in that it removes the jut-outs on Wilshire Boulevard to create a new lane for buses between Malcolm Avenue and Comstock Avenue. The traffic impacts of this alternative would be very similar to those of the Project Alternative east of the City of Beverly Hills and very similar to those of the Proposed Project west of the City of Beverly Hills. This alternative is not being evaluated further because most public comment supported either 1) implementing the bus lanes for the entire length of the Proposed Project, or 2) retention of the jut-outs and existing landscape. This alternative would not address either of these goals. In addition, the cost of this alternative would exceed the per-mile amount allowed under the Federal Very Small Starts program because it reduces the project length but includes the expense of the jut-out removal.

15.2 MINI BUS LANES

As described in LADOT's April 19, 2007 City Council Report, this alternative would create "mini" bus lanes along short segments of Wilshire Boulevard around highly congested intersections. It would also provide some operational improvements to the traffic signals on Wilshire Boulevard to enhance the Transit Priority System. Specifically, this alternative includes the following elements:

- Enhanced Transit Priority System, including near-side signal priority, reduced signal recovery period, added green time for Wilshire Boulevard, etc.
- Pavement marking to try to prevent traffic from blocking the congested intersections
- Relocation of selected bus stops to improve bus operations
- Removal of some on-street parking spaces to facilitate bus operations
- Repair curb lane pavement in selected segments
- Installation of 200 concrete bus pads at the nearside of all signalized intersections and bus stops
- Widening of selected segments to create wider curb lanes for buses and/or to create all day mini bus lanes adjacent to:
    - La Brea Avenue-eastbound widening
    - Fairfax Avenue-widening in both directions
    - San Vicente Boulevard-widening in both directions
    - Federal Avenue-eastbound widening
    - Barrington Avenue-eastbound widening
- Conversion of mixed flow lanes and removal of on-street parking spaces to create all day mini bus lanes adjacent to:
    - Vermont Avenue (3 blocks eastbound and westbound)
    - Normandie Avenue (3 blocks westbound; St. Andrews to Mariposa eastbound)
    - Western Avenue (3 blocks westbound; St. Andrews to Mariposa eastbound)
    - Westwood Boulevard (westbound only from Selby Avenue to Gayley Avenue)

This alternative is not being evaluated further because, while it would improve bus travel time through several congested locations, it would not substantially improve schedule reliability and reduce bus "bunching" due to congested conditions elsewhere in the corridor. One of the goals of the project is to increase transit ridership by providing more reliable bus service, and this alternative would not meet that goal. This alternative would also be very difficult to enforce because of the intermittent nature of the bus lanes, as well as their short length, and would require an intensive enforcement approach. Additionally, since this alternative would not create a continuous BRT corridor, it would not be eligible for federal funding as part of the Very Small Starts Program. Finally, this alternative would require physical widening of Wilshire Boulevard within the Wilshire Community Plan Area, which the Community Plan prohibits.

16.0 CONCLUSIONS

The *Proposed Project* results in significant traffic impacts at 18 intersections in 2012 and 19 intersections in 2020. Since several intersections are impacted in one year but not in the other, a total of 21 intersections are significantly impacted by the Proposed Project in at least one of the years. With implementation of the recommended mitigation measures, 12 of the 21 significantly impacted intersections are reduced to a level considered less than significant with Proposed Project conditions.

Signal upgrades at five of the remaining nine significantly impacted intersections further reduce the project's impact during a.m. and/or p.m. peak hour conditions by an average of 32%, but not enough to fully mitigate the project's impact. The following intersections are forecast to remain significantly impacted in either year 2012 or 2020 with Proposed Project conditions since no feasible mitigation measure that fully mitigates the project's impact could be identified:

- Veteran Avenue/Sunset Boulevard;
- Bundy Drive/Wilshire Boulevard (partial mitigation measure);
- Veteran Avenue/Santa Monica Boulevard (partial mitigation measure);
- Overland Avenue/Santa Monica Boulevard;
- Westwood Boulevard/Olympic Boulevard (partial mitigation measure);
- Westwood Boulevard/Pico Boulevard;
- Overland Avenue/Pico Boulevard;
- Fairfax Avenue/Wilshire Boulevard (partial mitigation measure); and
- La Brea Avenue/Wilshire Boulevard (partial mitigation measure).

The *Project Alternative* results in significant traffic impacts at 15 intersections in 2012 and 14 intersections in 2020. Since several intersections are impacted in one year but not in the other, a total of 19 intersections are significantly impacted by the Project Alternative in at least one of the years. With implementation of the recommended mitigation measures, 10 of the 19 significantly impacted intersections are reduced to a level considered less than significant with Project Alternative conditions. Signal upgrades at five of the remaining nine significantly impacted intersections further reduce the project's impact during a.m. and/or p.m. peak hour conditions by an average of 25%, but not enough to fully mitigate the project's impact. The following intersections are forecast to remain significantly impacted in either year 2012 or year 2020 with Project Alternative conditions since no feasible mitigation measure that fully mitigates the project's impact could be identified:

- Veteran Avenue/Sunset Boulevard;
- Bundy Drive/Wilshire Boulevard (partial mitigation measure);
- Veteran Avenue/Santa Monica Boulevard (partial mitigation measure);
- Overland Avenue/Santa Monica Boulevard;
- Beverly Glen Boulevard/Santa Monica Boulevard;
- Westwood Boulevard/Olympic Boulevard (partial mitigation measure);
- Westwood Boulevard/Pico Boulevard;
- Fairfax Avenue/Wilshire Boulevard (partial mitigation measure); and
- La Brea Avenue/Wilshire Boulevard (partial mitigation measure).