



## 5.3 TRAFFIC AND CIRCULATION

The purpose of this section is to evaluate the impacts of the proposed project on the local traffic system in the project vicinity. This analysis summarizes the findings of a Traffic Impact Study prepared for the proposed project by Meyer Mohaddes Associates, Inc. (MMA), dated June 2006. The traffic report is presented as a technical analysis in its subject and language; thus, this section presents a summary intended for the non-technical reader. For a detailed discussion of assumptions, calculations and conclusions utilized in the traffic analysis, refer to the Traffic Impact Study, included in its entirety in [Appendix 15.3, \*Traffic Impact Study\*](#).

### 5.3.1 METHODOLOGY AND PERFORMANCE CRITERIA

#### STUDY AREA

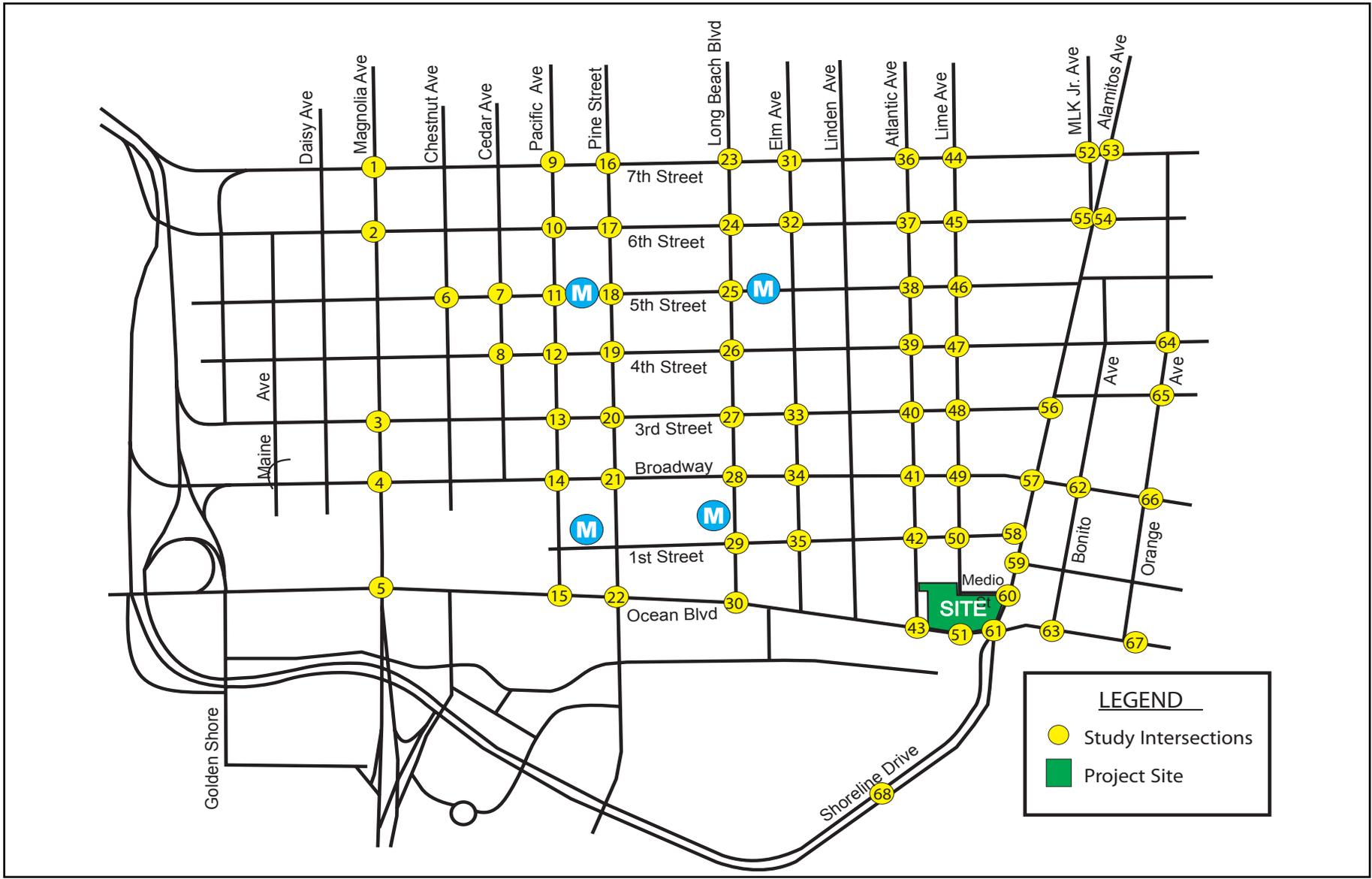
The study area includes the roadways and intersections near the project site and those locations where project-generated traffic could cause a significant impact. [Exhibit 5.3-1, \*Study Area Intersections\*](#), illustrates the 68 intersections selected for study through consultations with City staff. These are intersections deemed most likely to experience potentially significant impacts from the proposed project and therefore warranted detailed analysis. Of the 68 study intersections, 13 are currently controlled by stop signs.

One of the existing intersections will be modified in the future as part of a City public works project. The intersection of Long Beach Boulevard and 5<sup>th</sup> Street is to be modified to allow full east and westbound movement. An existing pedestrian traffic signal located mid-block between 5<sup>th</sup> and 6<sup>th</sup> Streets will be moved to this intersection. Currently, the east and west approaches have only right-turn in/out movements.

#### METHODOLOGY

Consistent with City of Long Beach guidelines for traffic impact analyses, traffic conditions in the vicinity of the project were analyzed using intersection capacity-based methodology known as the Intersection Capacity Utilization Methodology (ICU Methodology).

The efficiency of traffic operations at a location is measured in terms of Level of Service (LOS). LOS is a description of traffic performance at intersections. The LOS concept is a measure of average operating conditions at intersections during an hour. It is based on volume-to-capacity (V/C) ratio. Levels range from A to F with A representing excellent (free-flow) conditions and F representing extreme congestion. The ICU methodology compares the level of traffic during the peak hours at an intersection (volume) to the amount of traffic that intersection is able to carry (capacity). Intersections with vehicular volumes that are at or near capacity ( $V/C \cong 1.0$ ) experience greater congestion and longer vehicle delays. [Table 5.3-1, \*Level of Service Definitions for Signalized Intersections\*](#), describes the LOS concept and the operating conditions expected under each LOS for signalized intersections.



Source: Meyer, Mohaddes Associates, Inc., April 2006.



Not to Scale



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Exhibit 5.3-1

SHORELINE GATEWAY PROJECT  
 ENVIRONMENTAL IMPACT REPORT  
**Study Area Intersections**



**Table 5.3-1  
Level of Service Definitions for Signalized Intersections**

LOS	Interpretation	Volume to Capacity Ratio (V/C)
A	Excellent operation – free-flow	0.000 – 0.600
B	Very good operation – stable flow, little or no delays	0.601 – 0.700
C	Good operation – slight delays	0.701 – 0.800
D	Fair operation – noticeable delays, queuing observed	0.801 – 0.900
E	Poor operation – long delays, near or at capacity	0.901 – 1.000
F	Forced flow – congestion	Over 1.000

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington D.C., 1985 and Interim Materials on Highway Capacity, NCHRP Circular 212, 1982.

Analysis of unsignalized intersections is conducted differently from signalized intersections due to different operating characteristics. Stop controlled intersections were analyzed using the delay-based Highway Capacity Manual (HCM) method of determining LOS. Table 5.3-2, Level of Service Definitions for Unsignalized Intersections, describes the LOS concept for unsignalized intersections.

**Table 5.3-2  
Level of Service Definitions for Unsignalized Intersections**

LOS	LOS Description	Highway Capacity Manual Average Control Delay (sec/veh)
A	Little or no delay	< 10
B	Short traffic delays	> 10 and ≤ 15
C	Average traffic delays	> 15 and ≤ 25
D	Long traffic delays	> 25 and ≤ 35
E	Very long traffic delays	> 35 and ≤ 50
F	Severe congestion	> 50

LOS = level of service; sec = seconds; veh = vehicle.  
Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington D.C., 1985 and Interim Materials on Highway Capacity, NCHRP Circular 212, 1982.

## PERFORMANCE CRITERIA

For CEQA purposes, defined performance criteria are utilized to determine if a proposed project causes a significant impact. Based on the City of Long Beach Traffic Impact Guidelines, an impact is considered significant when the resulting LOS with project traffic is E or F and project related traffic contributes a V/C of 0.020 or more to the critical movements.

Since the City of Long Beach does not have official criteria to determine significant traffic impacts at a stop-controlled intersection, a review of the unsignalized intersections near the project was performed to determine the relative increase in



delay for the purpose of significant impact determination. For the unsignalized intersections operating at LOS D or worse with the proposed project, a traffic signal analysis was completed. The traffic signal warrant analysis was completed using the methodologies and criteria set forth in the Manual on Uniform Traffic Control Devices (MUTCD) and the California Supplement to the MUTCD. The warrants consider projected traffic volumes, vehicular delay on side streets and the location and spacing of other traffic signals in the area.

The Congestion Management Program (CMP) for Los Angeles County requires that the traffic impact of individual development projects of potential regional significance be analyzed. A specific system of arterial roadways plus all freeways comprise the CMP system. The analysis has been conducted according to the guidelines set forth in the 2002 Congestion Management Program for Los Angeles County.

For purposes of the CMP, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by two percent of capacity ( $V/C \geq 0.02$ ), causing LOS F ( $V/C > 1.00$ ). If the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by two percent of capacity ( $V/C \geq 0.02$ ).

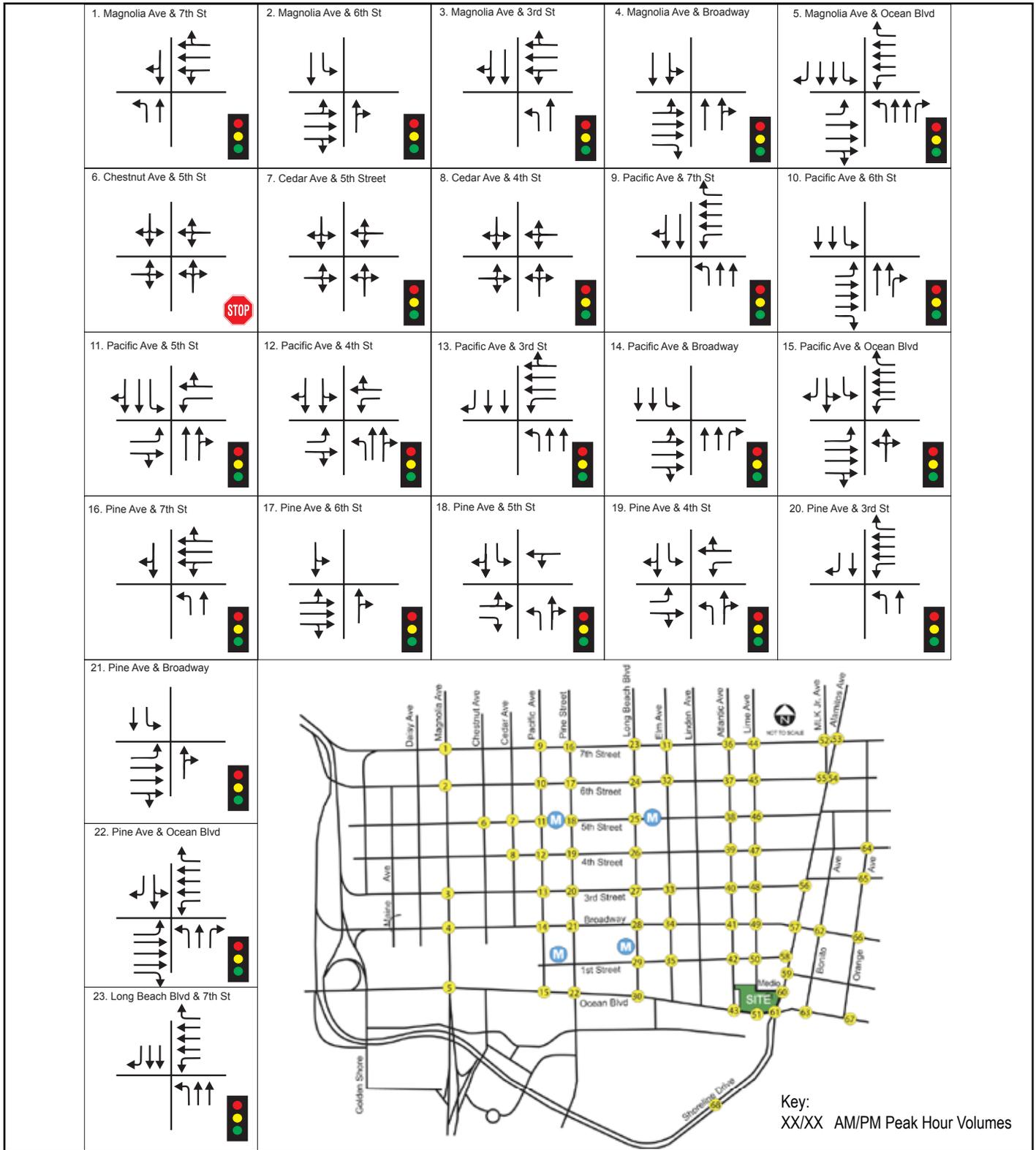
### **5.3.2 ENVIRONMENTAL SETTING**

The following describes the transportation setting for the traffic analysis. Existing traffic conditions and planned improvements/modifications are discussed. The traffic setting discussion includes a description of the study area roadway system, existing traffic volumes and corresponding levels of service, as defined by the performance criteria.

#### **EXISTING ROADWAY SYSTEM**

The existing roadway network in the study area is illustrated on [Exhibits 5.3-2a, 5.3-2b and 5.3-2b, \*Existing Lane Configurations and Traffic Controls\*](#). Roadways within the study area are described below:

- Shoreline Drive is referenced as a Regional Corridor in the *Long Beach General Plan* and provides east-west access through the attraction portion of downtown Long Beach, as well as direct access to and from I-710. There are three lanes in each direction with a raised median. On-street parking is allowed along Shoreline Drive between Chestnut and Pine Avenues and the posted speed limit is 45 miles per hour (mph). The average daily trips (ADT) in the study area ranges between 14,000 and 16,000 vehicles per day.
- Ocean Boulevard provides east-west linkage through downtown and provides indirect access to the I-710 and I-110 freeways and eastern Long Beach. It is classified as a Major Arterial, west of Alamitos Avenue, and provides three lanes in each direction with a raised center median. To the east of Alamitos Avenue, it is a four-lane, Minor Arterial. Parking is allowed on both sides of the street west of Magnolia Avenue and the posted speed limit is 30 mph. The ADT along Ocean Boulevard in the study area ranges between 36,000 and 39,000 vehicles per day.



Source: Meyer, Mohaddes Associates, Inc., April 2006.

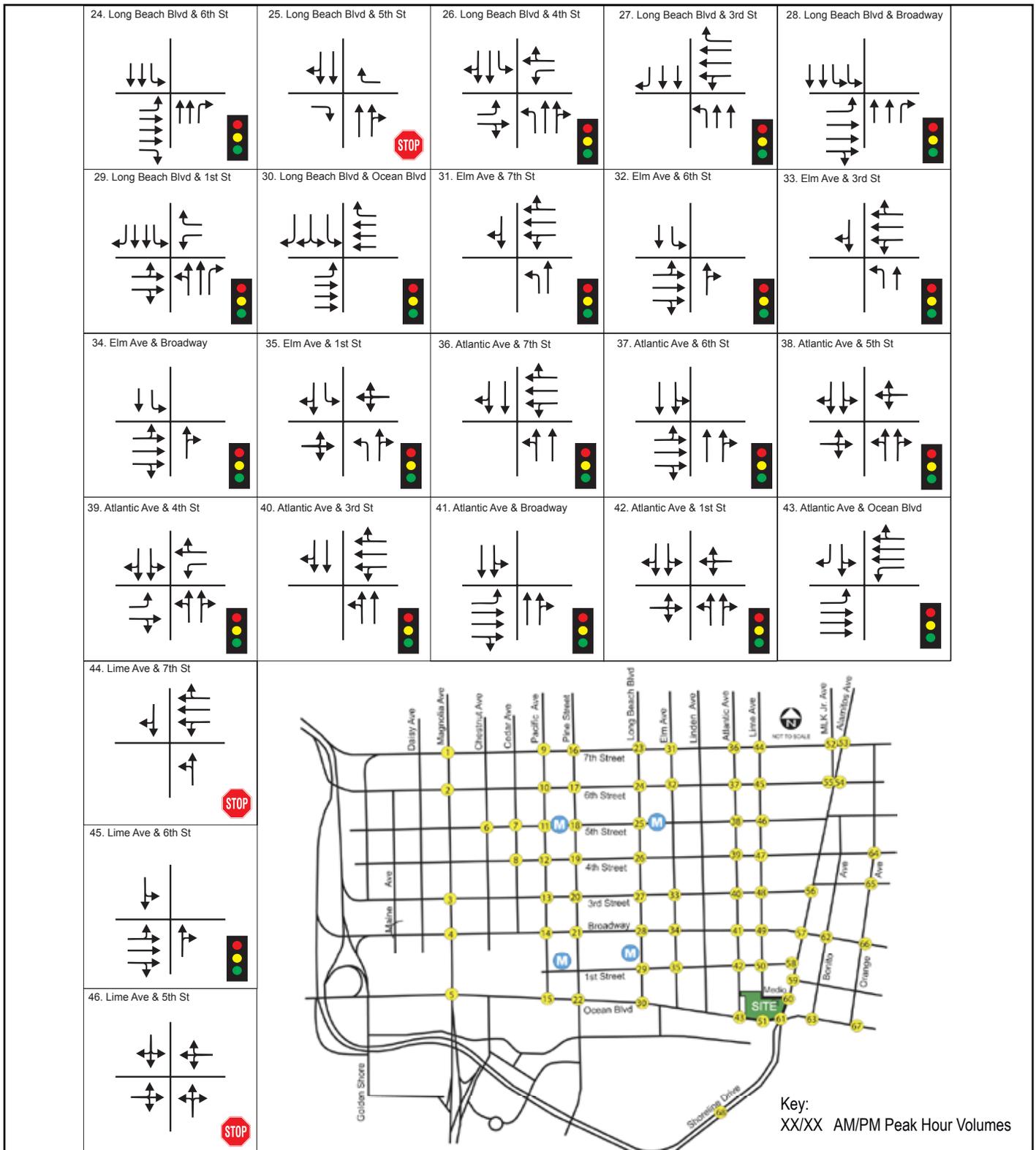
Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



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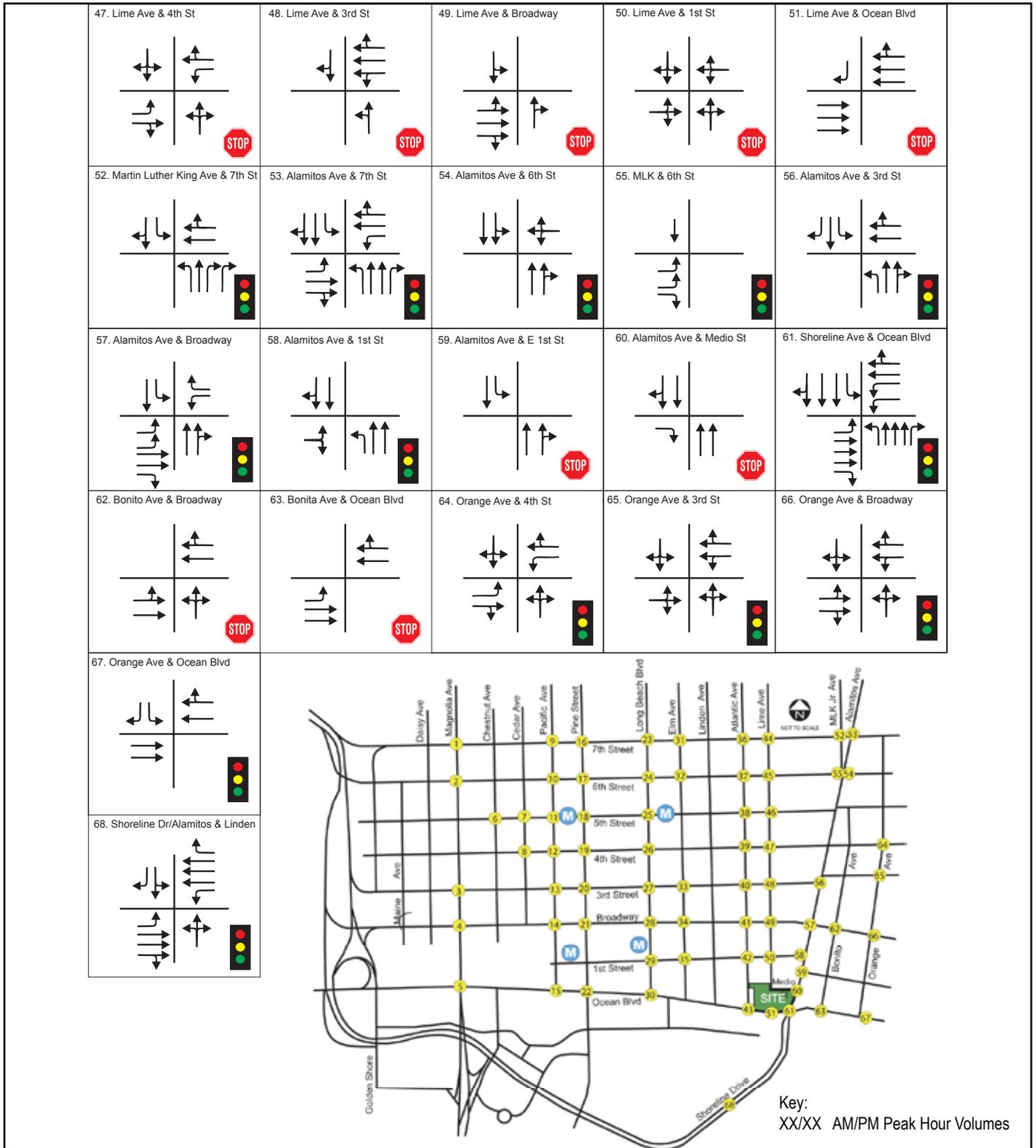
## SHORELINE GATEWAY PROJECT ENVIRONMENTAL IMPACT REPORT

# Existing Lane Configuration and Traffic Controls (Study Intersections 1 to 23)



Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



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# SHORELINE GATEWAY PROJECT ENVIRONMENTAL IMPACT REPORT

## Existing Lane Configuration and Traffic Controls (Study Intersections 47 to 68)



- Broadway provides three lanes and is classified as a one-way eastbound Major Arterial between the I-710 Freeway and Alamitos Avenue and a two-way Minor Arterial east of Alamitos. Parking is allowed along the north side of the street and the posted speed limit is 30 mph. The ADT along West Broadway in the study area ranges between 15,000 and 21,000 vehicles per day.
- 3<sup>rd</sup> Street provides direct east-west access within the downtown. It is currently designated as a Major Arterial between the I-710 Freeway and Alamitos Avenue in the City of Long Beach Transportation Element of the General Plan. Within the project area, 3<sup>rd</sup> Street is one-way and provides three lanes in the westbound direction. Parking is allowed on both sides of the roadway. The typical posted speed limit is 30 mph. The ADT along West 3<sup>rd</sup> Street in the study area ranges between 12,000 and 16,100 vehicles per day.
- 6<sup>th</sup> Street provides three lanes and is classified as a one-way eastbound Major Arterial between the I-710 Freeway and Alamitos Avenue and a two-way Minor Arterial east of Alamitos. Parking is allowed along some sections of the street and the posted speed limit is 30 mph. The ADT along 6<sup>th</sup> Street in the study area ranges between 1,300 and 13,100 vehicles per day.
- 7<sup>th</sup> Street provides three-lanes and is classified as a one-way westbound Major Arterial between the I-710 Freeway and Alamitos Avenue, and a two-way Regional Corridor, east of Alamitos. Parking is allowed along some sections of the street and the posted speed limit is 30 mph. The ADT along 7<sup>th</sup> Street in the study area ranges between 13,100 and 31,300 vehicles per day.
- Alamitos Avenue is a north-south Regional Corridor extending south from Pacific Coast Highway to Shoreline Drive. In the study area, it generally has two northbound and one southbound lane, with left-turn lanes at most intersections. Alamitos Avenue is an important gateway street for traffic coming into and out of downtown Long Beach. On-street parking contributes to congestion along Alamitos Avenue and, along some blocks, restricts the southbound traffic to one through lane except between 7<sup>th</sup> and 3<sup>rd</sup> Streets where two southbound lanes are provided between 7:00 AM and 9:00 AM. In the study area, the ADT ranges between 14,400 and 25,200 vehicles per day.
- Atlantic Avenue is a four lane, north-south Major Arterial that extends north from Ocean Boulevard to north of I-405. On-street parking is allowed along most of Atlantic Avenue in the study area. In the study area, the ADT ranges between 5,600 and 12,600 vehicles per day.
- Long Beach Boulevard is a north-south Major Arterial that extends north from Ocean Boulevard to north of I-405. It has a wide median that accommodates the MTA Blue Line light rail, with mid-block turns restricted to accommodate train movements and limit vehicles turning across the tracks. In the study area, the ADT ranges between 8,900 and 17,700 vehicles per day.



- Pine Avenue is a two lane, north-south Minor Arterial that is a primary entertainment corridor in the downtown with many shops, restaurants and theaters. Pine Street extends north from Shoreline Drive to Willow Street. In the study area, the ADT ranges between 4,000 and 6,800 vehicles per day.
- Pacific Avenue is a north-south Major Arterial that provides access to the downtown area and contains the northbound portion of the MTA Blue Line transit route. Pacific Avenue has two travel lanes in each direction with no or limited on-street parking. The ADT along Pacific Avenue in the study area ranges between 3,000 and 11,200 vehicles per day.
- Magnolia Avenue provides a north-south linkage to downtown and central Long Beach. It is classified as a Major Arterial south of 3<sup>rd</sup> Street and a Minor Arterial to the north in the City of Long Beach Transportation Element. Magnolia Avenue provides two lanes in each direction south of Broadway and one through lane in each direction to the north, with two-way left-turn lanes and on-street parking on both sides north of Broadway. The ADT along Magnolia Avenue in the study area ranges between 4,500 and 13,700 vehicles per day.
- I-710 Freeway is a north-south Regional Highway and provides access to the project from the communities to the north, as well as the regional Interstate system. North of the study area, it is part of the Los Angeles County Congestion Management Program's regional freeway system. The ADT along the I-710 Freeway in the study area is approximately 145,000 vehicles per day.

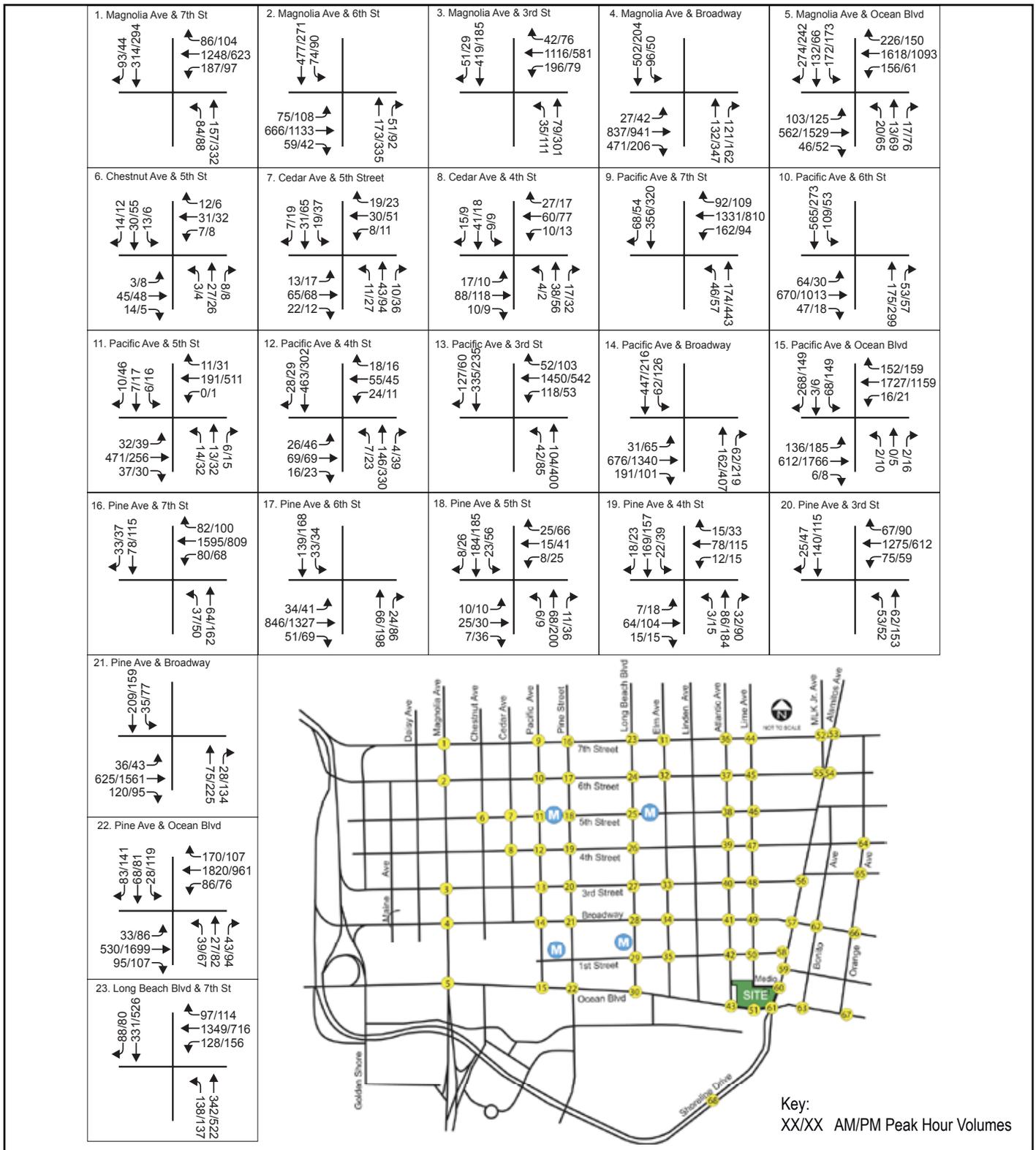
## **EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE**

The traffic analysis addresses typical morning (AM) and evening (PM) peak-hour intersection operations at each of the study intersections.

In order to determine the existing operation of the study intersections, existing intersection counts were taken in the AM and PM peak-hour periods. Peak hour turning movement volumes for each study area intersection are illustrated on Exhibit 5.3-3a, 5.3-3b and 5.3-3c, Existing Peak Hour Intersection Volumes. Detailed peak-hour count data are included in Appendix 15.3, Traffic Impact Analysis.

Table 5.3-3, Existing Peak Hour LOS at Study Area Intersections, summarizes the existing AM and PM peak-hour LOS of the study intersections. As indicated in Table 5.3-3, five of the study intersections are currently operating at an unacceptable LOS (LOS E or F), according to City of Long Beach performance criteria:

- Lime Avenue and 7<sup>th</sup> Street (AM peak hour only);
- Lime Avenue and Broadway (PM peak hour only);
- Alamitos Avenue and 3<sup>rd</sup> Street (AM peak hour only);
- Alamitos Avenue and Broadway (PM peak hour only); and
- Alamitos Avenue/Shoreline Drive and Ocean Boulevard (AM and PM peak hours).

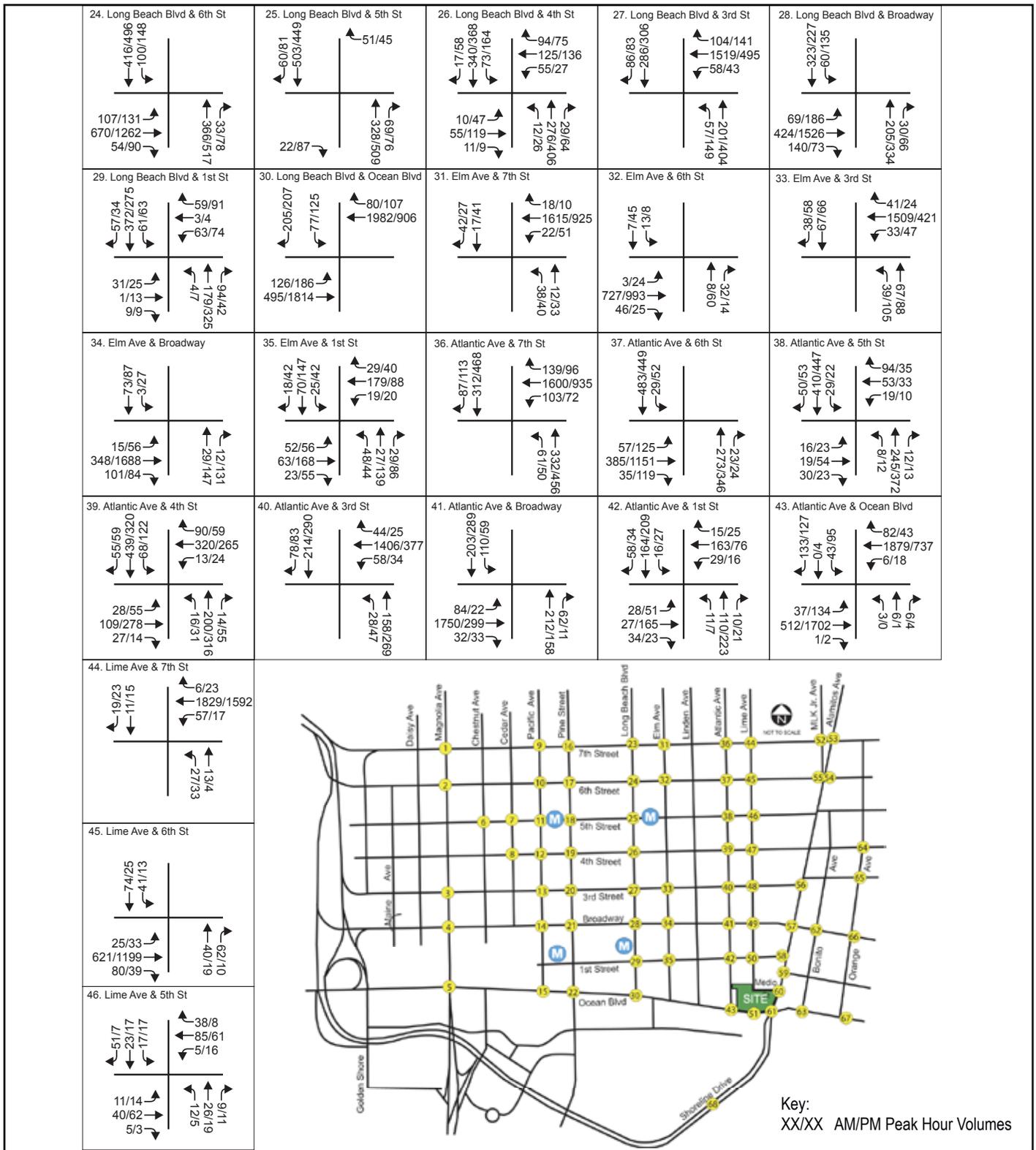


Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.

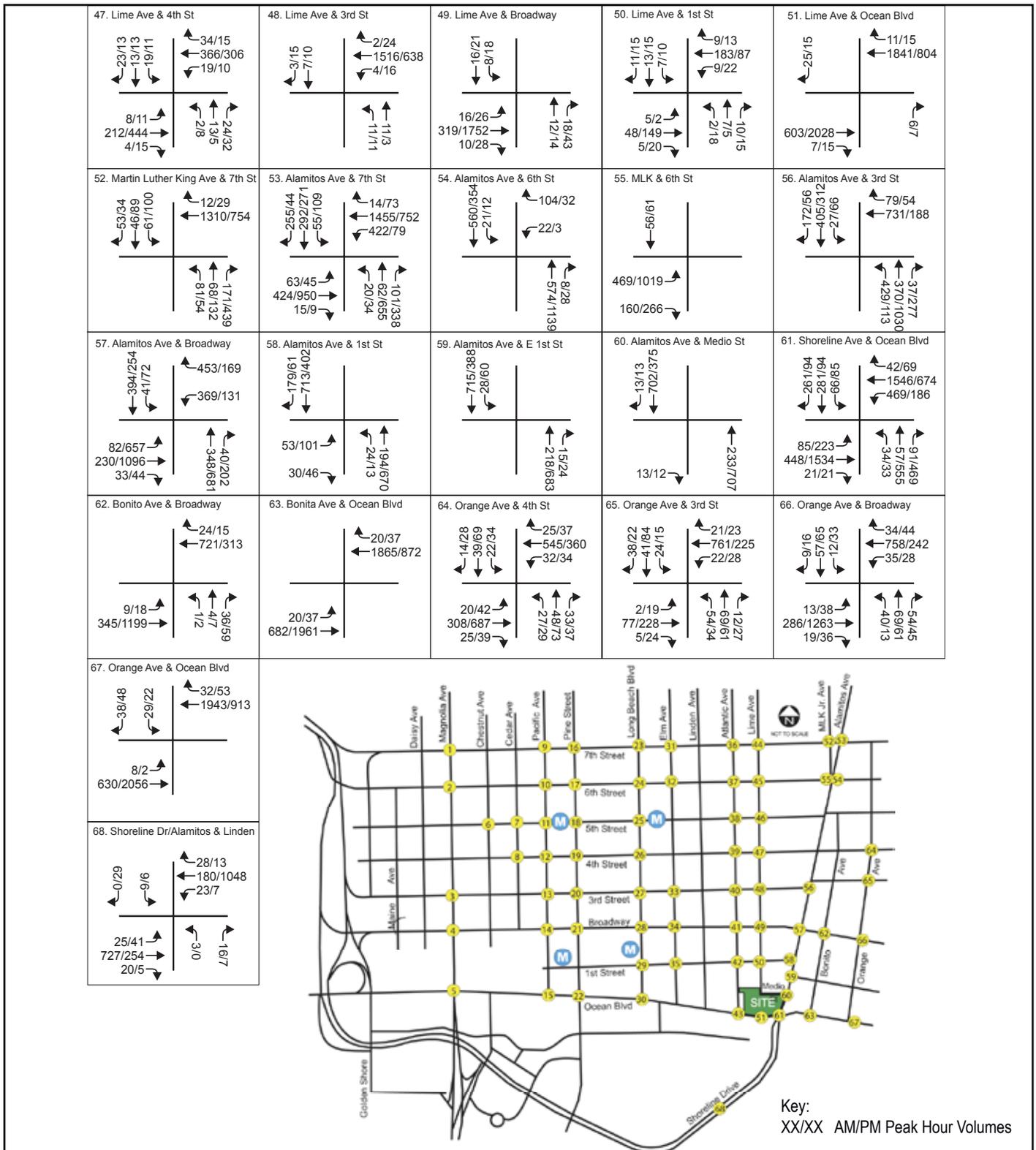


SHORELINE GATEWAY PROJECT  
 ENVIRONMENTAL IMPACT REPORT  
**Existing Peak Hour Intersection Volumes**  
**(Study Intersections 1 to 23)**



Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



Source: Meyer, Mohaddes Associates, Inc., April 2006.

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## Existing Peak Hour Intersection Volumes (Study Intersections 47 to 68)



**Table 5.3-3  
Existing Peak Hour LOS at Study Area Intersections**

Study Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C
Magnolia Avenue & 7 <sup>th</sup> Street	C		0.80	A		0.58
Magnolia Avenue & 6 <sup>th</sup> Street	B		0.63	C		0.76
Magnolia Avenue & 3 <sup>rd</sup> Street	A		0.60	A		0.48
Magnolia Avenue & Broadway	B		0.62	A		0.53
Magnolia Avenue & Ocean Boulevard	B		0.70	B		0.70
Chestnut Avenue & 5 <sup>th</sup> Street	A	10.0		B	10.3	
Cedar Avenue & 5 <sup>th</sup> Street	A		0.25	A		0.30
Cedar Avenue & 4 <sup>th</sup> Street	A		0.26	A		0.29
Pacific Avenue & 7 <sup>th</sup> Street	B		0.61	A		0.48
Pacific Avenue & 6 <sup>th</sup> Street	A		0.47	A		0.47
Pacific Avenue & 5 <sup>th</sup> Street	A		0.45	A		0.59
Pacific Avenue & 4 <sup>th</sup> Street	A		0.35	A		0.31
Pacific Avenue & 3 <sup>rd</sup> Street	A		0.60	A		0.41
Pacific Avenue & Broadway	A		0.45	B		0.68
Pacific Avenue & Ocean Boulevard	C		0.76	B		0.65
Pine Avenue & 7 <sup>th</sup> Street	A		0.57	A		0.45
Pine Avenue & 6 <sup>th</sup> Street	A		0.43	B		0.64
Pine Avenue & 5 <sup>th</sup> Street	A		0.29	A		0.40
Pine Avenue & 4 <sup>th</sup> Street	A		0.31	A		0.44
Pine Avenue & 3 <sup>rd</sup> Street	A		0.52	A		0.36
Pine Avenue & Broadway	A		0.44	C		0.79
Pine Avenue & Ocean Boulevard	B		0.63	C		0.71
Long Beach Boulevard & 7 <sup>th</sup> Street	B		0.64	A		0.54
Long Beach Boulevard & 6 <sup>th</sup> Street	A		0.47	B		0.65
Long Beach Boulevard & 5 <sup>th</sup> Street	A		0.20	A		0.26
Long Beach Boulevard & 4 <sup>th</sup> Street	A		0.42	A		0.56
Long Beach Boulevard & 3 <sup>rd</sup> Street	A		0.57	A		0.42
Long Beach Boulevard & Broadway	A		0.35	B		0.63
Long Beach Boulevard & 1 <sup>st</sup> Street	A		0.31	A		0.36
Long Beach Boulevard & Ocean Boulevard	B		0.70	A		0.58
Elm Avenue & 7 <sup>th</sup> Street	A		0.52	A		0.39
Elm Avenue & 6 <sup>th</sup> Street	A		0.32	A		0.38
Elm Avenue & 3 <sup>rd</sup> Street	A		0.54	A		0.37
Elm Avenue & Broadway	A		0.28	C		0.71
Elm Avenue & 1 <sup>st</sup> Street	A		0.38	A		0.47
Atlantic Avenue & 7 <sup>th</sup> Street	B		0.68	A		0.58
Atlantic Avenue & 6 <sup>th</sup> Street	A		0.40	A		0.57
Atlantic Avenue & 5 <sup>th</sup> Street	A		0.39	A		0.36
Atlantic Avenue & 4 <sup>th</sup> Street	A		0.58	A		0.55



**Table 5.3-3 [continued]  
Existing Intersections Peak Hour LOS**

Study Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C
Atlantic Avenue & 3 <sup>rd</sup> Street	A		0.58	A		0.36
Atlantic Avenue & Broadway	C		0.70	A		0.29
Atlantic Avenue & 1 <sup>st</sup> Street	A		0.36	A		0.40
Atlantic Avenue & Ocean Boulevard	B		0.64	A		0.57
<b>Lime Avenue &amp; 7<sup>th</sup> Street</b>	<b>F</b>	<b>72.4</b>		D	29.5	
Lime Avenue & 6 <sup>th</sup> Street	A		0.37	A		0.42
Lime Avenue & 5 <sup>th</sup> Street	A	7.8		A	7.5	
Lime Avenue & 4 <sup>th</sup> Street	C	15.3		C	17.7	
Lime Avenue & 3 <sup>rd</sup> Street	D	30.3		B	12.0	
<b>Lime Avenue &amp; Broadway</b>	<b>B</b>	<b>11.8</b>		<b>F</b>	<b>66.9</b>	
Lime Avenue & 1 <sup>st</sup> Street	B	10.6		B	10.9	
Lime Avenue & Ocean Boulevard	B	13.9		B	12.5	
Martin Luther King Avenue & 7 <sup>th</sup> Street	B		0.66	B		0.62
Alamitos Avenue & 7 <sup>th</sup> Street	D		0.82	C		0.78
Alamitos Avenue & 6 <sup>th</sup> Street	A		0.40	A		0.53
Martin Luther King Avenue & 6 <sup>th</sup> Street	A		0.32	A		0.54
<b>Alamitos Avenue &amp; 3<sup>rd</sup> Street</b>	<b>F</b>		<b>1.05</b>	B		0.66
<b>Alamitos Avenue &amp; Broadway</b>	<b>D</b>		<b>0.85</b>	<b>E</b>		<b>0.95</b>
Alamitos Avenue & 1 <sup>st</sup> Street	A		0.47	A		0.44
Alamitos Avenue & East 1 <sup>st</sup> Street	A	7.8		A	9.6	
Alamitos Avenue & Medio Street	B	11.0		A	9.6	
<b>Alamitos Avenue/Shoreline Drive &amp; Ocean Boulevard</b>	<b>E</b>		<b>0.94</b>	<b>E</b>		<b>0.93</b>
Bonito Avenue & Broadway	B	11.4		C	21.8	
Bonito Avenue & Ocean Boulevard	C	17.8		B	10.2	
Orange Avenue & 4 <sup>th</sup> Street	A		0.60	C		0.71
Orange Avenue & 3 <sup>rd</sup> Street	A		0.49	A		0.43
Orange Avenue & Broadway	A		0.55	B		0.69
Orange Avenue & Ocean Boulevard	C		0.79	D		0.81
Shoreline Drive & Linden	A		0.34	A		0.40

LOS = level of service; V/C = volume-to-capacity ratio; N/A = not applicable; sec = seconds; veh = vehicle.  
Boldface = deficient intersection operation.

## PARKING

Parking for existing residential, retail and office uses is provided in five surface parking lots. The project site includes approximately 72 surface parking spaces in three pay lots. Of these spaces, 41 are available for lease by residents of the



adjacent Artaban building and existing on-site apartment units.<sup>1</sup> The remaining 31 spaces are in an hourly lot located along Ocean Boulevard. There are also two dedicated business lots. The first is associated with the Long Beach Café site and the second is part of the Video Exchange site. Additionally, approximately 18 non-metered on-street parking spaces are provided adjacent to the project site.

## **PUBLIC TRANSPORTATION**

There are five transit agencies that provide service within the project area: the Metropolitan Transportation Authority (MTA), Long Beach Transit (LBT), Torrance Transit, Los Angeles Department of Transportation (LADOT) and Orange County Transportation Authority (OCTA). The five transit agencies operate a total of 39 bus routes and one rail line in proximity to the proposed project, as described below:

### **MTA Bus Service**

The MTA operates two bus lines daily through the 1<sup>st</sup> Street transit mall:

- Metro Line 60/360 (Long Beach Boulevard – Santa Fe Avenue); and
- Metro Line 232 (LAX to Long Beach).

### **MTA “Blue Line” Rail Service**

In addition to the 39 bus lines operating in proximity to the proposed project, there is one Metro light rail line that travels through downtown Long Beach. The Metro Blue Line is part of the Metro Rail Transit System that runs north-south from Los Angeles to Long Beach. The Metro Blue Line starts at 7<sup>th</sup> Street/Metro Center/Julian Dixon in downtown Los Angeles and travels south via Long Beach Avenue, Willowbrook Avenue and Long Beach Boulevard to its final destination at the Long Beach Transit Mall. The train operates Monday through Sunday, including all major holidays.

### **Long Beach Transit Bus Service**

LBT operates 28 bus routes through the 1<sup>st</sup> Street transit mall:

- Long Beach Transit Line 1 (Easy Avenue);
- Long Beach Transit Line 7 (Orange Avenue);
- Long Beach Transit Line 21 (Cherry Avenue);
- Long Beach Transit Line 22 (Downey Avenue);
- Long Beach Transit Line 23 (Cherry to Carson Street Only);
- Long Beach Transit Line 46 (Anaheim Street to downtown Long Beach);
- Long Beach Transit Line 51 (Long Beach Boulevard to Artesia Station);
- Long Beach Transit Line 52 (Long Beach Boulevard to Artesia Boulevard);
- Long Beach Transit Line 61 (Atlantic Avenue to Artesia Station);
- Long Beach Transit Line 62 (Atlantic Avenue to Alondra Boulevard);
- Long Beach Transit Line 63 (Atlantic Avenue to Artesia Boulevard);
- Long Beach Transit Line 66 (ZAP Atlantic);

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<sup>1</sup> Based on parking survey conducted by Anderson Pacific LLC.



- Long Beach Transit Line 81 (10<sup>th</sup> Street to CSULB);
- Long Beach Transit Line 91 (7<sup>th</sup> Street/Bellflower Boulevard);
- Long Beach Transit Line 92 (7<sup>th</sup> Street/Woodruff Avenue);
- Long Beach Transit Line 93 (7<sup>th</sup> Street/Clark Avenue);
- Long Beach Transit Line 94 (7<sup>th</sup> Street to Los Altos Only);
- Long Beach Transit 96 ZAP (The 96 ZAP 7<sup>th</sup> Street);
- Long Beach Transit Line 111 (Broadway/Lakewood Boulevard);
- Long Beach Transit Line 112 (Broadway/Clark Avenue);
- Long Beach Transit Line 172 (PCH/Palo Verde);
- Long Beach Transit Line 173 (PCH/Studebaker);
- Long Beach Transit Line 174 (PCH/Ximeno Avenue Only);
- Long Beach Transit Line 181 (Magnolia/4<sup>th</sup> Street);
- Long Beach Transit Line 182 (Pacific Avenue/4<sup>th</sup> Street);
- Long Beach Transit Line 191 (Santa Fe/Del Amo Boulevard);
- Long Beach Transit Line 192 (Santa Fe/South Street); and
- Long Beach Transit Line 193 (Santa Fe via McHelen to Del Amo Station).

In addition, LBT operates free shuttle buses (the Passport) in the downtown area and between major attractions near the downtown. Passport routes in the project vicinity include:

- Passport A (Alamitos Bay Landing);
- Passport C (Queen Mary);
- Passport D (Los Altos); and
- Tour D'Art.

### **Torrance Transit Bus Service**

Torrance Transit Line 3 (Redondo Beach to downtown Long Beach) travels east-west from the Redondo Beach Pier to downtown Long Beach. It operates Monday through Sunday, excluding New Year's Day, Thanksgiving Day and Christmas.

### **LADOT Transit Service**

Los Angeles Department of Transportation (LADOT) Commuter Express Line 142 (San Pedro/Terminal Island/Long Beach Express) runs predominately east-west from Ports O'Call and Sampson in San Pedro to the Long Beach Transit Mall via 10<sup>th</sup> Street, SR-47, Ocean Boulevard and Long Beach Boulevard. It operates Monday through Sunday, including all major holidays.

### **OCTA Transit Service**

Orange County Transportation Authority (OCTA) Route 60 (Long Beach to Tustin) operates through the 1<sup>st</sup> Street transit mall. It runs east-west from the Long Beach Transit Mall to Larwin Square in Tustin via 7<sup>th</sup> Street, Westminster and 17<sup>th</sup> Street. It operates Monday through Sunday, including all major holidays.



### 5.3.3 SIGNIFICANCE THRESHOLD CRITERIA

To determine whether the addition of project-generated trips results in a significant impact at a study intersection and thus requires mitigation, the City of Long Beach utilizes the following threshold of significance:

- An impact is considered significant when the resulting LOS with project traffic is E or F and project-related traffic contributes a V/C of 0.020 or more to the critical movements.

To determine whether the addition of project-generated trips results in a significant impact at a CMP study facility and thus requires mitigation, the CMP utilizes the following threshold of significance:

- A significant impact would occur when the proposed project increases traffic demand on a CMP facility by two percent of capacity ( $V/C \geq 0.02$ ), causing LOS F ( $V/C > 1.00$ ). If the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by two percent of capacity ( $V/C \geq 0.02$ ).

According to Appendix G, the Initial Study Checklist, of the *CEQA Guidelines*, a project would typically have a significant impact on traffic and circulation if the project would:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections);
- Exceed, either individually or cumulatively, an LOS standard established by the County CMP agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks; refer to Section 10.0, *Effects Found Not To Be Significant*;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); refer to Section 10.0, *Effects Found Not To Be Significant*;
- Result in inadequate emergency access; refer to Section 10.0, *Effects Found Not To Be Significant*, and Section 5.6, *Public Services and Utilities*;
- Result in inadequate parking capacity; and/or
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Based on these standards, the effects of the proposed project have been categorized as either a “less than significant impact” or a “potentially significant



impact.” Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant and unavoidable impact.

### 5.3.4 IMPACTS AND MITIGATION MEASURES

#### PROJECT TRIP GENERATION

In order to calculate trips forecasted to be generated by the proposed project, Institute of Transportation Engineers (ITE) Trip Generation rates were utilized. Buildout of the proposed project is anticipated to be completed by 2015.

*Table 5.3-4, Proposed Project Trip Generation*, summarizes the trips forecast to be generated by the proposed project. As shown in *Table 5.3-4*, the proposed project is forecast to generate approximately 3,080 daily trips, which includes 148 AM peak hour trips and 278 PM peak-hour trips.

**Table 5.3-4  
Proposed Project Trip Generation**

Land Use	Size	Units	ITE Code	Trips Generated						
				AM Peak-Hour Trips			PM Peak-Hour Trips			Daily 24-Hour
				Total	In	Out	Total	In	Out	
Residential	358	DU	230	143	24	119	171	115	56	1,898
Non Auto Trips Reduction <sup>1</sup>				-7	-1	-6	-9	-6	-3	-95
<b>Residential Subtotal</b>				136	23	113	162	109	53	1,803
Retail	13,561	SF	820	47	29	18	167	80	87	1,853
Non Auto Trips Reduction <sup>1</sup>				-2	-1	-1	-8	-4	-4	-93
<b>Retail Subtotal</b>				45	28	17	159	76	83	1,760
Existing Residential to be Removed	63	DU		-20	-6	-14	-14	-11	-3	-152
Existing Retail to be Removed	20,981	SF		-13	-8	-5	-29	-17	-12	-331
<b>Existing to be Removed Subtotal</b>				-33	-14	-19	-43	-28	-15	-483
<b>PROJECT TOTAL</b>				<b>148</b>	<b>37</b>	<b>111</b>	<b>278</b>	<b>157</b>	<b>121</b>	<b>3,080</b>

DU = dwelling unit; SF = square feet; ITE 230 = condominiums/townhouse; ITE 820 = shopping center.

Note:

<sup>1</sup> Non-Auto Trip Reduction is equivalent to five percent.

Existing trips based on field survey of the existing parking areas.

Source: Institute of Transportation Engineers, Trip Generation, 7<sup>th</sup> Edition.



### Transit Trip Generation and Mode Assignment

Transit usage by the proposed project residents and patrons is expected to be higher than average because of the availability of bus and rail service in the area. However, to provide a conservative analysis of auto use, the transit usage rate was assumed to be 3.5 percent, which is the average for this area of Los Angeles County.

The projected future transit ridership for the proposed project was estimated based on the overall trip generation for the project using the ITE rates and then multiplying that total trip generation by the 3.5 percent transit usage rate. A 5.0 percent non-auto use factor was included in the trip assignments. This includes a reduction for transit and walking trips.

The assumptions and analyses used to determine the number of percentage trips assigned to transit were calculated using guidelines set forth in the 2004 Congestion Management Program for Los Angeles County. The total number of additional transit riders that the proposed project could create is projected to be approximately 8 in the AM peak hour and 14 in the PM peak hour; refer to Table 5.3-5, Proposed Project Transit Trip Generation.

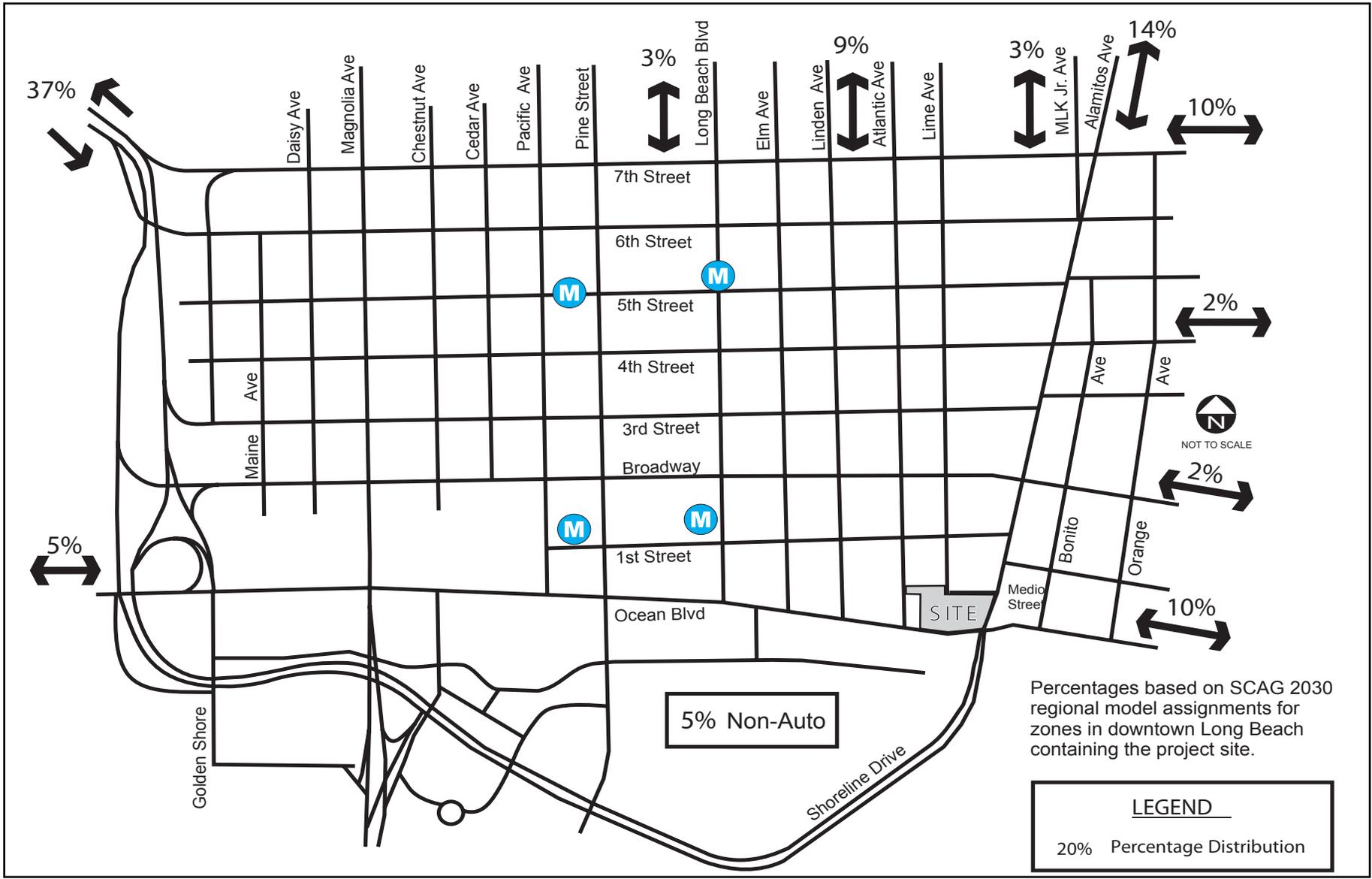
**Table 5.3-5  
Proposed Project Transit Trip Generation**

Land Use	Total Trips	
	AM Peak Hour	PM Peak Hour
Proposed Residential	143	171
Proposed Retail	47	167
Existing Residential	-20	-14
Existing Retail	-13	-29
<b>Subtotal</b>	<b>157</b>	<b>295</b>
Total Person Trips <sup>1</sup>	220	413
<b>Total New Transit Riders</b>	<b>8</b>	<b>14</b>

<sup>1</sup> Based on a person trip rate of 1.4.

### Project Trip Distribution and Assignment

Trip distribution to and from the proposed project site was determined based on the patterns of existing area traffic for similar types of developments, patterns listed in previous traffic studies for the area and on a select-zone analysis using the SCAG 2030 regional model for the downtown Long Beach area. For the proposed project, trip assignment is primarily based on the residential component of the development, as the retail/commercial component would serve predominantly local uses. Exhibit 5.3-4, Forecast Proposed Project Trip Distribution, illustrates the trip distribution for the proposed project.



Source: Meyer, Mohaddes Associates, Inc., April 2006.



Not to Scale



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Exhibit 5.3-4

SHORELINE GATEWAY PROJECT  
 ENVIRONMENTAL IMPACT REPORT  
**Forecast Proposed Project Trip Distribution**



The forecast trips generated by the proposed project were assigned to the area street system using the trip directional distribution described above. Because there are multiple access routes from the north, south, east and west, the routes used for each user type (i.e., resident, guest, patron, etc.) was considered depending on the user type's access route location. Exhibit 5.3-5a, 5.3-5b and 5.3-5c, *Forecast Proposed Project Peak Hour Intersection Volumes*, illustrates the trip assignment for the proposed project.

## **PROJECT IMPACTS**

- **DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT COULD RESULT IN ADVERSE IMPACTS TO THE FUNCTION OF INTERSECTIONS IN THE PROJECT AREA.**

*Level of Significance Prior to Mitigation:* Potentially Significant Impact.

*Impact Analysis:* The following discussion addresses impacts under 2015 without project and 2015 with project conditions.

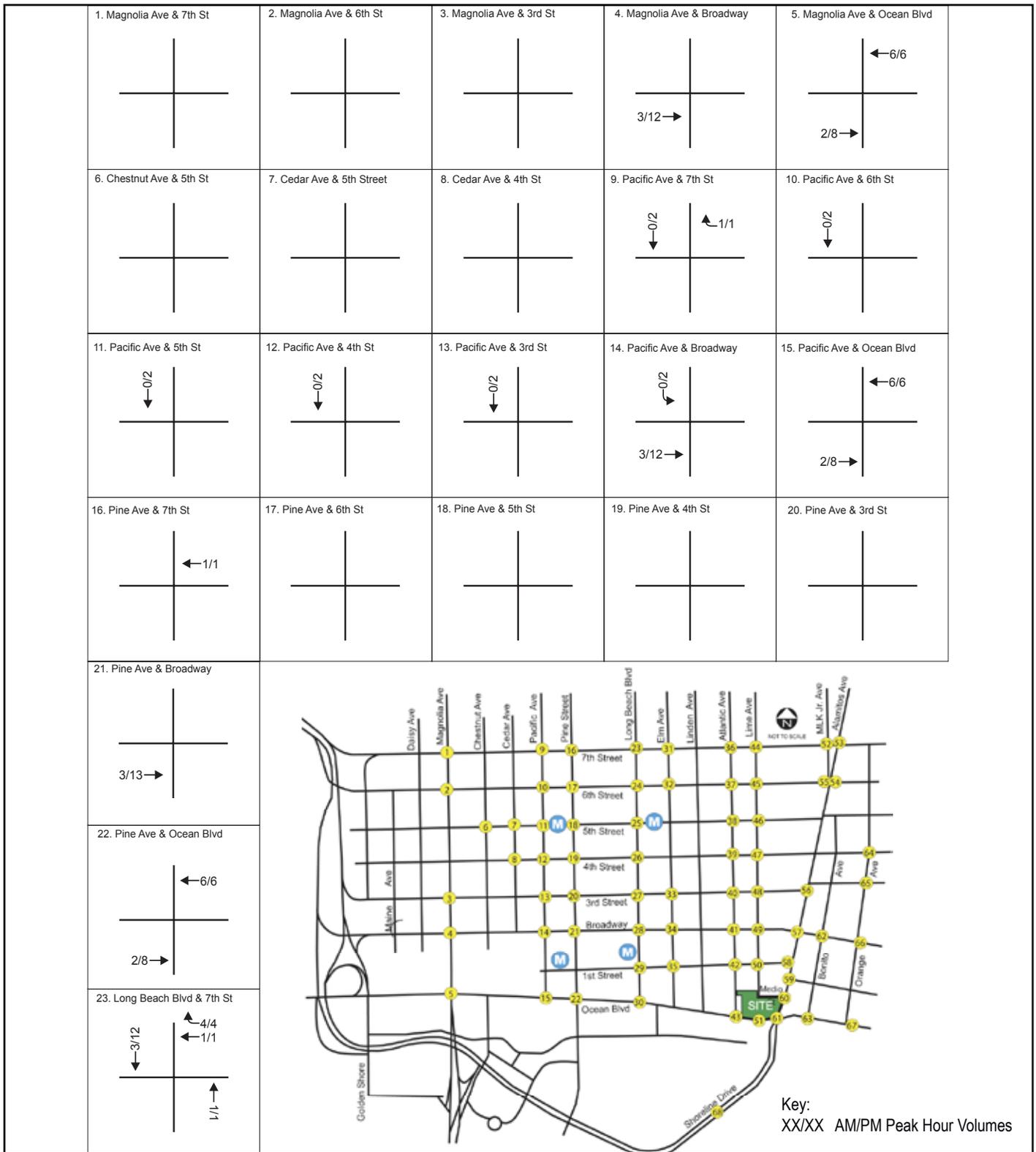
### **FORECAST YEAR 2015 WITHOUT PROJECT CONDITIONS**

Forecast year 2015 without project traffic conditions were generated by applying ambient traffic growth (general background regional growth) to existing traffic volumes plus growth in traffic volumes generated by specific cumulative projects expected to be completed by 2015.

Ambient growth is considered regional background growth from development and growth located outside the study area and increased activity at existing developments within the study area. Based on discussions and feedback from City of Long Beach staff, MMA applied an annual background growth rate of 1.00 percent to existing traffic volumes to account for forecast year 2015 ambient growth in the project vicinity.

Several related cumulative projects within the downtown area are anticipated to be operating by 2015, as outlined in Section 4.0, *Basis of Cumulative Analysis*. The City provided a list of new development and redevelopment projects in the general area including the location, number of units or square footage and percent complete for each project. Cumulative projects already constructed, but not occupied, were also included within the analysis. Forecast trip estimates for the related cumulative projects were developed based on ITE rates. Adjustments were included for pass-by and non-auto trips based on information in the ITE trip generation publication and rates developed for other developments in downtown Long Beach. While transit access to the project site is available, an explicit reduction in trips for transit use was not included. This is because the overall use of transit in the area could not be defined and the trip rates for uses, such as apartments, in the ITE manual include some use of transit in their calculations.

Table 5.3-6, *Forecast Cumulative Projects Trip Generation*, summarizes the peak hour trips forecast to be generated from the related cumulative projects; refer to Appendix 15.3 for detailed trip generation development.

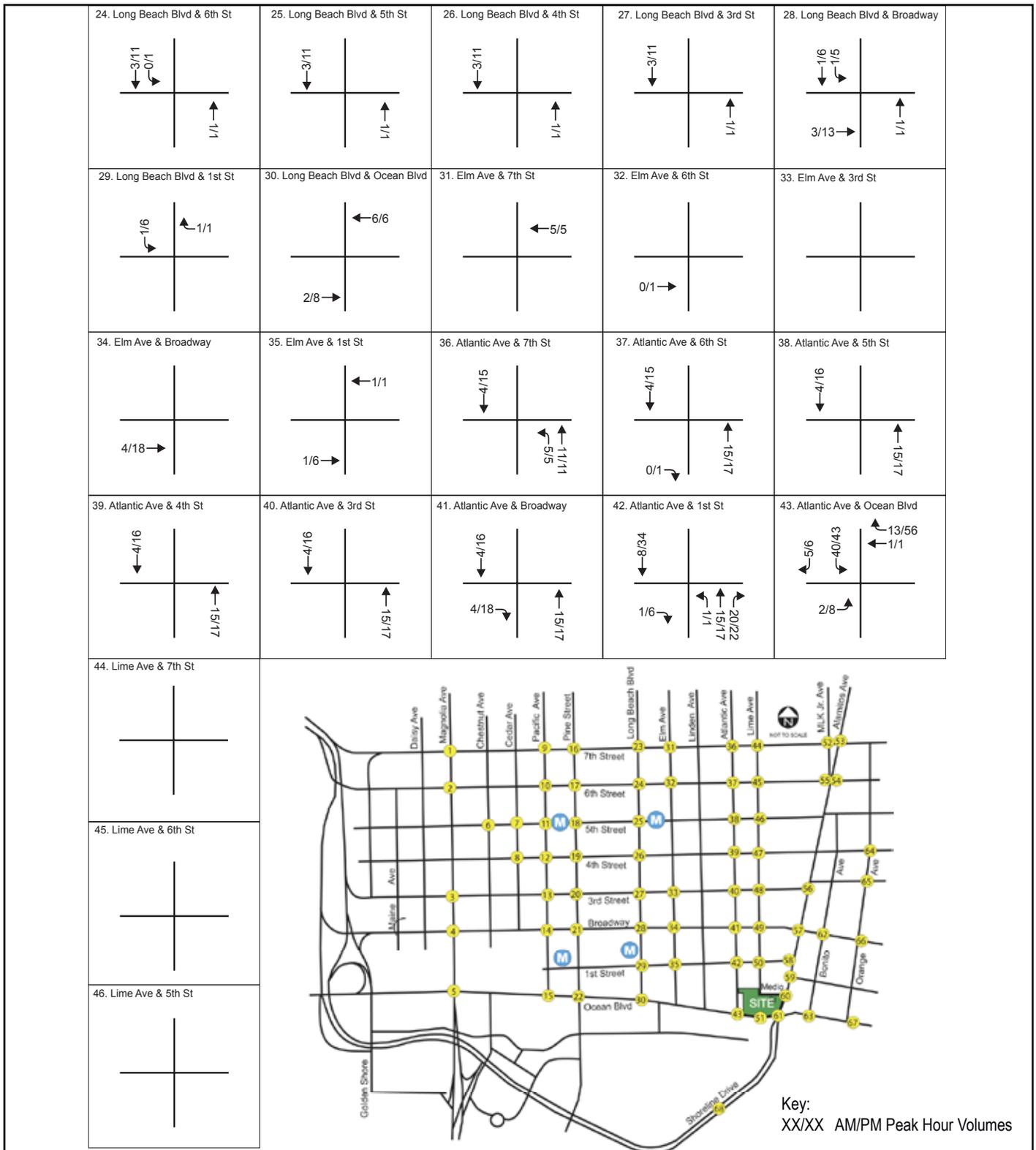


Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



SHORELINE GATEWAY PROJECT  
ENVIRONMENTAL IMPACT REPORT  
**Forecast Proposed Project Peak Hour  
Intersection Volumes (Study Intersections 1 to 23)**

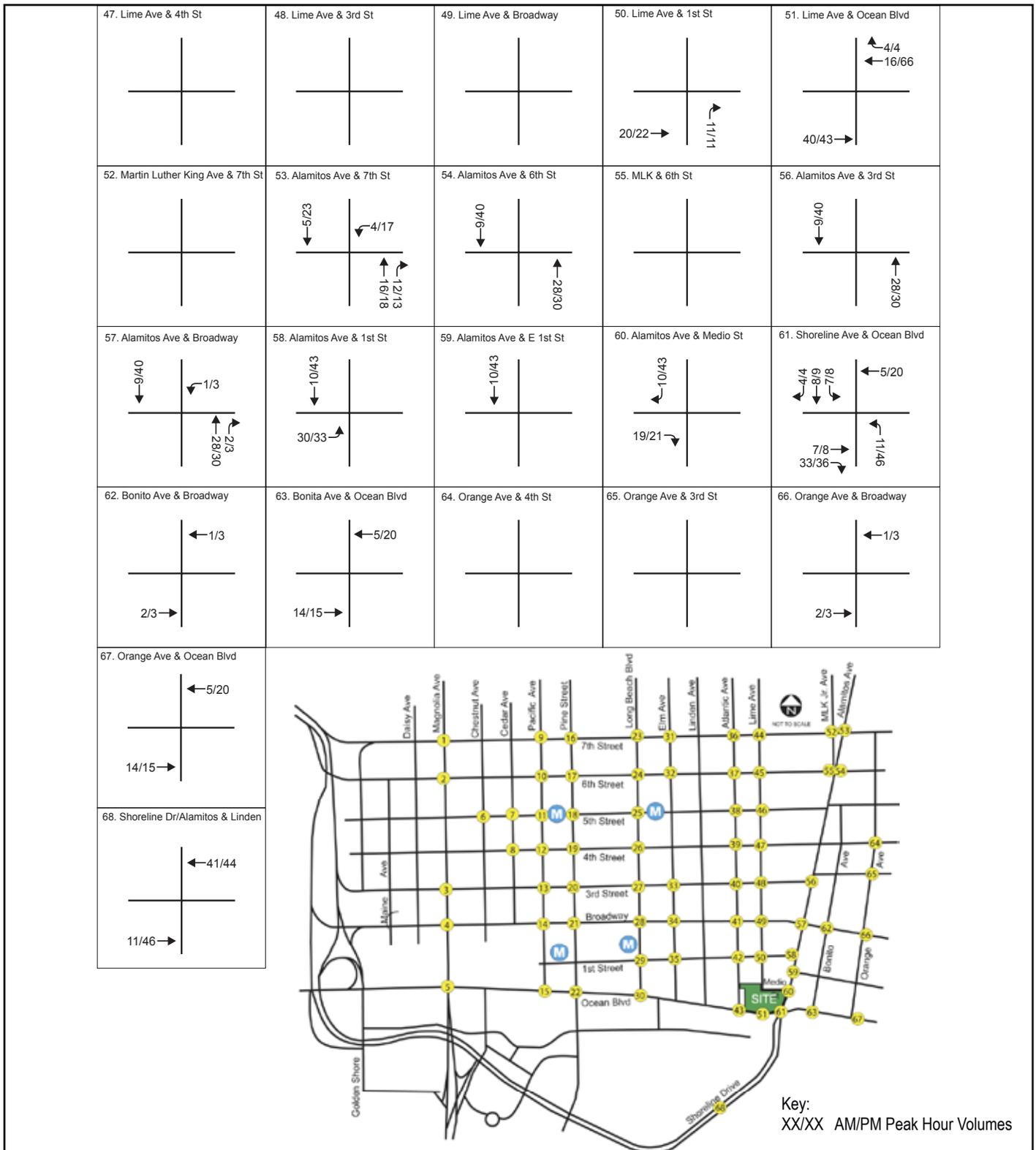


Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



SHORELINE GATEWAY PROJECT  
ENVIRONMENTAL IMPACT REPORT  
**Forecast Proposed Project Peak Hour  
Intersection Volumes (Study Intersections 24 to 46)**



Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



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# SHORELINE GATEWAY PROJECT ENVIRONMENTAL IMPACT REPORT

## Forecast Proposed Project Peak Hour Intersection Volumes (Study Intersections 47 to 68)



As indicated in Table 5.3-6, the related cumulative projects are forecasted to generate approximately 72,722 daily trips, which include 3,945 AM peak hour trips and 5,358 PM peak hour trips.

Trip distribution from the cumulative projects was determined based on the patterns of existing area traffic for similar types of developments and on patterns listed in previous traffic studies for the area. The trips generated by the cumulative projects were assigned to the area street system based on this directional distribution.

Exhibit 5.3-6a, 5.3-6b and 5.3-6c, Forecast Year 2015 Without Project Peak Hour Intersection Volumes, shows forecast year 2015 without project conditions peak-hour intersection traffic volumes.

Table 5.3-7, Forecast Year 2015 Without Project Conditions Peak Hour Intersection LOS, summarizes the AM and PM peak hour LOS of the study intersections.

As indicated in Table 5.3-7, 14 study intersections are forecasted to operate at a deficient LOS (LOS E or F) according to City of Long Beach performance criteria for forecast year 2105 without project conditions:

- Magnolia Avenue and 7<sup>th</sup> Street (AM peak hour only);
- Magnolia Avenue and 6<sup>th</sup> Street (PM peak hour only);
- Pacific Avenue and Broadway (PM peak hour only);
- Pacific Avenue and Ocean Boulevard (AM peak hour only);
- Pine Avenue and Broadway (PM peak hour only);
- Pine Avenue and Ocean Boulevard (PM peak hour only);
- Lime Avenue and 7<sup>th</sup> Street (AM and PM peak hours);
- Lime Avenue and 3<sup>rd</sup> Street (AM peak hour only);
- Lime Avenue and Broadway (PM peak hour only);
- Alamitos Avenue and 7<sup>th</sup> Street (AM and PM peak hours);
- Alamitos Avenue and 3<sup>rd</sup> Street (AM peak hour only);
- Alamitos Avenue and Broadway (AM and PM peak hours);
- Alamitos Avenue/Shoreline Drive and Ocean Boulevard (AM and PM peak hours); and
- Orange Avenue and Ocean Boulevard (AM and PM peak hours).

## **FORECAST YEAR 2015 WITH PROJECT CONDITIONS**

Forecast year 2015 with project traffic volumes were derived by adding forecast project-generated trips to forecast year 2015 without-project traffic volumes.

Exhibits 5.3-7a, 5.3-7b and 5.3-7c, Forecast Year 2015 With Project Peak Hour Intersection Volumes, shows forecast year 2015 with project AM and PM peak hour intersection traffic volumes.



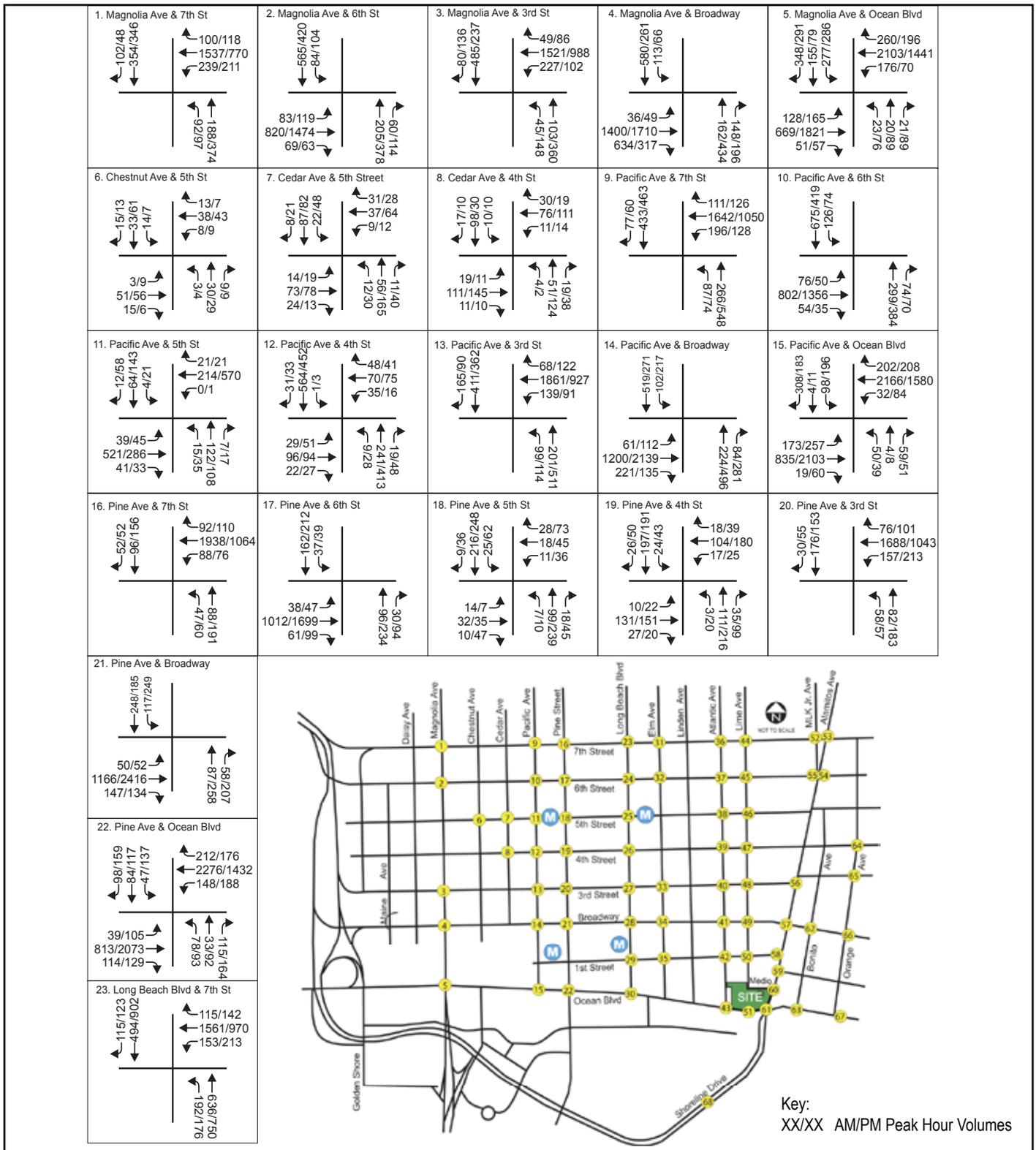
**Table 5.3-6  
Forecast Cumulative Projects Trip Generation**

Pending/Approved Project Location	Proposed Uses	AM Peak-Hour Trips			PM Peak-Hour Trips			Daily 24-Hour Trips
		Total	In	Out	Total	In	Out	
201 The Promenade	162 hotel rooms	74	45	29	96	51	45	1,823
	4,000 Sq. ft. retail	23	14	9	37	36	1	838
	7,000 Sq. ft. restaurant	65	42	23	61	37	24	890
517 E. 1 <sup>st</sup> Street	69 hotel rooms	26	16	10	41	22	19	991
224-248 E. Broadway	48 condo units	29	5	24	33	22	11	344
	14,000 Sq. ft. retail	47	29	18	84	80	3	1,853
	3,000 Sq. ft. restaurant	27	19	8	20	12	8	400
835 Locust Avenue	82 condo units	54	14	41	68	39	29	542
201 E. Broadway	11 condo units	9	2	7	10	7	3	98
100 E. Ocean Boulevard	155 apartment units	80	16	64	103	67	36	1,082
350 E. Ocean Boulevard	556 apartment units	276	55	221	323	210	113	3,492
200 E. Broadway	62 apartment units	34	7	27	52	34	18	523
	9,000 Sq. ft. retail	38	23	15	66	63	3	1,467
640 Long Beach Boulevard	12,000 Sq. ft. retail	44	25	19	51	76	-25	1,058
400 W. Ocean Boulevard	246 apartment units	124	25	99	153	99	54	1,629
150 W. Ocean Boulevard	216 apartment units	110	22	88	136	89	48	1,449
110 W. Ocean Boulevard	45 apartment units	26	5	21	42	28	15	421
4 <sup>th</sup> Street and Elm Avenue	72 apartment units	39	8	31	57	37	20	583
Promenade site between Broadway and 3 <sup>rd</sup> Street	96 apartment units	51	10	41	70	46	25	727
	14,000 Sq. ft. retail	48	29	19	86	82	3	1,892
133 The Promenade	83 apartment units	44	9	36	63	41	22	649
	22,000 Sq. ft. retail	64	39	25	117	112	5	2,570
433 Pine Avenue	30 apartment units	18	4	15	34	22	12	331
600 W. Broadway	1,329 condo units	409	70	339	501	336	165	5,787
	10,000 Sq. ft. retail	39	24	15	68	66	3	1,520
745 W. 3 <sup>rd</sup> Street	64 apartment units	35	7	28	53	34	18	535
427 W. 6 <sup>th</sup> Street	10 apartment units	9	2	7	23	15	8	210
125 Linden Avenue	30 condo units	20	3	16	22	15	7	231
	2,000 Sq. ft. retail	15	9	6	31	23	9	534
250 Pacific Avenue	142 condo units	68	12	57	80	54	26	865
210 W. 3 <sup>rd</sup> Street	94 apartment units	50	10	40	69	45	24	715
	3,000 Sq. ft. retail	19	12	7	20	29	-9	689
	123,000 Sq. ft. office	190	167	23	183	31	152	1,560



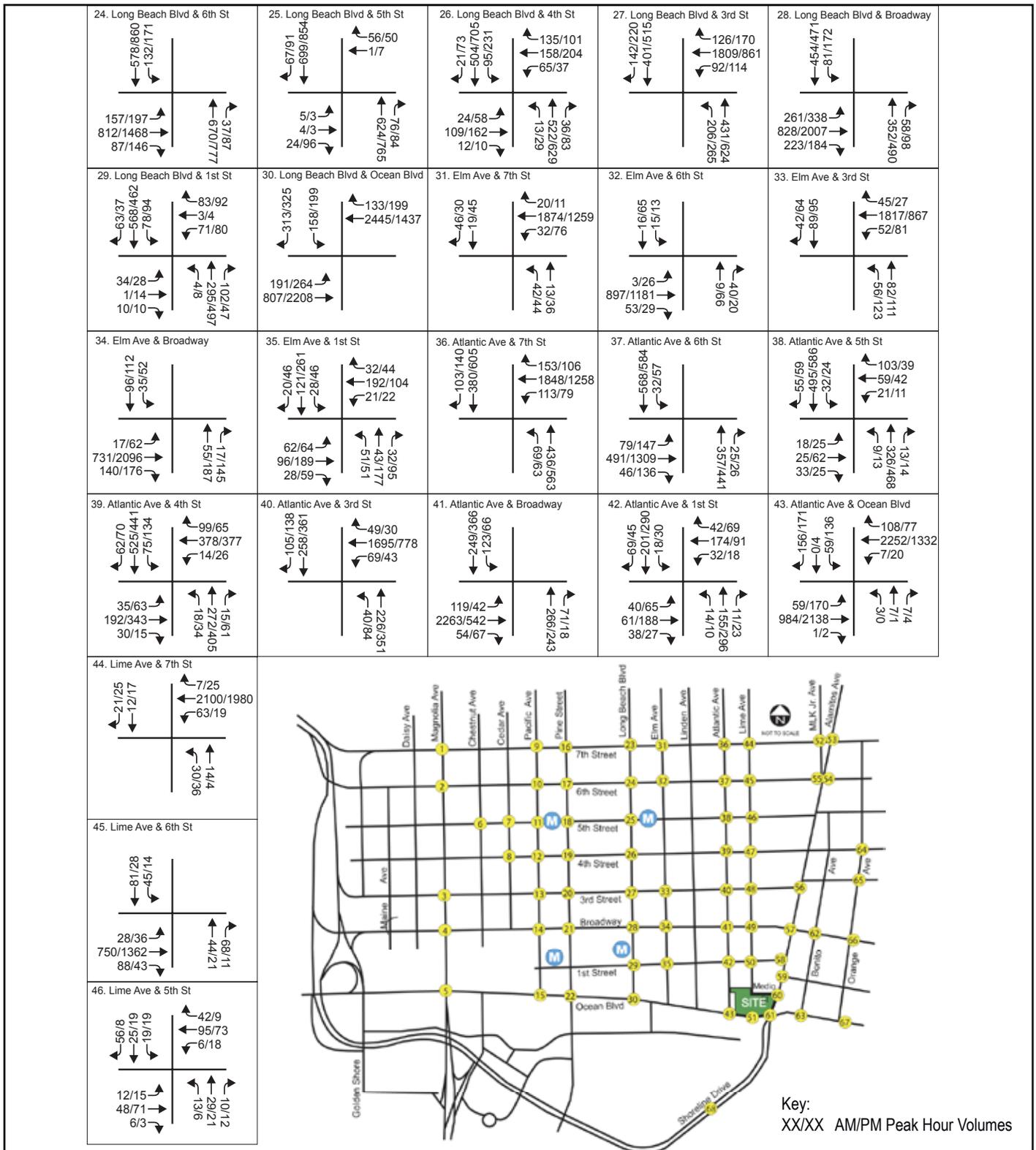
**Table 5.3-6 [continued]  
Forecast Related Cumulative Projects Trip Generation**

Pending/Approved Project Location	Proposed Uses	AM Peak-Hour Trips			PM Peak-Hour Trips			Daily 24-Hour Trips
		Total	In	Out	Total	In	Out	
643 W. Broadway	345 apartment units	173	35	138	207	135	73	2,224
	15,000 Sq. ft. retail	0	0	0	0	0	0	1,979
505 W. Broadway	164 condo units	77	13	64	90	60	30	977
421 W. Broadway	190 condo units	86	15	72	102	68	34	1,108
285 Bay Street	140 hotel rooms	62	38	24	83	44	39	1,626
350 Long Beach Boulevard	82 condo units	44	7	37	51	34	17	542
	7,000 Sq. ft. retail	32	19	12	54	52	2	1,206
Shoreline Drive and Pine Avenue	96,000 Sq. ft. retail	114	70	45	402	219	183	6,603
	14,000 Sq. ft. restaurant	152	83	69	87	52	35	1,771
604 Pine Avenue	482 condo units	182	31	151	218	146	72	2,444
	9,000 Sq. ft. retail	37	23	14	64	61	3	1,420
432 West Ocean	80 condo units	43	7	36	50	34	17	531
	140 hotel rooms	62	38	24	83	44	39	1,626
Pacific Avenue between 3 <sup>rd</sup> and 4 <sup>th</sup> Streets	171 condo units 20,000 Sq. ft. retail	88	20	68	141	85	56	1,538
Long Beach Boulevard between 1 <sup>st</sup> Street and Broadway	446 condo units 11,000 Sq. ft. retail	203	53	150	337	198	139	3,748
Block bounded by 3 <sup>rd</sup> Street, Elm Avenue, Broadway and Long Beach Boulevard	179 condo units 16,000 Sq. ft. retail	172	68	104	192	120	72	2,038
1 <sup>st</sup> Street and Elm Avenue	54 condo units	14	3	11	3	3	0	43
100 Long Beach Boulevard	72 condo units	8	-24	32	9	25	-16	248
600 East Broadway and 631-633 East 1 <sup>st</sup> Street	62,000 Sq. ft. retail	148	100	48	341	164	177	2,933
Block bounded by 5 <sup>th</sup> Street, Pacific Avenue, 4 <sup>th</sup> Street and Cedar	141 condo units 23,000 Sq. ft. retail	33	4	29	28	20	8	318
Pacific Avenue between 4 <sup>th</sup> and 5 <sup>th</sup> Streets	118 apartment units	12	-10	22	-39	-9	-30	-499
<b>Total</b>		<b>3,945</b>	<b>1,369</b>	<b>2,576</b>	<b>5,358</b>	<b>3,514</b>	<b>1,844</b>	<b>72,722</b>
Sq. ft. = square feet								
Note: Portions of projects that were complete and occupied at the time of the traffic counts were not included as their trips would have been included in the existing intersection traffic volumes.								
Source: ITE Trip Generation Manual, 7 <sup>th</sup> Ed., 2003. Equation-based rates were used where available; otherwise average trip rates were utilized.								



Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



Source: Meyer, Mohaddes Associates, Inc., April 2006.

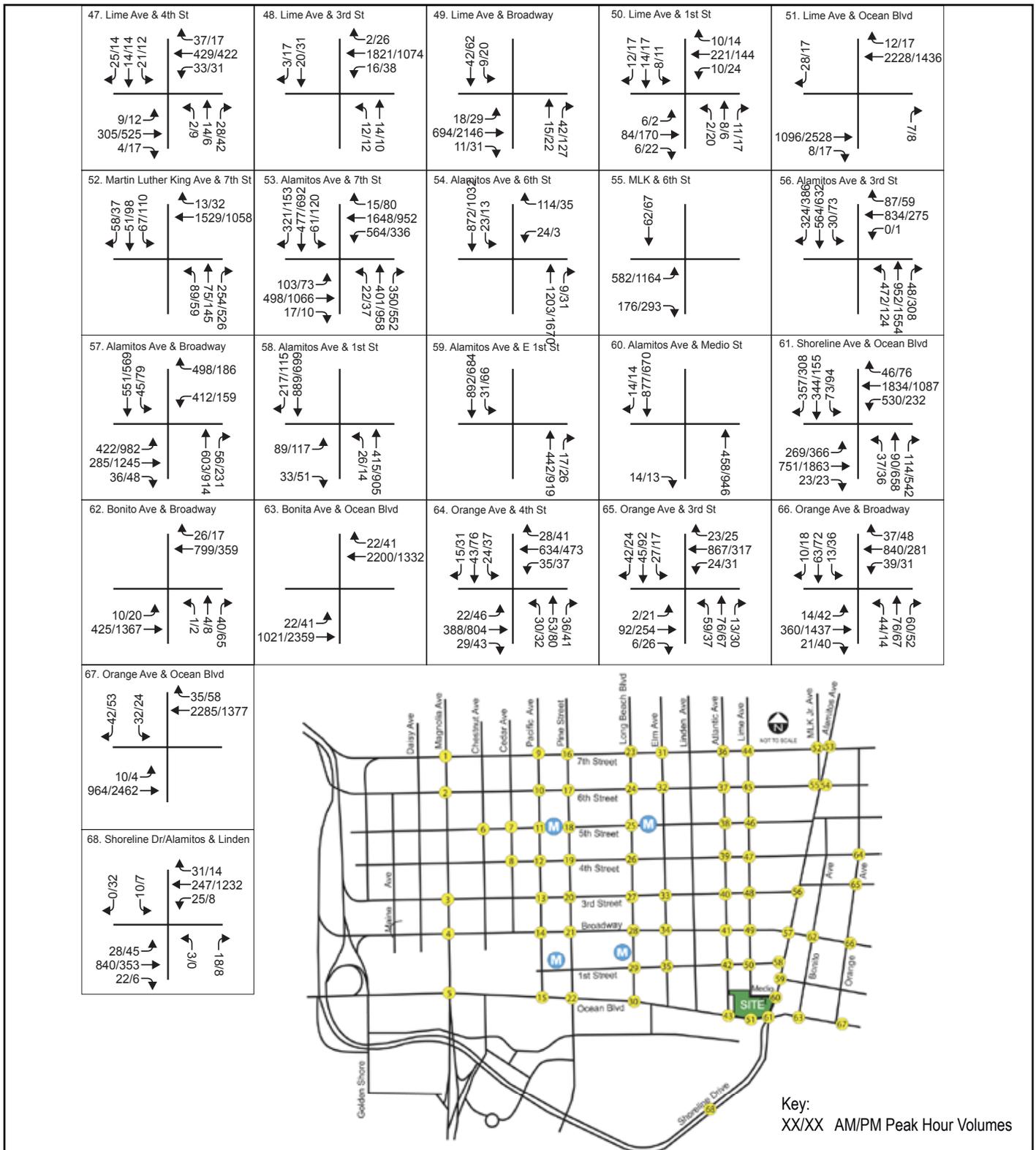
Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



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# SHORELINE GATEWAY PROJECT ENVIRONMENTAL IMPACT REPORT

## Forecast Year 2015 Without Project Peak Hour Intersection Volumes (Study Intersections 24 to 46)



Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



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SHORELINE GATEWAY PROJECT  
ENVIRONMENTAL IMPACT REPORT  
**Forecast Year 2015 Without Project Peak Hour  
Intersection Volumes (Study Intersections 47 to 68)**

Exhibit 5.3-6c



**Table 5.3-7  
Forecast Year 2015 Without Project Conditions Peak Hour Intersection LOS**

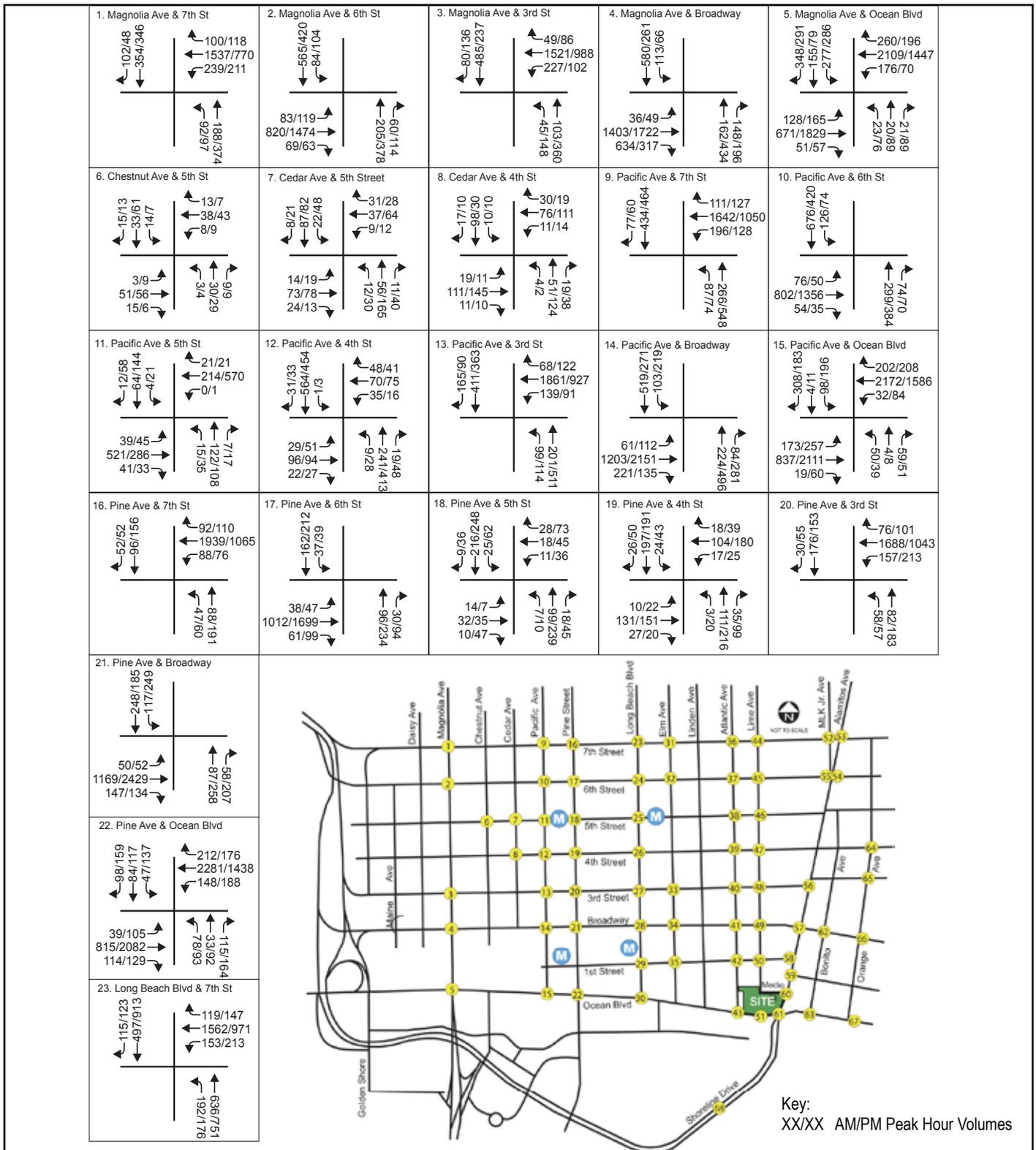
Study Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C
<b>Magnolia Avenue &amp; 7<sup>th</sup> Street</b>	E		<b>0.922</b>	B		0.683
<b>Magnolia Avenue &amp; 6<sup>th</sup> Street</b>	C		0.731	<b>E</b>		<b>0.904</b>
Magnolia Avenue & 3 <sup>rd</sup> Street	C		0.736	B		0.618
Magnolia Avenue & Broadway	C		0.759	C		0.750
Magnolia Avenue & Ocean Boulevard	D		0.866	D		0.812
Chestnut Avenue & 5 <sup>th</sup> Street	B	10.2		B	10.6	
Cedar Avenue & 5 <sup>th</sup> Street	A		0.296	A		0.371
Cedar Avenue & 4 <sup>th</sup> Street	A		0.329	A		0.361
Pacific Avenue & 7 <sup>th</sup> Street	C		0.737	A		0.594
Pacific Avenue & 6 <sup>th</sup> Street	A		0.536	A		0.587
Pacific Avenue & 5 <sup>th</sup> Street	A		0.517	B		0.668
Pacific Avenue & 4 <sup>th</sup> Street	A		0.414	A		0.404
Pacific Avenue & 3 <sup>rd</sup> Street	C		0.765	A		0.575
<b>Pacific Avenue &amp; Broadway</b>	B		0.608	<b>E</b>		<b>0.985</b>
<b>Pacific Avenue &amp; Ocean Boulevard</b>	<b>E</b>		<b>0.938</b>	D		0.825
Pine Avenue & 7 <sup>th</sup> Street	B		0.675	A		0.552
Pine Avenue & 6 <sup>th</sup> Street	A		0.485	C		0.766
Pine Avenue & 5 <sup>th</sup> Street	A		0.326	A		0.453
Pine Avenue & 4 <sup>th</sup> Street	A		0.392	A		0.518
Pine Avenue & 3 <sup>rd</sup> Street	B		0.642	A		0.481
<b>Pine Avenue &amp; Broadway</b>	B		0.608	<b>F</b>		<b>1.180</b>
<b>Pine Avenue &amp; Ocean Boulevard</b>	C		0.784	<b>E</b>		<b>0.923</b>
Long Beach Boulevard & 7 <sup>th</sup> Street	C		0.779	C		0.738
Long Beach Boulevard & 6 <sup>th</sup> Street	B		0.627	C		0.796
Long Beach Boulevard & 5 <sup>th</sup> Street	A		0.410	A		0.399
Long Beach Boulevard & 4 <sup>th</sup> Street	A		0.581	C		0.766
Long Beach Boulevard & 3 <sup>rd</sup> Street	C		0.776	B		0.664
Long Beach Boulevard & Broadway	A		0.503	D		0.828
Long Beach Boulevard & 1 <sup>st</sup> Street	A		0.371	A		0.438
Long Beach Boulevard & Ocean Boulevard	D		0.881	C		0.710
Elm Avenue & 7 <sup>th</sup> Street	A		0.579	A		0.472
Elm Avenue & 6 <sup>th</sup> Street	A		0.366	A		0.436
Elm Avenue & 3 <sup>rd</sup> Street	B		0.638	A		0.514
Elm Avenue & Broadway	A		0.418	D		0.871
Elm Avenue & 1 <sup>st</sup> Street	A		0.435	A		0.552
Atlantic Avenue & 7 <sup>th</sup> Street	C		0.775	C		0.716
Atlantic Avenue & 6 <sup>th</sup> Street	A		0.465	B		0.655
Atlantic Avenue & 5 <sup>th</sup> Street	A		0.436	A		0.424
Atlantic Avenue & 4 <sup>th</sup> Street	B		0.655	B		0.673



**Table 5.3-7 [continued]  
Forecast Year 2015 Without Project Conditions Peak Hour Intersection LOS**

Study Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	V/C	LOS	Delay (sec/veh)	V/C
Atlantic Avenue & 3 <sup>rd</sup> Street	B		0.680	A		0.521
Atlantic Avenue & Broadway	D		0.862	A		0.379
Atlantic Avenue & 1 <sup>st</sup> Street	A		0.413	A		0.454
Atlantic Avenue & Ocean Boulevard	C		0.761	B		0.695
<b>Lime Avenue &amp; 7<sup>th</sup> Street</b>	<b>F</b>	<b>176.3</b>		<b>F</b>	<b>56.3</b>	
Lime Avenue & 6 <sup>th</sup> Street	A		0.410	A		0.457
Lime Avenue & 5 <sup>th</sup> Street	A	7.9	0.191	A	7.6	0.120
Lime Avenue & 4 <sup>th</sup> Street	C	19.7		D	25.9	
<b>Lime Avenue &amp; 3<sup>rd</sup> Street</b>	<b>F</b>	<b>66.1</b>		C	23.8	
<b>Lime Avenue &amp; Broadway</b>	C	20.8		<b>F</b>	<b>773.8</b>	
Lime Avenue & 1 <sup>st</sup> Street	B	11.3		B	11.7	
Lime Avenue & Ocean Boulevard	C	16.2		B	14.2	
Martin Luther King Avenue & 7 <sup>th</sup> Street	C		0.744	C		0.774
<b>Alamitos Avenue &amp; 7<sup>th</sup> Street</b>	<b>E</b>		<b>0.987</b>	<b>F</b>		<b>1.137</b>
Alamitos Avenue & 6 <sup>th</sup> Street	B		0.628	C		0.706
Martin Luther King Avenue & 6 <sup>th</sup> Street	A		0.360	A		0.595
<b>Alamitos Avenue &amp; 3<sup>rd</sup> Street</b>	<b>F</b>		<b>1.246</b>	D		0.875
<b>Alamitos Avenue &amp; Broadway</b>	<b>F</b>		<b>1.081</b>	<b>F</b>		<b>1.101</b>
Alamitos Avenue & 1 <sup>st</sup> Street	A		0.568	A		0.533
Alamitos Avenue & East 1 <sup>st</sup> Street	A	8.4		B	11.0	
Alamitos Avenue & Medio Street	B	12.0		B	11.0	
<b>Alamitos Avenue/Shoreline Drive &amp; Ocean Boulevard</b>	<b>F</b>		<b>1.224</b>	<b>F</b>		<b>1.211</b>
Bonito Avenue & Broadway	B	12.4		D	28.9	
Bonito Avenue & Ocean Boulevard	C	23.1		B	13.3	
Orange Avenue & 4 <sup>th</sup> Street	B		0.668	C		0.799
Orange Avenue & 3 <sup>rd</sup> Street	A		0.538	A		0.459
Orange Avenue & Broadway	A		0.596	C		0.766
<b>Orange Avenue &amp; Ocean Boulevard</b>	<b>E</b>		<b>0.901</b>	<b>E</b>		<b>0.944</b>
Shoreline Drive & Linden	A		0.373	A		0.453

LOS = level of service; V/C = volume-to-capacity ratio; N/A = not applicable; sec = seconds; veh = vehicle.  
 Boldface = deficient intersection operation.



Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.

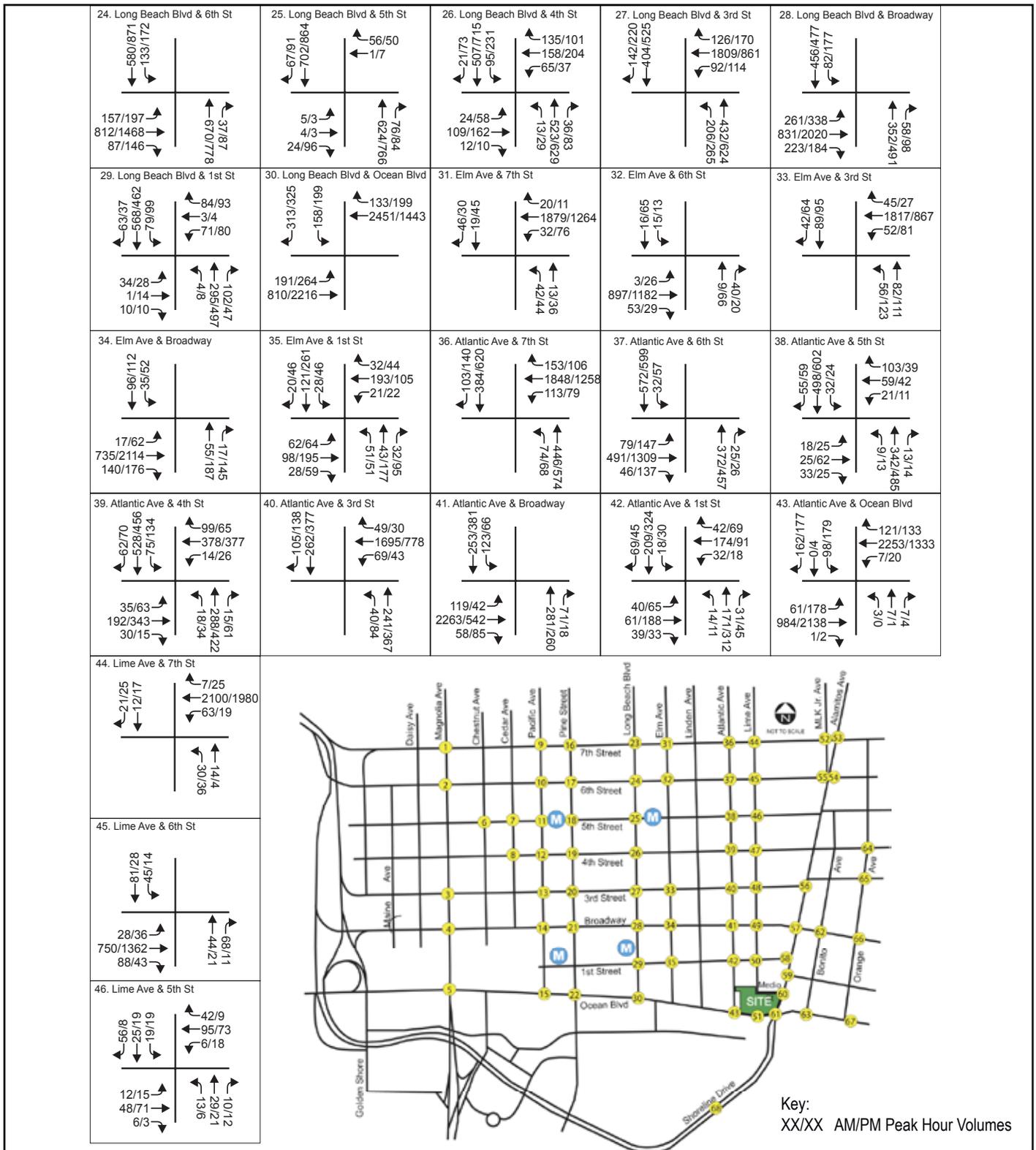


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# SHORELINE GATEWAY PROJECT ENVIRONMENTAL IMPACT REPORT

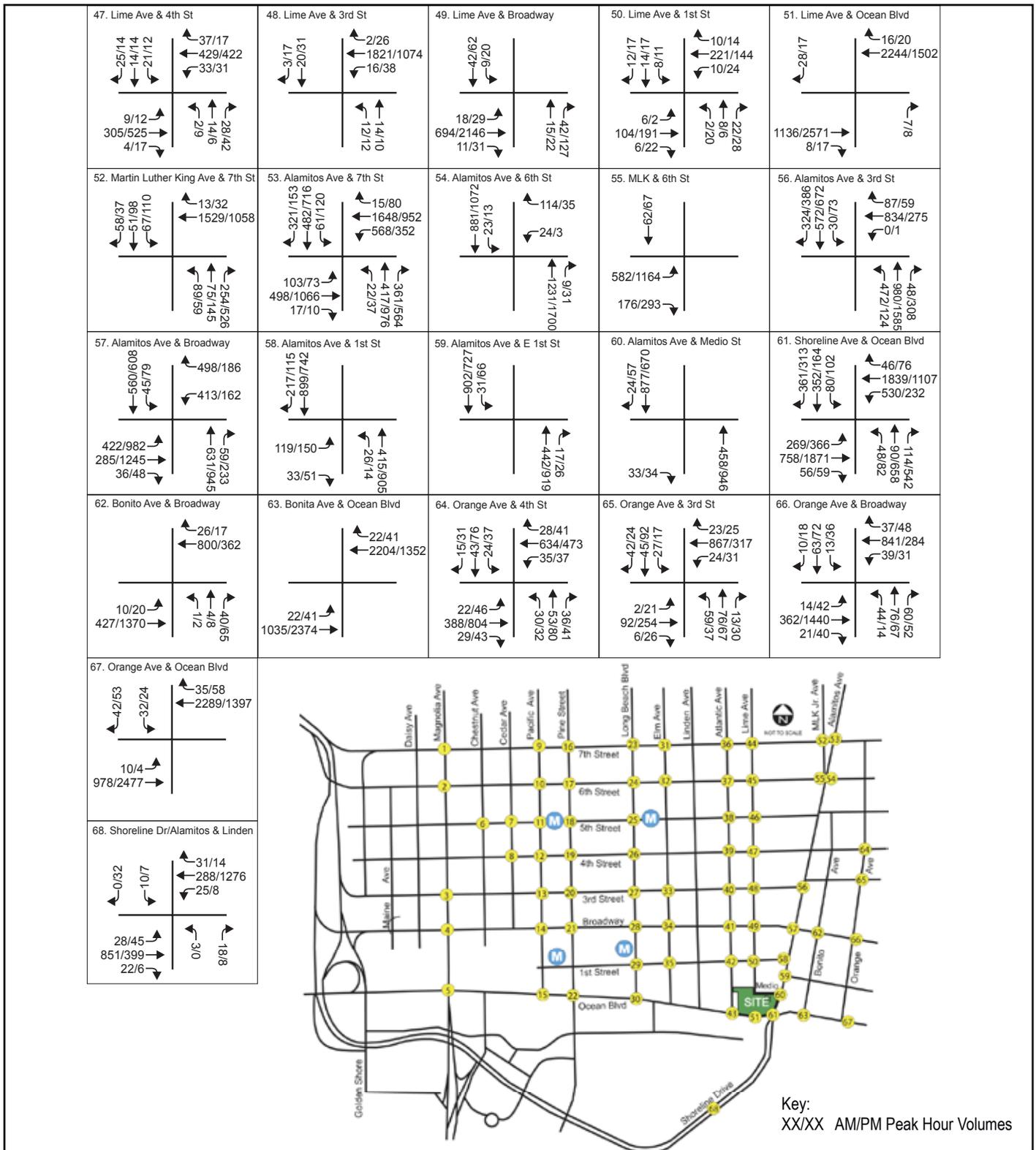
## Forecast Year 2015 With Project Peak Hour Intersection Volumes (Study Intersections 1 to 23)

Exhibit 5.3-7a



Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



Source: Meyer, Mohaddes Associates, Inc., April 2006.

Note: Intersections without assigned volumes are at the periphery of the study area and are not forecast to be affected by project generated trips.



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# SHORELINE GATEWAY PROJECT ENVIRONMENTAL IMPACT REPORT

## Forecast Year 2015 With Project Peak Hour Intersection Volumes (Study Intersections 47 to 68)



Table 5.3-8, Forecast Year 2015 With Project Conditions Peak Hour Intersection LOS, summarizes the AM and PM peak-hour LOS of the study intersections.

As shown in Table 5.3-8, 14 study intersections are forecast to operate at a deficient LOS (E or F) according to City of Long Beach performance criteria for forecast year 2015 with project conditions:

- Magnolia Avenue and 7<sup>th</sup> Street (AM peak hour only);
- Magnolia Avenue and 6<sup>th</sup> Street (PM peak hour only);
- Pacific Avenue and Broadway (PM peak hour only);
- Pacific Avenue and Ocean Boulevard (AM peak hour only);
- Pine Avenue and Broadway (PM peak hour only);
- Pine Avenue and Ocean Boulevard (PM peak hour only);
- Lime Avenue and 7<sup>th</sup> Street (AM and PM peak hours);
- Lime Avenue and 3<sup>rd</sup> Street (AM peak hour only);
- Lime Avenue and Broadway (PM peak hour only);
- Alamitos Avenue and 7<sup>th</sup> Street (AM and PM peak hours);
- Alamitos Avenue and 3<sup>rd</sup> Street (AM peak hour only);
- Alamitos Avenue and Broadway (AM and PM peak hours);
- Alamitos Avenue/Shoreline Drive and Ocean Boulevard (AM and PM peak hours); and
- Orange Avenue and Ocean Boulevard (AM and PM peak hours).

As also shown in Table 5.3-8, the following intersections would result in a significant impact for forecast year 2015 with project conditions, according to the City of Long Beach performance criteria:

- Alamitos Avenue and 7<sup>th</sup> Street (PM peak hour only); and
- Alamitos Avenue/Shoreline Drive and Ocean Boulevard (AM peak hour only).

### **Unsignalized Intersections**

Since the City of Long Beach does not have official criteria to determine significant traffic impacts at a stop-controlled intersection, a review of the unsignalized intersections near the project was performed to determine the relative increase in delay for the purpose of significant impact determination. For forecast year 2015, there would be 12 unsignalized intersections in the study area. Of the 12 unsignalized intersections, five would operate at LOS D or worse during the AM and/or PM peak hour; refer to Table 5.3-8.

The City has plans to complete the grid of traffic signals in the downtown and the immediate vicinity at locations where volumes and/or delay meet accepted warrants for signals and/or the location of the intersections are appropriately spaced within the existing grid of streets and signals. The intersections along Lime Avenue (7<sup>th</sup> Street, 3<sup>rd</sup> Street and Broadway) are included in this plan. Based on the projected operating conditions and traffic volumes at those intersections, a traffic signal warrant analysis was completed.



**Table 5.3-8  
Forecast Year 2015 With Project Conditions Peak Hour Intersection LOS**

Study Intersection	AM Peak Hour								PM Peak Hour							
	No Project			With Project			Change	Impact	No Project			With Project			Change	Impact
	LOS	Delay	V/C	LOS	Delay	V/C			LOS	Delay	V/C	LOS	Delay	V/C		
Magnolia Avenue & 7 <sup>th</sup> Street	E		0.92	E		0.92	0.00	No	B		0.68	B		0.68	0.00	No
Magnolia Avenue & 6 <sup>th</sup> Street	C		0.73	C		0.73	0.00	No	E		0.90	E		0.90	0.00	No
Magnolia Avenue & 3 <sup>rd</sup> Street	C		0.74	C		0.74	0.00	No	B		0.62	B		0.62	0.00	No
Magnolia Avenue & Broadway	C		0.76	C		0.76	0.00	No	C		0.75	C		0.75	0.00	No
Magnolia Avenue & Ocean Boulevard	D		0.87	D		0.87	0.00	No	D		0.81	D		0.81	0.00	No
Chestnut Avenue & 5 <sup>th</sup> Street	B	10.2		B	10.2		0.00	No	B	10.6		B	10.6		0.00	No
Cedar Avenue & 5 <sup>th</sup> Street	A		0.30	A		0.30	0.00	No	A		0.37	A		0.37	0.00	No
Cedar Avenue & 4 <sup>th</sup> Street	A		0.33	A		0.33	0.00	No	A		0.36	A		0.36	0.00	No
Pacific Avenue & 7 <sup>th</sup> Street	C		0.74	C		0.74	0.00	No	A		0.59	A		0.59	0.00	No
Pacific Avenue & 6 <sup>th</sup> Street	A		0.54	A		0.54	0.00	No	A		0.59	A		0.59	0.00	No
Pacific Avenue & 5 <sup>th</sup> Street	A		0.52	A		0.52	0.00	No	B		0.67	B		0.67	0.00	No
Pacific Avenue & 4 <sup>th</sup> Street	A		0.41	A		0.41	0.00	No	A		0.40	A		0.41	0.01	No
Pacific Avenue & 3 <sup>rd</sup> Street	C		0.77	C		0.77	0.00	No	A		0.58	A		0.58	0.00	No
Pacific Avenue & Broadway	B		0.61	B		0.61	0.00	No	E		0.99	E		0.99	0.00	No
Pacific Avenue & Ocean Boulevard	E		0.94	E		0.94	0.00	No	D		0.83	D		0.83	0.00	No
Pine Avenue & 7 <sup>th</sup> Street	B		0.68	B		0.68	0.00	No	A		0.55	A		0.55	0.00	No
Pine Avenue & 6 <sup>th</sup> Street	A		0.49	A		0.49	0.00	No	C		0.77	C		0.77	0.00	No
Pine Avenue & 5 <sup>th</sup> Street	A		0.33	A		0.33	0.00	No	A		0.45	A		0.45	0.00	No
Pine Avenue & 4 <sup>th</sup> Street	A		0.39	A		0.39	0.00	No	A		0.52	A		0.52	0.00	No
Pine Avenue & 3 <sup>rd</sup> Street	B		0.64	B		0.64	0.00	No	A		0.48	A		0.48	0.00	No
Pine Avenue & Broadway	B		0.61	B		0.61	0.00	No	F		1.18	F		1.18	0.00	No
Pine Avenue & Ocean Boulevard	C		0.78	C		0.79	0.01	No	E		0.92	E		0.93	0.01	No
Long Beach Boulevard & 7 <sup>th</sup> Street	C		0.78	C		0.78	0.00	No	C		0.74	C		0.74	0.00	No
Long Beach Boulevard & 6 <sup>th</sup> Street	B		0.63	B		0.63	0.00	No	C		0.80	C		0.80	0.00	No
Long Beach Boulevard & 5 <sup>th</sup> Street	A		0.41	A		0.41	0.00	No	A		0.40	A		0.51	0.11	No
Long Beach Boulevard & 4 <sup>th</sup> Street	A		0.58	A		0.58	0.00	No	C		0.77	C		0.77	0.00	No
Long Beach Boulevard & 3 <sup>rd</sup> Street	C		0.78	C		0.78	0.00	No	B		0.66	B		0.67	0.01	No
Long Beach Boulevard & Broadway	A		0.50	A		0.51	0.01	No	D		0.83	D		0.83	0.00	No
Long Beach Boulevard & 1 <sup>st</sup> Street	A		0.37	A		0.37	0.00	No	A		0.44	A		0.44	0.00	No
Long Beach Boulevard & Ocean Boulevard	D		0.88	D		0.88	0.00	No	C		0.71	C		0.71	0.00	No
Elm Avenue & 7 <sup>th</sup> Street	A		0.58	A		0.58	0.00	No	A		0.47	A		0.47	0.00	No
Elm Avenue & 6 <sup>th</sup> Street	A		0.37	A		0.37	0.00	No	A		0.44	A		0.44	0.00	No



**Table 5.3-8 [continued]**  
**Forecast Year 2015 With Project Conditions Peak Hour Intersection LOS**

Study Intersection	AM Peak Hour								PM Peak Hour							
	No Project			With Project			Change	Impact	No Project			With Project			Change	Impact
	LOS	Delay	V/C	LOS	Delay	V/C			LOS	Delay	V/C	LOS	Delay	V/C		
Elm Avenue & 3 <sup>rd</sup> Street	B		0.64	B		0.64	0.00	No	A		0.51	A		0.51	0.00	No
Elm Avenue & Broadway	A		0.42	A		0.42	0.00	No	D		0.87	D		0.88	0.01	No
Elm Avenue & 1 <sup>st</sup> Street	A		0.44	A		0.44	0.00	No	A		0.55	A		0.56	0.01	No
Atlantic Avenue & 7 <sup>th</sup> Street	C		0.78	C		0.78	0.00	No	C		0.72	C		0.72	0.00	No
Atlantic Avenue & 6 <sup>th</sup> Street	A		0.47	A		0.47	0.00	No	B		0.66	B		0.66	0.00	No
Atlantic Avenue & 5 <sup>th</sup> Street	A		0.44	A		0.44	0.00	No	A		0.42	A		0.43	0.01	No
Atlantic Avenue & 4 <sup>th</sup> Street	B		0.66	B		0.66	0.00	No	B		0.67	B		0.68	0.01	No
Atlantic Avenue & 3 <sup>rd</sup> Street	B		0.68	B		0.68	0.00	No	A		0.52	A		0.53	0.01	No
Atlantic Avenue & Broadway	D		0.86	D		0.87	0.01	No	A		0.38	A		0.39	0.01	No
Atlantic Avenue & 1 <sup>st</sup> Street	A		0.41	A		0.42	0.01	No	A		0.45	A		0.47	0.02	No
Atlantic Avenue & Ocean Boulevard	C		0.76	C		0.77	0.01	No	B		0.70	C		0.70	0.00	No
<b>Lime Avenue &amp; 7<sup>th</sup> Street</b>	<b>F</b>	<b>176.3</b>		<b>F</b>	<b>176.3</b>		0.00	No	<b>F</b>	<b>56.3</b>		<b>F</b>	<b>56.3</b>		0.00	No
Lime Avenue & 6 <sup>th</sup> Street	A		0.41	A		0.41	0.00	No	A		0.46	A		0.46	0.00	No
Lime Avenue & 5 <sup>th</sup> Street	A	7.9		A	7.9		0.00	No	A	7.6	0.12	A	7.6		0.00	No
Lime Avenue & 4 <sup>th</sup> Street	C	19.7		C	19.7		0.00	No	D	25.9		D	25.9		0.00	No
<b>Lime Avenue &amp; 3<sup>rd</sup> Street</b>	<b>E</b>	<b>66.1</b>		<b>F</b>	<b>66.1</b>		0.00	No	C	23.8		C	23.8		0.00	No
<b>Lime Avenue &amp; Broadway</b>	<b>C</b>	<b>20.8</b>		<b>C</b>	<b>20.8</b>		0.00	No	<b>F</b>	<b>773.8</b>		<b>F</b>	<b>773.8</b>		0.00	No
Lime Avenue & 1 <sup>st</sup> Street	B	11.3		B	11.5		0.20	No	B	11.7		B	11.9		0.20	No
Lime Avenue & Ocean Boulevard	C	16.2		N/A	N/A		N/A	No	B	14.2		N/A	N/A		N/A	No
Martin Luther King & 7 <sup>th</sup> Street	C		0.74	C		0.74	0.00	No	C		0.77	C		0.77	0.00	No
<b>Alamitos Avenue &amp; 7<sup>th</sup> Street</b>	<b>E</b>		<b>0.99</b>	<b>E</b>		<b>0.99</b>	0.00	No	<b>F</b>		<b>1.14</b>	<b>F</b>		<b>1.16</b>	<b>0.02</b>	<b>Yes</b>
Alamitos Avenue & 6 <sup>th</sup> Street	B		0.63	B		0.64	0.01	No	C		0.71	C		0.72	0.01	No
Martin Luther King & 6 <sup>th</sup> Street	A		0.36	A		0.36	0.00	No	A		0.60	A		0.60	0.00	No
<b>Alamitos Avenue &amp; 3<sup>rd</sup> Street</b>	<b>F</b>		<b>1.25</b>	<b>F</b>		<b>1.25</b>	0.00	No	<b>D</b>		<b>0.88</b>	<b>D</b>		<b>0.89</b>	<b>0.01</b>	<b>No</b>
<b>Alamitos Avenue &amp; Broadway</b>	<b>F</b>		<b>1.08</b>	<b>F</b>		<b>1.09</b>	0.01	No	<b>F</b>		<b>1.10</b>	<b>F</b>		<b>1.11</b>	<b>0.01</b>	<b>No</b>
Alamitos Avenue & 1 <sup>st</sup> Street	A		0.57	A		0.59	0.02	No	A		0.53	A		0.56	0.03	No
Alamitos Avenue & East 1 <sup>st</sup> Street	A	8.4		A	8.4		0.00	No	B	11.0		B	11.0		0.00	No
Alamitos Avenue & Medio Street	B	12.0		B	12.4		0.40	No	B	11.0		B	11.4		0.40	No
<b>Alamitos Avenue/ Shoreline Drive &amp; Ocean Boulevard</b>	<b>F</b>		<b>1.22</b>	<b>F</b>		<b>1.24</b>	<b>0.02</b>	<b>Yes</b>	<b>F</b>		<b>1.21</b>	<b>F</b>		<b>1.22</b>	<b>0.01</b>	<b>No</b>
Bonito Avenue & Broadway	B	12.4		B	12.5		0.10	No	D	28.9		D	29.1		0.20	No
Bonito Avenue & Ocean Boulevard	C	23.1		C	23.2		0.10	No	B	13.3		B	13.5		0.20	No
Orange Avenue & 4 <sup>th</sup> Street	B		0.67	B		0.67	0.00	No	C		0.80	C		0.80	0.00	No



**Table 5.3-8 [continued]  
Forecast Year 2015 With Project Conditions Peak Hour Intersection LOS**

Study Intersection	AM Peak Hour								PM Peak Hour							
	No Project			With Project			Change	Impact	No Project			With Project			Change	Impact
	LOS	Delay	V/C	LOS	Delay	V/C			LOS	Delay	V/C	LOS	Delay	V/C		
Orange Avenue & 3 <sup>rd</sup> Street	A		0.54	A		0.54	0.00	No	A		0.46	A		0.46	0.00	No
Orange Avenue & Broadway	A		0.60	A		0.60	0.00	No	C		0.77	C		0.77	0.00	No
<b>Orange Avenue &amp; Ocean Boulevard</b>	E		<b>0.90</b>	E		<b>0.90</b>	0.00	No	E		<b>0.94</b>	E		<b>0.95</b>	0.01	No
Shoreline Drive & Linden	A		0.37	A		0.38	0.01	No	A		0.45	A		0.46	0.01	No

LOS = level of service; V/C = volume-to-capacity ratio; N/A = not applicable.  
**Boldface = deficient intersection operation.**

### Traffic Signal Warrant Analysis for Unsignalized Intersections

A traffic signal warrant analysis was completed using the methodologies and criteria set forth in the Manual on Uniform Traffic Control Devices (MUTCD) and the California Supplement to the MUTCD. The warrants consider projected traffic volumes, vehicular delay on side streets, pedestrian activity, traffic accidents, and the location and spacing of other traffic signals in the area.

The results of the warrant analysis indicate that the intersection of Lime Avenue with Broadway would meet the warrants for a traffic signal based on the projected vehicular volume. The City is preparing plans for a traffic signal at the Lime Avenue and Broadway intersection and will install this traffic signal as a part of another City Public Works project. The intersections with 3<sup>rd</sup> and 7<sup>th</sup> Streets would not meet the warrant based on volume or delay alone. However, other factors such as pedestrian activity, signal system completion, and accident prevention at these two intersections make the installation of traffic signals desirable. While the 3<sup>rd</sup> and 7<sup>th</sup> Street intersections with Lime Avenue in relation to other traffic signals, are less than the MUTCD warrants minimum distances, many of the downtown traffic signals are spaced closer than the MUTCD minimum and operate well together. In addition, providing traffic signals would allow the intersections to have protected pedestrian operations. Therefore, the traffic signals would provide good operations, with improved levels of service and safety, versus remaining unsignalized. Copies of the traffic signal warrant analyses are located [Appendix 15.3](#).

### RECOMMENDED IMPROVEMENTS

In order to reduce significant impacts to a less than significant level under forecast year 2015 with project conditions at the identified intersections and address other operational and safety concerns, the following transportation system improvements are recommended.

### Previously Committed Improvements

One change to the existing street system that has been approved as a part of a City of Long Beach Public Works project is the modification of the existing Long Beach



Boulevard and 5<sup>th</sup> Street intersection. The intersection will be modified to allow full turning and through movements. The existing pedestrian traffic signal (located mid-block between 5<sup>th</sup> and 6<sup>th</sup> Streets), will be moved to this intersection to control vehicle and pedestrian movements. This change will allow for east-west through movement, as well as left turn into and out of 5<sup>th</sup> Street from Long Beach Boulevard.

***Lime Avenue Corridor***

Several intersections along the Lime Avenue corridor do not have traffic signals. Three of the intersections with Lime Avenue (7<sup>th</sup> Street, 3<sup>rd</sup> Street, and Broadway) currently or are projected to operate at failing levels of service. Although the proposed project does not have a significant impact at these intersections, based on the significance criteria, the City wants to install traffic signals at all of the intersections along Lime Avenue as a part of completing the traffic signal grid system in the downtown area. In order to complete this effort, the City is developing plans to install a traffic signal at the intersection of Lime Avenue with Broadway. The proposed project and the Long Beach Redevelopment Agency will be responsible for providing the traffic signals at the intersections of Lime Avenue with 7<sup>th</sup> Street and Lime Avenue with 3<sup>rd</sup> Street, respectively. The installation of traffic signals at these intersections will provide acceptable operating conditions at all three locations. A summary of the operating conditions with the proposed mitigation measures is listed in Table 5.3-9, Year 2015 With Project Intersection Operating Conditions with Mitigation.

**Table 5.3-9  
Year 2015 With Project Intersection Operating Conditions with Mitigation**

Intersection	AM Peak Hour				PM Peak Hour			
	Without Improvements		With Improvements		Without Improvements		With Improvements	
	LOS	Delay or V/C	LOS	V/C	LOS	Delay or V/C	LOS	V/C
Lime Avenue & 7 <sup>th</sup> Street	F	169.3*	B	0.65	F	52.6*	A	0.59
Lime Avenue & 3 <sup>rd</sup> Street	E	44.1*	A	0.52	C	15.9*	A	0.39
Lime Avenue & Broadway	C	16.2*	A	0.35	F	175.8*	C	0.71

\* Denotes delay value.

***Alamitos/Shoreline/Ocean Intersection***

The analysis indicates that the project impact at the Alamitos/Shoreline/Ocean intersection cannot be mitigated to a less than significant level, based on the City's analysis criteria. Imposition of the grade separated intersection improvement is infeasible because it would require the creation of an additional lane of travel, necessitating the acquisition of property from the intersection eastward for a great distance. This would entail: (1) the condemnation of at least two historically significant buildings (the Villa Riviera and the Green and Green residential structure at 920 East Ocean Boulevard) resulting in an unavoidable significant impact to



historical resources; and (2) the condemnation of at least thirty other multiple family condominium buildings resulting in the loss of hundreds of individually owned residential units. However, traffic management and safety can be enhanced through the installation of a monitoring camera(s) at the intersection to provide real-time information on traffic conditions at the intersection and the nearby roadways. The camera would be mounted on the top of the building tower located the closest to the intersection. A fiber-optic cable would connect the camera to a junction box located at the intersection and would be connected back to the City's Traffic Management Center (TMC).

### ***Atlantic Avenue and Ocean Boulevard Intersection***

Vehicles approaching the project site from the west on Ocean Boulevard will add vehicles to the already congested eastbound left-turn lane. During the peak hours, there is a significant volume of westbound through and southbound left-turn traffic at the intersection that will conflict with these vehicles. The intersection currently has no dedicated left-turn phasing to provide gaps for traffic to turn and the existing signal equipment is not upgradeable to current operating and safety standards. Without dedicated left-turn traffic signal phasing, the eastbound-to-northbound left turns may spill back into the adjacent through lane and obstruct through traffic. In order to reduce the risk of a spillback from the turn lane, the existing traffic signal should be modernized to current safety standards by installing new traffic signal equipment, including dedicated left-turn phasing.

### **Year 2015 Conditions**

With the approval and completion of redevelopment projects in the downtown and central area of the City, the capacity of the street system will become more intensely utilized. In 2005, only 9 of the 68 intersections were operating at LOS D or worse. In 2015, 22 intersections are expected to be operating at those levels. As the system's capacity is utilized, it will become more and more important to manage the street system in a more efficient and coordinated manner.

The project would contribute to significant impacts at two of the study area intersections: Alamos Avenue/7<sup>th</sup> Street and Alamos Avenue/Shoreline Drive and Ocean Boulevard. These intersections are physically constrained with existing developments located close to the street or other limitations making expansion of the roadway cross-section impractical. At these intersections, operational improvements or policy-based changes may improve overall traffic conditions, but would not affect the volume-to-capacity calculation on which the impact criteria are based. At these locations, a significant unavoidable impact may remain.

Discussions conducted with City staff along with other on-going analysis of these locations indicate that there are no feasible physical measures that could be developed at the Alamos Avenue/7<sup>th</sup> Street intersection and the Alamos Avenue/Shoreline Drive and Ocean Boulevard intersection that would mitigate the project's impact to these intersections. Therefore, impacts at these locations are concluded to be significant and unavoidable.



**Mitigation Measures:**

- TR-1 The project applicant shall provide, to the satisfaction of the City of Long Beach Traffic Engineer, a rooftop pan/tilt/zoom camera(s) and communications with power and control capability to the City of Long Beach Department of Public Works in order to monitor real-time traffic operations along the Alamitos Avenue, Shoreline Drive, and Ocean Boulevard corridors. The camera shall be located on top of the building tower located closest to the Alamitos/Shoreline/Ocean intersection.
- TR-2 Lime Avenue and 7<sup>th</sup> Street. While the project would not produce a significant impact at this intersection based on the significance criteria, it would experience an increase in delay with the full development of all cumulative projects referenced in the analysis. To improve traffic operations and safety at this intersection, the project applicant shall be responsible for the installation of a traffic signal.
- TR-3 Atlantic Avenue and Ocean Boulevard. In order to reduce the possibility of eastbound left-turning vehicles queuing into the adjacent through lane, the project applicant shall modernize the traffic signal to current safety standards and provide left-turn phasing at the intersection.

**Level of Significance After Mitigation:** Significant and unavoidable impact.

- **DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT COULD RESULT IN ADVERSE IMPACTS TO THE FUNCTION OF LOS ANGELES COUNTY CONGESTION MANAGEMENT PROGRAM (CMP) FACILITIES IN THE PROJECT AREA.**

**Level of Significance Prior to Mitigation:** Potentially Significant Impact.

**Impact Analysis:** The Los Angeles County Congestion Management Program (CMP) requires that a proposed development address two major subject areas with respect to traffic impacts. These are the project's impacts on the CMP highway system and on the local and regional transit systems.

According to the CMP guidelines, the geographical area examined in a CMP traffic impact analysis (TIA) consists of the CMP monitoring locations that meet the following criteria:

- CMP intersections where the proposed project would add 50 or more trips during the AM or PM weekday peak hours (of adjacent street traffic).
- Mainline freeway-monitoring locations where the project would add more than 150 trips, in either direction, during either the AM or PM weekday peak hours.

**CMP Study Area**

Utilizing CMP guidelines, the following CMP study intersections are contained in the CMP study area:



- Alamitos Avenue and 7<sup>th</sup> Street; and
- Alamitos Avenue and Ocean Boulevard.

Utilizing CMP guidelines, the following CMP freeway segment is contained in the CMP study area:

- I-710 NB south of Anaheim Street; and
- I-710 SB south of Anaheim Street.

### **CMP Intersection Analysis**

For purposes of the CMP analysis, a significant impact occurs when a proposed project increases traffic demand on a CMP facility by two percent of capacity ( $V/C \geq 0.02$ ), causing LOS F ( $V/C > 1.00$ ). If the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by two percent of capacity ( $V/C \geq 0.02$ ).

As indicated in Table 5.3-8, Forecast Year 2015 With Project Peak Hour LOS, the project would increase demand at the Alamitos/7<sup>th</sup> Street and Alamitos/Ocean Boulevard intersections by two percent (0.02) or more. Therefore, the project would have a significant CMP impact at the intersections.

City staff has studied potential improvements to the Alamitos/7<sup>th</sup> Street and Alamitos/Shoreline Drive and Ocean Boulevard intersections to determine if physical or significant operational changes could be made to accommodate additional traffic and/or provide acceptable future levels of service during peak hours. The proximity of existing development, one-way streets and spacing between intersections, limit options for providing additional capacity at the Alamitos Avenue and 7<sup>th</sup> Street intersection without significant property acquisition. At the Alamitos/Shoreline Drive and Ocean Boulevard intersection, the proximity of existing developments along Alamitos Avenue and Ocean Boulevard limit the possibility of widening the at-grade intersection without a significant loss of parking to the east of the intersection or large-scale property acquisition. Additionally, the City has determined that a grade separation of the streets (as recommended in the *General Plan*) would not be practical due to the proximity of existing uses (i.e., Villa Riviera and International Tower), as well as the number of access driveways near the intersections. Therefore, improvements along the Alamitos and Ocean corridors would be limited to physical changes within the existing right-of-way and operational or policy-based changes. Therefore, impacts would be considered significant and unavoidable.

### **CMP Mainline Freeway Segment Analysis**

As indicated in Table 5.3-10, Project Added Trips at CMP Freeway Monitoring Station, the proposed project would not contribute more than the minimum threshold of 150 peak-period trips at any CMP mainline location. Based on CMP criteria, a detailed impact analysis is not warranted. Impacts would be less than significant.

**Mitigation Measures:** No mitigation measures are recommended.

**Level of Significance After Mitigation:** Significant and unavoidable impact.



**Table 5.3-10  
Project Added Trips at CMP Freeway Monitoring Station**

Freeway Segment	Projected Added Trips		Traffic Impact Analysis Required?	
	NB	SB	NB	SB
	Weekday AM Peak Hour			
I-710 Freeway south of Anaheim Street	41	14	No	No
	Weekday PM Peak Hour			
I-710 Freeway south of Anaheim Street	48	58	No	No

● **DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT COULD RESULT IN INADEQUATE ON- AND OFF-SITE PARKING.**

**Level of Significance Prior to Mitigation:** Potentially Significant Impact.

**Impact Analysis:** An analysis of the project’s parking supply and demand was completed to determine whether the project would have sufficient parking. The proposed project is proposing to provide up to 820 parking spaces. The current Long Beach parking code requires two parking spaces per residential units plus one guest parking space for every four units. In addition, the proposed project would be required to provide up to five spaces for every 1,000 square feet of commercial space.

The proposed development plan would remove approximately 18 un-metered on-street parking spaces. In addition, the City has requested the replacement of up to 70 parking spaces for the Artaban building.

As shown in Table 5.3-11, *Parking Analysis*, based on the City’s parking code minus a 5 percent reduction for transit use, the project would be required to provide 839 parking spaces to satisfy the project’s parking requirement. This would leave a deficit of 19 spaces (820 minus 826). With replacement of the lost on-street parking spaces and parking for the Artaban building, the required parking would increase to 937 spaces, or a deficit of 107 spaces.

Assuming that some of the residential guest parking would not be required during the day and that some of the retail/commercial uses would serve primarily a daytime clientele, the number of guest and visitor spaces could be reduced. Assuming a 50 percent shared parking rate for the retail parking (the smaller user group) the number of required spaces could be reduced by approximately 34 spaces. This would leave a total parking deficit of 73 spaces.

The project applicant would be required to complete a shared parking analysis to determine if the amount of parking proposed is sufficient. If the shared parking analysis determines that the parking proposed for the project would be sufficient, a variance would be granted in accordance with the City’s Zoning Regulations. However, if the shared parking analysis determines that parking would be insufficient, resulting in a significant impact, the project shall meet the parking requirements, in accordance with the City’s Zoning Regulations. Completion of the



shared parking analysis and appropriate compliance with the findings would reduce impacts to a less than significant level.

**Table 5.3-11  
Parking Analysis**

Land Use	Size	Units	Rate	Required Spaces
<b><i>Without Shared Parking</i></b>				
Residential	358	D.U.'s	2 per unit	716
5% TOD Reduction				35
<i>Subtotal</i>				<i>681</i>
Guest Parking	358	D.U.'s	0.25 per unit	90
Commercial	13.56	000's S.F	5 per 1,000 s.f.	68
<i>Subtotal</i>				<i>839</i>
Supply				820
Project Shortage				(19)
Artaban Parking				(70)
On-Street Replacement				(18)
<b>Total Shortage</b>				<b>(107)</b>
<b><i>With 50% Shared Parking</i></b>				
Residential	358	D.U.'s	2 per unit	716
5% TOD Reduction				35
<i>Subtotal</i>				<i>681</i>
Guest Parking	358	D.U.'s	0.25 per unit	90
Commercial	13.56	000's S.F	5 per 1,000 s.f.	68
Less: 50% Shared Parking				(34)
<i>Subtotal</i>				<i>805</i>
Supply				820
Project Shortage				15
Artaban Parking				(70)
On-Street Replacement				(18)
<b>Total Shortage</b>				<b>(73)</b>

Note: Shared parking based on 50 percent of the commercial parking demand assumed to be daytime users.

**Mitigation Measures:**

TR-4 Prior to site plan approval, a shared parking analysis shall be completed and approved by the City for the proposed project. If the shared parking analysis determines that the proposed parking supply would be sufficient to merit anticipated project demand, approval of a Standards Variance for parking shall be requested by the applicant. If the shared parking analysis determines the proposed parking would be insufficient to meet project demand, the project shall meet the parking requirements established by the City's Zoning Regulations.

**Level of Significance After Mitigation:** Less Than Significant Impact.



- **DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT COULD RESULT IN ADVERSE IMPACTS TO PUBLIC TRANSPORTATION WITHIN THE PROJECT AREA.**

**Level of Significance Prior to Mitigation:** Less Than Significant Impact.

**Impact Analysis:** Based on the projected additional ridership generated by the proposed project and discussions with LBT officials, the project would not result in significant impacts to public transportation within the area. LBT would monitor transit conditions and adjust/coordinate services as needed to address changes in demand. To encourage the use of public transit and non-auto trips, the project would include transportation demand management (TDM) features outlined in the City's TDM policies including, where appropriate, bicycle parking, safe bicycle access to streets and parking, efficient pedestrian access and pedestrian-friendly access to area transit facilities. The City's Bicycle Master Plan includes on-street bicycle lanes along Broadway, 3<sup>rd</sup> Street, Magnolia, Pacific Avenue and Alamitos Avenue. Additionally, bicycle-parking facilities are proposed along several streets and the existing downtown "Bike Station" provides access to bicycles and services. Development of the project site would be required to coordinate with area transit providers to accommodate and encourage transit use by residents and patrons. For non-residential sites, appropriate programs and facilities would be included to encourage car and van pooling, provide information on transportation alternatives and encourage trip reduction strategies in accordance with the City's TDM policies for non-residential development. Compliance with the City's TDM ordinance would reduce impacts to a less than significant level.

**Mitigation Measures:** No mitigation measures are recommended.

**Level of Significance After Mitigation:** Not applicable.

### **5.3.5 CUMULATIVE IMPACTS**

- **DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT AND OTHER RELATED CUMULATIVE PROJECTS COULD RESULT IN CUMULATIVELY CONSIDERABLE TRAFFIC AND CIRCULATION IMPACTS.**

**Level of Significance Prior to Mitigation:** Potentially Significant Impact.

**Impact Analysis:** As noted previously, forecast year 2015 traffic volumes (without project) were derived by applying an annual growth rate factor to existing traffic volumes for forecast ambient growth in the project vicinity. Additionally, trips were added to account for the related cumulative projects outlined in [Section 4.0, Basis of Cumulative Analysis](#), as identified by City staff.

[Table 5.3-7](#) indicates that, with ambient growth and the addition of related cumulative projects, 14 intersections (five of which are currently operating at LOS E or F) are projected to operate at a deficient LOS (LOS E or F) according to City of Long Beach performance criteria for forecast year 2015 without project conditions.

- Magnolia Avenue and 7<sup>th</sup> Street (AM peak hour only);



- Magnolia Avenue and 6<sup>th</sup> Street (PM peak hour only);
- Pacific Avenue and Broadway (PM peak hour only);
- Pacific Avenue and Ocean Boulevard (AM peak hour only);
- Pine Avenue and Broadway (PM peak hour only);
- Pine Avenue and Ocean Boulevard (PM peak hour only);
- Lime Avenue and 7<sup>th</sup> Street (AM and PM peak hours);
- Lime Avenue and 3<sup>rd</sup> Street (AM peak hour only);
- Lime Avenue and Broadway (PM peak hour only);
- Alamitos Avenue and 7<sup>th</sup> Street (AM and PM peak hours);
- Alamitos Avenue and 3<sup>rd</sup> Street (AM peak hour only);
- Alamitos Avenue and Broadway (AM and PM peak hours);
- Alamitos Avenue/Shoreline Drive and Ocean Boulevard (AM and PM peak hours); and
- Orange Avenue and Ocean Boulevard (AM and PM peak hours).

As shown in Table 5.3-8, 14 study intersections are forecast to operate at a deficient LOS (LOS E or F) according to City of Long Beach performance criteria for forecast year 2015 with project conditions:

- Magnolia Avenue and 7<sup>th</sup> Street (AM peak hour only);
- Magnolia Avenue and 6<sup>th</sup> Street (PM peak hour only);
- Pacific Avenue and Broadway (PM peak hour only);
- Pacific Avenue and Ocean Boulevard (AM peak hour only);
- Pine Avenue and Broadway (PM peak hour only);
- Pine Avenue and Ocean Boulevard (PM peak hour only);
- Lime Avenue and 7<sup>th</sup> Street (AM and PM peak hours);
- Lime Avenue and 3<sup>rd</sup> Street (AM peak hour only);
- Lime Avenue and Broadway (PM peak hour only);
- Alamitos Avenue and 7<sup>th</sup> Street (AM and PM peak hours);
- Alamitos Avenue and 3<sup>rd</sup> Street (AM peak hour only);
- Alamitos Avenue and Broadway (AM and PM peak hours);
- Alamitos Avenue/Shoreline Drive and Ocean Boulevard (AM and PM peak hours); and
- Orange Avenue and Ocean Boulevard (AM and PM peak hours).

As also shown in Table 5.3-8, the following intersections would result in a significant impact for forecast year 2015 with project conditions, according to the City of Long Beach performance criteria:

- Alamitos Avenue and 7<sup>th</sup> Street (PM peak hour only); and
- Alamitos Avenue/Shoreline Drive and Ocean Boulevard (AM peak hour only).

These intersections are physically constrained with existing developments located close to the street or other limitations making expansion of the roadway cross-section impractical. At these locations, operation improvements or policy-based changes may improve overall traffic conditions, but would not improve the volume-to-capacity ratio, based on the City's performance criteria. MMA's discussions with City staff have determined that there are no feasible mitigation measures to reduce impacts below a threshold of significance. Therefore, cumulative impacts at the two intersections would be significant and unavoidable.



The Alamitos Avenue/7<sup>th</sup> Street and Alamitos Avenue/Ocean Boulevard intersections have also been identified as CMP study facilities. As indicated in Table 5.3-8, the addition of project-generated trips on the CMP intersections would result in a significant impact, according to the CMP performance criteria for forecast year 2015 with project conditions. Therefore, project implementation would result in significant cumulative traffic impacts to CMP facilities.

Regional programs such as the Long Range Transportation Plan (LRTP) prepared by the Los Angeles County Metropolitan Transportation Authority (MTA), the Regional Transportation Plan (RTP), the Regional Transportation Improvement Plan (RTIP) prepared by the Southern California Association of Governments (SCAG), and the Statewide Transportation Improvement Plan (STIP) prepared by the California Department of Transportation (Caltrans) are all intended to address the cumulative mobility needs of Los Angeles County. The LRTP recommends HOV, transit, and demand management improvements and identified funding sources and implementation schedules. The RTP forecasts long-range transportation demands for the five-county SCAG region and identifies policies, actions, and funding sources to accommodate these demands, including construction of new transportation facilities, transportation system management strategies, transportation demand management strategies, and land use strategies. The RTP and STIP are programming documents listing all of the funded/programmed regional improvements.

However, additional measures to address significant cumulative conditions are beyond the ability of any individual project to implement and, as such, the project's incremental impacts on cumulative conditions would be considered significant and unavoidable.

**Mitigation Measures:** Refer to mitigation measures TR-1 through TR-3. No additional mitigation measures are recommended.

**Level of Significance After Mitigation:** Significant and unavoidable impact.

### **5.3.6 SIGNIFICANT UNAVOIDABLE IMPACTS**

Implementation of the proposed Shoreline Gateway project, along with other cumulative projects, would result in significant and unavoidable impacts to the Alamitos Avenue/7<sup>th</sup> Street and Alamitos Avenue/Shoreline Drive and Ocean Boulevard intersections, based on the City's performance criteria. Additionally, Alamitos Avenue/7<sup>th</sup> Street and Alamitos Avenue/Shoreline Drive and Ocean Boulevard are CMP study intersections and would result in significant and unavoidable impacts, based on CMP performance criteria. All other traffic impacts can be mitigated to less than significant levels.

If the City of Long Beach approves the Shoreline Gateway Project, the City shall be required to adopt findings in accordance with Section 15091 of the *CEQA Guidelines* and prepare a Statement of Overriding Considerations in accordance with Section 15093 of the *CEQA Guidelines*.