APPENDIX I

TRAFFIC STUDY AND CONSTRUCTION MANAGEMENT PLAN

This appendix provides the Traffic Study for the proposed Project prepared by the Applicant's consultant, The Mobility Group. Additionally, this appendix includes a Construction Management Plan prepared by Bolour with the assistance of Morley Builders. The Traffic Study and the Construction Management Plan were independently reviewed by Fehr & Peers and used to inform the analysis provided in Section 3.13, *Transportation and Traffic* within this Environmental Impact Report (EIR).

I1: Pier & Strand Hotel Traffic Study (The Mobility Group 2017)

I2: Construction Management Plan

Pier & Strand Hotel

Traffic Study

June 28, 2017

Prepared by

The **Mobility** Group

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1. Introduction

This report documents a traffic impact analysis for the proposed Pier and Strand Hotel in the City of Hermosa Beach. The Project Site is located on The Strand at Pier Avenue, adjacent to the Hermosa Beach Pier, in Downtown Hermosa Beach. The Project location is shown in Figure 1.1.

The area of the Project Site is a major recreational and tourist destination associated not only with the extensive beach, but also the Pier and numerous restaurant and shopping destinations in Downtown Hermosa Beach. The area of the Project Site is located in a multimodal and very walkable and pedestrian-friendly environment, with a high level of pedestrian and bicycle activity. The Strand is a popular bicycle and walking trail along the Pacific Ocean through Hermosa Beach. It is part of the 22-mile South Bay Bicycle trail which extends from Santa Monica to the Palos Verde Peninsula. Pier Avenue adjacent to the Project is an auto-free area. The Project Site is also adjacent to three bus transit lines.

1.1 Project Description

The Project site context is shown in Figure 1.2 and the Project Illustrative Plan is shown in Figure 1.3.

The Project Site is currently developed with 9,596 sq. ft. of restaurant uses, 6,060 sq. ft. of retail uses, 8 residential DU's, and a small parking lot with 15 striped spaces.

The Proposed Project will consist of a 100 room hotel with associated hotel uses including 7,019 sq. ft. of restaurant/lobby bar, 2,406 sq. ft. of meeting rooms, 10,868 sq. ft. of rooftop terrace/lounge, and a 2,857 sq. ft. spa/wellness facility. It will also include separate uses of 5,215 sq. ft. of retail uses, 5,757 sq. ft. of restaurant uses, and 2,192 sq. ft. of beach quick serve food.

Vehicle access to the Project Site will be provided via 13th Street, to a porte-cochere on 13th Street at Beach Drive. 13th Street is currently one–way eastbound. As it will function as the principal vehicular access route to the Project Site, the Project is proposing to convert 13th Street from one-way eastbound to two-way operation to facilitate direct access/egress. This study addresses that proposal as well as an option of keeping 13th Street in its existing one-way eastbound configuration. Pedestrian and bicycle access will be available from all directions, via The Strand, Pier Avenue, and 13th Street. Service Access will be provided via 13th Court.

The Proposed Project will be self-contained with respect to parking, and will provide 178 on-site parking spaces in two subterranean levels. It will also provide 180 on-site bicycle parking spaces, of which 30 spaces will be at ground level and 150 spaces will be in the basement level of the garage.

The Proposed Project will therefore be entirely consistent with, and will support, the multi-modal nature of Downtown Hermosa Beach and the bicycle and pedestrian friendly environment.

1.2 Overview of Study Scope

The scope and methodology of this analysis was determined in conjunction with the City of Hermosa Beach staff and the City's Traffic Consultant and was conducted in accordance with their guidelines and directions for the preparation of traffic studies.

In order to address the key weekday and weekend time periods, the analysis addresses the following five time periods:

- Weekday AM peak hour
- Weekday PM peak hour
- Friday PM peak hour
- Saturday Midday peak hour
- Sunday Afternoon peak hour

The analysis also addresses the following scenarios:

- Existing Conditions
- Existing Conditions With Project
- Future Conditions Year Without Project
- Future Conditions Year With Project
- Future Conditions Yer With Project and Mitigation

The future year analysis addresses 2021 as the projected year of Project completion.

1.3 Organization of this Report

This report is organized as follows. Chapter 2 describes the existing transportation conditions in the area of the Project. Chapter 3 addresses the future conditions without the Project (year 2021) and sets the future cumulative baseline for analysis of Project impacts. Chapter 4 provides an analysis of the proposed Project, including the trip generation and traffic distribution transportation characteristics of the Project, and analyzes the potential

transportation impacts of the Project including traffic conditions at intersections and impacts on the Congestion Management Program monitoring locations, as well as construction traffic impacts. Chapter 5 identifies any proposed transportation mitigation measures for the Project.

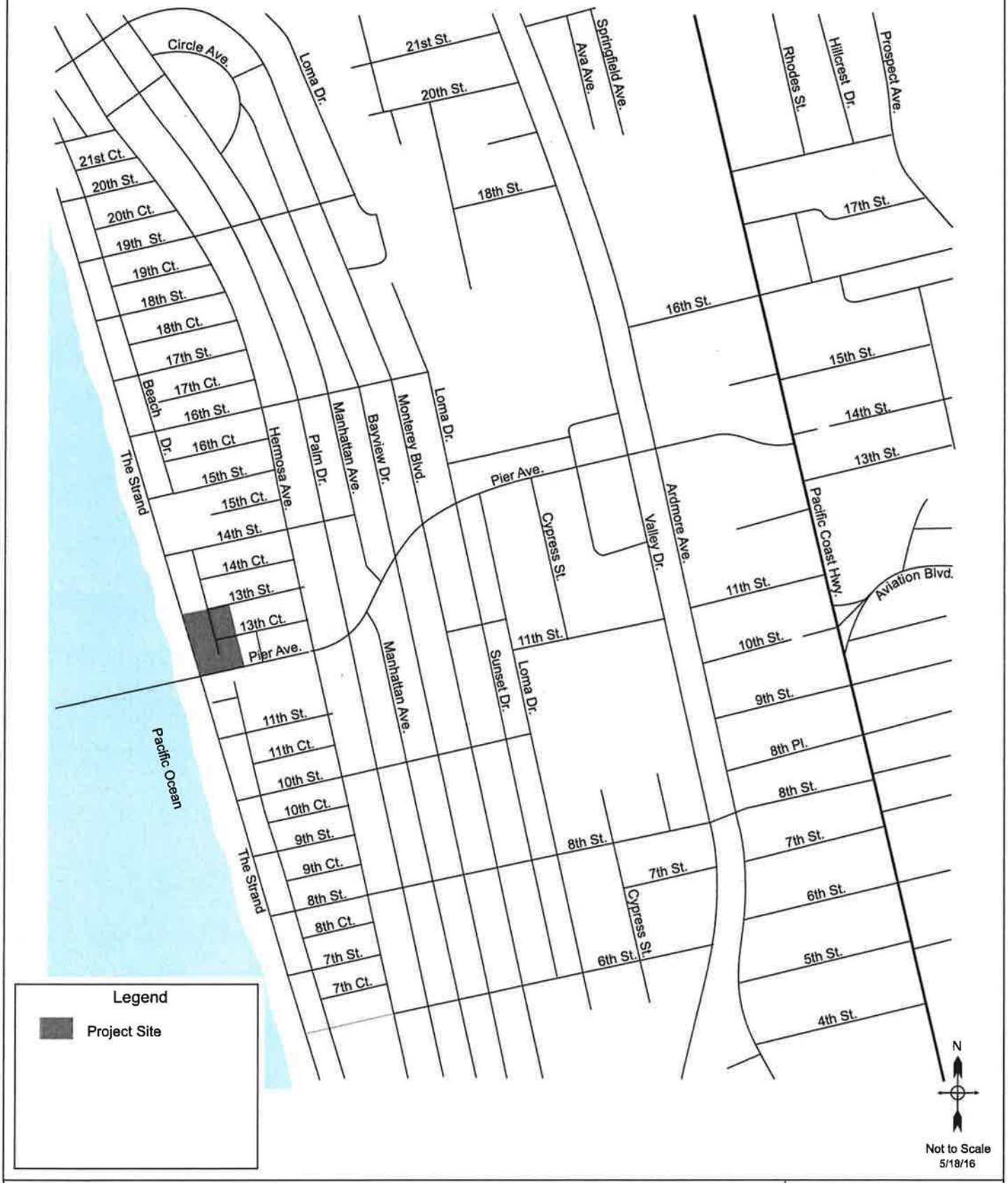

Figure 1.1
Project Location

Pier and Strand Hotel - Traffic Study

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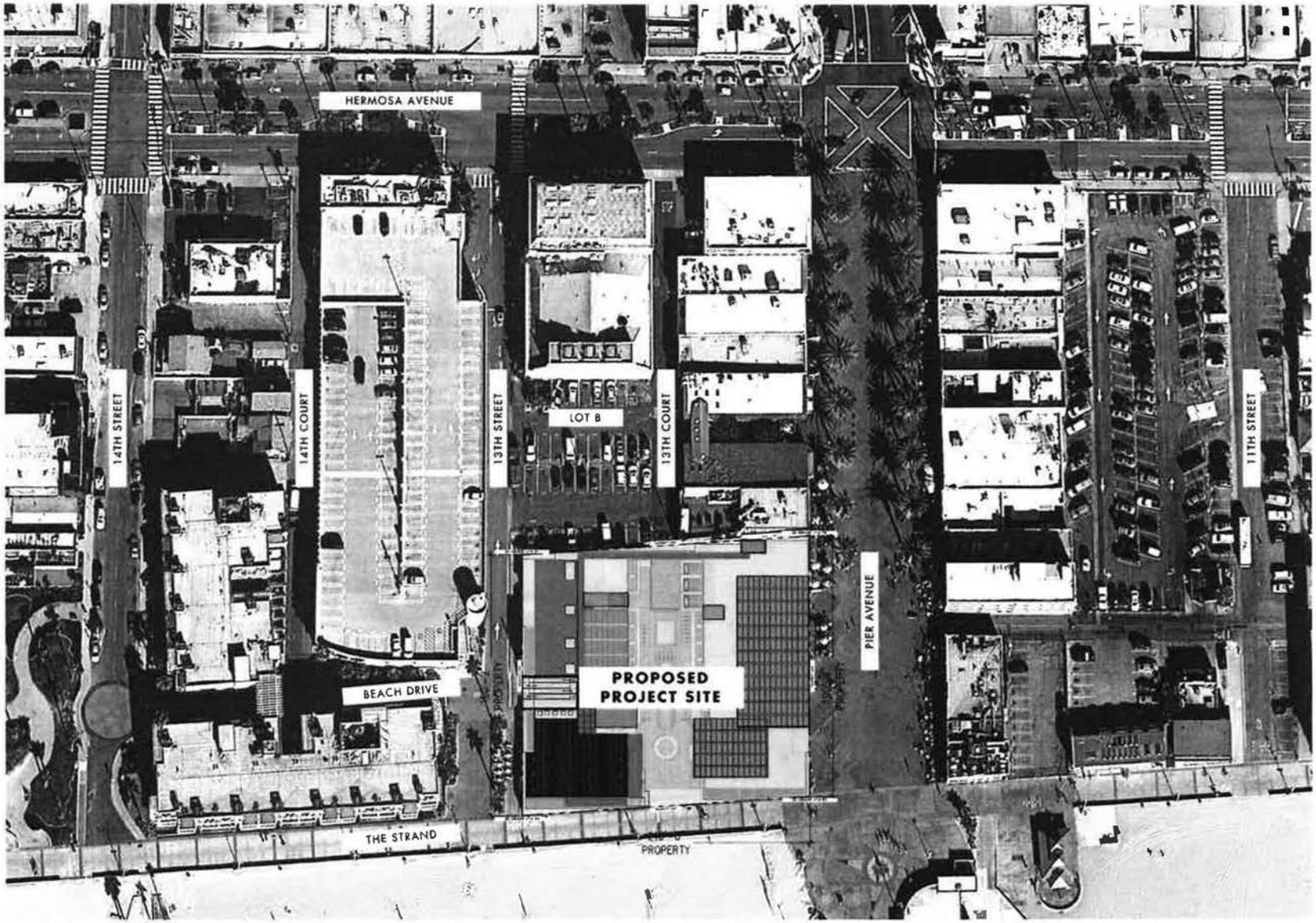

Source: HKS Architects, Inc.

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Figure 1.2
Project Site Context

Pier and Strand Hotel - Traffic Study

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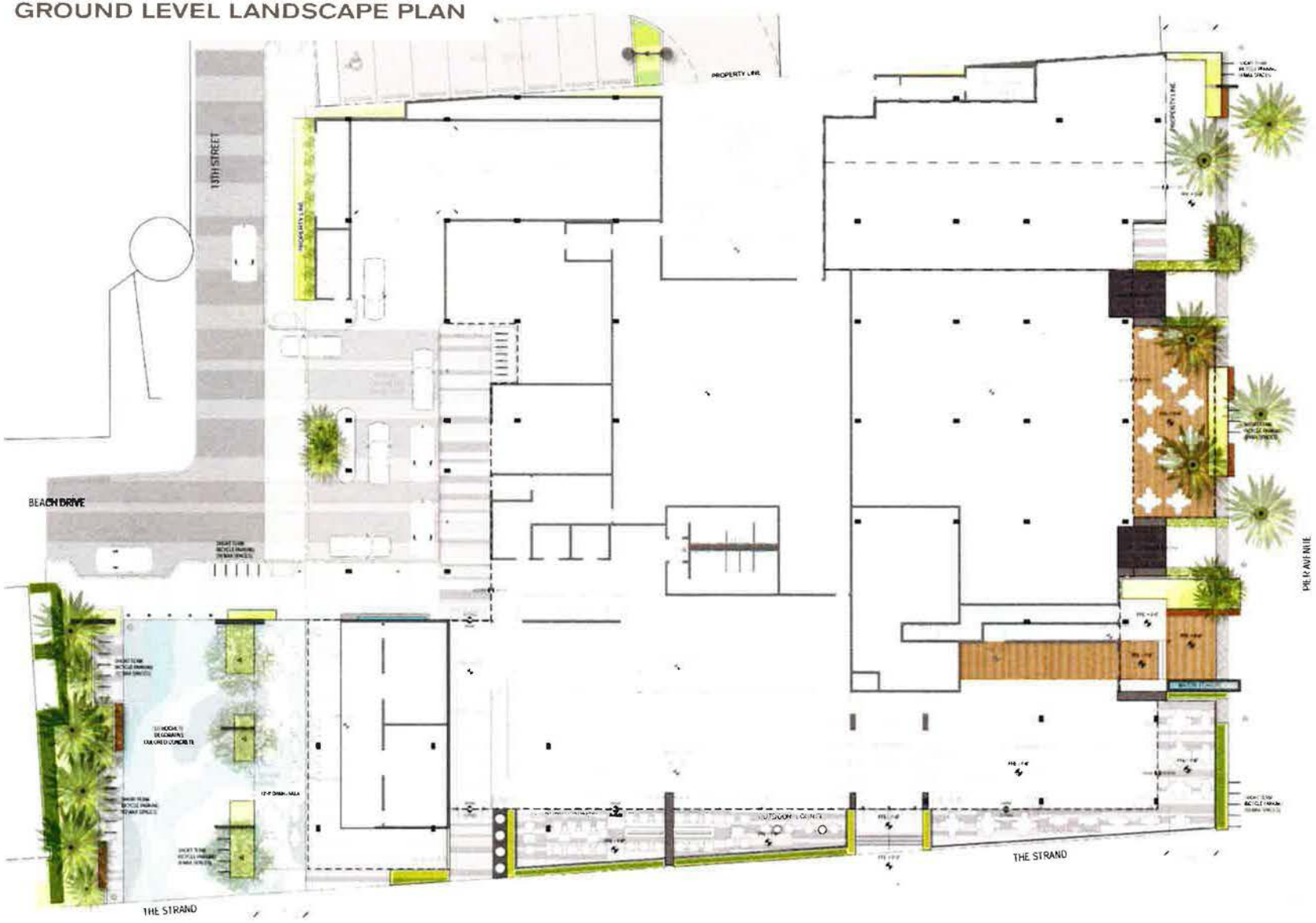

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Figure 1.3
Project Illustrative Plan

Pier and Strand Hotel - Traffic Study

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2. Existing Conditions

2.1 Roadway System

The Project Site is located on The Strand at Pier Avenue, adjacent to the Hermosa Beach Pier. It is bounded on the west by the Pacific Ocean, on the south by Pier Avenue, to the north by 13th Street, and to the east by a City parking lot and private property.

The site is served by two principal streets, Pier Avenue running east-west and Hermosa Avenue running north-south. West of Hermosa Avenue and immediately adjacent to the Project Site, Pier Avenue is a pedestrian only street. The Strand is a pedestrian / bicycle path that runs north-south adjacent to the beach, and directly adjacent to the Project site.

The key streets in the vicinity of the Project Site are described below (see Figure 1.1). The street designations referred to are those identified in the current City of Hermosa Beach General Plan.

Hermosa Avenue runs north-south two blocks from the beach. It is the principal roadway providing access to the beach areas and is a four lane roadway with median but generally without left turn lanes. Between 10th Street and 14th street left turn lanes are provided. North of Pier Avenue it is a Collector Street. South of Pier Avenue it is an Arterial Street. Metered curbside parallel parking is provided throughout the study area, and north of 14th Street and south of 10th Street also adjacent to both sides of the median. The majority of intersections on Hermosa Avenue are 2-way or 4-way stops with pedestrian crosswalks. In the vicinity of the Project, traffic signals are located at the intersections of Pier Avenue, 13th Street, and 14th Street.

Pier Avenue, east of Hermosa Avenue, is a Collector Street running east–west and connecting Hermosa Avenue to Pacific Coast Highway. It is the principal roadway access to the pier area. It is a four lane street with median but no dedicated turn lanes, running through the central commercial district. Between Hermosa Avenue and Valley Drive it has angle parking on both sides of the street. East of Ardmore Avenue to Pacific Coast Highway there is a painted median, and parallel parking. Pier Avenue is a designated truck route in the City.

Valley Drive / Ardmore Avenue are Collector Streets running north-south. They each generally provide one lane in each direction, with parallel parking allowed only in certain locations. The Hermosa Beach Greenbelt separates the two roadways.

Pacific Coast Highway (PCH) is an Arterial Street running north–south on the eastern edge of the study area. It is a state highway (SR-1) and connects north to Manhattan Beach, El Segundo, and the LAX area, and south to Redondo Beach and the South Bay. It is striped as a six lane roadway but during off peak periods parking is generally allowed in the curb lane resulting in two travel lanes in each direction. Parking is prohibited on the east side of the street during the AM peak period (7:00 to 9:00am) to provide a third northbound travel lane and on the west side of the street during the PM peak period (3:00pm to 7:00pm) to provide a third southbound travel lane. PCH is a designated truck route in the City.

8th Street is an east-west Collector Street between Hermosa Avenue and PCH. It has one lane in each direction and generally provides metered parking, except for certain areas between Ardmore Aveneu and Loma Drive where parking is not allowed on one or both sides of the street.

Other local streets in the immediate vicinity of the Project site are as follows:

Beach Drive: Beach drive is a local street between 14th Street and Pier Avenue one block east of the Strand. Because Pier Avenue west of Hermosa Avenue is closed to traffic, Beach Drive carries little vehicular traffic south of 13th Street except for local access from the north. It also provides a pedestrian route and bicycle route parallel to and one block east of The Strand. The proposed development would remove the section of Beach Drive between 13th Street and Pier Avenue.

13th Court: 13th Court is an east-west alley providing vehicular access to the rear of the Project Site from Hermosa Avenue. It is narrow and without parking. Access to 13th Court from Hermosa Avenue is right in / right out only at an unsignalized intersection.

13th Street: 13th Street is a single lane, one-way eastbound street, without parking, providing access from Beach Drive to Hermosa Avenue. Its intersection with Hermosa Avenue is signalized with all movements allowed.

14th Street: 14th Street is an east-west two-way street between Beach Drive and Hermosa Avenue. Its intersection with Hermosa Avenue is signalized with all movements allowed. It has metered parking on both sides.

2.2 Study Intersections

A total of 15 intersections were identified for inclusion in the traffic analysis, all of which are located within the boundary of the City of Hermosa Beach. The locations of study intersections are shown in Figure 2.1

These intersections were identified in conjunction with the city of Hermosa Beach as locations where the majority of trips associated with the Project would be focused based on the trip distribution developed for the Project (see Chapter 4). These locations consist of the intersections through which Project trips would travel before dispersing to multiple routes and therefore were the locations where potential traffic impacts were most likely to occur. The intersections identified for analysis are as follows:

1. Hermosa Avenue & 16th Street
2. Hermosa Avenue & 14th Street
3. Hermosa Avenue & 13th Street
4. Hermosa Avenue & Pier Avenue
5. Hermosa Avenue & 11th Street
6. Hermosa Avenue & 10th Street
7. Hermosa Avenue & 8th Street
8. Manhattan Avenue (West) & Pier Avenue
9. Manhattan Avenue (East) & Pier Avenue
10. Monterey Boulevard & Pier Avenue
11. Valley Drive & Pier Avenue
12. Ardmore Avenue & Pier Avenue
13. Pacific Coast Highway & Pier Avenue
14. Pacific Coast Highway & Aviation Boulevard.
15. Pacific Coast Highway & 8th Street

Seven of the study intersections are signalized, and eight are unsignalized. The existing lane configuration of each intersection is shown in Figure 2.2.

2.3 Existing Intersection Conditions

Existing Traffic Volumes

New traffic count data was collected for the analysis of all study intersections. In order to address the highest traffic volume periods of summer, and to also address the key weekday and weekend time periods, the traffic counts were collected during the peak summer season for five different time periods.

- Weekday AM peak period (7:00 am to 9:00 am)
- Weekday PM peak period (4:00 pm to 6:00pm)
- Friday PM peak period (5:00 pm to 9:00 pm)
- Saturday Midday peak period (12:00 pm to 3:00 pm)
- Sunday Afternoon peak period (3:00 pm to 6:00 pm)

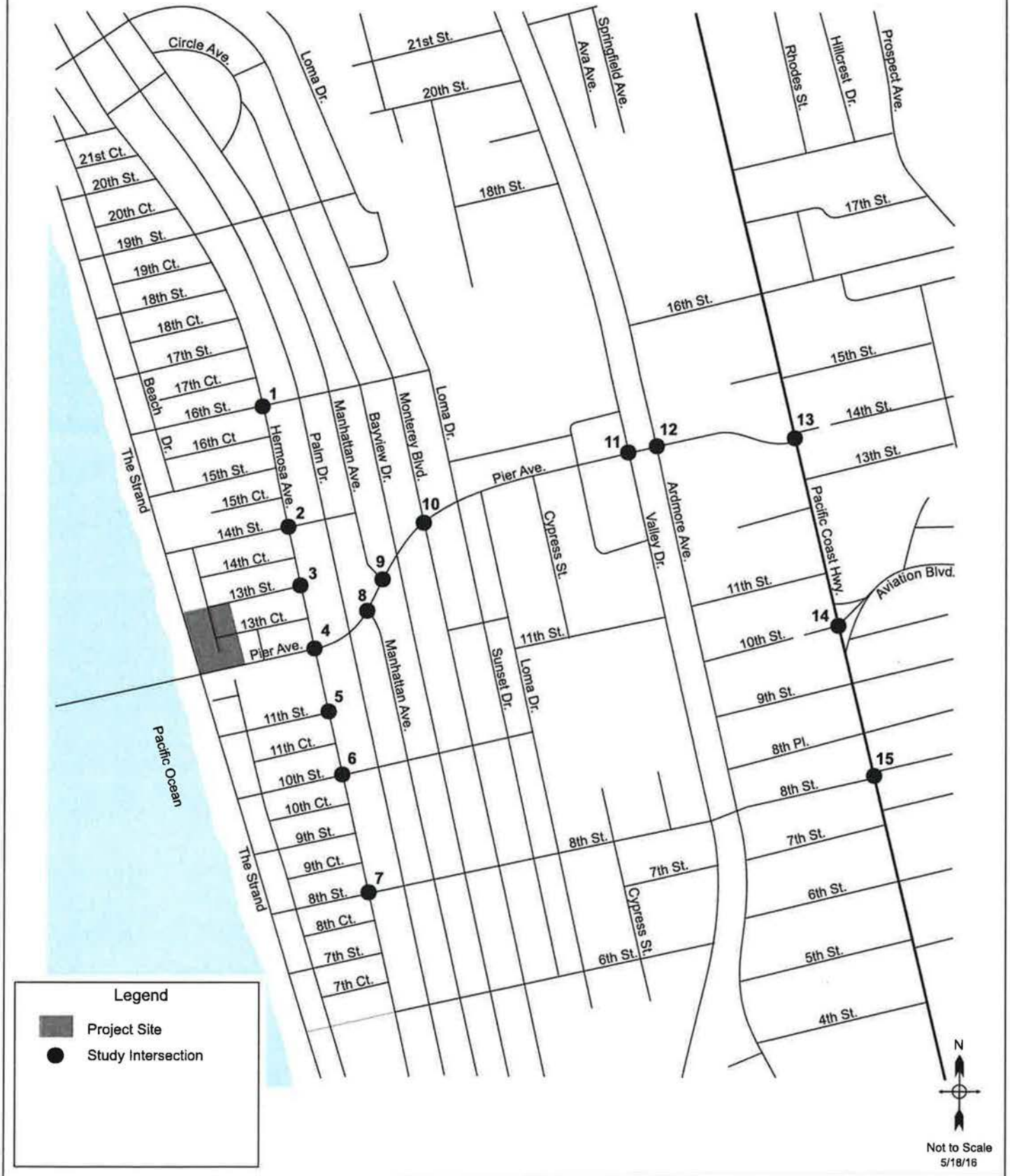

Figure 2.1
Study Intersections

Pier and Strand Hotel - Traffic Study

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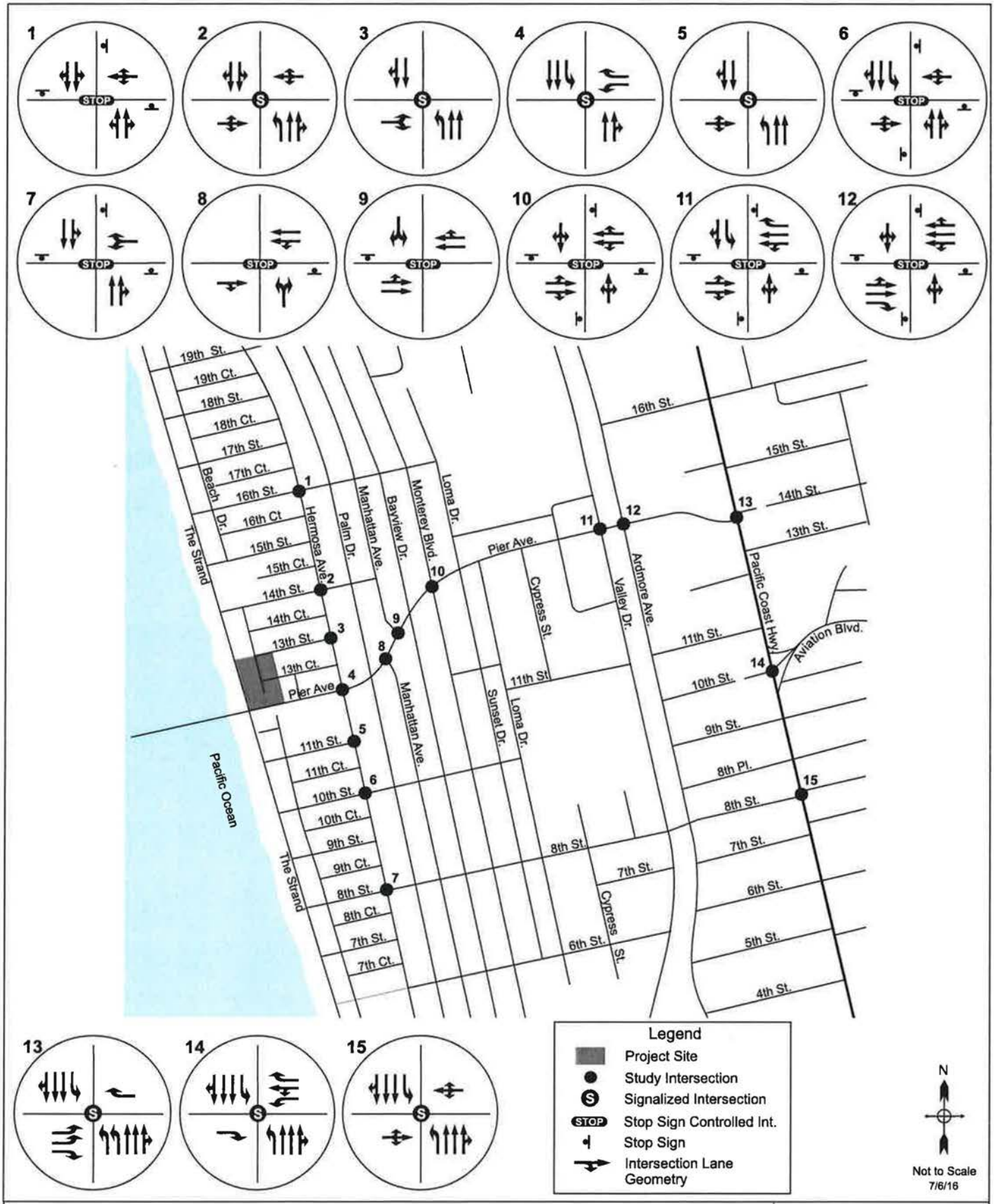

Figure 2.2
Configuration of Analyzed Intersections

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Pier and Strand Hotel - Traffic Study

These were determined to be the peak periods of highest traffic volumes from 24-hour roadway volume counts conducted for a seven-day period during the summer period prior to conducting the intersection counts. Weekday peak period traffic counts were conducted on Thursday August 27, 2015. Traffic counts were also conducted for the Friday PM period on Friday August 21, for the Saturday Midday period, on Saturday August 22, and for the Sunday afternoon period on Sunday August 23. The traffic volume counts were factored upward by 1% to represent 2016 conditions[1]. The existing peak hour traffic volumes are illustrated in Figures 2.3 to 2.7 for the highest volume hours within each period, which were typically the following:

- Weekday AM peak period (7:45 am to 8:45 am)
- Weekday PM peak period (5:00 pm to 6:00pm)
- Friday PM peak period (5:15 pm to 6:15 pm)
- Saturday Midday peak period (1:45 pm to 2:45 pm)
- Sunday Afternoon peak period (3:30 pm to 4:30 pm)

Level of Service Methodology

The level of service analysis was conducted using the methodology established by the City of Hermosa Beach. All signalized intersections were analyzed using the Intersection Capacity Utilization (ICU) methodology. Unsignalized intersections were analyzed using the Highway Capacity Manual (HCM) 2010 methodology.

Level of Service (LOS) is a qualitative measure used to describe the condition of traffic flow, ranging from excellent conditions at LOS A to overloaded conditions at LOS F. The ICU method compares the peak hour volume of traffic at an intersection to the traffic volume the intersection is able to carry under ideal conditions (the capacity), and defines a volume to capacity (V/C) ratio for the intersection as a whole, which is then related to level of service. For the ICU analysis methodology for signalized intersections these are shown in Table 2.1.

For the HCM analysis methodology for unsignalized intersections, levels of service are defined instead by the average delay in seconds per vehicle occurring at the intersection. In contrast to signalized intersections, where all approaches to the intersection must stop at a red light and wait for the next green light, at stop-controlled intersections only the minor street traffic controlled by the stop sign is required to stop (at two-way stop intersections). Through traffic movements on the major street do not stop, and turning movements from the major street must stop only if there is conflicting traffic approaching in the opposite direction. At all-way stop intersections, all approaches have to stop. Table 2.2 defines the ranges of delay

[1] An evaluation of growth projections from the Los Angeles County Congestion Management Program for Regional Statistical Area 18 (which includes Hermosa Beach) showed an annual growth forecast of 0.25% per year between 2015 and 2020. The use of a 1% per year growth factor is therefore conservative.

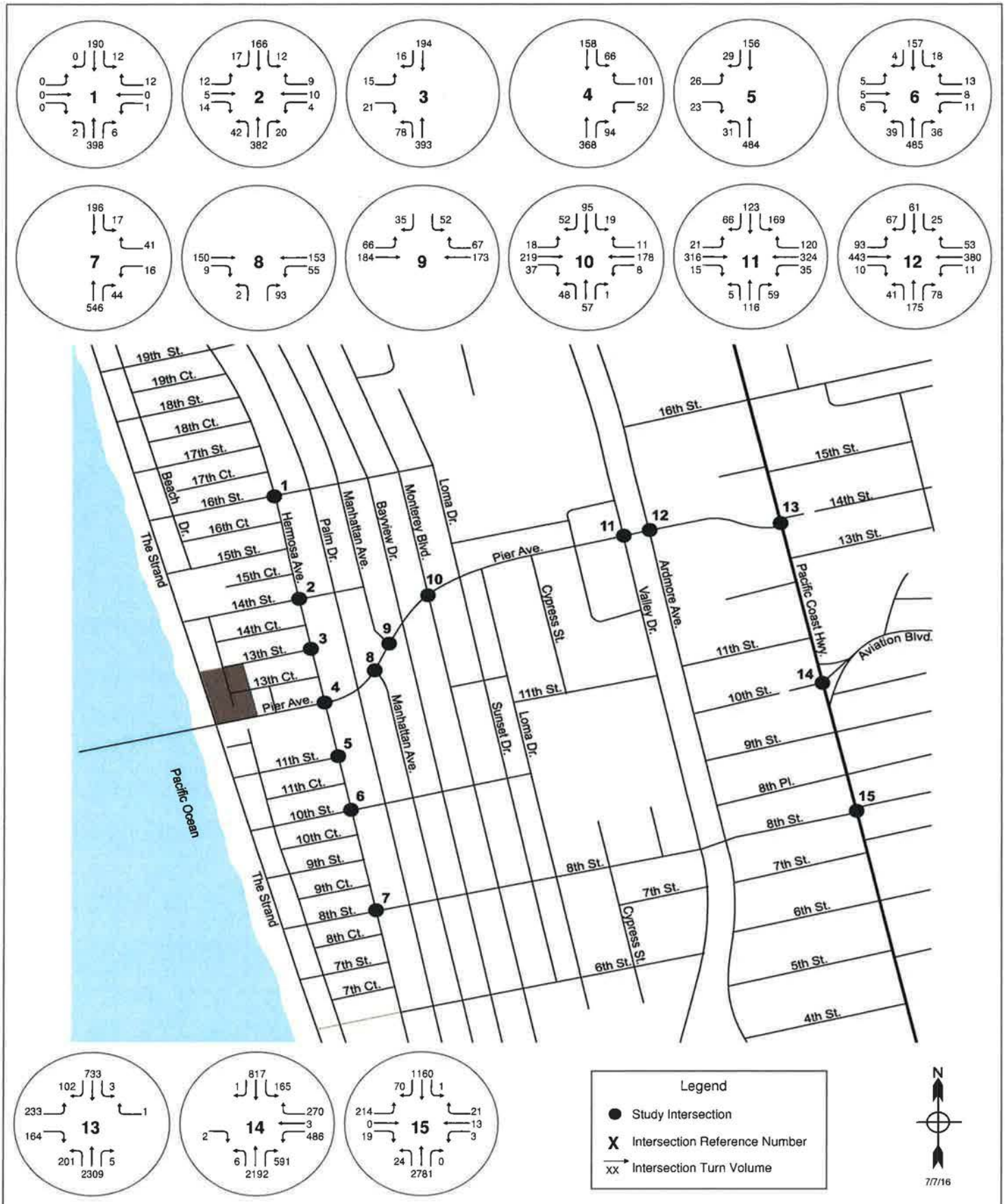

Figure 2.3
Existing Traffic Volumes - Weekday – AM Peak Hour

Pier and Strand Hotel - Traffic Study

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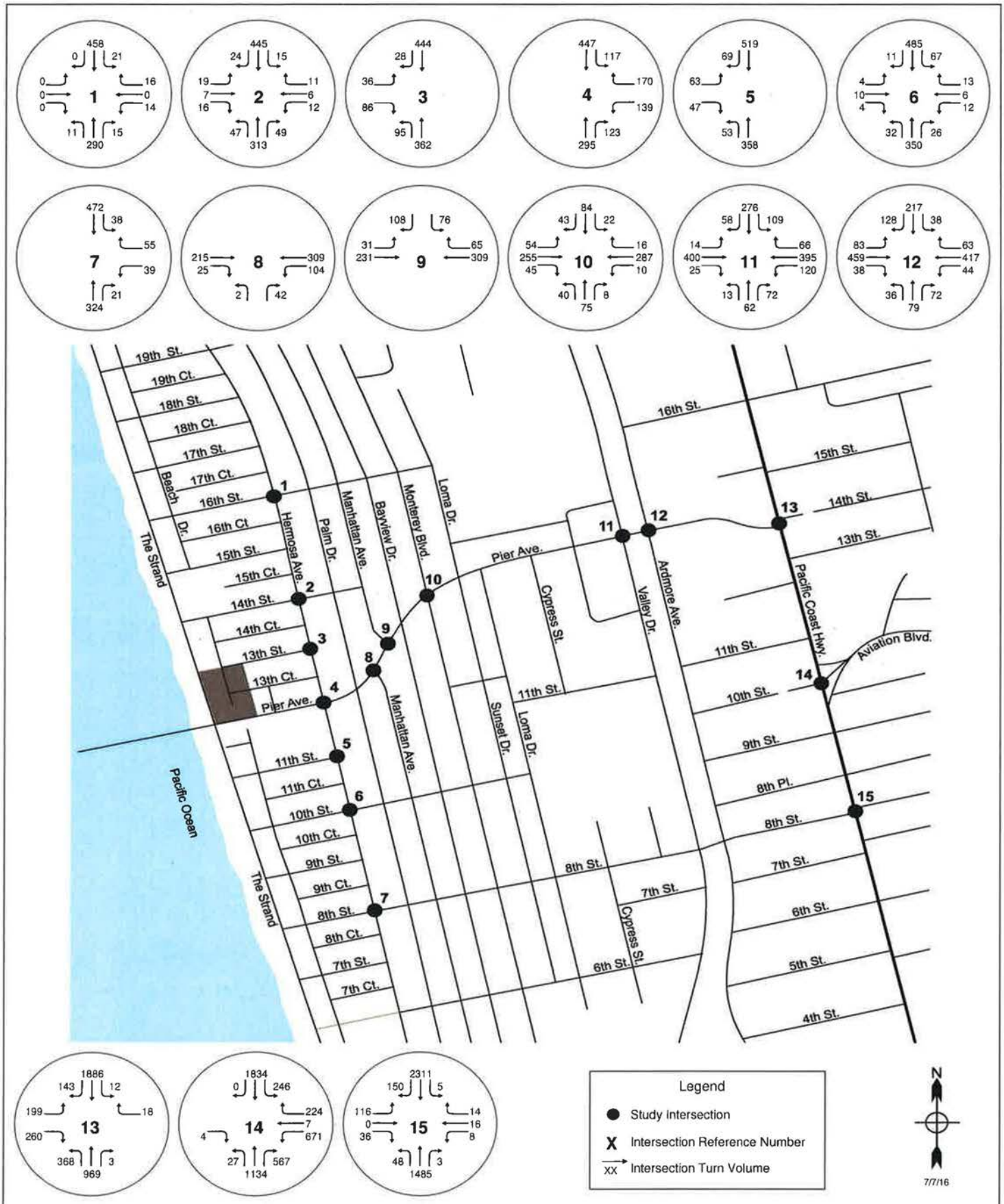

Figure 2.4
Existing Traffic Volumes - Weekday – PM Peak Hour

Pier and Strand Hotel - Traffic Study

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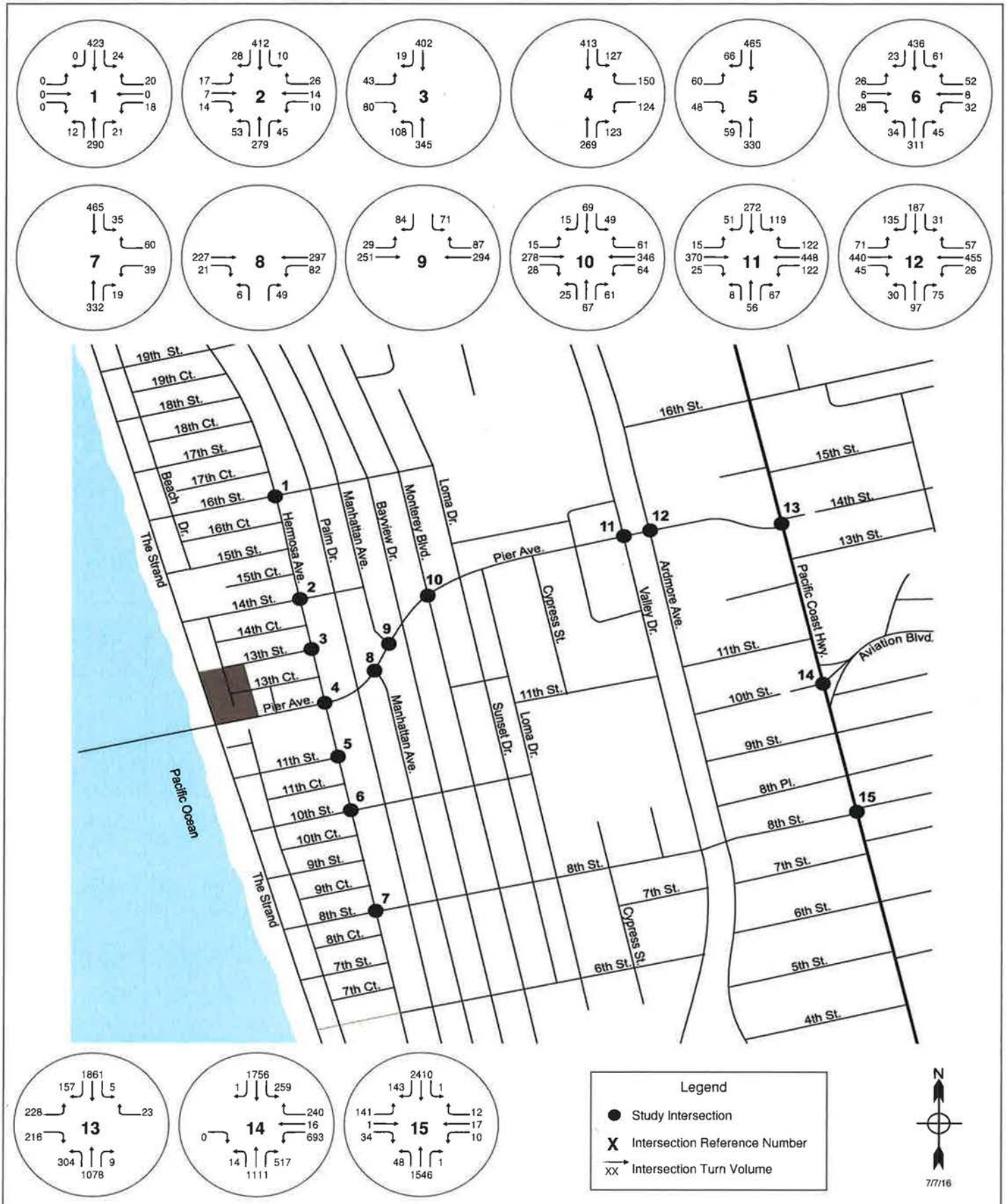

Figure 2.5
Existing Traffic Volumes - Friday – PM Peak Hour

Pier and Strand Hotel - Traffic Study

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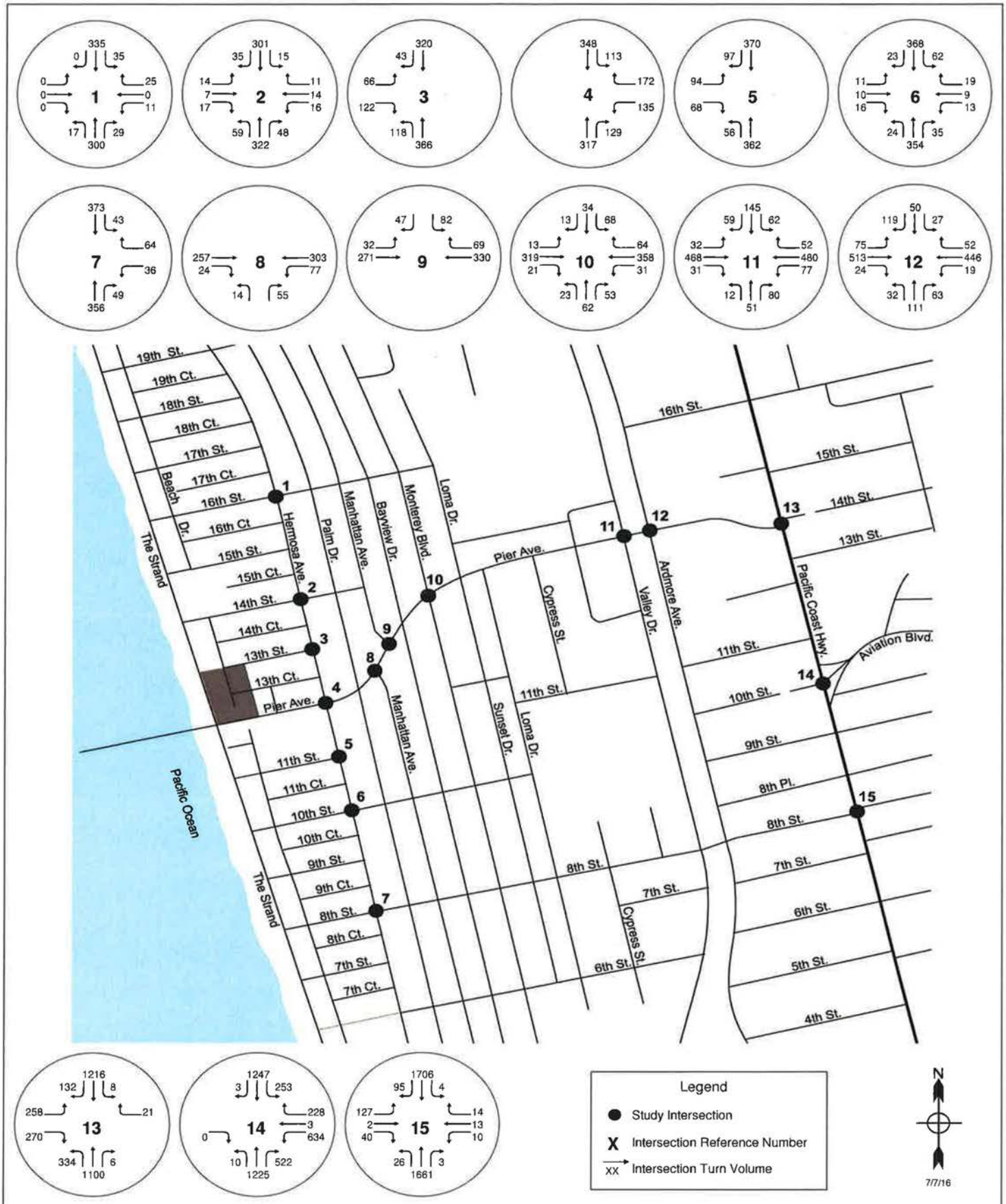

Figure 2.6
Existing Traffic Volumes - Saturday – Midday Peak Hour

Pier and Strand Hotel - Traffic Study

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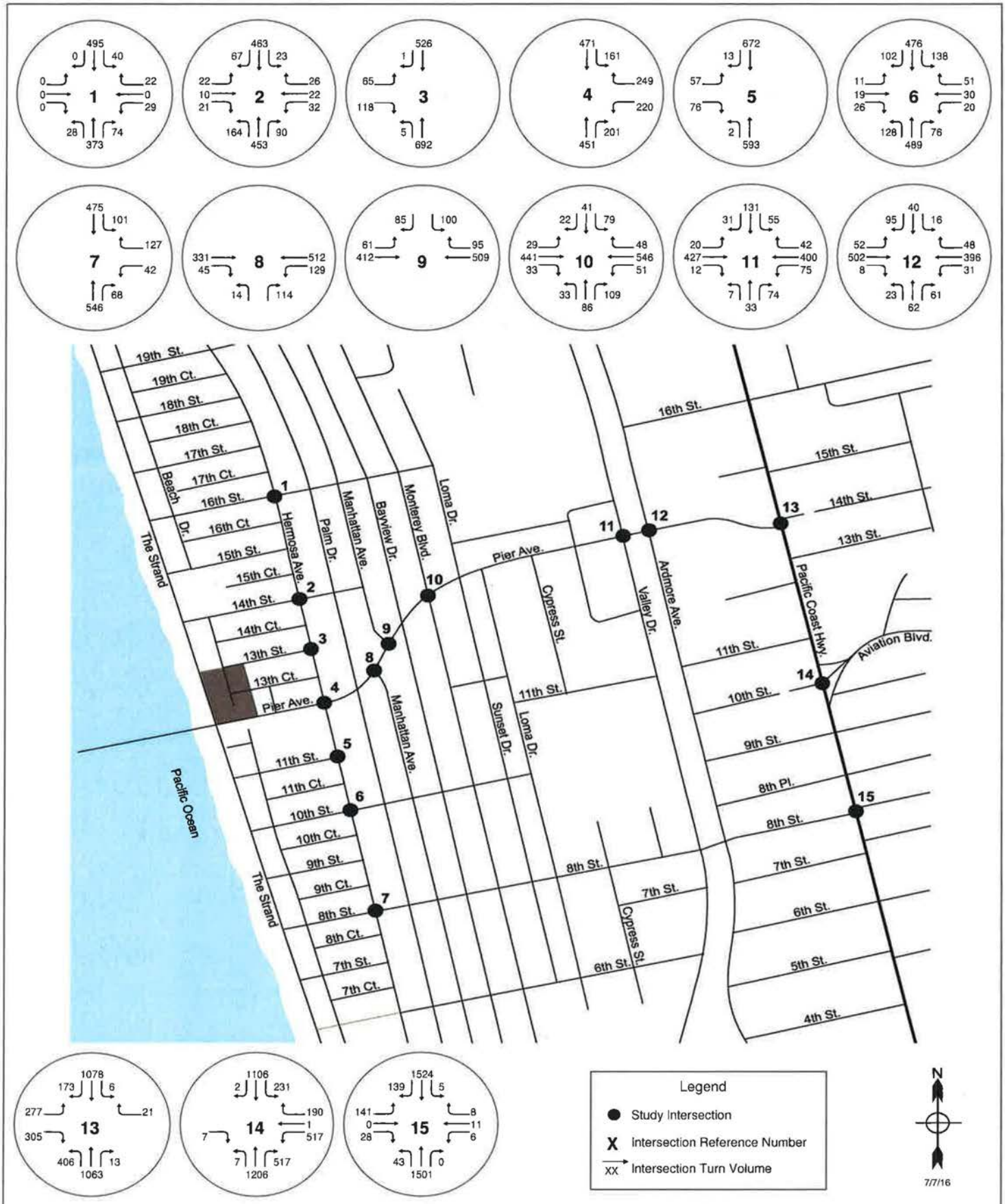

Figure 2.7
Existing Traffic Volumes - Sunday – Mid-Afternoon Peak Hour

Pier and Strand Hotel - Traffic Study

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Table 2.1 Level of Service Definitions for Signalized Intersections

Level of Service	Description	Volume to Capacity Ratio	Delay (sec)
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	<0.600	≤10.0
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	0.601 – 0.700	>10.0 – ≤20.0
C	Good operation. Occasionally drivers may have to wait for more than 60 seconds, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.701 – 0.800	>20.0 – ≤35.0
D	Fair operation. Cars are sometimes required to wait for more than 60 seconds during short peaks. There is no long-standing traffic queues. This level is typically associated with design practice for peak periods.	0.801 – 0.900	>35.0 – ≤55.0
E	Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.	0.901 – 1.000	>55.0 – ≤80.0
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the intersections approach lanes; therefore, volumes carried are not predictable. Potential for stop-and-go type traffic flow.	Over 1.000	>80.0

Source: *Highway Capacity Manual*, Special Report 209, Transportation Research Board, Washington, D.C., 1985 and *Interim Materials on Highway Capacity*, MCHRP Circular 212, 1982 and *HCM2010 Highway Capacity Manual 2010*, Transportation Research Board, Washington, D.C.

and their corresponding levels of service for unsignalized intersections. For unsignalized intersections these parameters are reported for the minor movements only and not for the major street through moves or for the intersection as a whole.

Table 2.2 Level Of Service Definitions For Unsignalized Intersections

Level of Service	Average Control Delay (seconds/veh)
A	0 to 10
B	>10 to 15
C	>15 to 25
D	>25 to 35
E	>35 to 50
F	> 50

Source: *HCM2010 Highway Capacity Manual 2010*, Transportation Research Board, Washington, D.C.

Existing Peak Hour Levels of Service

Table 2.3 summarizes the existing V/C ratios and corresponding levels of service at the analyzed intersections for all time periods. Note that for signalized intersections the V/C ratio and delay values and the level of service are shown for the intersection as a whole, whereas for unsignalized intersections the delay values and the level of service are shown for the worst case minor (stopped) approach only.

AM Peak Hour

All of the studied intersections currently operate at LOS D or better during the AM peak hour, except for the intersection of PCH & Aviation Blvd. which operates at LOS E. All but two intersections operate at LOS B or better with many operating at LOS A.

PM Peak Hour

All of the studied intersections currently operate at LOS D or better during the PM peak hour, with all but one intersection operating at LOS C or better, and with many operating at LOS A or LOS B.

Table 2.3 Existing Conditions - Intersection Level of Service

6/29/2017

Intersection		*Intersection Type*	*Existing Conditions (Year 2016)*									
			Weekday AM Peak Hour		*Weekday PM Peak Hour*		*Friday 5-9pm Peak Hour*		*Saturday 12-3pm Peak Hour*		*Sunday 3-6pm Peak Hour*	
			V/C or (Delay) & Volume	*LOS*	*V/C or (Delay) & Volume*	*LOS*	*V/C or (Delay) & Volume*	*LOS*	*V/C or (Delay) & Volume*	*LOS*	*V/C or (Delay) & Volume*	*LOS*
1.	Hermosa Ave & 16th St	3-Way Stop	(8.8) 621	A	(9.5) 825	A	(9.4) 808	A	(9.1) 752	A	(10.5) 1,061	B
2.	Hermosa Ave & 14th St	Signalized	0.255	A	0.314	A	0.316	A	0.281	A	0.439	A
3.	Hermosa Ave & 13th St	Signalized	0.237	A	0.383	A	0.376	A	0.405	A	0.431	A
4.	Hermosa Ave & Pier Ave	Signalized	0.621	B	0.682	B	0.668	B	0.689	B	0.832	D
5.	Hermosa Ave & 11th St	Signalized	0.282	A	0.465	A	0.370	A	0.461	A	0.398	A
6.	Hermosa Ave & 10th St	4-Way Stop	(9.7) 787	A	(10.0) 1,020	A	(10.3) 1,062	B	(9.6) 954	A	(13.9) 1,566	B
7.	Hermosa Ave & 8th St	3-Way Stop	(10.0) 860	A	(10.2) 955	B	(10.1) 950	B	(10.0) 940	A	(13.2) 1,380	B
8.	Manhattan Ave West & Pier Ave	1-Way Stop	(9.5) 462	A	(9.8) 697	A	(10.2) 682	B	(10.9) 730	B	(12.5) 1,145	B
9.	Manhattan Ave East & Pier Ave	1-Way Stop	(11.5) 577	B	(12.9) 820	B	(12.7) 816	B	(13.8) 831	B	(23.1) 1,262	C
10.	Monterey Blvd & Pier Ave	4-Way Stop	(9.4) 743	A	(10.3) 939	B	(11.1) 1,078	B	(10.9) 1,059	B	(15.8) 1,518	C
11.	Valley Dr. & Pier Ave	4-Way Stop	(13.7) 1,369	B	(19.2) 1,610	C	(19.5) 1,675	C	(17.0) 1,549	C	(13.6) 1,308	B
12.	Ardmore Ave. & Pier Ave	4-Way Stop	(14.3) 1,437	B	(18.5) 1,674	C	(17.0) 1,649	C	(14.4) 1,531	B	(12.3) 1,334	B
13.	PCH & Pier Ave	Signalized	0.657	B	0.700	B	0.699	B	0.574	A	0.583	A
14.	PCH & Aviation Blvd	Signalized	0.952	E	0.820	D	0.823	D	0.821	D	0.765	C
15.	PCH & 8th St	Signalized	0.845	D	0.758	C	0.793	C	0.617	B	0.591	A

Friday PM Peak Hour

All of the studied intersections currently operate at LOS C or better during the Friday PM peak hour, with the exception of the intersection of PCH & Aviation Blvd. which operates at LOS D. Many of the intersections operate at LOS A or LOS B.

Saturday Midday Peak Hour

All of the studied intersections currently operate at LOS D or better during the Saturday Midday peak hour, with all but one intersection operating at LOS C or better, and with many operating at LOS A or LOS B.

Sunday Afternoon Peak Hour

All of the studied intersections currently operate at LOS D or better during the Sunday Afternoon peak hour, with all but one intersection operating at LOS C or better, and with many operating at LOS A or LOS B.

2.4 Existing Bicycle and Pedestrian Facilities

Bicycle Facilities

Current bicycle facilities in the area of the Project Site include a Class I Bike Path along The Strand, and a Class III Bike Route (with sharrows on the roadway surface) along Hermosa Avenue. The Strand is a popular bicycle and walking trail along the Pacific Ocean through Hermosa Beach. It is part of the 22-mile South Bay Bicycle trail which extends from Santa Monica to the Palos Verde Peninsula.

The project site currently includes a bicycle rental shop which will be replaced with a new bicycle shop with rental bicycles in the Proposed Project.

Bicycle parking areas are provided along The Strand, on Pier Avenue between The Strand and Hermosa Avenue and in Downtown.

Numerous additional bicycle facilities are planned to be implemented in the City in the future including in the area of the Project. These are discussed further in Chapter 3.

There is considerable bicycle activity in the area. Counts taken in the summer of 2015 show that bicycle volumes on The Strand adjacent to the Proposed Project range from 160 bikes in the AM peak hour to 250 bikes in the PM peak hour, and as many as 295 bikes per hour at weekends. The counts also show bike volumes on Pier Avenue adjacent to the Proposed

Project ranging from 45 bikes in the AM peak hour, to 105 bikes in the PM peak hour, and as many as 150 bikes per hour at weekends.

Pedestrian Facilities

The Strand provides a pedestrian path adjacent to the beach throughout Hermosa Beach and extending both north and south into adjacent communities. Pier Avenue is a wide pedestrian only thoroughfare between The Strand and Hermosa Avenue. Both facilities are directly adjacent to the Project Site.

At the nearby intersection of Pier Avenue & Hermosa Avenue, a scramble pedestrian crossing provides convenient pedestrian access across the intersection. (This provides an all-red phase to vehicles to allow pedestrians to cross the intersection diagonally as well as on the regular crosswalks at the same time).

There are a number of east-west streets between The Strand and Hermosa Avenue that are pedestrian walk streets (for pedestrians only) , including 9th Street and 8th Street south of the Project Site, and 16th Street, 17th Street and 18th Street to the north of the Project Site.

All streets in Downtown have sidewalks in generally good condition. There are pedestrian crosswalks along Hermosa Avenue, at 13th Street, 14th Street and 16th Street to the north and 11th Street, 10th Street, and 8th Street to the south.

There is considerable pedestrian activity in the area. Counts taken in the summer of 2015 show that pedestrian volumes on The Strand adjacent to the Proposed Project are approximately 325 pedestrians in the AM and PM peak hours, 560 pedestrians in the Friday PM peak hour, 915 pedestrians in the Saturday Midday PM peak hour, and 1,515 pedestrians in the Sunday Afternoon peak hour. The counts also show pedestrian volumes on Pier Avenue adjacent to the Proposed Project ranging from 250 pedestrians in the AM peak hour to 615 pedestrians in the PM peak hour, 1,500 pedestrians in the Friday PM peak hour, 1,630 pedestrians in the Saturday Midday PM peak hour, and 2,815 pedestrians in the Sunday Afternoon peak hour. Pedestrian volumes on Hermosa Avenue north of Pier Avenue range from 50 pedestrians in the AM peak hour to 150 pedestrians in the PM peak hour, 380 pedestrians in the Friday PM peak hour and in the Saturday Midday PM peak hour, and 505 pedestrians in the Sunday Afternoon peak hour.

2.5 Existing Transit Service

The Project Site is located in an area with a bus service provided by local and regional operators. Metro (Los Angeles County Metropolitan Transportation Authority), Los Angeles Department of Transportation (LADOT), and Beach Cities Transit operate routes serving the

Project Site. Figure 2.8 shows the location of the nearby bus routes and Table 2.4 summarizes transit service.

Bus stops are located approximately 700 ft south of the Project Site between 11th Court and 11th Street (for southbound travel), and 1,000 ft south of the Project Site just south of 10th Street (for northbound travel).

Metro Bus Service

Metro Line 130 runs predominantly east-west from Redondo Beach to Artesia. In the vicinity of the Project Site it runs along Hermosa Avenue and Pier Avenue. On weekdays, the service operates between 5:20 am and 9:30 pm, with headway of approximately 40 minutes in the AM peak period and 45 minutes in the PM peak period. At the weekend, the service operates between 6:20 am and 10:10 pm with headway of approximately 60 minutes in the Saturday and Sunday peak periods.

Beach Cities Transit

Service 109 provides access north and south of the Project Site between the Los Angeles Airport City Bus Center and Redondo Beach. In the vicinity of the Project Site it runs along Hermosa Avenue. On weekdays, the service operates between 6:20 am and 9:30 pm with approximately 45 minute headways in the AM and PM peak periods, and . At the weekend, the service operates between 6:20 am and 10:00 pm with headway of approximately 60 minutes.

LADOT

LADOT Commuter Express Service 438 runs between Redondo Beach and Downtown Los Angeles. In the vicinity of the Project Site it runs along Hermosa Avenue. Service operates on weekdays between 5:45am and 9:00 am and between 3:45pm and 7:30pm, with approximately 15 minute headways in the AM peak period, and 10 minute headways in the PM peak period

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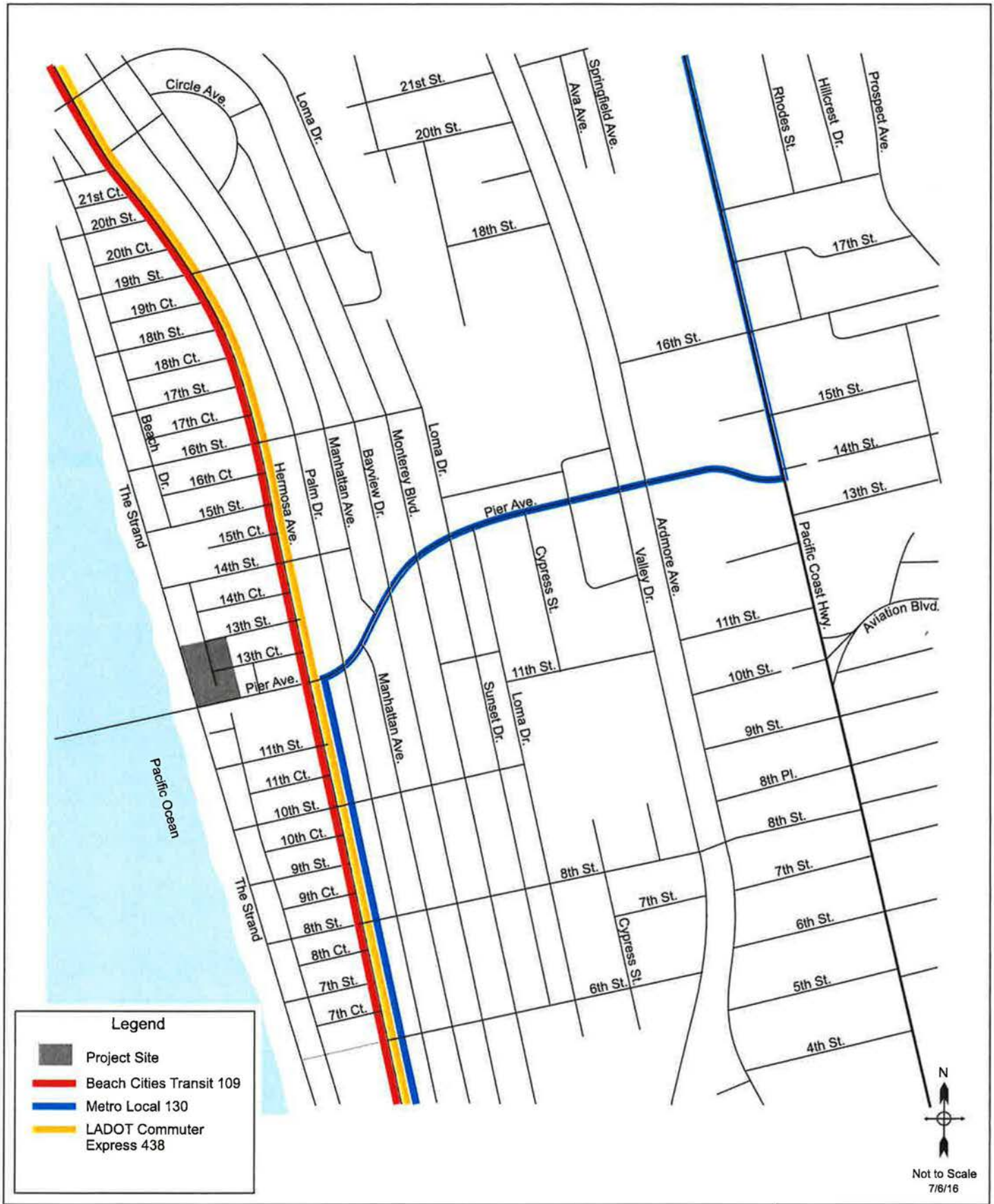

Figure 2.8
Existing Transit Service

Pier and Strand Hotel - Traffic Study

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Table 2.4 Existing Public Transit Services

1/25/2017

Route	Line	Description	Weekday Hours of Operation	Weekend Hours of Operation	Approximate Headway (minutes)				
					Weekday AM	Weekday PM	Friday 5-9pm	Saturday 12-3pm	Sunday 3-6pm
Metro Local	130	Redondo Beach - Cerritos	5:20am - 9:30pm	6:20am - 10:10pm	40	45	55	60	60
Beach Cities Transit	109	Redondo Beach - LAX City Bus Center	6:20am - 9:30pm	6:20am - 10:00pm	45	45	60	90	60
LADOT - Commuter	438	Redondo Beach - Downtown Los Angeles (AM to Downtown Los Angeles only; PM to Redondo Beach only)	6:00am - 7:20pm	-	15	10	10	-	-

3. Future Conditions Without The Project

3.1 Traffic Forecasts

In order to evaluate the potential traffic impacts of the Project, it was necessary to first estimate and then analyze future traffic conditions without the project. The year selected for this analysis was 2021 which is the expected year of completion of the proposed project. Future traffic forecasts were estimated by forecasting two separate components of traffic growth in the study area.

The first component represents the ambient growth that is a general growth in traffic volumes due to minor new developments in the project area, and regional growth and development outside the study area. A growth rate of 1% per year was applied for this ambient traffic growth based on historical traffic growth and in conjunction with the City of Hermosa Beach. An evaluation of growth projections from the Los Angeles County Congestion Management Program for Regional Statistical Area 18 (which includes Hermosa Beach) showed an annual growth forecast of 0.25% per year between 2015 and 2020. The use of 1% per year growth factor therefore provides a conservative forecast. The existing traffic counts were therefore adjusted upward by a total of 5% to represent the ambient growth to the project completion year.

The second component of future growth relates to specific development projects located in the study area that are either under construction, approved, or under formal planning consideration and potentially could be in place by the year 2021 when the proposed project will be completed, and that could add traffic growth to the roadways in the study area. The following section of this chapter describes the process of estimating traffic from these cumulative projects.

This approach is conservative in that not all of the related projects may be ultimately built, and not all may be built by 2021 (the buildout year of the subject project). Along with the fact that the analysis includes both a list of specific related projects and a general background growth factor, the analysis likely overstates the future growth in traffic without the subject project.

3.2 Cumulative Projects

Project List

A list of proposed development projects that could affect traffic conditions in the project area was prepared based on information obtained from a variety of sources including the City of

Hermosa Beach, and other studies and reports. A total of fifteen potential development projects were identified, which are listed in Table 3.1, and are shown in Figure 3.1.

It should also be noted that again for purposes of preparing a conservative analysis, no potential street improvements or transportation mitigation measures that might be associated with any of the cumulative projects were included in the future conditions traffic analysis.

Project Trip Generation and Distribution

Trip generation estimates for the related projects were prepared, as also shown in Table 3.1. These were generally taken from the environmental and/or traffic studies prepared for the individual projects. Where the information was not available from previous reports, the trip generation was estimated using trip rates developed by the Institute of Transportation Engineers (ITE). Trip generation estimates were prepared for all five analysis time periods.

Typically, trip generation information was available for the weekday AM peak hour and the weekday PM peak hour from the related project studies but not available for the Friday PM peak hour, the Saturday Midday peak hour, and the Sunday Afternoon peak hour. The ITE trip rates database does not identify trip rates specifically for a Friday. Because the hour of analysis in this study is essentially the same for a Friday PM peak hour as for a weekday peak hour, the trip generation rates for the weekday PM peak hour were directly adopted for the Friday PM peak hour scenario. For the Saturday Midday peak hour and the Sunday Afternoon peak hour, trip generation was estimated based on a methodology which included using trip rates in *Trip Generation – 9th Edition* using reasonable assumptions and interpretations and professional judgment. This generally involved estimating the percent of daily trips that would occur in the specific analysis hour, or by using the trip rate for the "peak hour of generator"[1]. The trip rates used in the analysis are presented in Appendix A.

Similarly, trip distribution estimates were also taken from previous studies where available or were estimated based on an understanding of the type of the project, its location, and the downtown roadway and circulation system.

As shown in Table 3.1, the related projects would generate between approximately 1,220 and 2,355 hourly trips, depending on the time period. It should be noted that because of the large geographic distribution of these projects, that not all of these trips would travel through the study area and traverse the study intersections.

[1]ITE trip rates are usually provided for the peak hour of street traffic (a.m. and p.m. peak hour), and the "peak hour of generator" – i.e. the hour of highest trip generation for the land use. For the Saturday midday peak hour, and Sunday Afternoon peak hour, this peak hour of generator trip rate was used when considered to appropriately represent the analysis time period, though in some cases may result in a conservatively high estimate. In cases where it was considered that the peak hour of generator rate was not applicable, the trip rate for the analysis time period was based on estimates using similar or comparable land uses, or by estimating the percent of daily trips that would occur in the analysis time period and based on professional judgment from available data from other time periods.

Table 3.1 Related Project List and Trip Generation Estimates

1/18/2017

Project #	Project Name	Location / Address	Jurisdiction	Project Description		Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour			Friday 5-9 Peak Hour			Saturday 12-3 Peak Hour			Sunday 3-6 Peak Hour		
							In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
1	H2O Hotel	1429 Hermosa Avenue, Hermosa Beach	City of Hermosa Beach	30 Rooms	Hotel	268	12	8	20	10	11	21	10	11	21	15	11	26	13	10	23
2	2101 Pacific Coast Highway	2101 Pacific Coast Highway	City of Hermosa Beach	10,124 s.f.	Office	112	14	2	16	3	12	15	3	12	15	2	2	4	1	1	2
3	906 Hermosa Avenue	906 Hermosa Avenue	City of Hermosa Beach	8,780 s.f.	Office	97	12	2	14	2	11	13	2	11	13	2	2	4	1	0	1
4	Sketchers	2901 & 3001 Pacific Coast Highway, Hermosa Beach and 305 & 330 S Sepulveda Boulevard,	City of Hermosa Beach & City of Manhattan Beach	19,209 s.f.	Executive Offices	153	27	2	29	3	24	27	3	24	27	4	4	8	2	1	3
				100,296 s.f.	Design Center	800	141	11	152	14	127	141	14	127	141	23	20	43	9	7	16
				998 s.f.	Coffee Shop	204	14	13	27	5	5	10	5	5	10	2	15	17	2	15	17
				8 buses	GCS Event Bus Trips	64	0	0	0	16	16	32	16	16	32	0	0	0	0	0	0
				49,080 s.f.	Net General Office	577	82	9	91	13	74	87	13	74	87	11	10	21	5	3	8
				4,000 s.f.	Existing Retail	-85	-1	-1	-2	-3	-4	-7	-3	-4	-7	-6	-6	-12	-4	-4	-8
				2,815 s.f.	Existing Automobile Car Center	-81	-4	-2	-6	-4	-4	-8	-4	-4	-8	-4	-5	-9	-4	-5	-9
				2,525 s.f.	Existing Automated Car Wash	-320	-6	-6	-12	-14	-14	-28	-14	-14	-28	-14	-14	-28	-14	-14	-28
				160,243 s.f.	Total	1,312	253	26	279	30	224	254	30	224	254	17	23	40	-4	3	-1
5	Redondo Beach Waterfront Project	Portofino Way / Harbor Drive / Torrance Boulevard, Redondo Beach	City of Redondo Beach	511,460 s.f.	Proposed Mixed-Use	22,234	458	305	763	849	626	1,475	849	626	1,475	1,233	993	2,226	953	734	1,687
				207,402 s.f.	Existing Mixed-Use	-9,684	-263	-156	-419	-378	-315	-693	-378	-315	-693	-507	-417	-923	-411	-312	-723
				304,058 s.f.	Total	12,550	195	149	344	471	311	782	471	311	782	726	576	1,303	542	422	964
6	Gelson's Supermarket	8th Street & Sepulveda Boulevard, City of Manhattan Beach	City of Manhattan Beach	34,900 s.f.	Supermarket, Fast Food Retaurant & Bank	3,062	90	61	151	83	69	152	83	69	152	103	96	199	146	137	283
7	824 1st Street	824 1st Street	City of Hermosa Beach	3,000 s.f.	Office	33	4	1	5	1	3	4	1	3	4	1	0	1	0	0	0

Table 3.1 Related Project List and Trip Generation Estimates

1/18/2017

Project #	Project Name	Location / Address	Jurisdiction	Project Description		Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour			Friday 5-9 Peak Hour			Saturday 12-3 Peak Hour			Sunday 3-6 Peak Hour		
							In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
8	2420 Pacific Coast Highway	2420 Pacific Coast Highway	City of Hermosa Beach	32,191 s.f.	Church	293	11	7	18	9	9	18	9	9	18	0	0	0	0	0	0
				30,078 s.f.	Supermarket	3,075	63	39	102	145	140	285	145	140	285	163	157	320	290	279	569
				15,000 s.f.	Existing Office	-165	-20	-3	-23	-4	-18	-22	-4	-18	-22	-3	-3	-6	-1	-1	-2
				29,653 s.f.	Existing Recreation Center	-1,003	-40	-21	-61	-40	-41	-81	-40	-41	-81	-17	-15	-32	-25	-19	-44
				17,616 s.f.	Total	2,200	14	22	36	110	90	200	110	90	200	143	139	282	264	259	523
9	1133 Artesia Boulevard	1133 Artesia Boulevard	City of Manhattan Beach	12,000 s.f.	Grocery Store	1,227	25	16	41	58	56	114	58	56	114	65	63	128	116	111	227
10	865 Manhattan Beach Boulevard	865 Manhattan Beach Boulevard	City of Manhattan Beach	15,000 s.f.	General Office	165	20	3	23	4	18	22	4	18	22	3	3	6	1	1	2
				700 s.f.	Deli	340	21	21	42	5	4	9	5	4	9	16	18	34	16	18	34
				15,700 s.f.	Total	505	41	24	65	9	22	31	9	22	31	19	21	40	17	19	36
11	1000 N Sepulveda Boulevard	1000 N Sepulveda Boulevard	City of Manhattan Beach	23,050 s.f.	Medical Office	833	43	12	55	23	59	82	23	59	82	48	36	84	0	0	0
				665 s.f.	Pharmacy	60	1	1	2	3	3	6	3	3	6	3	4	7	3	4	7
				1,715 s.f.	Coffee Shop	1,860	95	91	186	35	35	70	35	35	70	54	59	113	54	59	113
				5,400 s.f.	Existing Restaurant	-687	-32	-26	-58	-32	-21	-53	-32	-21	-53	-40	-36	-76	-55	-45	-100
				20,030 s.f.	Total	2,066	107	78	185	29	76	105	29	76	105	65	63	128	2	18	20
12	757 Manhattan Beach Boulevard	757 Manhattan Beach Boulevard	City of Manhattan Beach	5 DUs	Condominiums	29	0	2	2	2	1	3	2	1	3	1	1	2	1	1	2
				6 DUs	Existing Apartments	-40	-1	-2	-3	-3	-1	-4	-3	-1	-4	-2	-1	-3	-2	-1	-3
				-1 DUs	Total	-11	-1	0	-1	-1	0	-1	-1	0	-1	-1	0	-1	-1	0	-1

Table 3.1 Related Project List and Trip Generation Estimates

1/18/2017

Project #	Project Name	Location / Address	Jurisdiction	Project Description	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour			Friday 5-9 Peak Hour			Saturday 12-3 Peak Hour			Sunday 3-6 Peak Hour		
						In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
13	1129 N Sepulveda Boulevard	1129 N Sepulveda Boulevard	City of Manhattan Beach	2,000 s.f. Retail	85	1	1	2	3	4	7	3	4	7	6	6	12	3	4	7
14	1100 Manhattan Beach Boulevard	1100 Manhattan Beach Boulevard	City of Manhattan Beach	13,000 s.f. Retail	555	7	5	12	23	25	48	23	25	48	38	39	77	21	26	47
15	2012 Artesia Boulevard	2012 Artesia Boulevard	City of Redondo Beach	16,900 s.f. Indoor Pool	727	31	19	50	63	38	101	63	38	101	55	58	113	55	58	113
Total					**24,788**	**805**	**414**	**1,219**	**894**	**952**	**1,846**	**894**	**952**	**1,846**	**1,255**	**1,099**	**2,356**	**1,177**	**1,067**	**2,244**

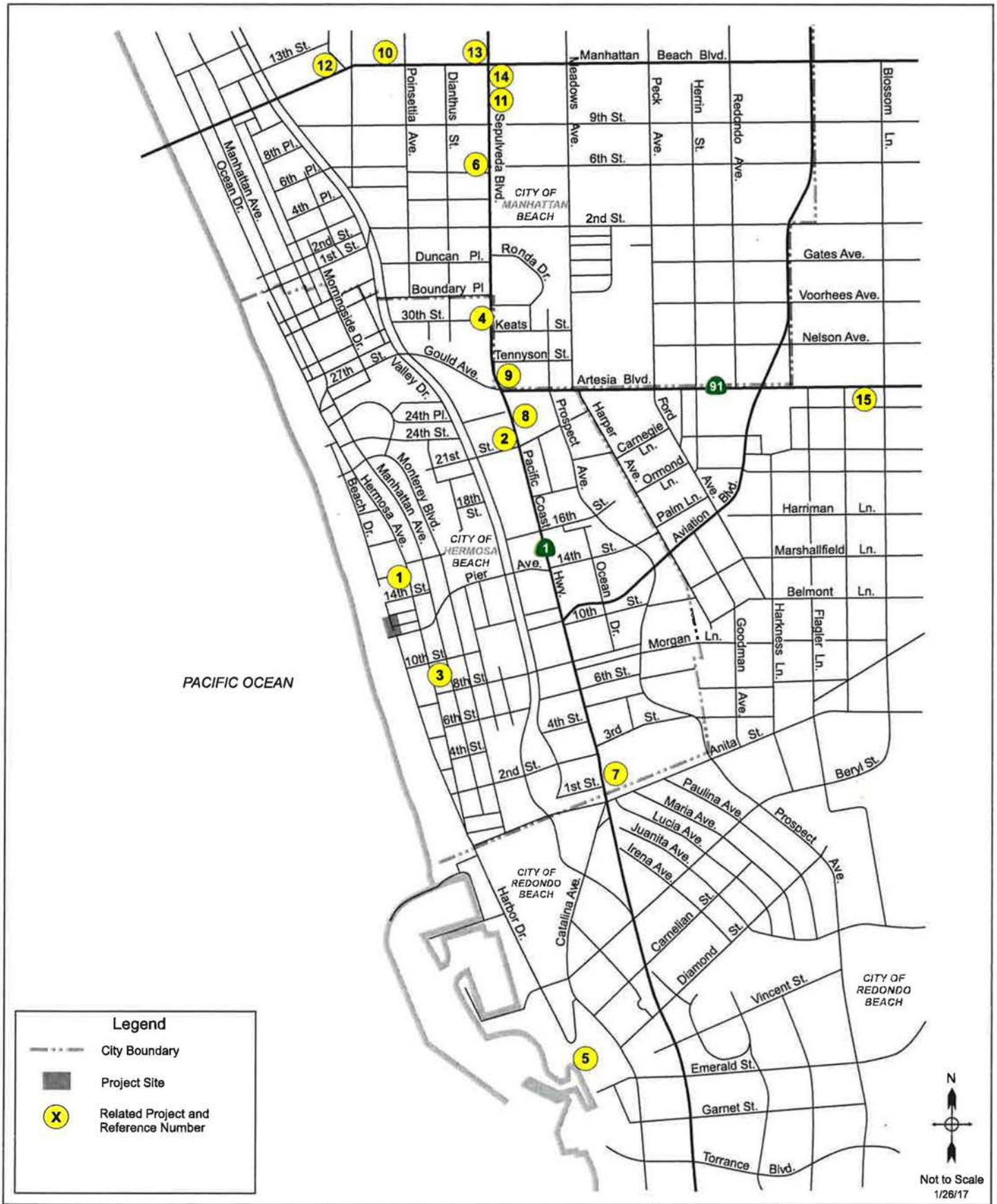

Figure 3.1
Location of Related Projects

Pier and Strand Hotel - Traffic Study

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Future Traffic Forecasts for 2021 Without Project Condition

The trip estimates shown in Table 3.1 were then added to the roadway network and combined with existing volumes and ambient traffic growth (described earlier) to provide forecasts of future traffic conditions in the study area in 2021, for the Weekday AM, Weekday PM, Friday Evening, Saturday Midday and Sunday Afternoon peak periods, representing the Future Without Proposed Project conditions.

The Future Without Project peak hour traffic volumes are illustrated in Figures 3.2 to 3.6 for the Weekday AM, Weekday PM, Friday Evening, Saturday Midday and Sunday Afternoon peak hours respectively.

3.3 Transportation System Improvement Projects

A number of transportation system improvements will occur on the future in the study area.

Hermosa Avenue Street Improvement Project (City of Hermosa Beach)

The City of Hermosa Beach's Downtown Core Revitalization Strategy (January 2014) includes specification of Hermosa Avenue Streetscape Improvements between 10th Street and 14th Street. The package of improvements aims to increase sidewalk widths and improve parking facilities on Hermosa Avenue between 10th Street and 14th Street, whilst retaining the possibility of having two southbound traffic lanes during peak periods. These changes have not yet been officially adopted and are unlikely to occur by 2021 so are not included in the analysis.

Pacific Coast Highway Improvements (Caltrans)

Caltrans is planning improvements to sections of Pacific Coast Highway and Aviation Boulevard in Hermosa Beach to improve mobility and provide an aesthetically pleasing roadway. A number of alternatives are being considered that would improve pedestrian mobility and beautify the roadway by reconstructing sidewalks, underground utilities and constructing a landscaped median; and to improve mobility and safety for all users including pedestrians, bicyclists and transit users by implementing road diet concepts and constructing roundabouts at some intersections. These improvements – when finalized – are not expected to be implemented until 2022, so are not included in this analysis.

Bicycle Facility Improvements

The South Bay Bicycle Master Plan identifies a number of improvements for bicycle facilities in the in the study area and the City of Hermosa Beach. These include a Bike Route on Pier

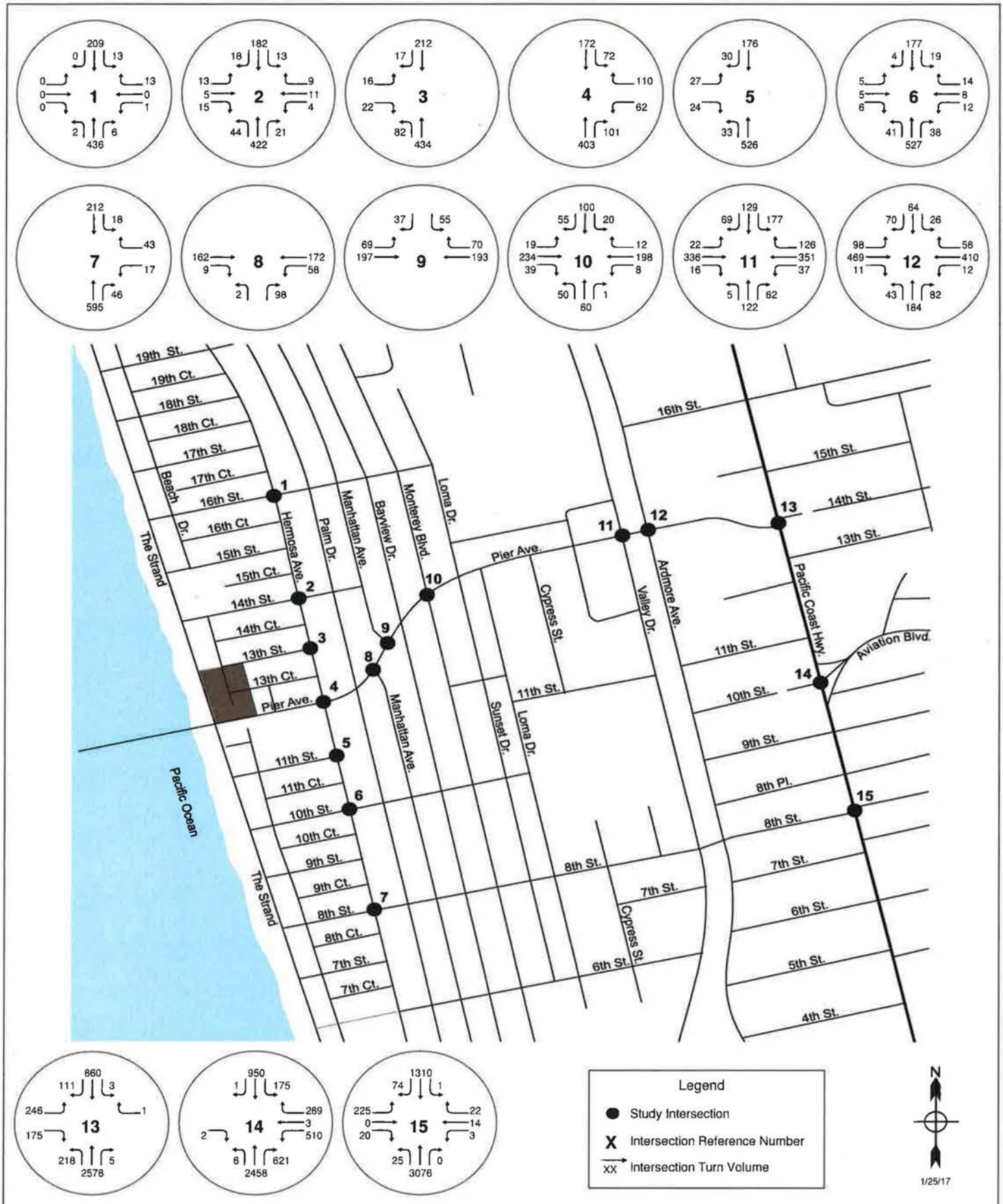

Figure 3.2
Future Without Project Traffic Volumes - Weekday – AM Peak Hour

Pier and Strand Hotel - Traffic Study

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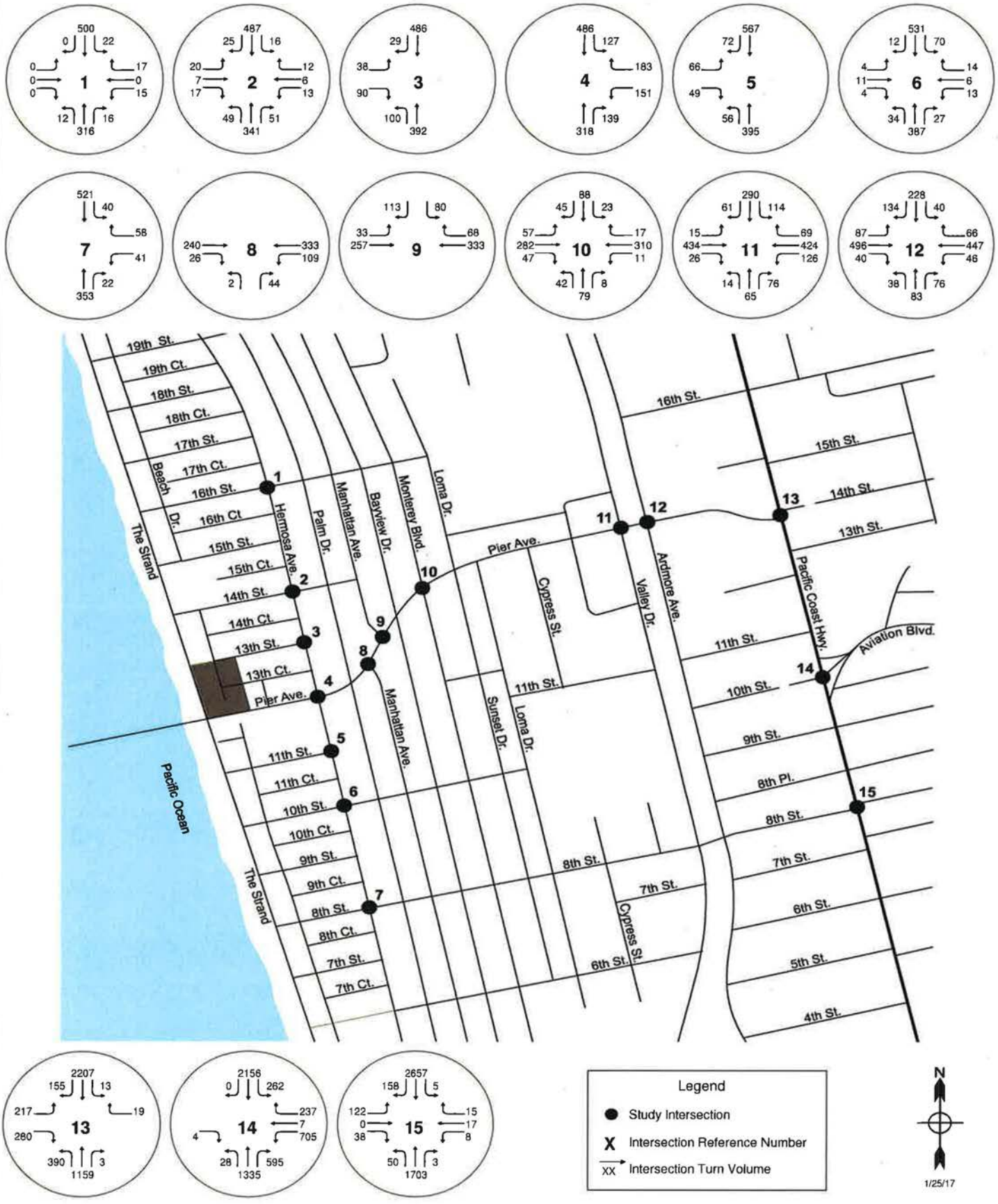

Figure 3.3
Future Without Project Traffic Volumes - Weekday – PM Peak Hour

Pier and Strand Hotel - Traffic Study

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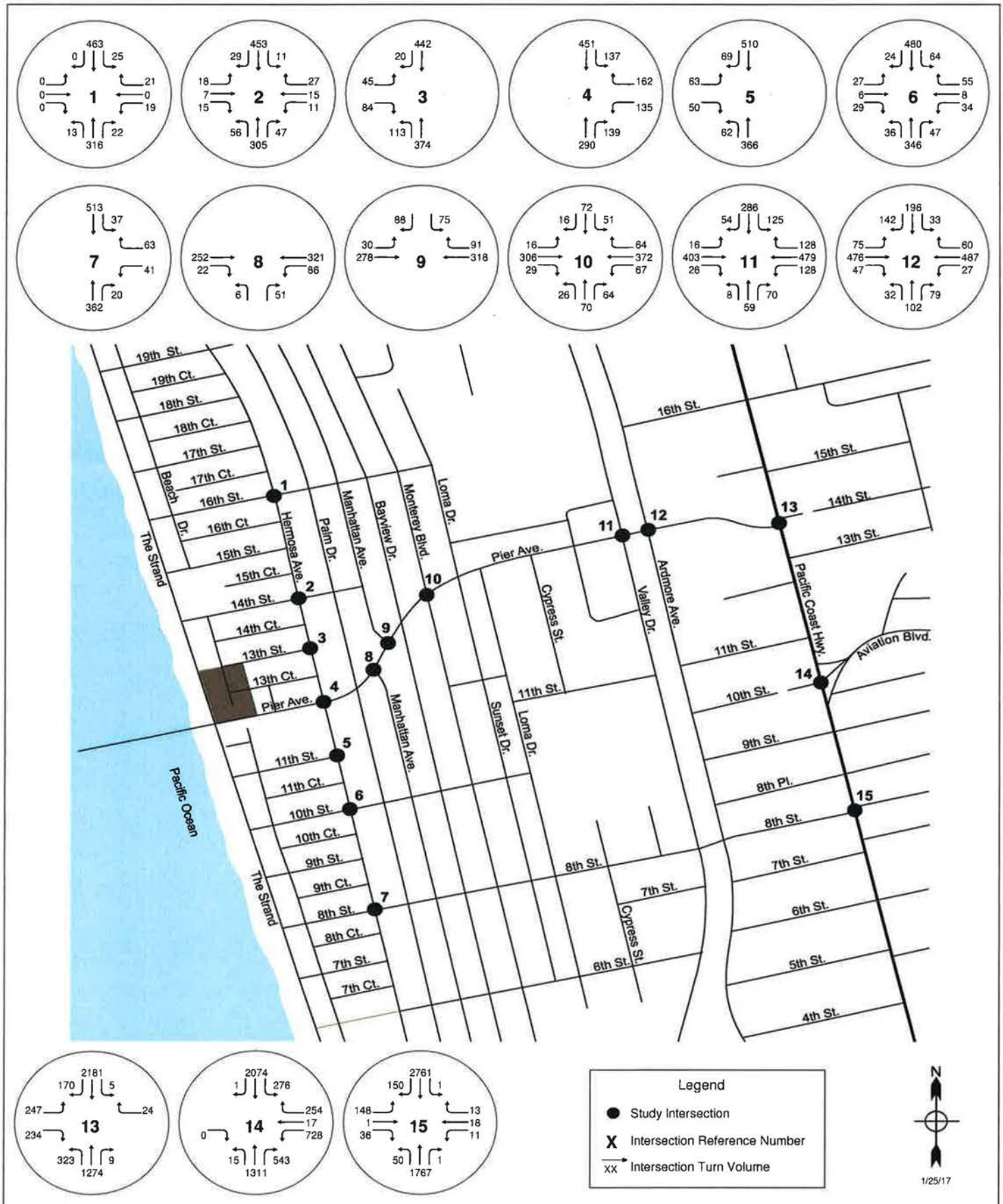

Figure 3.4
Future Without Project Traffic Volumes - Friday – PM Peak Hour

Pier and Strand Hotel - Traffic Study

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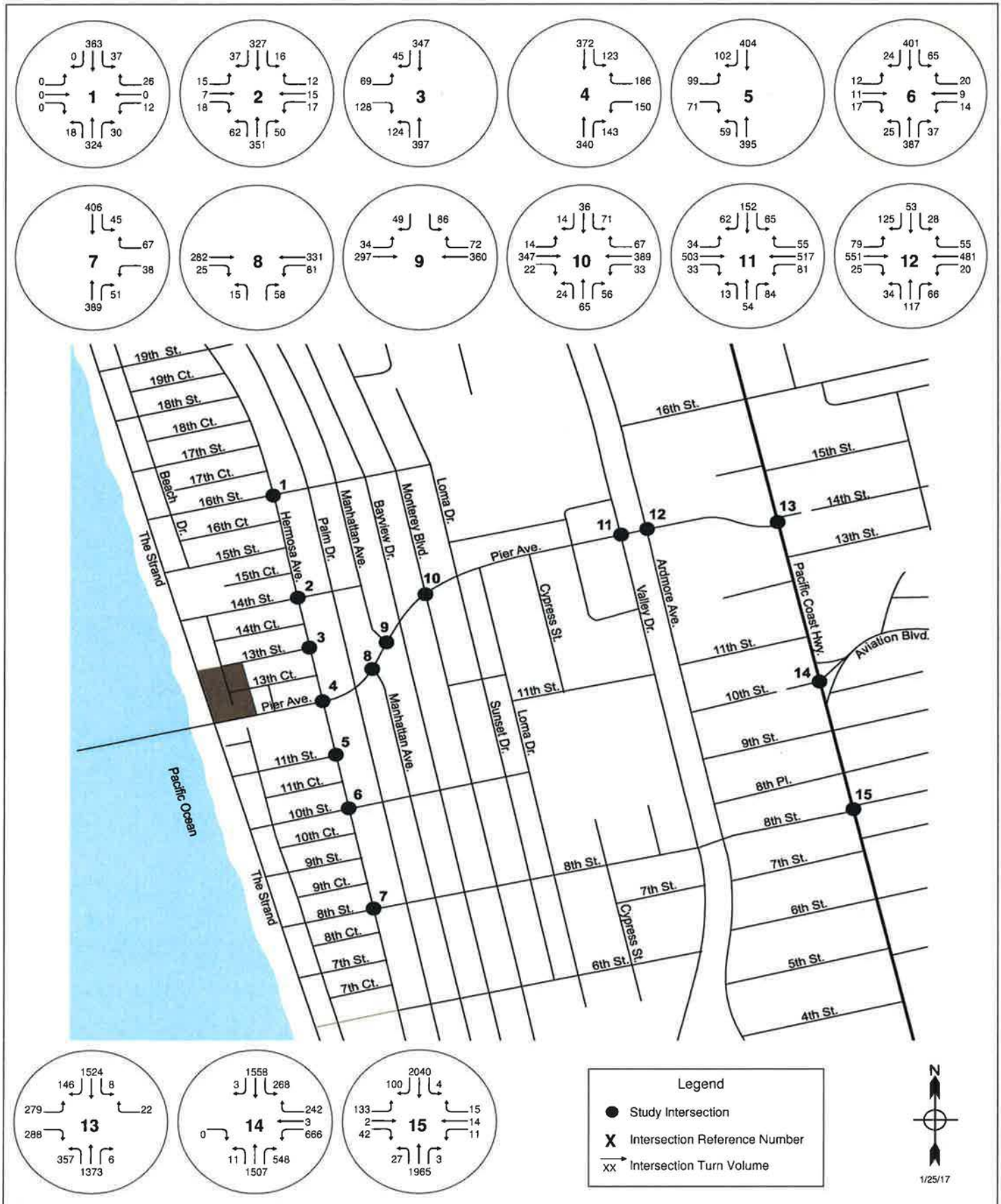

Figure 3.5
Future Without Project Traffic Volumes - Saturday – Midday Peak Hour

Pier and Strand Hotel - Traffic Study

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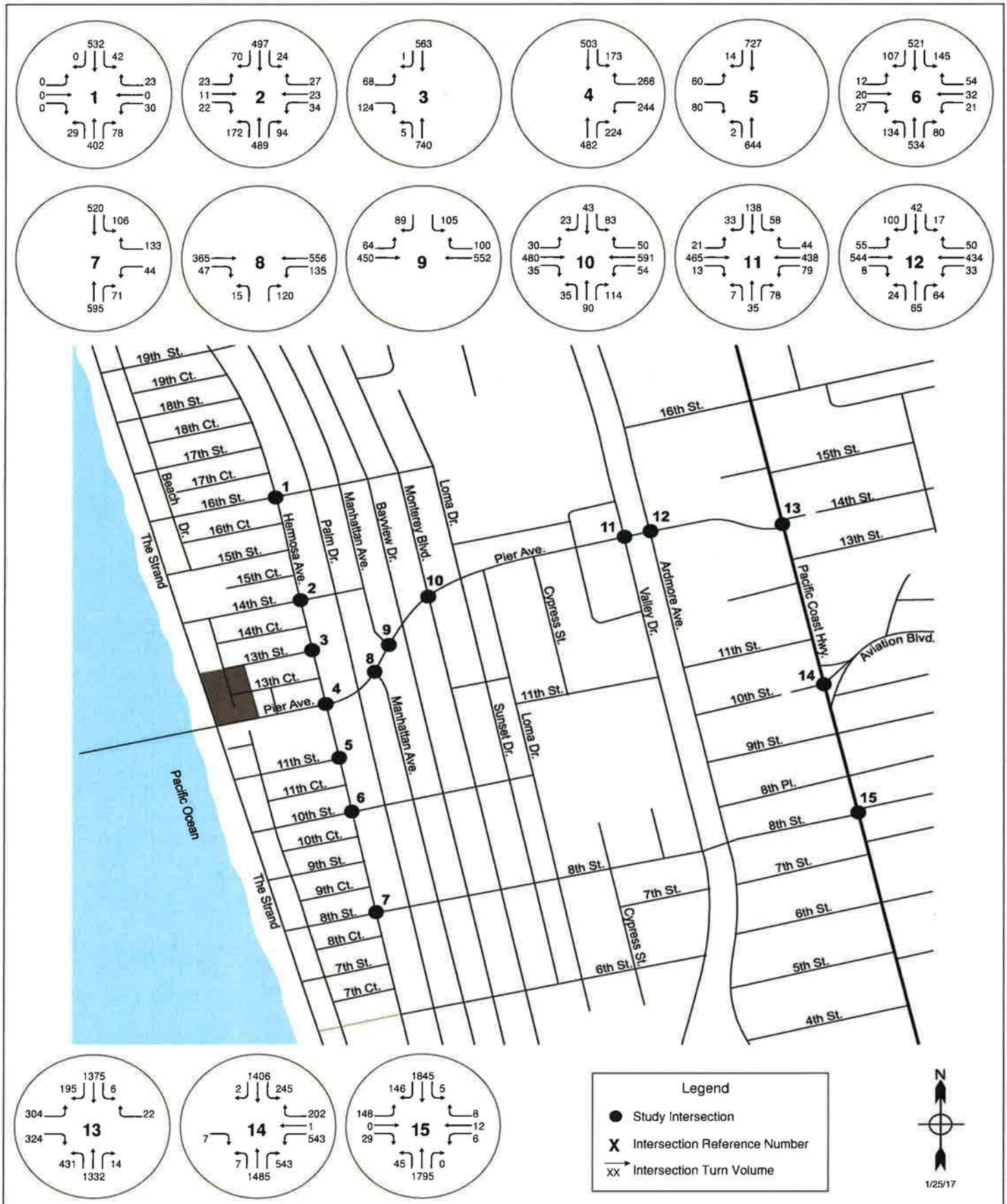

Figure 3.6
Future Without Project Traffic Volumes - Sunday – Mid-Afternoon Peak Hour

Pier and Strand Hotel - Traffic Study

The **Mobility** Group
Transportation Strategies & Solutions

Avenue from Hermosa Avenue to Ardmore Avenue; a Bike Friendly Street on Monterey Blvd.; a Bike Friendly Street on 8th Street east of Hermosa Avenue, and Bike Routes on Valley Drive and Ardmore Avenue. There are no implementation details currently available on these improvements, although they would be unlikely to modify the roadway lane configurations, so they are not included in the analysis. Figure 3.7 shows the existing and planned bicycle facilities in the study area.

3.4 Future Intersection Conditions

Future Without Project Intersection Level of Service

The future without Project traffic forecasts were evaluated to determine the V/C ratio and LOS for the analyzed intersections for the Weekday AM, Weekday PM, Friday Evening, Saturday Midday and Sunday Afternoon peak hours. The results are shown in Tables 3.2 and 3.3, which summarize the intersection levels of service calculated for the future without project conditions, and compares them to existing conditions levels of service. For the three intersections along Pacific Coast Highway, the results are shown for both the ICU method (V/C ratio) and the HCM method (vehicle delay). For these intersections, the ICU results are shown for informational purposes for the city of Hermosa Beach, and the HCM results are shown for the Caltrans methodology, but the analysis conclusions are based on the HCM results.

Weekday AM Peak Hour

All studied intersections would operate at LOS C or better during the Weekday AM peak hour, except for the intersections of PCH & Aviation Blvd. which would operate at LOS F (compared to the current LOS E), and the intersection of PCH & 8th Street which would operate at LOS E (compared to the current LOS D). Many of the intersections would continue to operate at LOS A or LOS B.

Weekday PM Peak Hour

All studied intersections would operate at LOS D or better during the Weekday PM peak hour. Many of the intersections would continue to operate at LOS A or LOS B.

Friday Evening Peak Hour

All studied intersections would operate at LOS D or better during the Friday PM peak hour. Many of the intersections would continue to operate at LOS A or LOS B.

Saturday Midday Peak Hour

All studied intersections would operate at LOS C or better during the Saturday Midday peak hour, except for the intersection of PCH & Aviation Blvd. which would operate at LOS E (compared to the current LOS D), with many of the intersections continuing to operate at LOS A or LOS B.

Sunday Afternoon Peak Hour

All studied intersections would operate at LOS D or better during the Sunday Afternoon peak hour, with many of the intersections continuing to operate at LOS A or LOS B.

Table 3.2 Future Without Project Conditions - Intersection Level of Service
Weekday - AM and PM Peak Hour

6/29/2017

Intersection		*Intersection Type*	*AM Peak Hour*				*PM Peak Hour*			
			Existing Conditions (Year 2016)		*Future Without Project Conditions (Year 2021)*		*Existing Conditions (Year 2016)*		*Future Without Project Conditions (Year 2021)*	
			V/C or (Delay) & Volume	*LOS*	*V/C or (Delay) & Volume*	*LOS*	*V/C or (Delay) & Volume*	*LOS*	*V/C or (Delay) & Volume*	*LOS*
1.	Hermosa Ave & 16th St	3-Way Stop	(8.8) 621	A	(9.0) 680	A	(9.5) 825	A	(9.8) 898	A
2.	Hermosa Ave & 14th St	Signalized	0.255	A	0.269	A	0.314	A	0.331	A
3.	Hermosa Ave & 13th St	Signalized	0.237	A	0.259	A	0.383	A	0.404	A
4.	Hermosa Ave & Pier Ave	Signalized	0.621	B	0.643	B	0.682	B	0.708	C
5.	Hermosa Ave & 11th St	Signalized	0.282	A	0.297	A	0.465	A	0.496	A
6.	Hermosa Ave & 10th St	4-Way Stop	(9.7) 787	A	(10.1) 856	B	(10.0) 1,020	A	(10.5) 1,113	B
7.	Hermosa Ave & 8th St	3-Way Stop	(10.0) 860	A	(10.4) 931	B	(10.2) 955	B	(10.7) 1,041	B
8.	Manhattan Ave West & Pier Ave	1-Way Stop	(9.5) 462	A	(9.6) 501	A	(9.8) 697	A	(10.0) 754	B
9.	Manhattan Ave East & Pier Ave	1-Way Stop	(11.5) 577	B	(11.8) 621	B	(12.9) 820	B	(13.6) 884	B
10.	Monterey Blvd & Pier Ave	4-Way Stop	(9.4) 743	A	(9.6) 796	A	(10.3) 939	B	(10.7) 1,009	B
11.	Valley Dr. & Pier Ave	4-Way Stop	(13.7) 1,369	B	(14.6) 1,452	B	(19.2) 1,610	C	(22.0) 1,714	C
12.	Ardmore Ave. & Pier Ave	4-Way Stop	(14.3) 1,437	B	(15.5) 1,525	C	(18.5) 1,674	C	(21.2) 1,781	C
13.	PCH & Pier Ave	Signalized	0.657	B	0.717	C	0.700	B	0.782	C
14.	PCH & Aviation Blvd	Signalized	0.952	E	1.031	F	0.820	D	0.888	D
15.	PCH & 8th St	Signalized	0.845	D	0.915	E	0.758	C	0.839	D

Table 3.3 Future Without Project Conditions - Intersection Level of Service
Friday-PM & Saturday-Midday & Sunday-Mid-Afternoon Peak Hour

6/29/2017

Intersection		*Intersection Type*	*Friday - PM Peak Hour*				*Saturday - Midday Peak Hour*				*Sunday - Mid-Afternoon Peak Hour*			
			Existing Conditions (Year 2016)		*Future Without Project Conditions (Year 2021)*		*Existing Conditions (Year 2016)*		*Future Without Project Conditions (Year 2021)*		*Existing Conditions (Year 2016)*		*Future Without Project Conditions (Year 2021)*	
			V/C or (Delay) & Volume	*LOS*	*V/C or (Delay) & Volume*	*LOS*	*V/C or (Delay) & Volume*	*LOS*	*V/C or (Delay) & Volume*	*LOS*	*V/C or (Delay) & Volume*	*LOS*	*V/C or (Delay) & Volume*	*LOS*
1.	Hermosa Ave & 16th St	3-Way Stop	(9.4) 808	A	(9.7) 879	A	(9.1) 752	A	(9.3) 810	A	(10.5) 1,061	B	(11.0) 1,136	B
2.	Hermosa Ave & 14th St	Signalized	0.316	A	0.333	A	0.281	A	0.293	A	0.439	A	0.459	A
3.	Hermosa Ave & 13th St	Signalized	0.376	A	0.396	A	0.405	A	0.423	A	0.431	A	0.451	A
4.	Hermosa Ave & Pier Ave	Signalized	0.668	B	0.693	B	0.689	B	0.716	C	0.832	D	0.867	D
5.	Hermosa Ave & 11th St	Signalized	0.370	A	0.391	A	0.461	A	0.489	A	0.398	A	0.420	A
6.	Hermosa Ave & 10th St	4-Way Stop	(10.3) 1,062	B	(10.8) 1,156	B	(9.6) 954	A	(10.0) 1,022	A	(13.9) 1,566	B	(15.4) 1,687	C
7.	Hermosa Ave & 8th St	3-Way Stop	(10.1) 950	B	(10.6) 1,036	B	(10.0) 940	A	(10.4) 1,016	B	(13.2) 1,380	B	(14.5) 1,491	B
8.	Manhattan Ave West & Pier Ave	1-Way Stop	(10.2) 682	B	(10.4) 738	B	(10.9) 730	B	(11.2) 792	B	(12.5) 1,145	B	(13.2) 1,238	B
9.	Manhattan Ave East & Pier Ave	1-Way Stop	(12.7) 816	B	(13.3) 880	B	(13.8) 831	B	(14.7) 898	B	(23.1) 1,262	C	(27.7) 1,360	D
10.	Monterey Blvd & Pier Ave	4-Way Stop	(11.1) 1,078	B	(11.7) 1,153	B	(10.9) 1,059	B	(11.4) 1,138	B	(15.8) 1,518	C	(17.8) 1,628	C
11.	Valley Dr. & Pier Ave	4-Way Stop	(19.5) 1,675	C	(22.3) 1,782	C	(17.0) 1,549	C	(19.1) 1,653	C	(13.6) 1,308	B	(14.8) 1,409	B
12.	Ardmore Ave. & Pier Ave	4-Way Stop	(17.0) 1,649	C	(19.2) 1,756	C	(14.4) 1,531	B	(15.7) 1,634	C	(12.3) 1,334	B	(13.2) 1,436	B
13.	PCH & Pier Ave	Signalized	0.699	B	0.781	C	0.574	A	0.655	B	0.583	A	0.667	B
14.	PCH & Aviation Blvd	Signalized	0.823	D	0.891	D	0.821	D	0.904	E	0.765	C	0.851	D
15.	PCH & 8th St	Signalized	0.793	C	0.875	D	0.617	B	0.695	B	0.591	A	0.667	B

4. Future With Project Conditions

This section of the report describes the transportation characteristics of the proposed project and documents the analysis of potential project traffic impacts in the study area.

4.1 Project Transportation Characteristics

The Project site context is shown in Figure 4.1 and the Project Illustrative Plan is shown in Figure 4.2. The Project Site is currently developed with 9,596 sq. ft. of restaurant uses, 6,060 sq. ft. of retail uses, 8 residential DU's, and a small parking lot with 15 striped spaces.

The Proposed Project will consist of a 100 room hotel with associated hotel uses including 7,019 sq. ft. of restaurant/lobby bar, 2,406 sq. ft. of meeting rooms, 10,868 sq. ft. of rooftop terrace/lounge, and a 2,857 sq. ft. spa/wellness facility. It will also include separate uses of 5,215 sq. ft. of retail uses, 5,757 sq. ft. of restaurant uses, and 2,192 sq. ft. of beach quick serve food. Vehicle access to the Project Site will be provided via 13th Street, to a porte-cochere on 13th Street at Beach Drive. As 13th Street will function as the principal vehicular access route to the Project Site, the Project is proposing to convert it from one-way eastbound to two-way operation to facilitate direct access/egress. Project traffic would approach and leave the site via 13th Street. Figure 4.3 shows the proposed configuration of 13th Street, which is discussed further later in this chapter under Project Access. This study addresses that proposal as well as an option of keeping 13th Street in its existing one-way eastbound configuration. Under that option, Project traffic would approach the site via 14th Street and Beach Drive, and leave the site via 13th Street. Service access will be via 13th Court. Pedestrian and bicycle access will be available from all directions, via The Strand, Pier Avenue, and 13th Street.

The Proposed Project will be self-contained with respect to parking, and will provide 178 on-site parking spaces in two subterranean levels. It will also provide 180 on-site bicycle parking spaces, of which 30 spaces will be at ground level and 150 spaces will be in the basement level of the garage.

The Proposed Project will therefore be entirely consistent with, and will support, the multi-modal nature of Downtown Hermosa Beach and the bicycle and pedestrian friendly environment.

Project Trip Generation - Overview

The Proposed Project has unique characteristics in that it is located both in downtown Hermosa Beach and adjacent to the Strand, the Pier, and the ocean. It is a mixed use project,

Source: HKS Architects, Inc.

7/8/16

Figure 4.1
Project Site Context

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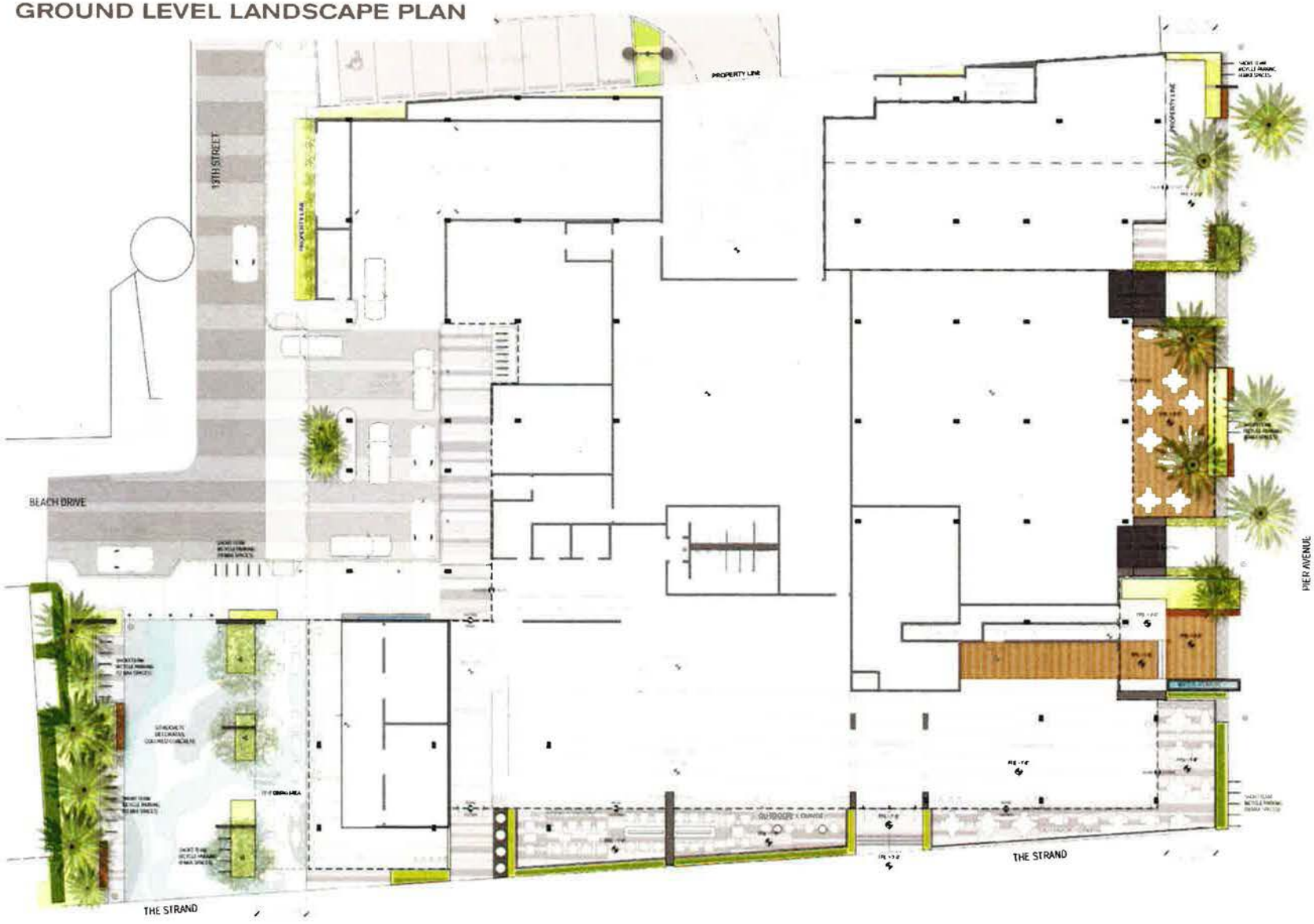
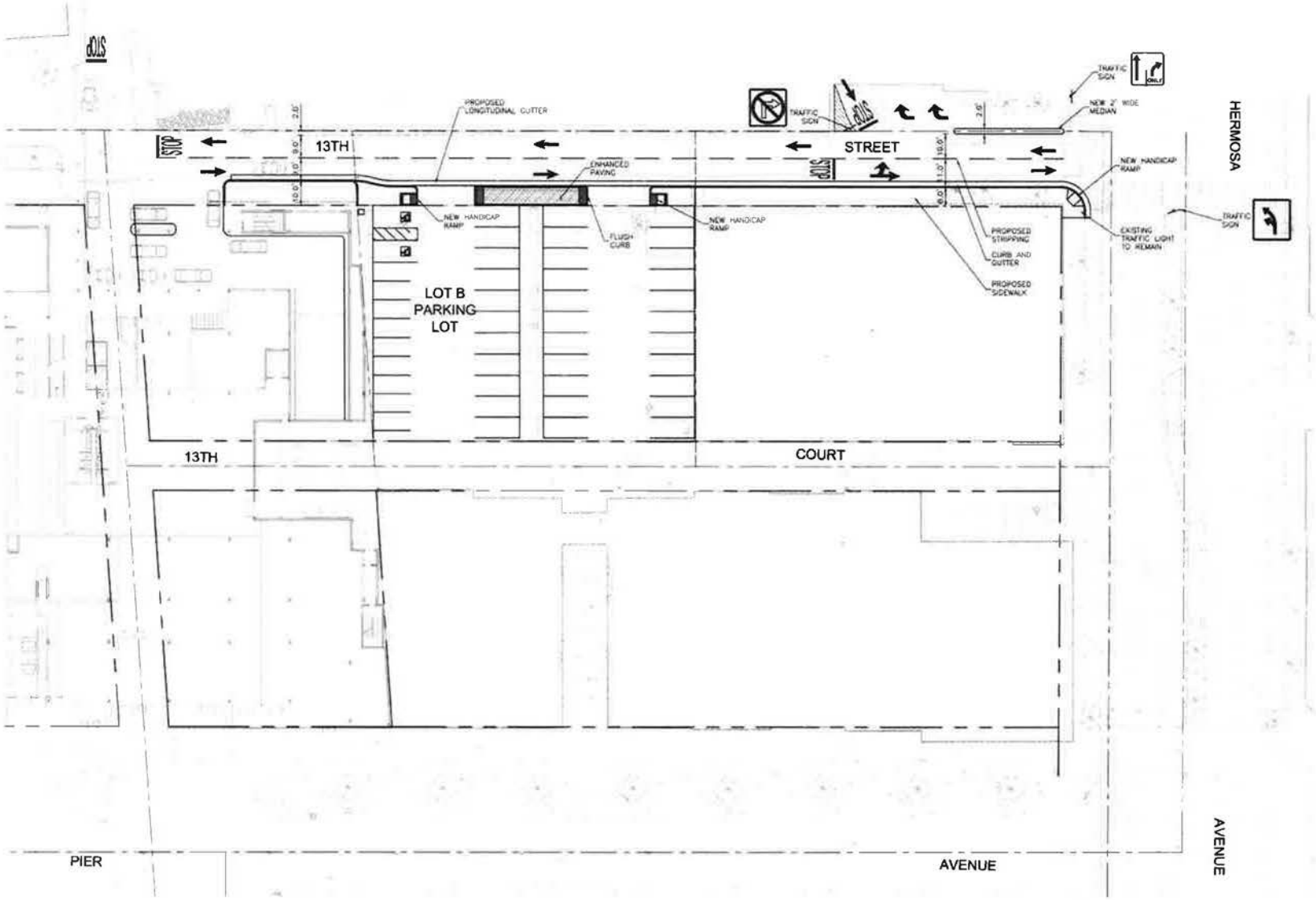


Figure 4.2
Project Illustrative Plan

Pier and Strand Hotel - Traffic Study

The **Mobility** Group
Transportation Strategies & Solutions



Source: Fuscoe Engineering

7/8/16

Figure 4.3
Proposed 13th Street Configuration

Pier and Strand Hotel - Traffic Study

The **Mobility** Group
Transportation Strategies & Solutions

with facilities that are primarily for hotel guests but also may be open to the public, and independent retail and restaurant uses for the general public. The Proposed Project is in a location where many people already come to downtown Hermosa Beach and the ocean, park one time, and then visit multiple destinations as they walk around downtown, visit the beach, and walk/bike along The Strand. The uses in the Project will, for some, be just one more stop on a visit already made to downtown. Because they are already visiting downtown, their visit to the proposed project will not generate an additional vehicle trip.

The Proposed Project is located immediately adjacent to The Strand and to Pier Avenue, which both carry significant numbers of pedestrians and bicyclists that pass directly by the proposed project. Counts conducted in 2015 show that there are typically more than 300 pedestrians per hour on The Strand and between 250 and 600 pedestrians per hour on Pier Avenue adjacent to the project during the am and pm peak hours. At weekends there are typically approximately 1,000 pedestrians on The Strand, and 1,600 to 2,800 pedestrians on Pier Avenue. According to walkscore.com, downtown Hermosa Beach has a walkability score of 94 (out of 100) – which is described as a "walkers paradise" where daily errands do not require a car. The counts also show that there are typically more than 250 bicyclists per hour on The Strand and over 100 bicyclists per hour on Pier Avenue adjacent to the project during the weekday and weekend peak hours.

Conventional trip generation rates typical used in traffic studies (from the Institute of Transportation Engineers (ITE) Trip Generation manual) are therefore not applicable because the ITE trip rates are for stand-alone uses in suburban locations. Both the location of the project in a highly visited downtown/recreational destination, and the internal synergy of the uses within the project, require that appropriate adjustments be made to the ITE trip rates to adequately estimate vehicle trips to reflect the unique circumstances of the project. This includes adjusting for the fact that some people will already be in the hotel and will not make additional vehicle trips to other project land uses (internal trips), and some of the external visitors to the project will already be in downtown and will walk or bike to the project (non-auto trips). These types of adjustments, which were applied to base trip generation rates in *ITE Trip Generation, 9th Edition*, are discussed below, by each type of use in the proposed project[1]. Trip generation estimates for the proposed project were made as follows. The estimates are shown in Table 4.1.

Project Trip Generation Estimates

The trip rates for a hotel in the ITE Trip Generation Manual are inclusive of hotel amenities and services such as restaurants, cocktail lounges, meeting rooms and banquet rooms and service shops. However, the data is not specific to the size / quantity of these various uses at the survey sites. In order to prepare a conservative analysis for this project, the hotel uses

[1] These adjustments are consistent with the analysis, estimates and assumptions made in the shared parking study by Walker Parking Consultants, *Shared Parking Analysis, Strand and Pier Hotel Project, Walker Parking, November 18, 2016.*

were each treated individually for the purposes of estimating trip generation, as described below.

Hotel Rooms

Unlike a suburban stand-alone hotel, the proposed hotel is located in a visitor destination area. The main reason for people staying at the hotel will be for a visit to downtown Hermosa Beach and the beach/ocean. Once people have arrived at the hotel there will be a very strong tendency for guests when they leave the hotel to either walk or rent a bike to access local destinations, rather than use a car. This is demonstrated by empirical data collected at the nearby Beach House Inn, which identified that vehicle trip rates were only 30% of the standard ITE trip rates for a hotel. (Count data is included in Appendix C).

Trip generation estimates for the hotel rooms were therefore based on empirical data collected at the nearby Beach House Inn – which is a direct comparable to the hotel element of the proposed project. The Beach House Inn is a luxury 96 room hotel located on The Strand just north of the proposed project. The hotel also has approximately 2,285 sq. ft of meeting rooms (approximate occupancy of 68 to 134 persons).

Hotel Restaurant/Lobby Bar

In common with many hotels, the hotel will include a hotel restaurant and lobby bar. These will be provided primarily for hotel guests, and will be the primary food service for guests. However, because of the hotel location directly on The Strand and adjacent to Pier Avenue, these uses will be expected to also attract visitors from outside the hotel, although many of those visitors will be people already visiting downtown Hermosa Beach and who have already parked and who therefore will walk and not drive to the project.

Typically, trips to these uses are included in the ITE Hotel trip rate. However, because the ITE trip rate is not being used for this analysis, because the trip rate being used is for an adjacent hotel without a restaurant (Beach House Inn), and because of the proposed project's location on the Strand, trips for the hotel restaurant and lobby bar were estimated separately.

Adjustments to ITE trip rates were made to reflect the characteristics of these uses described above, with estimates that 50% of trips would be internal to the proposed project, and that 40% of external trips would be by auto (25% on weekends due to the typically higher visitor rates to the area at weekends), with the remainder being non-auto modes (walk, bike, or transit).

Hotel Meeting Rooms

The hotel meeting rooms will be used for meeting/functions where attendees are either staying in the hotel (internal), or not staying in the hotel (external). While the ITE trip rates for hotels

include meeting rooms, a conservative analysis for this study will address a scenario where attendees to meeting room functions are not staying at the hotel and trips are independent of the hotel trip rate.

While some of the events held in the hotel meeting rooms will be attended primarily by guests staying at the hotel, some events will be attended by outside visitors. In order to prepare a conservative analysis, trip generation for the meeting rooms assumed an event attended entirely by outside visitors. As such events will tend to be "destination" events, i.e. the primary reason for visiting the hotel and downtown Hermosa Beach, it is assumed that none of the trips will be internal to the hotel or the downtown.

Trips to/from the meeting rooms were estimated using a trip rate of 0.50 trips /attendee. (Based on 128 occupants, all arriving by auto, with 1.2 persons per vehicle, and 60% arrive or depart in the peak hour).

Hotel Terrace/Rooftop Lounge

The Hotel Terrace and Rooftop Lounge will provide facilities for hotel guests, but will also be accessible to the public. It will therefore provide an additional amenity to the array of destinations already provided in downtown Hermosa Beach, and many visitors will already have parked in downtown for their multi-purpose trip.

As the hotel terrace and rooftop lounge will be part of the hotel and will provide an amenity for hotel guests, some of the users of these facilities will already be on site. It will also be used by members of the public – some of whom will already be in downtown Hermosa Beach and will already have parked in downtown for their multi-purpose trip. It is estimated that 60% of trips would be from hotel guests, and that 50% of the external visitors would use autos with the remainder using non-auto modes (walk, bike, or transit).

Hotel Spa/Wellness Salon

The spa/wellness center will be comprised of a fitness center, exclusively for the use of hotel guests and spa visitors only, as well as a number of treatment rooms within the spa itself. While the spa will be open to the public, the small size of the facility is intended as an amenity for hotel guests and will be conducive to hotel guests as opposed to members of the public driving in from off-site. Therefore it is assumed that 75% of visitors would be from hotel guests, and that 80% of external trips would be by auto on weekdays and 60% on weekends (more people already in the area on weekends).

Beach Quick Service Food

Two walk-up style casual café spaces are planned adjacent to the public plaza at the terminus of 13th Street & Beach Drive. These are programmed with walk-up windows intended to

provide quick-serve food service for beach goers and users of the Strand. As these are intended to service people already at the hotel and the large number of pedestrians and bicyclists in the area, it is highly unlikely they would be "destination" uses that people from outside the area would drive to. It was therefore assumed that 95% of trips to these uses would already be in the hotel or general area, and that 5% of the external visitors would drive.

Other Project Land Uses – Retail, Restaurant

While the retail and restaurant uses in the project will be separate to the hotel, there will be synergy with the hotel in that some of the retail and restaurant customers will be staying at the hotel. Other retail customers may already be in downtown Hermosa Beach and visit the retail and restaurant uses as one of multiple stops as they walk around downtown. Neither category of customer will drive to the retail use as they will have already parked elsewhere. Included in the retail uses, will be a bike shop that will function in the same way as the existing bike shop on the property, and provide bike rentals for people visiting Downtown Hermosa Beach. Some of these will include hotel residents as well as people who are already parked in downtown (and who will make multiple visits/stops to downtown destinations without moving their cars).

For these other uses in the project, trip generation estimates were based on ITE rates adjusted for the local circumstances. For the small amount of local retail uses, the ITE trip rate for specialty retail was used, and it was estimated that 10% of trips would be internal to the proposed project (already also visiting another part of the project), and that 40% of the external visitors would arrive by auto with the remainder using non-auto modes (walk, bike, or transit).

For the restaurant uses it was also estimated that 10% of trips would be internal to the proposed project (already also visiting another part of the project), and that 40% of the external visitors would arrive by auto with the remainder using non-auto modes (walk, bike, or transit).

Trip Rates for Friday PM Peak Hour, Saturday Midday Peak Hour and Sunday Afternoon Peak Hour

The ITE trip rates database does not identify trip rates specifically for a Friday. Because the hour of analysis in this study is essentially the same for a Friday PM peak hour as for a weekday peak hour, the trip generation rates for the weekday PM peak hour were directly adopted for the Friday PM peak hour scenario. For the Saturday Midday peak hour and the Sunday Afternoon peak hour, trip generation was estimated based on a methodology which included using trip rates in *Trip Generation – 9th Edition* with reasonable assumptions and interpretations and professional judgment. This generally involved using the trip rate for the

"peak hour of generator"[1], or by using the information available within *ITE Trip Generation, 9th Edition* to derive best estimates, as noted in the footnotes to Tables 4.1 to 4.5

Total Proposed Project Trip Generation

The trip rates used in the analysis, and the trip generation estimates, are presented in Tables 4.1 to 4.5 for the five time periods analyzed. It is estimated that the Proposed Project would generate a total of 117 AM peak hour vehicle trips, 146 PM peak hour vehicle trips, 146 Friday PM peak hour vehicle trips, 179 Saturday Midday peak hour vehicle trips, and 159 Sunday Afternoon peak hour vehicle trips. Because of the adjustments discussed above, this would be approximately 42% of the trips that would be estimated using the conventional ITE rates for suburban stand alone locations that are not appropriate in this instance.

The trip estimates reflect the project's unique location adjacent to the beach in downtown Hermosa Beach, amid an area of high pedestrian and bicycle activity and all of the factors discussed above. They are also consistent with observed experience at other locations in Southern California.

In addition to the data from the adjacent Beach House Inn in Hermosa Beach, data is available from hotels in Santa Monica[2] that found that hotel trip rates were largely consistent between the four facilities, and ranged between 50% and 60% of the standard ITE hotel rates. The lower rates were explained by the fact that the hotels studied were in dense urban areas where walking is more common, compared to the fact that ITE trip rates are for typically stand alone suburban locations; and higher levels of trips captured internally by restaurant uses in the hotels. However, three of the hotels were at least six to seven blocks from the beach, so not directly comparable to the proposed project, and the reduced trip rate was more due to their location in a walkable downtown than being beech adjacent. One hotel[3], on the other hand, was located two blocks from the beach in the core of downtown Santa Monica (and therefore with the most similar location to the proposed project with respect to beach adjacency), and had lower trip rates than the rest, which were 35% to 45% of ITE trip rates for certain peak periods. The data revealed that over 60% of trips to/from that hotel were made by foot.

Trip Generation of Existing Uses

[1] ITE trip rates are usually provided for the peak hour of street traffic (a.m. and p.m. peak hour), and the "peak hour of generator" – i.e. the hour of highest trip generation for the land use. For the Saturday midday peak hour, and Sunday Afternoon peak hour, this peak hour of generator trip rate was used when considered to appropriately represent the analysis time period, though in some cases may result in a conservatively high estimate. In cases where it was considered that the peak hour of generator rate was not applicable, the trip rate for the analysis time period was based on estimates using similar or comparable land uses, or by estimating the percent of daily trips that would occur in the analysis time period and based on professional judgment from available data from other time periods.

[2] A project in Santa Monica studied four hotels (three in Santa Monica and one in Marina Del Rey)[2]. These hotels varied in size from 123 to 370 rooms, characteristics, and walking distances from the beach and local commercial services.

[3] The Holiday Inn Santa Monica Beach.

The existing uses on the site, which will be removed, include 9,596 gsf of restaurant uses, 6,060 gsf of retail uses, and 8 residential apartments. Trip generation estimates of these existing uses were prepared using ITE rates, and adjusting for the location in downtown Hermosa Beach adjacent to the beach in a similar manner as described above for the proposed project.

These estimates are also shown in Tables 4.1 thru 4.5, which show that it is estimated that the current uses generate between 50 to 81 vehicle trips per hour, depending on the time period analyzed.

Net Project Trip Generation

The net project trips, accounting for the removal of the existing uses, are shown in Tables 4.1 to 4.5, which indicate an estimated net total of 55 AM peak hour vehicle trips, 96 PM peak hour vehicle trips, 96 Friday PM peak hour vehicle trips, 109 Saturday Midday peak hour vehicle trips, and 78 Sunday Afternoon peak hour vehicle trips.

Trip Distribution and Trip Assignment

The likely distribution of project trips was identified based on the type of land uses in the Project, the likely origins of commercial use visitors based on the local and regional distribution of population, and the characteristics of the street system in the area of the Project. The general trip distribution pattern was developed in consultation with the City of Hermosa Beach, and is shown in Figure 4.4.

Traffic generated by the Project was added to the future without project traffic volumes to obtain future traffic volumes with the project for both peak periods at each of the study intersections. The project only peak hour traffic volumes are illustrated in Figures 4.5 to 4.9 for the five peak hours respectively and the total future with project conditions peak hour traffic volumes are illustrated in Figures 4.10 and 4.14 for the five peak hours.

4.2 Project Impacts - Intersections

Significant Impact Thresholds

The significance of potential Project impacts at study intersections was evaluated using the criteria established by the City of Hermosa Beach and utilized in previous traffic analyses for projects in the City, as shown below:

Table 4.1 Pier & Strand Hotel - Trip Generation Estimate - AM Peak Hour

6/21/2017

Use	Quantity	Units	ITE Code	Base Trip Rate	Adjusted Trips				Directional Split			
					% Internal	% Auto	Trips	Notes	% In	% Out	Trips In	Trips Out
Hotel												
Hotel Rooms	100	Rooms	NA	0.17 /room	0%	NA	17	[1]	58%	42%	10	7
Hotel Restaurant/Lobby Lounge/Bar	7,019	gsf	932	10.8 /1,000 gsf	50%	40%	15	[2]	55%	45%	8	7
Hotel Meeting Rooms	128	occ		0.50 /occ	NA	NA	64	[3]	100%	0%	64	0
Hotel Terrace/Rooftop Lounge	10,868	nsf	925	0.00 /1,000 gsf	60%	50%	0	[4]	NA	NA	0	0
Spa/Wellness Salon	2,857	gsf	918	1.21 /1,000 gsf	75%	80%	1	[9]	100%	0%	1	0
Beach Quick Serve Food	2,192	gsf	933	43.87 /1,000 gsf	5%	5%	5	[7]	60%	40%	3	2
Subtotal Hotel							102				86	16
Other												
Retail	5,215	gsf	826	6.84 /1,000 gsf	10%	40%	13	[5]	48%	52%	6	7
Restaurant	5,757	gsf	931	0.81 /1,000 gsf	10%	40%	2	[6]	82%	18%	2	0
Subtotal Other							15				8	7
TOTAL PROJECT ALL USES							117				94	23
Existing Uses												
Restaurants	9,596	gsf	932	0 /1,000 gsf	0%	40%	0	[2]	55%	45%	0	0
Retail	6,060	gsf	826	0 /1,000 gsf	0%	40%	0	[5]	48%	52%	0	0
Residential	8	DU's	220	0.51 /DU	0%	100%	4	[8]	20%	80%	1	3
TOTAL EXISTING USES							4				1	3
TOTAL NET PROJECT							113				93	20

Notes on Adjusted Trip Rates:
PHG = Peak Hour of Generator.

1. Uses observed rates at adjacent Beach House Hotel.
2. Uses ITE 932 - High Turnover (Sit-Down) Restaurant trip rates.
3. Assumes 2,406 gsf, 80% net usable sf, 0% internal to hotel, remainder drive, 1.2 per car, 60% in peak hour = 0.5 trips/occupant.
4. Uses ITE 925 - Drinking Place trip rates. No ITE trip rate available for AM Peak Hour - Assumed this land use would not generate trips in AM Peak Hour.
5. Uses ITE 826 - Specialty Retail. No ITE trip rate available for AM peak hour of adjacent street traffic - Used ITE trip rate for AM PHG.
6. Uses ITE 931 - Quality Restaurant trip rates.
7. Uses ITE 933 - Fast Food Without Drive Thru trip rates.
8. Uses ITE 220 - Apartment trip rates.
9. Uses ITE 918 - Hair Salon (Closest ITE Category. ITE definition includes Spa/Massage facilities).

Table 4.2 Pier & Strand Hotel - Trip Generation Estimate - PM Peak Hour

12/30/2016

Use	Quantity	Units	ITE Code	Base Trip Rate	Adjusted Trips				Directional Split			
					% Internal	% Auto	Trips	Notes	% In	% Out	Trips In	Trips Out
Hotel												
Hotel Rooms	100	Rooms	NA	0.18 /room	0%	NA	18	[1]	51%	49%	9	9
Hotel Restaurant/Lobby Lounge/Bar	7,019	gsf	932	9.85 /1,000 gsf	50%	40%	14	[2]	60%	40%	8	6
Hotel Meeting Rooms	128	occ		0.50 /occ	NA	NA	64	[3]	0%	100%	0	64
Hotel Terrace/Rooftop Lounge	10,868	nsf	925	11.34 /1,000 gsf	60%	50%	25	[4]	66%	34%	17	8
Spa/Wellness Salon	2,857	gsf	918	1.45 /1,000 gsf	75%	80%	1	[9]	17%	83%	0	1
Beach Quick Serve Food	2,192	gsf	933	26.15 /1,000 gsf	5%	5%	3	[7]	51%	49%	2	1
Subtotal Hotel							125				36	89
Other												
Retail	5,215	gsf	826	2.71 /1,000 gsf	10%	40%	5	[5]	44%	56%	2	3
Restaurant	5,757	gsf	931	7.49 /1,000 gsf	10%	40%	16	[6]	67%	33%	11	5
Subtotal Other							21				13	8
TOTAL PROJECT ALL USES							146				49	97
Existing Uses												
Restaurants	9,596	gsf	932	9.85 /1,000 gsf	0%	40%	38	[2]	67%	33%	25	13
Retail	6,060	gsf	826	2.71 /1,000 gsf	0%	40%	7	[5]	44%	56%	3	4
Residential	8	DU's	220	0.62 /DU	0%	100%	5	[8]	65%	35%	3	2
TOTAL EXISTING USES							50				31	19
TOTAL NET PROJECT							96				18	78

Notes on Adjusted Trip Rates:

1. Uses observed rates at adjacent Beach House Hotel.
2. Uses ITE 932 - High Turnover (Sit-Down) Restaurant trip rates.
3. Assumes 2,406 gsf, 80% net usable sf, 0% internal to hotel, remainder drive, 1.2 per car, 60% in peak hour = 0.5 trips/occupant.
4. Uses ITE 925 - Drinking Place trip rates.
5. Uses ITE 826 - Specialty Retail trip rates.
6. Uses ITE 931 - Quality Restaurant trip rates.
7. Uses ITE 933 - Fast Food Without Drive Thru trip rates.
8. Uses ITE 220 - Apartment trip rates.
9. Uses ITE 918 - Hair Salon (Closest ITE Category. ITE definition includes Spa/Massage facilities).

Table 4.3 Pier & Strand Hotel - Trip Generation Estimate - Friday Evening

12/30/2016

Use	Quantity	Units	ITE Code	Base Trip Rate	Adjusted Trips				Directional Split			
					% Internal	% Auto	Trips	Notes	% In	% Out	Trips In	Trips Out
Hotel												
Hotel Rooms	100	Rooms	NA	0.18 /room	0%	NA	18	[1]	51%	49%	9	9
Hotel Restaurant/Lobby Lounge/Bar	7,019	gsf	932	9.85 /1,000 gsf	50%	40%	14	[2]	60%	40%	8	6
Hotel Meeting Rooms	128	occ		0.50 /occ	NA	NA	64	[3]	0%	100%	0	64
Hotel Terrace/Rooftop Lounge	10,868	nsf	925	11.34 /1,000 gsf	60%	50%	25	[4]	66%	34%	17	8
Spa/Wellness Salon	2,857	gsf	918	1.45 /1,000 gsf	75%	80%	1	[9]	17%	83%	0	1
Beach Quick Serve Food	2,192	gsf	933	26.20 /1,000 gsf	5%	5%	3	[7]	51%	49%	2	1
Subtotal Hotel							125				36	89
Other												
Retail	5,215	gsf	826	2.71 /1,000 gsf	10%	40%	5	[5]	44%	56%	2	3
Restaurant	5,757	gsf	931	7.49 /1,000 gsf	10%	40%	16	[6]	67%	33%	11	5
Subtotal Other							21				13	8
TOTAL PROJECT ALL USES							146				49	97
Existing Uses												
Restaurants	9,596	gsf	932	9.85 /1,000 gsf	0%	40%	38	[2]	67%	33%	25	13
Retail	6,060	gsf	826	2.71 /1,000 gsf	0%	40%	7	[5]	44%	56%	3	4
Residential	8	DU's	220	0.62 /DU	0%	100%	5	[8]	65%	35%	3	2
TOTAL EXISTING USES							50				31	19
TOTAL NET PROJECT							96				18	78

Notes on Adjusted Trip Rates:

1. Uses PM peak hour observed rates at adjacent Beach House Hotel.
2. Uses ITE 932 - High Turnover (Sit-Down) Restaurant trip rate for PM peak hour.
3. Assumes 2,406 gsf, 80% net usable sf, 0% internal to hotel, remainder drive, 1.2 per car, 60% in peak hour = 0.5 trips/occupant.
4. Uses ITE 925 - Drinking Place trip rate for PM peak hour.
5. Uses ITE 826 - Specialty Retail trip rate for PM peak hour.
6. Uses ITE 931 - Quality Restaurant trip rate for PM peak hour.
7. Uses ITE 933 - Fast Food Without Drive Thru trip rate for PM peak hour.
8. Uses ITE 220 - Apartment trip rate for PM peak hour.
9. Uses ITE 918 - Hair Salon for PM Peak Hour (Closest ITE Category. ITE definition includes Spa/Massage facilities).

Table 4.4 Pier & Strand Hotel - Trip Generation Estimate - Midday Saturday

12/30/2016

Use	Quantity	Units	ITE Code	Base Trip Rate	Adjusted Trips				Directional Split			
					% Internal	% Auto	Trips	Notes	% In	% Out	Trips In	Trips Out
Hotel												
Hotel Rooms	100	Rooms	NA	0.22 /room	0%	NA	22	[1]	56%	44%	12	10
Hotel Restaurant/Lobby Lounge/Bar	7,019	gsf	932	14.07 /1,000 gsf	50%	25%	12	[2]	53%	47%	6	6
Hotel Meeting Rooms	128	occ		0.50 /occ	NA	NA	64	[3]	50%	50%	32	32
Hotel Terrace/Rooftop Lounge	10,868	nsf	925	19.29 /1,000 gsf	60%	50%	42	[4,5]	68%	32%	29	13
Spa/Wellness Salon	2,857	gsf	918	5.08 /1,000 gsf	75%	60%	2	[12]	36%	64%	1	1
Beach Quick Serve Food	2,192	gsf	933	54.55 /1,000 gsf	5%	5%	6	[9]	49%	51%	3	3
Subtotal Hotel							148				83	65
Other												
Retail	5,215	gsf	826	4.76 /1,000 gsf	10%	40%	9	[6,7]	56%	44%	5	4
Restaurant	5,757	gsf	931	10.82 /1,000 gsf	10%	40%	22	[8]	59%	41%	13	9
Subtotal Other							31				18	13
TOTAL PROJECT ALL USES							179				101	78
Existing Uses												
Restaurants	9,596	gsf	932	14.07 /1,000 gsf	0%	40%	54	[2]	53%	47%	29	25
Retail	6,060	gsf	826	4.76 /1,000 gsf	0%	40%	12	[6,7]	56%	44%	7	5
Residential	8	DU's	220	0.52 /DU	0%	100%	4	[10,11]	61%	39%	2	2
TOTAL EXISTING USES							70				38	32
TOTAL NET PROJECT							109				63	46

Notes on Adjusted Trip Rates:
PHG = Peak Hour of Generator.

1. Calculated by multiplying weekday PM trip rates to the ratio of ITE Saturday PHG to ITE weekday PM peak hour trip rates: 0.18* (0.72/0.6) = 0.22.
2. Uses ITE 932 - High Turnover (Sit-Down) Restaurant Saturday PHG trip rates.
3. Assumes 2,406 gsf, 80% net usable sf, 0% internal to hotel, remainder drive, 1.2 per car, 60% in peak hour = 0.5 trips/occupant.
4. Uses ITE 925 - Drinking Place.
5. No ITE trip rates available for Saturday Daily or Saturday PHG - Calculated by multiplying Weekday PM PHG trip rate to the ratio of High Turnover Restaurant Saturday to Weekday daily trip rates: 15.49* 158.37/127.15 = 19.29. Directional Distribution is the same as ITE 925 PM PHG.
6. Uses ITE 826 - Specialty Retail.
7. No ITE trip rates available for Saturday PHG - Calculated by multiplying Weekday PM PHG trip rate to the ratio of Saturday to Weekday daily trip rates: 5.02* 42.04/44.32 = 4.76. Directional Distribution is the same as PM PHG.
8. Uses ITE 931 - Quality Restaurant Saturday PHG trip rates.
9. Uses ITE 933 - Fast Food Without Drive Thru Saturday PHG trip rates.
10. Uses ITE 220 - Apartment Saturday PHG trip rates.
11. No directional distribution available in ITE for Saturday PHG - Used Weekday PM PHG trip rates.
12. Uses ITE 918 Hair Salon Saturday PHG trip rates (Closest ITE Category. ITE definition includes Spa/Massage facilities).

Table 4.5 Pier & Strand Hotel - Trip Generation Estimate - Sunday Afternoon

12/30/2016

Use	Quantity	Units	ITE Code	Base Trip Rate	Adjusted Trips				Directional Split			
					% Internal	% Auto	Trips	Notes	% In	% Out	Trips In	Trips Out
Hotel												
Hotel Rooms	100	Rooms	NA	0.17 /room	0%	NA	17	[1]	46%	54%	8	9
Hotel Restaurant/Lobby Lounge/Bar	7,019	gsf	932	18.46 /1,000 gsf	50%	25%	16	[2]	55%	45%	9	7
Hotel Meeting Rooms	128	occ		0.50 /occ	NA	NA	64	[3]	50%	50%	32	32
Hotel Terrace/Rooftop Lounge	10,868	nsf	925	16.06 /1,000 gsf	60%	50%	35	[4,5]	68%	32%	24	11
Spa/Wellness Salon	2,857	gsf	918	5.08 /1,000 gsf	75%	60%	2	[14]	36%	64%	1	1
Beach Quick Serve Food	2,192	gsf	933	36.59 /1,000 gsf	5%	5%	4	[10,11]	51%	49%	2	2
Subtotal Hotel							138				76	62
Other												
Retail	5,215	gsf	826	2.31 /1,000 gsf	10%	40%	4	[6,7]	56%	44%	2	2
Restaurant	5,757	gsf	931	8.38 /1,000 gsf	10%	40%	17	[8]	63%	37%	11	6
Subtotal Other							21				13	8
TOTAL PROJECT ALL USES							159				89	70
Existing Uses												
Restaurants	9,596	gsf	932	18.5 /1,000 gsf	0%	40%	71	[2]	55%	45%	39	32
Retail	6,060	gsf	826	2.31 /1,000 gsf	0%	40%	6	[6,7]	56%	44%	3	3
Residential	8	DU's	220	0.51 /DU	0%	100%	4	[12,13]	61%	39%	2	2
TOTAL EXISTING USES							81				44	37
TOTAL NET PROJECT							78				45	33

Notes on Adjusted Trip Rates:
PHG = Peak Hour of Generator.

1. Calculated by multiplying weekday PM trip rates by the ratio of ITE Sunday PHG to Weekday PM peak hour trip rates: 0.18* 0.56/0.6 = 0.17.
2. Uses ITE 932 - High Turnover (Sit-Down) Restaurant Sunday PHG trip rates.
3. Assumes 2,406 gsf, 80% net usable sf, 0% internal to hotel, remainder drive, 1.2 per car, 60% in peak hour = 0.5 trips/occupant.
4. Uses ITE 925 - Drinking Place.
5. No ITE trip rates available for Sunday Daily or Sunday PHG - Calculated by multiplying Weekday PM PHG trip rate to the ratio of High Turnover Restaurant Sunday to Weekday daily trip rates: 15.49* 131.84/127.15 = 19.29. Directional Distribution is the same as ITE 925 PM PHG.
6. Uses ITE 826 - Specialty Retail.
7. No ITE trip rates available for Sunday PHG - Calculated by multiplying Weekday PM PHG trip rate to the ratio of Sunday to Weekday daily trip rates: 5.02* 20.43/44.32 = 2.31. Directional Distribution is the same as PM PHG.
8. Uses ITE 931 - Quality Restaurant Sunday PHG trip rates.
9. No ITE trip rates available for Sunday PHG - Used Saturday PHG trip rates.
10. Uses ITE 933 - Fast Food Without Drive Thru.
11. No ITE trip rate available for Sunday PHG - Calculated by multiplying Weekday PM PHG trip rate to the ratio of Sunday to Weekday daily trip rates: 52.40* 500/716 = 36.59. Directional Distribution is the same as PM PHG.
12. Uses ITE 220 - Apartment Sunday PHG trip rates.
13. No directional distribution available in ITE for Sunday PHG - Used Weekday PM PHG trip rates.
14. No ITE trip rate available for Sunday PHG - Used ITE 918 - Hair Salon Saturday PHG trip rates (Closest ITE Category. ITE definition includes Spa/Massage facilities).

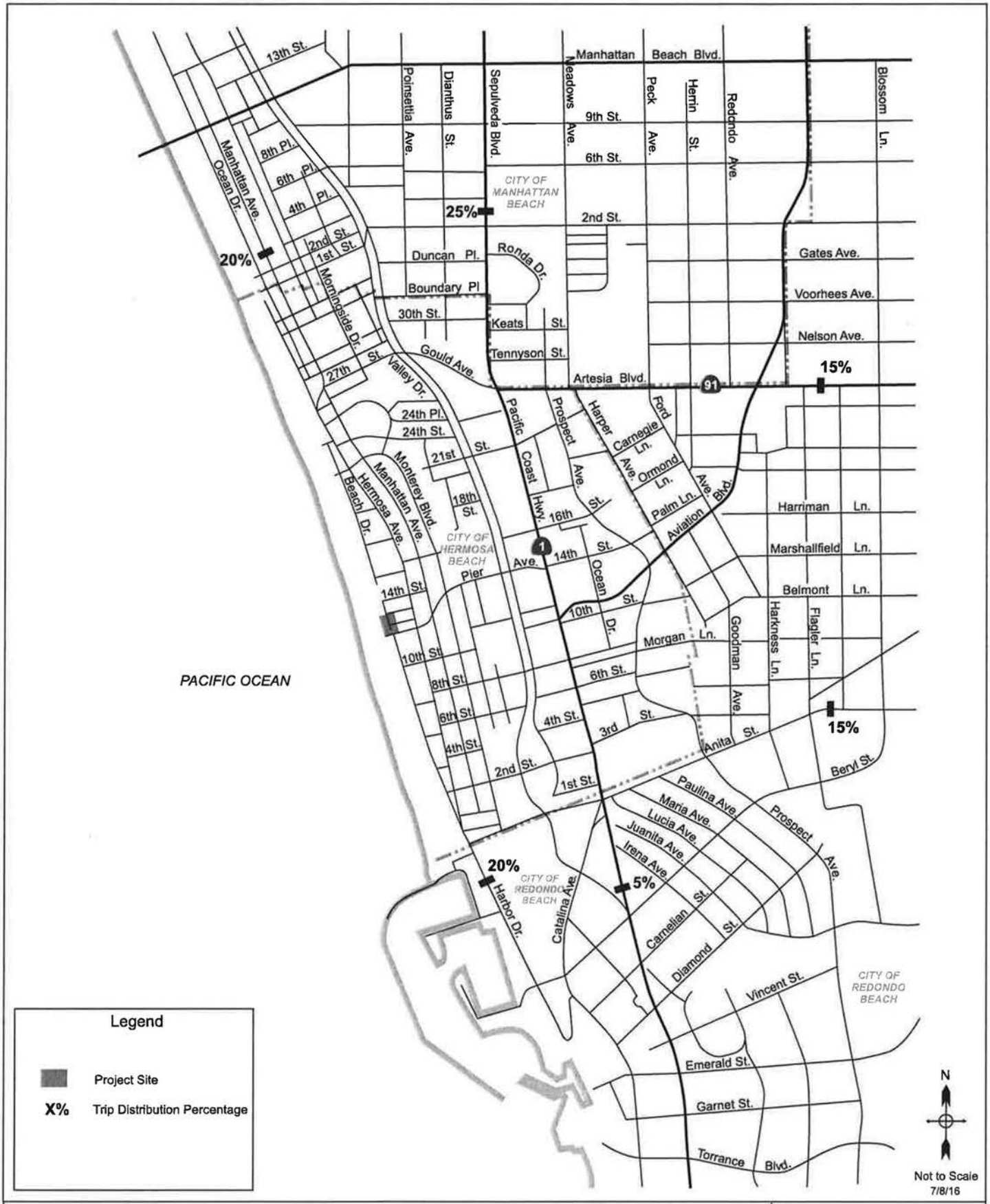


Figure 4.4
Trip Distribution

Pier and Strand Hotel - Traffic Study

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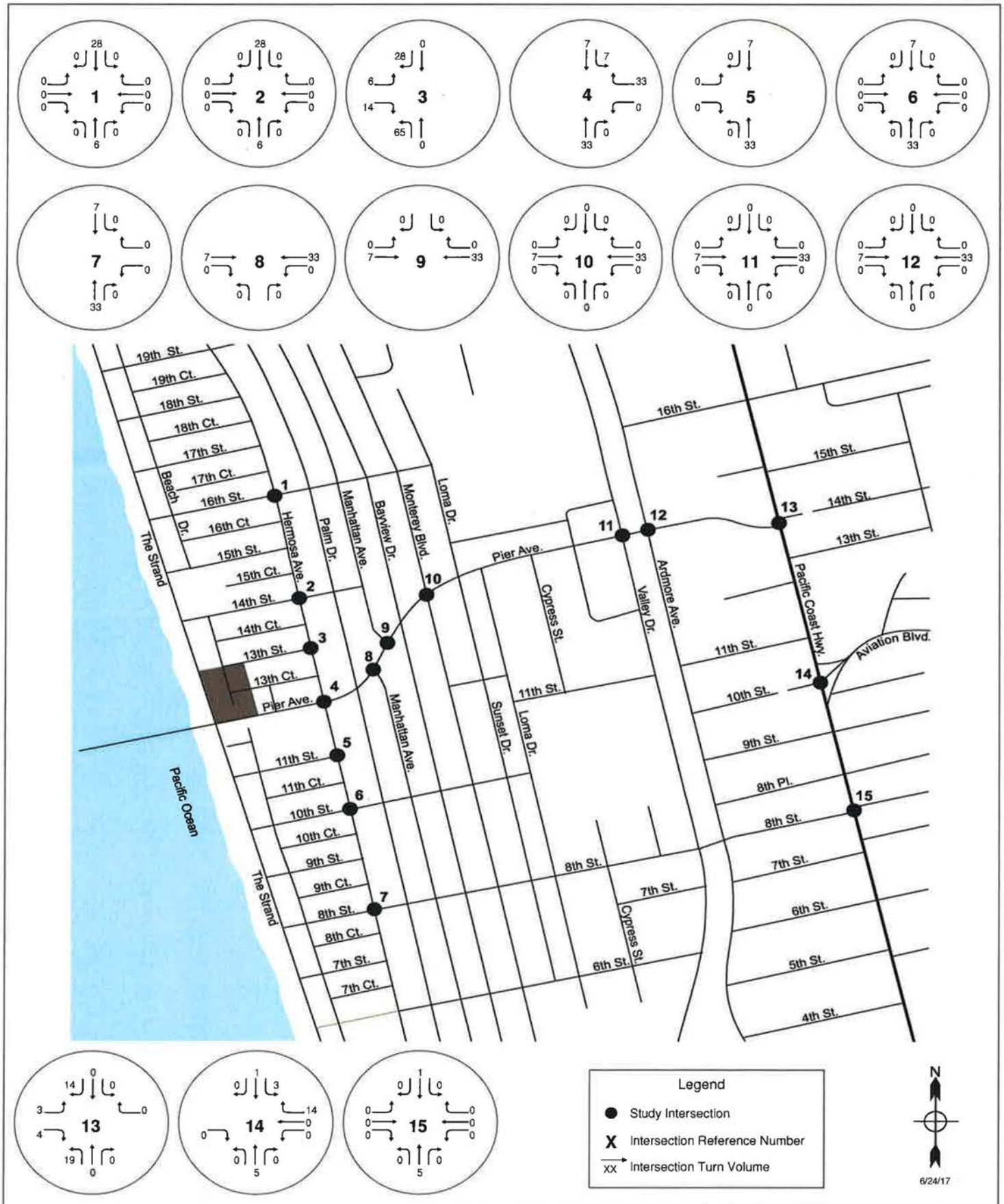

Figure 4.5
Project Only Traffic Volumes - Weekday – AM Peak Hour

Pier and Strand Hotel - Traffic Study

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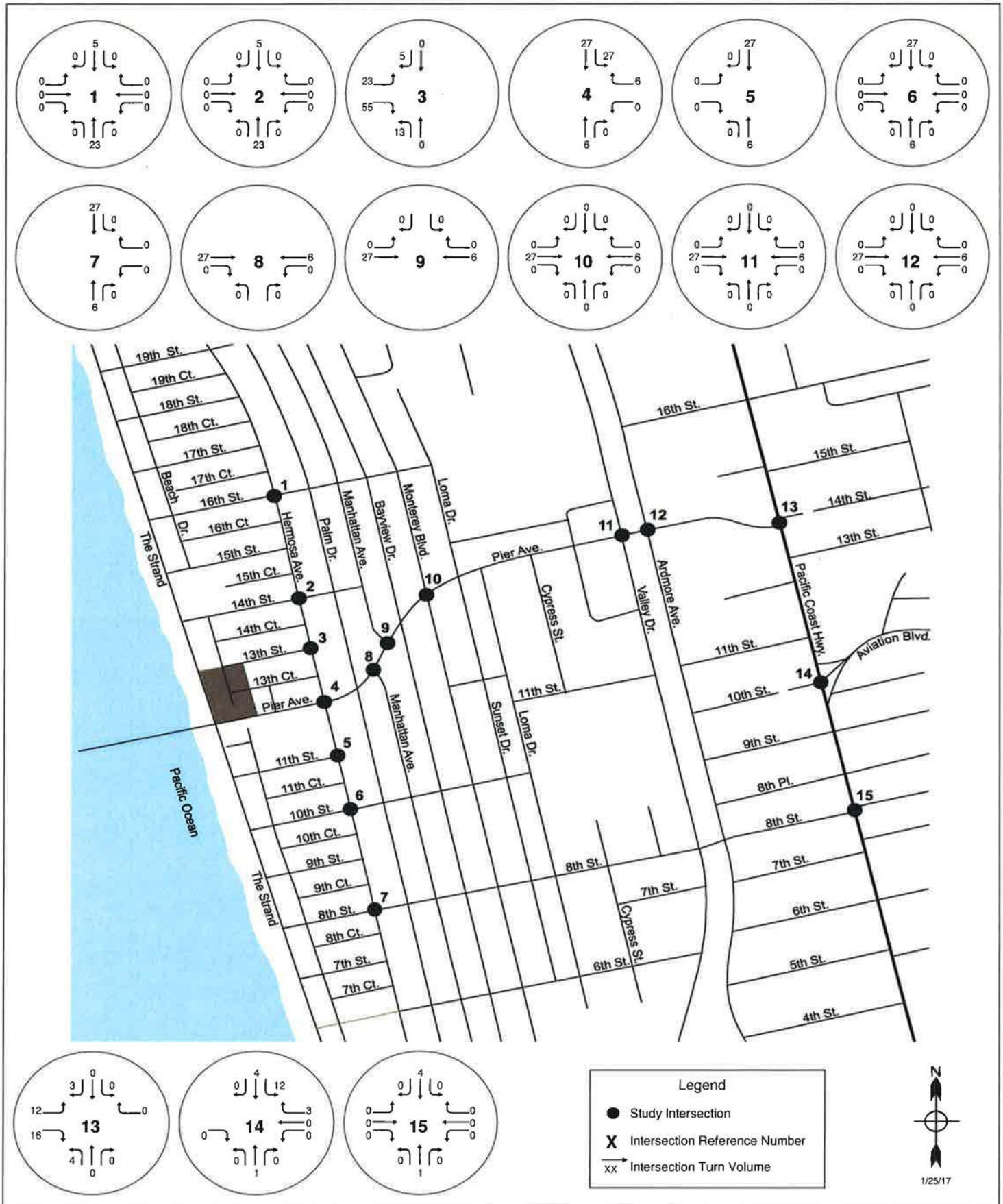

Figure 4.6
Project Only Traffic Volumes - Weekday – PM Peak Hour

Pier and Strand Hotel - Traffic Study

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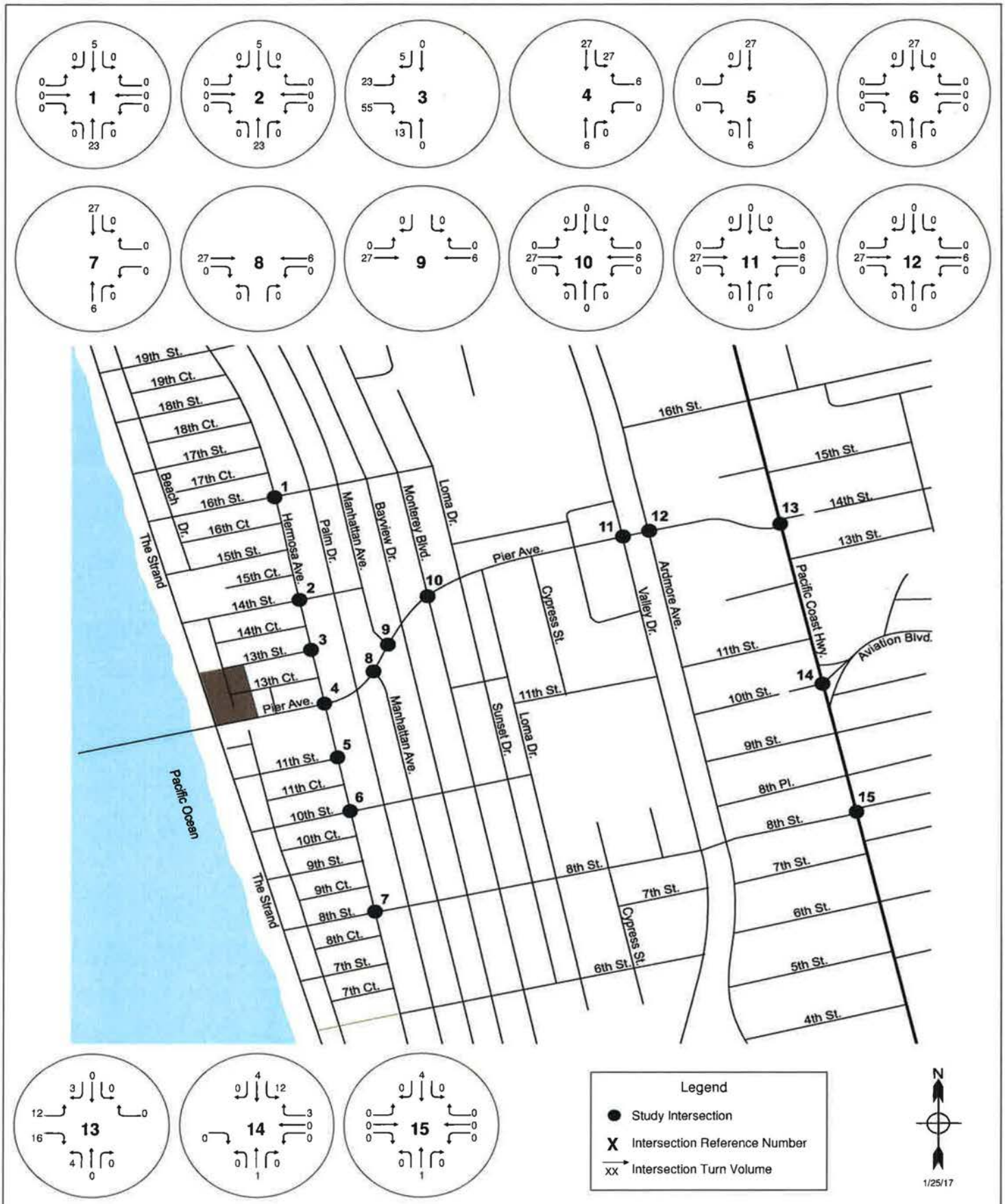

Figure 4.7
Project Only Traffic Volumes - Friday – PM Peak Hour

Pier and Strand Hotel - Traffic Study

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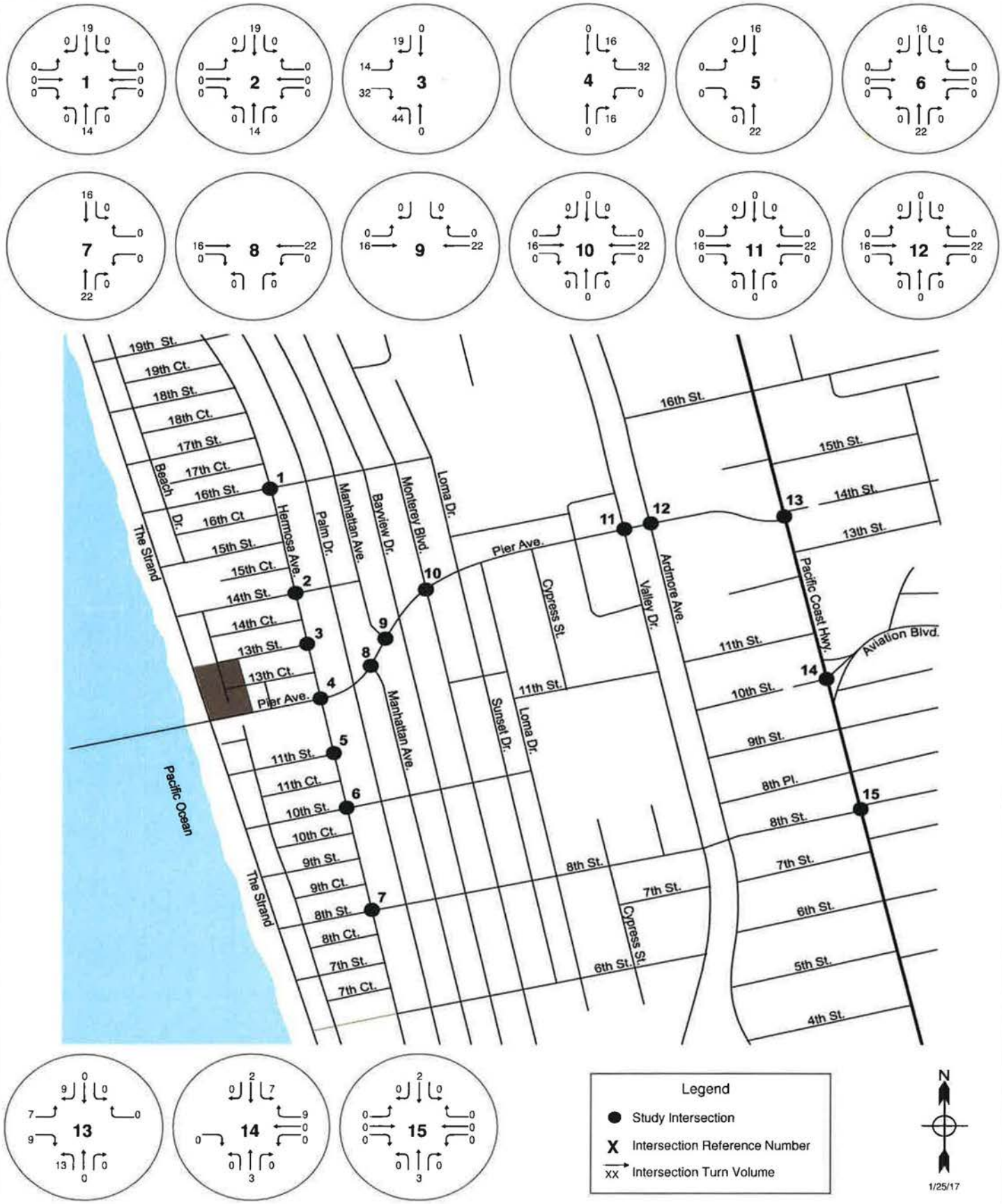

Figure 4.8
Project Only Traffic Volumes - Saturday – Midday Peak Hour

Pier and Strand Hotel - Traffic Study

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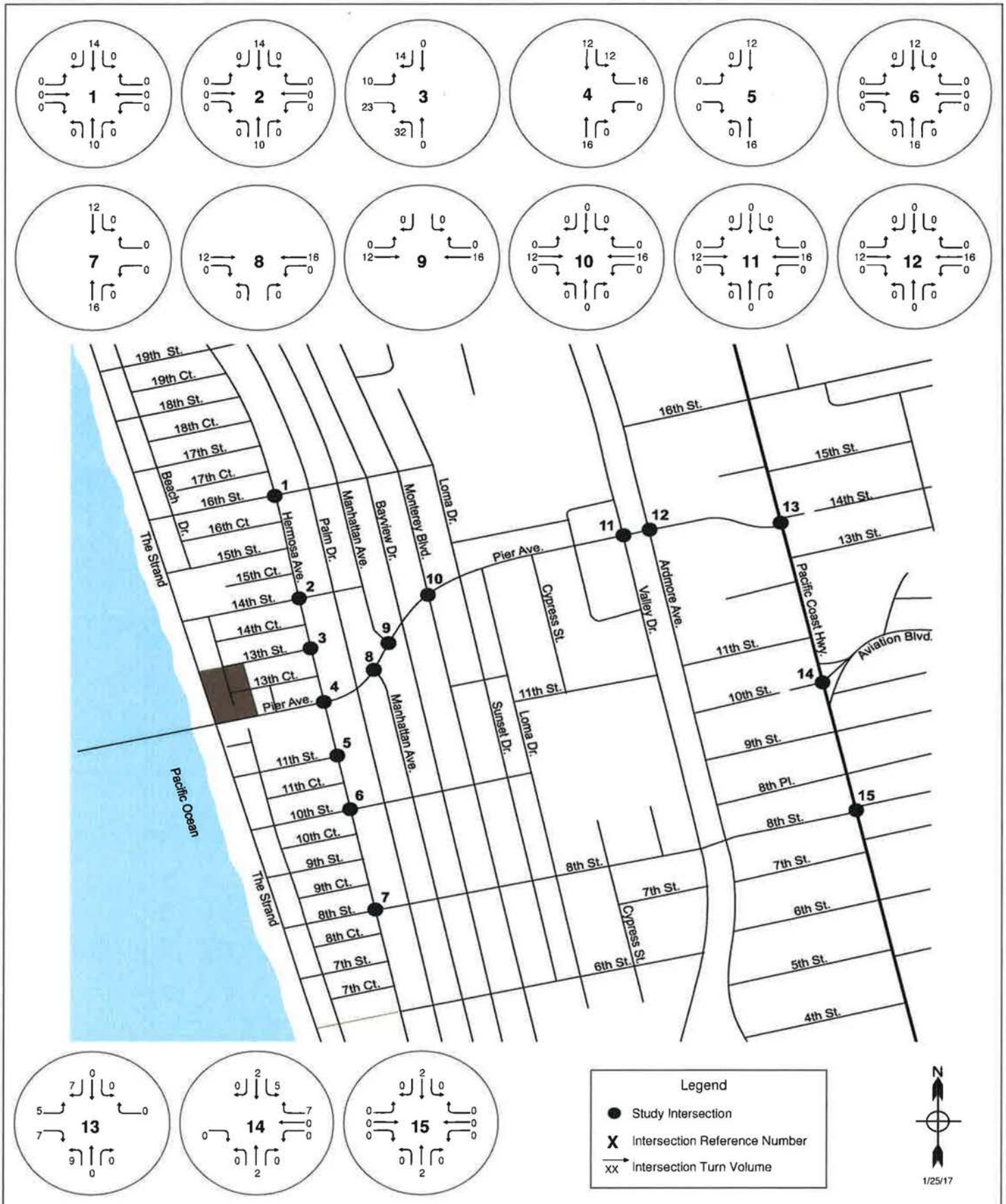

Figure 4.9
Project Only Traffic Volumes - Sunday – Mid-Afternoon Peak Hour

Pier and Strand Hotel - Traffic Study

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