

APPENDIX H TRAFFIC



**TRAFFIC IMPACT ANALYSIS REPORT
PACIFIC CITY
Huntington Beach, California**

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Existing LOS Conditions

6. The project study area covers thirty existing and thirty-two Year 2008 key signalized intersections and twenty-four key roadway segments (links). As shown, all thirty existing study intersections currently operate at LOS D or better, except the intersection of PCH at Warner Avenue, which currently operates LOS F during the PM peak hour. Among the study roadway links, Pacific Coast Highway between Beach Boulevard/Huntington Street and Goldenwest Street/6th Street currently operate at LOS E on a daily basis. The remaining analyzed links currently operate at LOS C or better.

Previously Identified Study Area Traffic Impacts

7. As indicated in the 1998 Updated Waterfront Ocean Grand Resort Transportation and Circulation Analysis, the intersections of Beach Boulevard at Pacific View Avenue and Atlanta Avenue at Huntington Street were assumed to be signalized intersections and analyzed as such.

Year 2008 Traffic Impact Analysis (City of Huntington Beach Methodology)

8. In the near-term horizon Year 2008, one of the thirty-two key study intersections is expected to continue to operate at adverse service levels as a result of Pacific City project traffic combined with background traffic (ambient plus related projects). The intersection of Pacific Coast Highway at Warner Avenue is expected to continue to operate at adverse service levels during the AM and PM peak hours with the addition of Pacific City project traffic to background traffic. The remaining thirty-one key study intersections are forecast to continue to operate at acceptable service levels with the addition of The Pacific City project traffic during the weekday AM and PM peak hours.
9. In the near-term horizon Year 2008, Pacific City project traffic combined with background traffic indicates that six study roadway links will continue to operate at adverse service levels with the addition of Project traffic when compared to the City of Huntington Beach criteria and each of the six study links will also experience a V/C increase greater than 0.030. However, based on the City's impact criteria for roadway links, none of the study roadway links has an adjacent study intersection(s) with adverse levels of service with the addition of project traffic. The remaining nineteen roadway links are expected to operate at LOS C or better on a daily basis, with the addition of project traffic.

Year 2008 Cumulative Impact Improvement Measures

10. The recommended intersection improvement at the intersection of Pacific Coast Highway and Warner Avenue, which has been identified in the Orange County MPAH and Caltrans Route Concept Study for PCH, is expected to improve the level of service during the AM and PM peak hours. The recommended improvement measure and fair-share percentage is described as follows:
 - Install a third northbound through lane on Pacific Coast Highway at Warner Avenue consistent with the Orange County MPAH and Caltrans Route Concept Study for PCH.
 - Fair-Share Percentage is 22%

EXECUTIVE SUMMARY

Project Description

1. The Pacific City Project involves the construction of approximately 240,000 SF of office/retail/restaurant use, a 400-room hospitality component, a surf museum, and 516 residential condominiums to be completed in 2008.

Traffic Study Analysis Scenarios

2. This traffic impact analysis evaluates the proposed Pacific City project's potential traffic impact on a near-term (2008) and General Plan Buildout (2020) basis for the following scenarios and at the following number of intersections and roadway links, accordingly:
 - City of Huntington Beach methodology (2008)
 - 32 intersections (30 existing)
 - 25 roadway links (24 existing)
 - State of California methodology (2008)
 - 19 intersections
 - General Plan Buildout: City of Huntington Beach methodology (2020)
 - 30 intersections
 - 27 roadway links

Project Access

3. Access to the proposed Pacific City Project is provided via ten (10) project driveways. Five commercial/hotel driveways (2 gated access drives into the parking structure) will be provided along Pacific View Avenue, 1st Street, and Huntington Street and five (5) gated residential access driveways will be provided along Pacific View Avenue, 1st Street, and Huntington Street, which require 44 feet of storage reservoir at each residential gated entry for residents.

Project Traffic Generation Forecast

4. The Pacific City project is expected to generate approximately 628 AM peak hour vehicle trips (345 inbound, 283 outbound) and 1,051 PM peak hour vehicle trips (505 inbound, 546 outbound) with approximately 12,002 daily vehicle trips (one half arriving, one half departing).

Related Project Traffic

5. There are four related projects, identified from a list of fourteen potential related projects provided by the City, [*The Strand, The Waterfront Ocean Grand Hyatt Resort and Residential, The Beachside Project, and The Boardwalk project*] in the City of Huntington Beach that could impact the key study intersections and roadways. The total weekday forecast traffic generation for the related projects in the City of Huntington Beach is estimated at 19,882 two-way vehicle trips per day with 1,303 AM peak hour trips (545 inbound, 758 outbound) and 1,781 PM peak hour trips (1,037 inbound, 744 outbound).

Year 2008 Traffic Impact Analysis (State of California Methodology)

11. In the near-term horizon Year 2008, two of the nineteen key study intersections are expected to continue to operate at adverse service levels as a result of Pacific City project traffic combined with background traffic (ambient plus related projects). The intersections of Pacific Coast Highway at Seapoint Avenue and Pacific Coast Highway at Warner Avenue are expected to continue to operate at adverse service levels during the PM peak hour and AM and PM peak hours, respectively, with the addition of Pacific City project traffic to background traffic.

The following recommended intersection improvement is expected to improve the level of service to an acceptable level during the PM peak hour at the intersection of Pacific Coast Highway and Seapoint Avenue. The recommended improvement measure and project fair-share percentage is described as follows:

- Restripe the westbound approach on Seapoint Avenue to add an additional westbound right turn lane at Pacific Coast Highway.
- Fair-Share Percentage is 26%

The following recommended intersection improvement at the intersection of Pacific Coast Highway at Warner Avenue, which has been identified in the Orange County MPAH and Caltrans Route Concept Study for PCH, is expected to improve the level of service to an acceptable level during the AM and PM peak hours. The recommended improvement measure and project fair-share percentage is described as follows:

- Install a third northbound through lane on Pacific Coast Highway at Warner Avenue consistent with the Orange County MPAH and Caltrans Route Concept Study for PCH.
- Fair-Share Percentage is 22%

Parking Analysis

12. An off-site parking analysis has been conducted to address the existing and proposed off-site parking supply along the roadways adjacent to the Pacific City project site. Existing parking (approximately 69 spaces) will be relocated from along the project development frontages to within the site. In addition, a shared parking analysis has been conducted to address the on-site parking demand for the retail/restaurant/office and hospitality uses, which requires a peak parking demand of 1,473 parking spaces at 1:00 PM on a typical weekday. With the addition of the 69 spaces to be relocated on-site, the total parking demand for the retail/restaurant/office and hospitality uses is 1,542 parking spaces. The residential parking demand will be based on City code.

2020 General Plan Buildout Traffic Impact Analysis

13. In the General Plan Buildout Year 2020 Condition, one of the thirty key study intersections is expected to continue to operate at adverse service levels as a result of Pacific City project traffic combined with background traffic, which is based on City of Huntington Beach SARCCS traffic model data for the current General Plan Circulation Element roadway. The intersection is:

- Pacific Coast Highway @ Seapoint Avenue (PM)

14. In the General Plan Buildout Year 2020 Condition, five of the study roadway links will continue to operate at adverse service levels with the addition of Project traffic when compared to the City of Huntington Beach criteria and four of the five study links will also experience a V/C increase greater than 0.030. However, based on the City's impact criteria for roadway links, none of the study roadway link has an adjacent study intersection with adverse levels of service with the addition of project traffic. The remaining twenty-two roadway links are expected to operate at LOS C or better on a daily basis, with the addition of project traffic.

Year 2020 Cumulative Impact Improvement Measures

15. The recommended intersection improvement is expected to improve the level of service during the PM peak hour at the one cumulative impacted study intersection. The recommended improvement measure is described as follows:

- Restripe the westbound approach on Seapoint Avenue to add an additional westbound right turn lane and install a northbound right turn lane on a fair-share basis. (Pacific Coast Highway at Seapoint Avenue).
- Fair-Share Percentage is 63%.

2020 Pacific View Avenue General Plan Buildout Traffic Volumes

16. In order to determine the recommended buildout cross-section for the future section of Pacific View Avenue between 1st and Huntington Streets adjacent to the Pacific City project site, Year 2020 General Plan Buildout daily traffic volume forecasts with Pacific City project traffic were calculated for four (4) roadway network scenarios. Based on the forecast Year 2020 General Plan Buildout daily traffic volume for all four scenarios, which varies between 8,064 VPD and 10,789 VPD, Pacific View Avenue is expected to operate at LOS B or better as a two-lane divided roadway between 1st and Huntington Streets.



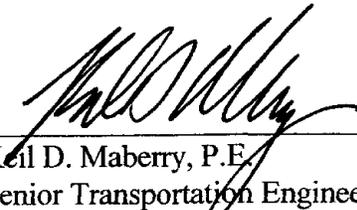
ENGINEERS

Traffic Signal Warrant Analysis

17. Based on Year 2008 background daily traffic, the Caltrans traffic signal planning warrant is satisfied at the intersection of 1st Street and Atlanta Avenue. The project percent impact/fair share is 57%. In addition, the intersection of Atlanta Avenue at Huntington Street will be signalized in conjunction with this development. The project percent impact/fair share is 59%.

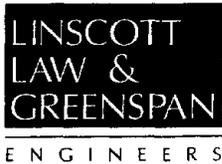
Project Specific and Area Traffic Improvements

18. In conjunction with development of Pacific City, the project frontages of Atlanta Avenue, 1st Street, and Pacific Coast Highway will be widened based on their appropriate classifications with raised landscaped medians and a traffic signal will be installed at the intersection of Atlanta Avenue and Huntington Street, as described in detail on Page 61, to accommodate anticipated traffic. Pacific View Avenue will be extended through the project site from Huntington Street to 1st Street as a 70-foot roadway with a raised median within a 90-foot ROW. In addition, one pedestrian bridge is proposed, in conjunction with this development, across PCH between 1st and Huntington Streets for improved access to the beach and transit stop on the south side of Pacific Coast Highway.



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**TRAFFIC IMPACT ANALYSIS REPORT
PACIFIC CITY
Huntington Beach, California**

INTRODUCTION

This Traffic Impact Study addresses the potential traffic impacts and circulation needs associated with the proposed Pacific City mixed-use project located in City of Huntington Beach. The project site is bound by Pacific Coast Highway on the south, 1st Street on the west, Atlanta Avenue on the north, and Huntington Street on the east, with the proposed extension of Pacific View Avenue bisecting the site, from Huntington Street to 1st Street. The project includes the development/construction of approximately 240,000 SF of office/retail use, a 400-room hospitality component (hotel/vacation ownership interval) resort hotel, and 516 residential condominiums with approximately 1,600 subterranean parking spaces.

The Scope of Work for this project was developed based on discussions with Mr. Bob Stachelski, City Transportation Manager, and the City of Huntington Beach Traffic Impact Assessment Preparation Guidelines, November 1996.

The project vicinity has been visited and an inventory of key area roadways and intersections made. Existing (2001/2002) peak period manual turning movement counts were conducted at thirty of the thirty-two key study intersections. A large majority of the study intersections were counted in August 2001 during the peak summer season. Average daily traffic counts were also conducted along the four project frontage roadways as well as Atlanta Avenue east of the project site and PCH northwest of 9th Street. The daily volumes shown on the City's Traffic Flow Map were used for the remaining study roadway links. Prior area traffic studies have been reviewed and information concerning other related projects, planned and/or approved, have been compiled.

Per the direction of City Staff, this traffic report analyzes existing and future peak hour traffic conditions upon completion of the proposed Pacific City project in Year 2008 at thirty-two (32) key intersections, which includes two future intersections along Pacific View Avenue, and twenty-five (25) key roadway segments. AM and PM peak hour and Daily background traffic forecasts for the 2008 horizon year have been projected by incorporating a one percent (1%) annual growth rate to existing peak hour and daily traffic volumes and including anticipated area cumulative project traffic.

In addition to the near-term analyses, this traffic report analyzes Year 2020 General Plan Build-out conditions without and with project traffic at thirty key study intersections (excludes two intersections studied in the near-term because of traffic modeling limitations) and twenty-seven key roadway links based on traffic forecasts using the Santa Ana River Crossings Cooperative Study (SARCCS) traffic analysis model. This traffic impact analysis also analyzes Year 2020 General Plan Build-out conditions with project traffic on Pacific View Avenue, to be constructed with this project, between 1st Street and Huntington Street under four (4) roadway network scenarios.

Finally, as now required by the State of California Department of Transportation (Caltrans), the nineteen state route intersections within the project study area [SR-39 (Beach Boulevard) and SR-1 (Pacific Coast Highway)], were analyzed on an AM and PM peak hour basis, for existing and Year 2008 traffic conditions, consistent with the recently published Caltrans *Guide for the Preparation of Traffic Impact Studies*, [June, 2001]. Because, this project does not require a General Plan Amendment, the Caltrans guidelines do not require a supplemental General Plan Buildout analysis or select link analysis based on the Caltrans *Guide for the Preparation of Traffic Impact Studies*.

The area near the project experiences seasonal traffic variations, which have been documented in previous studies. Summer weekday traffic conditions have been found to be relatively consistent with non-summer conditions during the typical morning and evening peak hours. Higher levels of traffic are typically found during the midday on summer weekdays, though generally not in excess of the traditional peak hours. Summer weekends often experience significantly higher congestion levels due to traffic and pedestrian activity levels.

In considering the need to analyze the weekend condition during the development of the scope of the traffic analysis, staff identified approximately 22 peak summer weekends and 3 typical holidays for a total of 47 potential days that represent the peak summer weekend condition. These days represent the peak traffic conditions for the downtown area based on observed congestion levels. Weekday peak hour conditions represent the worst case conditions for approximately 250 days per year. Non-summer weekends and holidays represent approximately 65 days per year and would not generally be considered peak conditions. Under CEQA, the determination of thresholds of significance and the application of those thresholds to specific conditions is delegated to the lead agency. In this case, the City of Huntington Beach has adopted several policies through its General Plan that would tend to support an analysis of the weekday condition as the environmental condition under which levels of significance are evaluated for individual projects and overall transportation planning. Level of service standards are identified that were based on evaluations of weekday peak hour conditions throughout the city. While the term "peak hour" is not specifically defined, it is consistently considered to occur during the weekday morning and late afternoon peak periods. No specific references are made to the summer weekend condition in maintaining certain level of service standards. This approach has been supported in the past for other projects such as the Hyatt Regency Resort and the recently approved project, The Strand. This is also consistent with the concept that basic economy would dictate a design that does not address the most extreme operating conditions for a roadway.

One additional issue considered by staff in evaluating the scope of the project analysis is the ability to forecast future weekend traffic volumes. Weekend analysis is not considered “standard” and limited tools are available for forecasting future traffic volumes. For example, build-out scenario analyses for this study were prepared using a computerized traffic model. This model is based on a regional traffic model and does not address weekend conditions. It would be impossible to develop weekend traffic projections under this scenario without imposing significant hardship on the developer in preparing a new weekend traffic model. For reference, summer weekend traffic counts and analysis of existing summer weekend conditions are included in **Appendix J**.

In consultation with City Staff, the scope of work for the project excluded a requirement to complete summer weekend analyses in consideration of CEQA guidelines, City policies, a practical evaluation of the frequency of occurrence of the summer weekend conditions and analysis tools available.

The thirty-two key area study intersections, listed below, were selected for evaluation based on a “select-zone” analysis of the SARCCS traffic model, which was used to develop the Maximum Possible ICU Impact table, presented as **Table 1**. As presented in Table 1, intersections with a maximum possible ICU increase of less than 1% were not analyzed, unless directed otherwise by City staff. These 32 analyzed intersections define the extent of the study boundaries for this traffic impact investigation and are listed on page 6 under “Study Intersections”.

The Volume to Capacity (V/C) characteristics and Level of Service (LOS) investigations for the AM and PM peak hour at these thirty-two intersections were used to isolate the potential traffic-related impacts associated with anticipated area growth, adjacent cumulative developments, and the Pacific City project. Further, this report identifies recommended intersection improvements that may be required to mitigate the increase in future traffic volumes in conjunction with expected project traffic. Included in this traffic impact study are:

- Existing traffic counts
- Estimated project traffic generation/distribution/assignment
- Estimated cumulative project traffic generation/distribution/assignment
- AM/PM peak hour and Daily analyses for existing and future near-term traffic conditions without and with project traffic
- Project-specific improvements and mitigation measures

TABLE 1

**STUDY AREA BOUNDARY
Pacific City, Huntington Beach**

Intersection		Maximum Possible ICU Impact	Possibly Impacted?
1.	Warner Avenue at Pacific Coast Highway	2.2%	YES
2.	Seapoint Avenue at Pacific Coast Highway	2.3%	YES
3.	Goldenwest Street at Orange Avenue	0.4%	NO
4.	Goldenwest Street at Pacific Coast Highway	1.9%	YES
5.	17 th Street at Orange Avenue	0.5%	NO
6.	17 th Street at Pacific Coast Highway	3.0%	YES
7.	9 th Street at Pacific Coast Highway	3.0%	YES
8.	6 th Street at Pacific Coast Highway	2.0%	YES
9.	Main Street at Yorktown Avenue	0.8%	NO
10.	Main Street at Utica Avenue	1.3%	YES
11.	Main Street at Adams Avenue	2.1%	YES
12.	Main Street at 6 th Street	2.6%	YES
13.	Main Street at Pacific Coast Highway	2.0%	YES
14.	Lake Street at Yorktown Avenue	1.4%	YES
15.	Lake Street at Adams Avenue	0.9%	NO
16.	1 st Street at Atlanta Avenue	5.2%	YES
17.	1 st Street at Pacific View Avenue	10.3%	YES
18.	1 st Street at Pacific Coast Highway	5.4%	YES
19.	Huntington Street at Pacific Coast Highway	4.9%	YES
20.	Huntington Street at Pacific View Avenue	14.3%	YES

TABLE 1 continued

**STUDY AREA BOUNDARY
Pacific City, Huntington Beach**

Intersection		Maximum Possible ICU Impact	Possibly Impacted?
21.	Huntington Street at Atlanta Avenue	5.2%	YES
22.	Huntington Street at Indianapolis Avenue	0.02%	NO
23.	Atlanta Avenue at Delaware Street	6.1%	YES
24.	Atlanta Avenue at Newland Street	1.1%	YES
25.	Atlanta Avenue at Magnolia Street	0.8%	NO
26.	Atlanta Avenue at Bushard Street	0.7%	NO
27.	Beach Boulevard at Talbert Avenue	0.9%	NO
28.	Beach Boulevard at Ellis/Main Street	1.6%	YES
29.	Beach Boulevard at Garfield Avenue	2.8%	YES
30.	Beach Boulevard at Yorktown Avenue	2.7%	YES
31.	Beach Boulevard at Adams Avenue	2.9%	YES
32.	Beach Boulevard at Indianapolis Avenue	3.6%	YES
33.	Beach Boulevard at Atlanta Avenue	5.9%	YES
34.	Beach Boulevard at Pacific Coast Highway	4.5%	YES
35.	Pacific Coast Highway at Newland Avenue	3.4%	YES
36.	Pacific Coast Highway at Magnolia Avenue	2.7%	YES
37.	Pacific Coast Highway at Brookhurst Avenue	3.6%	YES
38.	Pacific Coast Highway at Superior Avenue	0.8%	NO
39.	Indianapolis Avenue at Newland Street	0.5%	NO
40.	Adams Avenue at Newland Street	0.8%	NO

Year 2008 Near-Term Study Intersections

1. Goldenwest Street @ Pacific Coast Highway
2. 17th Street @ Pacific Coast Highway
3. 9th Street @ Pacific Coast Highway
4. 6th Street @ Pacific Coast Highway
5. Main Street @ 6th Street
6. Main Street @ Pacific Coast Highway
7. 1st Street @ Atlanta Avenue
8. 1st Street @ Pacific Coast Highway
9. Huntington Street @ Atlanta Avenue
10. Delaware Street @ Atlanta Avenue
11. Huntington Street @ Pacific Coast Highway
12. Huntington Street @ Pacific View Avenue
13. Beach Boulevard @ Adams Avenue (CMP Intersection)
14. Beach Boulevard @ Indianapolis Avenue
15. Beach Boulevard @ Atlanta Avenue
16. Beach Boulevard @ Pacific Coast Highway (CMP Intersection)
17. Newland Street @ Atlanta Avenue
18. Newland Street @ Pacific Coast Highway
19. Magnolia Street @ Pacific Coast Highway
20. Magnolia Street @ Atlanta Avenue
21. Pacific Coast Highway @ Seapoint Avenue
22. Pacific Coast Highway @ Warner Avenue (CMP Intersection)
23. Pacific Coast Highway @ Brookhurst Avenue
24. Main Street @ Adams Avenue
25. Main Street @ Utica Avenue
26. Lake Street @ Adams Avenue
27. Lake Street @ Yorktown Avenue
28. Beach Boulevard @ Yorktown Avenue
29. Beach Boulevard @ Garfield Avenue
30. Newland Street @ Ellis Avenue/Main Street
31. 1st Street @ Pacific View Avenue (Future)
32. Beach Boulevard @ Pacific View Avenue (Future)

PROJECT LOCATION AND DESCRIPTION

The Pacific City project site, which is approximately 31.5 acres of vacant land, is generally located in the southerly area of the City of Huntington Beach adjacent to Pacific Coast Highway and approximately one-quarter mile west of Beach Boulevard. The project site is bound by Pacific Coast Highway on the south, 1st Street on the west, Atlanta Avenue on the north, and Huntington Street on the east. **Exhibit 1** presents a Vicinity Map, which illustrates the general location of the project site and depicts its orientation within the surrounding street system.

As proposed, the Pacific City Project consists of approximately 240,000 SF of office/retail/restaurant use, a 400-room hospitality component (hotel/vacation ownership interval), and 516 residential condominiums with an estimated completion in 2008. **Table 2** summarizes the proposed land use development and floor areas for Pacific City Project. As presented in Table 2, the 400-room hospitality component (hotel/vacation ownership interval) will include 16,000 SF of Ballroom space, a 5,000 SF signature restaurant, and 15,000 SF of Cardio/Yoga facilities. **Exhibit 2** presents the proposed site plan for the Pacific City Project and labels each of the project access driveway locations for future reference throughout the report.

PROJECT ACCESS

The Pacific City project site, which is bound by PCH, 1st Street, Atlanta Avenue, and Huntington Street, will consist of a total of ten customer/service access driveways and are labeled 1 through 10 on Exhibit 2. As depicted in Exhibit 2, two driveways are proposed along 1st Street (one right-in/right-out for the residential and one right-in/right-out service access for the retail/commercial), three driveways are proposed along Huntington Street (two full-movement for the residential and one right-in/right-out service/employee access for the hotel), and five driveways are proposed along Pacific View Avenue (two full-movement for the residential, one full-movement for the retail/commercial only, one full-movement for the retail/commercial and hotel, and one right-in/right-out service access for the retail/commercial). All-way stop-control access will be provided along Pacific View Avenue at driveway access #2/#5 and #3/#6.

The easterly access on Pacific View Avenue is designed as the main retail/commercial/hotel project access with a valet parking zone proposed on site. In addition, intersection capacity analyses have been conducted at the two proposed all-way stop access locations along Pacific View Avenue to determine the total intersection delay, operational level of service, and required left turn storage length at each driveway. Using Year 2008 AM and PM peak hour project buildout traffic volumes at the two proposed all-way stop access locations along Pacific View Avenue, LOS calculations were conducted using the Highway Capacity Manual (HCM) methodology for unsignalized intersections. The westerly proposed all-way stop access location (Driveway access #2/#5) is anticipated to operate with an intersection stop delay of 7.86 seconds/vehicle (LOS A) and 8.78 seconds/vehicle (LOS A) during the AM and PM peak hours, respectively, while the easterly proposed all-way stop access location (Driveway access #3/#6) is anticipated to operate with an intersection stop delay of

8.74 seconds/vehicle (LOS A) and 10.58 seconds/vehicle (LOS B) during the AM and PM peak hours, respectively.

Based on our review of the forecast traffic volumes and the capacity analyses at each of the ten project access driveways, the following is a list of design features for each driveway.

- **Driveway #1** – (Service access for Retail/Restaurant uses) right-turn in/right-turn out only with one inbound and one outbound lane.
- **Driveway #2** – (Customer access for Retail/Restaurant/Office uses) full-movement with all-way stop control with one inbound and two outbound lanes (left turn and right turn); westbound left turn pocket recommended minimum length of 100 feet on Pacific View Avenue.
- **Driveway #3** – (Customer access for Retail/Restaurant/Office and Hotel uses) full-movement with all-way stop control; one inbound and two outbound lanes (left turn and right turn); westbound left turn pocket recommended minimum length of 200 feet on Pacific View Avenue.
- **Driveway #4** – (Service and secondary employee access for Hotel use) right-turn in/right-turn out only; one inbound and one outbound lane.
- **Driveway #5** – (Resident-only access for Residential use) full-movement with all-way stop control; one inbound and one outbound lane; eastbound left turn pocket recommended length of 100 feet on Pacific View Avenue.
- **Driveway #6** – (Resident and visitor access for Residential use) full-movement with all-way stop control; two inbound and two outbound lanes (left turn and right turn); eastbound left turn pocket recommended minimum length of 100 feet on Pacific View Avenue.
- **Driveway #7** – (Resident-only access for Residential use) full-movement with outbound stop control; one inbound and one outbound lane with 44-foot storage reservoir at gate; northbound left turn pocket recommended minimum length of 100 feet on Huntington Street.
- **Driveway #8** – (Resident-only access for Residential use) full-movement with outbound stop control; one inbound and one outbound lane with 44-foot storage reservoir at gate; northbound left turn pocket recommended minimum length of 100 feet on Huntington Street.
- **Driveway #9** – (Resident-only access for Residential use) right-turn in/right-turn out with outbound stop control; one inbound and one outbound lane with 44-foot storage reservoir at gate.
- **Driveway #10** – (Service access for Retail/Restaurant uses) right-turn in/right-turn out only with one inbound and one outbound lane.

TABLE 2

**PROPOSED LAND USE DEVELOPMENT SUMMARY
Pacific City, Huntington Beach**

PROPOSED LAND USES	GROSS SQUARE FEET (GSF)/UNITS
Office	60,000 GSF
Commercial	180,000 GSF
Quality Restaurant	50,000 GSF
Surf Museum	5,000 GSF
Retail Shops	125,000 GSF
Residential (Condominiums)	516 Units
Hospitality (Hotel/Vacation Ownership Interval)	400 Rooms
Hotel Ballroom	16,000 GSF
Signature Restaurant	5,000 GSF
Cardio/Yoga	15,000 GSF

n:\2100\2133\Tables\2002133 Table 2 Proposed Land Use Summary.xls

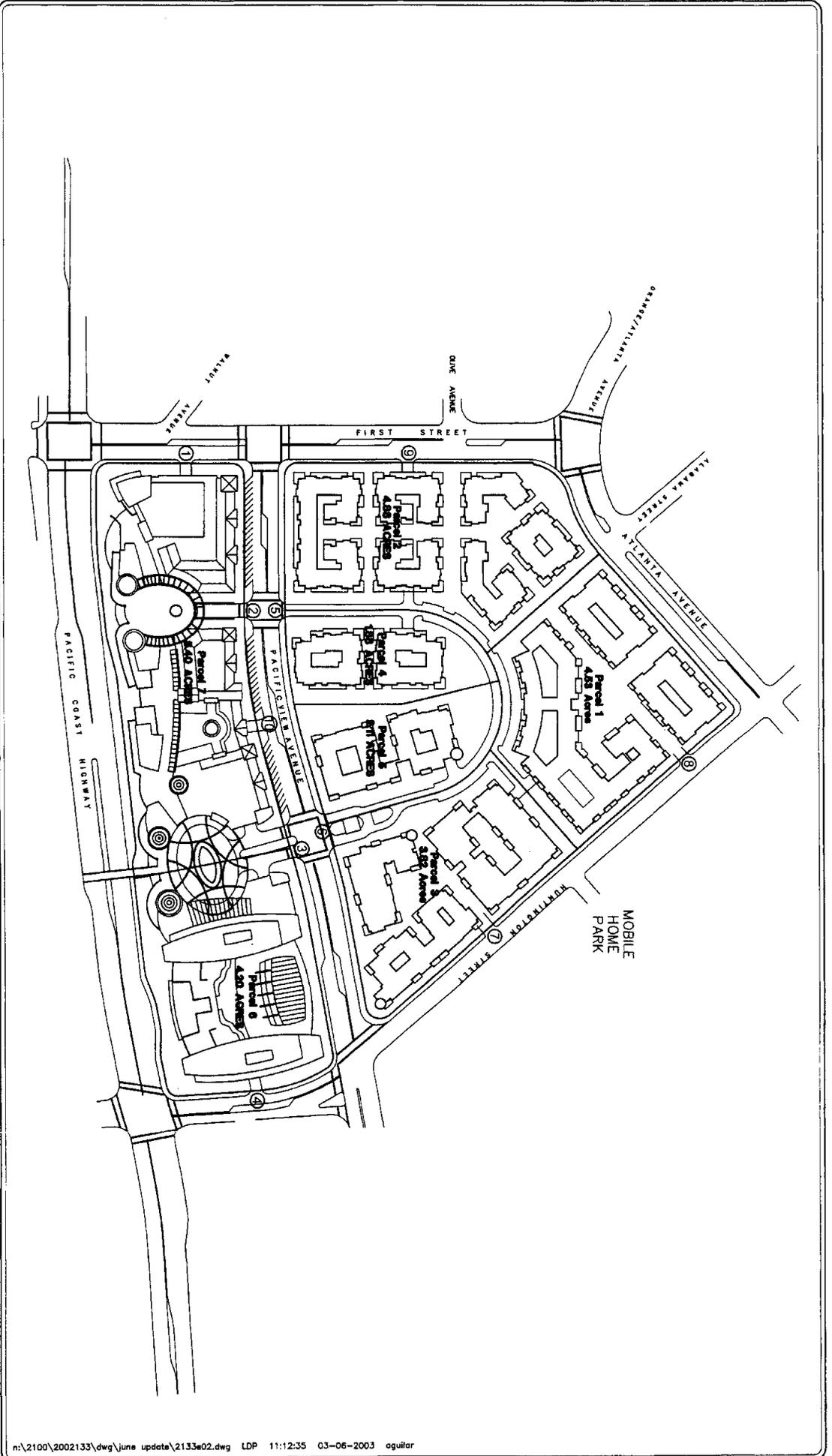


EXHIBIT 2

PROPOSED SITE PLAN

 PACIFIC CITY, HUNTINGTON BEACH

The five access driveways proposed for the residential development will be gate controlled with the three driveways on 1st Street and Huntington Street and the westerly driveway on Pacific View Avenue for residents only and the easterly driveway on Pacific View for residents and visitors. In addition, the two access drives along Pacific view Avenue into parking structure for the Retail/Restaurant/Office and Hotel uses will be gate controlled with a ticket dispenser. In order to determine the required storage reservoir at each gated entry, a queuing analysis has been performed at each of the seven gated project access driveways using the Crommelin Methodology.

Gate Queuing Analysis

Crommelin Methodology

The Crommelin Methodology determines the minimum storage reservoir required to provide adequate access and control for major parking facilities. Experience has proven that poorly designed parking facilities with inadequate storage capacities often times create an adverse effect on the operating characteristics in and around the facility, thereby lessening the effectiveness of the structure. The Crommelin Methodology addresses these concerns by analyzing conditions and applying a conservative analytical approach to planning access and control for parking facilities.

The methodology is based on peak hour traffic volumes, parking control strategies, processing rates at a control point, and the number of travel lanes. These characteristics are used to calculate a traffic intensity factor value (IF), which is derived by dividing the peak hour traffic volumes by the design processing rate. The IF value is then plotted on the 99% confidence level curve (where storage capacity will not be exceeded 99 times of 100) per the Crommelin Reservoir Needs nomograph. This process ultimately estimates the number of queuing vehicles that will store behind the service position vehicle at the control point. This number is rounded up to the nearest vehicle and added to the single service position vehicle, resulting in the total number of vehicles stored behind the control point. The required storage capacity, in vehicles, is converted into a length (feet) by multiplying the number of expected vehicles by a vehicle length of 22 feet.

Storage Reservoirs Analysis

Table A in Appendix B presents a summary of the storage reservoir analysis for the gated entrance at each of the five residential and two retail/restaurant/office/hotel access driveways. A service rate of 180 vehicles/hour was used to determine the required storage reservoir for residents, which is based on a conservative gate access rate of 20 seconds per vehicle for residents with either a remote control gate opener or a coded-card, while a service rate of 30 vehicles per hour (2 minutes per vehicle) was used to determine the required storage reservoir for visitors. Lastly, a service rate of 320 vehicles/hour was used to determine the required storage reservoir for retail/restaurant/office/hotel customers and employees, which is based on a ticket dispenser gate access control rate contained in the Crommelin report. Driveway #6 along Pacific View Avenue will accommodate both residents and visitors with separate drive aisles for each. The recommended storage reservoir length for the visitor queuing is 66 feet, which is based on a peak visitor volume of

16 vehicles at 7:00 PM (two times the PM peak hour volume of 8 vehicles, which is 7% of the total PM peak hour inbound residential traffic of 115) and can accommodate three vehicles between the manned guardhouse and the back of sidewalk. A separate drive aisle will be provided for residents to by-pass visitors queuing at the manned guardhouse.

As shown in Table A, each of the five residential access driveways and two retail/restaurant/office/hotel access driveways has a maximum expected queue of two vehicles which requires a storage reservoir length of 44 feet between the gate and the back of sidewalk. However, the visitor access driveway on Driveway #6 requires a storage reservoir length of 66 feet between the manned guard house and the back of sidewalk.

EXISTING TRAFFIC CONDITIONS

Regional access to the project site is provided primarily by the San Diego (I-405) Freeway and Pacific Coast Highway (SR-1), which generally run in a northwest to southeast orientation in the vicinity of the project. The I-405 Freeway is located approximately five miles north of the project site. Primary access to the site from the I-405 Freeway is provided via an interchange at Beach Boulevard. Pacific Coast Highway, which borders the site on the southwest, is a major highway, which extends through Orange County and links Huntington Beach with neighboring communities of Seal Beach, Long Beach, Costa Mesa, and Newport Beach. Principal local arterials, which serve Pacific City, are Beach Boulevard, Main Street, 1st Street, Huntington Street, Atlanta Avenue, and Pacific View Avenue. The following discussion provides a brief synopsis of these key area streets. These descriptions are based on an inventory of existing roadway conditions.

Pacific Coast Highway (PCH), also known as State Route 1, is designated as a Major Arterial Highway in the City's General Plan Circulation Element and the County of Orange MPAH southeast of Goldenwest Street. PCH is currently configured as a six-lane arterial south of Beach Boulevard, and is striped for six lanes from midway between Huntington and 1st Streets to 6th Street, which includes the northwesterly half of the project frontage. Northwest of 6th Street, PCH is configured as a four-lane arterial. Metered parking is currently provided on both sides of PCH except along the southwesterly half of the project frontage and along the southwest side of PCH, which is improved with a transit turnout for bus layovers and boardings. The speed limit along PCH varies from 35 MPH to 50 MPH in the project vicinity. PCH currently performs as a four-lane Expressway between Warner Avenue and Seapoint Avenue.

Beach Boulevard, also known as State Route 39, is designated as a Superstreet/Smartstreet on the County of Orange Master Plan of Arterial Highways (MPAH) and is currently six lanes between PCH and Ellis Avenue/Main Street and eight lanes north of Ellis Avenue/Main Street. Beach Boulevard begins at PCH in Huntington Beach and continues northward through the study area and cities of Westminster, Garden Grove, Anaheim, Buena Park, La Mirada, and terminates at Whittier Boulevard in La Habra.

Atlanta Avenue is designated as a four-lane Primary Arterial Highway in the City's General Plan Circulation Element and Orange County MPAH. Atlanta Avenue originates at 1st Street and continues easterly to its terminus at the Santa Ana River. Atlanta Avenue is currently a two-lane roadway along the project frontage and becomes four lanes from Delaware Street to the Santa Ana River. Parking is permitted along the north side of Atlanta Avenue adjacent to the existing single-family residences and is restricted along the project frontage.

Main Street is designated as a four-lane Primary Arterial Highway in the City's General Plan Circulation Element and Orange County MPAH north of 17th Street and extends from PCH to Beach Boulevard. Main Street is currently a two-lane roadway between PCH and Adams, a four-lane roadway between Adams Avenue and Yorktown Avenue and a six-lane roadway between Yorktown Avenue and Beach Boulevard. Angle parking is located along Main Street in downtown area between PCH and 6th Street.

1st Street is designated as a four-lane Primary Arterial Highway in the City's General Plan Circulation Element and Orange County MPAH and extends from PCH to Atlanta Avenue/Orange Avenue. 1st Street is currently a two-lane roadway and parking is permitted along both sides.

Huntington Street is designated as a four-lane Secondary roadway from PCH to Pacific View Avenue and a local street north of Pacific View in the City's General Plan Circulation Element and Orange County MPAH. Huntington Street originates at PCH and continues northerly to its terminus at Garfield Avenue. Huntington Street is currently a two-lane roadway with primarily residential frontage north of Atlanta Avenue. Parking is not permitted along either side of Huntington Street adjacent to the project frontage.

Delaware Street is designated as a four-lane Secondary roadway in the City's General Plan Circulation Element and Orange County MPAH and currently extends from just south of Atlanta Avenue to Taylor Drive north of Ellis Avenue. Delaware Street currently varies between a two-lane roadway and four-lane roadway with primarily residential frontage. Parking is permitted along both sides of Delaware Street.

Pacific View Avenue is designated as a four-lane Primary Arterial Highway in the City's General Plan Circulation Element and Orange County MPAH. Pacific View Avenue existed only from Huntington Street to approximately 500 feet east along the existing Waterfront Hilton project when the counts were conducted and this study initiated. Pacific View Avenue will be extended easterly to Beach Boulevard in conjunction with current development of the Ocean Grand Hyatt Resort and will be extended westerly to 1st Street in conjunction with the proposed Pacific City project. Parking is currently permitted along both sides adjacent to the existing Waterfront Hilton.

Exhibit 3 presents the existing roadway conditions for the arterials and key intersections evaluated in this report. This exhibit identifies the number of travel lanes for key arterials, intersection configurations and traffic controls for the thirty-two key study intersections.

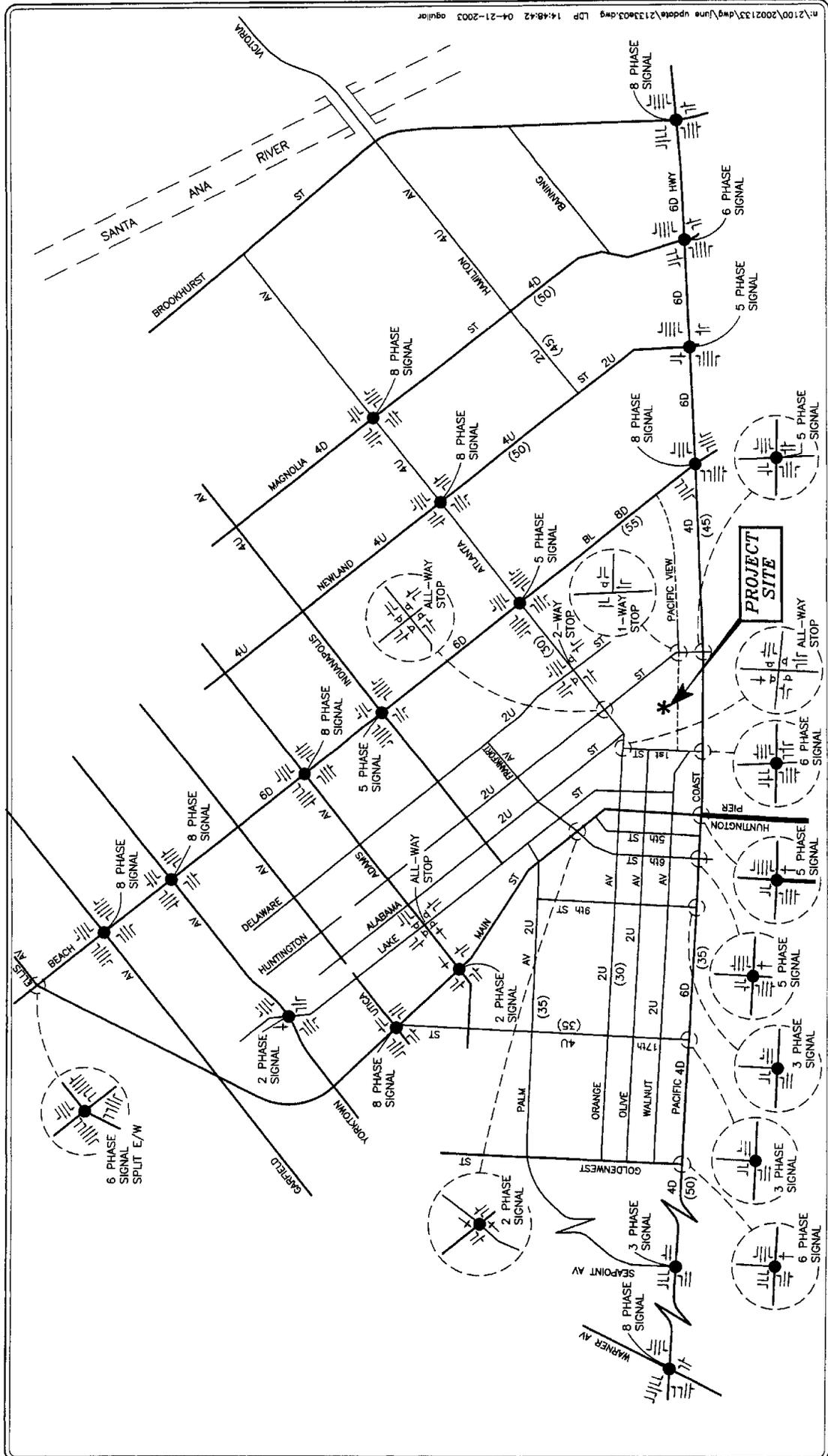


EXHIBIT 3

EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS
PACIFIC CITY, HUNTINGTON BEACH

KEY

- = APPROACH LANE ASSIGNMENT
- = FUNCTIONS AS SEPARATE TURN LANE, THOUGH NOT STRIPED
- = TRAFFIC SIGNAL, ∇ = STOP SIGN
- (XX) = POSTED SPEED LIMIT (MPH)
- 2 = NUMBER OF TRAVEL LANES
- D = DIVIDED, U = UNDIVIDED
- P = PARKING, NP = NO PARKING

NO SCALE
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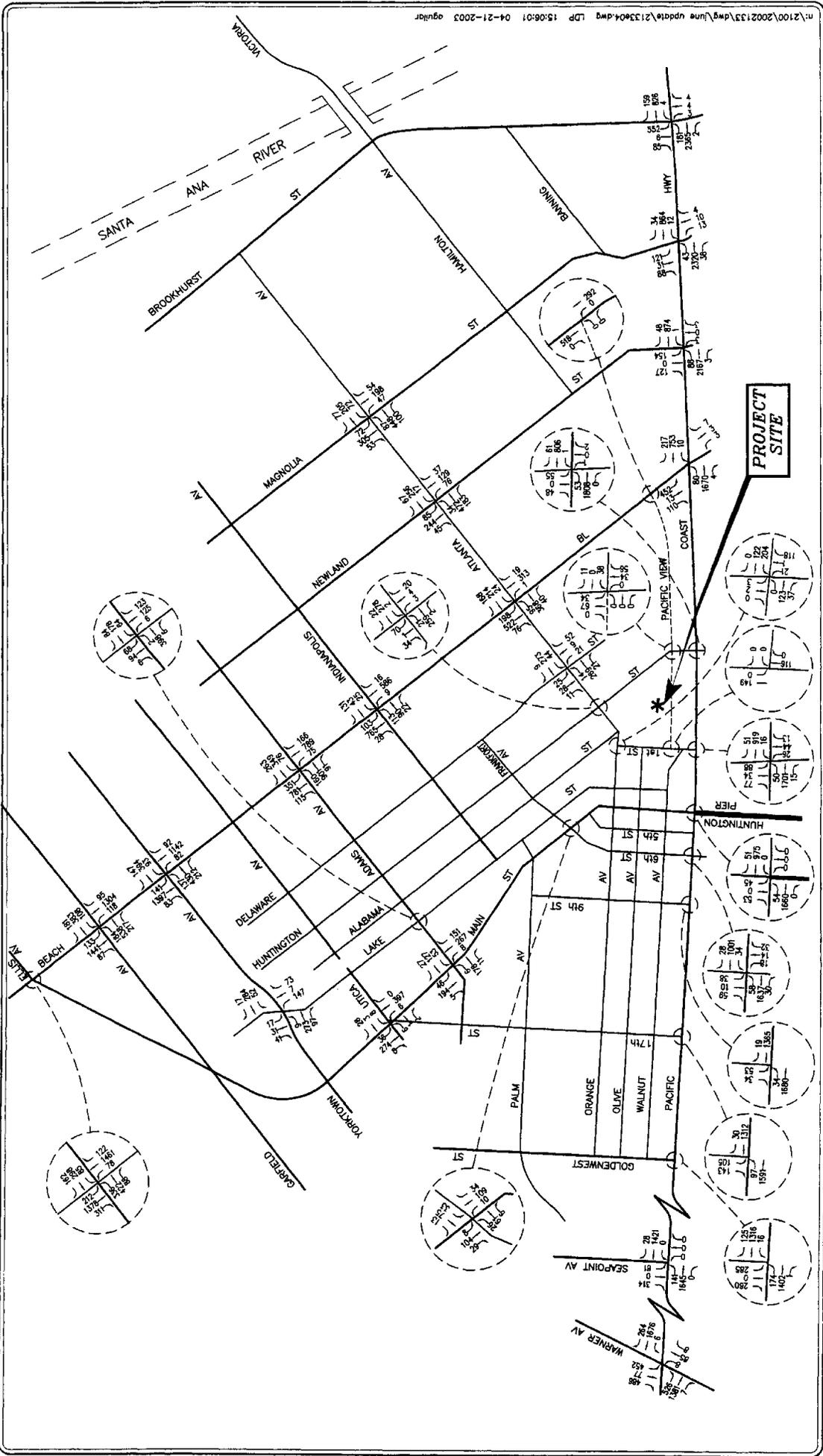
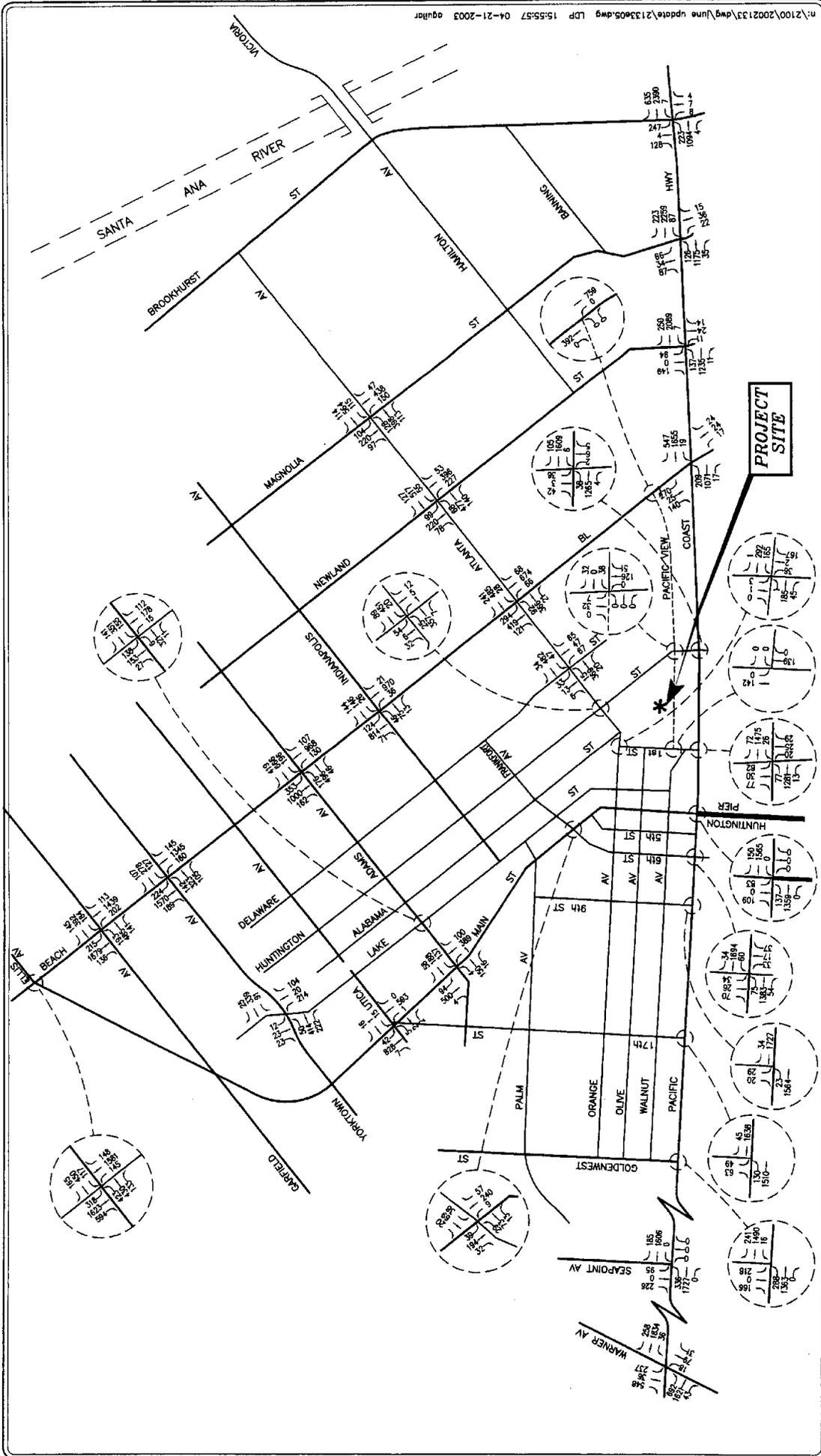


EXHIBIT 4

EXISTING AM PEAK HOUR TRAFFIC VOLUMES PACIFIC CITY, HUNTINGTON BEACH



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EXHIBIT 5

EXISTING PM PEAK HOUR TRAFFIC VOLUMES

PACIFIC CITY, HUNTINGTON BEACH



NO SCALE
**LINSCOTT
 LAW &
 GREENSPAN
 ENGINEERS**

17

EXISTING AREA TRAFFIC VOLUMES

Existing AM and PM peak hour intersection traffic volumes for the thirty study intersections evaluated in this report were obtained from manual morning and evening peak period turning movement counts conducted by Transportation Studies Inc. (TSI) in late August 2001 and May 2002. These intersections were designated for evaluation based on a “select- zone” analysis of the City’s Santa Ana River Crossing Cooperative Study (SARCCS) transportation model. **Exhibits 4 and 5** summarize the existing AM peak hour and PM peak hour turning movement volumes for the thirty study intersections included in this traffic impact analysis, respectively.

Existing average daily traffic (ADT) volumes on key roadway segments in the vicinity of the project are shown on **Exhibit 6**. The existing ADT volumes were obtained from recent (August 2001) traffic counts and the City’s Traffic Flow Map.

Appendix A contains the 2001/2002 detailed weekday manual peak period traffic count data for the thirty existing key study intersections, and the daily traffic counts for seven of the twenty-four existing key area roadway segments. The remaining seventeen roadway segments are based on the City’s flow map. Appendix J contains the 2002 summer weekend manual peak period traffic counts for the seven key intersections identified by City staff.

EXISTING INTERSECTION CONDITIONS

Level of Service Method of Analysis

Intersections

HCM Method of Analysis (Unsignalized Intersections)

In conformance with the City of Huntington Beach requirements, existing AM and PM peak hour operating conditions were evaluated using the Highway Capacity Methodology (HCM) for the four currently unsignalized intersections (1st Street/Atlanta Avenue; Huntington Street/Atlanta Avenue; Delaware Street/Atlanta Avenue; and Huntington Street/Pacific View Avenue). This methodology estimates the average total delay for each of the subject movements and determines the level of service for each movement. The overall average delay measured in seconds/vehicle, and level of service is then calculated for the entire intersection.

The HCM delay value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM delay value range, as shown in **Table 3**. Based on City criteria for unsignalized intersections, LOS D, which is an overall intersection delay of 35.0 seconds/vehicle or less, is the minimum acceptable intersection service level.

TABLE 3

**LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS¹
Pacific City, Huntington Beach**

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

ICU Method of Analysis

In conformance with City of Huntington Beach criteria, existing AM and PM peak hour operating conditions for the twenty existing key signalized intersections have been investigated according to the Intersection Capacity Utilization (ICU) Methodology. The ICU technique is used for signalized intersections and estimates the volume to capacity (V/C) relationship for an intersection based on individual V/C ratios for key conflicting movements. The ICU numerical value represents the percent of the signal green time, and thus capacity, required by existing or future traffic. The ICU methodology assumes uniform traffic distribution per intersection approach lane, and optimal signal operation.

The ICU value translates to a Level of Service (LOS) condition, which is a relative measure of the performance of the intersection. As presented in **Table 4**, six Levels of Service have been defined ranging from A, (free flow with an ICU of 0.60 or less) to F (forced flow with an ICU in excess of 1.00). Level of Service is D (ICU of 0.81 to 0.90) is traditionally considered the maximum acceptable Level of Service for urban and suburban peak hour conditions. The City of Huntington Beach considers LOS D to be the maximum acceptable service level for signalized intersections. The ICU value is the sum of the critical volume to capacity ratios at an intersection, and is not intended to be indicative of the LOS of the individual turning movements

¹ Source: 2000 Highway Capacity Manual.

TABLE 4

**LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS
Pacific City, Huntington Beach**

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	0.00 - 0.60	Free Flow; Very low delay, less than 10.0 seconds per vehicle.
B	0.61 - 0.70	Rural Design; Delay in the range of 10.1 to 20 seconds per vehicle.
C	0.71 - 0.80	Urban Design; Delay in the range of 20.1 to 35 seconds per vehicle.
D	0.81 - 0.90	Maximum Urban Design; Delay ranges from 35.1 to 55 seconds per vehicle.
E	0.91 - 1.00	Capacity; Delay ranges from 55.1 to 80 seconds per vehicle.
F	≥ 1.01	Forced Flow; Delay in excess of 80 seconds per vehicles.

The ICU calculations incorporate a lane capacity value of 1,700 vehicles per hour for left-turn, through and right-turn lanes. A clearance adjustment factor of 0.05 was added to each Level of Service calculation to account for time lost due to yellow clearance intervals, as required by the County of Orange Congestion Management Plan. Please note that a clearance adjustment factor of 0.26 has been applied to the ICU for the intersection of PCH at Main Street due to the “all-red scramble walk” operation, in which all approaches of the intersection receive a red ball indication to allow pedestrians to cross in all directions, simultaneously.

HCM Method of Analysis (Signalized Intersections)

In conformance with the Caltrans requirements, existing AM and PM peak hour operating conditions for the nineteen Caltrans-operated signalized intersections were evaluated using the 2000 Highway Capacity Manual (HCM) signalized methodology. Based on the HCM method of analysis, level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometries, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of any incidents, and when there are no other vehicles on the road.

In Chapter 16 of the HCM, only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. In contrast, in previous versions of the HCM (1994 and earlier), delay included only stopped delay. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle. The six qualitative categories of Level of Service that have been defined along with the corresponding HCM control delay value range for signalized intersections are shown in **Table 5**.

TABLE 5

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS²
Pacific City, Huntington Beach

Level of Service (LOS)	Control Delay Per Vehicle (seconds/vehicle)	Level of Service Description
A	≤ 10.0	This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10.0 and ≤ 20.0	This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.
C	> 20.0 and ≤ 35.0	Average traffic delays. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	> 35.0 and ≤ 55.0	Long traffic delays At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55.0 and ≤ 80.0	Very long traffic delays This level is considered by many agencies (i.e. OC CMP) to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	≥ 80.0	Severe congestion This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels.

² Source: *Highway Capacity Manual 2000*, Chapter 16 (Signalized Intersections).

Roadway Links

In conformance with the City's criteria, existing daily operating conditions for the twenty-four existing roadway links have been investigated according to the volume-to-capacity (V/C) of each link. The V/C relationship is used to estimate the LOS of the roadway segment with the volume based on 24-hour traffic count data and the capacity based on the City's classification of each roadway.

The roadway link capacities of each street classification, according to the City's General Plan and Orange County's MPAH, is presented in **Table 6**, except for the Expressway and Arterial Collector classifications, which have been developed in consultation with City staff. The Expressway capacities were based on a conservative assumption of 1,900 vehicles per hour per lane, which is consistent with a multi-lane highway with a free-flow speed of 45 mph (Exhibit 21-2 of the Highway Capacity Manual 2000), peak hour traffic at approximately 10% of daily traffic, and an 80% green-time for PCH on the study link between Warner Avenue and Goldenwest Street. In addition, the Arterial Collector capacities were assumed to be approximately half the Primary Arterial capacities based on the 2-lane divided roadway relation to the 4-lane divided roadway. As presented in Table 6, the roadway capacities, in Vehicles Per Day (VPD), are shown for the street classifications from Smartstreet/Principal on down, which apply to the key study roadway links.

TABLE 6

**ROADWAY LINK CAPACITIES
Pacific City, Huntington Beach**

Facility Type	Number of Lanes	LOS A Design Volume	LOS B Design Volume	LOS C Design Volume	LOS D Design Volume	LOS E Design Volume
Smartstreet/Principal	8 (divided)	45,300	52,500	60,000	67,400	75,100
Expressway	4 (divided)	36,500	42,600	48,700	54,900	60,800
Expressway	6 (divided)	54,600	63,700	72,800	82,000	91,000
Major Arterial	6 (divided)	33,900	39,400	45,000	50,600	56,300
Primary Arterial	4 (divided)	22,500	26,300	30,000	33,800	37,500
Secondary Arterial	4 (undivided)	15,000	17,500	20,000	22,500	25,000
Arterial Collector	2 (divided)	10,800	12,600	14,400	16,200	18,000
Collector	2 (undivided)	7,500	8,800	10,000	11,300	12,500

Existing Intersection Level of Service Results

Table 7 summarizes the existing service level calculations for the thirty existing study intersections (two of the thirty-two total study intersections are future intersections with no existing traffic) based on existing traffic volumes and current street geometry. As shown, all thirty study intersections currently operate at LOS D or better, except the intersections of PCH at Warner Avenue, which currently operates at LOS F during the PM peak hour. **Appendix D** presents the Existing ICU/LOS and HCM/LOS calculations for each of the thirty existing key intersections for the AM and PM peak hour periods. **Appendix J** presents the existing summer weekend ICU/LOS calculations for peak midday hour at each of the seven existing key intersections for comparison purposes.

Existing Roadway Link Level of Service Results

Table 8 summarizes the existing service level calculations for the twenty-four existing study roadway links based on existing 24-hour traffic volumes and current roadway geometry. As shown, only two of the study links currently operates below the City's maximum V/C criteria of 0.81. Based on the V/C method of analysis, the roadway links of Pacific Coast Highway between Huntington Street/Beach Boulevard and Goldenwest Street/6th Street currently operate at LOS E on a daily basis. The remaining analyzed links currently operate at LOS C or better.

TABLE 7

**EXISTING YEAR 2001/2002 PEAK HOUR LEVELS OF SERVICE
Pacific City, Huntington Beach**

KEY INTERSECTION	TIME PERIOD	CONTROL TYPE	ICU/HCM	LOS
1. Goldenwest Street at Pacific Coast Highway	AM	6 ϕ Traffic	0.623	B
	PM	Signal	0.721	C
2. 17 th Street at Pacific Coast Highway	AM	3 ϕ Traffic	0.580	A
	PM	Signal	0.637	B
3. 9 th Street at Pacific Coast Highway	AM	3 ϕ Traffic	0.575	A
	PM	Signal	0.589	A
4. 6 th Street at Pacific Coast Highway	AM	5 ϕ Traffic	0.457	A
	PM	Signal	0.504	A
5. Main Street at 6 th Street	AM	2 ϕ Traffic	0.206	A
	PM	Signal	0.321	A
6. Main Street at Pacific Coast Highway	AM	5 ϕ Traffic	0.611	B
	PM	Signal	0.697	B
7. 1 st Street at Atlanta Avenue	AM	All-Way	9.2 s/v	A
	PM	Stop	10.8 s/v	B
8. 1 st Street at Pacific Coast Highway	AM	6 ϕ Traffic	0.452	A
	PM	Signal	0.444	A
9. Huntington Street at Atlanta Avenue	AM	All-Way	10.7 s/v	B
	PM	Stop	18.6 s/v	C
10. Delaware Street at Atlanta Avenue	AM	Two-Way	3.2 s/v	A
	PM	Stop	5.4 s/v	A
11. Huntington Street at Pacific Coast Highway	AM	5 ϕ Traffic	0.616	B
	PM	Signal	0.571	A
12. Huntington Street at Pacific View Avenue	AM	One-Way	3.0 s/v	A
	PM	Stop	2.5 s/v	A
13. Beach Boulevard at Adams Avenue	AM	8 ϕ Traffic	0.580	A
	PM	Signal	0.665	B
14. Beach Boulevard at Indianapolis Avenue	AM	5 ϕ Traffic	0.317	A
	PM	Signal	0.426	A
15. Beach Boulevard at Atlanta Avenue	AM	5 ϕ Traffic	0.349	A
	PM	Signal	0.552	A
16. Beach Boulevard at Pacific Coast Highway	AM	8 ϕ Traffic	0.518	A
	PM	Signal	0.684	A
17. Newland Street at Atlanta Avenue	AM	8 ϕ Traffic	0.329	A
	PM	Signal	0.464	A
18. Newland Street at Pacific Coast Highway	AM	6 ϕ Traffic	0.567	A
	PM	Signal	0.596	A
19. Magnolia Street at Pacific Coast Highway	AM	6 ϕ Traffic	0.565	A
	PM	Signal	0.626	B
20. Magnolia Street at Atlanta Avenue	AM	8 ϕ Traffic	0.371	A
	PM	Signal	0.514	A

Note:

- s/v = seconds per vehicle (delay)
- **Bold V/C and LOS values** indicate adverse service levels based on City LOS Standards

TABLE 7 continued

**EXISTING YEAR 2001/2002 PEAK HOUR LEVELS OF SERVICE
Pacific City, Huntington Beach**

KEY INTERSECTION	TIME PERIOD	CONTROL TYPE	ICU/HCM	LOS
21. Pacific Coast Highway at Seapoint Avenue	AM	3 ϕ Traffic	0.661	B
	PM	Signal	0.803	C
22. Pacific Coast Highway at Warner Avenue	AM	8 ϕ Traffic	0.886	D
	PM	Signal	0.928	E
23. Pacific Coast Highway at Brookhurst Street	AM	8 ϕ Traffic	0.683	B
	PM	Signal	0.729	C
24. Main Street at Adams Avenue	AM	5 ϕ Traffic	0.445	A
	PM	Signal	0.618	B
25. Main Street at Utica Avenue	AM	8 ϕ Traffic	0.210	A
	PM	Signal	0.308	A
26. Lake Street at Adams Avenue	AM	5 ϕ Traffic	0.512	A
	PM	Signal	0.588	A
27. Lake Street at Yorktown Avenue	AM	2 ϕ Traffic	0.328	A
	PM	Signal	0.451	A
28. Beach Boulevard at Yorktown Avenue	AM	8 ϕ Traffic	0.632	B
	PM	Signal	0.690	B
29. Beach Boulevard at Garfield Avenue	AM	8 ϕ Traffic	0.624	B
	PM	Signal	0.749	C
30. Beach Boulevard at Ellis Avenue/ Main Street	AM	6 ϕ Traffic	0.557	A
	PM	Signal	0.669	B
31. 1 st Street at Pacific View Avenue (future)	AM	N/A	N/A	N/A
	PM	N/A	N/A	N/A
32. Beach Boulevard at Pacific View Avenue (future)	AM	N/A	N/A	N/A
	PM	N/A	N/A	N/A

Note:

- s/v = seconds per vehicle (delay)
- **Bold V/C and LOS values** indicate adverse service levels based on City LOS Standards

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TABLE 8

YEAR 2001

EXISTING ROADWAY LINK CAPACITY ANALYSIS SUMMARY

Pacific City, Huntington Beach

ARTERIAL	LOS E Capacity	Lanes	Existing		
			Daily Volume	V/C Ratio	LOS
Pacific Coast Highway Warner Ave to Seapointe Ave	60,800	4	42,000	0.691	B
Pacific Coast Highway Seapointe Ave to Goldenwest St	60,800	4	36,000	0.592	A
Pacific Coast Highway Goldenwest Street to 6th Street	37,500	4	37,144	0.991	E
Pacific Coast Highway 6th Street to 1st Street	56,300	6	37,500	0.666	B
Pacific Coast Highway 1st Street to Huntington Street	56,300	6	37,545	0.667	B
Pacific Coast Highway Huntington Street to Beach Blvd	37,500	4	37,000	0.987	E
Pacific Coast Highway Beach Blvd to Newland Street	56,300	6	40,000	0.710	C
Pacific Coast Highway Magnolia St to Brookhurst St	56,300	6	40,000	0.710	C
Beach Boulevard PCH to Atlanta Ave	75,100	6	13,000	0.173	A
Beach Boulevard Atlanta Ave to Indianapolis Ave	75,100	6	21,000	0.280	A
Beach Boulevard Indianapolis Ave to Adams Ave	75,100	6	29,000	0.386	A
Beach Boulevard Adams Ave to Yorktown Ave	75,100	6	41,000	0.546	A
Beach Boulevard Garfield Ave to Main St	75,100	6	45,000	0.599	A
Atlanta Avenue Beach Blvd to Delaware St	32,000	4	16,000	0.500	A
Atlanta Avenue 1st St to Huntington St	12,500	2	9,267	0.741	C
Atlanta Avenue Huntington St to Delaware St	18,000	2	10,849	0.603	A
1st Street Orange Ave to Pacific Coast Highway	12,500	2	5,979	0.478	A
Huntington Street Atlanta Ave to Pacific View Ave	18,000	2	1,887	0.105	A
Main Street Palm Ave to Adams Ave	12,500	2	5,000	0.400	A

TABLE 8 continued

YEAR 2001

**EXISTING ROADWAY LINK CAPACITY ANALYSIS SUMMARY
Pacific City, Huntington Beach**

ARTERIAL	LOS E Capacity	Lanes	Existing		
			Daily Volume	V/C Ratio	LOS
Lake Street Indianapolis Ave to Adams Ave	18,000	2	6,000	0.333	A
Lake Street Adams Ave to Yorktown Ave	18,000	2	9,000	0.500	C
Adams Avenue Beach Blvd to Newland St	37,500	4	25,000	0.667	B
Indianapolis Avenue Beach Blvd to Newland St	25,000	4	7,000	0.280	A
Atlanta Avenue Beach Blvd to Newland St	25,000	4	16,000	0.640	B
Pacific View (future with project) 1st Street to Huntington Street	--	--	--	--	--

Bold V/C and LOS values indicate adverse service levels based on City LOS standards.

TRAFFIC FORECASTING METHODOLOGY

In order to estimate the potential traffic impacts of the proposed Pacific City development, a multi-step process has been utilized. The first step is traffic generation, which estimates the total arriving and departing traffic at the site on a peak hour and daily basis. The traffic generation potential of the site is estimated by applying the appropriate vehicle trip generation equations and/or rates to the proposed land use.

The second step of the evaluation process is traffic distribution, which identifies the expected origins and destinations of inbound and outbound project traffic. These origins and destinations are based on existing and expected future demographics, housing, shopping opportunities, as well as travel patterns in the area. The third step is traffic assignment, which involves the allocation of the project traffic generation estimates to area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment is based on specific project volume forecasts along key roadways and on key intersection movements.

With the forecasting process complete and project traffic assignments developed, the impact of the project is evaluated by comparing the operational conditions at key intersections and roadway links, with and without project-related traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated.

PROJECT TRAFFIC CHARACTERISTICS

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation factors and equations used in the traffic forecasting procedure are found in the Sixth Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 1997]. **Table 9** summarizes the trip generation rates used in forecasting the impact of the Pacific City project.

Pacific City Project Traffic Generation

As stated previously, the Pacific City project consists of approximately 240,000 SF of office/retail/restaurant use, a 400-room hospitality component (hotel/vacation ownership interval), and a surf museum, and 516 residential condominiums. More specifically, the 240,000 SF will consist of 125,000 SF of retail/commercial use, 60,000 SF of office space, 50,000 SF of restaurant use, and a 5,000 SF international surf museum. **Table 10** presents the forecast daily, AM and PM peak hour traffic volumes on a “typical” weekday for the proposed project. An internal trip reduction and mode-shift reduction was applied to the traffic generation forecast to account for the trip interaction between the hotel, restaurant, commercial/retail, office, existing/proposed residential, and beach/recreational uses. **Appendix C** contains the Trip Reduction Flow Diagram, which graphically presents the trip interaction between the proposed uses within the project (internal capture) and the trip interaction between the project uses and the beach and downtown areas (mode-shift). As presented on the Trip Reduction Flow Diagram, the retail/commercial and hotel uses present the greatest trip reduction potential, primarily due the project’s proximity to the beach and the type of retail/commercial uses, such as restaurants and specialty retail shops.

As presented in Table 10, the proposed Pacific City project has a trip generation potential of 12,002 daily trips, of which 628 trips (345 inbound, 283 outbound) are produced in the AM peak hour and 1,051 trips (505 inbound, 546 outbound) are generated in the PM peak hour.

Project Traffic Distribution and Assignment

The geographic distribution of traffic generated by a development is dependent upon several factors such as the distribution of population and employment, other shopping opportunities, accessibility to the site, and existing traffic patterns. The project traffic distribution pattern was based primarily on a “select-zone” analysis of the City’s transportation model and was adjusted slightly based on knowledge of the area and impact of existing land use and traffic control in the study area. The model considers land use patterns and the roadway network, predicts normal travel patterns such as home to work, home to shopping, etc., loads these trips onto the roadway network, and predicts the resulting traffic volume. The traffic model output was utilized to determine the specific project distribution percentages at the study intersections and roadway links based on the PM peak period traffic model volume data.

TABLE 9

**PROJECT TRAFFIC GENERATION RATES/EQUATIONS¹
Pacific City, Huntington Beach**

ITE Land Use Code	Independent Variable	Time Period	Equations	Percent Entering	Percent Exiting
• 230: Residential Condominium/Townhouse	TE/Dwelling Unit	Daily	$\text{Ln}(T) = 0.85 \text{Ln}(X) + 2.564$	50%	50%
		AM Peak	$\text{Ln}(T) = 0.79 \text{Ln}(X) + 0.298$	17%	83%
		PM Peak	$\text{Ln}(T) = 0.827 \text{Ln}(X) + 0.309$	67%	33%
• 710: General Office	TE/1000 SF	Daily	$\text{Ln}(T) = 0.768 \text{Ln}(X) + 3.654$	50%	50%
		AM Peak	$\text{Ln}(T) = 0.797 \text{Ln}(X) + 1.558$	88%	12%
		PM Peak	$T = 1.121(X) + 79.295$	17%	83%
• 820: Shopping Center	TE/1000 SF	Daily	$\text{Ln}(T) = 0.643 \text{Ln}(X) + 5.866$	50%	50%
		AM Peak	$\text{Ln}(T) = 0.596 \text{Ln}(X) + 2.329$	61%	39%
		PM Peak	$\text{Ln}(T) = 0.660 \text{Ln}(X) + 3.403$	48%	52%
• 310: Hotel	TE/Room	Daily	$T = 8.946(X) - 368.112$	50%	50%
		AM Peak	$\text{Ln}(T) = 1.240 \text{Ln}(X) - 1.998$	61%	39%
		PM Peak	$\text{Ln}(T) = 1.212 \text{Ln}(X) - 1.763$	53%	47%

¹ Source: *Trip Generation*, 6th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (1997).

TABLE 10

**PROJECT TRAFFIC GENERATION FORECAST
Pacific City, Huntington Beach**

ITE Land Use Code	ADT	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
• 310: Hotel (400 Rooms)	3,212	140	88	228	128	116	244
Internal Capture (10%/5%/15%)	-321	-7	-4	-11	-19	-17	-36
Mode Shift (20%/10%/25%)	<u>-642</u>	<u>-14</u>	<u>-9</u>	<u>-23</u>	<u>-32</u>	<u>-29</u>	<u>-61</u>
<i>Subtotal</i>	<i>2,249</i>	<i>119</i>	<i>75</i>	<i>194</i>	<i>77</i>	<i>70</i>	<i>147</i>
• 710: General Office (60,000 SF)	896	109	15	124	25	122	147
Internal Capture (15%/10%/10%)	-134	-11	-1	-12	-3	-12	-15
Mode Shift (10%/5%/5%)	<u>-90</u>	<u>-5</u>	<u>-1</u>	<u>-6</u>	<u>-1</u>	<u>-6</u>	<u>-7</u>
<i>Subtotal</i>	<i>672</i>	<i>93</i>	<i>13</i>	<i>106</i>	<i>21</i>	<i>104</i>	<i>125</i>
• 820: Retail/Restaurant (175,000 SF)	9,769	137	88	225	436	473	909
Internal Capture (8%/12%/8%)	-782	-16	-11	-27	-35	-38	-73
Mode Shift (20%/10%/25%)	<u>-1,954</u>	<u>-14</u>	<u>-9</u>	<u>-23</u>	<u>-109</u>	<u>-118</u>	<u>-227</u>
<i>Subtotal</i>	<i>7,033</i>	<i>107</i>	<i>68</i>	<i>175</i>	<i>292</i>	<i>317</i>	<i>609</i>
• Museum (5,000 SF)	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.	Nom.
• 230: Residential							
Condominium/Townhouse (516 du)	2,626	31	155	186	160	77	237
Internal Capture (12%/8%/13%)	-315	-2	-12	-14	-21	-10	-31
Mode Shift (10%/10%/15%)	<u>-263</u>	<u>-3</u>	<u>-16</u>	<u>-19</u>	<u>-24</u>	<u>-12</u>	<u>-36</u>
<i>Subtotal</i>	<i>2,048</i>	<i>26</i>	<i>127</i>	<i>153</i>	<i>115</i>	<i>55</i>	<i>170</i>
Net Traffic Generation Forecast	12,002	345	283	628	505	546	1,051

Note:

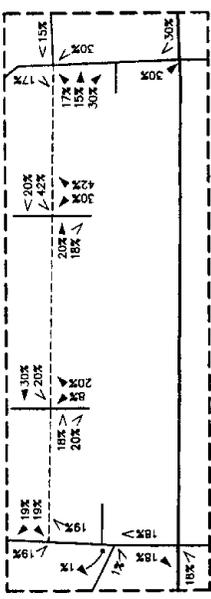
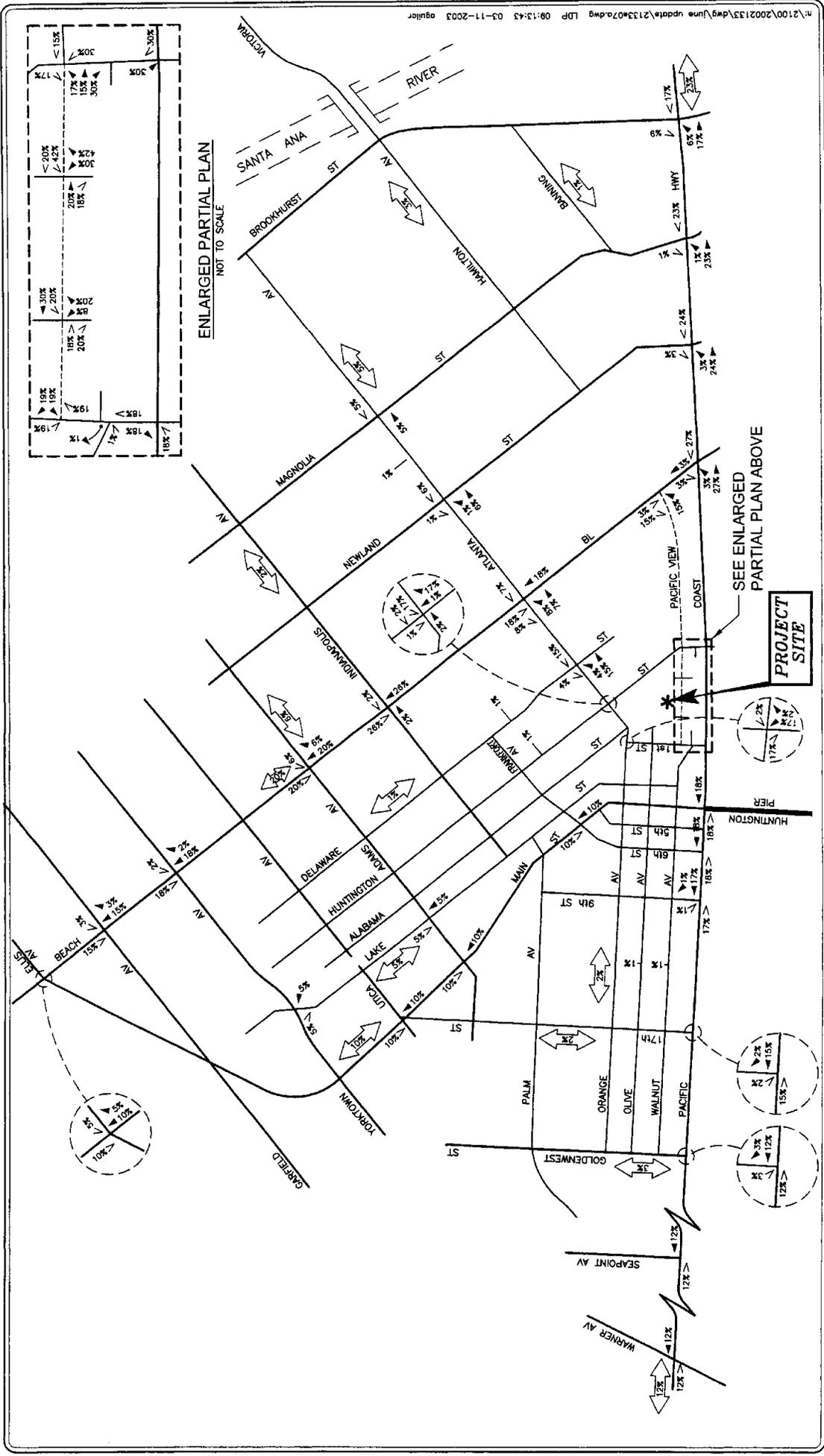
- Internal Capture and Mode Shift values are based on the Trip Reduction Flow Diagram contained in Appendix C
- (X%/Y%/Z%) = Daily/AM Peak/PM Peak

Exhibit 7A identifies the anticipated traffic distribution and assignment pattern for the Retail/Restaurant/Office portion of the Pacific City project. A significant percentage of the Retail/Restaurant/Office project-related traffic is expected to use Beach Boulevard, Pacific Coast Highway, and Atlanta Avenue (35 percent on Pacific Coast Highway, 26 percent on Beach Boulevard and 19 percent on Atlanta Avenue). An additional 15 percent is expected to use Main Street and Lake Street.

Exhibit 7B identifies the anticipated traffic distribution and assignment pattern for the Residential portion of the Pacific City project. A significant percentage of the Residential project-related traffic is expected to use Beach Boulevard, Pacific Coast Highway, and Atlanta Avenue (45 percent on Pacific Coast Highway, 35 percent on Beach Boulevard and 32 percent on Atlanta Avenue). An additional 5 percent is expected to use Main Street. The percentage of traffic using the five residential driveway access locations was determined based on the parking supply accessible by each driveway. In addition, it was assumed that visitor traffic consists of 7% of the peak hour inbound traffic and the peak visitor traffic was assumed to be twice the PM peak hour visitor traffic volume.

Exhibit 7C identifies the anticipated traffic distribution and assignment pattern for the Hospitality component portion of the Pacific City project. A significant percentage of the anticipated traffic distribution and assignment pattern for the project-related traffic is expected to use Beach Boulevard, Pacific Coast Highway, and Atlanta Avenue (50 percent on Pacific Coast Highway, 45 percent on Beach Boulevard and 5 percent on Atlanta Avenue).

The anticipated weekday AM and PM peak hour project traffic volumes associated with Pacific City are presented in **Exhibits 8** and **9**, respectively. The peak hour traffic volumes generated by the proposed project reflect the traffic distribution characteristics shown in Exhibits 7A, 7B, and 7C and the peak hour traffic generation forecast presented in Table 11. Exhibits 8 and 9 also show the expected peak hour traffic volumes at the nine of the ten project driveways. **Exhibit 10** presents the added daily project traffic assignments on the key roadway links in the study area. As presented in Exhibit 10, Pacific View Avenue is anticipated to carry the greatest amount of project traffic at 7,041 vehicles per day (VPD).



SEE ENLARGED PARTIAL PLAN ABOVE

PROJECT SITE

KEY
 < XXX% = INBOUND PERCENTAGE
 > XXX% = OUTBOUND PERCENTAGE

EXHIBIT 7A
PROJECT TRIP DISTRIBUTION PATTERN
RETAIL/RESTAURANT/OFFICE
 PACIFIC CITY, HUNTINGTON BEACH

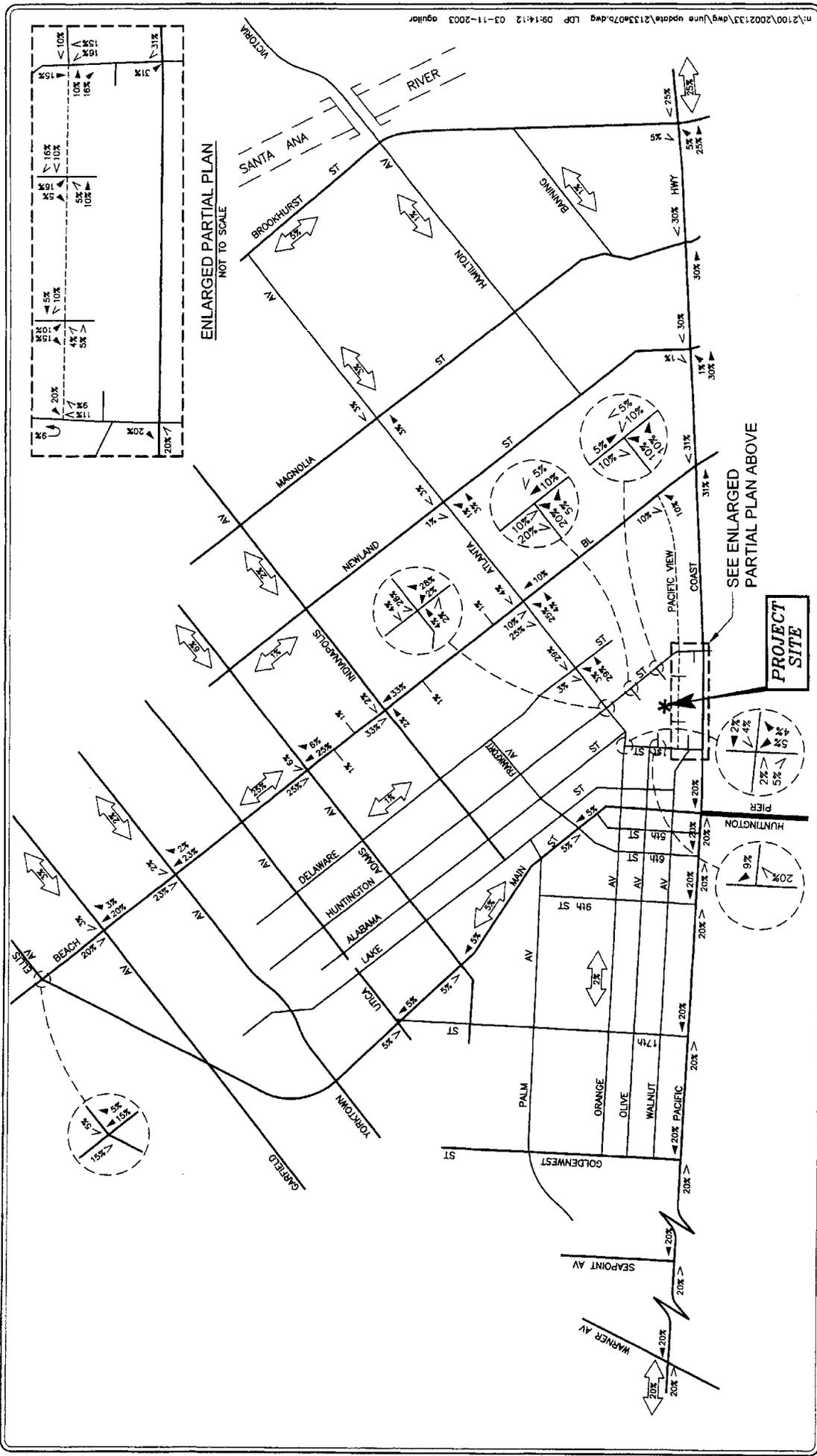


EXHIBIT 7B
PROJECT TRIP DISTRIBUTION PATTERN
RESIDENTIAL
 PACIFIC CITY, HUNTINGTON BEACH

NO SCALE
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XX% = INBOUND PERCENTAGE
 <XX% = OUTBOUND PERCENTAGE

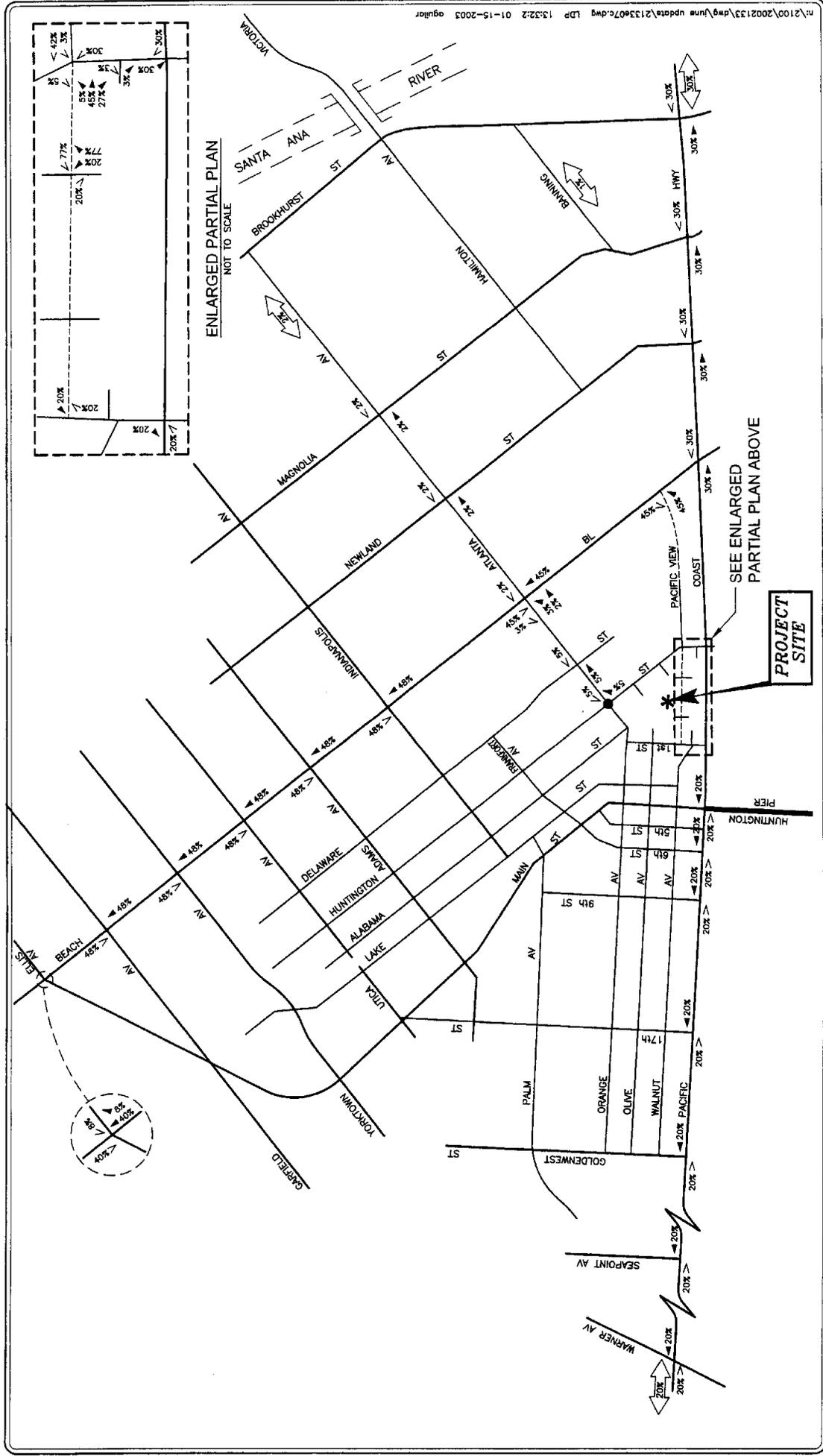
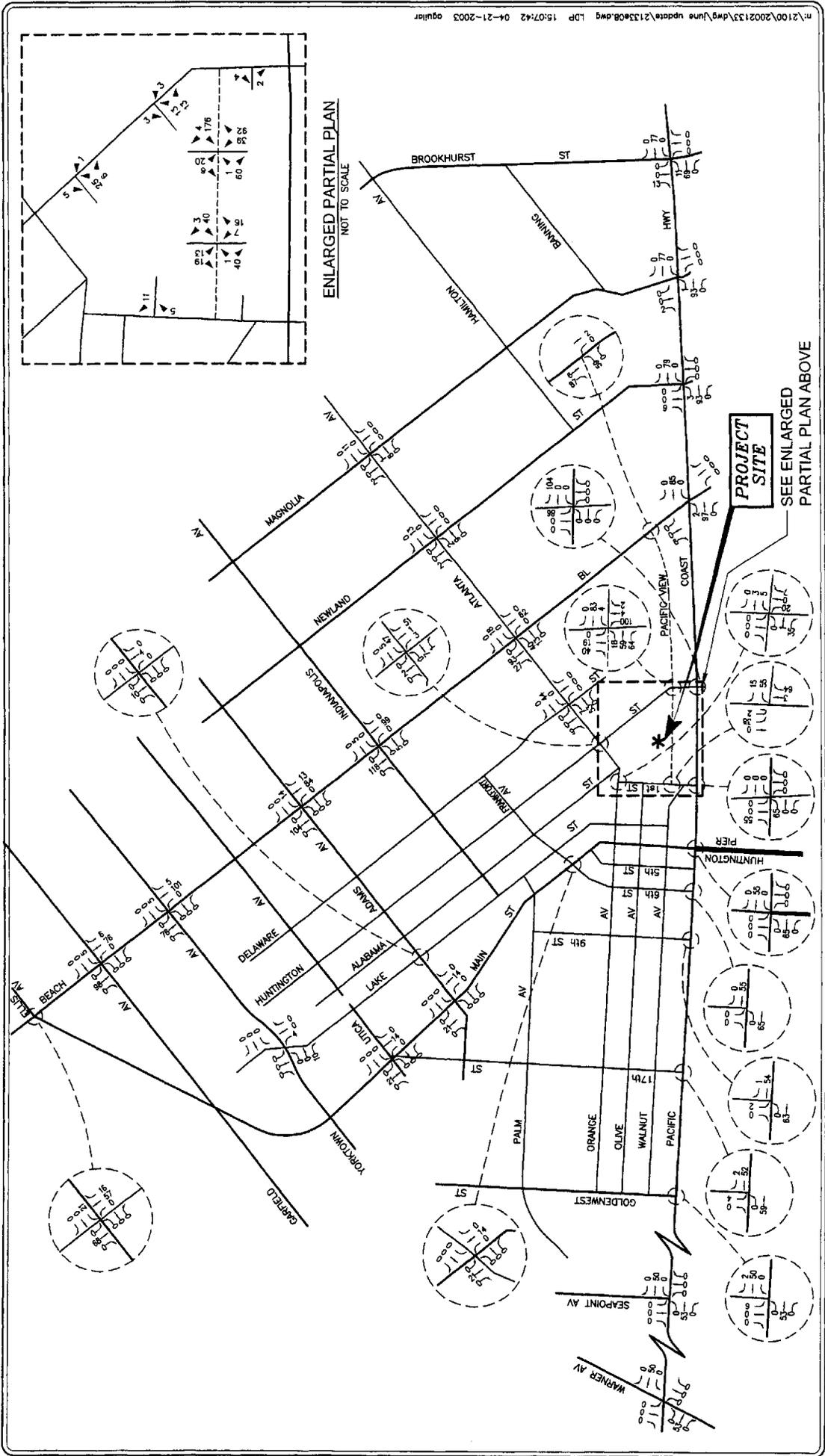


EXHIBIT 7C
PROJECT TRIP DISTRIBUTION PATTERN
HOTEL
 PACIFIC CITY, HUNTINGTON BEACH

NO SCALE
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EXHIBIT 8

AM PEAK HOUR PROJECT TRAFFIC VOLUMES
PACIFIC CITY, HUNTINGTON BEACH

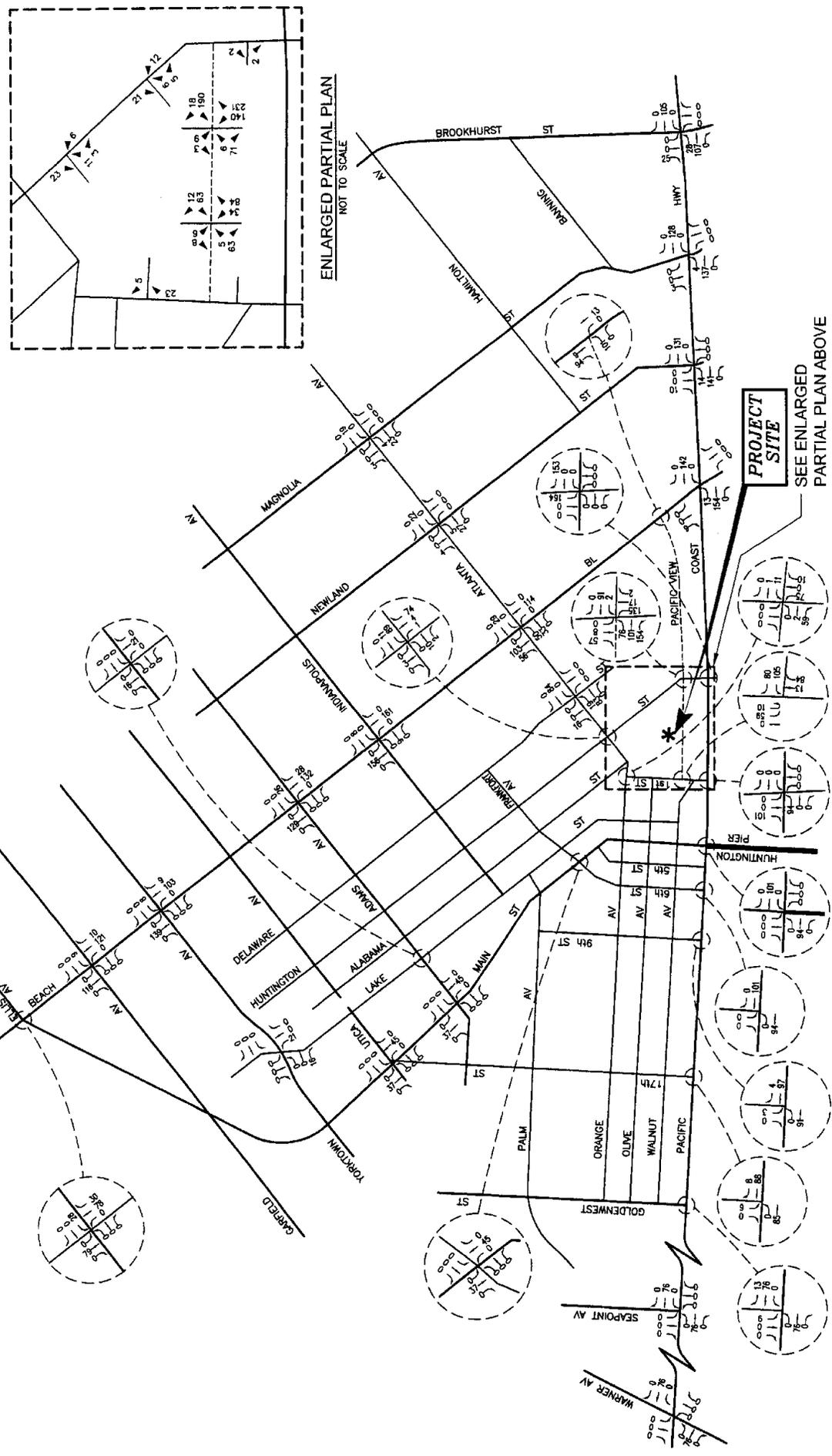


EXHIBIT 9

PM PEAK HOUR PROJECT TRAFFIC VOLUMES
PACIFIC CITY, HUNTINGTON BEACH

NO SCALE

**LINSCOTT
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 GREENSPAN
 ENGINEERS**

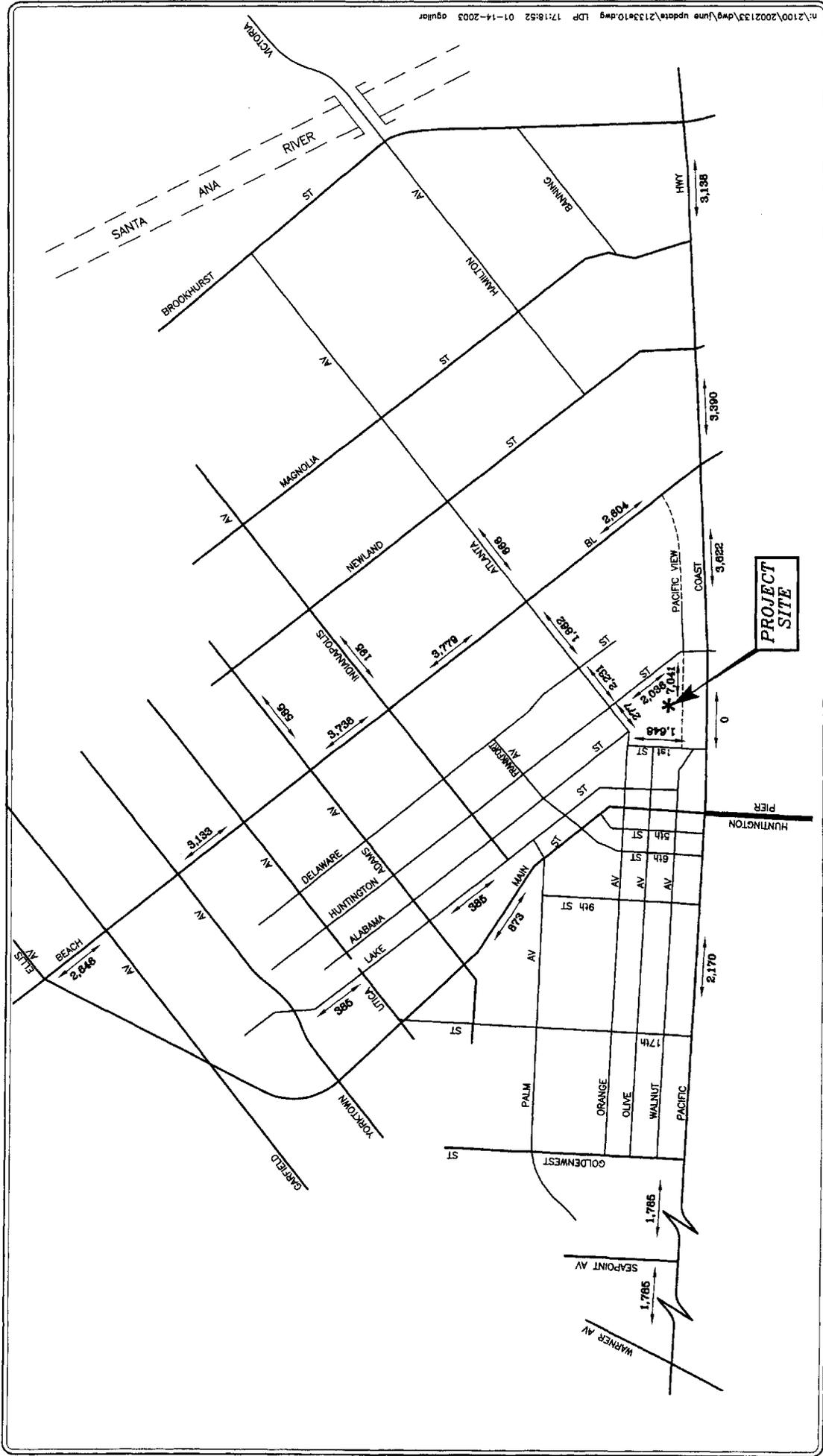


EXHIBIT 10

AVERAGE DAILY PROJECT TRAFFIC VOLUMES
PACIFIC CITY, HUNTINGTON BEACH

2008 TRAFFIC CONDITIONS

2008 Background Traffic Conditions

Ambient Traffic

Horizon year background traffic growth estimates have been calculated using ambient growth factors. The ambient traffic growth factor is intended to include unknown and future related projects in the study area, as well as account for regular growth in traffic volumes due to development of projects outside the study area. Based on buildout traffic volumes and prior studies conducted in the downtown area, future growth in the traffic volumes at the key study intersections has been calculated at one percent (1.0%) per year. Applied to existing 2001 traffic volumes results in a seven percent (7%) growth in existing volumes at the thirty-two key study intersections and twenty-four key roadway segments to horizon year 2008.

Related Projects Traffic Characteristics

Based on information provided by City of Huntington Beach Planning staff, there are fourteen potential planned and/or approved projects, which may generate traffic in the project study area by the Year 2008. A list of the fourteen potential related projects is provided below with an explanation of their status and traffic application within this analysis. Of the fourteen potential related projects, four have been identified as having significant traffic generation potential. Information regarding the four related projects have been compiled from either previously prepared traffic studies or information provided by the City and reflect the status of the related projects at the time the traffic counts were conducted. The four projects are The Strand at 5th Street & PCH, The Waterfront Ocean Grand Hyatt Resort and Residential development, The Beachside project at Atlanta Avenue and Beach Boulevard and The Boardwalk project at Goldenwest Street and Palm Avenue.

1. AES Huntington Beach Generating Plant (located immediately southwest of the proposed project area). ***Accounted for in ambient growth traffic.***
2. Ocean Grand Hyatt Resort (519 hotel rooms and 17,000 SF of conference area, located at Beach Boulevard and Pacific Coast Highway). ***Included in traffic impact analysis.***
3. Waterfront Residential Development (184-unit residential development located at Beach Boulevard and PCH, adjacent to the Ocean Grand Resort project and a 300-room hotel to be constructed after 2008) ***Residential component included in traffic impact analysis.***
4. The Strand (130 room hotel plus 135,000 SF of retail, restaurant, and entertainment located at Main Street and Pacific Coast Highway). ***Included in traffic impact analysis.***
5. Magnolia Pacific Specific Plan, a.k.a. Ascon/Nesi Landfill (specific plan allowing 502 dwelling units on 40 acres located southwest corner of Hamilton Ave and Magnolia Street. ***To be completed after Pacific City.***
6. Orange Coast River Park (passive park in the planning stages which extends east from the AES Huntington Beach Generating Plant through Costa Mesa and Newport Beach.) ***Accounted for in ambient growth traffic.***

7. Beachside (86 detached single-family residential condominiums located on the northeast corner of Beach Boulevard and Atlanta Avenue. *Included in traffic impact analysis.*
8. Poseidon Desalination Plant (40 MGD desalination facility proposed behind AES facility). *Accounted for in ambient growth traffic.*
9. Seacliff Village (260,000 SF of commercial use on Yorktown between Goldenwest Street and Main Street). *Almost completely occupied, remaining traffic accounted for in ambient growth traffic.*
10. Peninsula Marketplace (95,000 SF commercial center near completion and is located on the southwest corner of Goldenwest Street and Garfield Avenue.) *Near Completion*
11. Walmart (100,000 SF commercial building under construction at the intersection of Talbert Avenue and Beach Boulevard). *Accounted for in ambient growth traffic.*
12. Lowe's Hardware (100,000 SF building/garden center located east of Beach Boulevard on Warner Avenue). *Accounted for in ambient growth traffic.*
13. Walgreen's (15,000 SF commercial building under construction at the intersection of Beach Boulevard and Yorktown Avenue). *Accounted for in ambient growth traffic.*
14. The Boardwalk (188 single family, 65 multifamily, 3.5 ac. Neighborhood park at Goldenwest and Palm). *Included in traffic impact analysis.*

Table 11 provides a summary of the four related projects in the City of Huntington Beach along with corresponding forecast peak hour and daily traffic volumes. As presented in Table 11, total forecast related traffic generation is estimated at 19,882 two-way daily trips with 1,303 AM peak hour trips (545 inbound, 758 outbound) and 1,781 PM peak hour trips (1,037 inbound, 744 outbound). The traffic generation forecast for the related projects are based on prior approved traffic studies.

Exhibits 11 and 12 present the AM and PM peak hour background traffic volumes (existing traffic plus ambient growth traffic plus related project traffic) at the thirty-two key study intersections for project buildout Year 2008, respectively.

Exhibit 13 presents the Year 2008 background daily traffic volumes on the twenty-four key area roadways within the project vicinity.

2008 Background Plus Pacific City Project Traffic

Exhibits 14 and 15 illustrate Year 2008 forecast AM and PM peak hour traffic volumes with the inclusion of the trips generated by Pacific City project. **Exhibit 16** presents Year 2008 forecast average daily traffic volumes with the inclusion of the trips generated by Pacific City project.

TABLE 11

RELATED PROJECTS TRAFFIC GENERATION FORECAST¹
Pacific City, Huntington Beach

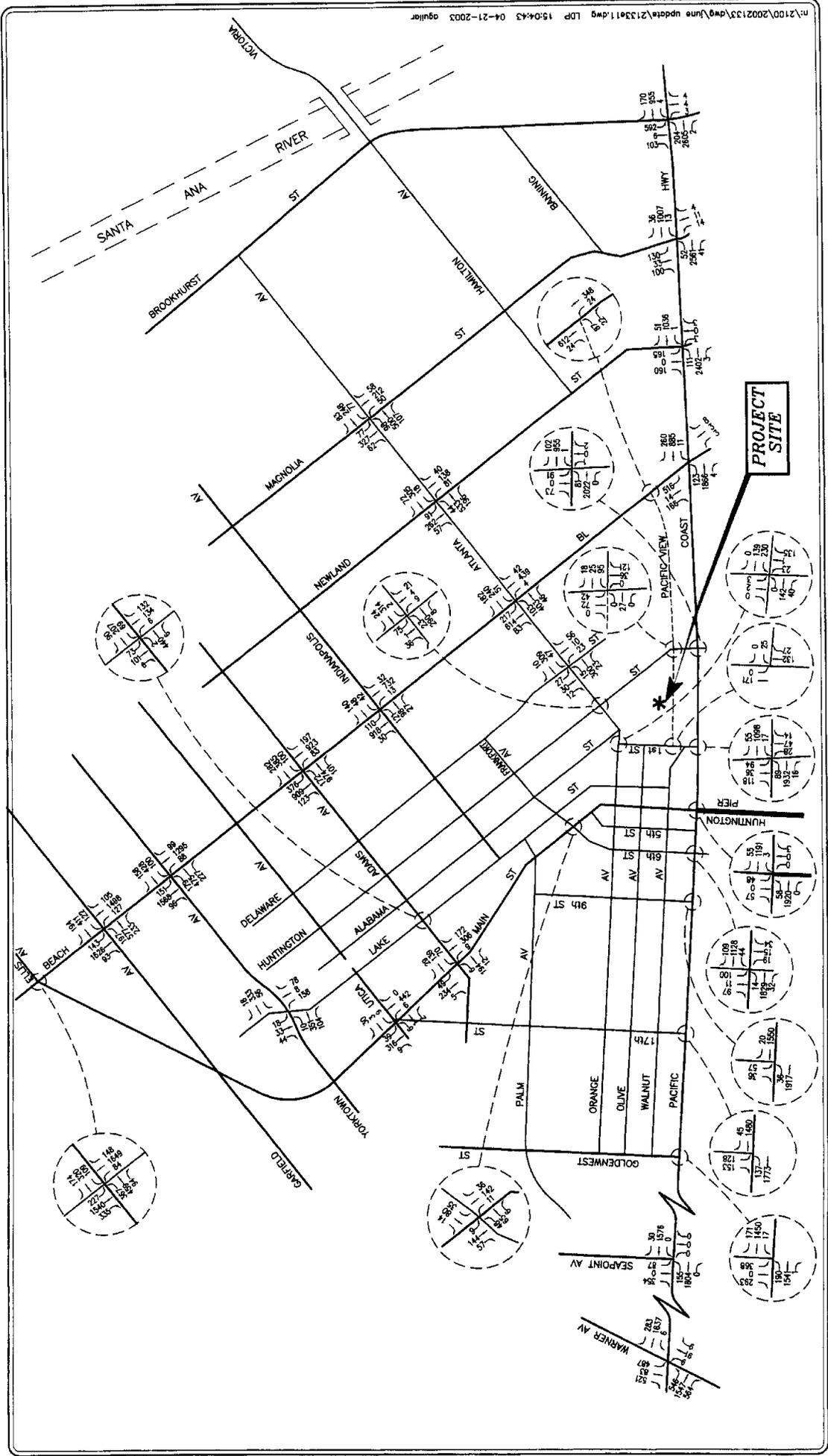
Related Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Trip Generation Forecast:							
• The Strand² Retail/Restaurant/Office/Hotel (121,000 SF & 149 Rooms)	7,106	220	163	383	324	293	617
• Waterfront Ocean Grand Resort³ Low Density Residential (184 DU) Resort Hotel (519 Rooms)	2,208	40	118	158	129	77	206
<i>Subtotal</i>	<u>4,515</u> 6,723	<u>208</u> 248	<u>140</u> 258	<u>348</u> 506	<u>213</u> 342	<u>182</u> 259	<u>395</u> 601
• The Beachside Single-Family Residential (86 DU)	823	16	48	64	56	31	87
• The Boardwalk (Area 4B & PLC)⁴ Residential (500 DU)	5,230	61	289	350	315	161	476
Total Related Project Trip Generation	19,882	545	758	1,303	1,037	744	1,781

¹ Source: City of Huntington Beach Planning Department.

² Source: *The Strand* Traffic Impact Study, Prepared by LSA Associates (January 2002)

³ Source: *Waterfront Ocean Grand Resort* Traffic Impact Study, Prepared by LSA Associates (July 2, 1998)

⁴ Source: Area 4B Conceptual Master Plan and PLC Traffic Impact Study, Prepared by LSA Associates (March 8, 1999)



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EXHIBIT 11

2008 AM PEAK HOUR BACKGROUND TRAFFIC VOLUMES
 PACIFIC CITY, HUNTINGTON BEACH

NO SCALE
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GREENSPAN
ENGINEERS

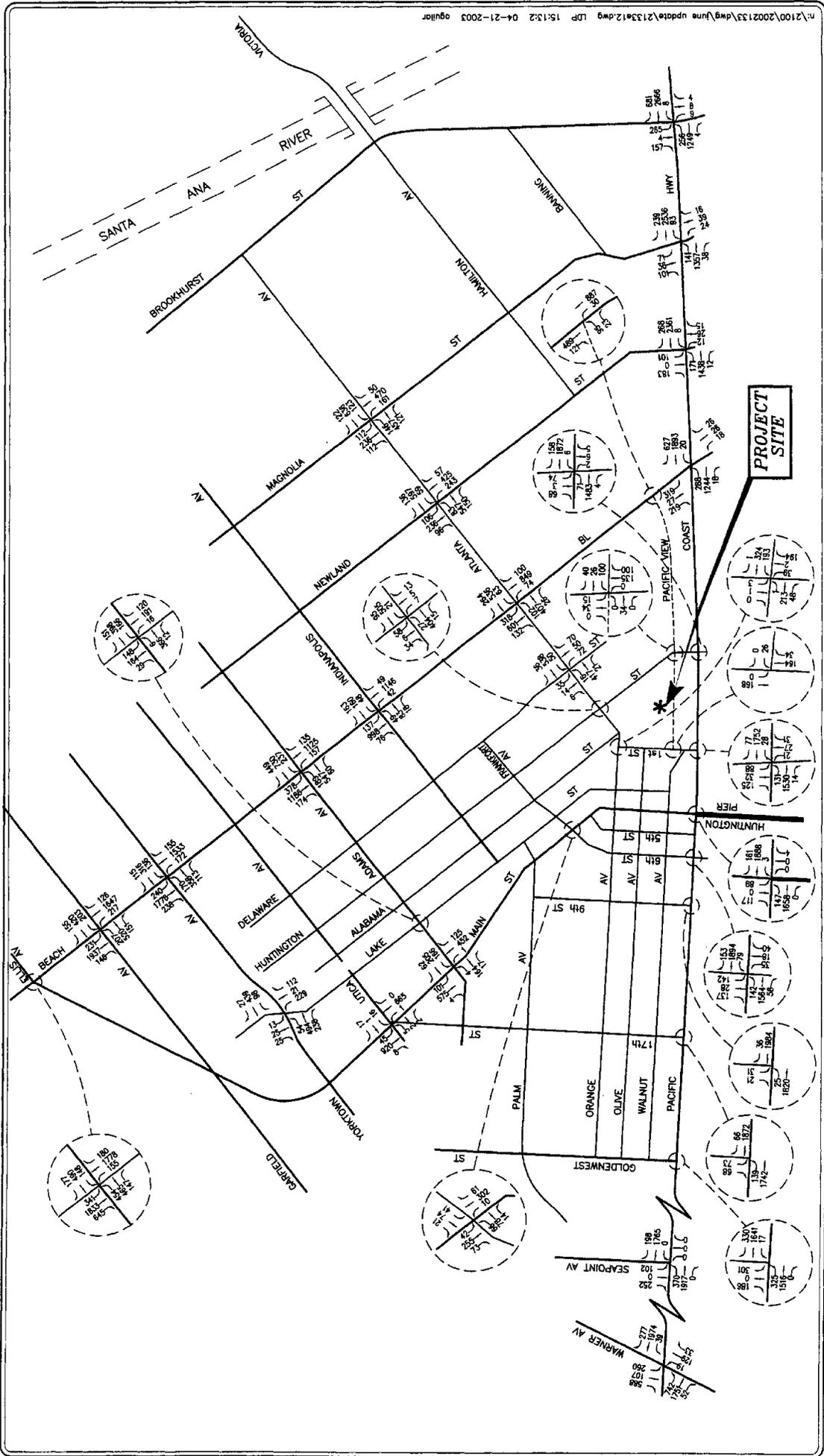
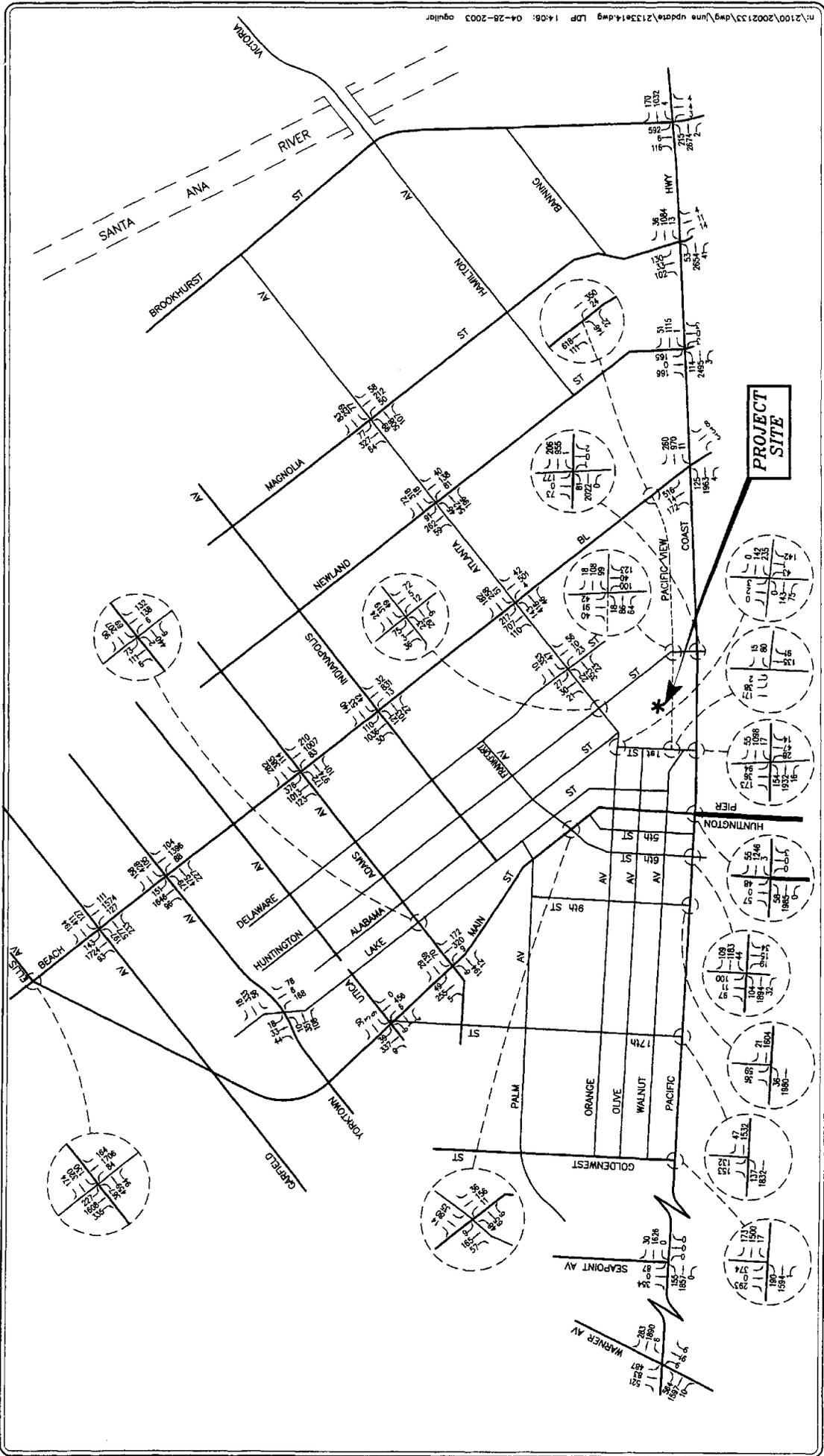


EXHIBIT 12

2008 PM PEAK HOUR BACKGROUND TRAFFIC VOLUMES
PACIFIC CITY, HUNTINGTON BEACH



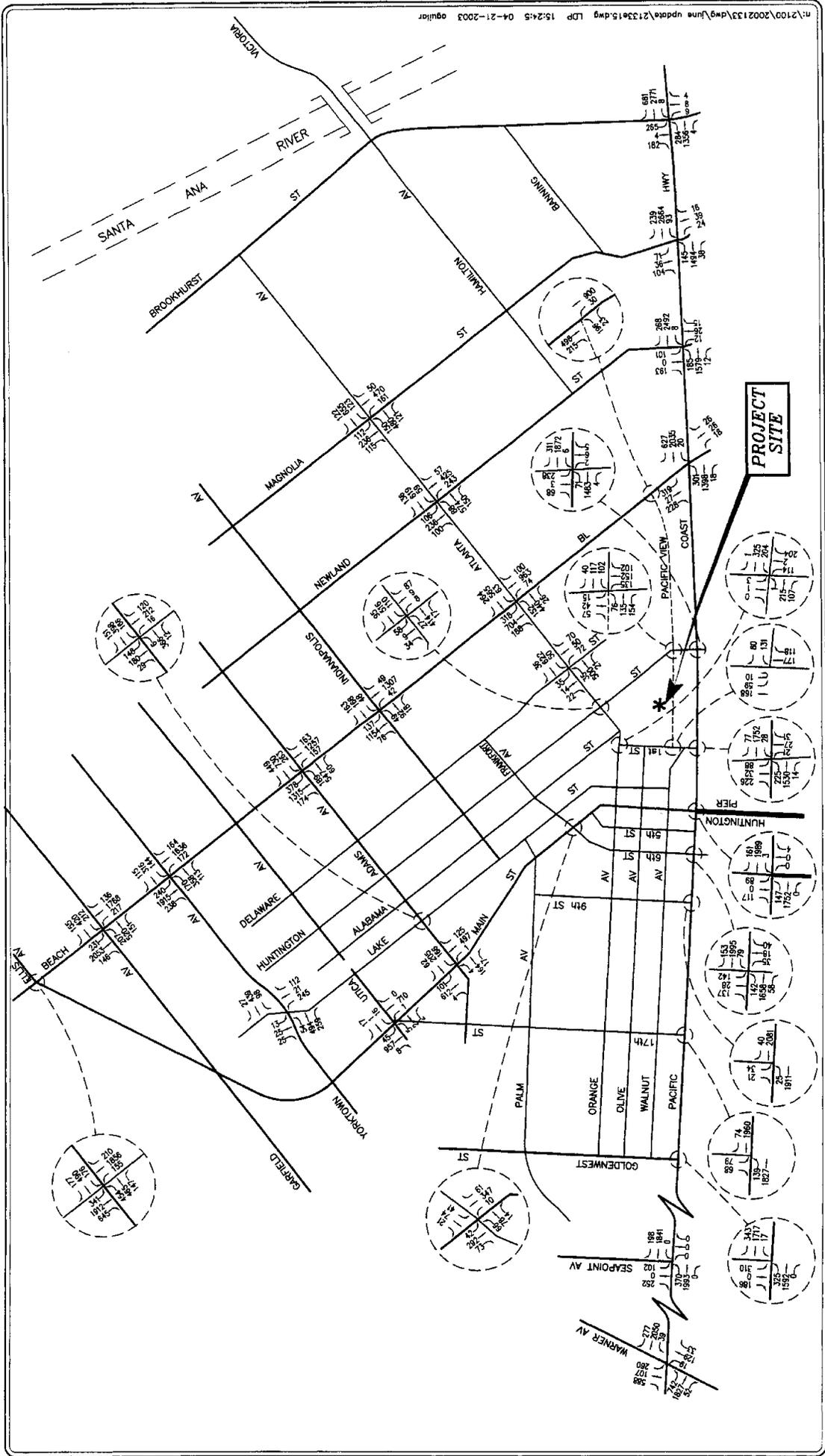
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EXHIBIT 14

2008 AM PEAK HOUR VOLUMES WITH PROJECT TRAFFIC
 PACIFIC CITY, HUNTINGTON BEACH

NO SCALE

**LINSCOTT
 LAW &
 GREENSPAN
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EXHIBIT 15

2008 PM PEAK HOUR VOLUMES WITH PROJECT TRAFFIC
 PACIFIC CITY, HUNTINGTON BEACH

NO SCALE
**LUNSCOTT
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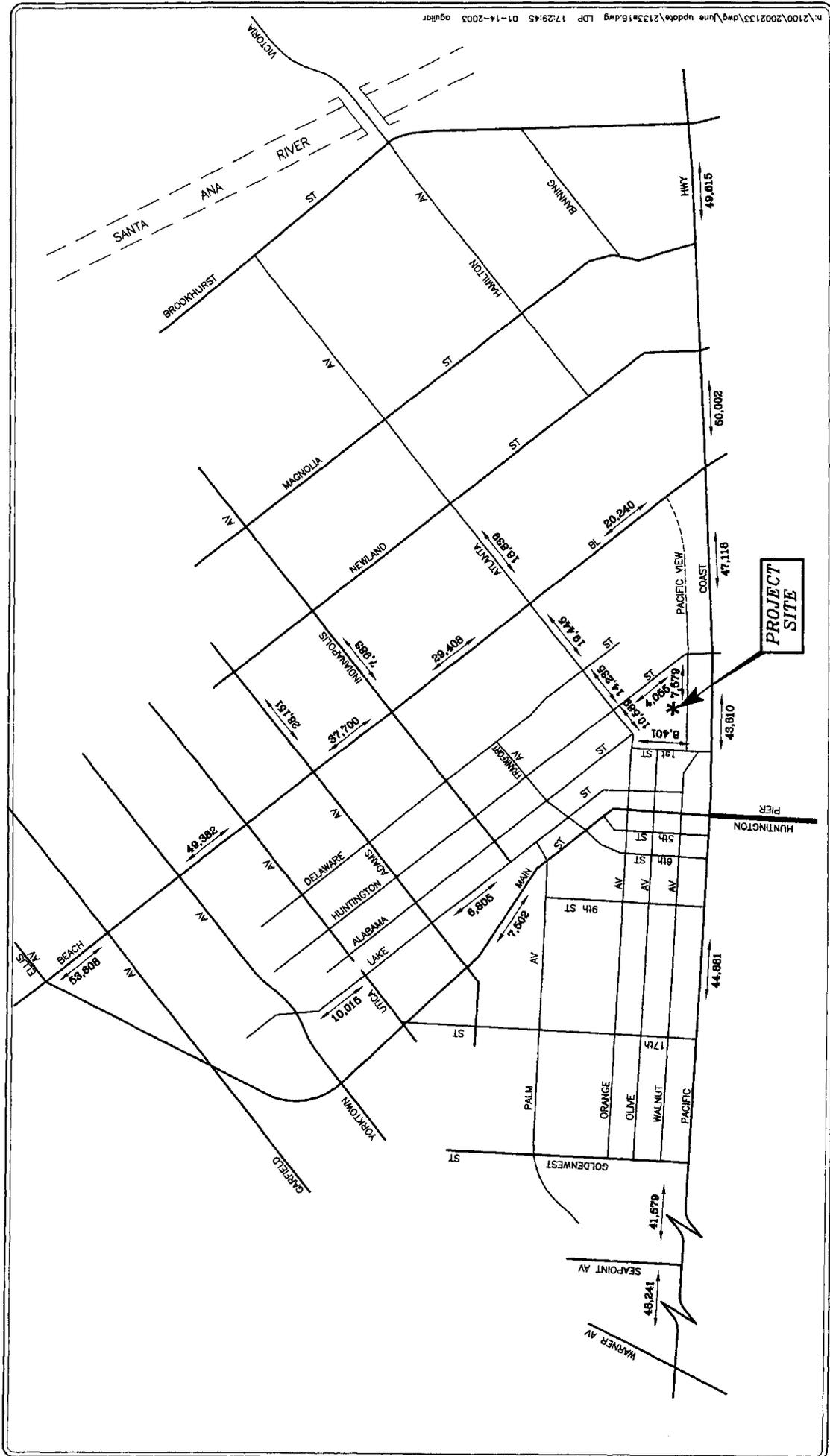


EXHIBIT 16

2008 AVERAGE DAILY VOLUMES WITH PROJECT TRAFFIC
PACIFIC CITY, HUNTINGTON BEACH

NO SCALE
**LINSCOTT
 LAW &
 GREENSPAN
 ENGINEERS**

Impact Criteria and Thresholds (City of Huntington Beach)

The relative impact of added project traffic volumes generated by the Pacific City Project during the AM and PM peak hours and daily basis were evaluated based on the analysis of existing and future operating conditions at thirty-two key intersections and twenty-four roadway links, without, then with, the proposed Pacific City project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-capacity relationships and service level calculations at each study intersection and roadway link. As previously mentioned, thirty-two key intersections and twenty-four roadway links were identified based on discussions with City staff and use of the City's transportation model.

The LOS standards and impact criteria specified in the City of Huntington Beach *Traffic Impact Assessment Preparation Guidelines* have been used to assess the significance of the potential traffic impacts associated with the proposed project at City intersections and roadway links.

In order to determine whether an intersection or roadway link will be significantly impacted by the implementation of the proposed project, performance criteria for significance must be established. The following definitions describe the significance criteria used in this study.

"Significant Traffic Impact" for City intersections:

A "Significant" traffic impact for intersections is defined as a project-related V/C ratio value greater than or equal to LOS E (0.905), which requires mitigation by reducing the V/C ratio to LOS D (0.904) or baseline, if the baseline is LOS E or F (greater than or equal to 0.905). Baseline is defined as the pre-project condition (Year 2008 Background).

"Significant Traffic Impact" for Roadway Links:

A "Significant" traffic impact for roadway links is defined as a project-related V/C ratio value greater than or equal to LOS D (0.805), a project-related increase of 0.030, and an adverse intersection service level (LOS E or F) at either of the two adjacent intersections, which requires mitigation by reducing the V/C ratio to LOS C (0.804) or baseline, if the baseline is LOS D, E, or F (greater than or equal to 0.805). Baseline is defined as the pre-project condition (Year 2008 Background). Absent any specific impact criteria for roadway links in the Caltrans *Traffic Impact Studies Preparation Guide* [June 2001], the City's impact criteria was applied to the study links on Pacific Coast Highway and Beach Boulevard.

Impact Criteria and Thresholds (State of California)

The relative impact of added project traffic volumes generated by the Pacific City Project during the AM and PM peak hours basis were evaluated based on the analysis of existing and future operating conditions at the nineteen State-controlled key intersections, without, then with, the proposed Pacific City project.

The LOS standards and impact criteria specified by the State of California Department of Transportation (Caltrans) for State-controlled intersections have been applied to the nineteen Caltrans intersections within the study area. The following definition describes the Caltrans impact criteria used in this study.

“Significant Traffic Impact” for State intersections:

A "Significant" traffic impact for Caltrans intersections is defined as a project-related V/C ratio value greater than or equal to LOS E (55.1 sec/veh), which requires mitigation by reducing the intersection delay to LOS D (55.0 sec/veh) or baseline, if the baseline is LOS E or F (greater than or equal to 55.1 sec/veh). Baseline is defined as the pre-project condition (Year 2008 Background).

Traffic Impact Analysis Scenarios

Per City Staff, the following scenarios are those for which LOS calculations have been performed:

Year 2008 Horizon

- 1) 2008: Future Background (Existing plus Ambient traffic plus Related Project traffic)
- 2) 2008: Future Background with Pacific City Project Traffic
- 3) Project Impact (ICU/HCM increase)/Significance
- 4) Condition (2) with Mitigation, if necessary

Year 2020 Buildout

- 1) 2020: Future General Plan Buildout Conditions Without Pacific City Project Traffic
- 2) 2020: Future General Plan Buildout Conditions With Pacific City Project Traffic
- 3) Scenario (3) with Improvement Measures, if necessary

PREVIOUSLY IDENTIFIED STUDY AREA TRAFFIC IMPACTS

As indicated in the 1998 Updated Waterfront Ocean Grand Resort Transportation and Circulation Analysis, the intersections of Beach Boulevard at Pacific View Avenue and Atlanta Avenue at Huntington Street were assumed to be signalized intersections and analyzed as such.

City of Huntington Beach Methodology

Table 12 summarizes the peak hour ICU/HCM Level of Service results at the thirty-two study intersections. The first column of values in Table 12 presents a summary of Year 2008 background traffic conditions based on existing intersection geometry, but without any Pacific City project traffic. The second column presents future forecast traffic conditions with the addition of Pacific City project traffic. The third column shows the increase in ICU value due to the added peak hour project trips, for information purposes, and indicates whether the traffic associated with the Pacific City project will have a significant impact based on the significance criteria identified earlier. The fourth column indicates the forecast operating conditions with intersection improvements (mitigation), if required, recommended to achieve an acceptable Level of Service.

2008 Future Background Traffic Conditions

An analysis of future (Year 2008) traffic conditions indicates that the forecast increase in background traffic will continue to cause one of the thirty-two study intersections to operate at adverse service levels. The intersections of PCH at Warner Avenue, which currently operates at LOS E during the PM peak hour, is expected to operate at LOS F (PM), with the addition of ambient traffic and related project traffic. The remaining thirty-one key intersections are expected to continue to operate at LOS D or better in both peak hours.

2008 Near-Term Conditions with Pacific City Project Traffic

Review of Columns 2 and 3 of Table 12 shows that, in the near-term horizon Year 2008, one of the thirty-two key study intersections is expected to continue to operate at adverse service levels as a result of Pacific City project traffic combined with background traffic (ambient plus related projects). The intersection of Pacific Coast Highway at Warner Avenue is expected to continue to operate at adverse service levels (LOS E or F) during the AM and PM peak hours with the addition of Pacific City project traffic to background traffic. The remaining thirty-one key study intersections are forecast to continue to operate at acceptable service levels with the addition of The Pacific City project traffic during both the weekday AM and PM peak commute hours.

Appendix D presents the Year 2008 ICU/LOS and HCM/LOS calculations for each of the thirty-two key intersections for the AM and PM peak hour periods.

TABLE 12

**YEAR 2008
PEAK HOUR INTERSECTION LEVELS OF SERVICE SUMMARY
Pacific City, Huntington Beach**

Key Intersections	Time Period	(1) Year 2008 Background Conditions		(2) Year 2008 Background Plus Project		(3) Project Impact/ Significance		(4) Year 2008 With Mitigation	
		ICU	LOS	ICU	LOS	ICU Inc.	Y/N	ICU	LOS
1. Goldenwest Street at Pacific Coast Highway	AM	0.696	B	0.713	C	0.017	N	--	--
	PM	0.813	D	0.837	D	0.024	N	--	--
2. 17 th Street at Pacific Coast Highway	AM	0.647	B	0.666	B	0.019	N	--	--
	PM	0.725	C	0.755	C	0.030	N	--	--
3. 9 th Street at Pacific Coast Highway	AM	0.647	B	0.667	B	0.02	N	--	--
	PM	0.667	B	0.697	B	0.03	N	--	--
4. 6 th Street at Pacific Coast Highway	AM	0.540	A	0.553	A	0.013	N	--	--
	PM	0.674	B	0.694	B	0.020	N	--	--
5. Main Street at 6 th Street	AM	0.257	A	0.269	A	0.012	N	--	--
	PM	0.384	A	0.410	A	0.026	N	--	--
6. Main Street at Pacific Coast Highway	AM	0.669	B	0.681	B	0.012	N	--	--
	PM	0.770	C	0.790	C	0.020	N	--	--
7. 1 st Street at Atlanta Avenue	AM	0.284	A	0.300	A	0.016	N	--	--
	PM	0.315	A	0.367	A	0.052	N	--	--
8. 1 st Street at Pacific Coast Highway	AM	0.502	A	0.501	A	-0.001	N	--	--
	PM	0.535	A	0.589	A	0.054	N	--	--
9. Huntington Street at ¹ Atlanta Avenue	AM	11.72	B	0.355	A	N/A	N	--	--
	PM	28.00	D	0.516	A	N/A	N	--	--
10. Delaware Street at ¹ Atlanta Avenue	AM	3.34	A	3.44	A	0.100	N	--	--
	PM	6.48	A	10.44	B	3.960	N	--	--
11. Huntington Street at Pacific Coast Highway	AM	0.701	B	0.717	C	0.016	N	--	--
	PM	0.691	B	0.740	C	0.049	N	--	--
12. Huntington Street at ¹ Pacific View Avenue	AM	4.76	A	8.89	A	4.130	N	--	--
	PM	4.62	A	13.38	B	8.760	N	--	--
13. Beach Boulevard at Adams Avenue	AM	0.651	B	0.678	B	0.027	N	--	--
	PM	0.736	C	0.765	C	0.029	N	--	--
14. Beach Boulevard at Indianapolis Avenue	AM	0.358	A	0.380	A	0.022	N	--	--
	PM	0.479	A	0.515	A	0.036	N	--	--
15. Beach Boulevard at Atlanta Avenue	AM	0.412	A	0.436	A	0.024	N	--	--
	PM	0.622	B	0.681	B	0.059	N	--	--
16. Beach Boulevard at Pacific Coast Highway	AM	0.576	A	0.595	A	0.019	N	--	--
	PM	0.794	C	0.839	D	0.045	N	--	--
17. Newland Street at Atlanta Avenue	AM	0.360	A	0.362	A	0.002	N	--	--
	PM	0.515	A	0.526	A	0.011	N	--	--
18. Newland Street at Pacific Coast Highway	AM	0.619	B	0.637	B	0.018	N	--	--
	PM	0.673	B	0.707	C	0.034	N	--	--
19. Magnolia Street at Pacific Coast Highway	AM	0.617	B	0.635	B	0.018	N	--	--
	PM	0.694	B	0.721	C	0.027	N	--	--
20. Magnolia Street at Atlanta Avenue	AM	0.399	A	0.402	A	0.003	N	--	--
	PM	0.563	A	0.571	A	0.008	N	--	--

¹ LOS indicated as intersection delay in seconds/vehicle (s/v)

TABLE 12 continued

**YEAR 2008
PEAK HOUR INTERSECTION LEVELS OF SERVICE SUMMARY
Pacific City, Huntington Beach**

Key Intersections	Time Period	(1) Year 2008 Background Conditions		(2) Year 2008 Background Plus Project		(3) Project Impact/ Significance		(4) Year 2008 With Mitigation	
		ICU	LOS	ICU	LOS	ICU Inc.	Y/N	ICU	LOS
21. Pacific Coast Highway at Seapoint Avenue	AM	0.730	C	0.745	C	0.015	N	--	--
	PM	0.875	D	0.898	D	0.023	N	--	--
22. Pacific Coast Highway at Warner Avenue	AM	0.966	E	0.981	E	0.015	Y	0.793	C
	PM	1.021	F	1.043	F	0.022	Y	0.842	D
23. Pacific Coast Highway at Brookhurst Street	AM	0.743	C	0.757	C	0.014	N	--	--
	PM	0.809	D	0.845	D	0.036	N	--	--
24. Main Street at Adams Avenue	AM	0.500	A	0.509	A	0.009	N	--	--
	PM	0.703	B	0.729	C	0.026	N	--	--
25. Main Street at Utica Avenue	AM	0.227	A	0.231	A	0.004	N	--	--
	PM	0.336	A	0.346	A	0.010	N	--	--
26. Lake Street at Adams Avenue	AM	0.553	A	0.556	A	0.003	N	--	--
	PM	0.644	B	0.656	B	0.012	N	--	--
27. Lake Street at Yorktown Avenue	AM	0.366	A	0.373	A	0.007	N	--	--
	PM	0.494	A	0.509	A	0.015	N	--	--
28. Beach Boulevard at Yorktown Avenue	AM	0.705	C	0.721	C	0.016	N	--	--
	PM	0.773	C	0.800	C	0.027	N	--	--
29. Beach Boulevard at Garfield Avenue	AM	0.685	B	0.707	C	0.022	N	--	--
	PM	0.830	D	0.858	D	0.028	N	--	--
30. Beach Boulevard at Ellis Avenue/ Main Street	AM	0.610	B	0.621	B	0.011	N	--	--
	PM	0.736	C	0.752	C	0.016	N	--	--
31. 1 st Street at Pacific View ¹ Avenue (future)	AM	N/A	N/A	2.62	A	N/A	N	--	--
	PM	N/A	N/A	4.34	A	N/A	N	--	--
32. Beach Boulevard at Pacific View Ave (future)	AM	0.215	A	0.250	A	0.035	N	--	--
	PM	0.252	A	0.284	A	0.032	N	--	--

¹ LOS indicated as intersection delay in seconds/vehicle (s/v)

- **Bold V/C and LOS values** indicate adverse service levels based on City LOS Standards

State of California (Caltrans) Methodology

Table 13 summarizes the peak hour HCM (HCS-2000 for signalized intersections) Level of Service results at the nineteen state-controlled study intersections within the study area. The first column of HCM/LOS values in Table 13 presents a summary of Year 2001 existing traffic conditions. The second column presents Year 2008 background traffic conditions based on existing intersection geometry, but without any Pacific City project traffic. The third column presents future forecast traffic conditions with the addition of Pacific City project traffic. The fourth column indicates whether the intersection will operate at adverse service levels, which is LOS E or worse (55.1 seconds/vehicle and greater), with the addition of Pacific City project traffic. The fifth column indicates the forecast operating conditions with intersection improvements, if required, recommended to achieve an acceptable Level of Service.

2008 Future Background Traffic Conditions

An analysis of future (Year 2008) traffic conditions indicates that the forecast increase in background traffic is expected to result in or continue to operate at adverse service levels at two of the nineteen State-controlled study intersections. The intersections of PCH at Warner Avenue, which currently operates at LOS E during the AM peak hour and LOS F during the PM peak hour, and PCH at Seapoint Avenue are expected to operate at LOS F (AM and PM) and LOS E (PM only), respectively, with the addition of ambient traffic and related project traffic. The remaining seventeen State study intersections are expected to continue to operate at LOS D or better in both peak hours.

2008 Near-Term Conditions with Pacific City Project Traffic

Review of Columns 2 and 3 of Table 14 shows that, in the near-term horizon Year 2008, two of the nineteen key study intersections are expected to result in or continue to operate at adverse service levels as a result of Pacific City project traffic combined with background traffic (ambient plus related projects). The intersections of Pacific Coast Highway at Seapoint Avenue and Pacific Coast Highway at Warner Avenue are expected to continue to operate at adverse service levels during the PM peak hour (LOS E) and AM and PM peak hours (LOS F), respectively, with the addition of Pacific City project traffic to background traffic. The remaining seventeen intersections are expected to either operate at LOS D or better during the AM and PM peak hours, with the addition of project traffic.

Appendix E presents the Year 2008 HCM/LOS calculations for each of the nineteen State study intersections for the AM and PM peak hour periods.

TABLE 13

**YEAR 2008
PEAK HOUR INTERSECTION LEVELS OF SERVICE SUMMARY
CALTRANS (HCM)
Pacific City, Huntington Beach**

Key Intersections	Time Period	(1)		(2)		(3)		(4)	(5)	
		Year 2001 Existing Conditions		Year 2008 Background Conditions		Year 2008 Background Plus Project		Project Impact/Significance	Year 2008 With Mitigation	
		HCM	LOS	HCM	LOS	HCM	LOS	Yes/No	HCM	LOS
1. Goldenwest Street at Pacific Coast Highway	AM	38.0	D	51.5	D	54.9	D	No		
	PM	35.0	C	45.9	D	51.4	D	No		
2. 17 th Street at Pacific Coast Highway	AM	19.5	B	21.9	C	22.7	C	No		
	PM	18.7	B	24.0	C	30.2	C	No		
3. 9 th Street at Pacific Coast Highway	AM	18.5	B	21.6	C	22.8	C	No		
	PM	15.6	B	22.0	C	32.1	C	No		
4. 6 th Street at Pacific Coast Highway	AM	21.5	C	23.5	C	23.8	C	No		
	PM	18.3	B	21.6	C	21.9	C	No		
5. Main Street at Pacific Coast Highway	AM	21.3	C	22.1	C	22.6	C	No		
	PM	22.0	C	23.8	C	24.5	C	No		
6. 1 st Street at Pacific Coast Highway	AM	33.5	C	40.1	D	47.8	D	No		
	PM	35.4	D	43.6	D	51.1	D	No		
7. Huntington Street at Pacific Coast Highway	AM	21.4	C	28.9	C	47.7	D	No		
	PM	18.8	B	23.1	C	41.4	D	No		
8. Beach Boulevard at Adams Avenue	AM	39.1	D	40.9	D	41.4	D	No		
	PM	41.5	D	45.4	D	48.5	D	No		
9. Beach Boulevard at Indianapolis Avenue	AM	26.4	C	26.8	C	27.1	C	No		
	PM	27.1	C	27.9	C	28.6	C	No		
0. Beach Boulevard at Atlanta Avenue	AM	29.3	C	29.6	C	29.6	C	No		
	PM	32.5	C	33.4	C	34.7	C	No		
1. Beach Boulevard at Pacific Coast Highway	AM	35.0	C	39.7	D	42.3	D	No		
	PM	25.5	C	33.7	C	46.1	D	No		
2. Newland Street at Pacific Coast Highway	AM	23.7	C	26.3	C	27.7	C	No		
	PM	23.1	C	25.9	C	28.1	C	No		
3. Magnolia Street at Pacific Coast Highway	AM	23.9	C	27.0	C	29.1	C	No		
	PM	25.2	C	29.0	C	32.5	C	No		
4. Pacific Coast Highway at Seapoint Avenue	AM	24.9	C	29.3	C	31.5	C	No	29.0	C
	PM	34.6	C	62.8	E	79.4	E	Yes	51.5	D
5. Pacific Coast Highway at Warner Avenue	AM	60.7	E	105.2	F	117.3	F	Yes	44.9	D
	PM	204.9	F	293.0	F	319.8	F	Yes	42.6	D
6. Pacific Coast Highway at Brookhurst Street	AM	32.9	C	37.9	D	40.6	D	No		
	PM	26.5	C	33.6	C	45.4	D	No		
7. Beach Boulevard at Yorktown Avenue	AM	39.8	D	44.0	D	45.9	D	No		
	PM	39.0	D	46.1	D	52.2	D	No		
8. Beach Boulevard at Garfield Avenue	AM	38.8	D	41.4	D	43.1	D	No		
	PM	42.4	D	49.4	D	54.6	D	No		
9. Beach Boulevard at Ellis Ave/Main Street	AM	36.6	D	38.5	D	39.4	D	No		
	PM	42.5	D	49.0	D	54.0	D	No		

Note:

- **Bold V/C and LOS values indicate adverse service levels based on City LOS Standards**

YEAR 2008 ROADWAY LINK CAPACITY ANALYSIS

Table 14 summarizes the daily roadway link Level of Service results at the twenty-five study roadway links. The third column lists Year 2008 background traffic conditions based on future roadway geometry, but without any Pacific City project traffic. The fourth column presents future forecast traffic conditions with the addition of project traffic. The fifth column shows the increase in V/C associated with the Pacific City project.

2008 Future Background Traffic Conditions

An analysis of future (Year 2008) traffic conditions indicates that four of the twenty-five study roadway links are expected to operate at LOS D, one at LOS E, and two at LOS F. The following is a list of the roadway links with adverse service levels with the addition of ambient traffic and related project traffic.

- Pacific Coast Highway: Goldenwest Street to 6th Street (LOS F/1.139)
- Pacific Coast Highway: Huntington Street to Beach Boulevard (LOS F/1.160)
- Pacific Coast Highway: Beach Boulevard to Newland Street (LOS D/0.828)
- Pacific Coast Highway: Magnolia Street to Brookhurst Street (LOS D/0.826)
- Beach Boulevard: Adams Avenue to Yorktown Avenue (LOS D/0.821)
- Beach Boulevard: Garfield Avenue to Main Street/Ellis Avenue (LOS E/0.905)
- Atlanta Avenue: Huntington Street to 1st Street (LOS D/0.825)

2008 Near-Term Conditions with Pacific City Project Traffic

Review of Column 4 of Table 14 indicates that six of the seven study roadway links will continue to operate at adverse service levels with the addition of Project traffic when compared to the City of Huntington Beach criteria and each of the six study links will also experience a V/C increase greater than 0.030. However, based on the City's impact criteria for roadway links, none of the study roadway links has an adjacent study intersection(s) with adverse levels of service with the addition of project traffic. The remaining nineteen roadway links are expected to operate at LOS C or better on a daily basis, with the addition of project traffic. Please note that Atlanta Avenue between 1st and Huntington Streets improves to LOS A with project traffic due to project-specific improvements to add additional lanes along the Atlanta Avenue project frontage.

TABLE 14

**YEAR 2008
ROADWAY LINK CAPACITY ANALYSIS SUMMARY
Pacific City, Huntington Beach**

ARTERIAL	(1) LOS E Capacity	(2)		(3) Year 2008 Background		(4) Year 2008 with Project		(5) V/C Increase	
		Lanes	LOS	Daily Volume	V/C Ratio	Daily Volume	V/C Ratio		LOS
Pacific Coast Highway Warner Ave to Seapointe Ave	60,800	4	C	46,456	0.764	48,241	0.793	C	0.029
Pacific Coast Highway Seapointe Ave to Goldenwest St	60,800	4	B	39,794	0.655	41,579	0.684	B	0.029
Pacific Coast Highway Goldenwest Street to 6th Street	37,500	4	F	42,711	1.139	44,881	1.197	F	0.058
Pacific Coast Highway 6th Street to 1st Street	56,300	6	C	43,067	0.765	45,237	0.803	C	0.038
Pacific Coast Highway 1st Street to Huntington Street	56,300	6	C	43,810	0.778	43,810	0.778	C	0.000
Pacific Coast Highway Huntington Street to Beach Blvd	37,500	4	F	43,496	1.160	47,118	1.256	F	0.096
Pacific Coast Highway Beach Blvd to Newland Street	56,300	6	D	46,612	0.828	50,002	0.888	D	0.060
Pacific Coast Highway Magnolia St to Brookhurst St	56,300	6	D	46,477	0.826	49,615	0.881	D	0.055
Beach Boulevard PCH to Atlanta Ave	56,300	6	A	17,636	0.313	20,240	0.360	A	0.047
Beach Boulevard Atlanta Ave to Indianapolis Ave	56,300	6	A	25,629	0.455	29,408	0.522	A	0.067
Beach Boulevard Indianapolis Ave to Adams Ave	56,300	6	A	33,962	0.603	37,700	0.670	B	0.067
Beach Boulevard Adams Ave to Yorktown Ave	56,300	6	D	46,249	0.821	49,382	0.877	D	0.056

Notes:

- Bold V/C and LOS values indicate adverse service levels based on City and/or CMP LOS standards.

- The roadway capacities in column (2) represent the capacities with project-specific improvements; however, Year 2008 Background LOS are based on existing capacities.

TABLE 14 (continued)

**YEAR 2008
ROADWAY LINK CAPACITY ANALYSIS SUMMARY
Pacific City, Huntington Beach**

	(8) LOS E Capacity	(7) Lanes	(5) Year 2008 Background			(4) Year 2008 with Project			(6) V/C Increase
			Daily Volume	V/C Ratio	LOS	Daily Volume	V/C Ratio	LOS	
ARTERIAL									
Beach Boulevard Garfield Ave to Main St	56,300	6	50,962	0.905	E	53,608	0.952	E	0.047
Atlanta Avenue Beach Blvd to Delaware St	25,000	4	17,583	0.703	A	19,445	0.778	B	0.075
Atlanta Avenue 1st St to Huntington St	25,000	4	10,312	0.825	D	10,589	0.424	A	-0.401
Atlanta Avenue Huntington St to Delaware St	18,000	2	12,004	0.667	B	14,235	0.791	C	0.124
1st Street Atlanta Ave to Olive Ave	37,500	4	6,753	0.180	A	8,401	0.224	A	0.044
Huntington Street Atlanta Ave to Pacific View Ave	18,000	2	2,019	0.112	A	4,055	0.225	A	0.113
Main Street Palm Ave to Adams Ave	12,500	2	6,629	0.530	A	7,502	0.600	A	0.070
Lake Street Indianapolis Ave to Adams Ave	18,000	2	6,420	0.357	A	6,805	0.378	A	0.021
Lake Street Adams Ave to Yorktown Ave	18,000	2	9,630	0.535	A	10,015	0.556	A	0.021
Adams Avenue Beach Blvd to Newland St	37,500	4	27,566	0.735	C	28,151	0.751	C	0.016
Indianapolis Avenue Beach Blvd to Newland St	25,000	2	7,788	0.312	A	7,983	0.319	A	0.007
Atlanta Avenue Beach Blvd to Newland St	25,000	4	18,173	0.727	A	18,839	0.754	A	0.027
Pacific View 1st Street to Huntington Street	18,000	2	538	0.030	A	7,579	0.421	A	0.391

Notes:

- Bold V/C and LOS values indicate adverse service levels based on City and/or CMP LOS standards.
- The roadway capacities in column (2) represent the capacities with project-specific improvements; however, Year 2008 Background LOS are based on existing capacities.



ENGINEERS

YEAR 2008 CUMULATIVE IMPACT IMPROVEMENT MEASURES

Study Intersections (City of Huntington Beach Methodology)

Cumulative Improvement Measure - The recommended intersection improvement, which has been identified in the Orange County MPAH and Caltrans Route Concept Study for PCH, is expected to improve the level of service during the AM and PM peak hours at the one cumulative impacted study intersection. The recommended improvement measure is described as follows:

Year 2008 Service Levels @ Pacific Coast Highway/Warner Avenue

- Install a third northbound through lane on Pacific Coast Highway consistent with the Orange County MPAH and Caltrans Route Concept Study for PCH.

<u>Condition</u>	<u>AM Peak Hour</u>	<u>PM Peak Hour</u>
Without Project Traffic	LOS E (0.966)	LOS F (1.021)
With Project Traffic	LOS E (0.981)	LOS F (1.043)
With Proposed Mitigation	LOS C (0.793)	LOS D (0.842)

Study Intersections (State of California Methodology)

Cumulative Improvement Measure - The recommended intersection improvement is expected to offset the impact of the Pacific City project traffic during the PM peak hour at the cumulative impacted study intersection. The recommended improvement measure and the LOS summary is described as follows:

Year 2008 Service Levels @ Pacific Coast Highway/Seapoint Avenue

- Add a second westbound right turn lane on Seapoint Avenue.

<u>Condition</u>	<u>PM Peak Hour</u>
Without Project Traffic	LOS E (62.8 s/v)
With Project Traffic	LOS E (79.4 s/v)
With Proposed Mitigation	LOS D (51.5 s/v)

Cumulative Improvement Measure - The recommended intersection improvement, which has been identified in the Orange County MPAH and Caltrans Route Concept Study for PCH, is expected to improve the level of service during the AM and PM peak hours at the cumulative impacted study intersection. The recommended improvement measure is described as follows:

Year 2008 Service Levels @ Pacific Coast Highway/Warner Avenue

- Install a third northbound through lane on Pacific Coast Highway consistent with the Orange County MPAH and Caltrans Route Concept Study for PCH.

<u>Condition</u>	<u>AM Peak Hour</u>	<u>PM Peak Hour</u>
Without Project Traffic	LOS F (105.2 s/v)	LOS F (293.0 s/v)
With Project Traffic	LOS F (117.3 s/v)	LOS F (319.8 s/v)
With Proposed Mitigation	LOS D (44.9 s/v)	LOS D (42.6 s/v)

PERCENTAGE OF NET TRAFFIC IMPACT

Consistent with the City's Preparation Guidelines, the percentage of net traffic impact has been calculated for the two cumulative key impacted study intersections, which also operate at adverse service levels under existing or background conditions, based on the following equation.

- Net Traffic Impact = $(100 * V_p) / (V_c - V_e)$

Where V_p represents the project volume, V_e represents the existing volume, V_c represents the cumulative volume, which includes existing plus background plus project traffic. The subsequent calculation formula has been provided by the City, which determines what percentage of the total added traffic (background traffic plus project traffic), is project traffic for the AM and PM peak hour. The Net Traffic Impact, which is the fair-share percentage, has been calculated as follows:

Pacific Coast Highway @ Seapoint Avenue

$$\text{Project's Fair Share} = \frac{(100 * V_p)}{(V_c - V_e)}$$

$$\text{PM Peak Hour Traffic} = \frac{152 * 100}{4,756 - 4,175} = 26\%$$

The Percent Traffic Impact/Project Fair-Share is **26%**.

Pacific Coast Highway at Warner Avenue

$$\text{AM Peak Hour Traffic} = \frac{103 * 100}{5,550 - 4,976} = 18\%$$

$$\text{PM Peak Hour Traffic} = \frac{152 * 100}{6,123 - 5,433} = 22\%$$

The Percent Traffic Impact/Project Fair-Share is **22%**.

PROJECT-SPECIFIC TRAFFIC IMPROVEMENTS

Atlanta Avenue

The south side of Atlanta Avenue will be widened approximately 30 feet along the project frontage between 1st Street and Huntington Street. This will allow for an additional eastbound travel lane and a raised median island. The widening will also include a 30-foot property line dedication [60 feet on south side of centerline and approximately 30 feet on the north side (30 feet existing)]. A five-phase traffic signal will be installed at the intersection of Atlanta Avenue and Huntington Street consistent with prior traffic studies in the area.

1st Street

The east side of 1st Street will be widened approximately 18 feet along the project frontage between Pacific Coast Highway and Atlanta Avenue. This will allow for an additional northbound and southbound travel lane and a raised median island as well as an additional southbound left turn lane at Pacific Coast Highway. The widening will also include a 20-foot property line dedication.

Pacific Coast Highway

The north side of Pacific Coast Highway will be widened approximately 8 feet along the project frontage between 1st Street and Huntington Street. The widening will also include a 10-foot property line dedication and installation of an OCTA bus turnout along the north side of PCH west of Huntington Street. In addition to the roadway improvements, a pedestrian bridge is proposed across Pacific Coast Highway in conjunction with buildout of the project, midway between Huntington and 1st Streets, to provide an additional pedestrian connection between the Pacific City development and the beach area.

Huntington Street

The west side of Huntington Street will be widened approximately 10 feet along the project frontage between Pacific Coast Highway and Pacific View Avenue. This will allow for an additional southbound travel lane as well as an exclusive southbound right turn lane at Pacific Coast Highway. The widening will also include a 10-foot property line dedication (40-foot half-width).

Pacific View Avenue

Pacific View Avenue will be developed as part of the Pacific City project through the project site from Huntington Street to 1st Street consistent with the Precise Plan of Street Alignment. However, based on the Year 2008 total daily traffic volume as presented in Exhibit 27 and Exhibit 28 (8,848 VPD), it is recommended that Pacific View Avenue be constructed to a width of 70 feet curb-to-curb. This will allow for one 20-foot westbound through lane, a 14-foot raised landscaped median island, a 14-foot eastbound through lane and angle parking at 45° (22 feet). The roadway will be dedicated to a width of 90 feet, which will allow for an 18-foot parkway on the north side and a 2-foot parkway on the south side. **Appendix K** presents a diagram of the proposed layout of Pacific View Avenue.

Pedestrian Pathway

In addition to the widening along Atlanta Avenue, a twenty-four-foot wide pedestrian access easement will be dedicated through the project site extending from the south side of Atlanta Avenue, at Alabama Street, to Pacific View Avenue at the easterly residential access driveway where pedestrians can cross at the all-way stop. In addition, it is recommended that the proposed pedestrian bridge, which is recommended in the Coastal Element of the Huntington Beach General Plan (Policy C2.2.3), be located between Huntington and 1st Streets (aligned with Driveway #3) in order maximize use of the crossing and discourage jay-walking. The proposed bridge crossing provides access to the existing OCTA transit turnout area on the south side of Pacific Coast Highway between Huntington and 1st Streets. Such pathways will link with public access through the commercial/retail portion of the project and ultimately, via the proposed pedestrian bridges, to the coastal areas on the south side of Pacific Coast Highway.

TRAFFIC SIGNAL WARRANT ANALYSIS

In order to determine whether any of the key unsignalized study intersections warrant signalization under existing, background or background plus project traffic conditions, signal warrant analyses have been conducted at the following key unsignalized study intersections:

- 1st Street @ Atlanta Avenue (All-Way Stop)
- Huntington Street @ Pacific View Avenue (One-Way/existing & Two-Way/future)
- Pacific View Avenue @ 1st Street (One-Way/future Stop)

The signal warrant analyses is based on criteria presented in the Caltrans *Traffic Manual*, Chapter 9: *Traffic Signals and Lighting*. Using the existing hourly and peak hour data collected at this intersection and using future with project peak hour and daily traffic volumes, signal warrant analyses were conducted using the peak hour volume warrant and planning warrant (Caltrans Figure 9.4) at the three unsignalized study intersections. The installation of a traffic signal should be considered if this warrant is met.

Based on our analysis of the applicable warrants, Year 2008 conditions without and with project traffic indicates that none of the three key unsignalized study intersections satisfy the peak hour traffic signal warrant. In addition, using the planning warrant and Year 2008 and Year 2020 daily traffic at the Huntington Street/Pacific View Avenue intersection, the signal warrant is not satisfied. However, using the planning warrant, the intersection of 1st Street and Atlanta Avenue satisfies the traffic signal warrant. **Appendix F** contains the detailed warrant analysis worksheets for the analyzed locations. As a result, the following intersection meets the Caltrans warrant for installation of a traffic signal and the fair/share calculations are presented for the two proposed new traffic signals:

Huntington Street at Atlanta Avenue

$$\text{Project's Fair Share} = \frac{(100 * V_p)}{(V_c)}$$

$$\text{AM Peak Hour Traffic} = \frac{117 * 100}{924 - 716} = 56\%$$

$$\text{PM Peak Hour Traffic} = \frac{191 * 100}{1,384 - 1,059} = 59\%$$

The Percent Traffic Impact/Project Fair-Share is **59%**.

1st Street at Atlanta Avenue

$$\text{AM Peak Hour Traffic} = \frac{71 * 100}{786 - 631} = 46\%$$

$$\text{PM Peak Hour Traffic} = \frac{158 * 100}{1,177 - 898} = 57\%$$

The Percent Traffic Impact/Project Fair-Share is **57%**.

TRANSPORTATION CENTER ANALYSIS

Based on a Huntington Beach Transportation Center Location Study, conducted in January 1980 by the Orange County Transit District, City of Huntington Beach, and PBQ&D, Inc., two potential sites were identified for further detailed analysis:

- Goldenwest College/Huntington Center Area
- Pacific Coast Highway/Lake Street Area

The Goldenwest College/Huntington Center Area was developed with a transportation center along Gothard Street and provides bus layovers and transfers for OCTA as well as other transportation center facilities. The Pacific Coast Highway and Lake Street area has not been developed as a transportation center, but a 560-foot bus turnout has been installed along the south side of Pacific Coast Highway between 1st Street and Huntington Street which provide bus layovers and boarding for OCTA. Based on discussions with City Transportation staff regarding the potential for locating a transportation center in the Pacific Coast Highway/Lake Street Area, it was determined that the existing bus turnout along the south side of Pacific Coast Highway could be upgraded to accommodate additional transportation facilities.



ENGINEERS

DELAWARE STREET EXTENSION

As presented in the City of Huntington Beach General Plan Circulation Element, Delaware Street is proposed to be extended from Atlanta Avenue to Pacific Coast Highway through the existing mobile home park located east of Huntington Street and north of Pacific View Avenue. Because of the current location of the Waterfront Hilton resort, the proposed alignment of the Delaware Street extension would extend from Atlanta Avenue, at the existing Delaware Street, and connect to existing Huntington Street at the Pacific View intersection, thus creating a five-legged intersection. As a result, it is recommended that if Delaware Street is ever extended to Huntington Street, Huntington Street should be improved with a southbound cul-de-sac (designed with the bulb offset to the east) on the north side of Pacific View Avenue, such that the extension of Delaware Street would make up the north leg of the intersection. This would require that the entire Pacific View Avenue/Huntington Street intersection be redesigned accordingly. These assumptions are included in the Year 2020 General Plan Buildout analysis of the project.

In addition, Pacific City will be dedicating 10 feet along the west side of Huntington Street between Pacific View Avenue and Pacific Coast Highway in order to provide an 80-foot right-of-way consistent with the Secondary Arterial cross-section.

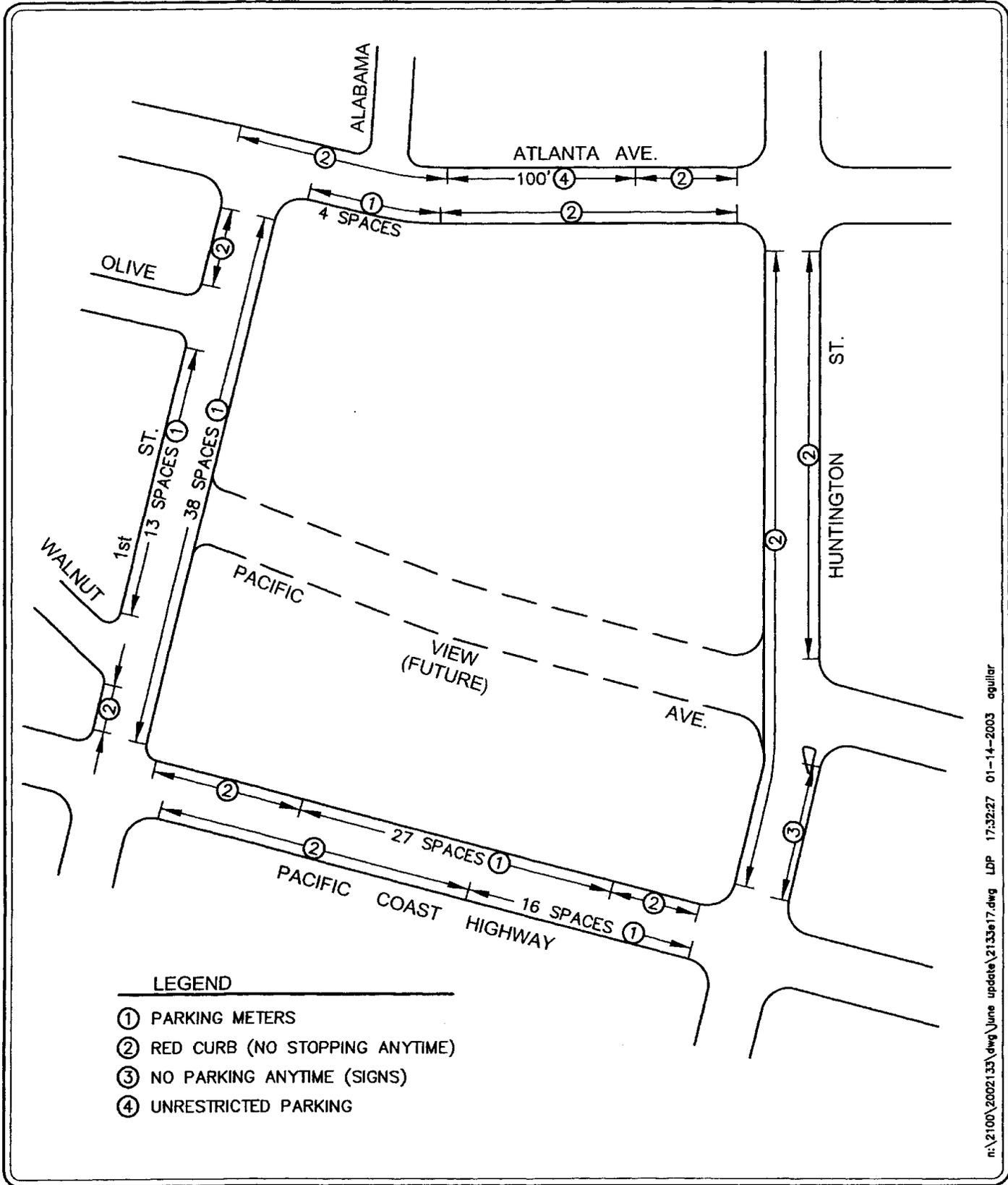
The parking conditions associated with the proposed Pacific City project consist of off-site parking supply and demand adjacent to the project site and on-site parking supply and demand provided within subterranean parking structures below both the retail/restaurant/office/hotel and residential developments. The off-site parking analysis focuses to existing parking supply and future parking supply and demand on the adjacent roadways surrounding the Pacific City project site.

Off-Site Parking Analysis

Exhibit 17 presents the Existing Off-Site Parking Plan for the adjacent roadways surrounding the Pacific City project site, which indicates the existing number of parking spaces and areas where parking is currently restricted. As presented in Exhibit 17, there are currently 103 parking spaces (99 metered spaces and 4 unrestricted spaces) on both sides of 1st Street, Atlanta Avenue, Huntington Street, and Pacific Coast Highway adjacent to the project site and 69 parking spaces abutting the project site.

Exhibit 18 presents the Proposed Off-Site Parking Plan for the adjacent roadways surrounding the Pacific City project site, which indicates the proposed number of parking spaces to be provided at completion of the Pacific City project. On-street parking on Pacific View Avenue is expected to be provided in addition to all required parking for the project, including the provisions of replacement parking for current on-street parking on other streets. Consequently, the off-site parking objective for the Pacific City project is to maximize the on-street parking adjacent to the site to enhance the urban development setting while ensuring adequate on-site parking supply should the on-street parking be eliminated in the future on Pacific View Avenue, 1st Street, and Atlanta Avenue. Therefore, a maximum of 69 parking spaces are expected to be relocated within the retail parking structure in addition to the required project parking.

As presented in Exhibit 18, approximately 105 parking spaces will be provided (101 metered spaces and 4 unrestricted spaces) on both sides of 1st Street, Atlanta Avenue, Huntington Street, Pacific View Avenue, and Pacific Coast Highway adjacent to the project site. The 69 existing parking spaces abutting the site will be provided on-site as additional demand within the parking structure. The existing 27 metered parking spaces (which are part of the 69) along the north side of Pacific Coast Highway will be eliminated in conjunction with the project. Also, approximately 20 metered parking spaces will be added along the south side of Atlanta Avenue west of Huntington Street.



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NO SCALE

**LINSCOTT
LAW &
GREENSPAN
ENGINEERS**

EXHIBIT 17

**EXISTING OFF-SITE PARKING PLAN
PACIFIC CITY, HUNTINGTON BEACH**

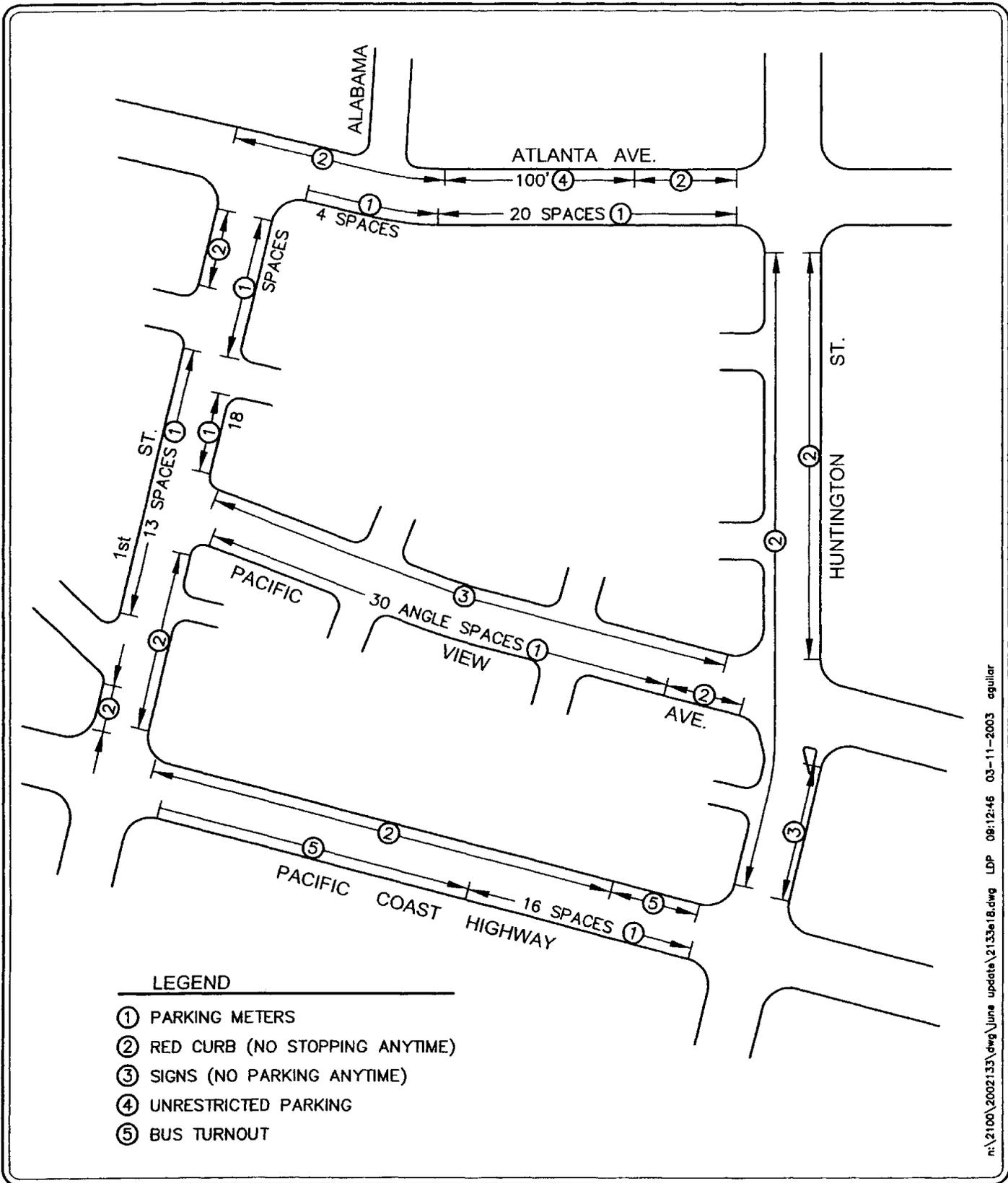


EXHIBIT 18

PROPOSED OFF-SITE PARKING PLAN PACIFIC CITY, HUNTINGTON BEACH

Pages 69 through 71 of this report contain the shared parking analysis. This analysis has been superceded by subsequent documentation prepared by Linscott, Law & Greenspan in October 2003, which is available for review at the City of Huntington Beach and City of Huntington Beach Main and Central libraries.

YEAR 2020 GENERAL PLAN BUILDOUT TRAFFIC CONDITIONS

As directed by the City of Huntington Beach, Year 2020 General Plan Buildout traffic volumes have been developed using the City of Huntington Beach Santa Ana River Crossings Cooperative Study (SARCCS) traffic analysis model as executed by Urban Crossroads. In order to determine the Year 2020 General Plan Buildout traffic volumes, in the project vicinity, based on several different potential Buildout roadway network scenarios, we conducted Year 2020 General Plan Buildout SARCCS model runs without and with Pacific City project traffic for four (4) roadway network scenarios, listed as follows:

1. With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings (Current General Plan Circulation Element Network)
2. Without Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings
3. Without Hamilton Avenue Extension Without Walnut Avenue Alignment and With the Santa Ana River Crossings
4. Without Hamilton Avenue Extension Without Walnut Avenue Alignment and Without the Santa Ana River Crossings

For clarification purposes, the Hamilton Avenue Extension refers to the potential future connection of Hamilton Avenue between Newland Street and Beach Boulevard through the existing marshland consistent with the General Plan Circulation Element. The Walnut Avenue Alignment refers to the extension of Walnut Avenue between 2nd Street and 1st Street to align with future Pacific View Avenue through the Pacific City project. The Santa Ana River Crossings refer to future bridge crossings of the Santa Ana River channel at Gisler Avenue and Banning Avenue/19th Street to connect Costa Mesa and Huntington Beach.

As directed by City Transportation staff, intersection capacity analyses and roadway link capacity analyses have been conducted for General Plan Buildout roadway network scenario No. 1 only, which is consistent with the City's current General Plan Circulation Element network. The remaining three General Plan Buildout roadway network scenarios were used to analyze their affect on Pacific View Avenue through the project site between 1st and Huntington Streets.

Year 2020 General Plan Buildout Traffic Conditions With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings Without Pacific City Project Traffic

Exhibits 19 and 20 present Year 2020 Buildout AM and PM peak hour traffic volumes, respectively, at thirty key study intersections (1st Street/Pacific View Avenue and Magnolia Street/Atlanta Avenue excluded) without the proposed Pacific City Project for the With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings roadway network. **Exhibit 21** presents Year 2020 Buildout daily traffic volumes at the twenty-seven key study roadway links without the proposed Pacific City Project for the With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings roadway network. **Appendix H** presents the With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings SARCCS Without project traffic model data.

Year 2020 General Plan Buildout Traffic Conditions With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings With Pacific City Project Traffic

Exhibits 22 and 23 present Year 2020 Buildout AM and PM peak hour traffic volumes, respectively, at thirty key study intersections with the proposed Pacific City Project for the With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings roadway network. **Exhibit 24** presents Year 2020 Buildout daily traffic volumes at the twenty-six key study roadway links with the proposed Pacific City Project for the With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings roadway network.

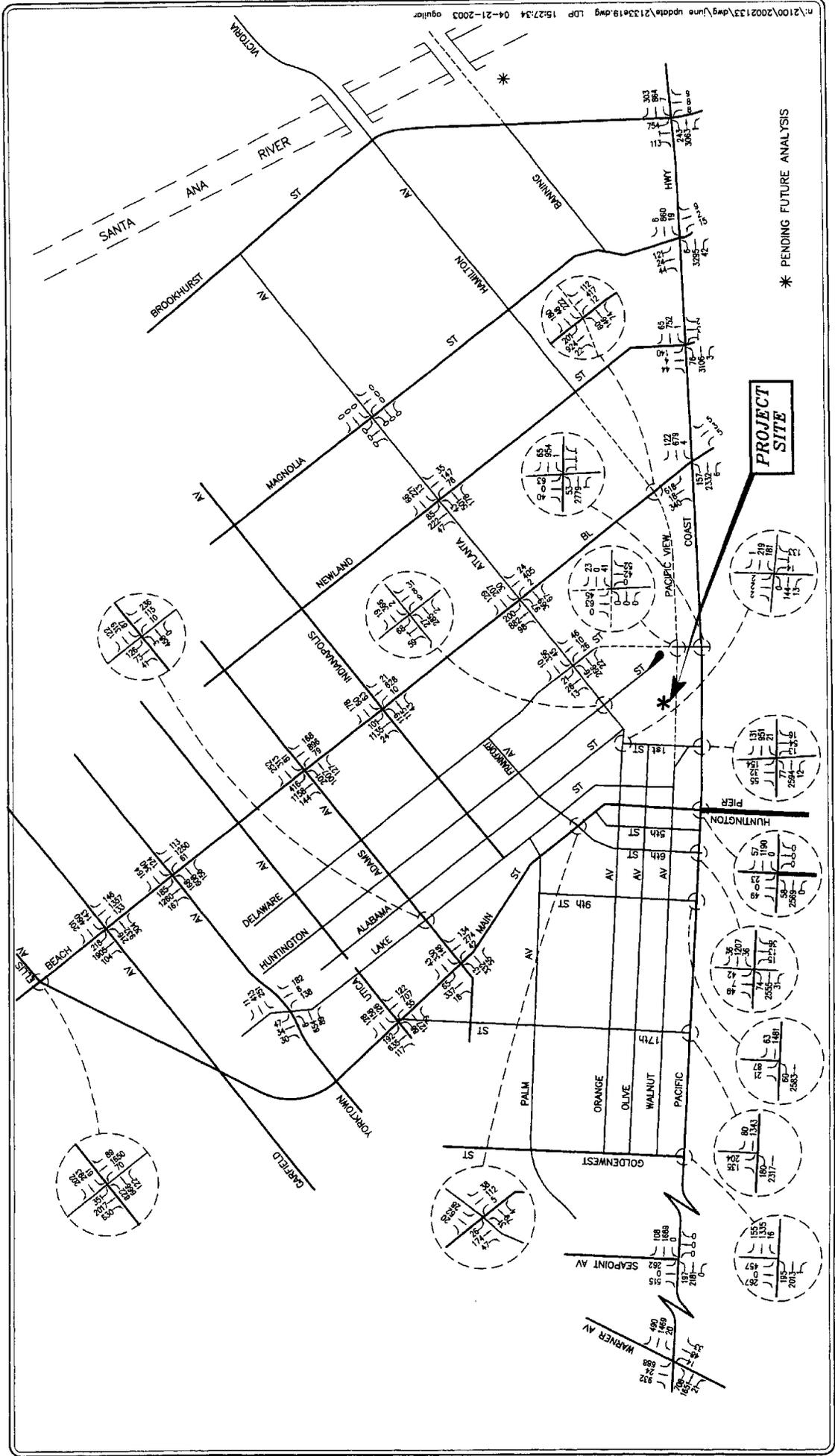


EXHIBIT 19
2020 GENERAL PLAN BUILDOUT AM PEAK HOUR VOLUMES
WITHOUT PROJECT TRAFFIC
 PACIFIC CITY, HUNTINGTON BEACH

NO SCALE
 LINSKOTT
 LAW &
 GREENSPAN
 ENGINEERS

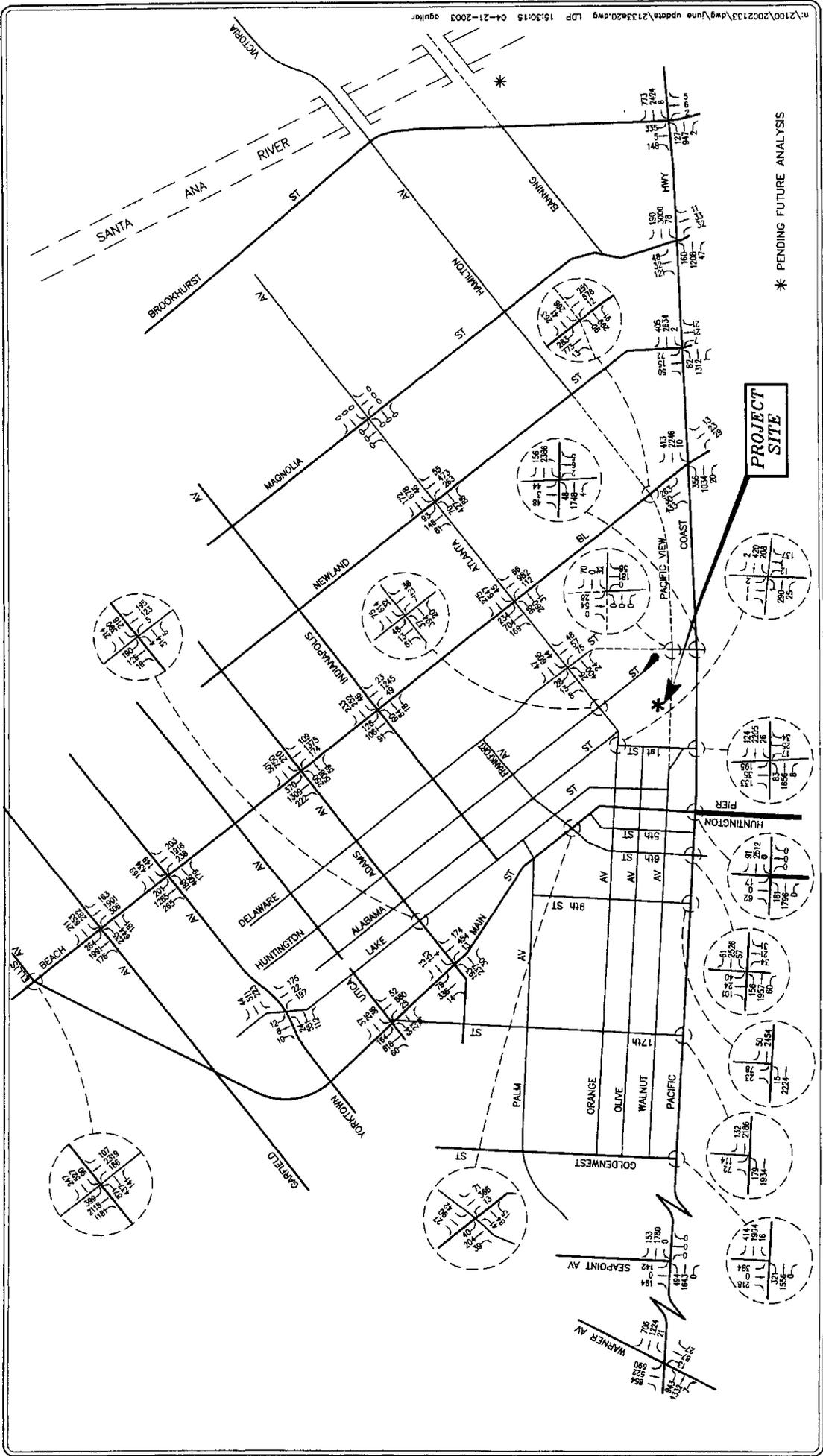


EXHIBIT 20
2020 GENERAL PLAN BUILDOUT PM PEAK HOUR VOLUMES
WITHOUT PROJECT TRAFFIC
 PACIFIC CITY, HUNTINGTON BEACH

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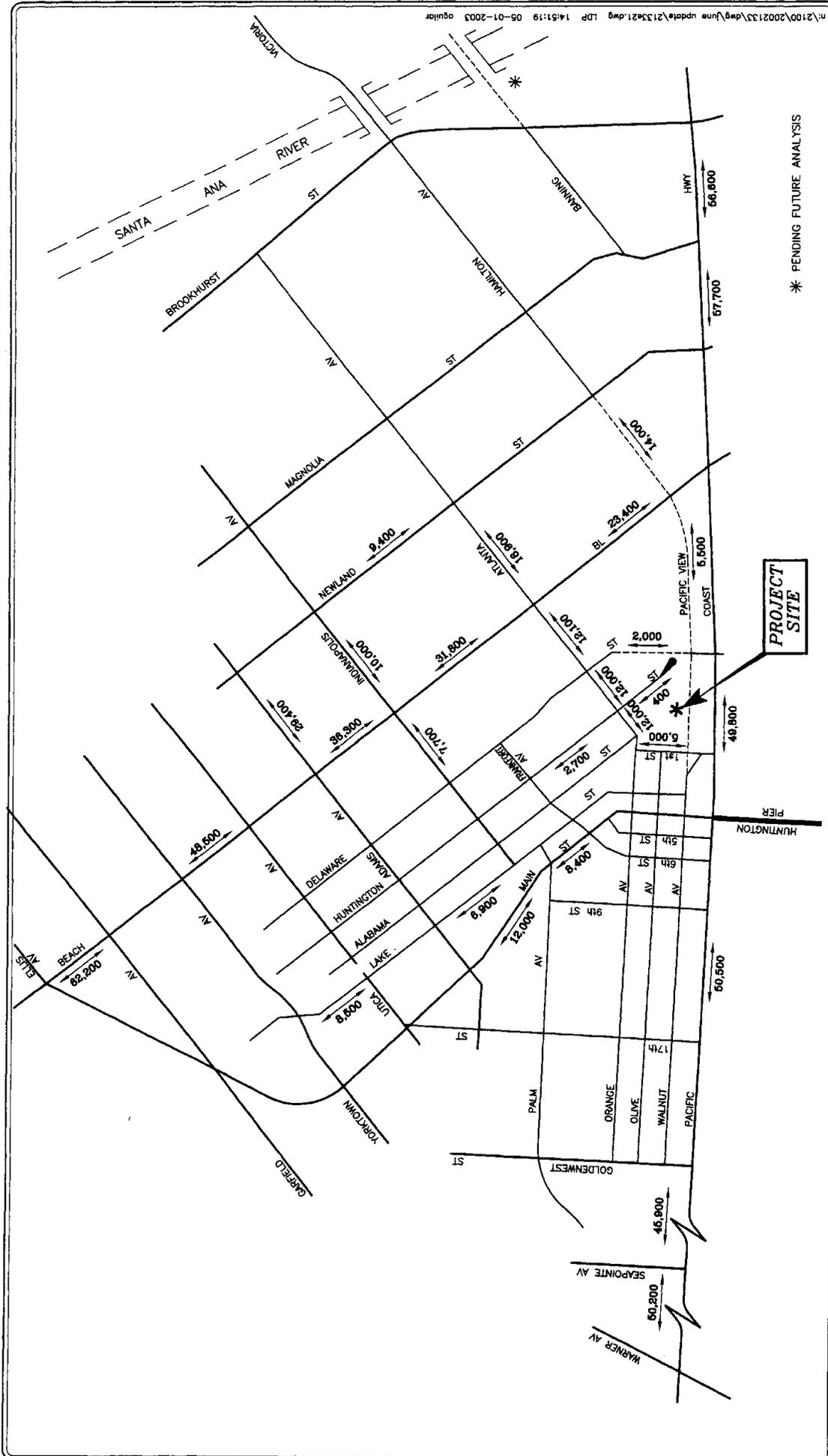


EXHIBIT 21
2020 GENERAL PLAN BUILDOUT AVERAGE DAILY TRAFFIC VOLUMES WITHOUT PROJECT TRAFFIC
 PACIFIC CITY, HUNTINGTON BEACH

NO SCALE

**LINSCOTT
 LAW &
 GREENSPAN
 ENGINEERS**

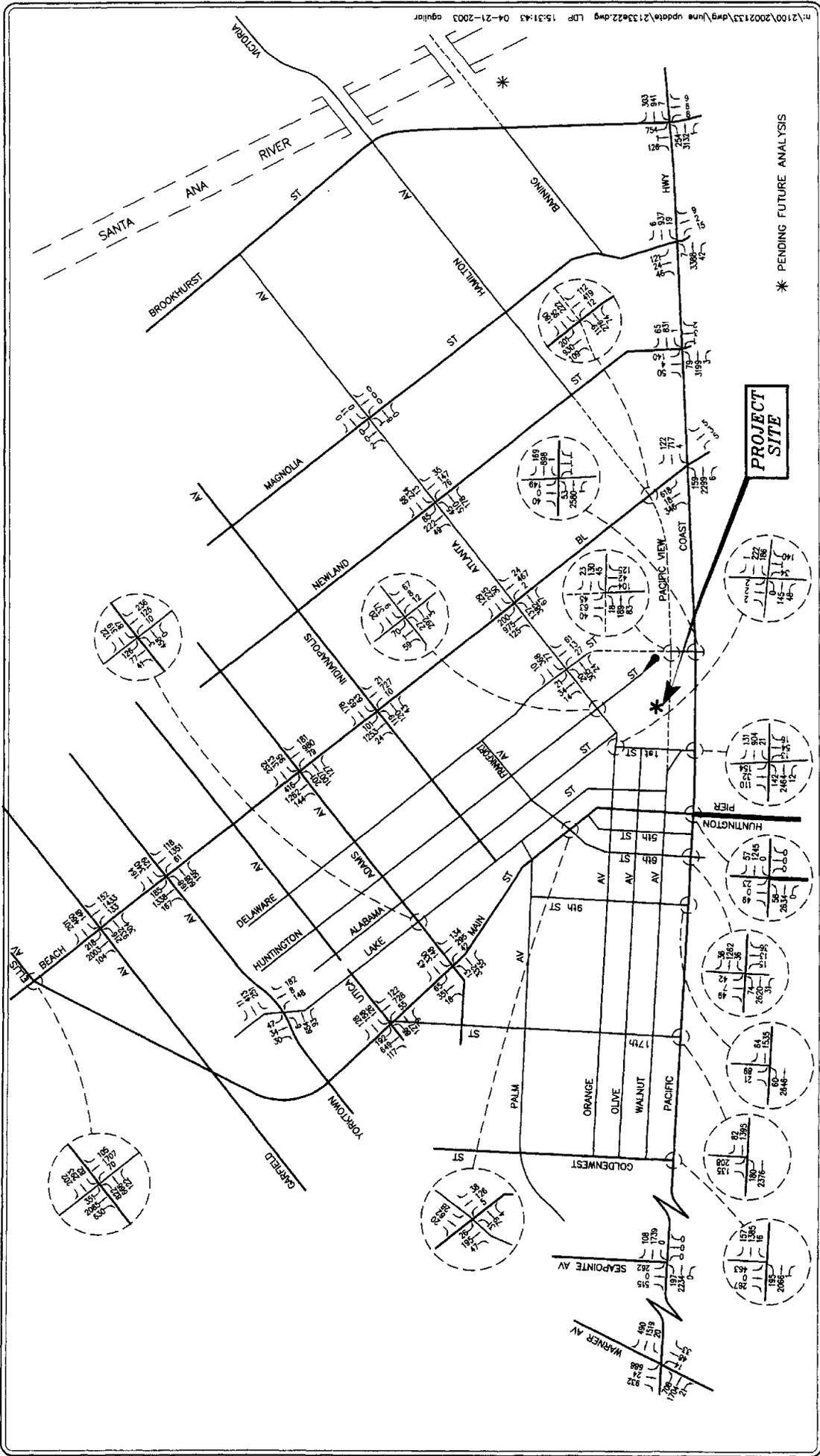


EXHIBIT 22
2020 GENERAL PLAN BUILDOUT AM PEAK HOUR VOLUMES
WITH PROJECT TRAFFIC
 PACIFIC CITY, HUNTINGTON BEACH

NO SCALE
 LINSOTT
 LAW &
 GREENSPAN
 ENGINEERS

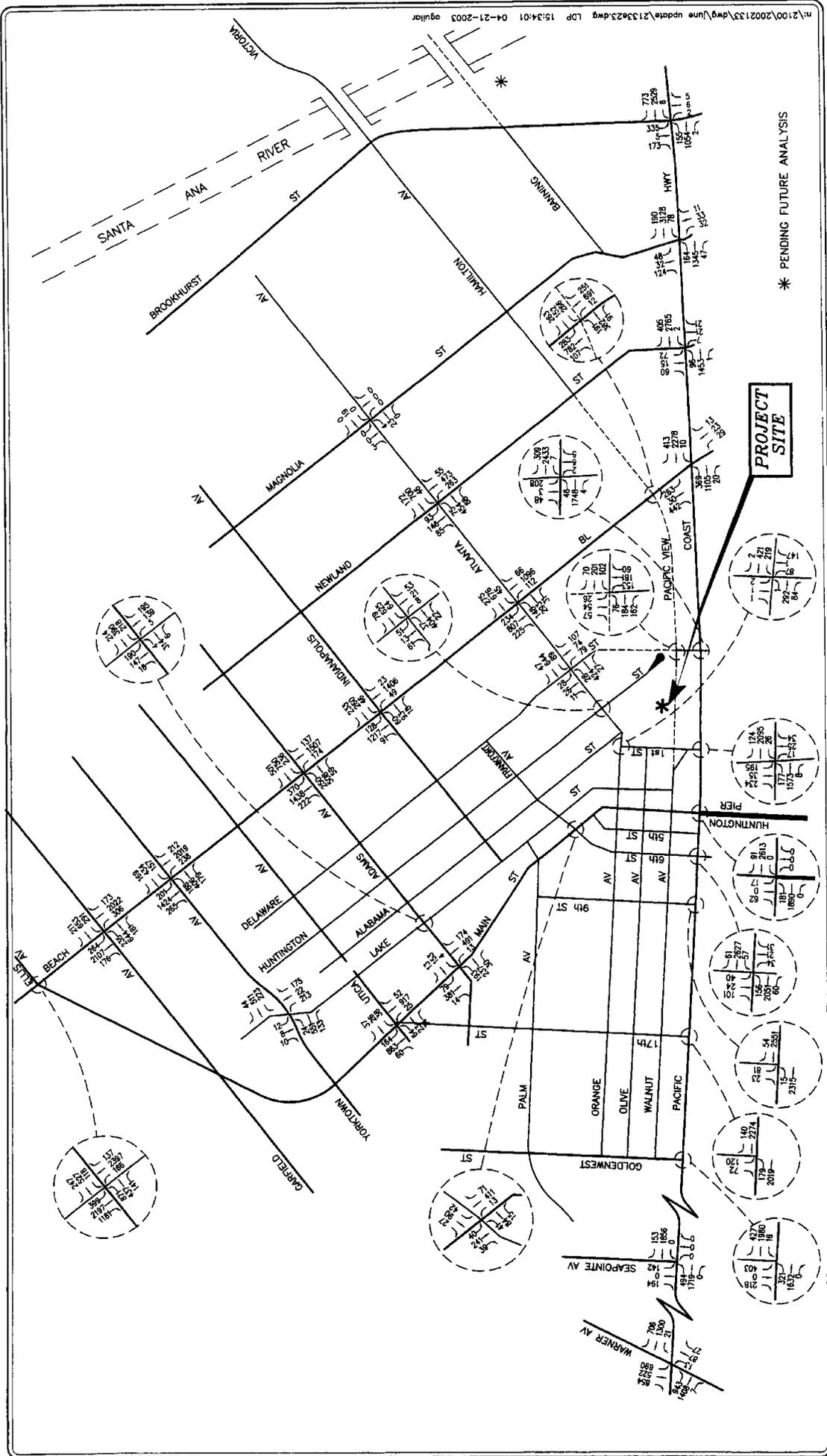


EXHIBIT 23

**2020 GENERAL PLAN BUILDOUT PM PEAK HOUR VOLUMES
WITH PROJECT TRAFFIC**

PACIFIC CITY, HUNTINGTON BEACH

NO SCALE
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GREENSPAN
ENGINEERS

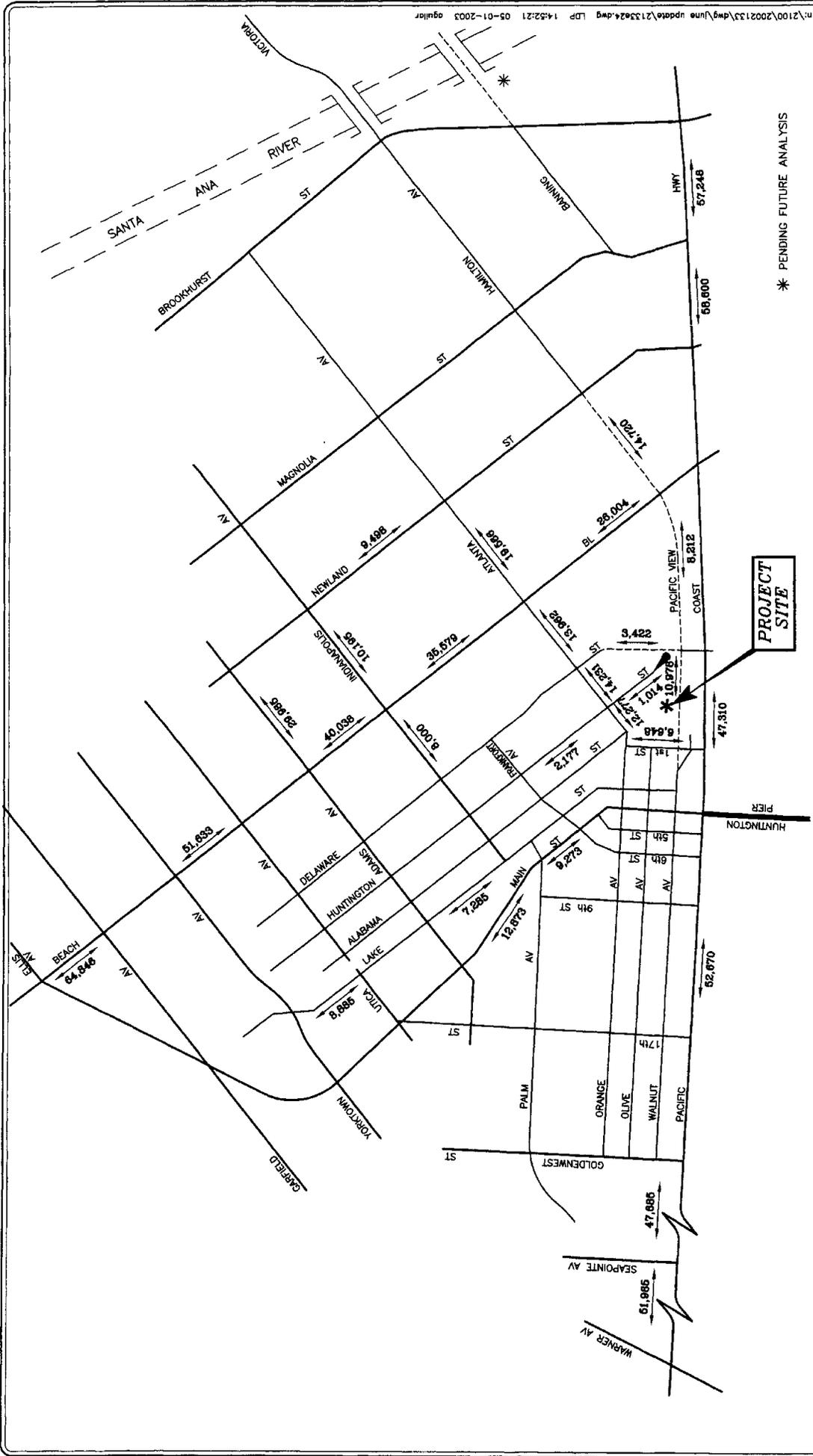


EXHIBIT 24

2020 GENERAL PLAN BUILDOUT AVERAGE DAILY TRAFFIC VOLUMES WITH PROJECT TRAFFIC
PACIFIC CITY, HUNTINGTON BEACH

NO SCALE
LINSOTT
LAW &
GREENSPAN
ENGINEERS

YEAR 2020 GENERAL PLAN BUILDOUT TRAFFIC IMPACT ANALYSIS

Impact Criteria and Thresholds

The relative impact of the added project traffic volumes generated by Pacific City General Plan Buildout Analysis on the current General Plan Buildout Circulation Element network, during the AM peak hour, PM peak hour, and Daily time frames was evaluated based on analysis of future operating conditions at the thirty key intersections and twenty-seven key roadways, without, then with the proposed Pacific City project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the project at each key study intersection was then evaluated using the City of Huntington Beach traffic impact criteria described previously on Page 49.

2020 General Plan Buildout Peak Hour Intersection Capacity Analysis - With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings (Current General Plan Circulation Element Network)

Table 15 summarizes the peak hour Level of Service results at the thirty key study intersections for the Year 2020 General Plan Buildout condition With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings roadway network. The first column (1) of ICU/LOS values in Table 15 presents a summary of Year 2020 peak hour traffic conditions without project traffic. The second column (2) lists Year 2020 conditions with project traffic based on anticipated Year 2020 intersection geometry. The third column (3) indicates whether the traffic associated with Pacific City Project will have a significant impact based on the City of Huntington Beach traffic impact criteria. The fourth column indicates the forecast operating conditions with intersection improvements (mitigation), if required, recommended to achieve an acceptable Level of Service.

Year 2020 General Plan Buildout Without Pacific City Project Traffic Condition

An analysis of future (Year 2020) General Plan Buildout Without Pacific City Project traffic conditions indicates that one of the thirty key study intersections will operate at adverse LOS E based on the SARCCS traffic model data. The one key study intersection is listed as follows:

- Seapoint Avenue @ Pacific Coast Highway (PM)

The remaining twenty-nine key study intersections are forecast to operate at LOS D or better during the AM and PM peak hours.

TABLE 15

**YEAR 2020 GENERAL PLAN BUILDOUT
PEAK HOUR INTERSECTION LEVELS OF SERVICE SUMMARY
W/HAMILTON EXT. W/WALNUT ALIGNMENT W/SARC
Pacific City, Huntington Beach**

Key Intersections	Time Period	(1) Year 2020 Without Project Traffic		(2) Year 2020 With Project Traffic		(3) Project Impact/ Significance		(4) Year 2020 With Mitigation	
		ICU	LOS	ICU	LOS	ICU Inc.	Y/N	ICU	LOS
1. Goldenwest Street at Pacific Coast Highway	AM	0.588	A	0.600	A	0.012	NO	--	--
	PM	0.728	C	0.746	C	0.018	NO	--	--
2. 17 th Street at Pacific Coast Highway	AM	0.624	B	0.638	B	0.014	NO	--	--
	PM	0.677	B	0.699	B	0.022	NO	--	--
3. 9 th Street at Pacific Coast Highway	AM	0.607	B	0.621	B	0.014	NO	--	--
	PM	0.596	A	0.618	A	0.022	NO	--	--
4. 6 th Street at Pacific Coast Highway	AM	0.641	B	0.654	B	0.013	NO	--	--
	PM	0.724	C	0.744	C	0.020	NO	--	--
5. Main Street at 6 th Street	AM	0.249	A	0.261	A	0.012	NO	--	--
	PM	0.424	A	0.451	A	0.027	NO	--	--
6. Main Street at Pacific Coast Highway	AM	0.778	C	0.790	C	0.012	NO		
	PM	0.869	D	0.888	D	0.019	NO		
7. 1 st Street at Atlanta Avenue	AM	0.210	A	0.226	A	0.016	NO	--	--
	PM	0.267	A	0.318	A	0.051	NO	--	--
8. 1 st Street at Pacific Coast Highway	AM	0.648	B	0.648	B	0.000	NO	--	--
	PM	0.636	B	0.691	B	0.055	NO	--	--
9. Huntington Street at Atlanta Avenue	AM	0.242	A	0.266	A	0.024	NO	--	--
	PM	0.338	A	0.353	A	0.015	NO	--	--
10. Delaware Street at Atlanta Avenue	AM	0.212	A	0.248	A	0.036	NO	--	--
	PM	0.271	A	0.391	A	0.120	NO	--	--
11. Huntington Street at Pacific Coast Highway	AM	0.634	B	0.685	B	0.051	NO	--	--
	PM	0.606	B	0.732	B	0.126	NO	--	--
12. Huntington Street at Pacific View Avenue	AM	0.125	A	0.278	A	0.153	NO	--	--
	PM	0.192	A	0.367	A	0.175	NO	--	--
13. Beach Boulevard at Adams Avenue	AM	0.651	B	0.678	B	0.027	NO	--	--
	PM	0.820	D	0.849	D	0.029	NO	--	--
14. Beach Boulevard at Indianapolis Avenue	AM	0.413	A	0.439	A	0.026	NO	--	--
	PM	0.557	A	0.593	A	0.036	NO	--	--
15. Beach Boulevard at Atlanta Avenue	AM	0.408	A	0.452	A	0.044	NO	--	--
	PM	0.722	C	0.783	C	0.061	NO	--	--
16. Beach Boulevard at Pacific Coast Highway	AM	0.693	B	0.712	C	0.019	NO	--	--
	PM	0.762	C	0.795	C	0.033	NO	--	--
17. Newland Street at Atlanta Avenue	AM	0.329	A	0.333	A	0.004	NO	--	--
	PM	0.512	A	0.523	A	0.011	NO	--	--
18. Newland Street at Pacific Coast Highway	AM	0.745	C	0.763	C	0.018	NO	--	--
	PM	0.665	B	0.699	B	0.034	NO	--	--
19. Magnolia Street at Pacific Coast Highway	AM	0.759	C	0.777	C	0.018	NO	--	--
	PM	0.782	C	0.809	D	0.027	NO	--	--
20. Pacific Coast Highway at Seapoint Avenue	AM	0.882	D	0.896	D	0.014	NO	0.784	C
	PM	0.952	E	0.974	E	0.022	YES	0.929	E

TABLE 15 continued

**YEAR 2020 GENERAL PLAN BUILDOUT
PEAK HOUR INTERSECTION LEVELS OF SERVICE SUMMARY
W/HAMILTON EXT. W/WALNUT ALIGNMENT W/SARC
Pacific City, Huntington Beach**

Key Intersections	Time Period	(1) Year 2020 Without Project Traffic		(2) Year 2020 With Project Traffic		(3) Project Impact/ Significance		(4) Year 2020 With Mitigation	
		ICU	LOS	ICU	LOS	ICU Inc.	Y/N	ICU	LOS
21. Pacific Coast Highway at Warner Avenue	AM	0.796	C	0.806	D	0.010	NO	--	--
	PM	0.882	D	0.897	D	0.015	NO	--	--
22. Pacific Coast Highway at Brookhurst Street	AM	0.887	D	0.900	D	0.013	NO	--	--
	PM	0.705	C	0.742	C	0.037	NO	--	--
23. Main Street at Adams Avenue	AM	0.634	B	0.646	B	0.000	NO	--	--
	PM	0.718	C	0.740	C	0.012	NO	--	--
24. Main Street at Utica Avenue	AM	0.626	B	0.632	B	0.006	NO	--	--
	PM	0.495	A	0.506	A	0.011	NO	--	--
25. Lake Street at Adams Avenue	AM	0.652	B	0.658	B	0.006	NO	--	--
	PM	0.668	B	0.677	B	0.009	NO	--	--
26. Lake Street at Yorktown Avenue	AM	0.563	A	0.570	A	0.007	NO	--	--
	PM	0.510	A	0.525	A	0.015	NO	--	--
27. Beach Boulevard at Yorktown Avenue	AM	0.724	C	0.748	C	0.024	NO	--	--
	PM	0.871	D	0.893	D	0.022	NO	--	--
28. Beach Boulevard at Garfield Avenue	AM	0.766	C	0.784	C	0.018	NO	--	--
	PM	0.878	D	0.900	D	0.022	NO	--	--
29. Beach Boulevard at Ellis Avenue/ Main Street	AM	0.691	B	0.701	B	0.010	NO	--	--
	PM	0.798	C	0.814	D	0.016	NO	--	--
30. Beach Boulevard at Pacific View Avenue	AM	0.468	A	0.506	A	0.038	NO	--	--
	PM	0.669	B	0.696	B	0.027	NO	--	--

- **Bold V/C and LOS values** indicate adverse service levels based on City LOS Standards

N:\2100\2002133\tables\Table 19 2020 LOS Summary.doc

Year 2020 General Plan Buildout With Pacific City Project Traffic Condition

Review of Columns 2 and 3 indicates that one of the thirty key study intersections will continue to operate at adverse service levels with the addition of Pacific City Project traffic in the future Year 2020 General Plan Buildout condition. The one key study intersection is listed as follows:

- Seapoint Avenue @ Pacific Coast Highway (PM)

Appendix I contains the Year 2020 Build-Out General Plan Intersection Capacity Utilization (ICU) calculation worksheets for the With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings scenario.

2020 General Plan Buildout Daily Roadway Link Capacity Analysis - With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings

Table 16 summarizes the Daily Level of Service results at the twenty-seven key roadway links for the Year 2020 General Plan Buildout condition With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings roadway network. The third column of V/C/LOS values in Table 16 presents a summary of Year 2020 daily traffic conditions without project traffic based on the General Plan roadway classification. The fourth column lists Year 2020 conditions with project traffic based on the General Plan roadway classification.

Year 2020 General Plan Buildout Conditions Without Pacific City Project Traffic Condition

Review of Table 16 indicates that five of the twenty-seven roadway segments are expected to operate at adverse LOS D or worse without project traffic for the Year 2020 General Plan Buildout condition With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings roadway network. The following is a list of the roadway links with adverse service levels without project traffic.

- Pacific Coast Highway: Huntington Street to 1st Street (LOS D/0.867)
- Pacific Coast Highway: 9th Street to 17th Street (LOS D/0.881)
- Pacific Coast Highway: Newland Street to Magnolia Street (LOS F/1.025)
- Pacific Coast Highway: Magnolia Street to Brookhurst Street (LOS F/1.005)
- Beach Boulevard: Garfield Avenue to Main Street/Ellis Avenue (LOS D/0.823)

Year 2020 General Plan Buildout Conditions with Pacific City Project Traffic Condition

Review of the fourth Column of Table 16 indicates that five of the study roadway links will continue to operate at adverse service levels with the addition of Project traffic when compared to the City of Huntington Beach criteria and four of the five study links will also experience a V/C increase greater than 0.030. However, based on the City's impact criteria for roadway links, none of the study roadway link has an adjacent study intersection with adverse levels of service with the addition of project traffic. The remaining twenty-two roadway links are expected to operate at LOS C or better on a daily basis, with the addition of project traffic.

TABLE 16

**YEAR 2020 GENERAL PLAN BUILDOUT
ROADWAY LINK CAPACITY ANALYSIS SUMMARY
W/HAMILTON EXT. W/WALNUT ALIGNMENT W/SANTA ANA RIVER CROSSING
Pacific City, Huntington Beach**

ARTERIAL	General Plan Capacity	Lanes	2020 W/O PROJECT			2020 W/PROJECT			V/C Increase
			Daily Volume	V/C Ratio	LOS	Daily Volume	V/C Ratio	LOS	
PCH Warner Avenue to Seapoint Avenue	91,200	6	50,200	0.550	A	51,985	0.570	A	0.020
PCH Seapoint Avenue to Goldenwest Ave	91,200	6	45,900	0.503	A	47,685	0.523	A	0.020
PCH Goldenwest Street to 6th Street	56,300	6	49,600	0.881	D	52,670	0.936	D	0.055
PCH 6th Street to 1st Street	56,300	6	49,600	0.881	D	52,670	0.936	D	0.055
PCH 1st Street to Huntington Street	56,300	6	48,800	0.867	D	47,310	0.840	D	-0.026
PCH Newland Street to Magnolia Street	56,300	6	57,700	1.025	F	58,600	1.041	F	0.016
PCH Magnolia Avenue to Brookhurst Ave	56,300	6	56,600	1.005	F	57,248	1.017	F	0.012
Atlanta Avenue 1st Street to Huntington Street	37,500	4	12,000	0.320	A	12,277	0.327	A	0.007
Atlanta Avenue Huntington Street to Delaware Street	37,500	4	12,000	0.320	A	14,231	0.379	A	0.059
Huntington Street Atlanta Avenue to Indianapolis Ave	12,500	2	2,700	0.216	A	2,777	0.222	A	0.006
Huntington Street Atlanta Avenue to Pacific View Ave	18,000	2	2,400	0.133	A	4,436	0.246	A	0.113
Pacific View Avenue East of Huntington Street	37,500	4	2,100	0.056	A	8,212	0.219	A	0.163
Main Street 6th Street to Palm Avenue	25,000	4	8,400	0.336	A	9,273	0.371	A	0.035
Main Street Palm Avenue to Adams Avenue	25,000	4	12,000	0.480	A	12,873	0.515	A	0.035
Lake Street Indianapolis Ave to Adams Avenue	37,500	4	6,900	0.184	A	7,285	0.194	A	0.010
Lake Street Utica Avenue to Yorktown Avenue	37,500	4	8,500	0.227	A	8,885	0.237	A	0.010
Indianapolis Avenue Beach Blvd to Delaware Street	25,000	4	7,700	0.308	B	7,895	0.316	A	0.008
Atlanta Avenue Beach Blvd to Newland Street	37,500	4	18,900	0.504	A	19,566	0.522	A	0.018
Adams Avenue Beach Blvd to Newland Street	37,500	4	29,400	0.784	C	29,985	0.800	C	0.016
Newland Street Indianapolis Ave to Atlanta Avenue	25,000	4	9,400	0.376	A	9,498	0.380	A	0.004
Beach Boulevard Indianapolis Ave to Adams Avenue	75,100	8	36,600	0.487	A	40,038	0.533	A	0.046
Beach Boulevard Indianapolis Ave to Atlanta Avenue	75,100	8	31,800	0.423	A	35,579	0.474	A	0.050
Beach Boulevard Atlanta Avenue to PCH	75,100	8	23,400	0.312	A	26,004	0.346	A	0.035
Pacific View Avenue 1st Street to Huntington Street	37,500	4	1,447	0.039	A	8,488	0.226	A	0.188
1st Street Atlanta Avenue to Pacific View Ave	37,500	4	5,000	0.133	A	6,648	0.177	A	0.044
Beach Boulevard Yorktown Avenue to Adams Avenue	75,100	8	48,500	0.646	B	51,633	0.688	B	0.042
Beach Boulevard Garfield Avenue to Ellis/Main Street	75,100	8	62,200	0.828	D	64,846	0.863	D	0.035



ENGINEERS

YEAR 2020 GENERAL PLAN BUILDOUT CUMULATIVE IMPACT IMPROVEMENT MEASURES

Study Intersections

Cumulative Improvement Measures - The recommended intersection improvement is expected to offset the impact of the Pacific City project during the PM peak hour at the one cumulative impacted study intersection. The recommended improvement measure is described as follows:

Year 2020 Service Levels @ Pacific Coast Highway/Seapoint Avenue

- Add a second westbound right turn lane on Seapoint Avenue

<u>Condition</u>	<u>PM Peak Hour</u>
Without Project Traffic	LOS E (0.952)
With Project Traffic	LOS E (0.974)
With Proposed Mitigation	LOS E (0.929)

YEAR 2020 GENERAL PLAN BUILDOUT PERCENTAGE OF NET TRAFFIC IMPACT

Consistent with the City’s Preparation Guidelines, the percentage of net traffic impact has been calculated for the one cumulative impacted study intersection, which also operates at adverse service levels under Year 2020 without project conditions. The Net Traffic Impact, which is the fair-share percentage, is presented as follows:

Pacific Coast Highway @ Seapoint Avenue

$$\text{Project's Fair Share} = \frac{(100 * V_p)}{(V_c - V_e)}$$

$$\text{PM Peak Hour Traffic} = \frac{152 * 100}{4,416 - 4,175} = 63\%$$

The Percent Traffic Impact/Project Fair-Share is **63%**.

YEAR 2020 PACIFIC VIEW AVENUE GENERAL PLAN BUILDOUT TRAFFIC CONDITIONS

In order to determine the recommended buildout cross-section for the future section of Pacific View Avenue between 1st and Huntington Streets adjacent to the Pacific City project site, we calculated Year 2020 General Plan Buildout daily traffic volume forecasts with Pacific City project traffic for four (4) roadway network scenarios, listed as follows:

1. With Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings (Current General Plan Circulation Element Network)
2. Without Hamilton Avenue Extension With Walnut Avenue Alignment and With the Santa Ana River Crossings
3. Without Hamilton Avenue Extension Without Walnut Avenue Alignment and With the Santa Ana River Crossings
4. Without Hamilton Avenue Extension Without Walnut Avenue Alignment and Without the Santa Ana River Crossings

Exhibit 25 presents the Year 2020 General Plan Buildout daily traffic volume forecasts with Pacific City project traffic for the four (4) roadway network scenarios. As presented in Exhibit 25, the Year 2020 General Plan Buildout daily traffic volume forecasts with Pacific City project traffic for each of the four scenarios are listed as follows:

- Scenario 1: 10,978 VPD
- Scenario 2: 8,488 VPD
- Scenario 3: 8,064 VPD
- Scenario 4: 8,064 VPD

The buildout traffic volumes were forecast based on related project daily traffic, Pacific City project daily traffic, and ambient growth at 1%/year applied to the Year 2008 daily forecast as well as reference to the SARCCS traffic model data for each scenario. In addition, it was assumed that five percent (5%) of the Year 2020 General Plan Buildout daily traffic on PCH at 1st Street will relocate to Pacific View Avenue with the completion of the current General Plan Circulation Element network (Scenario 1) based on the relation between the daily forecast traffic on Pacific View Avenue and Pacific Coast Highway without project traffic. Scenario 2 assumes no additional relocated traffic because of the discontinuity along Pacific View Avenue as a result of the lack of the Walnut Avenue connection. Scenarios 3 and 4 assume five percent (5%) less traffic than Scenario 2, based on the relation of the modeled daily forecast traffic on Pacific View Avenue, with project traffic, between Scenarios 3/4 and Scenario 2, which is approximately 5% (1,900 vs. 2,000).

As a result, based on the forecast Year 2020 General Plan Buildout daily traffic volumes for each of the four scenarios, Pacific View Avenue is expected to operate at LOS B or better as a two-lane divided roadway between 1st and Huntington Streets.

	<p>① YEAR 2020 GENERAL PLAN BUILDOUT W/HAMILTON W/WALNUT W/SARC W/PROJECT TRAFFIC</p>
	<p>② YEAR 2020 GENERAL PLAN BUILDOUT W/O HAMILTON W/O WALNUT W/O SARC W/PROJECT TRAFFIC</p>
	<p>③ YEAR 2020 GENERAL PLAN BUILDOUT W/O HAMILTON W/O WALNUT W/SARC W/PROJECT TRAFFIC</p>
	<p>④ YEAR 2020 GENERAL PLAN BUILDOUT W/O HAMILTON W/O WALNUT W/O SARC W/PROJECT TRAFFIC</p>

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NO SCALE
UNSCOTT
LAW &
GREENSPAN
ENGINEERS

EXHIBIT 25

2020 PACIFIC VIEW AVENUE BUILDOUT AVERAGE
DAILY TRAFFIC VOLUMES WITH PROJECT TRAFFIC
PACIFIC CITY, HUNTINGTON BEACH

CONGESTION MANAGEMENT PROGRAM (CMP) ANALYSIS

This section presents the Congestion Management Program (CMP) traffic analysis. The analysis is consistent with the requirements and procedures outlined in the current *Orange County Congestion Management Program (CMP)*. The CMP requires that a traffic impact analysis be conducted for any project generating 2,400 or more daily trips, or 1,600 or more daily trips for projects that directly access the CMP Highway System (HS). Per the CMP guidelines, this number is based on the desire to analyze any impacts that will be 3% or more of the existing CMP highway system facilities' capacity.

As noted in the Pacific City traffic study, the proposed project is projected to generate approximately 12,002 daily trip-ends, and thus meets the criteria requiring a CMP TIA.

The CMPHS includes specific roadways, which include State Highways and Super Streets, which are now known as Smart Streets, and CMP arterial monitoring locations/intersections. Therefore, the CMP TIA analysis requirements relate to the potential impacts only on the specified CMPHS.

The CMP highway system arterial facilities and CMP arterials closest to the project site consists of the Beach Boulevard, Pacific Coast Highway (PCH), and Warner Avenue. The CMP arterial monitoring locations/intersections nearest to the Pacific City site include Warner Avenue at PCH, Beach Boulevard at PCH, and Beach Boulevard at Adams Avenue.

Based on project trip generation estimates and trip distribution pattern presented earlier, the amount of project traffic using these CMP facilities indicates that only one of the three CMP intersections listed above exceeds the 3% threshold established by the CMP. The intersection of Beach Boulevard at Pacific Coast Highway is expected to have a 4.5 % increase. However, all three CMP intersections have been analyzed in this report.

Hence, it is concluded that the Pacific City project will not have any significant traffic impact on the Congestion Management Program Highway System.

Appendices to the Traffic Analysis Impact Report are available for review at the City of Huntington Beach and City of Huntington Beach Central and Main libraries, with the exception of Appendix J that follows.

APPENDIX J TO TRAFFIC IMPACT ANALYSIS REPORT

**YEAR 2002 EXISTING SUMMER WEEKEND TRAFFIC COUNT DATA &
EXISTING INTERSECTION CAPACITY UTILIZATION (ICU) LEVEL OF
SERVICE CALCULATION SHEETS**

Transportation Studies, Inc.

City : HUNTINGTON BEACH
 N/S Direction : 9TH ST
 E/W Direction : PACIFIC COAST HWY
 Client : LL & G

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206032
 Site Code : 00000977
 Start Date: 06/22/02
 Page : 1

TURNING MOVEMENTS

Start Time	9TH ST Southbound			PACIFIC COAST HWY Westbound			9TH ST Northbound			PACIFIC COAST HWY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
06/22/02													
11:00	7	0	8	5	239	0	0	0	0	0	262	5	526
11:15	11	0	7	10	283	0	0	0	0	0	299	21	631
11:30	4	0	14	7	282	0	0	0	0	0	295	12	614
11:45	11	0	11	14	283	0	0	0	0	0	357	13	689
Hour	33	0	40	36	1087	0	0	0	0	0	1213	51	2460
12:00	15	0	9	12	271	0	0	0	0	0	319	14	640
12:15	13	0	15	15	268	0	0	0	0	0	327	18	656
12:30	7	0	14	21	281	0	0	0	0	0	349	13	685
12:45	10	0	13	17	297	0	0	0	0	0	371	16	724
Hour	45	0	51	65	1117	0	0	0	0	0	1366	61	2705
13:00	13	0	17	15	273	0	0	0	0	0	333	14	665
13:15	11	0	18	9	287	0	0	0	0	0	308	11	644
13:30	14	0	12	16	264	0	0	0	0	0	322	14	642
13:45	13	0	11	19	310	0	0	0	0	0	347	13	713
Hour	51	0	58	59	1134	0	0	0	0	0	1310	52	2664
Total	129	0	149	160	3338	0	0	0	0	0	3889	164	7829
% Apr.	46.4	-	53.5	4.5	95.4	-	-	-	-	-	95.9	4.0	-
% Int.	1.6	-	1.9	2.0	42.6	-	-	-	-	-	49.6	2.0	-

Transportation Studies, Inc.

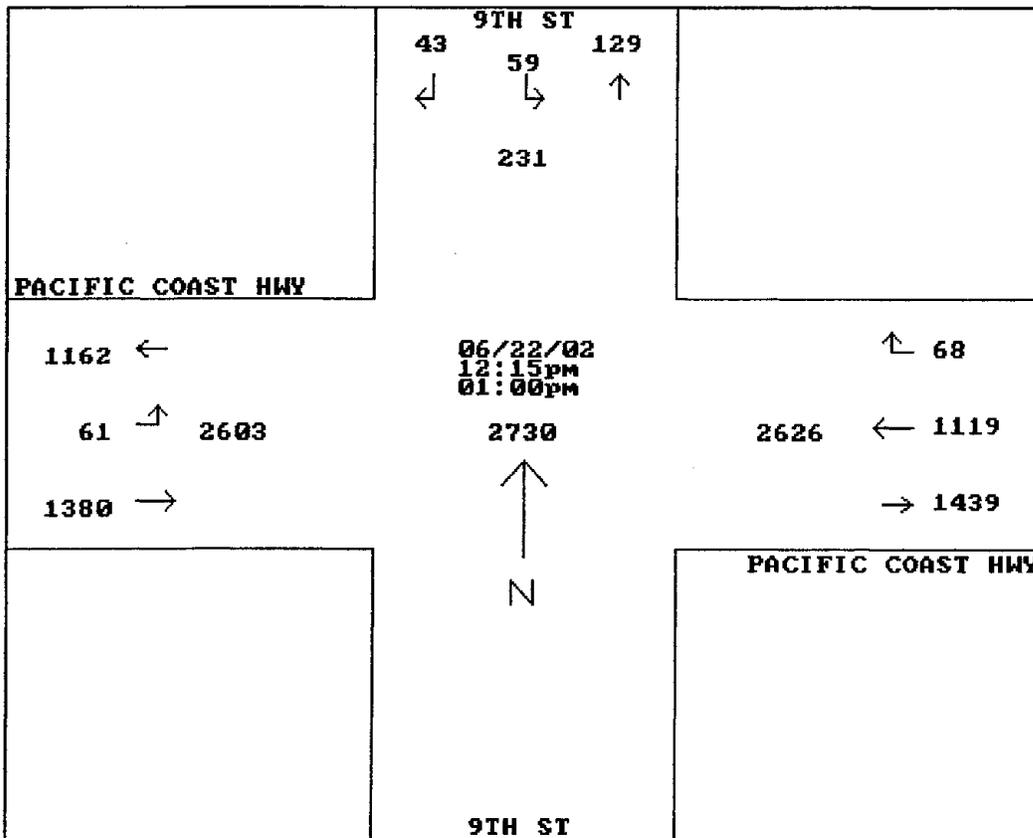
City : HUNTINGTON BEACH
 N/S Direction : 9TH ST
 E/W Direction : PACIFIC COAST HWY
 Client : LL & G

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206032
 Site Code : 00000977
 Start Date: 06/22/02
 Page : 2

TURNING MOVEMENTS

Start Time	9TH ST Southbound			PACIFIC COAST HWY Westbound			9TH ST Northbound			PACIFIC COAST HWY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Peak Hour Analysis By Entire Intersection for the Period: 11:00 on 06/22/02 to 13:45 on 06/22/02													
Time	12:15			12:15			12:15			12:15			
Vol.	43	0	59	68	1119	0	0	0	0	0	1380	61	
Pct.	42.1	0.0	57.8	5.7	94.2	0.0	0.0	0.0	0.0	0.0	95.7	4.2	
Total	102			1187			0			1441			
High	13:00			12:45			12:45			12:45			
Vol.	13	0	17	17	297	0	0	0	0	0	371	16	
Total	30			314			0			387			
PHF	0.850			0.945			0.000			0.930			



Transportation Studies, Inc.

City : HUNTINGTON BEACH (2)
 N/S Direction : 6TH ST
 E/W Direction : PACIFIC COAST HWY
 Client : LL & G

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206033
 Site Code : 00000917
 Start Date: 06/22/02
 Page : 1

TURNING MOVEMENTS

Start Time	6TH ST Southbound			PACIFIC COAST HWY Westbound			6TH ST Northbound			PACIFIC COAST HWY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
06/22/02													
11:00	18	3	11	20	233	23	3	1	5	12	252	12	593
11:15	21	4	11	12	271	16	4	5	5	14	274	15	652
11:30	17	2	10	18	265	23	5	6	6	20	246	28	646
11:45	26	9	11	17	248	29	7	4	11	26	289	18	695
Hour	82	18	43	67	1017	91	19	16	27	72	1061	73	2586
12:00	13	12	13	15	267	30	8	6	14	27	281	16	702
12:15	19	10	11	18	257	27	9	10	13	38	278	19	709
12:30	21	13	18	20	272	25	11	11	18	30	292	21	752
12:45	17	10	13	16	261	21	13	12	17	26	319	19	744
Hour	70	45	55	69	1057	103	41	39	62	121	1170	75	2907
13:00	21	13	16	19	249	22	16	10	13	22	281	17	699
13:15	18	9	14	23	273	19	18	3	11	29	274	19	710
13:30	13	6	18	17	266	21	13	9	12	27	287	21	710
13:45	17	7	13	22	281	20	16	10	13	23	290	20	732
Hour	69	35	61	81	1069	82	63	32	49	101	1132	77	2851
Total	221	98	159	217	3143	276	123	87	138	294	3363	225	8344
% Apr.	46.2	20.5	33.2	5.9	86.4	7.5	35.3	25.0	39.6	7.5	86.6	5.7	-
% Int.	2.6	1.1	1.9	2.6	37.6	3.3	1.4	1.0	1.6	3.5	40.3	2.6	-

Transportation Studies, Inc.

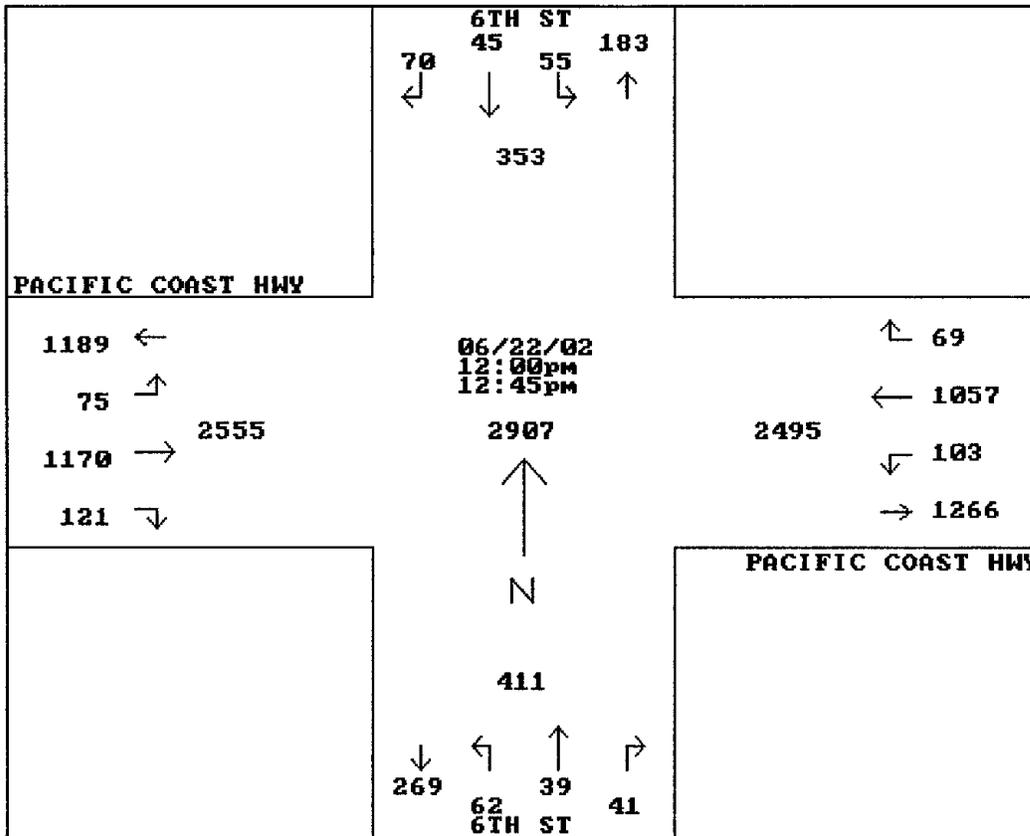
City : HUNTINGTON BEACH
 I/S Direction : 6TH ST
 :/W Direction : PACIFIC COAST HWY
 Client : LL & G

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206033
 Site Code : 00000917
 Start Date: 06/22/02
 Page : 2

TURNING MOVEMENTS

Start Time	6TH ST Southbound			PACIFIC COAST HWY Westbound			6TH ST Northbound			PACIFIC COAST HWY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Peak Hour Analysis By Entire Intersection for the Period: 11:00 on 06/22/02 to 13:45 on 06/22/02													
Time	12:00			12:00			12:00			12:00			
Vol.	70	45	55	69	1057	103	41	39	62	121	1170	75	
Pct.	41.1	26.4	32.3	5.6	86.0	8.3	28.8	27.4	43.6	8.8	85.6	5.4	
Total	170			1229			142			1366			
High	12:30			12:30			12:45			12:45			
Vol.	21	13	18	20	272	25	13	12	17	26	319	19	
Total	52			317			42			364			
PHF	0.817			0.969			0.845			0.938			



City : HUNTINGTON BEACH
 N/S Direction : MAIN ST
 E/W Direction : PACIFIC COAST HWY
 Client : LL & G

Transportation Studies, Inc.
 1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206034
 Site Code : 00000979
 Start Date: 06/22/02
 Page : 1

TURNING MOVEMENT

Start Time	MAIN ST Southbound			PACIFIC COAST HWY Westbound			MAIN ST Northbound			PACIFIC COAST HWY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Utrn	Right	Thru	Left	Right	Thru	Left	
06/22/02													
11:00	25	0	22	36	293	12	0	0	0	0	240	24	652
11:15	28	0	36	55	248	8	0	0	0	0	218	41	634
11:30	21	0	32	73	278	20	0	0	0	0	201	65	690
11:45	30	0	42	65	259	13	0	0	0	0	234	54	697
Hour	104	0	132	229	1078	53	0	0	0	0	893	184	2673
12:00	48	0	37	57	214	23	0	0	0	0	231	70	680
12:15	56	0	48	74	282	27	0	0	0	0	259	63	809
12:30	70	0	61	82	250	20	0	0	0	0	224	52	759
12:45	58	0	54	91	294	13	0	0	0	0	257	63	830
Hour	232	0	200	304	1040	83	0	0	0	0	971	248	3078
13:00	66	0	47	84	260	10	0	0	0	0	226	74	767
13:15	84	0	57	71	239	16	0	0	0	0	244	65	776
13:30	72	0	50	76	288	23	0	0	0	0	285	59	853
13:45	57	0	45	83	262	19	0	0	0	0	250	75	791
Hour	279	0	199	314	1049	68	0	0	0	0	1005	273	3187
Total	615	0	531	847	3167	204	0	0	0	0	2869	705	8938
% Apr.	53.6	-	46.3	20.0	75.0	4.8	-	-	-	-	80.2	19.7	-
% Int.	6.8	-	5.9	9.4	35.4	2.2	-	-	-	-	32.0	7.8	-

Transportation Studies, Inc.

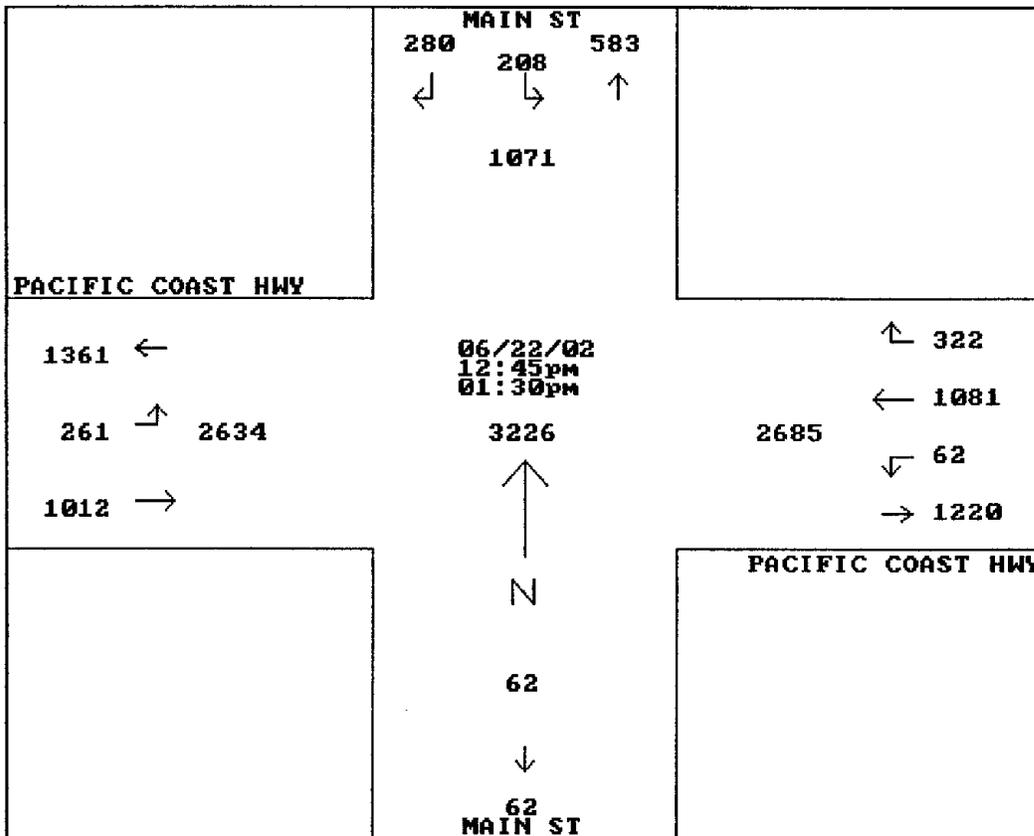
ity : HUNTINGTON BEACH
 /S Direction : MAIN ST
 /W Direction : PACIFIC COAST HWY
 Client : LL & G

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name : H0206034
 Site Code : 00000979
 Start Date : 06/22/02
 Page : 2

TURNING MOVEMENT

Start Time	MAIN ST Southbound			PACIFIC COAST HWY Westbound			MAIN ST Northbound			PACIFIC COAST HWY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Utrn	Right	Thru	Left	Right	Thru	Left	
Peak Hour Analysis By Entire Intersection for the Period: 11:00 on 06/22/02 to 13:45 on 06/22/02													
Time	12:45			12:45			12:45			12:45			
Vol.	280	0	208	322	1081	62	0	0	0	0	1012	261	
Pct.	57.3	0.0	42.6	21.9	73.7	4.2	0.0	0.0	0.0	0.0	79.4	20.5	
Total	488			1465			0			1273			
High	13:15			12:45			12:45			13:30			
Vol.	84	0	57	91	294	13	0	0	0	0	285	59	
Total	141			398			0			344			
PHF	0.865			0.920			0.000			0.925			



City : HUNTINGTON BEACH
 N/S Direction : 1ST ST
 E/W Direction : PACIFIC COAST HWY
 Client : LL & G

④

Transportation Studies, Inc.
 1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name : H0206035
 Site Code : 00000917
 Start Date : 06/22/02
 Page : 1

TURNING MOVEMENTS

Start Time	1ST ST Southbound			PACIFIC COAST HWY Westbound			1ST ST Northbound			PACIFIC COAST HWY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
06/22/02													
11:00	6	10	18	8	247	17	13	7	9	6	223	9	573
11:15	17	5	32	19	290	11	8	6	9	9	229	14	649
11:30	7	8	32	12	347	16	9	8	6	12	256	16	729
11:45	10	3	32	6	286	21	8	9	7	16	227	23	648
Hour	40	26	114	45	1170	65	38	30	31	43	935	62	2599
12:00	11	9	30	17	311	27	10	12	8	17	261	27	740
12:15	13	13	34	19	279	21	13	14	11	19	241	26	703
12:30	15	10	27	20	363	20	10	9	15	13	277	30	809
12:45	21	16	29	17	297	22	8	11	14	17	256	26	734
Hour	60	48	120	73	1250	90	41	46	48	66	1035	109	2986
13:00	17	13	27	21	317	19	9	10	13	20	281	23	770
13:15	19	14	33	17	339	21	13	12	15	19	271	26	799
13:30	17	20	30	19	323	21	10	13	16	17	267	29	782
13:45	16	19	27	22	347	18	9	14	18	27	287	21	825
Hour	69	66	117	79	1326	79	41	49	62	83	1106	99	3176
Total	169	140	351	197	3746	234	120	125	141	192	3076	270	8761
% Apr.	25.6	21.2	53.1	4.7	89.6	5.6	31.0	32.3	36.5	5.4	86.9	7.6	-
% Int.	1.9	1.5	4.0	2.2	42.7	2.6	1.3	1.4	1.6	2.1	35.1	3.0	-

Transportation Studies, Inc.

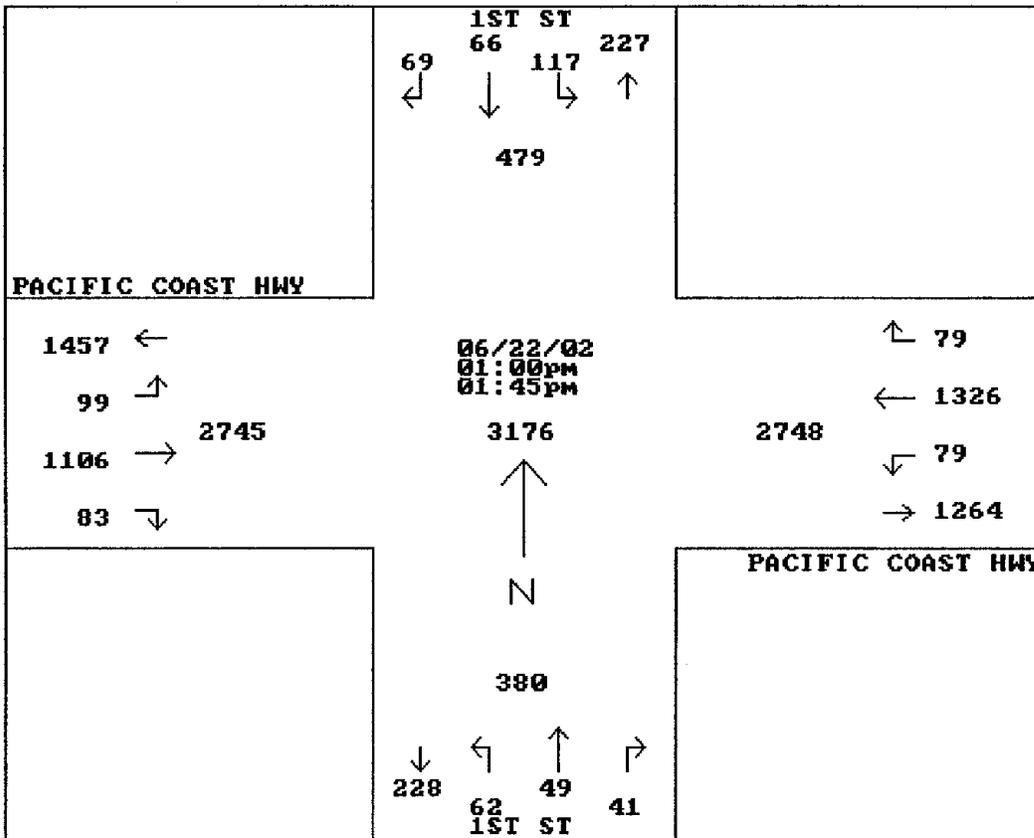
ity : HUNTINGTON BEACH
 /S Direction : 1ST ST
 /W Direction : PACIFIC COAST HWY
 lient : LL & G

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206035
 Site Code : 00000917
 Start Date: 06/22/02
 Page : 2

TURNING MOVEMENTS

Start Time	1ST ST Southbound			PACIFIC COAST HWY Westbound			1ST ST Northbound			PACIFIC COAST HWY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Peak Hour Analysis By Entire Intersection for the Period: 11:00 on 06/22/02 to 13:45 on 06/22/02													
Time	13:00			13:00			13:00			13:00			
Vol.	69	66	117	79	1326	79	41	49	62	83	1106	99	
Pct.	27.3	26.1	46.4	5.3	89.3	5.3	26.9	32.2	40.7	6.4	85.8	7.6	
Total	252			1484			152			1288			
High	13:30			13:45			13:45			13:45			
Vol.	17	20	30	22	347	18	9	14	18	27	287	21	
Total	67			387			41			335			
PHF	0.940			0.958			0.926			0.961			



Transportation Studies, Inc.

City : HUNTINGTON BEACH
 N/S Direction : HUNTINGTON ST
 E/W Direction : PACIFIC COAST HWY
 Client : LL & G

5

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206036
 Site Code : 00000977
 Start Date: 06/22/02
 Page : 1

TURNING MOVEMENTS

Start Time	HUNTINGTON ST Southbound			PACIFIC COAST HWY Westbound			HUNTINGTON ST Northbound			PACIFIC COAST HWY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
06/22/02													
11:00	8	2	12	16	284	9	5	2	3	3	247	8	599
11:15	15	6	14	18	299	15	4	1	2	3	252	11	640
11:30	14	3	9	24	347	21	1	1	2	3	272	11	708
11:45	9	1	10	18	289	10	1	2	4	4	251	8	607
Hour	46	12	45	76	1219	55	11	6	11	13	1022	38	2554
12:00	13	2	12	21	352	8	3	4	4	5	273	6	703
12:15	14	3	13	17	312	9	4	4	2	6	269	7	660
12:30	17	6	11	19	371	19	5	2	6	10	301	9	776
12:45	12	5	16	27	333	17	4	3	3	11	281	6	718
Hour	56	16	52	84	1368	53	16	13	15	32	1124	28	2857
13:00	18	10	14	23	352	14	5	2	2	13	287	4	744
13:15	13	4	11	21	371	16	8	1	1	17	291	3	757
13:30	6	2	14	24	344	18	10	2	3	11	273	8	715
13:45	10	3	17	26	369	13	10	4	6	13	297	10	778
Hour	47	19	56	94	1436	61	33	9	12	54	1148	25	2994
Total	149	47	153	254	4023	169	60	28	38	99	3294	91	8405
% Apr.	42.6	13.4	43.8	5.7	90.4	3.8	47.6	22.2	30.1	2.8	94.5	2.6	-
% Int.	1.7	0.5	1.8	3.0	47.8	2.0	0.7	0.3	0.4	1.1	39.1	1.0	-

Transportation Studies, Inc.

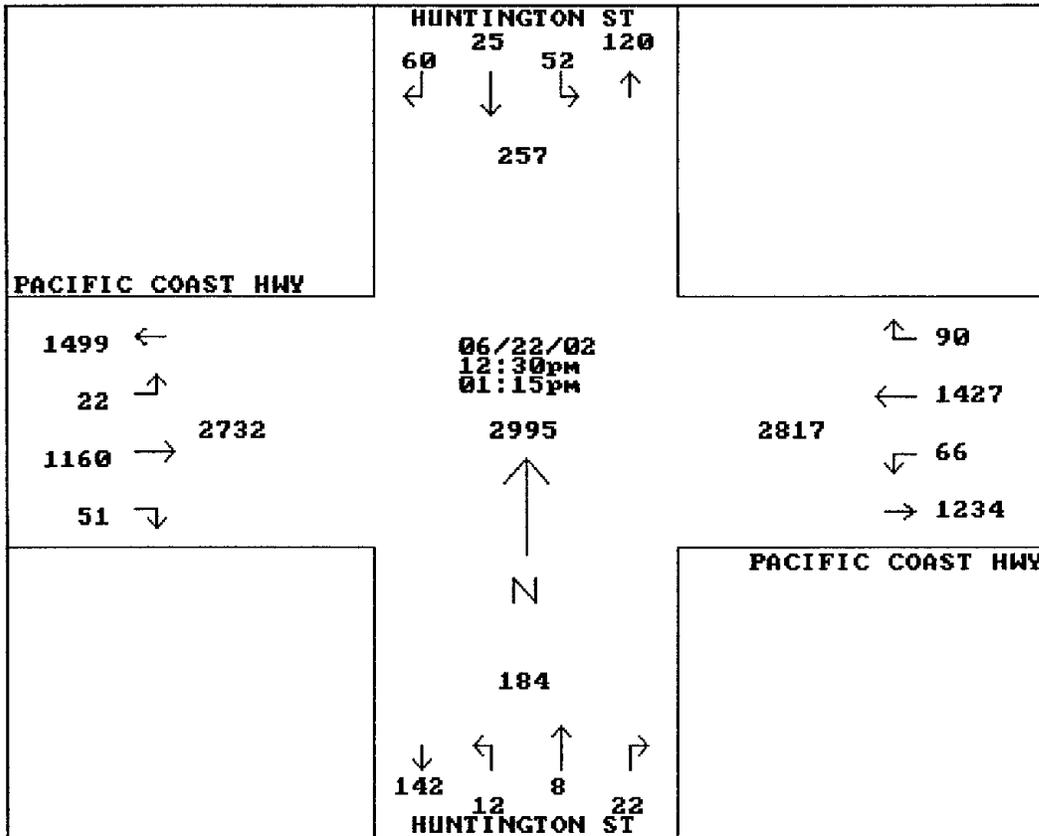
City : HUNTINGTON BEACH
 /S Direction : HUNTINGTON ST
 /W Direction : PACIFIC COAST HWY
 Client : LL & G

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206036
 Site Code : 00000977
 Start Date: 06/22/02
 Page : 2

TURNING MOVEMENTS

Start Time	HUNTINGTON ST Southbound			PACIFIC COAST HWY Westbound			HUNTINGTON ST Northbound			PACIFIC COAST HWY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Peak Hour Analysis By Entire Intersection for the Period: 11:00 on 06/22/02 to 13:45 on 06/22/02													
Time	12:30			12:30			12:30			12:30			
Vol.	60	25	52	90	1427	66	22	8	12	51	1160	22	
Pct.	43.7	18.2	37.9	5.6	90.1	4.1	52.3	19.0	28.5	4.1	94.0	1.7	
Total	137			1583			42			1233			
High	13:00			12:30			12:30			12:30			
Vol.	18	10	14	19	371	19	5	2	6	10	301	9	
Total	42			409			13			320			
PHF	0.815			0.967			0.807			0.963			



Transportation Studies, Inc.

City : HUNTINGTON BEACH
 N/S Direction : BEACH BOULEVARD (6)
 E/W Direction : PACIFIC COAST HIGHWAY
 Client : LL&G

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206037
 Site Code : 00000918
 Start Date: 06/22/02
 Page : 1

TURNING MOVEMENTS

Start Time	BEACH BOULEVARD Southbound			PACIFIC COAST HIGHWAY Westbound			BEACH BOULEVARD Northbound			PACIFIC COAST HIGHWAY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
06/22/02													
11:00	88	35	75	41	285	20	3	19	1	10	242	35	854
11:15	93	34	71	56	243	24	1	7	7	12	196	51	795
11:30	93	34	93	57	247	26	5	6	12	6	228	41	848
11:45	76	41	53	60	253	24	4	8	3	5	244	47	818
Hour	350	144	292	214	1028	94	13	40	23	33	910	174	3315
12:00	102	43	68	54	267	20	9	10	1	10	240	55	879
12:15	120	40	85	55	266	25	0	19	0	7	255	49	921
12:30	165	37	99	90	249	25	1	18	1	12	229	55	981
12:45	141	29	70	89	237	18	0	14	2	9	229	55	893
Hour	528	149	322	288	1019	88	10	61	4	38	953	214	3674
13:00	95	54	72	66	279	18	7	20	1	16	250	46	924
13:15	123	49	84	58	242	19	0	23	2	9	240	59	908
13:30	116	52	78	66	275	23	2	20	9	13	234	54	942
13:45	115	59	82	54	262	26	0	13	14	17	287	50	979
Hour	449	214	316	244	1058	86	9	76	26	55	1011	209	3753
Total	1327	507	930	746	3105	268	32	177	53	126	2874	597	10742
% Apr.	48.0	18.3	33.6	18.1	75.3	6.5	12.2	67.5	20.2	3.5	79.8	16.5	-
% Int.	12.3	4.7	8.6	6.9	28.9	2.4	0.2	1.6	0.4	1.1	26.7	5.5	-

Transportation Studies, Inc.

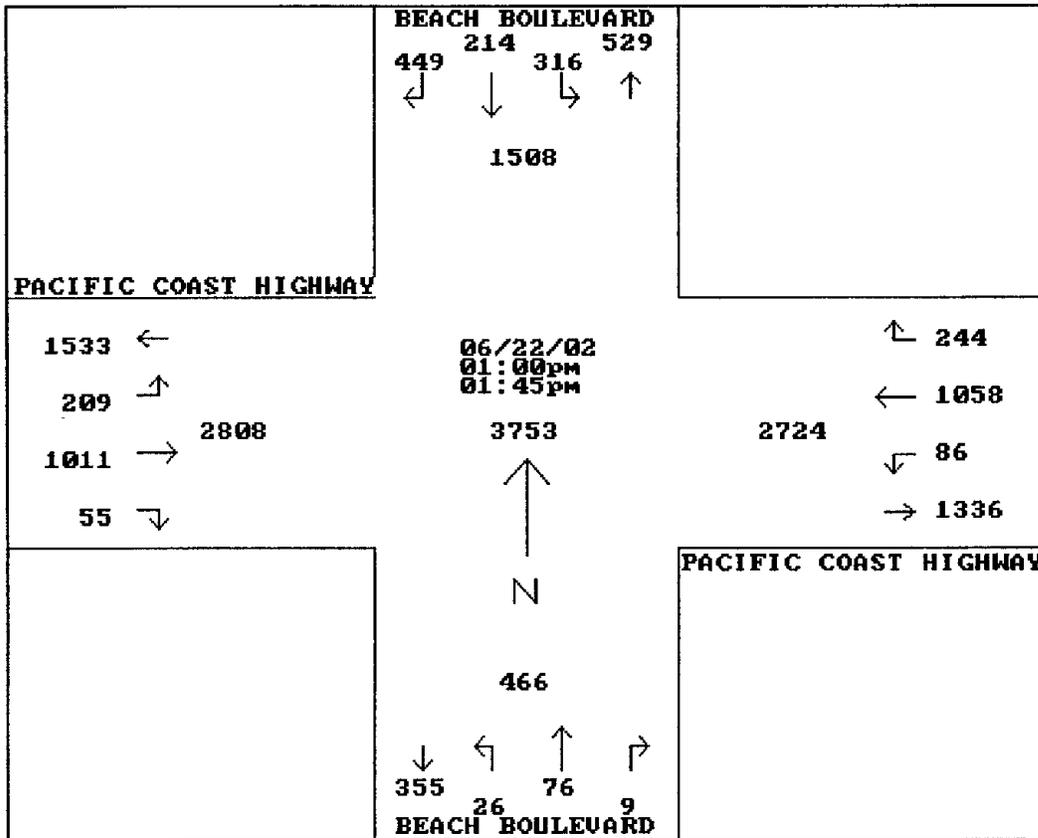
City : HUNTINGTON BEACH
 /S Direction : BEACH BOULEVARD
 /W Direction : PACIFIC COAST HIGHWAY
 Client : LL&G

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206037
 Site Code : 00000918
 Start Date: 06/22/02
 Page : 2

TURNING MOVEMENTS

Start Time	BEACH BOULEVARD Southbound			PACIFIC COAST HIGHWAY Westbound			BEACH BOULEVARD Northbound			PACIFIC COAST HIGHWAY Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Peak Hour Analysis By Entire Intersection for the Period: 11:00 on 06/22/02 to 13:45 on 06/22/02													
Time	13:00			13:00			13:00			13:00			
Vol.	449	214	316	244	1058	86	9	76	26	55	1011	209	
Pct.	45.8	21.8	32.2	17.5	76.2	6.1	8.1	68.4	23.4	4.3	79.2	16.3	
Total	979			1388			111			1275			
High	13:15			13:30			13:30			13:45			
Vol.	123	49	84	66	275	23	2	20	9	17	287	50	
Total	256			364			31			354			
PHF	0.956			0.953			0.895			0.900			



City : HUNTINGTON BEACH ⑦
 N/S Direction : BEACH BOULEVARD
 E/W Direction : ATLANTA AVENUE
 Client : LL&G

Transportation Studies, Inc.
 1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206038
 Site Code : 0000920
 Start Date: 06/22/02
 Page : 1

TURNING MOVEMENTS

Start Time	BEACH BOULEVARD Southbound			ATLANTA AVENUE Westbound			BEACH BOULEVARD Northbound			ATLANTA AVENUE Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
06/22/02													
11:00	28	193	68	20	86	9	26	67	9	8	95	30	639
11:15	22	201	43	28	78	7	16	91	4	6	69	24	589
11:30	37	142	68	31	84	12	12	92	7	3	84	30	602
11:45	20	141	36	30	62	7	11	87	7	7	59	29	496
Hour	107	677	215	109	310	35	65	337	27	24	307	113	2326
12:00	29	220	70	22	73	12	15	87	8	6	71	28	641
12:15	21	220	58	59	94	8	14	102	4	2	79	39	700
12:30	20	221	61	46	68	6	8	89	16	10	97	39	681
12:45	31	219	85	35	85	9	17	131	6	13	75	17	723
Hour	101	880	274	162	320	35	54	409	34	31	322	123	2745
13:00	50	198	54	44	58	4	8	93	18	7	57	30	621
13:15	22	212	69	32	93	7	5	114	7	11	70	30	672
13:30	30	167	52	17	70	10	6	91	10	8	61	35	557
13:45	26	281	40	16	73	9	14	88	9	12	61	31	660
Hour	128	858	215	109	294	30	33	386	44	38	249	126	2510
Total	336	2415	704	380	924	100	152	1132	105	93	878	362	7581
% Apr.	9.7	69.8	20.3	27.0	65.8	7.1	10.9	81.4	7.5	6.9	65.8	27.1	-
% Int.	4.4	31.8	9.2	5.0	12.1	1.3	2.0	14.9	1.3	1.2	11.5	4.7	-

Transportation Studies, Inc.

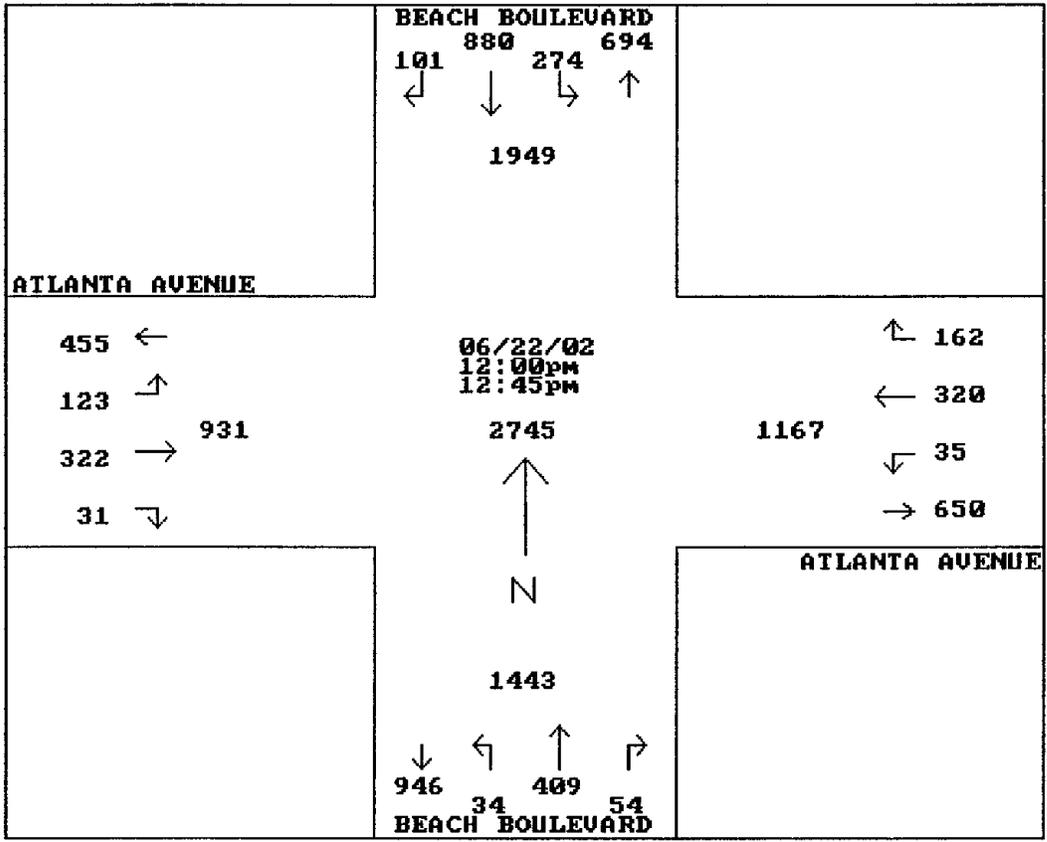
City : HUNTINGTON BEACH
 I/S Direction : BEACH BOULEVARD
 E/W Direction : ATLANTA AVENUE
 Client : LL&G

1820 E. Garry Avenue
 Suite 116
 Santa Ana, CA. 92705

Study Name: H0206038
 Site Code : 00000920
 Start Date: 06/22/02
 Page : 2

TURNING MOVEMENTS

Start Time	BEACH BOULEVARD Southbound			ATLANTA AVENUE Westbound			BEACH BOULEVARD Northbound			ATLANTA AVENUE Eastbound			Intrvl. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Peak Hour Analysis By Entire Intersection for the Period: 11:00 on 06/22/02 to 13:45 on 06/22/02													
Time	12:00			12:00			12:00			12:00			
Vol.	101	880	274	162	320	35	54	409	34	31	322	123	
Pct.	8.0	70.1	21.8	31.3	61.8	6.7	10.8	82.2	6.8	6.5	67.6	25.8	
Total	1255			517			497			476			
High	12:45			12:15			12:45			12:30			
Vol.	31	219	85	59	94	8	17	131	6	10	97	39	
Total	335			161			154			146			
PHF	0.936			0.802			0.806			0.815			



**YEAR 2008 SUMMER WEEKEND EXISTING
PEAK HOUR INTERSECTION LEVELS OF SERVICE SUMMARY
Pacific City, Huntington Beach**

Key Intersections	Peak Time Period	Year 2002 Existing Conditions	
		ICU	LOS
1. 9 th Street at Pacific Coast Highway	MID-DAY	0.491	A
2. 6 th Street at Pacific Coast Highway	MID-DAY	0.480	A
3. Main Street at Pacific Coast Highway	MID-DAY	0.778	C
4. 1 st Street at Pacific Coast Highway	MID-DAY	0.416	A
5. Huntington Street at Pacific Coast Highway	MID-DAY	0.533	A
6. Beach Boulevard at Pacific Coast Highway	MID-DAY	0.640	B
7. Beach Boulevard at Atlanta Avenue	MID-DAY	0.516	A

N:\2100\2002133\tables\2133 Existing Weekend LOS Summary.doc

LINSCOTT, LAW & GREENSPAN, ENGINEERS
 1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
 (714) 641-1587

INTERSECTION CAPACITY UTILIZATION

8th Street @ Pacific Coast Highway
 Peak hr: Weekend
 Annual Growth: 1.00%

Date: 04/18/2003
 Date of Count: 2002
 Projection Year:

N-S St: 9th Street
 E-W St: Pacific Coast Highway
 Project: Pacific City
 File: 2100\20021331cu\2008\Weekend\ICU1A

2002 EXISTING TRAFFIC		Added		Total		V/C		Added		Total		V/C				
Movement	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Ratio
Nb Left	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Thru	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Nb Right	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	59	1	1700	0.035	0	59	1	1700	0.035	0	59	1	1700	1	1700	0.035
Sb Thru	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000
Sb Right	43	1	1700	0.025	0	43	1	1700	0.025	0	43	1	1700	1	1700	0.025
EB Left	61	1	1700	0.036	0	61	1	1700	0.036	0	61	1	1700	1	1700	0.036
EB Thru	1380	2	3400	0.406 *	0	1380	2	3400	0.406 *	0	1380	2	3400	2	3400	0.406 *
EB Right	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
WB Left	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *	0	0	0	0.000 *
WB Thru	1119	2	3400	0.349	0	1119	2	3400	0.349	0	1119	2	3400	2	3400	0.349
WB Right	68	0	0	-	0	68	0	-	0	68	0	-	0	68	0	-
Yellow Allowance:				0.050 *				0.050 *				0.050 *				0.050 *
ICU				0.491				0.491				0.491				0.491
LOS				A				A				A				A

* Key conflicting movement as a part of ICU.
 ** Functions as a separate turn lane, however, is not striped as such.
 Counts conducted by:
 Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.000
 Significant Impact: NO

Area Traffic Mitigation:

LINSCOTT, LAW & GREENSPAN, ENGINEERS
 1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
 (714) 841-1587

N-S St: 6th Street
 E-W St: Pacific Coast Highway
 Project: Pacific City
 File: 210020021331cu2008\Weekend\ICU2A

INTERSECTION CAPACITY UTILIZATION

6th Street @ Pacific Coast Highway
 Peak hr: Weekend
 Annual Growth: 1.00%

Date: 04/18/2003
 Date of Count: 2002
 Projection Year:

2002 EXISTING TRAFFIC		Added			Total			V/C			Added			Total			V/C			
Movement	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Ratio
Nb Left	62	0	0	0.000	0	0	0	0.000	0	0	0	0.000	0	0	0	0.000	62	0	0	0.000
Nb Thru	39	1	1700	0.084 *	0	39	1	1700	0.084 *	0	39	1	1700	0.084 *	0	39	1	1700	0.084 *	0
Nb Right	41	0	0	-	0	41	0	-	0	41	0	-	0	41	0	-	0	41	0	-
Sb Left	55	1	1700	0.032 *	0	55	1	1700	0.032 *	0	55	1	1700	0.032 *	0	55	1	1700	0.032 *	0
Sb Thru	45	1	1700	0.072	0	45	1	1700	0.072	0	45	1	1700	0.072	0	45	1	1700	0.072	0
Sb Right	78	0	0	-	0	78	0	-	0	78	0	-	0	78	0	-	0	78	0	-
EB Left	75	1	1700	0.044	0	75	1	1700	0.044	0	75	1	1700	0.044	0	75	1	1700	0.044	0
EB Thru	1170	3	5100	0.253 *	0	1170	3	5100	0.253 *	0	1170	3	5100	0.253 *	0	1170	3	5100	0.253 *	0
EB Right	121	0	0	-	0	121	0	-	0	121	0	-	0	121	0	-	0	121	0	-
WB Left	103	1	1700	0.061 *	0	103	1	1700	0.061 *	0	103	1	1700	0.061 *	0	103	1	1700	0.061 *	0
WB Thru	1057	3	5100	0.221	0	1057	3	5100	0.221	0	1057	3	5100	0.221	0	1057	3	5100	0.221	0
WB Right	69	0	0	-	0	69	0	-	0	69	0	-	0	69	0	-	0	69	0	-
Yellow Allowance:				0.050 *				0.050 *				0.050 *				0.050 *				0.050 *
ICU				0.480				0.480				0.480				0.480				0.480
LOS				A				A				A				A				A

* Key conflicting movement as a part of ICU.
 ** Functions as a separate turn lane, however, is not striped as such.
 Counts conducted by:
 Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.000
 Significant Impact: NO

Area Traffic Mitigation:

LINSCOTT, LAW & GRENSPAN, ENGINEERS
 1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
 (714) 641-1587

N-S St: Main Street
 E-W St: Pacific Coast Highway
 Project: Pacific City
 File: 21002002133\icu\2008\Weekend\ICU3A

INTERSECTION CAPACITY UTILIZATION

Main Street @ Pacific Coast Highway
 Peak hr: Weekend
 Annual Growth: 1.00%

Date: 04/18/2003
 Date of Count: 2002
 Projection Year:

2002: EXISTING TRAFFIC		Added Volume		Total Volume		V/C Ratio		Added Volume		Total Volume		V/C Ratio	
Movement	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Ratio	V/C Ratio
Nb Left	0	0	0	0.000	0	0	0	0.000	0	0	0	0	0.000
Nb Thru	0	1	1700	0.000	0	0	1700	0.000	0	0	1700	0.000	0.000
Nb Right	0	0	0	-	0	0	0	-	0	0	0	0	-
Sb Left	208	1	1700	0.122	0	208	1700	0.122	0	208	1700	0.122	0.122
Sb Thru	0	0	0	0.000	0	0	0	0.000	0	0	0	0	0.000
Sb Right	280	1	1700	0.165	0	280	1700	0.165	0	280	1700	0.165	0.165
Eb Left	261	1	1700	0.154 *	0	261	1700	0.154 *	0	261	1700	0.154 *	0.154 *
Eb Thru	1012	3	5100	0.198	0	1012	5100	0.198	0	1012	5100	0.198	0.198
Eb Right	0	0	0	-	0	0	0	-	0	0	0	0	-
Wb Left	62	1	1700	0.036	0	62	1700	0.036	0	62	1700	0.036	0.036
Wb Thru	1081	3	5100	0.212 *	0	1081	5100	0.212 *	0	1081	5100	0.212 *	0.212 *
Wb Right	322	1	1700	0.189	0	322	1700	0.189	0	322	1700	0.189	0.189
Yellow Allowance:				0.300 *				0.300 *				0.300 *	0.300 *
ICU				0.788				0.788				0.788	0.788
LOS				C				C				C	C

* Key conflicting movement as a part of ICU.
 ** Functions as a separate turn lane, however, is not striped as such.
 Counts conducted by:
 Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.000
 Significant Impact: NO

Area Traffic Mitigation:

LINSCOTT, LAW & GREENSPAN, ENGINEERS
 1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
 (714) 641-1587

INTERSECTION CAPACITY UTILIZATION

1st Street (Split Phase) @ Pacific Coast Highway
 Peak hr: Weekend
 Annual Growth: 1.00%

Date: 04/18/2003
 Date of Count: 2002
 Projection Year:

N-S St: 1st Street (Split Phase)
 E-W St: Pacific Coast Highway
 Project: Pacific City
 File: 210012002133\icu2008\Weekend\ICU4A

Movement	2002 EXISTING TRAFFIC			Added			Total			V/C			Added			Total			V/C					
	Volume	Lanes	Capacity	Volume	Lanes	Capacity	Volume	Lanes	Capacity	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Volume	Lanes	Capacity	Ratio	Volume	Lanes	Capacity	Ratio
Nb Left	62	1.5	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0	0	0.000	0	0	0	0.000	
Nb Thru	49	0.5	3400	0	0.033 *	0	0	0.033 *	0	0	0.033 *	0	0	0.033 *	0	0	0	0	0.033 *	0	0	3400	0.033 *	
Nb Right	41	1	1700	0	0.024	0	0	0.024	0	0	0.024	0	0	0.024	0	0	0	0	0.024	0	0	1700	0.024	
Sb Left	117	1.5	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0	0	0.000	0	0	0	0.000	
Sb Thru	66	0.5	3400	0	0.054 *	0	0	0.054 *	0	0	0.054 *	0	0	0.054 *	0	0	0	0	0.054 *	0	0	1700	0.039	
Sb Right	69	1	1700	0	0.041	0	0	0.041	0	0	0.041	0	0	0.041	0	0	0	0	0.041	0	0	2550	0.027	
Eb Left	99	1	1700	0	0.058 *	0	0	0.058 *	0	0	0.058 *	0	0	0.058 *	0	0	0	0	0.058 *	0	0	1700	0.058 *	
Eb Thru	1106	3	5100	0	0.233	0	0	0.233	0	0	0.233	0	0	0.233	0	0	0	0	0.233	0	0	5100	0.233	
Eb Right	83	0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	0	0	-	0	0	0	-	
Wb Left	79	1	1700	0	0.046	0	0	0.046	0	0	0.046	0	0	0.046	0	0	0	0	0.046	0	0	1700	0.046	
Wb Thru	1326	3	5100	0	0.275 *	0	0	0.275 *	0	0	0.275 *	0	0	0.275 *	0	0	0	0	0.275 *	0	0	5100	0.275 *	
Wb Right	79	0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	0	0	-	0	0	0	-	
Yellow Allowance:					0.050 *			0.050 *			0.050 *			0.050 *					0.050 *					0.050 *
ICU					0.416			0.416			0.416			0.416					0.416					0.401
LOS					A			A			A			A					A					A

* Key conflicting movement as a part of ICU.
 ** Functions as a separate turn lane, however, is not striped as such.
 Counts conducted by:
 Capacity expressed in vehicles per hour of green.

Project ICU Impact: -0.015
 Significant Impact: NO
 Area Traffic Mitigation:

LINSCOTT, LAW & GREENSPAN, ENGINEERS
 1580 Corporate Drive, Suite 122, Costa Mesa CA 92626
 (714) 641-1587

INTERSECTION CAPACITY UTILIZATION

Beach Boulevard @ Pacific Coast Highway
 Peak hr: Weekend
 Annual Growth: 1.00%

Date: 04/18/2003
 Date of Count: 2002
 Projection Year:

N-S St: Beach Boulevard
 E-W St: Pacific Coast Highway
 Project: Pacific City
 File: 2100\2002\133\icu\2008\Weekend\ICU6A

2002 EXISTING TRAFFIC														
Movement	Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio	Added Volume	Total Volume	Lanes	Capacity	V/C Ratio
Nb Left	26	1	1700	0.015 *	0	26	1	1700	0.015 *	0	26	1	1700	0.015 *
Nb Thru	76	2	3400	0.022	0	76	2	3400	0.022	0	76	2	3400	0.022
Nb Right	9	1	1700	0.005	0	9	1	1700	0.005	0	9	1	1700	0.005
Sb Left	316	2	3400	0.093	0	316	2	3400	0.093	0	316	2	3400	0.093
Sb Thru	214	1	1700	0.126	0	214	1	1700	0.126	0	214	1	1700	0.126
Sb Right	449	1	1700	0.264 *	0	449	1	1700	0.264 *	0	449	1	1700	0.264 *
Eb Left	209	2	3400	0.061	0	209	2	3400	0.061	0	209	2	3400	0.061
Eb Thru	1011	3	5100	0.209	0	1011	3	5100	0.209	0	1011	3	5100	0.209
Eb Right	55	0	0	-	0	55	0	0	-	0	55	0	0	-
Wb Left	86	1	1700	0.051	0	86	1	1700	0.051	0	86	1	1700	0.051
Wb Thru	1058	2	3400	0.311 *	0	1058	2	3400	0.311 *	0	1058	2	3400	0.311 *
Wb Right	244	1	1700	0.144	0	244	1	1700	0.144	0	244	1	1700	0.144
Yellow Allowance:				0.050 *					0.050 *					0.050 *
ICU				0.640					0.640					0.640
LOS				B					B					B

* Key conflicting movement as a part of ICU.
 ** Functions as a separate turn lane, however, is not striped as such.
 Counts conducted by:
 Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.000
 Significant Impact: NO
 Area Traffic Mitigation:

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LINSCOTT, LAW & GREENSPAN, ENGINEERS
 1580 Corporate Drive, Suite 122, Costa Mesa CA, 92626
 (714) 641-1587

N-S St: Beach Boulevard
 E-W St: Atlanta Avenue
 Project: Pacific City
 File: 2100\2002133\icu\2008\Weekend\ICU7A

INTERSECTION CAPACITY UTILIZATION

Beach Boulevard @ Atlanta Avenue
 Peak hr: Weekend
 Annual Growth: 1.00%

Date: 04/18/2003
 Date of Count: 2002
 Projection Year:

2002 EXISTING TRAFFIC		Added		Total		V/C		Added		Total		V/C				
Movement	Volume	Lanes	Capacity	Ratio												
Nb Left	34	1	1700	0.020	0	1	1700	0.020	0	1	1700	0.020	0	1	1700	0.020
Nb Thru	409	3	5100	0.091 *	0	3	5100	0.091 *	0	3	5100	0.091 *	0	3	5100	0.091 *
Nb Right	54	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Sb Left	274	1	1700	0.161 *	0	1	1700	0.161 *	0	1	1700	0.161 *	0	1	1700	0.161 *
Sb Thru	880	3	5100	0.192	0	3	5100	0.192	0	3	5100	0.192	0	3	5100	0.192
Sb Right	101	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Eb Left	123	1	1700	0.072 *	0	1	1700	0.072 *	0	1	1700	0.072 *	0	1	1700	0.072 *
Eb Thru	322	2	3400	0.104	0	2	3400	0.104	0	2	3400	0.104	0	2	3400	0.104
Eb Right	31	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Wb Left	35	1	1700	0.021	0	1	1700	0.021	0	1	1700	0.021	0	1	1700	0.021
Wb Thru	320	2	3400	0.142 *	0	2	3400	0.142 *	0	2	3400	0.142 *	0	2	3400	0.142 *
Wb Right	162	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
Yellow Allowance:				0.050 *												
ICU				0.516				0.516				0.516				0.468
LOS				A				A				A				A

* Key conflicting movement as a part of ICU.
 ** Functions as a separate turn lane, however, is not striped as such.
 Counts conducted by:
 Capacity expressed in vehicles per hour of green.

Project ICU Impact: 0.000
 Significant Impact: NO

Area Traffic Mitigation:

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