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San Diego Unified Port District
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Part V of V

Sunroad Harbor Island Hotel Project

& East Harbor Island Subarea Port Master Plan Amendment

RECIRCULATED PORTIONS OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

Unified Port of San Diego

November 2010

State Clearinghouse Number 2006021027

UPD Number 83356-EIR-783

NOTICE OF AVAILABILITY

RECIRCULATED PORTIONS OF THE DRAFT ENVIRONMENTAL IMPACT REPORT SUNROAD HARBOR ISLAND HOTEL PROJECT & EAST HARBOR ISLAND SUBAREA PORT MASTER PLAN AMENDMENT (UPD #83356-EIR-783; SCH #2006021027)

Notice is hereby given that the San Diego Unified Port District (SDUPD), as the lead agency under the California Environmental Quality Act (CEQA), has prepared Recirulated Portions of the Draft Environmental Impact Report (EIR) for the Sunroad Harbor Island Hotel Project and East Harbor Island Subarea Port Master Plan Amendment. This document includes revisions to portions of the following chapters and sections of the Draft EIR: Executive Summary (Chapter 1); Project Description (Chapter 3); Transportation, Traffic and Parking (Section 4.6); Cumulative Impacts (Chapter 5); Alternatives (Chapter 6); Port Master Plan Amendment (Appendix B); and Traffic Study (Appendix E).

The proposed project involves the redevelopment of an existing property leased to Sunroad Marina Partners, LP at 955 Harbor Island Drive in San Diego. The project is landside only and the existing adjacent marina building and marina boat berths within the submerged tidelands would not be altered. The project includes demolition of an existing locker building and parking lot; construction of a 4-story 175-room limited-service hotel; reduction of traffic circle and realignment of a portion of East Harbor Island Drive; reconfiguration of existing paved areas; enhanced public access along the Harbor Island East Basin side of the hotel; and realignment of existing sewer, water, and utility lines.

The Recirculated Portions of the Draft EIR and all referenced documents are available for public review during normal business hours at the SDUPD Office of the District Clerk, 3165 Pacific Highway, San Diego, CA 92101. A CD copy of the Recirculated Portions of the Draft EIR can be obtained by contacting the Land Use Planning Department at (619) 686-6283. The Recirculated Portions of the Draft EIR can be viewed online at http://www.portofsandiego.org/sunroad-harbor-island-hotel.html. The Recirculated Portions of the Draft EIR is also available for review at the following libraries:

- San Diego Central Library (820 E Street, San Diego, CA 92101)
- Mission Hills Branch Library (925 W. Washington Street, San Diego, CA 92103)
- Point Loma/Hervey Branch Library (3701 Voltaire Street., San Diego, CA 92107)

Pursuant to CEQA Guidelines Section 15088.5(f)(2), the SDUPD requests that reviewers limit their comments to the chapters or portions of the Draft EIR which are revised and recirculated in this document. The SDUPD will respond only to comments received during the original circulation period on chapters or portions of the EIR which are not revised and recirculated, and comments received during the recirculation period that relate to chapters or portions of the EIR which are revised and recirculated in this document. Comments received on the original Draft EIR during the previous comment period will be responded to in the Final EIR and need not be re-submitted.

Comments on this Recirculated Portions of the Draft EIR should be addressed to the San Diego Unified Port District, Land Use Planning Department, 3165 Pacific Highway, San Diego, CA, 92101. The 45-day public review period for the Recirculated Portions of the Draft EIR begins **Wednesday, November 24, 2010** and ends at **4:00 pm on Monday, January 10, 2011.**

57791

Unified Port of San Diego

3165 Pacific Highway, San Diego, CA 92101
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November 23, 2010

SUBJECT: Transmittal of Recirculated Portions of the Draft Environmental Impact Report for Public Review

PROJECT TITLE: "*Sunroad Harbor Island Hotel Project & East Harbor Island Subarea Port Master Plan Amendment*"; San Diego, California (UPD #83356-EIR-783; SCH #2006021027)

PUBLIC REVIEW BEGINS: Wednesday, November 24, 2010

PUBLIC REVIEW ENDS: Monday, January 10, 2011

PUBLIC DISTRIBUTION: Enclosed please find copy(ies) of the Recirculated Portions of the Draft Environmental Impact Report (EIR) for the above referenced project. A public Notice of Availability of the Recirculated Portions of the Draft EIR has been published and copies have been forwarded to various federal, state, and local agencies, libraries, newspapers, business and community groups, and other interested parties.

AGENCY DISTRIBUTION: The enclosed Recirculated Portions of the Draft EIR is forwarded for your review and/or processing. For state agencies, this copy is sent to you directly to. The Recirculated Portions of the Draft EIR was formally submitted to the State Clearinghouse, and you may receive an official copy from them in the near future.

LIBRARY DISTRIBUTION: The enclosed Recirculated Portions of the Draft EIR is transmitted to appropriate public library systems to facilitate review by the public. Please ensure that the enclosed copy is available at your location.

Should you need additional information, please contact the Port of San Diego Land Use Planning Department, at (619) 686-6283.

JOHN HELMER
Director, Land Use Planning

Enc: Recirculated Portions of the Draft EIR

57791

Recirculated Portions of Draft Environmental Impact Report

for the

Sunroad Harbor Island Hotel Project
&
East Harbor Island Subarea Port Master Plan Amendment

SCH No. 2006021027
UPD No. 83356-EIR-635

November 2010

San Diego Unified Port District
3165 Pacific Highway
San Diego, California 92101-1128

Table of Contents

57791

6

Appendices

Tables

57791

8

Figures

57791

9

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57791

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Prologue

P.1 Background

This document contains revisions to portions of the Draft Environmental Impact Report (EIR) for the Sunroad Harbor Island Hotel Project and East Harbor Island Subarea Port Master Plan (PMP) Amendment (Project or Proposed Project). The Project is within the jurisdiction of the San Diego Unified Port District (Port District) on a site currently leased to Sunroad Marina Partners, LP (Sunroad). A Draft EIR was prepared to disclose potential environmental effects of the Proposed Project and included a description of the Proposed Project, an assessment of its potential environmental effects, a description of feasible mitigation measures to reduce significant effects that were identified in the Draft EIR, and consideration of alternatives that could reduce or avoid the Project's significant impacts. In accordance with the California Environmental Quality Act (CEQA), the Draft EIR was distributed for a 45-day public review and comment period beginning on December 10, 2009 and ending on January 25, 2010. Copies of the Draft EIR or notice of availability of the Draft EIR were sent to various state, regional, and local agencies, as well as interested organizations and individuals. In total, comment letters were received from four public agencies.

The Draft EIR determined that the cumulative impacts to traffic and fire protection services could not be mitigated to a less than significant level. All other individual and cumulative impacts were mitigated to a level less than significant. However, comments received from the City of San Diego (City) on the Draft EIR indicated that the traffic analysis did not use the most recent significance thresholds adopted by the City. In particular, the thresholds that were used in the Draft EIR were for projects analyzed prior to 2007. The most recent thresholds are more stringent for intersections and street segments that are at level of service (LOS) F under existing conditions. The City comments also indicated that incorrect roadway classifications and capacities were used in the traffic analysis. Further, the traffic analysis contained in the Draft EIR analyzed traffic impacts for a 210-room hotel, the originally proposed size of the hotel. Impacts for the 210-room hotel had similar less than significant impacts as the 175-room hotel. The revisions to the Draft EIR include an updated traffic report for the 175-room hotel (Appendix E of Draft EIR).

This Recirculated Portions of the Draft EIR was prepared in accordance with Section 15088.5 of the CEQA Guidelines which states that "A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review." Significant new information includes "a new significant environmental impact [that] would result from the project or from a new mitigation measure proposed to be implemented" or "a feasible project alternative or mitigation measure [that is] considerably different from others previously analyzed [that] would clearly lessen the environmental impacts of the project." Further, because the revisions are limited to a few chapters of the Draft EIR, only those chapters are included in this Recirculated Portions of the Draft EIR. These chapters and the associated revisions are discussed below in Section P.3.

P.2 Public Review and Comments

CEQA Guidelines Section 15088.5 describes the procedures for recirculation of portions of an EIR. Subsection (f)(2) provides that, when an EIR is revised only in part and the lead agency is recirculating only the revised chapters or portion of an EIR, the lead agency may request that reviewers limit their comments to the revised chapters or portions of the recirculated EIR.

Pursuant to CEQA Guidelines Section 15088.5(f)(2), therefore, the Port District requests that reviewers limit their comments to the chapters or portions of the Draft EIR which are revised and recirculated in this document. The Port District will respond only to comments received during the original circulation period on chapters or portions of the EIR which are not revised and recirculated, and comments received during the recirculation period that relate to chapters or portions of the EIR which are revised and recirculated in this document. Comments received on the original Draft EIR during the previous comment period will be responded to in the Final EIR and need not be re-submitted.

This Recirculated Portions of the Draft EIR will be available for a 45-day period for review and comment by the public and public agencies from Wednesday, November 24, 2010 to Monday, January 10, 2011. Comments on the Recirculated Portions of the Draft EIR must be received by 4:00 p.m. on Monday, January 10, 2011 and must be submitted in writing to:

San Diego Unified Port District
Land Use Planning Department
P.O. Box 120488
San Diego, CA 92112-0488

A hard copy of this Recirculated Portions of the Draft EIR and all referenced documents are available for public review during normal business hours at the San Diego Unified Port District's Office of the District Clerk, 3165 Pacific Highway, San Diego, CA 92101. A CD copy of the Recirculated Portions of the Draft EIR also can be obtained by contacting the Land Use Planning Department at (619) 686-6283. The Recirculated Portions of the Draft EIR can be viewed online at www.portofsandiego.org/sunroad-harbor-island-hotel.html. The Recirculated Portions of the Draft EIR is also available for review, during normal operation hours for the duration of the public review period, at the following libraries:

- San Diego Central Library (820 E Street, San Diego, CA 92101)
- Mission Hills Branch Library (925 W. Washington Street, San Diego, CA 92103)
- Point Loma/Hervey Branch Library (3701 Voltaire Street., San Diego, CA 92107)

P.3 Revisions Made to the Previously Circulated Draft EIR

57791

CEQA Guidelines Section 15088.5 requires a summary of the revisions made to the previously circulated Draft EIR to be included in the revision to the Recirculated Portions of the Draft EIR. The Recirculated Portions of the Draft EIR consist of the following chapters

12

and appendices. With the exception of the revised Appendix E (Traffic Impact and Parking Analysis), the revisions are shown in strike-out (deletions) / underline (additions) format. The revisions made to the Port Master Plan Amendment (pp. 1-9, 3-10 and 3-11, and Appendix B of the EIR) that were made after the circulation of the Draft EIR are shown in highlighted text.

Chapter 1: Executive Summary

This chapter contains revisions to the text of the Port Master Plan Amendment in Section 1.3.7, *Port Master Plan Amendment* (p. 1-9 and 1-10), to the mitigation measures for cumulative traffic impacts in Section 1.4, *Impact Summary* (p. 1-19 and 1-20), and to Table 1-3, *Impact and Level of Significance Comparison of Proposed Project and Alternatives* (p. 1-24). The strikeout/underline text shown in Table 1-1 has not been revised from the previously circulated Draft EIR. Although there are no other changes in this chapter, the remainder of Chapter 1 is included to provide context for the revisions in other sections of the Draft EIR.

Chapter 3: Project Description

This chapter contains revisions to the text of the Port Master Plan Amendment in Section 3.2.7, *Port Master Plan Amendment* (pp. 3-10 and 3-11), and to the description of the Reduced Project Alternative in Section 3.4.2, *Reduced Project Alternative* (pp. 3-13 and 3-14). The strikeout/underline text shown in Table 3-1 has not been revised from the previously circulated Draft EIR. Although there are no other changes in this chapter, the remainder of Chapter 3 is included to provide context for the revisions in other sections of the Draft EIR.

Section 4.6: Transportation, Traffic and Parking

This chapter contains revisions to Section 4.6.1, *Introduction* (p. 4.6-1), Section 4.6.2, *Existing Conditions* (pp. 4.6-2 through 4.6-6), Section 4.6.3, *Impact Significance Criteria* (pp. 4.6-9 and 4.6-10), and Section 4.6.4.1, *Analysis of Project Impacts: Substantial Traffic Increase* (pp. 4.6-11 through 4.6-15). These revisions were made to ensure consistency with the most recent City significance thresholds, roadway classifications and roadway capacities. However, the revisions to the significance thresholds, roadway classifications and roadway capacities used in the Draft EIR did not result in any change in the conclusions regarding the significance of potential traffic impacts. Although there are no other changes in this chapter, the remainder of Section 4.6 is included to provide context for the revisions described above.

Chapter 5: Cumulative Impacts (Transportation, Traffic and Parking)

This chapter contains revisions to Section 5.3.6, *Transportation, Traffic, and Parking* (pp. 5-16 through 5-19), Section 5.4.1, *Significant Cumulative Impacts: Transportation, Traffic and Parking* (p. 5-36), Section 5.5.1, *Mitigation Measures: Transportation, Traffic and Parking* (p. 5-37 and 5-38), and Section 5.6.1, *Significance of Impacts after Mitigation: Transportation, Traffic and Parking* (p. 5-39 through 5-41). These revisions were made to ensure consistency with the most recent City significance thresholds, roadway classifications and roadway capacities. The revisions to the significance thresholds, roadway classifications

57791

13

and roadway capacities used in the Draft EIR resulted in the identification of one additional cumulative significant impact on traffic at the intersection of Pacific Highway and Hawthorn Street, and two new significant cumulative street segment impacts: North Harbor Drive between Harbor Island Drive and Rental Car Access Road, and North Harbor Drive between Rental Car Access Road and Laurel Street. Mitigation Measures TR-C4, TR-C5, and TR-C6 have been recommended to reduce these additional cumulative traffic impacts to a level less than significant. However, the Port District cannot guarantee implementation of the recommended mitigation because the affected intersection and street segments are within the jurisdiction of the City, not the Port District, and the City does not have an adopted plan or program which addresses improvements at the impacted intersection or street segments. Accordingly, the additional cumulative impacts identified in the revisions would remain significant and unmitigated. Although there are no other changes in this chapter, the remainder of Chapter 5 is included to provide context for the revisions described above.

Chapter 6: Alternatives

This chapter contains revisions to the Transportation, Traffic and Parking analysis (pp. 6-6 through 6-7) of Section 6.2.1, *No Project Alternative*; and the description (p. 6-9), the Transportation, Traffic and Parking analysis (pp. 6-12 through 6-15), and the Summary (pp. 6-18 through 6-20) of Section 6.2.2, *Reduced Project Alternative.* The revisions to Section 6.2.1, *No Project Alternative* were made to reflect the revisions made in Chapter 5 to ensure consistency with the most recent City significance thresholds, roadway classifications and roadway capacities. The revisions to Section 6.2.2, *Reduced Project Alternative* were made to revise the alternative to a level which would reduce the significant cumulative traffic impacts of the Proposed Project. The Reduced Project Alternative analyzed in the Draft EIR was a 69-room hotel. A hotel of this size would avoid all cumulative traffic impacts under the previous traffic significance thresholds. With the most recent City roadway classifications, roadway capacities and significance standards, a 69-room hotel would avoid all significant traffic impacts with the exception of two intersections. The Reduced Project Alternative was also revised to analyze a 123-room hotel. A 123-room hotel would avoid all significant traffic impacts with the exception of three intersections. Both the 69-room hotel and 123-room hotel would reduce the cumulative traffic impacts assessed for the Proposed Project. Although there are no other changes in this chapter, the remainder of Chapter 6 is included to provide context for the revisions described above.

Appendix B –Port Master Plan Amendment

This appendix contains the revised Draft Port Master Plan Amendment. The main revisions in this chapter are the paragraphs that were moved from the East Harbor Island Subarea text to the introductory Planning District 2 text. All revisions to this appendix that were made after the circulation of the Draft EIR are shown in highlighted text.

57791

14

Appendix E – Traffic Impact and Parking Analysis

This technical appendix (and its relevant appendices) has been revised to consider the proposed 175-room hotel, the updated traffic significance thresholds, and the revised street classifications and capacities. The Significance Avoidance Project Alternative Letter Report (Appendix H of the previously circulated Traffic Impact and Parking Analysis) has been deleted and replaced with the Reduced Project Alternative Letter Report (Appendix I of the revised Traffic Impact and Parking Analysis). The Reduced Project Alternative Letter Report analyzes the traffic impacts associated with a 69-room hotel and a 123-room hotel. Both the 69-room hotel and the 123-room hotel would reduce the cumulative traffic impacts under the revised traffic significance thresholds. The changes are not shown in strike-out/underline format.

P.4 Sections with No Revisions

The following chapters of the Draft EIR have not been revised and therefore are not included in the Recirculated Portions of the Draft EIR.

Chapter 2: Introduction

This chapter discusses the background on the Project, the Project's objectives, and provides information on how the EIR will be used and the certification process. None of the changes discussed above alter the information presented in this chapter. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

Chapter 4: Environmental Analysis

This chapter discusses the existing conditions and potential impacts that could result from the Proposed Project for different environmental factors. With the exception of Transportation, Traffic and Parking (Section 4.6), the issue warranting the recirculation of portions of the Draft EIR does not change the impact conclusions contained in the Draft EIR. The revisions to Section 4.6 (Transportation, Traffic and Parking) are included in the Recirculated Portions of the Draft EIR. All other sections of this chapter are discussed below.

Section 4.1: Land Use, Water Use, and Coastal Access

The issue warranting the recirculation of portions of the Draft EIR is due to traffic issues and does not affect the land use, water use, or coastal access impact analysis conducted in the Draft EIR. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

Section 4.2: Biological Resources

The issue warranting the recirculation of portions of the Draft EIR is due to traffic issues and does not affect the biological resources impact analysis conducted in the Draft EIR. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

57791

Section 4.3: Aesthetics

The issue warranting the recirculation of portions of the Draft EIR is due to traffic issues and does not affect the aesthetics impact analysis conducted in the Draft EIR. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

Section 4.4: Hazards and Hazardous Materials

The issue warranting the recirculation of portions of the Draft EIR is due to traffic issues and does not affect the hazards and hazardous materials impact analysis conducted in the Draft EIR. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

Section 4.5: Hydrology and Water Quality

The issue warranting the recirculation of portions of the Draft EIR is due to traffic issues and does not affect the hydrology and water quality impact analysis conducted in the Draft EIR. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

Section 4.7: Air Quality

The issue warranting the recirculation of portions of the Draft EIR is due to traffic issues and does not affect the air quality impact analysis conducted in the Draft EIR. Traffic counts were utilized for the air quality analysis; however, the issue warranting the recirculation of portions of the Draft EIR is associated with traffic significance thresholds, not traffic counts. Thus, the traffic count data was not altered and the air quality analysis is not affected by these revisions. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

Section 4.8: Noise

The issue warranting the recirculation of portions of the Draft EIR is due to traffic issues and does not affect the noise impact analysis conducted in the Draft EIR. Traffic counts were utilized for the noise analysis; however, the issue warranting the recirculation of portions of the Draft EIR is associated with traffic significance thresholds, not traffic counts. Thus, the traffic count data was not altered and the noise analysis is not affected by these revisions. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

Section 4.9: Geology and Soils

The issue warranting the recirculation of portions of the Draft EIR is due to traffic issues and does not affect the geology and soils impact analysis conducted in the Draft EIR. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

Section 4.10: Public Services and Utilities

The issue warranting the recirculation of portions of the Draft EIR is due to traffic issues and does not affect the public services and utilities impact analysis conducted in the Draft EIR. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

57791

16

Section 4.11: Recreation

The issue warranting the recirculation of portions of the Draft EIR is due to traffic issues and does not affect the recreation impact analysis conducted in the Draft EIR. Therefore, this section is not included in the Recirculated Portions of the Draft EIR.

Chapter 7: Other Required Considerations

This chapter discusses growth-inducing impacts; unavoidable and irreversible significant environmental effects; and effects found not to be significant. Because the revisions to the Draft EIR are related to traffic, none of the revisions discussed above would affect the required considerations of the Project. Therefore, this chapter is not included in the Recirculated Portions of the Draft EIR.

Chapter 8: Citations, Consultations, and List of Preparers

No additional citations or preparers were added and no additional agencies, organizations, or persons were contacted during the preparation of the Recirculated Portions of the Draft EIR. Therefore, this chapter is unchanged and is not included in the Recirculated Portions of the Draft EIR.

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57791

18

Chapter 1
Executive Summary

1.1 Proposed Project

This environmental impact report (EIR) is prepared pursuant to the California Environmental Quality Act (CEQA), Public Resources Code (PRC) Section 21000, et seq., and its implementing guidelines (CEQA Guidelines), California Code of Regulations (CCR), Title 14, Section 15000, et seq., to analyze the potential environmental impacts of the Sunroad Harbor Island Hotel Project and East Harbor Island Subarea Port Master Plan Amendment (Proposed Project). The Lead Agency for the environmental review of the Proposed Project is the San Diego Unified Port District (Port District). The proponent of the Proposed Project is Sunroad Marina Partners, LP. The Proposed Project plans to replace an existing marina locker building and surface parking with a 4-story hotel with a maximum of 175 rooms. The Proposed Project also includes an amendment to the Port Master Plan (PMP) to address changes in land use resulting from reconfiguring an eastern portion of Harbor Island Drive and the traffic circle at its eastern terminus.

1.1.1 Environmental Setting

The Proposed Project site is located in the southern portion of San Diego County at the northern end of San Diego Bay. The Project site is on the east end of Harbor Island and is within the jurisdiction of the Port District. The Port District regulates development within its jurisdiction in accordance with the PMP. The Project site is the location of the Proposed Project improvements (the hotel and adjacent parking lots, the parking lot located west of the existing Sunroad Resort Marina building, and the roadway and traffic circle realignment areas). The Project site is currently developed with a marina locker building, parking lots, traffic circle, and part of Harbor Island Drive. The Project vicinity refers to areas near the Project site but that are located outside of where improvements are proposed.

57791

Existing Conditions and Surrounding Land Uses

The Project site is currently developed with commercial recreational uses associated with the adjacent marina facility, i.e., a marina locker building and surface parking. The marina facility, located north and west of the Project site, consists of a marina (docks and slips), a marina office/sales building, and surface parking lots.

Harbor Island Drive terminates in a traffic circle located in the eastern portion of the Project site. Harbor Island Drive is a Port District road that features a public promenade along its southern front and 12 public street/surface parking spaces. Parts of the existing onsite promenade are landscaped with grass and trees. Other vegetation in the area includes ornamental or screening shrubs and trees within the marina building area and parking lot, and within the restaurant area and parking lot.

In the late 1960s, Harbor Island was formed into a peninsula in the northern portion of San Diego Bay using dredged material. Harbor Island is not an actual island but rather a thin strip of filled tidelands formed in an east–west direction in the shape of two adjacent peninsulas. Harbor Island's filled tideland area and the submerged tidelands between the island and the mainland to the north are devoted primarily to commercial recreation and public recreation uses including: hotels, marinas, marine-related businesses, and restaurants; as well as fishing areas, vista areas, and a promenade providing public access to the coast. East Harbor Island, the eastern of the two peninsulas, houses a marina, restaurants, and a bayside public promenade. Harbor Island Drive runs the length of Harbor Island and provides access to the Project site from the west. East Harbor Island also contains the Harbor Police Headquarters and employee parking for the San Diego International Airport (SDIA). The marina facility includes two locker buildings, with 117 lockers each, located west and east of the central marina building, along the northern edge of the facility. The easternmost end of Harbor Island includes a 306-space surface parking lot, the Island Prime restaurant, and the Reuben E. Lee restaurant, which is located on a floating barge.

The U.S. Coast Guard Station, General Dynamics/Lockheed facility, several rental car facilities, and SDIA lie to the north of Harbor Island. East Harbor Island also has submerged tidelands with designations for recreational boat berthing and specialized berthing, and a boat navigation corridor that is used for boat access to the marina and berths located between the East Harbor Island peninsula and the mainland to the north. The San Diego Bay ship navigation channel is located south of Harbor Island, with the U.S. Naval Air Station North Island (NAS North Island) located on the opposite shore.

The existing marina, located adjacent to the Project site, includes approximately 550 operational boat slips for private craft. The boat berths are separated by floating walkways that provide pedestrian access to the docked boats. The walkways are accessed by gated entrances located on ramps linking the slips to a paved area north of the marina building and parking lots. These ramps extend over the shoreline, which is protected by a rock revetment slope.

57791

20

The Island Prime restaurant is a single-story, post-and-beam structure that overhangs the San Diego Bay on concrete piers. The most recent improvements to the restaurant were completed in 2005. The on-water Reuben E. Lee Sternwheeler restaurant (Reuben E. Lee) is located over submerged tidelands. The floating structure was constructed in the 1960s to resemble a sternwheeler riverboat, but is not an operational vessel. The restaurant was temporarily closed in 2003 pending renovation of the damaged super-structure. In 2008 the Port District approved a renovation of the restaurant. The renovation is anticipated to be completed by 2013.

The remainder of the submerged tidelands adjacent to the Project site contains an eelgrass mitigation area, which was created to mitigate eelgrass impacts related to construction of the marina. The submerged tidelands in the vicinity of the Project site also include an anchorage and navigable waters.

1.2 Public Planning Process

On September 2, 2008, the Board of Port Commissioners (BPC) approved the Preliminary Project Review and directed staff to proceed with environmental review of the Proposed Project. The easternmost portion of East Harbor Island, which includes the Project site, is currently leased to Sunroad Marina Partners, LP (Sunroad). Because the Planning District 2 Precise Plan identifies a 500-room hotel on the westernmost parcel of East Harbor Island, a PMP Amendment is required to allow the hotel use on the Proposed Project site.

The Port District published a Notice of Preparation (NOP) on December 18, 2008, announcing its intent to prepare an EIR for the Proposed Project (UPD #83356-EIR-783). The NOP was mailed to more than 45 agencies, organizations, and other interested individuals and groups, soliciting their comments on the scope and content of the environmental analysis to be included in the Draft EIR. The public review period of the NOP ended on January 20, 2009. In addition, the Port District held a Public Scoping meeting on Thursday, January 15, 2009, at the Embarcadero Planning Center. The following is a list of those respondents who submitted written comments in response to the NOP:

- United States Army Corps of Engineers
- California Coastal Commission
- California Department of Toxic Substances Control
- California Department of Transportation, Division of Aeronautics
- City of San Diego Development Services Department
- San Diego County Regional Airport Authority

The NOP and copies of all NOP comment letters are provided in Appendix A of this Draft EIR.

1.3 Project Description

The Proposed Project involves the partial redevelopment of one leasehold, which is currently leased by Sunroad Marina Partners, LP, located at 955 Harbor Island Drive. This leasehold is currently developed with a marina, support buildings, and surface parking. The proposed redevelopment would only affect the land side of this leasehold. The traffic circle, located at the east end of Harbor Island Drive, as well as a portion of Harbor Island Drive are also included in the proposed redevelopment.

The Project description as proposed in this Draft EIR includes the following physical changes to the Project site:

- demolition of one existing locker building and parking lot east of the existing marina building;
- construction of a limited service 4-story hotel with a total floor area of approximately 117,000 square feet, consisting of a maximum of 175 rooms, fitness and limited meeting space (approximately 8,000 square feet), and common areas;
- reduction of the traffic circle and realignment of the road and leasehold lines;
- reconfiguration of existing paved areas as necessary to accommodate ingress and egress to the hotel and surface parking;
- enhanced public access along the Harbor Island East Basin; and
- realignment of existing sewer, water, and utility lines.

The Project also proposes an amendment to the PMP to address the changes in land use resulting from reconfiguring East Harbor Island Drive and the traffic circle at its eastern terminus, and providing for the existing allowed 500 hotel rooms (currently allowed only on the parcel used by SDIA for employee parking) to be spread across multiple hotels (together totaling no more than 500 rooms) on East Harbor Island.

1.3.1 Proposed Hotel

The floor area of the proposed hotel would total approximately 117,000 square feet and include a maximum of 175 rooms, fitness and meeting space, and common areas. The meeting rooms would facilitate functions and conferences for guests. The 175 rooms, which would make up approximately 94,000 square feet of the hotel, would be distributed over four floors. The height of the structure is proposed to be approximately 65 feet. Architectural details and fenestrations may cause the maximum building height to reach 75 feet. The maximum height approved by the Federal Aviation Administration and San Diego County Airport Land Use Commission for the Proposed Project is 86 feet above mean sea level in order to accommodate features such as a flag pole.

57791

22

Fitness and meeting rooms would total approximately 8,000 square feet. Common areas—including exterior features such as the pool and spa—would total approximately 15,000 square feet of the Project site.

Specific lighting plans have not been developed. However, the structure is proposed to be lit at night for security and aesthetic purposes. All lighting will be consistent with the City of San Diego Outdoor Lighting Regulations.

The projected number of fulltime hotel employees would range from 35 to 40.

1.3.2 Open Areas, Promenade, and Landscaping

The PMP defines four public access categories (Classes I–IV) that require development of physical accessways depending on the intended degree of public shoreline access. The existing Class I promenade, identified in the PMP, includes pedestrian access along Harbor Island Drive. The portion of the promenade located south of the Project site (along the bay) would not be altered as a part of the Proposed Project.

The Project proposes enhanced public access within East Harbor Island. The Project will include a pedestrian promenade along the Harbor Island East Basin side of the hotel and would connect to the promenade that will be extended along the eastern end of Harbor Island, as part of the Reuben E. Lee restaurant redevelopment. The proposed promenade will consist of a 10-foot-wide hardscape path extending from the existing promenade to the hotel and would also extend along the northern perimeter of the hotel to allow access to the restaurants at the eastern border of Harbor Island. Pedestrian access would also be available adjacent to the hotel building to provide access to Harbor Island Drive. Additional public access enhancements include landscaping, benches, and signage adjacent to the pathways identifying the promenade as open to the public.

The traffic circle would be reconfigured to accommodate the ingress and egress of the hotel and a realignment of the easternmost portion of Harbor Island Drive.

The landscape improvements currently proposed are conceptual. A detailed landscape plan would be prepared for review and approval of the Port District prior to construction of the hotel. Certain mature and scenic trees would be incorporated into the exterior design of the hotel and common areas.

1.3.3 Parking

A total of 457 parking spaces for shared use with the hotel and marina guests would be provided in two parking lots. To accommodate the hotel and parking lots immediately west and east of the hotel, 111 parking spaces of the existing 291-space lot currently located east of the marina building would be eliminated.

57791

23

A 72-space parking lot would be located east of the hotel, and a 101-space lot would be located west of the hotel. An additional 7 parking spaces would be located near the front entrance of the hotel. The configuration of the spaces in the existing 277-space lot west of the existing marina building may be modified as a part of the Proposed Project. However, the number of spaces in the existing 277-space lot would not be reduced. The existing 306-space parking area located east of the Project site is not a part of the Proposed Project. The existing parking available on the Project site is part of the leasehold and is utilized for marina use. Public parking in the vicinity of the Project site is located on the southern side of Harbor Island Drive and will not be affected by the Proposed Project.

1.3.4 Roadway and Infrastructure Realignment

Roadway Realignment

The section of Harbor Island Drive located immediately south of the proposed hotel would be realigned. Harbor Island Drive would be reduced in width by approximately 12 feet by removing one of the two westbound lanes for a total distance of approximately 370 feet. The number of lanes in the vicinity of the hotel would be reduced from four to three, and would accommodate visitors to the hotel and maintain access to and from the Island Prime and Reuben E. Lee restaurants.

Emergency access and fire lanes would be provided. Emergency vehicles would be able to access fire lanes in the 101-space lot west of the hotel.

Infrastructure Realignment

Operation of the proposed hotel would increase demands on existing infrastructure systems including water supply and wastewater treatment. Water and sewer pipelines currently extend through the Project site. The Project Utility Plan proposes that certain existing facilities be removed and new facilities would be placed underneath Harbor Island Drive. Water and sewer pipelines serving the hotel would be connected with the realigned water and wastewater lines within Harbor Island Drive. Electrical, gas, telephone connections, and a storm drain system serving the hotel are also proposed to be located beneath Harbor Island Drive. Two new commercial fire hydrants—one for fire service and one for domestic service—would be built to serve the proposed hotel.

Proposed sewer and storm drain facilities would connect with existing facilities located on East Harbor Island. The proposed 8-inch sewer line would be extended within Harbor Island Drive and connect to an existing sewer line in the parking area proposed to the west of the hotel. Proposed 24-inch storm drain facilities would connect with facilities south of Harbor Island Drive.

The proposed 12-inch water line would extend from the hotel to Harbor Island Drive. This water line would extend within Harbor Island Drive outside of the Project site and connect with existing facilities immediately south of the existing marina. In accordance with City requirements, a redundant loop connection would be installed. The redundant loop would consist of a 12-inch water line that would extend from a connection point in Harbor Island Drive west of the Project site. From this connection point the redundant loop would extend within Harbor Island Drive to the Project site. A portion of the redundant loop would consist of a proposed 16-inch water line that would connect with facilities in the section of Harbor Island Drive that extends north to Harbor Drive.

Existing sewer and water lines serving the Island Prime and Reuben E. Lee restaurants would be realigned to accommodate the proposed hotel. These sewer and water lines would only be realigned if the proposed hotel is built.

After completion of the utility realignments, the roadway will be repaved and restriped.

Existing stormwater drains extend within East Harbor Island to the Project site. A stormwater drainage system would be connected with these existing facilities to collect stormwater runoff from the Project site. Prior to construction detailed stormwater drainage system plans would be prepared in accordance with Port of San Diego Storm Water Ordinance and the Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. These plans would show Best Management Practices (BMPs) incorporated into the system in accordance with National Pollutant Discharge Elimination System (NPDES) and Port District requirements. A Bio-filtration System or a mechanical Baysaver Separation System is proposed to be used for stormwater containment.

1.3.5 Construction Activities

Demolition

Demolition associated with the Project would involve removal of one existing locker building and the existing parking lot located east of the marina building. Following construction, the number of parking spaces within the Project vicinity would be reduced from 568 to 457. The remaining locker facilities within the marina area would be maintained for marina use. In addition, 100 to 120 lockers would be constructed north of the proposed 101-space parking lot.

Construction

Construction of the Proposed Project would occur in a single phase. Construction would involve excavation of approximately 10,000 cubic yards of material. The excavated material would be used on site or would be disposed of

57791

25

at an offsite landfill. The construction period is expected to be 15 to18 months in duration.

The construction staging area would be on the Project site, east of the marina building and west of the proposed hotel footprint. During construction the 277-space parking lot located west of the marina building would be available for marina use. The existing public parking spaces along East Harbor Island Drive would remain available for public use during construction.

The foundation of the proposed hotel would be constructed using stone columns or Helical Earth Anchor Technology (HEAT anchors). The Proposed Project would not utilize pile driving.

1.3.6 Design Features

Energy conservation and sustainability features would be incorporated into the design and construction of the Proposed Project. These features will provide energy and water efficiency equivalent to 15% in excess of standards required by California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6 of the California Code of Regulations). These features will be incorporated as conditions of approval of the Project.

1.3.7 Port Master Plan Amendment

The Project proposes an amendment to the PMP to address the proposed land use changes necessary to implement the Project. The changes warranting a PMP Amendment include the reconfiguration of East Harbor Island Drive and the traffic circle at its eastern terminus, and allowing the 500-room hotel currently allowed in the PMP to be spread across multiple hotels on East Harbor Island. The Proposed Project includes development of a 175-room hotel, which would constitute a portion of the 500 total hotel rooms allowed on East Harbor Island.

The PMP Amendment, described below, is included in this Draft EIR as Appendix B.

The hotel referenced in the PMP was proposed for the westernmost parcel of East Harbor Island (the parcel located west of the Project site). This parcel is currently used by SDIA for employee parking. Although the Proposed Project generally includes those uses outlined in this description, the PMP would need to be amended to allow those uses on all of East Harbor Island, including the Project site. The portion of the Project site that the hotel would be constructed on already has the proper land use designation for a hotel use—Commercial Recreation. The proposed changes to the traffic circle and roadway also warrant an amendment to the PMP.

57791

2U

The Project's PMP Amendment would revise the East Harbor Island Subarea discussion as follows:

> The east end of Harbor Island, subarea 23, ~~has been~~ is the last subarea to complete phased development and is designated commercial recreation. ~~The last project, a~~Future development in this subarea includes ~~high quality~~ two or more hotels totaling ~~of~~ approximately 500 rooms. ~~which are is~~ These hotels will be sited to be responsive to views of San Diego Bay~~, the airport,~~ and the downtown San Diego skyline. Maximum building heights will be ~~establish~~ consistent~~cy~~ with adopted aircraft approach paths and Federal Aviation Administration (FAA) regulations. ~~The hotel~~ Hotels ~~complex~~ may includes typical supporting facilities such as swimming pools, spas, commercial retail, restaurants, cocktail lounges, meeting and conference space, recreational facilities, including piers, and ancillary uses. A marina of approximately 550 slips is located adjacent to the hotels and occupies most of the basin. The eastern end of the peninsula is anchored by restaurants, which are uniquely sited on the water's edge.
>
> The existing promenade along the southern side of Harbor Island Drive will be extended to the eastern portion of the East Harbor Island subarea and along the Harbor Island East Basin frontage as the subarea is developed or redeveloped. The promenade will provide pedestrian access around East Harbor Island and will connect the hotel developments, marina, and restaurants to the rest of Harbor Island. The promenade will be located to provide views of the San Diego Bay, the downtown San Diego skyline, and the Harbor Island East Basin. ~~Public access will be maintained along the promenade. Private uses shall not obstruct the public promenades.~~ When the promenade is located within a private leasehold or on a Port development site, improvements and the promenade will be sited to allow uninterrupted pedestrian flow. Benches and ~~overlooks~~ viewing decks adjacent to the promenade will be sited to provide multiple viewing opportunities in a manner that does not obstruct pedestrian flow. Public access and other path-finding signage, as well as signage identifying that the promenade is open to the public, will be placed at strategic locations throughout East Harbor Island to guide guests and visitors to and from public use areas, restaurants, and other facilities.
>
> ~~A public access plan will be prepared and implemented for each hotel development. The public access plans will include information on signage, amenities, and public information to inform and invite the public to and around East Harbor Island and downtown San Diego.~~ *[paragraph moved to general discussion for Planning District 2 – see Appendix B of EIR for complete Draft PMP Amendment]*
>
> ~~All hotel developments should provide shuttle service to and from the airport and information regarding other transit opportunities.~~ *[paragraph moved to general discussion for Planning District 2 – see Appendix B of EIR for complete Draft PMP Amendment]*
>
> ~~A parking management plan will be prepared for each hotel development.~~ *[paragraph moved to general discussion for Planning District 2 – see Appendix B of EIR for complete Draft PMP Amendment]*

57791

27

As the East Harbor Island subarea is developed or redeveloped, Harbor Island Drive may be resized and realigned to optimize use of East Harbor Island. This may allow for increased and enhanced public enjoyment of the bay. The promenade and new public access features (i.e., benches) will provide enhanced open space and public access opportunities within the East Harbor Island subarea. Proportionate to the type and extent of development or redevelopment, activating uses such as restaurants, outdoor seating and dining areas, and retail shops open to the public ~~may~~ will be integrated into the hotel development or redevelopment.

A public promenade parallels the active ship channel of the bay and ~~i~~ensures pedestrian and bicycle coastal access. Landscaped open space on Harbor Island Drive is retained with the street design of an upgraded and modified "T" intersection. Utility capacity is expanded to meet increased service needs.

The PMP Amendment would also include the following:

- updating the Precise Plan map;
- updating the Lindbergh Field/Harbor Island Planning District 2 project list to change the 500-room hotel to multiple hotels with a cumulative total of 500 rooms and include the traffic circle/road realignment; and
- updating the land use acreage tables within the PMP to reflect increased promenade acreage, increased street acreage, reduced open space acreage, and reduced commercial recreation acreage.

Table 1-1 includes the revised Land Use acreages for Lindbergh Field/Harbor Island: Planning District 2 from the PMP Amendment. Appendix B of this Draft EIR includes each of the components of the proposed PMP Amendment.

The following Environmental Analysis sections provide a project-level analysis of all potential impacts associated with the proposed 175-room hotel project (including ancillary construction activities such as roadway realignment, etc.). All subsequent development projects (i.e., the 325 hotel rooms remaining from the originally allowed 500 hotel rooms) proposed as a result of the PMP Amendment would require additional project-level environmental analysis to ensure any unidentified impacts are addressed. There are no plans for developing more than the proposed 175-room hotel at this time.

Table 1-1. Precise Plan Land Use Allocation—Lindbergh Field/Harbor Island: Planning District 2

	Acres	
Land Use	**Existing**	**Revised**
Commercial	~~90.6~~	90.2
Airport-related Commercial	38.0	
Commercial Recreation	~~52.6~~	52.2
Industrial	631.8	

57791

28

Land Use	Acres Existing	Acres Revised
Aviation-related Industrial	130.6	
Industrial Business Park	33.1	
International Airport	468.1	
Public Recreation	~~26.2~~	26.7
Open Space	~~7.5~~	7.2
Park	16.4	
Promenade	~~2.3~~	3.1
Public Facilities	~~66.8~~	66.7
Harbor Services	1.3	
Streets	~~65.5~~	65.4
Total	**815.4**	

Note:

Does not include

Leased Federal Land	22.5 acres
State Submerged Tidelands	41.3 acres
Leased Uplands	4.1 acres

Revised acreage includes East Harbor Island Subarea PMPA

Source: Port District 2009a

1.4 Impact Summary

The Proposed Project would result in significant project impacts on Biological Resources; Hazards and Hazardous Materials; Geology and Soils; Noise; and Public Services and Utilities. The Project would contribute to cumulative impacts related to Transportation, Traffic, and Parking; and Public Services and Utilities. Those issues for which effects were found not to be significant are: Agricultural Resources, Cultural Resources, Mineral Resources, and Population and Housing. These environmental topics are described in Chapter 7, "Other Required Considerations," Section 7.3 of this Draft EIR, and are not discussed in further detail (CEQA Guidelines, Section 15128). Table 1-2 presents the significant impacts and proposed mitigation measures.

Alternatives analyzed in the EIR include the No Project Alternative and a Reduced Project Alternative. Table 1-3 presents the impacts associated with the Proposed Project compared with the alternatives.

57791

29

Table 1-2. Matrix of Significant Impacts and Mitigation Measures

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	Project Level Impacts	
	Biological Resources (Section 4.2)	
BIO-1: Removal of the mature trees during construction, as well as noise from construction activity, could impede the use of bird breeding sites on and adjacent to the Project Site. The MBTA prohibits take of nearly all native birds. Under the MBTA, "take" means only to kill; directly harm; or destroy individuals, eggs, or nests; or to otherwise cause failure of an ongoing nesting effort. Similar provisions within the FGC protect all native birds of prey and all non-game birds that occur naturally in the state. The destruction of an occupied nest or potential indirect impacts from construction noise on occupied nests that are located off site would be considered a significant impact and a violation of the MBTA and the FGC. Therefore, a significant impact would occur and mitigation is required.	**MM BIO-1: Avoid Nesting Season for Birds or Conduct Preconstruction Nesting Surveys** To ensure compliance with MBTA and similar provisions under the Fish and Game Code, the Project Applicant or its contractor shall implement one of the following restrictions: 1. Conduct all vegetation removal during the non-breeding season (between September 1 and January 31). OR 2. If construction activities are scheduled between February 1 and August 31, a qualified ornithologist (with knowledge of the species to be surveyed) shall conduct a focused nesting survey prior to the start of vegetation removal and within any potential nesting habitat (mature trees, eaves on buildings, etc). The nesting bird survey area shall include the entire limits of disturbance plus a 300-foot buffer for non-raptors and a 500-foot buffer for ground-nesting raptors. The nesting surveys shall be conducted within 1 week prior to initiation of construction activities and shall consist of a thorough inspection of the Project site by a qualified ornithologist(s). The work shall occur between sunrise and 12:00 p.m. when birds are most active. If no active nests are detected during these surveys, no additional mitigation is required. If the survey confirms nesting within 300 feet of the disturbance footprint for non-raptors or within 500 feet for raptors, a no-disturbance buffer shall be established around each nest site to avoid disturbance or destruction of the nest until after the nesting season or after a qualified ornithologist determines that the young have fledged. The size of the no-disturbance buffer shall be determined by the qualified biologist at the time of discovery. If there is a delay of more than 7 days between when the nesting bird survey is performed and vegetation removal begins, it shall be	Less than significant.

57791

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	confirmed that no new nests have been established.	
	Hazards and Hazardous Materials (Section 4.4)	
HZ-1: Construction crews could encounter undocumented areas of contamination and other construction-related hazards.	**MM HZ-1a:** Prior to the initiation of construction activities, the Project Applicant shall prepare and submit to the Port District's Environmental Services Department for approval, a contingency plan outlining the procedures to be followed by the Project Applicant and/or contractor in the event that undocumented areas of contamination are encountered during construction activities. The contingency plan shall provide, at a minimum, that in the event undocumented areas of contamination are discovered during construction activities, the Project Applicant and/or its contractor shall discontinue construction activities in the area of suspected contamination and shall notify the Port District forthwith, and, in consultation with the County of San Diego Department of Environmental Health's Hazardous Materials Division and subject to the review and approval of the Port District and any other public agency with jurisdiction over the contamination encountered, the Project Applicant shall prepare a plan for abatement and remediation of the contamination. Construction activities shall be discontinued until the Project Applicant and/or contractor has implemented all appropriate health and safety procedures required by the Port District and any other agency with jurisdiction over the contamination encountered. **MM HZ-1b:** Prior to the initiation of construction activities, the Project Applicant shall prepare a Site Safety Plan to address possible hazardous materials present within the Project Site associated with the UST that was removed , the marina and past use of the surrounding areas for industrial purposes including aerospace and other industries. The Site Safety Plan shall be subject to Port of San Diego approval, and, if deemed appropriate, the Project Applicant shall, in consultation with the County of San Diego Department of Environmental Health, be prepared to address hazardous construction-related activities within the boundaries of the Project site to reduce potential health and safety hazards to workers and the public.	Less than significant

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	Noise (Section 4.8)	
NOI-1: The proposed hotel would be constructed within an area that could result in interior noise levels exceeding the 45dBA CNEL threshold. Exposure to high levels of single-event noise from aircraft could result in significant operational impacts on interior noise levels at the proposed hotel.	**MM NOI-1: Reduction of interior noise levels below 45-dBA (CNEL) interior noise requirement.** The proposed hotel shall include noise insulation features such that an interior noise level of 45 dBA (CNEL) is achieved. An acoustical consultant shall be retained by the Project Applicant prior to commencement of construction to review Proposed Project construction-level plans to ensure that the hotel plans incorporate measures that will achieve the 45 dBA (CNEL) standard. Noise insulation features that could be installed include, but are not limited to, the following: 1. Acoustically rated dual pane windows and sliding glass door assemblies 2. Heavy-weight drapes and thick carpets for sound absorption The following minimal performance requirements as specified by the project's franchiser (Hyatt Place Franchising, LLC) shall be adhered to as they pertain to interior/exterior sound transmission loss: ■ Exterior wall assemblies and walls between guestrooms shall have a minimum sound transmission class (STC) rating of 52 ■ Walls between guestrooms and stairwells shall have a minimum STC rating of 60 ■ All floor/ceiling assemblies shall have a minimum STC rating of 60 ■ Guest room entry doors shall receive full-frame sound insulation stripping	Less than significant
	Geology and Soils (Section 4.9)	
GEO-1: The proposed structures could suffer significant adverse effects due to groundshaking from seismic events and hazards due to relatively shallow groundwater and liquefiable soils beneath the surface that may create significant	**MM GEO-1**: To reduce the soil liquefaction and lateral spreading potential beneath the surface of the site, the Project Applicant shall implement all of the measures recommended in the Geocon Study (Appendix H1 of the EIR) including the following site design criteria: I. Except for stone columns and HEAT Anchor methods, dewatering shall be	Less than significant

57791

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
adverse effects on proposed structures in a seismic event.	undertaken for excavations below an elevation of 5 feet above mean sea level (MSL).	
	II. Ground improvements or deep foundations shall be implemented in conformance with the CBC site design criteria for Type B faults, which include the Rose Canyon Fault zone, as summarized in the following table:	
	Site Design Criteria	

Parameter	Ground Improvements	Deep Foundations	CBC Reference
Seismic Zone Factor	0.40	0.40	Table 16-I
Soil Profile	S_D	S_F	Table 16-J
Seismic Coefficient, C_a	0.57	0.57	Table 16-Q
Seismic Coefficient, C_v	1.02	1.87	Table 16-R
Near-Source Factor, N_a	1.3	1.3	Table 16-S
Near-Source Factor, N_v	1.6	1.6	Table 16-T
Seismic Source	B	B	Table 16-U

Notes:

S_D is the soil profile type that contains types of soils that are vulnerable to potential failure or collapse under seismic loading. This soil is often liquefiable.

S_F is the soil profile type that contains dense granular soil or stiff cohesive soil.

C_a is the seismic response coefficient for proximity and is defined by site conditions such as seismic zone and soil profile type. C_a is determined

57791

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	using Table 16-Q of the CBC. C_v is the seismic response coefficient and is defined by site conditions such as seismic zone and soil profile type. C_v is determined using Table 16-R of the CBC. N_a is the near-source factor for C_a and is defined by the seismic source type and the closest distance to a known seismic source. N_a is determined using Table 16-S of the CBC. N_v is the near-source factor for C_v and is defined by the seismic source type and the closest distance to a known seismic source. N_v is determined using Table 16-T of the CBC. B is the seismic source type between A—faults that produce the largest magnitude events with high rates of seismic activity, and C—faults that are not capable of producing large magnitude events and have low rates of seismic activity. B is determined using Table 16-U of the CBC. A. As recommended in the Geotech Study, ground improvements to mitigate the effects of liquefiable soils and lateral spreading shall be implemented for settlement-sensitive structures (such as the use of stone columns or the HEAT method). In addition, ground improvements for lateral spreading will be extended at least 5 feet below the mud line of the adjacent San Diego Bay along the existing shoreline, and for all structures the minimum depth of ground improvements will be as specified by the Geotech Study conducted by Geocon in March 2006. B. The Project Applicant shall follow recommendations listed in the Geotech Study conducted by Geocon in March 2006 for ground densification methods, minimum cone penetration test (CPT) tip resistance, minimum Standard Penetration Test (SPT), the installation of stone columns, and deep soil mixing. C. Following densification of the existing soils, the Project Applicant shall place additional fill material on the site to re-establish existing grades of between approximately 13 to 16 feet above MSL.	

34

57791

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation

III. The Project Applicant shall consult with a geotechnical engineer regarding placement of settlement monuments and recommended Grading Specifications.

IV. Site preparation shall begin with the removal of all deleterious material and vegetation. The depth of removal should be such that material exposed in cut areas or soil to be used as fill is relatively free of organic matter. Material generated during stripping and/or site demolition shall be exported from the site.

A. The upper 3 feet of soil within areas subjected to densification by stone columns shall be removed, moisture conditioned and recompacted.

B. The Project Applicant shall follow the recommended procedures listed in the Geotech Study with respect to removal of existing fill soil and insertion of new fill. In addition, any imported soils shall have an expansion index of less than 50 and a maximum particle dimension of 3 inches.

V. The Project Applicant shall follow the recommendations set by in the Geotech Study for the Proposed Project regarding foundations for the structures.

A. A geotechnical engineer shall observe foundation excavations to verify that the exposed soil conditions are consistent with those anticipated and that they have been extended to the appropriate bearing strata.

VI. The Project Applicant shall follow the recommendations set in the Geotech Study for the Proposed Project with regard to utilization of ground foundations such as deep foundations, when they shall be required.

VII. Where proposed, buildings can be supported by shallow or mat foundations in improved ground, or by deep foundations capable of transmitting foundation loads through the hydraulic fill and bay deposits into the Bay Point Formation. Such foundation systems include the following:

A. Foundation excavations shall be observed by the geotechnical engineer prior to the placement of reinforcing steel and concrete to verify that the exposed soil conditions are consistent with those anticipated. If unanticipated soil conditions are encountered, foundation modifications may be required.

VIII. The Project Applicant shall follow recommendations listed on the Geotech Study regarding the use of concrete slab-on-grade, including guidelines for crack-control spacing.

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	IX. In addition to the extensive mitigation measures listed above, the Geotech Study provides detailed recommendations for the appropriate engineering of other Project components including retaining walls, pavement, and drainage. These measures shall also be implemented.	
	Public Services and Utilities (Section 4.10)	
PUB-1: Due to one of the responding fire stations being above its annual workload capacity, the City of San Diego Fire Department has indicated that a new fire station is necessary in the area. The increased demand for fire protection service associated with the Proposed Project would contribute to the need for the City to construct an additional fire station. Construction of this station could cause additional impacts to the environment. Therefore, the Proposed Project would result in a significant impact on fire protection service by contributing to the need for the City to construct a new fire station.	**MM PUB-1:** Prior to the issuance of a certificate of occupancy for the Proposed Project, the Project Applicant shall pay its fair share of the cost of constructing a new fire station at Liberty Station in the amount determined by the City of San Diego. In the event the City of San Diego has not determined the amount of the Proposed Project's fair share of the cost of constructing a new fire station at Liberty Station at the time the Proposed Project requests issuance of a certificate of occupancy, the Project Applicant shall enter into a reimbursement agreement or other arrangement with the City of San Diego to provide for payment of its fair share amount when determined by the City of San Diego.	Implementation of mitigation measure MM PUB-1 could mitigate impacts of the Proposed Project on fire services to a less-than-significant level; however, the stated measures are contingent on the action of the City of San Diego and are outside of the jurisdiction of the Port District. The City has identified the construction of the fire station at the Liberty Station (former Naval Training Center) as a Tier-2, low priority project. The City has also not identified any financing plans that will assure that the fire station is constructed. Because the City does not have plans or funding for

36

57791

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
		the construction of the fire station at the Liberty Station site, the Port District cannot assure that this mitigation measure would be implemented, and the impacts would remain significant and unmitigated.
Cumulative Impacts		
Transportation, Traffic, and Parking		
TR-C1: Project traffic would contribute to the degradation of operations at the North Harbor Drive/Harbor Island Drive/Terminal 1 intersection in excess of City of San Diego thresholds during the AM and PM peak hours.	**MM TR-C1: North Harbor Drive / Harbor Island Drive / Terminal 1 intersection (East Airport Entrance).** The Project Applicant shall contribute a fair share percentage of ~~8.9~~9.0% towards restriping the northbound approach to provide a left-turn lane, a shared left-turn/thru lane, a thru lane, and a right-turn lane. The fair share contribution shall be paid to the City of San Diego traffic impact fee program. The improvements at this intersection shall include the following: remove the northbound right-turn lane's "free" movement and introduce right-turn "overlap" phasing; retain the north/south "split" signal phasing; and restripe the eastbound approach to convert the right-turn lane to a shared thru/right-turn lane. Modifications to the triangular median in the southeast portion of the intersection are expected.	Implementation of Mitigation Measures MM TR-C1 through MM TR-C6~~, MM TR-C2, and MM TR-C3~~ would mitigate impacts of the Proposed Project to less-than-significant levels. However, the intersections and street segments to be improved are within the jurisdiction of the City of San Diego. The mitigation measures are, therefore, contingent upon the action of the City of San Diego and
TR-C2: Project traffic would contribute to the degradation of operations at the North Harbor Drive/Rental Car Access Road intersection in excess of City of San Diego thresholds during the AM and PM peak hours.	**MM TR-C2: North Harbor Drive / Rental Car Access Road intersection.** The Project Applicant shall contribute a fair share percentage of 1.8% towards the reconfiguration of the westbound approach to provide an additional thru lane. To accommodate the additional lane, widening and modifications to the median / roadway shall be required. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	

37

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
TR-C3: Project traffic would contribute to the degradation of operations at the North Harbor Drive/Laurel Street intersection in excess of City of San Diego thresholds during the PM peak hours.	**MM TR-C3: North Harbor Drive / Laurel Street intersection.** The Project Applicant shall contribute a fair share percentage of ~~1.8~~2.2% towards the reconfiguration of the eastbound approach to provide a third left-turn lane and restriping the south-bound approach to provide a single shared left-turn/right-turn lane. To accommodate the additional lane, widening and modifications to the median/roadway shall be required. All three eastbound lanes on Laurel Street shall continue to Pacific Highway, where the number 1 lane would trap into the left-turn lane(s). An overhead sign bridge(s) shall be implemented to instruct drivers of the trap lane. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	are outside of the jurisdiction of the Port District. In addition, the City does not have an adopted plan or program that lists these intersection or street segment improvements. Therefore, the Port District cannot assure
TR-C4: Project traffic would contribute to the degradation of operations at the Pacific Highway/Hawthorn Street intersection in excess of City of San Diego thresholds during the AM peak hours.	**MM TR-C4: Pacific Highway/Hawthorn Street intersection.** The Project Applicant shall contribute a fair share percentage of 1.7% towards restriping the westbound approach of Hawthorn Street to provide a dedicated left-turn lane in addition to the three through lanes. To accommodate the additional lane, all curbside parking on Hawthorn Street will have to be prohibited between Pacific Highway and the railroad tracks. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	that these measures would be implemented, and the impacts would remain significant and unmitigated until the mitigation is implemented.
TR-C5: Project traffic would contribute to the degradation of operations on the 'North Harbor Drive between Harbor Island Drive and Rental Car Access Road' street segment in excess of City of San Diego thresholds.	**MM TR-C5: North Harbor Drive between Harbor Island Drive and Rental Car Access Road street segment.** The Project Applicant shall contribute a fair share percentage of 2.3% towards the addition of one lane. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	
TR-C6: Project traffic would contribute to the degradation of operations on the 'North Harbor Drive between Rental Car Access Road and Laurel Street' street segment in excess of City of San Diego thresholds.	**MM TR-C6: North Harbor Drive between Rental Car Access Road and Laurel Street street segment.** The Project Applicant shall contribute a fair share percentage of 0.9% towards the addition of one lane. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	

38

57791

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	Public Services and Utilities	
PUB-C1: The Proposed Project would contribute to cumulative demands on the fire protection and emergency response service of the City of San Diego Fire Department. Due to one of the responding fire stations being above its annual workload capacity, the Fire Department has indicated that a new fire station is necessary in the area. The increased demand for fire protection service associated with the Proposed Project would contribute to the need for the City to construct an additional fire station.	Significant cumulative impact PUB-C1, the Proposed Project's contribution of demand to the City Fire Department's fire protection and emergency response services, is similar to its project-level impact (see Section 4.10, "Public Services and Utilities"). The Proposed Project would place demand on a fire station that is above its annual response workload capacity—conditions that are likely to worsen further with the addition of cumulative development. Implementation of Mitigation Measure MM PUB-1 could mitigate the Proposed Project's contribution to this cumulative impact to a less-than-significant level.	Implementation of Mitigation Measure MM PUB-1 could mitigate the Proposed Project's impacts on fire services to a less-than-significant level. However, this mitigation measure entails establishment by the City Fire Marshal of a development impact fee program, by which the Project Applicant would pay impact fees for its demand on fire services. This mitigation measure is contingent upon action of the City of San Diego, is outside of the jurisdiction of the Port District, and may not be feasible. The City has identified the construction of the fire station at Liberty Station (former Naval Training Center) as a

57791

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
		Tier-2, low priority, project. The City has also not identified any financing plans that will assure that the station is constructed. Because the construction of this fire station is not identified as a high priority by the City, the Port District cannot assure that this mitigation measure would be implemented, and the cumulative impact would remain significant and unmitigated.
PUB-C2: The Proposed Project involves commercial construction of more than 40,000 square feet; therefore, it would contribute to a significant cumulative impact on solid waste facilities.	**MM PUB-C1:** Prior to the issuance of any demolition, grading, or construction permits, the Project Applicant shall prepare a waste management plan and submit it for approval to the City's Environmental Services Department. The plan shall include the following, as applicable: ■ Tons of waste anticipated to be generated ■ Material type of waste to be generated ■ Source separation techniques for waste generated ■ How materials will be reused on site ■ Name and location of recycling, reuse, and landfill facilities where recyclables and waste will be taken if not reused on site ■ A "buy-recycled" program for green construction products, including mulch and compost	Implementation of Mitigation Measure MM PUB-C1 would mitigate the Project's cumulative impact on solid waste facilities to below a level of significance.

57791

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	■ How the project will aim to reduce the generation of construction/ demolition debris ■ How waste reduction and recycling goals will be communicated to subcontractors ■ A timeline for each of the three main phases of the Project (demolition, construction, and occupancy) ■ How the Refuse and Recyclable Materials Storage Regulations will be incorporated into construction design of building's waste area ■ How compliance with the Recycling Ordinance will be incorporated into the operational phase ■ International Standards of Operations, or other certification, if any In addition, the Project Applicant has committed to implement the following recycling measures. These measures shall be included in the Waste Management Plan: ■ Provide interior and exterior storage areas for recyclables and green waste and provide adequate recycling containers on site. ■ Provide education and publicity about recycling and reducing waste, using signage and a case study.	

57791

Table 1-3. Impact and Level of Significance Comparison of Proposed Project and Alternatives

Issue Area/Impact	Proposed Project	No Project Alternative	Reduced Project Alternative
Land/Water Use and Coastal Access	NS	NI	NS
Biological Resources			
--Impact on Nesting Birds	SM	NI	SM
Aesthetics	NS	NI	NS
Hazards and Hazardous Materials			
--Hazardous Building Materials	SM	NI	SM
Hydrology and Water Quality	NS	NI	NS
Transportation/Traffic/Parking	NS	NI	NS
Air Quality	NS	NI	NS
Noise			
--Interior Noise Levels	SM	NI	SM
Geology and Coastal Processes			
--Shallow groundwater/liquefiable soils	SM	NI	SM
Public Services/Utilities			
--Increase in fire service demand	SU	NI	SU
Recreation	NS	NI	NS
Cumulative			
--Traffic (intersections)	SU	NI	~~NS~~SU
--Public Services (Fire service)	SU	NI	SU
--Public Services (Solid Waste)	SM	NI	SM

Notes:
NS = Not Significant
NI = No Impact
SM = Significant and Mitigable
SU = Significant and Unavoidable

57791

42

Chapter 3
Project Description and Environmental Setting

3.1 Environmental Setting

The Proposed Project site is located in the southern portion of San Diego County at the northern end of San Diego Bay (Figure 3-1). The Project site is on the east end of Harbor Island (Figures 3-2 and 3-3) and is within the jurisdiction of the Port District. The Port District regulates development within its jurisdiction in accordance with the PMP. The Project site is the location of the Proposed Project improvements (the hotel and adjacent parking lots, the parking lot located west of the existing Sunroad Resort Marina building, and the roadway and traffic circle realignment areas). The Project site is currently developed with a marina locker building, parking lots, traffic circle, and part of Harbor Island Drive. The Project vicinity refers to areas near the Project site but that are located outside of where improvements are proposed.

3.1.1 Port Master Plan

The Port District has planning jurisdiction over tidelands and submerged tidelands surrounding San Diego Bay. The PMP establishes 10 planning districts covering the 5,480 acres of Port District jurisdiction. The Proposed Project is located in the Lindbergh Field/Harbor Island Planning District (Planning District 2) of the PMP (Figure 3-4). Planning District 2 covers the San Diego International Airport and Harbor Island and is located north of San Diego Bay and Coronado, east of Shelter Island and Point Loma, and northwest of downtown San Diego. This planning district covers approximately 995 acres, consisting of approximately 815 acres of tidelands and 180 acres of submerged tidelands. More specifically, the Project area is located in the East Harbor Island Subarea (Subarea 23) of Planning District 2 (Figure 3-5). Subarea 23 covers an 81-acre portion of Harbor Island, in the northern portion of San Diego Bay. This subarea consists of 25 acres of tidelands and 56.5 acres of submerged tidelands.

3.1.2 Existing Conditions and Surrounding Land Uses

The Project site is currently developed with commercial recreational uses associated with the adjacent marina facility, i.e., a marina locker building and surface parking (see Figure 3-3). The marina facility, located north and west of the Project site, consists of a marina (docks and slips), a marina office/sales building, and surface parking lots.

Harbor Island Drive terminates in a traffic circle located in the eastern portion of the Project site. Harbor Island Drive is a Port District road that features a public promenade along its southern front and 12 public street/surface parking spaces. Parts of the existing onsite promenade are landscaped with grass and trees. Other vegetation in the area includes ornamental or screening shrubs and trees within the marina building area and parking lot, and within the restaurant area and parking lot.

In the late 1960s, Harbor Island was formed into a peninsula in the northern portion of San Diego Bay using dredged material. Harbor Island is not an actual island but rather a thin strip of filled tidelands formed in an east–west direction in the shape of two adjacent peninsulas. Harbor Island's filled tideland area and the submerged tidelands between the island and the mainland to the north are devoted primarily to commercial recreation and public recreation uses including: hotels, marinas, marine-related businesses, and restaurants; as well as fishing areas, vista areas, and a promenade providing public access to the coast. East Harbor Island, the eastern of the two peninsulas, houses a marina, restaurants, and a bayside public promenade. Harbor Island Drive runs the length of Harbor Island and provides access to the Project site from the west. East Harbor Island also contains the Harbor Police Headquarters and employee parking for the San Diego International Airport (SDIA). The marina facility includes two locker buildings, with 117 lockers each, located west and east of the central marina building, along the northern edge of the facility. The easternmost end of Harbor Island includes a 306-space surface parking lot, the Island Prime restaurant, and the Reuben E. Lee restaurant, which is located on a floating barge.

The U.S. Coast Guard Station, General Dynamics/Lockheed facility, several rental car facilities, and SDIA lie to the north of Harbor Island. East Harbor Island also has submerged tidelands with designations for recreational boat berthing and specialized berthing, and a boat navigation corridor that is used for boat access to the marina and berths located between the East Harbor Island peninsula and the mainland to the north (Figure 3-3). The San Diego Bay ship navigation channel is located south of Harbor Island, with the U.S. Naval Air Station North Island (NAS North Island) located on the opposite shore.

The existing marina, located adjacent to the Project site, includes approximately 550 operational boat slips for private craft. The boat berths are separated by floating walkways that provide pedestrian access to the docked boats. The walkways are accessed by gated entrances located on ramps linking the slips to a

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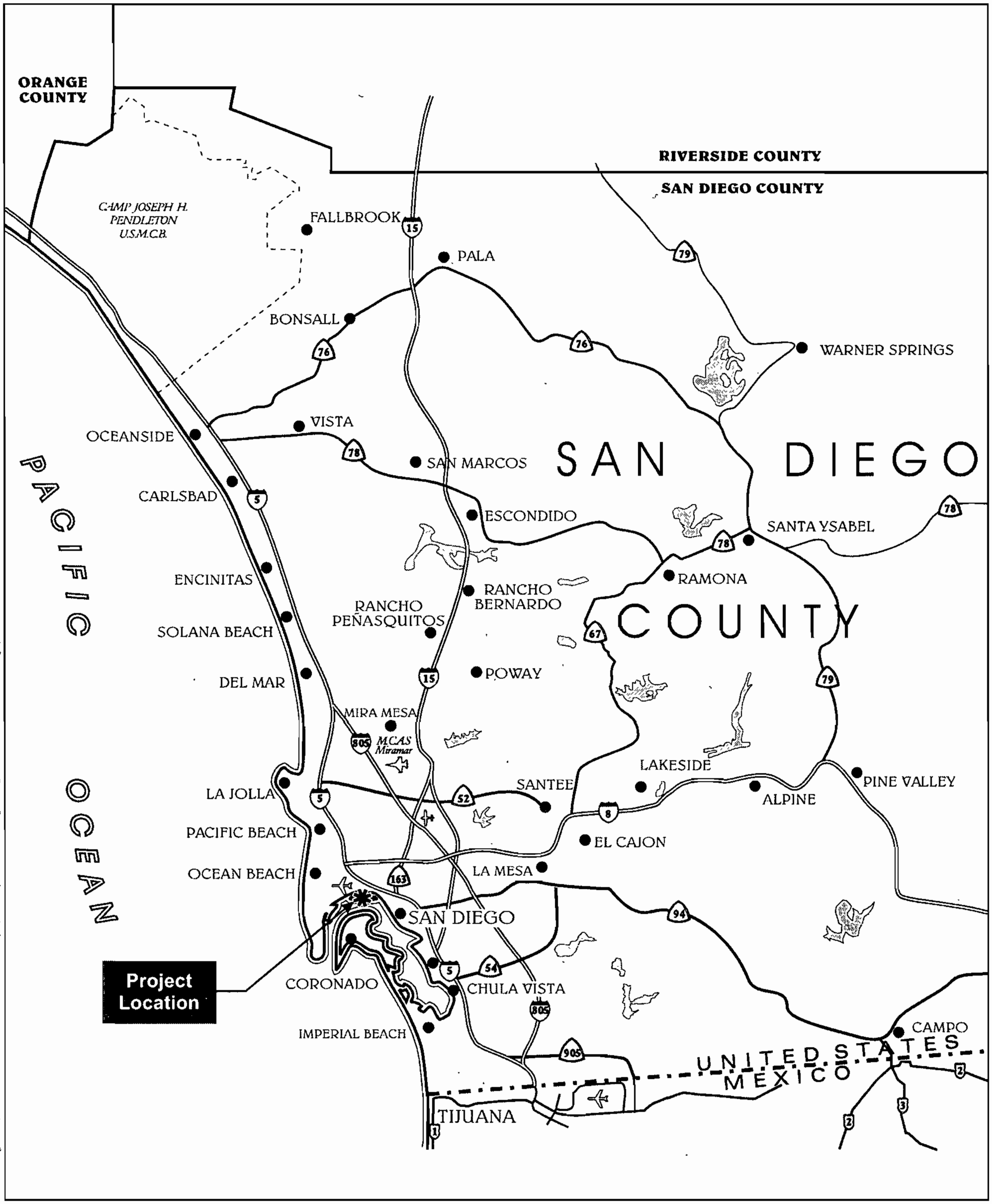

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Regional Location Map
Figure 3-1

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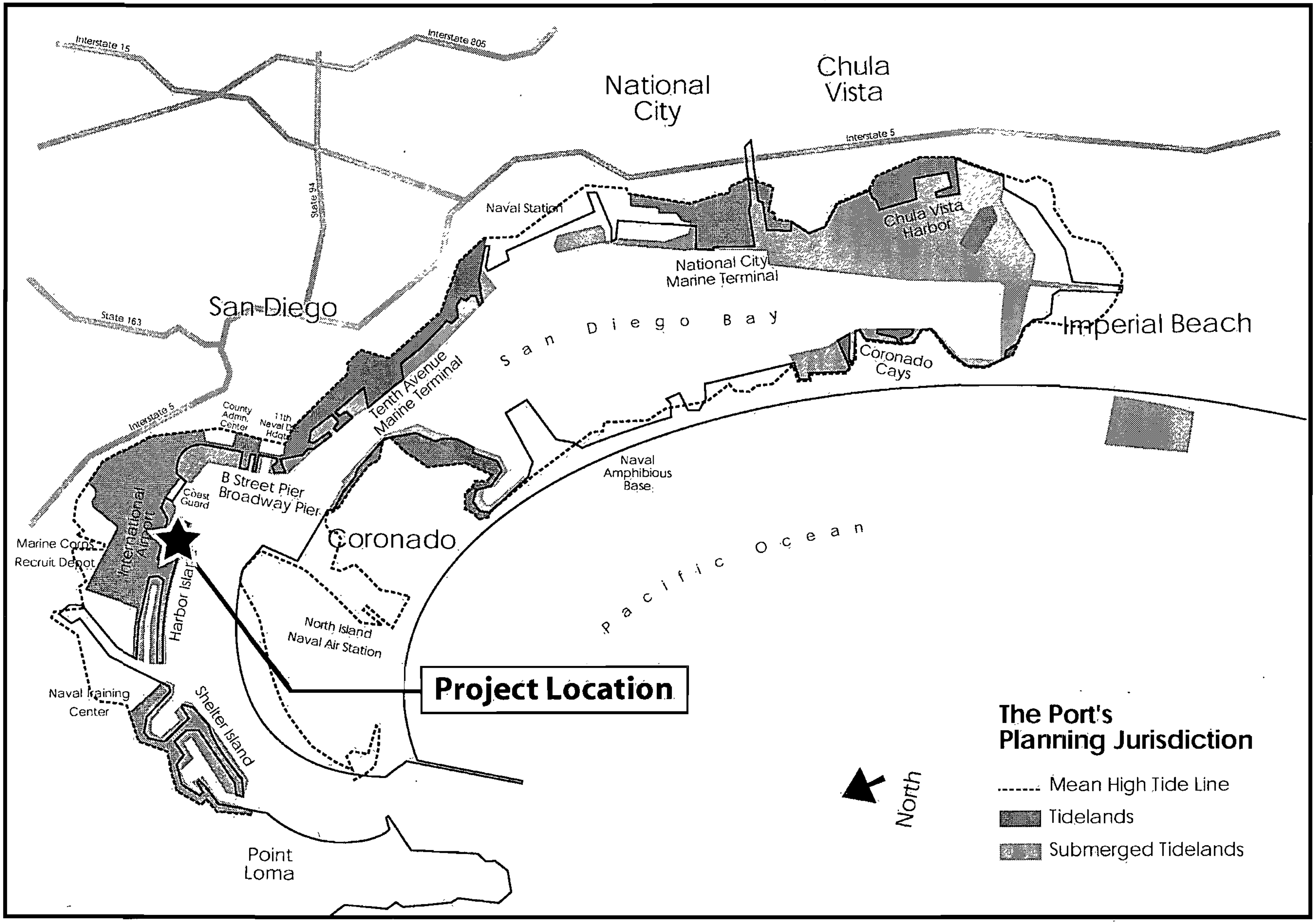

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Vicinity Map
Figure 3-2

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Source: Aerial Access (2008)

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Aerial Photograph of Project Site
Figure 3-3

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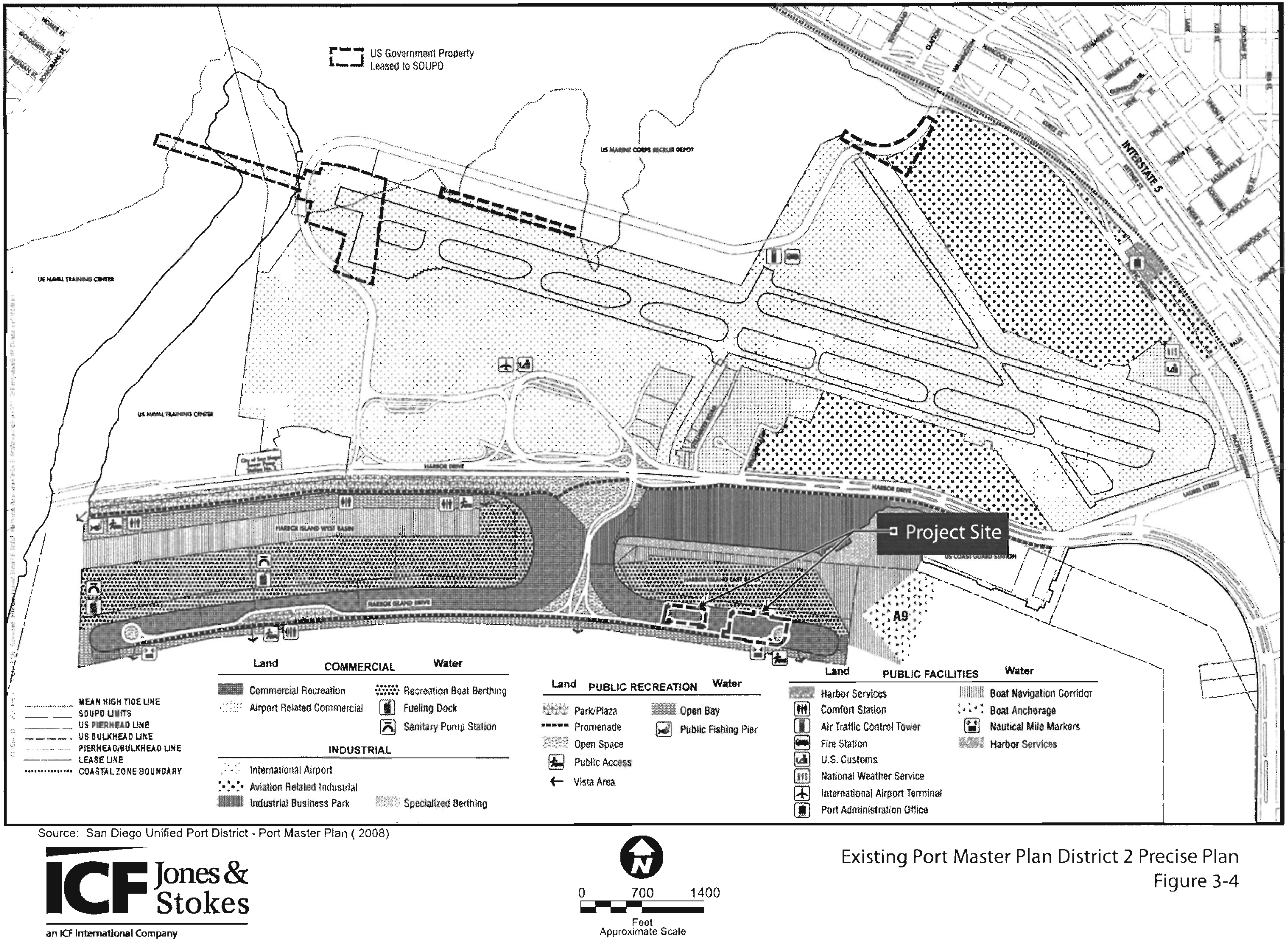

Source: San Diego Unified Port District - Port Master Plan (2008)

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Existing Port Master Plan District 2 Precise Plan
Figure 3-4

48

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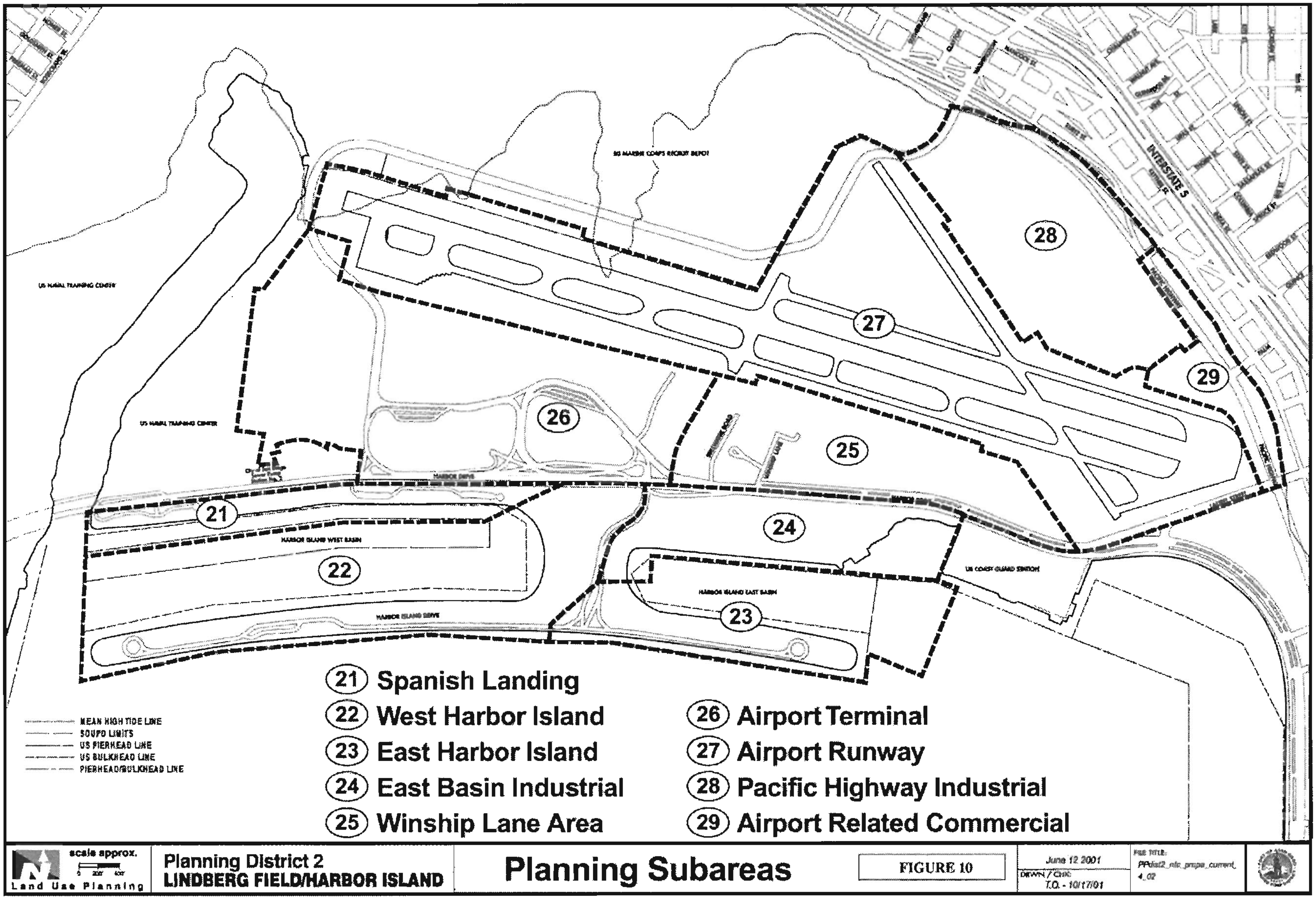

Source: Port Master Plan - 2008

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Planning District 2 Subareas
Figure 3-5

49

57791

paved area north of the marina building and parking lots. These ramps extend over the shoreline, which is protected by a rock revetment slope.

The Island Prime restaurant is a single-story, post-and-beam structure that overhangs the San Diego Bay on concrete piers. The most recent improvements to the restaurant were completed in 2005. The on-water Reuben E. Lee sternwheeler restaurant (Reuben E. Lee) is located over submerged tidelands. The barge on which the Reuben E. Lee restaurant was constructed in the 1960s is not an operational vessel. The restaurant was temporarily closed in 2003 pending renovation of the damaged super-structure. In 2008 the Port District approved a renovation of the restaurant. The renovation is anticipated to be completed by 2013.

The remainder of the submerged tidelands adjacent to the Project site contains an eelgrass mitigation area, which was created to mitigate eelgrass impacts related to construction of the marina. The submerged tidelands in the vicinity of the Project site also include an anchorage and navigable waters.

3.2 Project Description

The Proposed Project involves the partial redevelopment of one leasehold, which is currently leased by Sunroad Marina Partners, LP, located at 955 Harbor Island Drive. This leasehold is currently developed with a marina, support buildings, and surface parking. The proposed redevelopment would only affect the land side of this leasehold. The traffic circle, located at the east end of Harbor Island Drive, as well as a portion of Harbor Island Drive, are also included in the proposed redevelopment. The Proposed Project Site Plan is illustrated in Figure 3-6.

The Project description as proposed in this Draft EIR includes the following physical changes to the Project site:

- demolition of one existing locker building and parking lot east of the existing marina building;
- construction of a limited service 4-story hotel with a total floor area of approximately 117,000 square feet, consisting of a maximum of 175 rooms, fitness and limited meeting space (approximately 8,000 square feet), and common areas;
- reduction of the traffic circle and realignment of the road and leasehold lines;
- reconfiguration of existing paved areas as necessary to accommodate ingress and egress to the hotel and surface parking;
- enhanced public access along the Harbor Island East Basin; and
- realignment of existing sewer, water, and utility lines.

The Project also proposes an amendment to the PMP to address the changes in land use resulting from reconfiguring East Harbor Island Drive and the traffic

57791

circle at its eastern terminus, and providing for the existing allowed 500 hotel rooms (currently allowed only on the parcel used by SDIA for employee parking) to be spread across multiple hotels (together totaling no more than 500 rooms) on East Harbor Island.

3.2.1 Proposed Hotel

The floor area of the proposed hotel would total approximately 117,000 square feet and include a maximum of 175 rooms, fitness and meeting space, and common areas. The meeting rooms would facilitate functions and conferences for guests. The proposed site plan for the hotel is shown in Figure 3-7. Exterior elevations of the proposed hotel are shown in Figures 3-8 and 3-9. The 175 rooms, which would make up approximately 94,000 square feet of the hotel, would be distributed over four floors. As shown in Figures 3-8 and 3-9, the height of the structure is proposed to be approximately 65 feet. Architectural details and fenestrations may cause the maximum building height to reach 75 feet. The maximum height approved by the Federal Aviation Administration and San Diego County Airport Land Use Commission for the Proposed Project is 86 feet above mean sea level in order to accommodate features such as a flag pole.

Fitness and meeting rooms would total approximately 8,000 square feet. Common areas—including exterior features such as the pool and spa—would total approximately 15,000 square feet of the Project site.

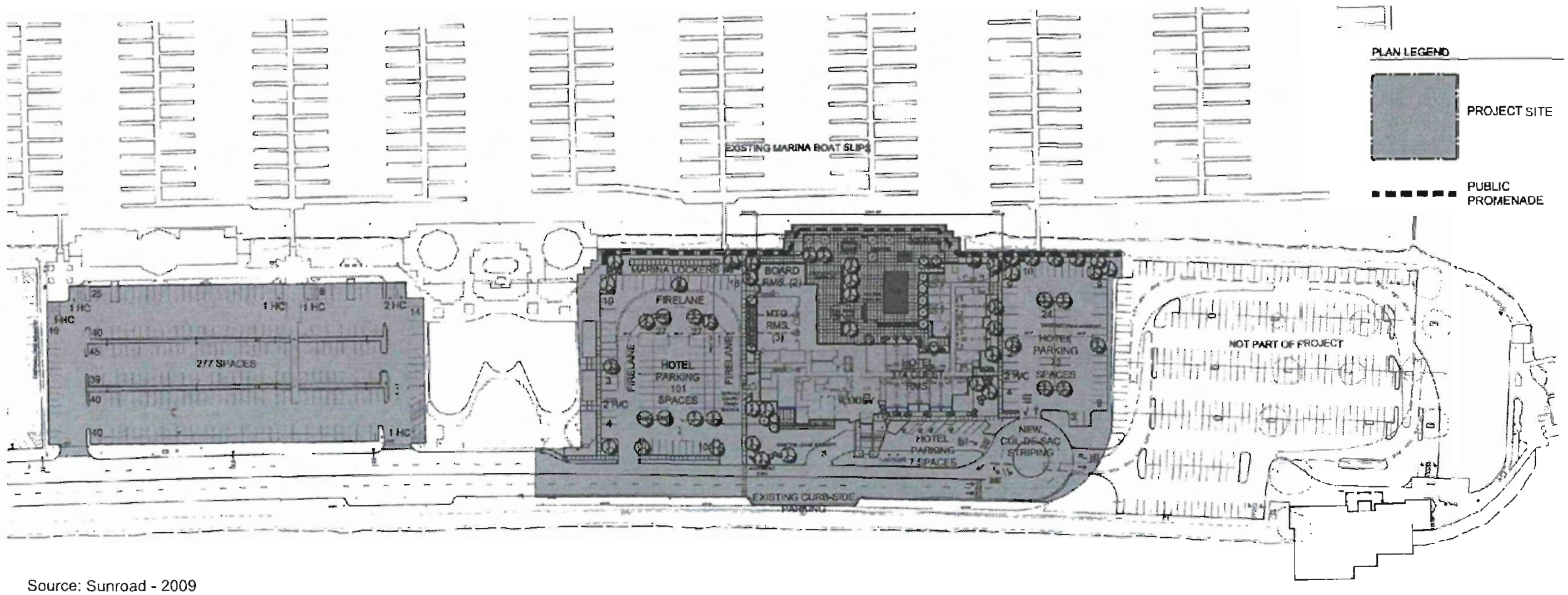
Specific lighting plans have not been developed. However, the structure is proposed to be lit at night for security and aesthetic purposes. All lighting will be consistent with the City of San Diego Outdoor Lighting Regulations.

The projected number of fulltime hotel employees would range from 35 to 40.

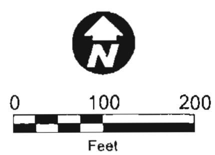
3.2.2 Open Areas, Promenade, and Landscaping

The PMP defines four public access categories (Classes I–IV) that require development of physical accessways depending on the intended degree of public shoreline access. The existing Class I promenade, identified in the PMP, includes pedestrian access along Harbor Island Drive. The portion of the promenade located south of the Project site (along the bay) would not be altered as a part of the Proposed Project.

The Project proposes enhanced public access within East Harbor Island. The Project will include a pedestrian promenade along the Harbor Island East Basin side of the hotel and would connect to the promenade that will be extended along the eastern end of Harbor Island, as part of the Reuben E. Lee restaurant redevelopment. The proposed promenade will consist of a 10-foot-wide hardscape path extending along the northern perimeter of the hotel to allow access to adjoining properties on East Harbor Island. Pedestrian access would also be available adjacent to the hotel building to provide access to Harbor Island



Source: Sunroad - 2009



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Proposed Site Plan
Figure 3-6

52

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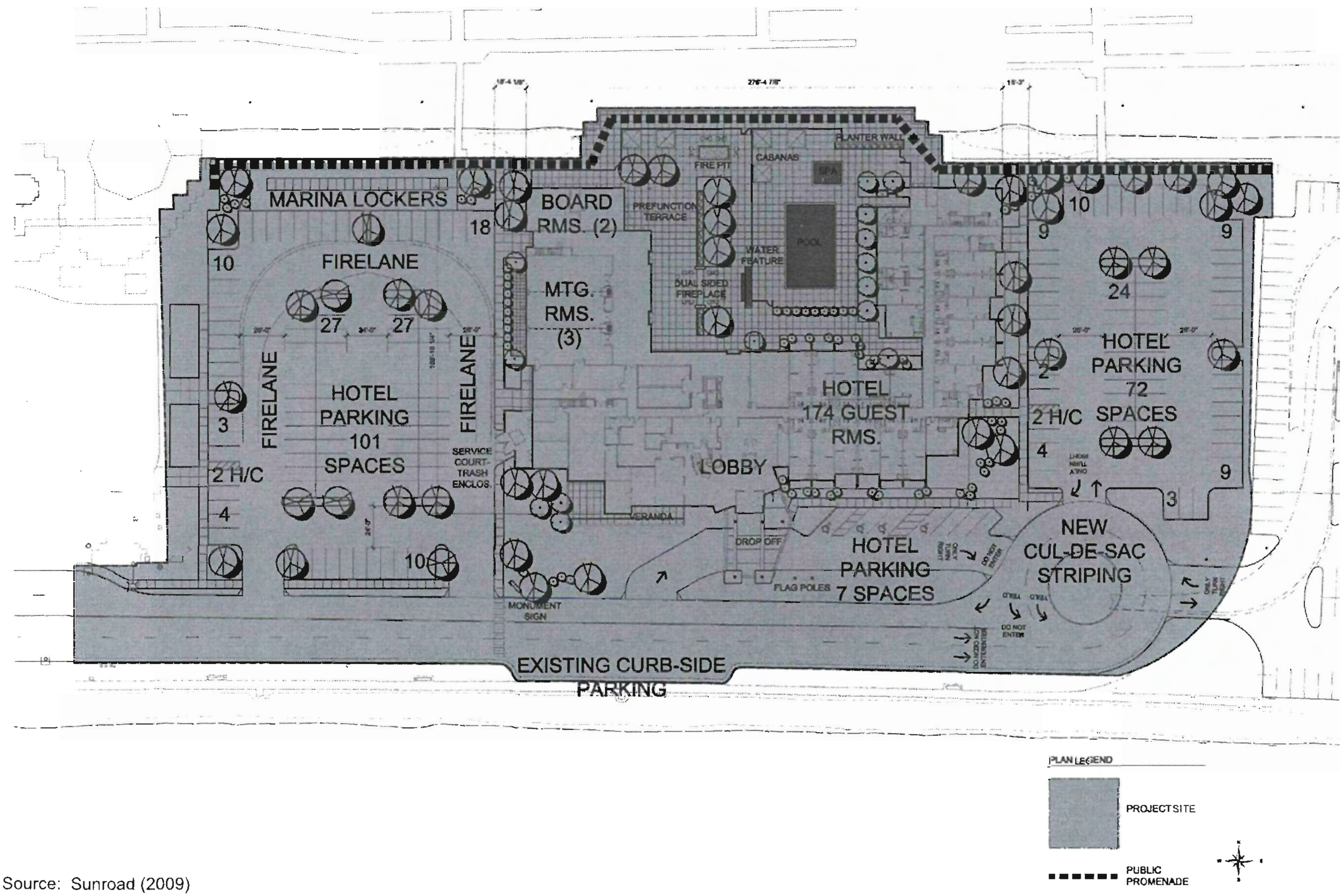

Source: Sunroad (2009)

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Proposed Hotel Site Plan
Figure 3-7

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Source: Sunroad (2009)

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South Exterior Elevation for Proposed Hotel
Figure 3-8

Source: Sunroad (2009)

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East Exterior Elevation for Proposed Hotel
Figure 3-9

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Drive. Additional public access enhancements include landscaping, benches, and signage adjacent to the pathways identifying the promenade as open to the public.

As shown in Figures 3-6 and 3-7, the traffic circle would be reconfigured to accommodate the ingress and egress of the hotel and a realignment of the easternmost portion of Harbor Island Drive.

The landscape improvements shown in Figures 3-6 through 3-9 are conceptual. A detailed landscape plan would be prepared for review and approval of the Port District prior to construction of the hotel. Certain mature and scenic trees would be incorporated into the exterior design of the hotel and common areas.

3.2.3 Parking

A total of 457 parking spaces for shared use with the hotel and marina guests would be provided. As shown in Figure 3-6, the Proposed Project includes two parking lots. To accommodate the hotel and parking lots immediately west and east of the hotel, 111 parking spaces of the existing 291-space lot currently located east of the marina building would be eliminated. A 72-space parking lot would be located east of the hotel, and a 101-space lot would be located west of the hotel. An additional 7 parking spaces would be located near the front entrance of the hotel. The configuration of the spaces in the existing 277-space lot west of the existing marina building may be modified as a part of the Proposed Project. However, the number of spaces in the existing 277-space lot would not be reduced. The existing 306-space parking area located east of the Project site is not a part of the Proposed Project. The existing parking available on the Project site is part of the leasehold and is utilized for marina use. Public parking in the vicinity of the Project site is located on the southern side of Harbor Island Drive and will not be affected by the Proposed Project.

3.2.4 Roadway and Infrastructure Realignment

Roadway Realignment

The section of Harbor Island Drive located immediately south of the proposed hotel would be realigned as shown in Figures 3-6 and 3-7. Harbor Island Drive would be reduced in width by approximately 12 feet by removing one of the two westbound lanes for a total distance of approximately 370 feet. As shown in Figure 3-6, the number of lanes in the vicinity of the hotel would be reduced from four to three, and would accommodate visitors to the hotel and maintain access to and from the Island Prime and Reuben E. Lee restaurants.

57791

As shown in Figures 3-6 and 3-7, emergency access and fire lanes would be provided. Emergency vehicles would be able to access fire lanes in the 101-space lot west of the hotel.

Infrastructure Realignment

Operation of the proposed hotel would increase demands on existing infrastructure systems including water supply and wastewater treatment. Water and sewer pipelines currently extend through the Project site. As shown in the proposed Utility Plan (Figures 3-10 and 3-11), certain existing facilities would be removed and new facilities would be placed underneath Harbor Island Drive. Water and sewer pipelines serving the hotel would be connected with the realigned water and wastewater lines within Harbor Island Drive. Electrical, gas, telephone connections, and a storm drain system serving the hotel are also proposed to be located beneath Harbor Island Drive. Two new commercial fire hydrants—one for fire service and one for domestic service—would be built to serve the proposed hotel.

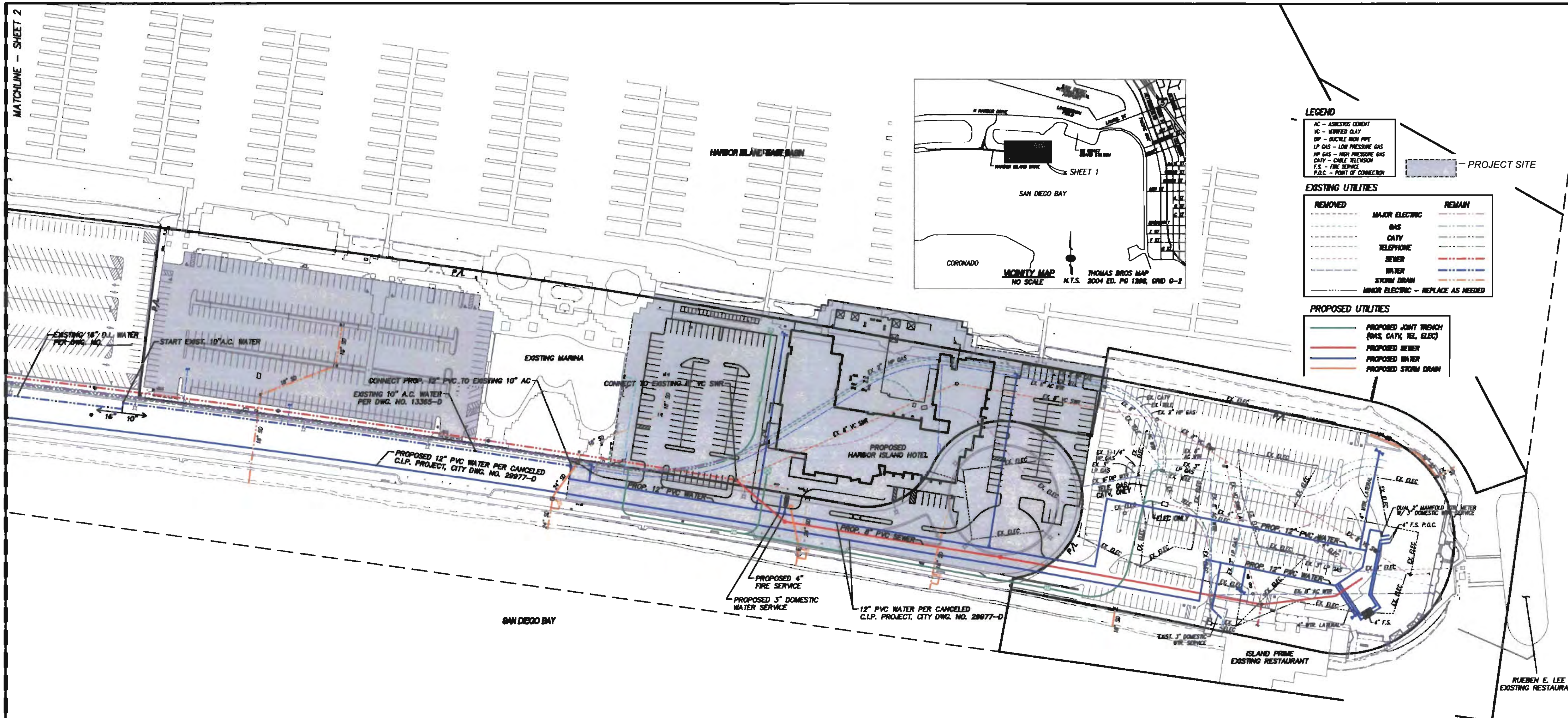
Proposed sewer and storm drain facilities would connect with existing facilities located on East Harbor Island. As shown in Figure 3-10, the proposed 8-inch sewer line would be extended within Harbor Island Drive and connect to an existing sewer line in the parking area proposed to the west of the hotel. Proposed 24-inch storm drain facilities would connect with facilities south of Harbor Island Drive.

As shown in Figures 3-10 and 3-11, the proposed 12-inch water line would extend from the hotel to Harbor Island Drive. This water line would extend within Harbor Island Drive outside of the Project site and connect with existing facilities immediately south of the existing marina. In accordance with City requirements, a redundant loop connection would be installed. As Figure 3-11 shows, the redundant loop would consist of a 12-inch water line that would extend from a connection point in Harbor Island Drive west of the Project site. From this connection point the redundant loop would extend within Harbor Island Drive to the Project site. A portion of the redundant loop would consist of a proposed 16-inch water line that would connect with facilities in the section of Harbor Island Drive that extends north to Harbor Drive.

As shown in Figure 3-10, existing sewer and water lines serving the Island Prime and Reuben E. Lee restaurants would be realigned to accommodate the proposed hotel. These sewer and water lines would only be realigned if the proposed hotel is built.

After completion of the utility realignments, the roadway will be repaved and restriped.

Existing stormwater drains extend within East Harbor Island to the Project site. A stormwater drainage system would be connected with these existing facilities to collect stormwater runoff from the Project site. Prior to construction detailed



Source: Sunroad (2009)

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Utility Plan - Sheet 1
Figure 3-10

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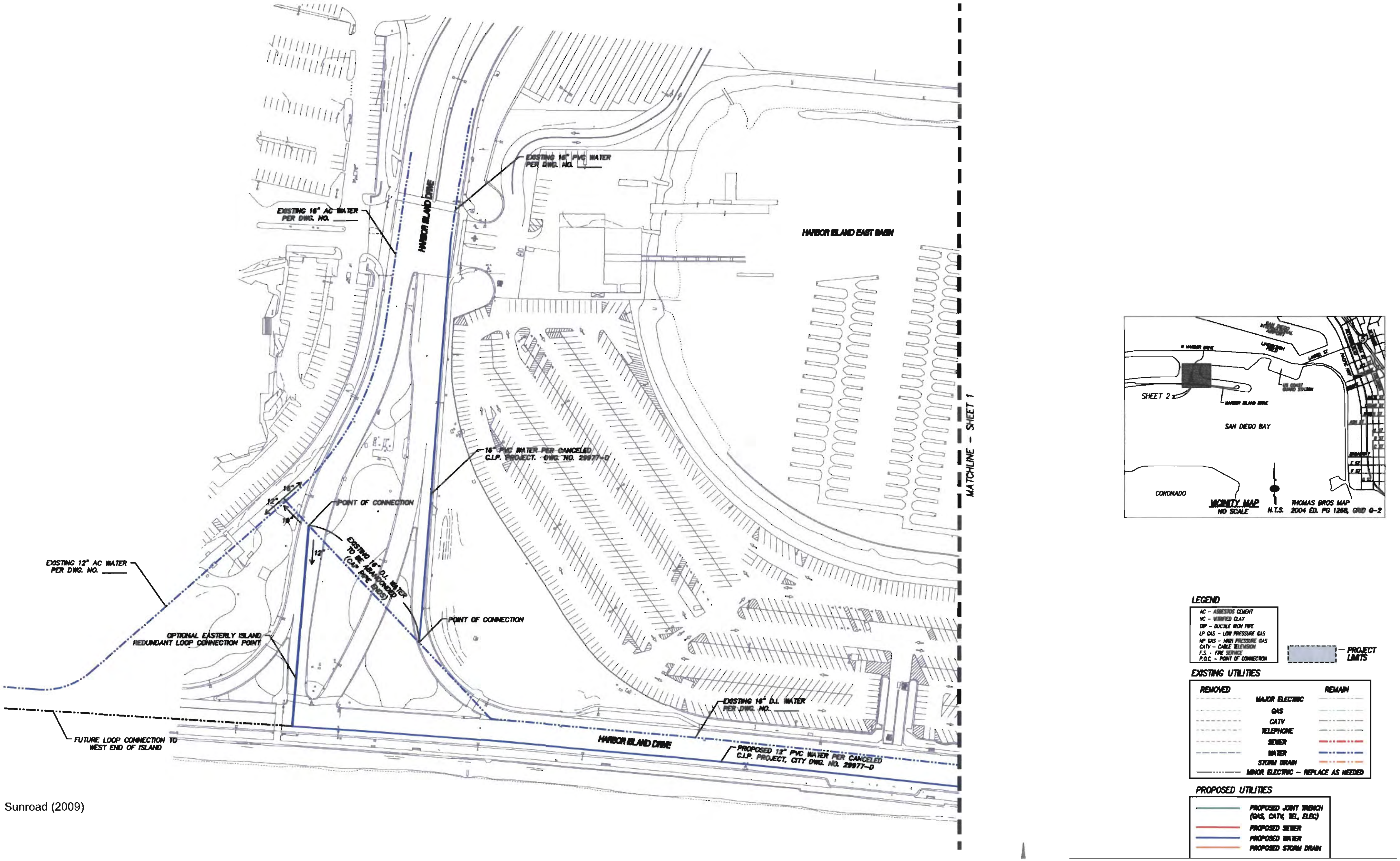

Source: Sunroad (2009)

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Utility Plan - Sheet 2
Figure 3-11

stormwater drainage system plans would be prepared in accordance with Port of San Diego Storm Water Ordinance and the Standard Urban Storm Water Mitigation Plan (SUSMP) requirements. These plans would show Best Management Practices (BMPs) incorporated into the system in accordance with National Pollutant Discharge Elimination System (NPDES) and Port District requirements. A Bio-filtration System or a mechanical Baysaver Separation System is proposed to be used for stormwater containment.

3.2.5 Construction Activities

Demolition

Demolition associated with the Project would involve removal of one existing locker building and the existing parking lot located east of the marina building. Following construction, the number of parking spaces within the Project vicinity would be reduced from 568 to 457. The remaining locker facilities within the marina area would be maintained for marina use. In addition, 100 to 120 lockers would be constructed north of the proposed 101-space parking lot (see Figures 3-6 and 3-7).

Construction

Construction of the Proposed Project would occur in a single phase. Construction would involve excavation of approximately 10,000 cubic yards of material. The excavated material would be used on site or would be disposed of at an offsite landfill. The construction period is expected to be 15 to 18 months in duration.

The construction staging area would be on the Project site, east of the marina building and west of the proposed hotel footprint. During construction the 277-space parking lot located west of the marina building would be available for marina use. The existing public parking spaces along East Harbor Island Drive would remain available for public use during construction.

The foundation of the proposed hotel would be constructed using stone columns or Helical Earth Anchor Technology (HEAT anchors). The Proposed Project would not utilize pile driving.

3.2.6 Design Features

Energy conservation and sustainability features would be incorporated into the design and construction of the Proposed Project. These features will provide energy and water efficiency equivalent to 15% in excess of standards required by California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6 of the California Code of Regulations). Such features will be incorporated as conditions of approval of the Project and include the following:

Construction

- Reuse or recycle at least 75% of construction materials (including soil, asphalt, concrete, metal, and lumber).
- Use 10% of building materials and products that are locally or regionally (or within 500 miles) extracted and manufactured, when available.
- Use alternative fuel types for 50% of construction equipment (e.g., biodiesel).
- Implement Green Building Initiatives, including low VOC emitting finishes, adhesives, and sealants.

Building Sustainability

- Install efficient HVAC system with refrigerant with an Ozone Depletion Potential of zero.
- Install Energy Star, "cool" or light-colored roofing for at least 75% of the roof area, cool pavements, and shade trees.
- Use dual pane low-E windows with a minimum of 0.30 solar heat gain coefficient.
- Install R-value optimized wall and roof installation.
- Use better-than-code energy efficient lighting throughout building and site.
- Utilize filtered and controlled natural ventilation to reduce heating and air conditioning demand by 10%.
- Incorporate engineering design system measures—variable speed chillers, fans, and pumps; boiler and chiller controls; heat recovery; smart auto thermostats; and CO_2 sensors for meeting room.
- Use only Energy Star appliances for all eligible equipment and fixtures.
- Use solar heating, automatic covers, and efficient pumps and motors for pools and spas.
- Install light emitting diodes (LED's) for 50% of all outdoor lighting (except in parking lots, which would use T-5 lighting or equivalent).
- Limit hours of outdoor lighting for 100% of the site lighting by using photocell controls.

- Utilize natural daylight for 75% of the regularly occupied spaces.

Water Conservation and Efficiency

- Install or reuse drought-tolerant landscaping trees and incorporate vines on selected walls to reduce potable water demand for irrigation by at least 50%.
- Use low flow plumbing features on all fixtures and appliances to reduce potable water use by at least 20%.
- Install water-efficient irrigation systems and devices, including drip irrigation, soil moisture-based irrigation controls, and/or drought-tolerant landscaping to reduce potable water use for irrigation by at least 50%.
- Install only low-flow (0.125 gallons per flush) or waterless urinals.
- Install only low-flow toilets (1.28 gallons per flush), faucets (1.0 gallons per minute), and showers (2.0 gallons per minute).
- Install sensor-activated lavatory faucets (0.5 gallons per minute) in public restrooms.
- Install moisture sensors that suspend irrigation during unfavorable weather conditions (rain, wind).
- Educate patrons about water conservation using interior and exterior signage.

Solid Waste

- Provide interior and exterior storage areas for recyclables and green waste, and provide adequate recycling containers on site.
- Provide education and publicity about recycling and reducing waste, using signage and a case study.

Transportation

- Limit idling time for commercial vehicles, including deliveries and construction vehicles to 20 minutes.
- Install bicycle parking facilities.
- Provide a shuttle service between the hotel and the airport.

3.2.7 Port Master Plan Amendment

The Project proposes an amendment to the PMP to address the proposed land use changes necessary to implement the Project. The changes warranting a PMP Amendment include the reconfiguration of East Harbor Island Drive and the traffic circle at its eastern terminus, and providing for the existing allowed 500 hotel rooms to be spread across multiple hotels on East Harbor Island. The Proposed Project includes development of a 175-room hotel, which would constitute a portion of the 500 total hotel rooms allowed on East Harbor Island.

The PMP Amendment, described below, is included in this Draft EIR as Appendix B.

The land side of the East Harbor Island Subarea is designated for Commercial Recreation uses (Figure 3-12). Commercial Recreation uses include, but are not limited to hotels, restaurants, specialty shops, and pleasure craft marinas. The existing PMP description for the East Harbor Island Subarea includes the following language:

> The east end of Harbor Island, subarea 23, has been the last subarea to complete phased development. The last project, a high quality hotel of approximately 500 rooms, is sited to be responsive to views of San Diego Bay, the airport, and the downtown San Diego skyline. Maximum building heights establish consistency with airport approach paths. The hotel complex includes restaurant, cocktail lounge, meeting and conference space, recreational facilities, including piers, and ancillary uses. A marina of approximately 550 slips is located adjacent to the hotel and occupies most of the basin. The eastern end of the peninsula is anchored by restaurants, which are uniquely sited on the water's edge.

The hotel referenced in the PMP was proposed for the westernmost parcel of East Harbor Island (the parcel located west of the Project site). This parcel is currently used by SDIA for employee parking. Although the Proposed Project generally includes those uses outlined in this description, the PMP would need to be amended to allow those uses on all of East Harbor Island, including the Project site. The portion of the Project site that the hotel would be constructed on already has the proper land use designation for a hotel use—Commercial Recreation. The proposed changes to the traffic circle and roadway also warrant an amendment to the PMP.

The Project's PMP Amendment would revise the East Harbor Island Subarea discussion as follows:

> The east end of Harbor Island, subarea 23, ~~has been~~is the last subarea to complete phased development and is designated commercial recreation. ~~The last project, a~~Future development in this subarea includes ~~high quality~~ two or more hotels totaling ~~of~~ approximately 500 rooms. ~~which are is~~ These hotels will be sited to be responsive to views of San Diego Bay~~, the airport,~~ and the downtown San Diego skyline. Maximum building heights will be ~~establish~~ consistent~~cy~~ with adopted aircraft approach paths and Federal Aviation Administration (FAA) regulations. ~~The hotel~~ Hotels ~~complex~~ may includes typical supporting facilities such as swimming pools, spas, commercial retail, restaurants, cocktail lounges, meeting and conference space, recreational facilities, including piers, and ancillary uses. A marina of approximately 550 slips is located adjacent to the hotels and occupies most of the basin. The eastern end of the peninsula is anchored by restaurants, which are uniquely sited on the water's edge.
>
> The existing promenade along the southern side of Harbor Island Drive will be extended to the eastern portion of the East Harbor Island subarea and along Harbor Island East Basin frontage as the subarea is developed or redeveloped. The promenade will provide pedestrian access around East Harbor Island and will connect the hotel developments, marina, and restaurants to the rest of

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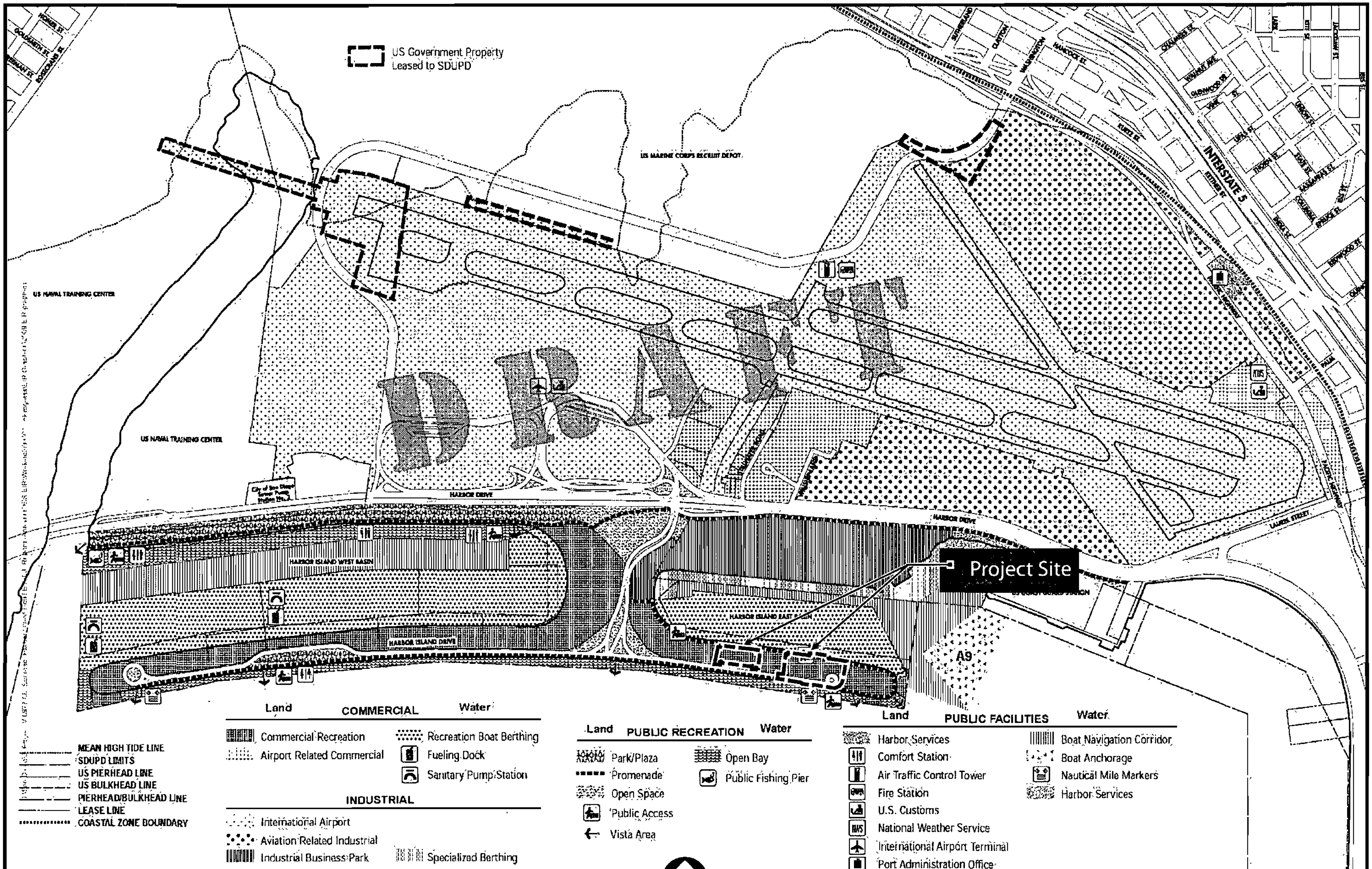

Source: San Diego Unified Port District - Port Master Plan (2009)

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Proposed Port Master Plan Precise Plan Amendment
Figure 3-12

64

57791

Harbor Island. The promenade will be located to provide views of the San Diego Bay, the downtown San Diego skyline, and the Harbor Island East Basin. ~~Public access will be maintained along the promenade. Private uses shall not obstruct the public promenades.~~ When the promenade is located within a private leasehold or on a Port development site, improvements and the promenade will be sited to allow uninterrupted pedestrian flow. Benches and ~~overlooks~~ viewing decks adjacent to the promenade will be sited to provide multiple viewing opportunities in a manner that does not obstruct pedestrian flow. Public access and other path-finding signage, as well as signage identifying that the promenade is open to the public, will be placed at strategic locations throughout East Harbor Island to guide guests and visitors to and from public use areas, restaurants, and other facilities.

~~A public access plan will be prepared and implemented for each hotel development. The public access plans will include information on signage, amenities, and public information to inform and invite the public to and around East Harbor Island and downtown San Diego.~~ *[paragraph moved to general discussion for Planning District 2 – see Appendix B of EIR for complete Draft PMP Amendment]*

~~All hotel developments should provide shuttle service to and from the airport and information regarding other transit opportunities.~~ *[paragraph moved to general discussion for Planning District 2 – see Appendix B of EIR for complete Draft PMP Amendment]*

~~A parking management plan will be prepared for each hotel development.~~ *[paragraph moved to general discussion for Planning District 2 – see Appendix B of EIR for complete Draft PMP Amendment]*

As the East Harbor Island subarea is developed or redeveloped, Harbor Island Drive may be resized and realigned to optimize use of East Harbor Island. This may allow for increased and enhanced public enjoyment of the bay. The promenade and new public access features (i.e., benches) will provide enhanced open space and public access opportunities within the East Harbor Island subarea. Proportionate to the type and extent of development or redevelopment, activating uses such as restaurants, outdoor seating and dining areas, and retail shops open to the public ~~may~~ will be integrated into the hotel development or redevelopment.

A public promenade parallels the active ship channel of the bay and ~~i~~ensures pedestrian and bicycle coastal access. Landscaped open space on Harbor Island Drive is retained with the street design of an upgraded and modified "T" intersection. Utility capacity is expanded to meet increased service needs.

The PMP Amendment would also include the following:

- updating the Precise Plan map, as identified in Figure 3-12;
- updating the Lindbergh Field/Harbor Island: Planning District 2 project list to change the 500-room hotel to multiple hotels with a cumulative total of 500 rooms and include the traffic circle/road realignment; and

57791

65

- updating the land use acreage tables within the PMP to reflect increased promenade acreage, increased street acreage, reduced open space acreage, and reduced commercial recreation acreage.

Table 3-1 includes the revised Land Use acreages for Lindbergh Field/Harbor Island: Planning District 2 from the PMP Amendment. Appendix B of this Draft EIR includes each of the components of the proposed PMP Amendment.

The following Environmental Analysis sections provide a project-level analysis of all potential impacts associated with the proposed 175-room hotel (including ancillary construction activities such as roadway realignment, etc.). All subsequent development projects (i.e., the 325 hotel rooms remaining from the originally allowed 500 hotel rooms) proposed as a result of the PMP Amendment would require additional project-level environmental analysis to ensure any unidentified impacts are addressed. There are no plans for developing more than the proposed 175-room hotel at this time.

Table 3-1. Precise Plan Land Use Allocation—Lindbergh Field/Harbor Island: Planning District 2

	Acres	
Land Use	**Existing**	**Revised**
Commercial	~~90.6~~	90.2
Airport-related Commercial	38.0	
Commercial Recreation	~~52.6~~	52.2
Industrial	631.8	
Aviation-related Industrial	130.6	
Industrial Business Park	33.1	
International Airport	468.1	
Public Recreation	~~26.2~~	26.7
Open Space	~~7.5~~	7.2
Park	16.4	
Promenade	~~2.3~~	3.1
Public Facilities	~~66.8~~	66.7
Harbor Services	1.3	
Streets	~~65.5~~	65.4
Total	**815.4**	

Note:

Does not include

Leased Federal Land	22.5 acres
State Submerged Tidelands	41.3 acres
Leased Uplands	4.1 acres

Revised acreage includes East Harbor Island Subarea PMPA

Source: Port District 2009a

57791

3.3 Coastal Access

The California Coastal Act Sections 30210–30214 establish requirements for the provision of public access to the coast, implementing Section 4 of Article X of the California Constitution. The PMP includes goals and policies established to address the Coastal Act requirements for public access to the coast within the Port District's jurisdiction. As stated above, the PMP also defines four public access categories (Classes I–IV) that require development of physical accessways depending on the intended degree of public shoreline access. The promenade proposed along the northern portion of the Project site would be within the Class III access category, while the existing promenade along Harbor Island's southern boundary is within the Class I access category.

The Project has been designed to conform to or exceed the coastal access requirements by constructing a landscaped public promenade along the northern portion of the Project site. The promenade associated with the Project would further enhance physical and visual access to the San Diego Bay.

3.4 Alternatives

Two alternatives, including the No Project Alternative, have been identified for consideration in the Draft EIR. In accordance with CEQA Guidelines §15126.6, the Reduced Project Alternative would avoid or substantially lessen the significant impacts of the Proposed Project with respect to traffic.

3.4.1 No Project Alternative

The No Project Alternative is a CEQA-required alternative that assumes no project development would occur and none of the Proposed Project's other components would be implemented. Under the No Project Alternative, the Port District would maintain existing conditions within the Project site, with all existing buildings remaining and the marina continuing to operate in its current capacity, with existing facilities and parking areas left intact. No new development or alterations would be implemented on this portion of East Harbor Island, including structures, parking lots, landscaping, or promenade. The PMP would not be amended to account for the Proposed Project or to incorporate the other changes to the PMP.

3.4.2 Reduced Project Alternative

The Reduced Project Alternative entails construction and operation of a smaller hotel than that of the Proposed Project. This alternative was selected for analysis because a reduction in the scale of the Project would ~~avoid~~ substantially lessen the significant cumulative traffic impacts identified for the Proposed Project. Under this alternative, East Harbor Island would still undergo redevelopment,

57791

67

with construction of a new hotel and parking areas and extension of the promenade, but the ~~scale of Project construction would be smaller~~ hotel would have fewer hotel rooms than that of the Proposed Project. The Reduced Project Alternative would entail a reduction in the number of rooms in the onsite hotel from a total of 175 rooms described for the Proposed Project to 69 rooms and 123 rooms, but would retain the same amount of meeting space as in the Proposed Project. The reduction in rooms would be accomplished by reducing the height ~~and footprint~~ of the hotel building from four stories to two stories (69 rooms) and three stories (123 rooms), respectively. Although a smaller hotel would result in fewer patron and employee vehicles than the Proposed Project, the parking areas under this alternative would be similar in size to the parking lots proposed under the Project. The promenade improvements and roadway, traffic circle, and utility realignments would be the same as in the Proposed Project.

Section 4.6
Transportation, Traffic, and Parking

4.6.1 Introduction

This section analyzes the Proposed Project's impacts on transportation, traffic, and parking; cumulative impacts on traffic are discussed in Chapter 5 of this Draft EIR. This section summarizes the analysis and findings presented in the *Traffic Impact and Parking Study —Sunroad Harbor Island (Traffic Study)* prepared by Linscott Law & Greenspan Engineers (LLG) in January 2009 and revised in October 2010. The October 2010 version of the traffic study supersedes the January 2009 version and ~~A complete copy of the Traffic Study~~ is included as Appendix E of this Draft EIR.

To conduct their analysis, LLG determined the extent of existing vehicle traffic within the local circulation system and calculated the impacts that would result from the addition of Project-related traffic to the local system. The Traffic Study also presents an analysis of the Project's parking demands. For a detailed discussion of existing conditions, methodology, and impact analysis pertaining to transportation, traffic, and parking refer to Appendix E.

~~It should be noted that the Traffic Study was completed when the Project Applicant was considering a 210-room limited service hotel. The Project Applicant has since revised the Project to consider a 175-room limited service hotel. LLG prepared a subsequent analysis that concluded the reduction of the total number of rooms from 210 to 175 would not change any conclusions of the Traffic Study. However, a reduction in the total required parking supply and fair share contributions is warranted. The results of the revised project review are presented in a Letter Report dated October 27, 2009, which is included in Appendix E.~~

57791

69

4.6.2 Existing Conditions

4.6.2.1 Environmental Setting

Circulation System Study Area

A network of small roadways, including North Harbor Drive, Harbor Island Drive, Laurel Street, Pacific Highway, and Nimitz Boulevard, provide local circulation to users of the Project and the surround area. Interstate 5 (I-5), an interstate freeway operated in California by the California Department of Transportation (Caltrans), provides regional circulation.

In accordance with standard engineering practice for traffic analysis, the Project traffic "study area" was defined based on the distribution of Project-generated trips on the roadway network. Intersections where 50 or more peak-hour Project-generated trips were forecast to be added were included in the traffic study.

The traffic study area consists of 20 roadway segments and 11 intersections (all of which are currently signalized). The affected roadways are described below, and are defined as arterials, major streets, or collectors pursuant to City of San Diego definitions.

Study Area Roadways

North Harbor Drive is classified as a 6-lane primary arterial that runs in an east–west direction north of the Project site and the Harbor Island East Basin. Currently North Harbor Island Drive is ~~classified as~~ a 6-lane divided roadway with the exception of the following segments: west of Nimitz Boulevard, North Harbor Island Drive is a four-lane divided roadway; between Harbor Island Drive and the Coast Guard Station and between Hawthorn Street and Grape Street, North Harbor Island Drive is a 7-lane divided roadway. The speed limit ranges from 40 to 45 miles per hour (mph), with parking generally prohibited; there are several bus stops at regular intervals, and bike lanes are provided between Nimitz Boulevard to the west and Terminal 2 of the San Diego International Airport (SDIA) to the east.

Pacific Highway is classified as a 6-lane divided ~~roadway~~ major arterial that runs generally in a north–south direction, northeast of the Project site and SDIA. Currently Pacific Highway is a 6-lane divided roadway in the Project area. The speed limit ranges between 35 and 40 mph. Bus stops and bike lanes are provided, with parking generally allowed south of, but prohibited north of, Laurel Street.

Laurel Street runs in an east–west direction, east of the Project site, connecting to North Harbor Drive. Laurel Street is classified as a ~~5~~4-lane major arterial between North Harbor Drive and Pacific Highway and as a 4-lane collector east of Pacific Highway. ~~local collector,~~ Currently, Laurel Street is a 5-lane ~~and is~~

57791

undivided roadway between North Harbor Drive and Pacific Highway. However, the second and third westbound lanes (along the airport frontage) merge into one lane at the end of the segment. ~~is not functional because of the 2-lane end conditions;~~ The merge condition essentially does not allow for full capacity of the two lanes; therefore, the analysis presented later in this report considered this segment as having only four lanes. East of Pacific Highway, Laurel Street is a 4-lane undivided roadway. The speed limit is 40 miles per hour. Parking is prohibited, and there are no bike lanes. Bus stops are provided.

Hawthorn Street is a one-way westbound roadway located east of the Project site and is classified as a 3-lane major arterial. Currently, Hawthorn Street provides three travel lanes from North Harbor Drive to just east of State Street. The speed limit is 30 mph. There are no bus stops or bike lanes, and parking is generally allowed except between North Harbor Drive and Pacific Highway.

Grape Street is a one-way eastbound roadway and is classified as a 3-lane major arterial. Currently, Grape Street provides three travel lanes from North Harbor Drive to just east of State Street. There is no posted speed limit. There are no bus stops or bike lanes, and parking is generally allowed.

Harbor Island Drive runs mainly in an east–west direction, immediately south of the Project site, spanning the length of Harbor Island along the waterfront. Harbor Island Drive also extends perpendicular from the Harbor Island waterfront to North Harbor Drive via a 4-lane divided roadway; this segment is classified as a major arterial and parking is not permitted. Harbor Island Drive along the waterfront is a 4-lane local collector and is undivided. The speed limit is 35 mph, with no curbside parking provided on the north side. However, there are 3-hour parking pullouts provided at regular intervals along the south side of the street.

The analysis presented in the Traffic Study considers operations of 20 total street segments of these studied roadways, as well as the following 11 intersections (all signalized):

- North Harbor Drive / Terminal 2 Entrance (West Airport Entrance)
- North Harbor Drive / Harbor Island Drive / Terminal 1 (East Airport Entrance)
- North Harbor Drive / Rental Car Access Road
- North Harbor Drive / Laurel Street
- North Harbor Drive / Hawthorn Street
- North Harbor Drive / Grape Street
- Pacific Highway / Laurel Street
- Pacific Highway / Hawthorn Street
- Pacific Highway / Grape Street
- Harbor Island Drive / Sheraton Driveway
- Harbor Island Drive / Harbor Island Drive

Methodology for Determining Current Conditions

The most recent traffic counts available for several of the roadway segments were obtained from the City of San Diego's *Machine Count Traffic Volumes—City Streets dated 1/1/2003 to 3/28/2008*. However, manual hand counts were conducted at the traffic study area intersections in August 2008. Additional counts were conducted to resolve inconsistencies recognized in previous data. Traffic counts are logged in Average Daily Traffic (ADT). Using these ADT counts, LLG determined the morning (AM) and evening (PM) peak hours for the roadways and used the peak volumes to estimate average peak-hour intersection delay (in seconds). The AM peak hours were determined to be 7 a.m.–9 a.m., and the PM peak hours were determined to be 4 p.m.–6 p.m.

A level of service (LOS) grade was then assigned for each studied roadway segment and intersection. LOS is an index to evaluate operational quality of the roadways and intersections of concern. LOS takes into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS is expressed using a letter-graded scale, with "A" being the most effective and "F" the least effective.

For a roadway segment, LOS is determined by the volume-to-capacity (V/C) ratio, which compares the existing ADT on the roadway segment to the segment's ADT capacity (as determined by the City's "standard" roadway classifications[1]). The City's threshold for acceptable capacity operation is LOS D or above for roadway segments. ~~The LOS capacities for North Harbor Drive account for the fact that airport traffic is commonly distributed throughout the day, and that the roadway does not operate with traditional AM and PM peak hours associated with normal commuting hours. Therefore, the various North Harbor Drive LOS capacities are higher than those of other City roadways.~~

For an intersection, LOS is determined based on the average delay experienced by an approaching vehicle at the intersection during the relevant peak hour. The City considers an intersection to be operating effectively if it is operating at LOS D or above.

Street Segment and Intersection Operations

Existing conditions at the studied street segments and intersections are shown below in Tables 4.6-1 and 4.6-2, respectively.

[1] City of San Diego classifications and thresholds were used for Project analysis in the Traffic Study because the Port does not maintain its own traffic standards. City of San Diego "Standard" ~~and "Modified"~~ Roadway classifications and capacities were used for the analysis in which there is daily traffic peaking in the AM peak period (7:00-9:00 AM) and PM peak period (4:00-6:00 PM) and the peak periods account for approximately 20% of the total daily traffic volume. North Harbor Drive, along with Laurel Street, Hawthorn Street, and Grape Street do not behave in the "standard" manner because of their proximity to SDIA, and instead have traffic distributed more uniformly throughout the day with peak periods accounting for only 11% of the total daily traffic volume. However, the Traffic Study conservatively used the "standard" capacities for the traffic analysis. ~~and LOS tables are used to take into account traffic volumes unique to regions within the vicinity of an airport.~~

57791

72

Table 4.6-1. Existing Street Segment Operations

Street Segment	Street Classification	Existing Capacity (LOS E)	ADT	V/C	LOS
North Harbor Drive					
Nimitz Boulevard to Terminal 2	6-lane Prime	~~94,000~~60,000	27,730	~~0.295~~0.462	~~A~~B
Terminal 2 (West Airport Entrance) to Harbor Island Drive	6-lane Prime	~~94,000~~60,000	29,750	~~0.316~~0.496	~~A~~B
Harbor Island Drive to Rental Car Access Road	7-lane Prime	~~108,000~~65,000	81,000	~~0.750~~1.246	~~C~~F
Rental Car Access Road to Laurel Street	6-lane Prime	~~94,000~~60,000	82,790	~~0.881~~1.380	~~D~~F
Laurel Street to Hawthorn Street	6-lane Prime	~~94,000~~60,000	54,260	~~0.577~~0.904	~~B~~D
Hawthorn Street to Grape Street	7-lane Prime	~~108,000~~65,000	37,830	~~0.350~~0.582	~~A~~C
South of Grape Street	5-lane Prime	~~94,000~~55,000	17,690	~~0.188~~0.322	A
Pacific Highway					
North of Laurel Street	6-lane Major	50,000	18,150	0.363	A
Laurel Street to Hawthorn Street	6-lane Major	50,000	9,760	0.195	A
Hawthorn Street to Grape Street	6-lane Major	50,000	18,460	0.369	A
South of Grape Street	6-lane Major	50,000	16,940	0.339	A
Laurel Street					
North Harbor Drive to Pacific Highway	4-lane Major	~~60,000~~40,000	36,390	~~0.607~~0.910	~~C~~E
East of Pacific Highway	4-lane Collector	~~45,000~~30,000	27,620	~~0.614~~0.921	~~C~~E
Hawthorn Street					
North Harbor Drive to Pacific Highway	3-lane Major *(one-way)*	~~38,000~~25,000	25,770	~~0.678~~1.031	~~C~~F
East of Pacific Highway	3-lane Major *(one-way)*	~~38,000~~25,000	23,480	~~0.618~~0.939	~~C~~E
Grape Street					
North Harbor Drive to Pacific Highway	3-lane Major *(one-way)*	~~38,000~~25,000	23,130	~~0.609~~0.925	~~C~~E
East of Pacific Highway	3-lane Major *(one-way)*	~~38,000~~25,000	20,330	~~0.535~~0.813	~~B~~E
Harbor Island Drive					
North Harbor Island Drive to Harbor Island Drive	4-lane Major	40,000	16,330	0.408	B
West of Harbor Island Drive	4-lane Collector	30,000	8,610	0.287	A
East of Harbor Island Drive	4-lane Collector	30,000	6,940	0.231	A

Source: LLG ~~2009~~2010

57791

Table 4.6-2. Existing Intersection Operations

Intersection	Peak Hour	Delay (seconds/vehicle)	LOS
North Harbor Drive / Terminal 2 (Western Airport Entrance)	AM	17.7	B
	PM	17.2	B
North Harbor Drive / Harbor Island Drive / Terminal 1 (East Airport Entrance)	AM	20.1	C
	PM	22.3	C
North Harbor Drive / Rental Car Access Road	AM	23.8	C
	PM	20.0	C
North Harbor Drive / Laurel Street	AM	23.0	C
	PM	39.2	D
North Harbor Drive / Hawthorn Street	AM	25.2	C
	PM	30.0	C
North Harbor Drive / Grape Street	AM	22.9	C
	PM	20.7	C
Pacific Highway / Laurel Street	AM	27.8	C
	PM	35.9	D
Pacific Highway / Hawthorn Street	AM	15.8	B
	PM	12.6	B
Pacific Highway / Grape Street	AM	10.3	B
	PM	19.0	B
Harbor Island Drive / Sheraton Driveway	AM	12.7	B
	PM	14.1	B
Harbor Island Drive / Harbor Island Drive	AM	7.4	A
	PM	7.6	A

Source: LLG ~~2009~~2010

Congestion Management Program

The Congestion Management Program (CMP) is a SANDAG program that monitors and plans for traffic on certain key arterials within the County to evaluate the interrelated link between land use, transportation, and air quality. The CMP requires an enhanced CEQA review for large projects, which are those that are expected to generate more than 2,400 ADT or more than 200 peak hour trips.

Parking

The majority of the Project site is currently used for surface parking (see Figure 3-3). Existing parking on the Project site includes a 277-space surface parking lot west of the marina building and a 291-space surface parking lot east of the marina building. Both surface parking lots are for marina guests.

Public Transportation

There is currently no public transit service to the Project site or to Harbor Island in general. The nearest public transit routes are the 923 and 992 bus routes of the Metropolitan Transit Service, which travel down North Harbor Drive, north of the Project site. Route 923 travels between Ocean Beach to the west and downtown San Diego to the east. Route 992 travels between SDIA to the west and downtown San Diego to the east. The transit stop closest to the Project site is for Route 923, which is approximately 0.7 mile northwest of the Project site, on North Harbor Drive.

There are no specifically identified bike paths in the Project vicinity, although bicyclists currently utilize Harbor Island Drive for travel along the Harbor Island peninsula. Bicycle use is prohibited on the bayside promenade on Harbor Island.

Air Traffic

The Project site is located south of SDIA, which is characterized by a heavy amount of air traffic, including commercial passenger planes and cargo planes carrying freight and mail. SDIA accommodates approximately 600 arriving and departing flights every day, most of which are passenger flights. NAS North Island, located south of the Project site, is a 24-hour naval air field operating seven days a week.

Rail Traffic

A railroad line accommodating freight service of the Burlington Northern Santa Fe Corporation (BNSF) and passenger service of Amtrak, the North County Transit District's Coaster line and Metropolitan Transit System's Trolley line runs in a north–south direction approximately 1 mile east of the Project site. The rail corridor is situated between Pacific Highway and Kettner Boulevard in this area. Three of the study area roadways cross the rail line at grade: Laurel, Hawthorn, and Grape Streets. These crossings accommodate a heavy volume of auto traffic due to their location along access routes to SDIA and are accordingly equipped with extensive safety controls. Street crossings feature mechanical barriers that are lowered when a passing train approaches, in order to prevent autos, bicycles, and pedestrians from crossing the tracks. The barriers are equipped with bells and flashing lights to safely announce the train's approach to drivers, bicyclists, and pedestrians.

4.6.2.2 Regulatory Environment

City of San Diego Traffic Impact Manual, July 1998

The City's Traffic Impact Manual describes the required elements for preparing and reviewing traffic impact studies for development in San Diego. According to the manual and City staff, a project is considered to have a significant impact if the new project traffic decreases the operations of surrounding roadways by a City-defined threshold.

4.6.3 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining significance of impacts associated with transportation, traffic, and parking resulting from development of the Proposed Project.

Impacts are considered significant if the Project would result in any of the following:

- cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the V/C ratio on roads, or congestion at intersections);
- exceed, either individually or cumulatively, a level-of-service (LOS) standard established by the county congestion management agency for designated roads or highways;
- result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- result in inadequate parking capacity; or

- conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle paths).

The first two bulleted criteria above are quantifiable by estimating the Project's increase in LOS for the studied intersections and roadway segments. To quantify these impacts, the Port District uses the following City of San Diego significance impact thresholds related to LOS factors, as shown in ~~-~~ Table 4.6-3. ~~provides a summary of the City significance thresholds. The Proposed Project would result in a significant direct impact if:~~

- ~~the addition of project traffic reduces the LOS for a roadway segment from an acceptable level (LOS D or higher) to an unacceptable level (LOS E or LOS F);~~
- ~~the addition of project traffic to a street segment that is already at LOS E or F under existing conditions increases that segment's V/C ratio by 0.02 or greater and decreases that segment's peak hour travel speed by 1 mph or greater;~~
- ~~the addition of project traffic reduces the LOS for an intersection from an acceptable level (LOS D or higher) to an unacceptable level (LOS E or LOS F); or~~
- ~~the addition of project traffic to an intersection that is already at LOS E or LOS F under existing conditions increases the average delay at that intersection by 2 seconds or more.~~

57791

77

~~Table 4.6-3. City of San Diego Traffic Impact Significance Thresholds~~

~~Level of Service with Project~~	~~Allowable Increase Due to Project Impacts[1]~~				
	~~Freeways~~	~~Roadway Segments~~		~~Intersections~~	~~Ramp Metering~~
	~~V/C~~	~~V/C~~	~~Speed (mph)~~	~~Delay (sec)~~	~~Delay (min)~~
~~E[2] and F[3]~~	~~0.01~~	~~0.02~~	~~1~~	~~2~~	~~2[3]~~

~~[1] If a proposed project's traffic impacts exceed the values shown in the table, then the impacts are deemed "significant." The project applicant shall identify "feasible mitigations to achieve LOS D or better."~~

~~[2] The acceptable LOS standard for roadways and intersections in San Diego is LOS D. However, for undeveloped locations, the goal is to achieve a LOS C. The Project site is considered a developed location.~~

~~[3] The impact is only considered significant if the total delay exceeds 15 minutes.~~

~~Notes:~~

~~Delay = average stopped delay per vehicle measured in seconds.~~

~~V/C = Volume to Capacity ratio (capacity at LOS E should be used)~~

~~Speed = Arterial speed measured in miles per hour for Congestion Management Program (CMP) analyses~~

~~Source: LLG 2009~~

Table 4.6-3. City of San Diego Traffic Impact Significance Thresholds

Level of Service with Project[1]	Allowable Change Due to Project Impact[2]					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	*Speed (mph)*	*V/C*	*Speed (mph)*	*Delay (sec.)*	*Delay (min.)*
E (or ramp meter delays above 15 min.)	0.010	1.0	0.02	1.0	2.0	2.0
F (or ramp meter delays above 15 min.)	0.005	0.5	0.01	0.5	1.0	1.0

Note: The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS E is 2 minutes. The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS F is 1 minute.

Delay = Average control delay per vehicle measured in seconds for intersections, or minutes for ramp meters.
LOS = Level of Service
Speed = Speed measured in miles per hour
V/C = Volume to Capacity ratio

[1] All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual or a similar LOS chart for each jurisdiction). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped or not densely developed locations per jurisdiction definitions). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

[2] If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are deemed to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible mitigations (within the Traffic Impact Study report) that will restore and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note 1 above), or if the project adds a significant amount of peak hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct and/or cumulatively considerable traffic impacts.

57791

98

4.6.4 Analysis of Project Impacts

4.6.4.1 Substantial Traffic Increase

Methodology

Trip Generation

The Traffic Study based the trip generation for the Proposed Project on *The City of San Diego Trip Generation Manual*, May 2003, and *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates*, April 2002. The City of San Diego "Marina" rate was used to calculate the traffic generation for the marina. SANDAG's "Business Hotel" rate was used to calculate the traffic generation for the hotel. As shown in Table 4.6-4, the Proposed Project is calculated to generate a total of 1,225 ADT, and would result in 39 inbound trips and 59 outbound trips during the AM peak hour. In the PM peak hour, there would be 66 inbound and 44 outbound trips. Anticipated trip ~~generation~~ distribution is shown in Figure 4.6-1.

~~For purposes of the impact analysis a worst case estimate of 210 rooms was used to calculate impacts. However, for purposes of assessing specific mitigation requirements, impacts associated with the proposed 175-room hotel were used.~~

Table 4.6-4. Project Trip Generation

Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour				PM Peak Hour			
		Rate	Volume	% of ADT	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
Proposed Hotel	175 rooms	7/room	1,225	8	40:60	39	59	9	60:40	66	44

Source: LLG ~~2009~~2010

57791

Level of Service Impacts for Near-Term Scenario

The Traffic Study analyzed impacts of the Project at Near-Term conditions and Long-Term cumulative conditions. Impacts of the Project at Near-Term (2012) conditions would be considered direct impacts. Impacts of the Project at Long-Term (2030) conditions would be considered a contribution to cumulative impacts (see Chapter 5, "Cumulative Impacts"). The Project Traffic Volumes for AM/PM Peak Hours and ADT are shown on Figure 4.6-2. The Near Term Existing + Cumulative Projects + Project traffic volumes are shown on Figure 4.6-3.

Interstate 5 and its associated on- and off-ramps are located within 2 miles of the Project site. However, based on the trip distribution and trip generation associated with the Project, it was determined that the Proposed Project would result in too few trips at the I-5 on- and off-ramps to warrant including I-5 in the Near-Term analysis.

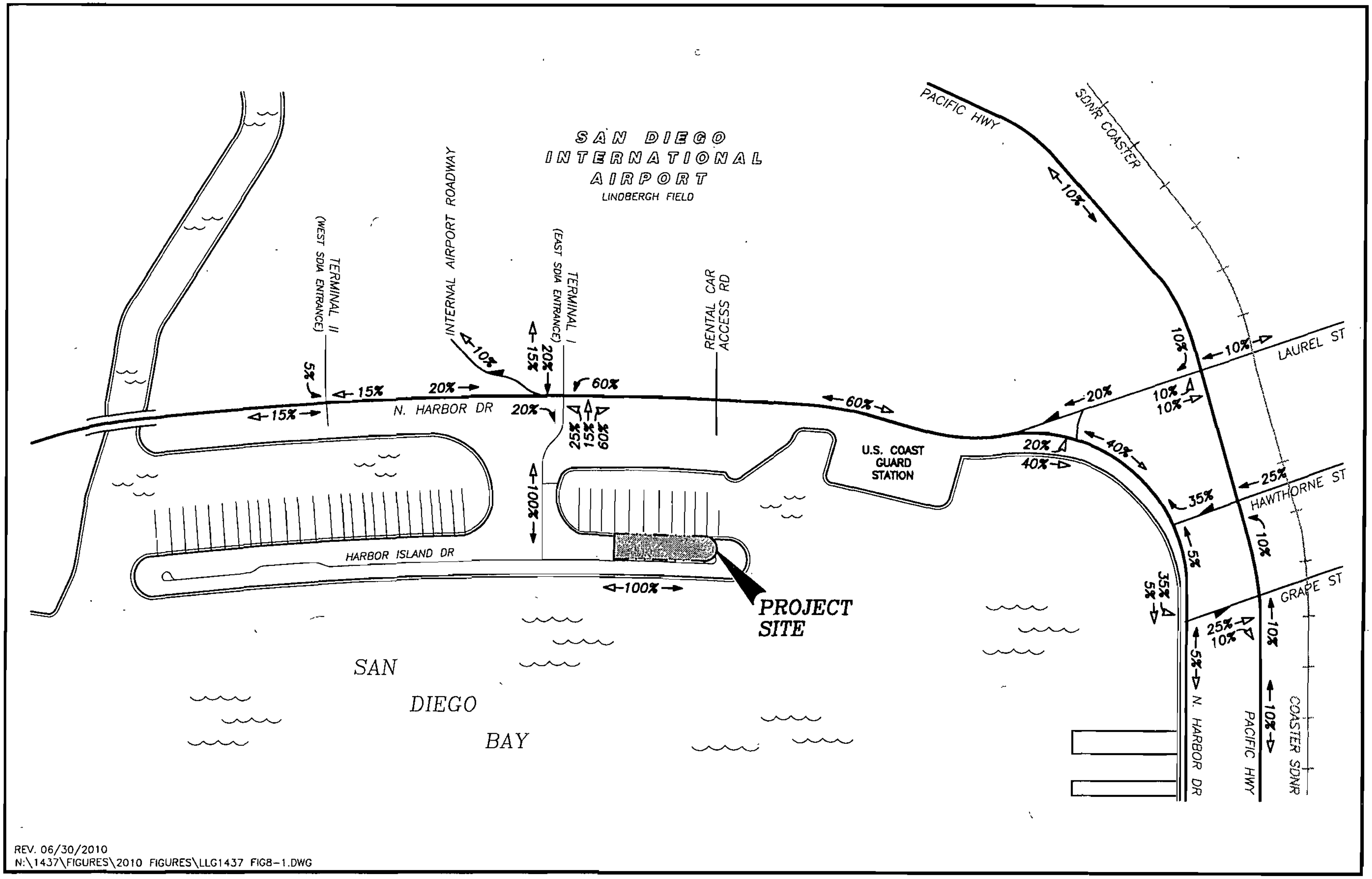
Near-Term Street Segment Operations

Table 4.6-5 compares the estimated Near-Term operations of the studied roadway segments under the Existing, Existing + Cumulative Projects, and Existing + Cumulative Projects + Project conditions. As shown on Table 4.6-5, all street segments ~~currently operate, and~~ are anticipated to operate under Near-Term conditions (with and without the Project),~~to continue to operate,~~ at LOS D or better with the exception of the following segments:

- North Harbor Drive, Harbor Island Drive to Rental Car Access Road
- North Harbor Drive, Rental Car Access Road to Laurel Street
- North Harbor Drive, Laurel Street to Hawthorn Street
- Laurel Street, North Harbor Drive to Pacific Highway
- Laurel Street, Pacific Highway to Kettner Boulevard
- Hawthorn Street, North Harbor Drive to Pacific Highway
- Hawthorn Street, Pacific Highway to Kettner Boulevard
- Grape Street, North Harbor Drive to Pacific Highway
- Grape Street, Pacific Highway to Kettner Boulevard

~~This segment operates at LOS D in Existing conditions, LOS E in Existing + Cumulative Projects conditions, and LOS E in Existing + Cumulative Projects + Project conditions. The traffic associated with the Project would not cause the intersection to degrade from LOS D to E. In addition, as shown in Table 4.6-5 the change in V/C ratio attributed to the Project at that intersection would be 0.0009, which does not exceed the City threshold for V/C ratio increase of 0.02. The street segment would be below an acceptable LOS even without the Project.~~ As shown in Table 4.6-5 the change in V/C ratio attributed to the Project on the above-listed street segments does not exceed the City threshold for V/C ratio

57791



NORTH

NOT TO SCALE

LEGEND

XX% — Regional Trip Distribution

XX% — Outbound Distribution

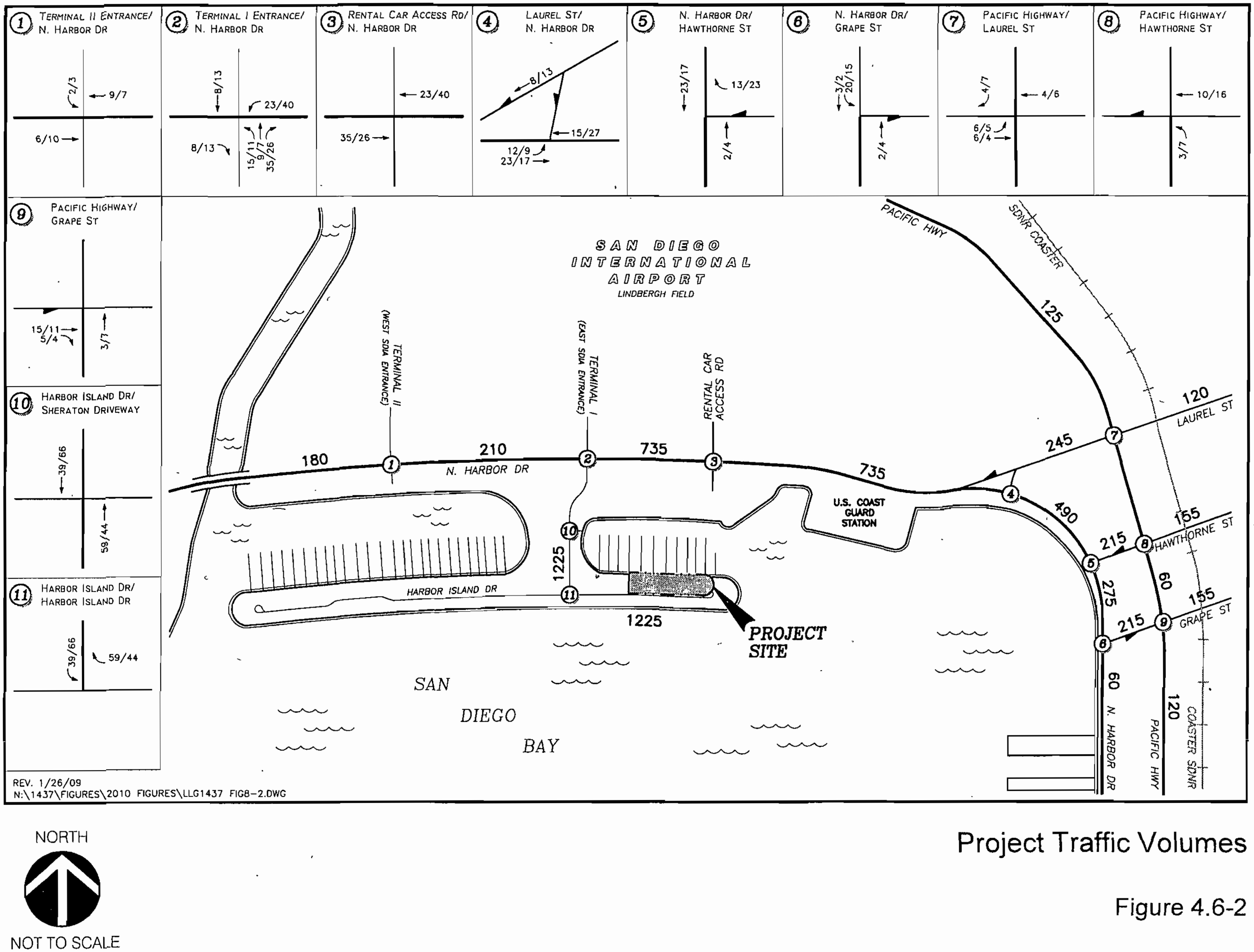
XX% — Inbound Distribution

Proposed Traffic Distribution

Figure 4.6-1

81

57791

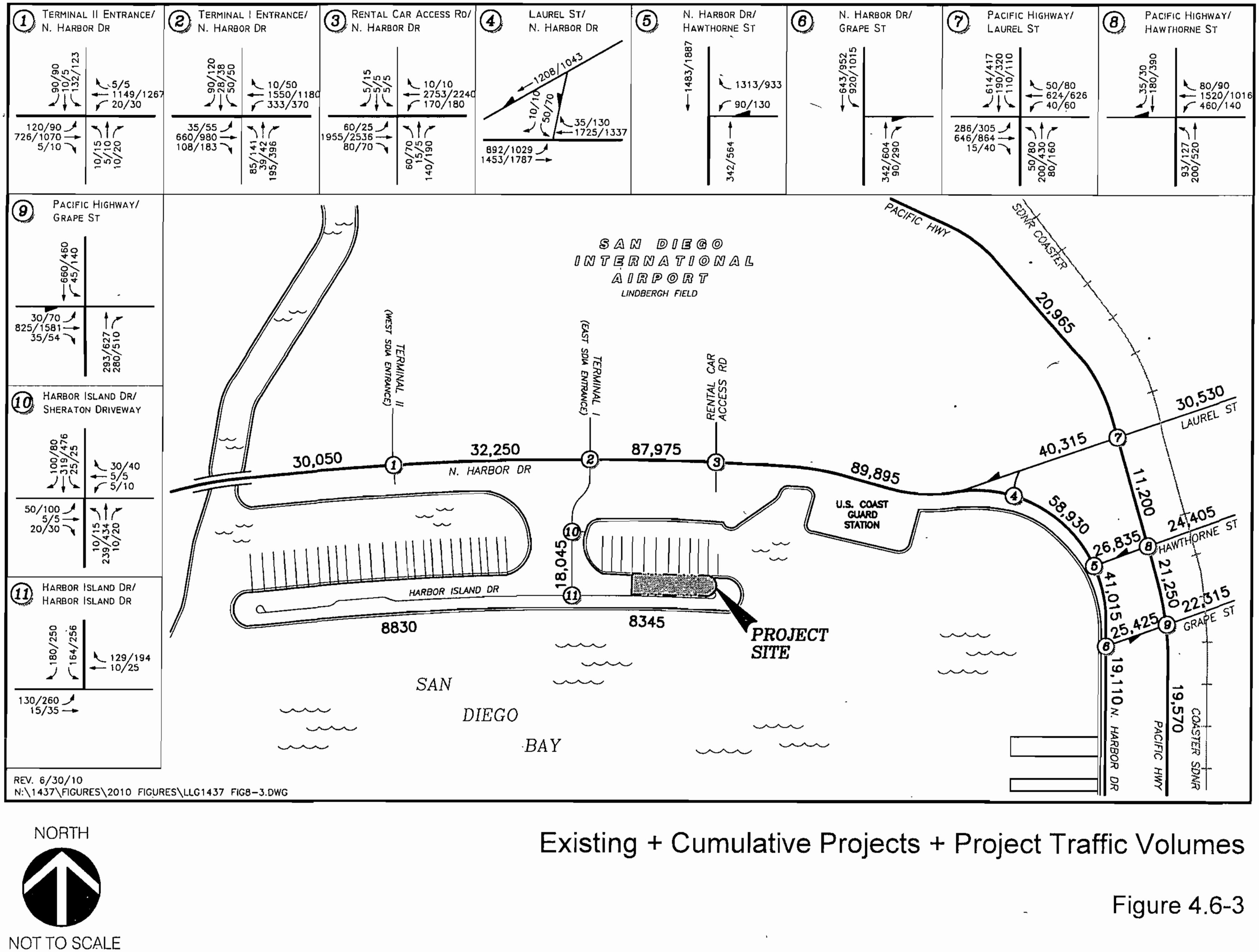


Project Traffic Volumes

Figure 4.6-2

57791

82



Existing + Cumulative Projects + Project Traffic Volumes

Figure 4.6-3

83

57791

with the exception of two LOS F street segments. However, these two street segments are not deemed significant impacts because the segments are built to their ultimate roadway classification and no impact was calculated for the arterial or adjacent intersections[2]. Therefore, the Proposed Project would not have a direct significant impact on the street segments in the Near-Term. The potential Long-Term (Year 2030) cumulative impacts of the Proposed Project are discussed in Chapter 5, "Cumulative Impacts."

Near-Term Intersection Operations

Table 4.6-6 compares the estimated Near-Term operations of the studied intersections under Existing, Existing + Cumulative Projects, and Existing + Cumulative Projects + Project conditions. As shown on Table 4.6-6, all ~~street segments~~intersections currently operate and are anticipated under Near-Term conditions to continue to operate at LOS D or better. Therefore, the Proposed Project would have no significant impact on the intersections in the Near-Term. The potential Long-Term (Year 2030) cumulative impacts of the Proposed Project are discussed in Chapter 5, "Cumulative Impacts."

Congestion Management Program

The CMP requires an enhanced CEQA review for projects that are expected to generate more than 2,400 ADT or more than 200 peak hour trips. The Proposed Project would not exceed either of these thresholds. The Proposed Project would generate approximately 1,225 ADT and 39 inbound / 59 outbound trips during the AM peak hours and 66 inbound / 44 outbound trips during the PM peak hours. Therefore, according to the CMP definition of a large project, the Proposed Project would not require an enhanced CEQA review process.

[2] See Section 4.3 and Table 9-3 of the Traffic Study (Appendix E of this EIR) for further explanation of the arterial segment analysis used to determine if the impacts are considered significant.

Table 4.6-5. Near-Term Street Segment Operations

Street Segment	Existing ADT	Existing V/C	Existing LOS	Existing + Cumulative Projects ADT	Existing + Cumulative Projects V/C	Existing + Cumulative Projects LOS	Existing + Cumulative Projects + Project ADT	Existing + Cumulative Projects + Project V/C	Existing + Cumulative Projects + Project LOS	Δ[1]	Sig?[2]
North Harbor Drive											
West of Terminal 2 (SDIA)	27,730	~~0.295~~ 0.462	B~~A~~	29,870	~~0.318~~0.498	B~~A~~	30,050~~90~~	~~0.320~~0.501	B~~A~~	0.003~~2~~	No
Terminal 2 (SDIA) to Harbor Island Drive	29,750	~~0.316~~ 0.496	B~~A~~	32,040	~~0.341~~0.534	B~~A~~	32,250~~300~~	~~0.344~~0.538	B~~A~~	0.004~~3~~	No
Harbor Island Drive to Rental Car Road	81,000	~~0.750~~ 1.246	F~~C~~	87,240	~~0.808~~1.342	F~~C~~	87,975~~8,120~~	~~0.816~~1.353	F~~C~~	0.011~~08~~	No[3]
Rental Car Access Road to Laurel Street	82,790	~~0.881~~ 1.380	F~~D~~	89,160	~~0.949~~1.486	F~~E~~	89,895~~90,040~~	~~0.958~~1.498	F~~E~~	0.012~~09~~	No[3]
Laurel Street to Hawthorn Street	54,260	~~0.577~~ 0.904	D~~B~~	58,440	~~0.622~~0.974	E~~C~~	58,930~~9,030~~	~~0.628~~0.982	E~~C~~	0.008~~6~~	No
Hawthorn Street to Grape Street	37,830	~~0.350~~ 0.582	C~~A~~	40,740	~~0.377~~0.627	C~~A~~	41,015~~70~~	~~0.380~~0.631	C~~A~~	0.004~~3~~	No
South of Grape Street	17,690	~~0.188~~ 0.322	A	19,050	~~0.203~~0.346	A	19,110~~20~~	~~0.203~~0.347	A	0.001~~0~~	No
Pacific Highway											
North of Laurel Street	18,150	0.363	A	20,840	0.417	B	20,965~~80~~	~~0.420~~0.419	B	0.002~~3~~	No
Laurel Street to Hawthorn Street	9,760	0.195	A	11,200	0.224	A	11,200	0.224	A	0.000	No
Hawthorn Street to Grape Street	18,460	0.369	A	21,190	0.424	B	21,250~~60~~	0.425	B	0.001	No
South of Grape Street	16,940	0.339	A	19,450	0.389	A	19,570~~600~~	~~0.392~~0.391	A	0.002~~3~~	No
Laurel Street											
North Harbor Drive to Pacific Highway	36,390	~~0.607~~0.910	E~~C~~	40,070	~~0.668~~1.002	F~~C~~	40,315~~60~~	~~0.673~~1.008	F~~C~~	0.006~~5~~	No
East of Pacific Highway	27,620	~~0.614~~0.921	E~~C~~	30,410	~~0.676~~1.014	F~~D~~	30,530~~60~~	~~0.679~~1.018	F~~D~~	0.004~~3~~	No
Hawthorn Street											
North Harbor Drive to Pacific Highway	25,770	~~0.678~~1.031	F~~C~~	26,620	~~0.701~~1.065	F~~C~~	26,835~~80~~	~~0.707~~1.073	F~~C~~	0.008~~6~~	No
East of Pacific Highway	23,480	~~0.618~~0.939	E~~C~~	24,250	~~0.638~~0.970	E~~C~~	24,405~~30~~	~~0.643~~0.976	E~~C~~	0.006~~5~~	No
Grape Street											
North Harbor Drive to Pacific Highway	23,130	~~0.609~~0.925	E~~C~~	25,210	~~0.663~~1.008	F~~C~~	25,425~~70~~	~~0.670~~1.017	F~~C~~	0.009~~7~~	No
East of Pacific Highway	20,330	~~0.535~~0.813	E~~B~~	22,160	~~0.583~~0.886	E~~C~~	22,315~~40~~	~~0.588~~0.893	E~~C~~	0.007~~5~~	No
Harbor Island Drive											
North Harbor Drive to Harbor Island Drive	16,330	0.408	B	16,820	0.421	B	18,045~~290~~	0.451~~7~~	B	0.030~~6~~	No
West of Harbor Island Drive.	8,610	0.287	A	8,830	0.294	A	8,830	0.294	A	0.000	No
East of Harbor Island Drive	6,940	0.231	A	7,120	0.237	A	8,345~~590~~	0.278~~6~~	A	0.041~~9~~	No

ADT = Average Daily Traffic; V/C = Volume to Capacity ratio; LOS = Level of Service

1 Increase in delay due to the Project

2 Sig? denotes "Significant Impact"

3 Despite the threshold exceeded, no significant impact is expected since the segment is built to its ultimate roadway classification and no impact was calculated for the arterial or adjacent intersections. See Section 4.3 and Table 9-3 of the Traffic Study (Appendix E of this EIR) for further explanation.

Source: LLG ~~2009~~2010

57791

Table 4.6-6. Near-Term Intersection Operations

Intersection	Peak Hour	Existing Delay[1]	Existing LOS[2]	Existing + Cumulative Projects Delay	Existing + Cumulative Projects LOS	Existing + Cumulative Projects + Project Delay	Existing + Cumulative Projects + Project LOS	Existing + Cumulative Projects + Project Δ[3]	Sig?[4]
North Harbor Drive / Terminal 2	AM	17.7	B	18.4	B	18.5	B	0.1	No
(West Airport Entrance)	PM	17.2	B	17.5	B	17.6	B	0.1	
North Harbor Drive / Harbor Island Drive	AM	20.1	C	29.7	C	31.0~~0.9~~	C	1.3~~2~~	No
/ Terminal 1 (East Airport Entrance)	PM	22.3	C	31.4	C	35.3~~36.3~~	D~~C~~	3.9~~4.9~~	
North Harbor Drive /	AM	23.8	C	30.4	C	31.7~~2.0~~	C	1.3~~6~~	No
Rental Car Access Road	PM	20.0	C	25.9	C	27.4~~1~~	C	1.5~~2~~	
North Harbor Drive /	AM	23.0	C	27.1	C	28.8~~9.1~~	C	1.7~~2.0~~	No
Laurel Street	PM	39.2	D	45.3	D	46.6~~8.3~~	D	1.3~~3.0~~	
North Harbor Drive /	AM	25.2	C	35.2	D	35.8~~6.4~~	D	0.6~~1.2~~	No
Hawthorn Street	PM	30.0	C	41.3	D	41.8~~2.4~~	D	0.5~~1.1~~	
North Harbor Drive /	AM	22.9	C	32.5	C	32.6~~3.6~~	C	0.1~~1.1~~	No
Grape Street	PM	20.7	C	36.3	D	38.00~~6~~	D	1.7~~2.3~~	
Pacific Highway /	AM	27.8	C	36.1	D	36.9~~7.1~~	D	0.8~~1.0~~	No
Laurel Street	PM	35.9	D	44.6	D	46.4	D	1.8	
Pacific Highway /	AM	15.8	B	18.4	B	18.7~~8~~	B	0.34	No
Hawthorn Street	PM	12.6	B	13.1	B	13.2	B	0.1	
Pacific Highway /	AM	10.3	B	11.4	B	11.5~~6~~	B	0.1~~2~~	No
Grape Street	PM	19.0	B	21.8	C	22.1	C	0.3	
Harbor Island Drive /	AM	12.7	B	14.1	B	14.3	B	0.2	No
Sheraton Driveway	PM	14.1	B	14.2	B	14.2~~3~~	B	0.0~~1~~	
Harbor Island Drive /	AM	7.4	A	7.6	A	8.0~~7.9~~	A	0.4~~3~~	No
Harbor Island Drive	PM	7.6	A	8.2	A	8.2~~3~~	A	0.0~~1~~	

[1] Average delay expressed in seconds per vehicle
[2] Level of Service
[3] Increase in delay due to the Project
[4] Sig? denotes "Significant Impact"
Source: LLG ~~2009~~2010

86

57791

Construction Traffic

Construction of the Project may be noticeable to drivers within the traffic study area and may contribute to traffic delays on an intermittent and temporary basis during Project construction; however, this would not be a significant impact. Construction traffic would include heavy trucks making deliveries of building materials to the site or hauling demolished material from the site, which would occur intermittently throughout the day, as well as contractor vehicles, which would be concentrated during early morning and evening periods. The construction route for heavy materials would follow studied roadways such as Harbor Island Drive, North Harbor Drive, Grape Street, and Hawthorn Street, which are built to sufficiently accommodate heavy vehicles. Project construction would not require roadway closures. Construction traffic activity would follow all City and state regulations regarding provision of traffic control (if necessary) and driver warnings for any oversize loads traveling within the local circulation system.

Construction of the Project may contribute to traffic delays that are temporary in nature. Construction vehicles consist primarily of heavy trucks and worker vehicles. There are several different ~~types~~ phases of construction activity, including grading, concrete pours, and building structures. Each construction activity has its own intensity and duration. An ADT calculation for each construction activity is outlined below. A passenger car equivalence (PCE) was applied to large construction trucks.

Grading, 1 month

– 1 heavy trucks/day x 2 trips/heavy truck x 2 PCE	=	4 ADT
– 5 workers vehicles/day x 2 trips/worker vehicle	=	10 ADT
Total	=	***14 ADT***

Concrete pours, 1 month

– 3 heavy trucks/day x 2 trips/heavy truck x 3 PCE	=	18 ADT
– 15 workers vehicles/day x 2 trips/worker vehicle	=	30 ADT
Total	=	***48 ADT***

Building Structures, 8 months at maximum activity

– 25 workers vehicles/day x 2 trips/worker vehicle	=	50 ADT
Total	=	***50 ADT***

As shown above, the maximum construction traffic of 50 ADT is considerably lower than the daily project trips of 1,225 ADT and would be temporary in nature (approximately 8 months for the longest phase associated with building structures). In addition, the Project will be required to complete a traffic control plan, to the City Engineer's satisfaction, prior to the commencement of construction. The standard traffic control plan identifies the routes for heavy construction vehicles and the hours of construction activity. The traffic control plan would also detail work zones and lane closures/transitions and be prepared to the requirements of the City of San Diego Regional Standard Drawings and Caltran's standards to the satisfaction of the City of San Diego Engineer prior to the commencement of work. Therefore, the construction traffic is not expected to cause any significant traffic impacts.

4.6.4.2 Change in Air Traffic Patterns

Due to the Proposed Project's location within the SDIA Airport Influence Area (AIA), the Proposed Project is subject to Federal Aviation Administration (FAA) review pursuant to FAR Part 77, and a determination by the Airport Land Use Commission (ALUC) that the Project is consistent with the SDIA Airport Land Use Compatibility Plan (ALUCP). On March 3, 2009, the FAA issued a "Determination of No Hazard to Air Navigation" for the Proposed Project. The study revealed that the Proposed Project would not exceed obstruction standards nor would it be a hazard to air navigation provided that a "Notice of Actual Construction or Alteration" (FAA Form 7460-2) is completed and returned to the FAA within 5 days after construction reaches its greatest height. Furthermore, on July 9, 2009, the ALUC found that the Proposed Project is consistent with the SDIA ALUCP. Please see Section 4.4, "Hazards and Hazardous Materials," for further discussion. Therefore, the Project would have no impact on air traffic patterns.

4.6.4.3 Substantial Increase in Hazards due to a Design Feature

A site plan assessment addressing potential hazards related to traffic circulation was completed as a part of the Traffic Study. No operational hazards or issues were identified in association with the proposed driveways, internal roadways, or parking areas. The design of the two proposed driveways serving the western parking lot, one driveway serving the eastern parking lot, and two serving the hotel drop-off would not result in circulation problems or hazards. A cul-de-sac is proposed at the east end of the Project site and would provide an adequate turn-around for the general public and access for the Island Prime and Reuben E. Lee restaurants. The parking lot design would not create hazards because the design does not include dead-end aisles and the drop-off area is sufficiently large. According to the Traffic Study, there would be no hazards due to design features or incompatible land uses, and therefore there would be no significant impact.

4.6.4.4 Inadequate Parking

The Traffic Study analyzes the sufficiency of parking spaces based on data that was acquired during the summer months in order to account for increased summer activity. Based on that data, the suggested parking requirement for the existing marina is 0.51 spaces per slip. The Tidelands Parking Guidelines for the Port District states that marinas on Harbor Island should have 1 parking space per slip and hotels on Harbor Island should have 0.6 parking space per room. The marina was built to such specifications, containing 568 parking spaces. Based on previous studies that have been submitted and accepted by the Port District, it is reasonable to adjust the *1 space/slip* rate when there is an existing facility from which a site-specific parking demand can be observed. As a part of the parking analysis conducted for the Proposed Project, parking occupancy counts were conducted during the marina's peak period, indicating the existing marina parking demand equates to a parking rate of approximately 0.51 space/slip.

It is standard practice when completing parking analyses to consider shared parking for land uses with different peak parking demand periods. Considering the proposed hotel and the marina have different peak parking periods, the Project's parking requirement is more accurately represented by a shared parking analysis. The shared parking analysis for the Project was completed in accordance with the City of San Diego's *Traffic Impact Study Manual July 1998*, which provides guidelines for shared parking. The City of San Diego's methodology for shared parking analysis is consistent with the Tidelands Parking Guidelines and Urban Land Institute (ULI) methodology.

In order to determine the Proposed Project's parking needs, the Traffic Study calculated parking demand between the existing marina and the proposed hotel both with and without shared parking. The results of this analysis are summarized in Table 4.6-7. The parking requirement without shared parking would be 306 spaces for the marina and 105 spaces for the hotel; however, per the Tidelands Parking Guidelines for the Port District, a 5% reduction factor was applied to the amount of parking spaces required by the hotel because the hotel will include a dedicated airport shuttle. Thus, with the adjustment factor for the dedicated airport shuttle, the required parking for the hotel is 100 spaces. This equates to a total parking demand of 406 spaces, without shared parking, for the marina and hotel.

The hotel would be located within the existing eastern parking lot and therefore would result in the elimination of approximately 111 spaces. However, these two land uses (hotel and marina) are expected to have shared parking as the marina and hotel would have offsetting peak parking needs. The peak parking demand for the marina typically occurs during the day, while the peak parking demand for a hotel typically occurs at night. A shared parking analysis was conducted for both weekday and weekend scenarios and determined that a net shared parking requirement of 381 parking spaces would be needed (Table 4.6-7). Shared parking is an allowed concept on Port tidelands, per the Tidelands Parking Guidelines. The proposed 457 parking spaces would adequately serve the demand of the existing marina and the Proposed Project because the proposed

57791

89

parking supply would exceed the estimated 406-space parking requirement (without shared parking) and the 381-space shared parking requirement. The existing parking available on the Project site is part of the leasehold and is utilized for marina use. Public parking in the vicinity of the Project site is located on the southern side of Harbor Island Drive and will not be affected by the Proposed Project. Therefore, with or without shared parking, the impact on parking would be less than significant.

Table 4.6-7. Shared Parking Demand Analyses

	Weekday			Weekend		
	Hotel 175 Rooms[1]	**Marina** 600 slips[2]	**Total**	**Hotel** 175 Rooms[1]	**Marina** 600 slips[2]	**Total**
Required Spaces w/o Shared Parking	**100**	**306**	**406**	**100**	**306**	**406**
6:00 a.m.	100	46	146	90	46	136
7:00 a.m.	95	141	236	80	233	313
8:00 a.m.	85	138	223	75	233	308
9:00 a.m.	85	177	262	70	230	300
10:00 a.m.	80	174	254	60	236	296
11:00 a.m.	75	202	277	55	266	321
12:00 p.m.	70	208	278	50	282	332
1:00 p.m.	70	181	251	50	272	322
2:00 p.m.	70	184	254	50	288	338
3:00 p.m.	60	193	253	50	306	356
4:00 p.m.	65	181	246	50	306	356
5:00 p.m.	60	156	216	60	291	351
6:00 p.m.	65	242	307	65	251	316
7:00 p.m.	75	306	381	70	254	324
8:00 p.m.	85	230	315	70	230	300
9:00 p.m.	90	153	243	75	153	228
10:00 p.m.	90	92	182	85	92	177
11:00 p.m.	100	46	146	95	46	141
12:00 a.m.	100	46	146	100	46	146
Required Parking Supply w/ Shared Parking:			**381**			**356**

[1] In accordance with Port District guidelines, the required number of parking spaces for a hotel located on Harbor Island is *0.6 spaces/room.*

[2] The marina currently has 550 boat slips and approximately 50 side-ties, for a boat capacity of approximately 600. Thus, the higher boat capacity number was used for the traffic analysis.

Source: LLG ~~2009~~2010

57791

4.6.4.5 Conflict with Adopted Policies, Plans, or Programs Supporting Alternative Transportation

Public Transportation

The Project would not remove or otherwise physically alter any existing public transportation facilities or services. The closest bus route is located north of the Project site, on North Harbor Drive.. The Proposed Project would not impact bus stops or this bus route. In addition, as discussed in Chapter 3, "Project Description," the Proposed Project will provide a shuttle service between the hotel and the airport. Therefore, implementation of the proposed hotel would not result in any direct impacts to public transportation facilities or services.

Rail Traffic

The Proposed Project would generate automobile traffic on Laurel Street, Hawthorn Street, and Grape Street that would cross the rail line that is located approximately 1 mile east of the Project site. Safe barrier crossings currently exist at these three locations, complete with bells and flashing lights. Project traffic would not overburden these existing crossings or increase the risk of rail-related traffic accidents. No new rail crossing features are necessary to accommodate Project traffic. Therefore, the Proposed Project would not result in a significant impact on rail traffic.

Pedestrian/Bicycle

The Project proposes enhancements to the availability of public access within East Harbor Island to include the addition of a pedestrian promenade behind the hotel, adjacent to the Harbor Island East Basin. This promenade will connect to the promenade that will be constructed around the eastern portion of East Harbor Island as part of the Reuben E. Lee restaurant redevelopment. The Reuben E. Lee redevelopment is an approved project and anticipated to be completed by 2013. The Proposed Project would not include any bicycle paths; however, the Project would not prohibit bicycle travel along Harbor Island Drive, and, as discussed in Chapter 3, "Project Description," the Proposed Project will install bicycle parking facilities on site. Therefore, the Project would not result in an adverse impact to pedestrian or bicycle facilities.

4.6.4.6 Port Master Plan Amendment

The PMP Amendment would not involve a change in land use to accommodate the total allotment of 500 hotel rooms by way of several small hotels across East

Harbor Island; the Project site already has the proper land use designation to accommodate a hotel use. There are no plans for developing more than the proposed 175-room hotel at this time. Any future development would require a project-level analysis at the time that development is identified. As such, approval of the proposed PMP Amendment would not result in direct impacts related to increases in traffic levels that would exceed a LOS or result in impacts on parking supply or alternative transportation.

Future development projects proposed in accordance with the PMP Amendment would be subject to additional environmental review in accordance with CEQA at the time applications are submitted to the Port District. The potential for future developments on East Harbor Island to result in direct impacts related to transportation, traffic, and parking would be evaluated when applications for development are submitted to the Port District.

4.6.5 Significant Impacts

No significant impacts on transportation, traffic, and parking would result from development of the Proposed Project.

4.6.6 Mitigation Measures

No significant impacts on transportation, traffic, and parking have been identified; therefore, no mitigation measures are required.

4.6.7 Significance of Impacts after Mitigation

No mitigation measures are required because the Proposed Project would not result in any significant impacts on transportation, traffic, and parking.

57791

92

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Chapter 5
Cumulative Impacts

5.1 Introduction

Although the environmental effects of an individual project may not be significant when that project is considered independently, the combined effects of several projects may be significant when considered collectively. Such impacts are "cumulative impacts." Section 15130 of the CEQA Guidelines provides guidance for analyzing significant cumulative impacts in an EIR. According to this section of the CEQA Guidelines, the discussion of cumulative impacts "...need not provide as great a detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness." The discussion should also focus only on significant effects resulting from the project's incremental effects and the effects of other projects. If the environmental conditions would essentially be the same with or without the Proposed Project's contribution, then it may be concluded that the effect is not significant. According to Section 15130(a)(1), "an EIR should not discuss impacts which do not result in part from the project evaluated in the EIR."

5.2 Cumulative Methodology

According to Section 15130(b) of the CEQA Guidelines, cumulative impact analysis may be conducted and presented by either of two methods: 1) "a list of past, present, and probable activities producing related or cumulative impacts"; or 2) "a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact." Both approaches have been utilized in the cumulative analysis presented in this chapter, depending on the resource area.

5.2.1 Cumulative Growth Projections

The cumulative traffic analysis and the related cumulative air quality and noise analyses were conducted for this Project using traffic growth projections pursuant to a computer model maintained by SANDAG (SANDAG Series 11, 2030 Projections). The model assumes growth in traffic trips within specific areas based on reported future projects. The PMP, which identifies future development planned within the Port District's jurisdiction, is incorporated into the SANDAG growth projections and, as such, all projects listed in the PMP are accounted for when using the SANDAG figures to analyze cumulative impacts. Similarly, growth anticipated in the City of San Diego General Plan is incorporated into the SANDAG growth projections. The model is built to estimate the increase in traffic that will occur by 2030, and cumulative impacts were assessed in the theoretical scenario for that year.

By reviewing the SANDAG growth projections, the traffic study established an adequate picture of the growth that is forecast to occur in the vicinity of the Project site and contribute future vehicle trips to the studied roadways and intersections. The noise and air quality analyses performed for the Project included an analysis of cumulative impacts related to operational traffic that based their respective cumulative analyses on the projected traffic volumes and conditions provided in the traffic study. Accordingly, noise and air quality include cumulative impact analyses that are based on the same published growth projections as the cumulative traffic analysis.

5.2.2 Cumulative Projects List

Other than traffic, air quality, and noise, cumulative impacts for all other environmental issue areas are based on a list of projects that are currently underway, approved, or proposed and likely to be implemented in the vicinity of the Project site. This list was compiled by reviewing relevant planning documents of the Port of San Diego and the City of San Diego, with confirmation via personal communications with representatives of those two jurisdictions. The cumulative projects identified in the study area are listed in Table 5-1; these correspond to the numbers shown on Figure 5-1.

A total of 25 cumulative projects have been considered in this cumulative analysis. The list of projects is generally limited to projects identified within an approximately 1.5-mile radius of the Project site on the land side, but is expanded to include additional areas west and southeast of the Project site containing clusters of projects that were deemed applicable to the Project's cumulative analysis (as shown in Figure 5-1). It was determined that 1.5 miles was a reasonable scope because of the densely built-out nature of the area around the Project site, the unique geography of and limitations of access to Harbor Island, the limited geographical area that would be cumulatively affected by the Project as a result of this isolation (e.g., due to the road network and topography), and the generally limited potential for more distant projects to combine and create cumulative impacts on most of the environmental issue areas. NAS North Island was excluded from the cumulative projects scope because of its physical isolation from the Project site and the limited access available between the Project site and NAS North Island. The cumulative projects considered in this analysis consist of primarily those within PMP Planning District 2. Larger projects located adjacent to the boundaries of Planning District 2, including within the City of San Diego's jurisdiction or the Airport Authority's jurisdiction, are also considered.

57791

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Cumulative Projects Map
Figure 5-1

57791

96

Table 5-1. Cumulative Projects

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
1	Reuben E. Lee Restaurant Replacement	East end of East Harbor Island	Demolition and removal of all four external decks of the Reuben E. Lee restaurant. The supporting barge hull, mooring piles, and breakwater will be retained in the existing location with access ramps, refurbished deck, proposed galley restrooms, covered and open food and beverage service areas of approximately 9,000 sf to accommodate business and social events. A proposed single story replacement dining restaurant, lounge and banquet facility of approximately 16,500 sf will be located on the adjacent landside. The parking lot will be reconfigured for 306 parking spaces, 10 of which will be tandem for employee or valet parking. Includes a paved pedestrian walkway through the site and three public overlook viewing platforms along the walkway within the site: (1) west of the Island Prime restaurant, (2) between the two restaurants, and (3) immediately west of the proposed replacement restaurant as illustrated on the attached site plan.	Anticipated to be operational by 2013.	Yes

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
2	Marina Cortez Dock Replacement	1880 Harbor Island Drive, west of Project site	Rip-rap shore protection and floating dock replacement at existing docks on West Harbor Island. The shore protection would include excavation of the embankment; relocation of excavated materials to the parking lot for drying and disposal; placement of filter fabric liner in the excavated area; placement of filter stone on top of filter fabric liner; and placement of rip-rap to the excavated area. The dock replacement includes the replacement of severely aged concrete floating docks with a smaller wood floating dock system.	Construction commencement in 2009, to be completed within 7–8 months.	No
3	2701 North Harbor Drive Demolition	2701 North Harbor Drive, northeast of Project site	Demolition of developed site over a 24- to 30-month period: Removal of approximately 50 existing structures (office and support buildings, warehouses, and sheds); removal of all asphalt, concrete and other paving materials; removal and disposal of all hazardous materials and contaminated demolition materials; cutting, capping, and removal, replacement or relocation of underground piping and utility systems (excluding the 54-inch and 60-inch storm drains); capping storm drain and sanitary sewer laterals; and removal of all onsite landscaping, including associated irrigation pipes and valve boxes.	EIR certified in August 2009. Demolition expected to begin in Spring 2010.	Yes
4	Cleanup and Abatement Order	2701 North Harbor Drive, northeast of Project site	Implementing a Cleanup and Abatement Order from RWQCB requiring soil and groundwater remediation of a contaminated area which includes the 2701 North Harbor Drive Demolition site.	In process.	Yes

57791

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
5 (a–j)	San Diego International Airport Master Plan	San Diego International Airport, north of Project site	The SDCRAA has prepared a proposed an Airport Master Plan that includes an Implementation Plan for the following ten components (a) expand existing Terminal 2 West with 10 new jet gates; (b) construct new aircraft parking and replacement Remain-Over-Night (RON) aircraft parking apron; (c) construct new apron and aircraft taxi lane; (d) construct new surface parking and vehicle circulation west of Terminal 2 West; (e) construct a new parking structure, departure curb, and vehicle circulation serving Terminal 2; (f) relocate and reconfigure SAN Park Pacific Highway; (g) construct a new access road from Sassafras Street/Pacific Highway intersection; (h) construct new general aviation facilities including access, terminal/hangars, and apron; (i) demolish the existing general aviation facilities; and (j) construct new apron hold areas and new taxiway east of Taxiway D.	Begin construction and initiate operations between 2009 and 2015.	Yes
6	Holiday Inn Bayside Hotel Expansion	4875 North Harbor Drive, west of Project site	Development of vacant parcel adjacent to the existing Holiday Inn Hotel for hotel expansion, including: construction of a new four-story, 57-room hotel building with lobby, meeting space, kitchen, and back of house office space; conversion of the existing hotel lobby to a fitness center; addition of approximately 21 new parking spaces; and installation of new onsite landscaping and hardscape for the hotel addition. The development will increase the total number of hotel rooms at the Holiday Inn to 300.	Construction anticipated to begin Spring 2011.	Yes

57791

99

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
7	Marina Green "The Wharf" Redevelopment and Westy's Parking Lot	America's Cup Harbor, west of Project site	Construction of a one two-story building, extended plaza, a new multilevel parking facility to accommodate the parking needs of the nearby sportfishing operations, and approximately 120 offsite parking spaces for the PLM's Phase Two project.	Construction anticipated to begin September 2010 and end June 2011.	Yes
8	Shelter Island Tonga Partners Group Site	Southwest side of Shelter Island Drive, west of Project site	Demolition of three existing buildings and construction of a two-story addition to an existing Marine Sales and Services building. With the addition, the building area will be 8,400 square feet. The Project also includes reconfiguration of the existing boat slips, with the net addition of one boat slip, for a total of 33 boat slips. A new waterfront promenade is also to be constructed.	Construction to commence in 2010.	No
9	Eichenlaub Marine	2608 Shelter Island Drive, west of Project site	Upgrade of existing building space to meet current codes and construction of a new façade. Shop areas and office space will be reconfigured and restrooms remodeled to comply with ADA regulations. A building addition of 2,580 ft^2 for high-bay shop space, mezzanine storage, and first-floor office space will be constructed on the site opposite the existing building. Exterior yard will be resurfaced with pervious concrete pavers to replace the existing asphalt surface (part of a SUSMP for the facility). New signs, landscape improvements, and 10 additional onsite parking spaces are included in the proposed project.	Construction anticipated to be completed in 2010.	No

57791

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
10	North Harbor Drive Realignment Project	North Harbor Drive corridor between Scott Street and Nimitz Boulevard, west of Project site	Realignment/improvement of North Harbor Drive between Scott Street and Nimitz Boulevard, eliminating the existing southerly frontage road to create a more efficient arrangement of parking spaces, realigning traffic lanes to satisfy City guidelines, and constructing a safe pedestrian crossing between Scott Street and Nimitz Boulevard.	Construction anticipated to begin in 2009 and end in March 2010.	No
11	Public Safety Training Institute	Camp Nimitz Parcel (Naval Training Center), McCain Road, west of Project site	Demolition of existing buildings, construction or new buildings, remodeling of existing buildings and redevelopment of outdoor areas on a 24.7-acre site for a new facility used by Joint Powers Authority (City of San Diego, County of San Diego, and San Diego Community College District) for public safety training purposes.	In the process of finalizing development and funding plans.	Unknown
12	Civic Arts and Cultural Center, Liberty Station Historical Core Reuse	Liberty Station Historical Core (NTC North Promenade), west of Project site	Rehabilitation of existing historic structures on Liberty Station for the Civic Arts and Cultural Center (civic, art, and cultural, office, retail, and museum uses), comprising 26 existing historic structures. Six have been rehabilitated and 20 are in the process of being rehabilitated.	In the process of receiving ALUC determinations and or tenant improvement permits.	Unknown
13	Nickelodeon Hotel	2220 Lee Court in Liberty Station, west of Project site	Construction of a new 650-room hotel within Liberty Station.	Development Permit in review.	Unknown
14	Building 902	Historic Decatur Road, Liberty Station, west of Project site	100,000 ft^2 new office building.	Construction planned to begin 2009.	No

101

57791

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
15	The Landing	Historic Decatur Road, Dewey Road, Sims Road, Truxtun Road, Liberty Station, west of Project site	Retail use of seven existing historic buildings.	Shell Permits issued, pending ALUC determinations and/or tenant improvement permits.	Unknown
16	Shoreline Plaza	Historic Decatur Road, Sims Road, Liberty Station, west of Project site	Light industrial/R&D use of six historic buildings.	Shell Permits issued, two buildings pending ALUC determinations and tenant improvement permits. Tenant improvements underway in the other four buildings.	Unknown
17	Point Loma Office/Retail	1510 Rosecrans Street, west of Project site	Construction of approximately 32,000 ft^2 of office/retail.	Development Permit in review.	Unknown
18	Former Lane Field Redevelopment	Between Harbor Drive and Pacific Highway north of Broadway, southeast of Project site	Redevelopment of parcels currently containing surface parking to include a 205-foot-high, 275-room hotel and a 275-foot-high, 525-room hotel, each of which would be surrounded by a 3-story retail and restaurant building. Also included are 1,330 underground parking spaces and public plazas and development of a public downtown shuttle system.	Coastal Development Permit issued in 2009 by Coastal Commission.	Unknown
19	Broadway Pier Cruise Ship Terminal	Western end of West Broadway (over Bay water), southeast of Project site	Construction of approximately 51,500 ft^2 steel-frame cruise ship terminal structure approximately, ground transportation area, a working north apron, a service area, and a public viewing area.	Construction began in early 2009 and is scheduled to end in December 2010.	No

57791

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
20	Shorepower at B Street Cruise Ship Terminal	End of West B Street (over Bay water), southeast of Project site	Construction of electrical equipment housing and installation of electrical cabling under the pier and up to three jib cranes along the pier wharf to facilitate plugging cruise ships into the local power grid to reduce pollutant emissions from cruise ships when docked in San Diego Bay.	Undergoing CEQA review.	Unknown
21	NEVP Phase I Coastal Access Features Project	North Harbor Drive between B Street Pier and Broadway Pier	Realignment of North Harbor Drive between Broadway Pier and B Street Pier to create an approximately 107-foot-wide Esplanade that would include a continuous bayfront promenade, storm water treatment system, a running/walking path, improved landscaping and structural architecture, and a public plaza at the foot of West Broadway flanked by formal gardens. West Broadway between North Harbor Drive and the railroad right-of-way would be reconstructed, including lowering the crest and installing a raised median.	Coastal Development Permit appeal to Coastal Commission in July 2009.	Unknown
22	Ruocco Park Project	Area located along the waterfront west of Pacific Hwy and south of Harbor Drive and on portions of the Harbor Seafood Mart site; southeast of Project site	Construction of 3.3 acres of public park/plaza areas, with landscape and aesthetic improvements such as a water feature, lawns, benches, enhanced paving, varieties of plant materials and an outdoor sculpture. Project entails demolition of portions of the existing Harbor Seafood Mart building and reconfiguration of parking areas.	Construction anticipated to begin in October 2010 and end in December 2011.	Yes

103

57791

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
23	Mega Yacht Moorings Project	Between Grape Street Piers and the Maritime Museum	Pilot program allowing mooring of up to eight larger yachts (100+ feet in an area) in Bay waters between the Grape Street Piers and Maritime Museum.	Pilot program being evaluated. Commencement of construction has yet to be determined.	Unknown
24	Old Police Headquarters	Terminus of Pacific Hwy and Harbor Drive, southeast of Project site	Rehabilitation of the approximately 115,000-ft^2 historic Old Police Headquarters (OPH) for entertainment, restaurant, specialty retail, museum, and ancillary support uses. Project also involves: replacement of the existing parking lot along Harbor Dr. with a new 1-acre urban park, which will include extensive landscaping, water features, and paved pedestrian walkways and plaza areas for public use; reconfiguration of the Pacific Highway entrance and the parking area south of the OPH; and the creation of a paved and landscaped pedestrian corridor along Kettner Blvd. to provide direct access from Harbor Dr. to the waterfront.	Limited demolition activities are underway.	Unknown
25	Stella Residential	2015 Hancock Street, northeast of Project site	86 multi-family dwelling units with proposed commercial.	Under construction.	No

Sources: Day pers. comm., Kempton pers. comm., Port District 2009b

57791

5.3 Cumulative Impact Analysis

The discussion below evaluates the potential for the Proposed Project to contribute to an adverse cumulative impact related to the resource areas addressed in Chapter 4. For each resource area, an introductory statement is made regarding what would amount to a significant cumulative impact in that resource area. Discussion is then presented regarding the potential for the identified cumulative projects to result in such a cumulative impact, followed by discussion of whether the project's contribution to any cumulative impact would be cumulatively considerable.

5.3.1 Land Use, Water Use, and Coastal Access

Significant adverse cumulative land use and water use impacts would result from projects that contribute to a trend in development that is incompatible with existing or planned uses or planned addition of incompatible uses. Potential cumulative impacts on coastal access would result from projects that contribute to a restriction of physical or visual public access to the beach or shoreline.

The land-based projects listed in Table 5-1 represent development that is overseen by the Port District, the City, or the Airport Authority. The land within their authority is guided by the jurisdictions' respective planning documents, which are regularly updated to reflect changes in conditions and prospective future developments. These jurisdictions have long operated in proximity to one another, and their planning documents consider adjacent jurisdictions, their ongoing land uses, and their plans for future development. Diligent planning efforts that consider the neighboring jurisdictions and involve the various planning agencies in the public review process prevent incrementally incompatible land use development that could present a significant cumulative land use impact. Because of these planning processes there is no significant cumulative land use impact to which the Project would contribute.

All of the projects listed in Table 5-1 that front on the bay are under the Port District's jurisdiction. The PMP has been prepared and is regularly updated with the intent of maintaining compatible land and water uses throughout its jurisdiction. The Proposed Project in combination with the cumulative projects within the Port District's jurisdiction are generally consistent with the intent of the PMP, and do not involve water uses that conflict with planned or existing uses. Therefore, there is no significant cumulative water use impact to which the Proposed Project would contribute.

Several of the projects listed in Table 5-1 would improve physical and visual coastal access by constructing new or enhanced promenades and/or open space along the bay; the Proposed Project would also create new public access along the basin side of the hotel. Several of the listed projects would develop new structures fronting on the bay, but these projects, similar to the Proposed Project, are subject to the California Coastal Act, which emphasizes the need to protect and provide public access along the coast. Accordingly, these cumulative projects are generally

57791

designed to limit their impact on coastal access and include components that improve coastal access, or include mitigation to maintain or provide this access, including through offsite improvements. Following the requirements of the Coastal Act avoids the potential for a significant cumulative coastal access impact. Therefore, the Proposed Project would not contribute to a significant adverse cumulative impact on coastal access.

5.3.2 Biological Resources

A significant cumulative biological resources impact would occur where the construction or operation of the cumulative projects would encroach into areas containing sensitive biological resources, affect the movement of wildlife species, or affect the functionality of a planned conservation area. The potential cumulative impacts associated with biological resources include potential temporary impacts on subtidal and intertidal organisms as a result of construction activities, alterations of bay water coverage limiting foraging habitat for sensitive bird species that dive for fish, and removal of trees and other vegetation that may serve as nesting areas for migratory birds.

Most of the projects listed in Table 5-1 front on San Diego Bay, and entail construction that—without proper controls—would have the potential to result in an increase in polluted storm water runoff during construction and operation. Polluted storm water could have a negative effect on species living in San Diego Bay or relying on the bay for their subsistence. As with the Proposed Project, the cumulative projects would be required to implement stormwater BMPs to control construction runoff and long-term flow of storm water into the bay. The projects would be required to comply with guidelines established by the *Water Quality Control Plan for the San Diego Basin* and limit their impact on bay pollution. For each project, implementation of construction and post-construction controls would avoid significant cumulative water quality–related impacts on biological resources. Therefore, there is no significant cumulative impact to which the Project could contribute.

Shadows cast by the Proposed Project would shade approximately 1,584 square feet (.04 acre) of eelgrass within near-shore waters. However, this shading would only occur during the last three hours of the day (around 3 p.m. or later) during November, December, and January. During the other months of the year shade from the proposed structures is not anticipated to affect the eelgrass beds in the Harbor Island East Basin. A cumulative impact on eelgrass would be assessed if cumulative projects fronting bay waters would shade eelgrass beds. Based on the bay-wide eelgrass survey conducted by the Port District and the Naval Facilities Engineering Command, eelgrass beds are only located near cumulative project 2, Marina Cortez Dock Replacement. However, cumulative project 2 is a 1:1 replacement of the existing docks at the Marina Cortez facility and would not result in any impacts on eelgrass. The other bayside projects (cumulative projects 1, 7, 8, 9, 19, 20, 21, and 23 from Table 5-1 and Figure 5-1) are not located adjacent to areas containing eelgrass according to the 2008 Survey. The Proposed Project would not result in a significant impact on eelgrass, nor would any projects in the cumulative

57791

study area result in eelgrass shading. Therefore, the Proposed Project would not contribute to a significant adverse cumulative impact on eelgrass.

Section 4.2 identified a significant project-level impact associated with the potential disturbance of nesting birds. This impact is related to project-related construction activity disturbing onsite, and indirect impacts from construction noise on adjacent, trees and vegetation. Construction of cumulative project 1, the Reuben E. Lee Restaurant Replacement, could coincide with Project construction. If this is the case, then this cumulative project could also disturb nesting birds in the onsite trees and vegetation, resulting in a cumulative impact on biological resources. However, this impact would be fully mitigated by implementing Mitigation Measure BIO-1, as stated in Section 4.2.6, which restricts construction during nesting season or, if construction is proposed during breeding season, requires preconstruction bird surveys and, if nesting birds are found, cessation of construction until after the fledglings have left the nest. No additional mitigation is needed to address the project's contribution to this potential cumulative impact.

5.3.3 Aesthetics

A significant adverse cumulative aesthetics impact would occur where the development of the cumulative projects would create a trend of degrading the visual quality of an area or where projects would combine to block important views.

Many of the cumulative projects represent redevelopment along the northern and northwestern edge of San Diego Bay. This is planned development within the jurisdiction of the Port District and the City of San Diego, pursuant to their planning guidance, and is intended, in part, to enhance the appeal of Harbor Island, Shelter Island, and other nearby landside areas, including improving the aesthetic quality of the area. Therefore, the projects identified in Table 5-1 would represent a cumulative enhancement of visual quality, to which the Proposed Project contributes.

Some of the cumulative projects would develop structures on Harbor Island, and this development may be cumulatively visible from some distant vantage points, including from recreational boaters in the bay waters near the Project site. Viewers that would notice this combined development would be distant from the visible development; and the scale of the structures would not intrude onto ridgeline views, block views of the water, or significantly degrade the visible quality of Harbor Island, thereby avoiding a significant impact. As with the Proposed Project, the Port District will continue to consider the aesthetic quality of the redevelopment it undertakes on Harbor Island, including the way that structures combine with existing and proposed development in the area, in order to prevent adverse cumulative impacts on Harbor Island. Therefore, there is no significant cumulative aesthetics impact to which the Project would contribute.

57791

None of the cumulative projects listed in Table 5-1 would combine with the Proposed Project to block views. Therefore, there is no associated cumulative impact.

5.3.4 Hazards and Hazardous Materials

Cumulative hazards and hazardous materials impacts would result when projects combine to create an increased risk of release of hazardous materials, to impair an emergency response plan, or to present a cumulative safety hazard in proximity to an airport.

Hazards and hazardous materials are generally localized conditions that could potentially endanger life or property. None of the cumulative projects listed in Table 5-1 propose features that would regularly emit hazardous materials into the water, ground, or air as part of their function. Similar to the Proposed Project, most of the cumulative projects would involve the use, storage, and transport of common chemicals and materials—such as gasoline, motor oil, solvents, household and industrial cleaning products, paint, swimming pool-related chemicals, some acids, and organic waste. The storage, use, and transport of hazardous materials on any site is overseen by the same local and state regulations as the Proposed Project and inspections are in place and undertaken to avoid or minimize hazardous materials–related risks and to protect people and the environment from harmful releases or accidents. Such avoidance and minimization of risk on individual projects would also minimize cumulative effects. Furthermore, the cumulative projects with hazardous materials impacts are far apart from one another to make it unlikely that any large-scale, cross-project hazardous event would occur. One cumulative project, the Cleanup and Abatement Order currently being implemented on 2701 North Harbor Drive (cumulative project 4), entails remediation of an acknowledged hazardous materials issue near the Project site, but this cumulative project site is separated from the Project by Harbor Drive and the Harbor Island East Basin, and would have no effect on the Proposed Project. Therefore, there is no significant cumulative impact related to hazardous materials releases to which the Proposed Project would contribute.

For the most part, the cumulative projects are located in proximity to SDIA. This cumulative development is subject to the ALUCP guidance on land uses and FAA height restrictions in the airport vicinity. Oversight by FAA and the Airport Authority ensures that cumulatively incompatible uses are not developed in proximity to SDIA, ensuring that there is no cumulative safety hazard to the public. Therefore, there is no significant cumulative impact to which the Project would contribute.

A few of the cumulative projects are located along Harbor Island Drive, and many of the cumulative projects are located along North Harbor Drive. These projects are located along the same emergency evacuation route as the Proposed Project. None of these cumulative projects would obstruct Harbor Island Drive or North Harbor Drive, and certain cumulative projects propose to enhance circulation along North Harbor Drive. As with the Proposed Project, all of the cumulative projects would be subject to review by the City of San Diego Fire

57791

Department to ensure that adequate emergency access is maintained. Therefore, there is no cumulative impact to which the Project would contribute.

5.3.5 Hydrology and Water Quality

Cumulative water quality impacts result from projects that combine to either pollute or increase the turbidity of water. Cumulative hydrology impacts result from projects combining to alter the course of surface water flow or to increase flood hazards in a particular area, either through diverting floodways or constructing structures within the floodways. As stated in Section 4.5 of this Draft EIR, the Project would not result in impacts with respect to flooding or surface water flows; therefore, the project's contribution to any hydrology impacts would not be cumulatively considerable, and these impacts are not discussed below. The cumulative impacts discussion below focuses on cumulative degradation of water quality.

All of the cumulative projects listed in Table 5-1 are located in the Pueblo watershed, the same watershed as the Proposed Project, and runoff from all cumulative project sites flows into San Diego Bay. San Diego Bay is currently a Clean Water Act (CWA) Section 303(d)-listed impaired water body for PCBs and copper. This listing is, in itself, a cumulative impact, as past projects occurring for decades throughout the watershed have contributed pollutants to the bay. This is a significant cumulative water quality impact.

As discussed in Section 4.5, "Hydrology and Water Quality," the water quality impacts associated with the Proposed Project would be less than significant. All of the cumulative projects listed in Table 5-1 have the potential to similarly contribute polluted runoff to the bay, thereby furthering its impairment. However, like the Proposed Project, each cumulative project is subject to CWA and NPDES compliance, as well as state and local regulatory standards that must be achieved during construction and operation to reduce or avoid polluted runoff. These regulations are designed to prevent impacts on water quality throughout the Port District and at a regional level. Accordingly, adherence to regulatory standards would avoid cumulatively significant impacts on water quality.

The cumulative effect of each of the projects listed in Table 5-1 combined with the Proposed Project is not anticipated to be a significant adverse impact on water quality. Therefore, the Proposed Project would not considerably contribute to a significant adverse cumulative impact on water quality.

5.3.6 Transportation, Traffic, and Parking

Cumulative traffic impacts result when multiple projects contribute trips to the same circulation system. LLG conducted a cumulative traffic impact analysis for the Proposed Project as part of the Traffic Study (Appendix E of this EIR). This cumulative analysis estimated cumulative impacts on the studied roadway system in 2030, and analyzed whether the project's contribution would be significant (or, for purposes of this analysis, cumulatively considerable). The Traffic Study's cumulative analysis was based on SANDAG growth projections for the affected area, as explained above in Section 5.2.1.

Because the Project has no effect on public transportation, it would not contribute to any cumulative impact on public transportation that may occur due to cumulative projects, and this issue is not discussed below.

Significance Criteria

As explained in Section 4.6.3, the Port District uses the ~~following~~ City of San Diego impact thresholds related to LOS factors. ~~This is similar to that used for the project-level analysis.~~ <u>These thresholds are shown on Table 4.6-3.</u> ~~The Proposed Project is said to have a significant cumulative impact if:~~

- ~~the addition of project traffic reduces the LOS for a roadway segment from an acceptable level (LOS D or higher) to an unacceptable level (LOS E or LOS F);~~
- ~~the addition of project traffic to a street segment that is already at LOS E or F under existing conditions increases that segment's V/C ratio by 0.02 or greater and decreases that segment's peak hour travel speed by 1 mph or greater;~~
- ~~the addition of project traffic reduces the LOS for an intersection from an acceptable level (LOS D or higher) to an unacceptable level (LOS E or LOS F); or~~
- ~~the addition of project traffic to an intersection that is already at LOS E or LOS F under existing conditions increases the average delay at that intersection by 2 seconds or more.~~

Cumulative Construction Traffic Impacts

As shown in Table 5-1, some cumulative projects may be constructed at the same time as the Proposed Project. However, the cumulative project with the most potential to contribute to cumulative construction traffic is the 2701 North Harbor Drive Demolition Project (cumulative project 3). Due to the proximity of 2701 North Harbor Drive Demolition Project to the Project site it is anticipated that construction traffic from both projects could utilize the same roadways. The 2701 North Harbor Drive Demolition Project is estimated to generate approximately 206 ADT of construction traffic. As discussed in Section 4.6.4.1, the Proposed Project is estimated to generate 50 ADT of construction traffic during the most traffic-intensive phase. Therefore, the total cumulative construction traffic is 256 ADT (206 ADT for the 2701 North Harbor Drive Demolition Project + 50 ADT for the Proposed Project). The cumulative construction traffic of 256 ADT is considerably lower than the daily project trips of 1,225 ADT associated with the Proposed Project and would be temporary in nature. Considering that, as discussed in Section 4.6.4.1, no near-term significant impacts were identified in association with the Proposed Project, the cumulative construction <u>traffic</u> would also not result in adverse impacts on intersections and roadway segments. In

57791

110

addition all projects listed in Table 5-1 will be required to complete standard traffic control plans prior to construction. The standard traffic control plan identifies the routes for heavy construction vehicles and the hours of construction activity. The traffic control plan would also detail work zones and lane closures/transitions and be prepared to the requirements of the City of San Diego Regional Standard Drawings and Caltrans' standards to the satisfaction of the City of San Diego Engineer prior to the commencement of work. Therefore, the Proposed Project would not contribute to significant cumulative construction traffic.

Level of Service Impacts for Long-Term Scenario

The Traffic Study analyzed impacts of the Proposed Project at Long-Term (Year 2030) cumulative conditions. The Year 2030 traffic volumes provided by SANDAG were used for the Long-Term cumulative traffic conditions. To account for development occurring near the Project site in downtown San Diego, the Traffic Study utilized a growth factor, based on Year 2030 traffic volumes obtained from Series 11 population forecasts from SANDAG to account for Near-Term background traffic. By comparing existing volumes to Year 2030 volumes, a growth factor was calculated for traffic volumes on roadways within the vicinity of the Project. The growth factor was then applied to existing turn movements and ADT at intersections to generate the "cumulative projects" traffic volumes.

Interstate 5 and its associated on- and off-ramps are located within 2 miles of the Project. However, based on the trip distribution and trip generation associated with the Project, it was determined that the Proposed Project would result in too few trips at the I-5 on- and off-ramps to warrant including I-5 in the Long-Term analysis.

Long-Term (Cumulative) Street Segment Operations

Figure 5-2 shows the Long-Term Year 2030 + Project traffic volumes. Table 5-2 shows that the Project would not result in significant impacts on any of the street segments with the exception of ~~in~~ the Long-Term (Year 2030) impacts to the following:~~.~~

- North Harbor Drive, Harbor Island Drive to Rental Car Access Road
- North Harbor Drive, Rental Car Access Road to Laurel Street

The Proposed Project would therefore contribute to a significant long-term cumulative impact at these intersections. The measures recommended to mitigate these impacts are set forth in Section 5.5 below. Many other street segments would continue to operate at LOS E or F, but the increase in traffic at the roadway segments would not exceed the City V/C ratio increase thresholds. ~~Therefore, the Proposed Project would not have a significant cumulative impact in the Long-Term on the street segments.~~

57791

111

Table 5-2. Long-Term (Cumulative) Street Segment Operations

Street Segment	Year 2030			Year 2030 + Project				Sig?[2]
	ADT	V/C	LOS	ADT	V/C	LOS	Δ[1]	
North Harbor Drive								
West of Terminal 2	64,280	~~0.684~~1.071	~~C~~F	64,460 ~~64,500~~	~~0.686~~1.074	~~C~~F	~~0.002~~0.003	No
Terminal 2 to Harbor Island Drive	39,540	~~0.421~~0.659	~~B~~C	39,750 ~~39,800~~	~~0.423~~0.663	~~B~~C	~~0.002~~0.004	No
Harbor Island Drive to Rental Car Road	112,020	~~1.037~~1.723	F	112,755 ~~112,900~~	~~1.045~~1.735	F	~~0.008~~0.012	**Yes** ~~No~~
Rental Car Road to Laurel Street	161,620	~~1.719~~2.694	F	162,355 ~~162,500~~	~~1.729~~2.706	F	~~0.010~~0.012	**Yes** No
Laurel Street to Hawthorn Street	71,910	~~0.765~~1.199	~~C~~F	72,400 ~~72,500~~	~~0.771~~1.207	~~C~~F	~~0.006~~0.008	No
Hawthorn Street to Grape Street	38,970	~~0.361~~0.600	~~A~~C	39,245 ~~39,300~~	~~0.364~~0.604	~~A~~C	~~0.003~~0.004	No
South of Grape Street	33,530	~~0.357~~0.610	~~A~~C	33,590 ~~33,600~~	~~0.357~~0.611	~~A~~C	~~0.000~~0.001	No
Pacific Highway								
North of Laurel Street	63,660	1.273	F	63,785 ~~63,800~~	1.276	F	0.003	No
Laurel Street to Hawthorn Street	23,600	0.472	B	23,600	0.472	B	0.000	No
Hawthorn Street to Grape Street	29,330	0.587	C	29,390 ~~29,400~~	0.588	C	0.001	No
South of Grape Street	41,950	0.839	D	42,070 ~~42,100~~	0.841~~2~~	D	0.002~~3~~	No
Laurel Street								
North Harbor Drive to Pacific Highway	76,210	~~1.270~~1.905	F	76,455 ~~76,500~~	~~1.275~~1.911	F	~~0.005~~0.006	No
East of Pacific Highway	41,550	~~0.923~~1.385	~~E~~F	41,670 ~~41,700~~	~~0.927~~1.389	~~E~~F	~~0.004~~0.004	No
Hawthorn Street								
North Harbor Drive to Pacific Highway	30,840	~~0.812~~1.234	~~D~~F	31,055 ~~31,100~~	~~0.818~~1.242	~~D~~F	0.008~~6~~	No
East of Pacific Highway	28,120	~~0.740~~1.125	~~C~~F	28,275 ~~28,300~~	~~0.745~~1.131	~~C~~F	0.006~~5~~	No
Grape Street								
North Harbor Drive to Pacific Highway	32,340	~~0.851~~1.294	~~D~~F	32,555 ~~32,600~~	~~0.858~~1.302	~~D~~F	0.008~~7~~	No
East of Pacific Highway	40,020	~~1.053~~1.601	F	40,175 ~~40,200~~	~~1.058~~1.607	F	0.006~~5~~	No
Harbor Island Drive								
North Harbor Drive to Harbor Island Drive	19,230	0.481	B	20,455 ~~20,700~~	0.511~~8~~	~~B~~C	0.030~~7~~	No
West of Harbor Island Drive	11,000	0.367	B	11,000	0.367	B	0.000	No
East of Harbor Island Drive	7,230	0.2~~2~~41	A	8,455 ~~8,700~~	0.282~~90~~	A	0.041~~9~~	No

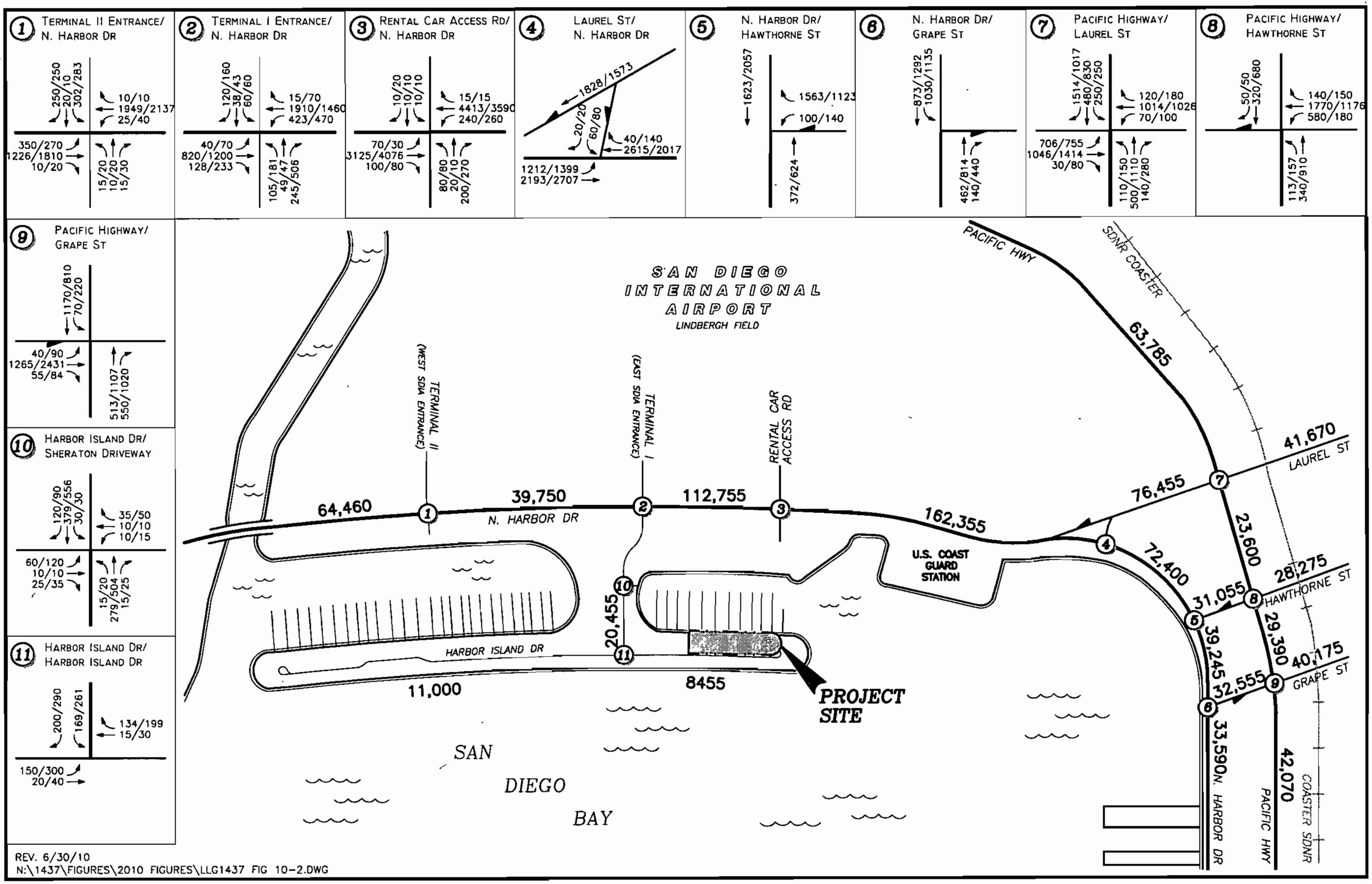
ADT = Average Daily Traffic; V/C = Volume to Capacity ratio; LOS = Level of Service

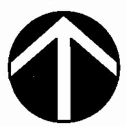
[1] Increase in delay due to the Project

[2] Sig? denotes "Significant Impact"

Source: LLG ~~2009~~2010

57791





NORTH

NOT TO SCALE

Year 2030 With Project Traffic Volumes

Figure 5-2

113

57791

Long-Term (Cumulative) Intersection Operations

Table 5-3 shows that the Project would not result in significant impacts to any of the intersections with the exception of Long-Term (Year 2030) impacts to the following:

- North Harbor Drive/Harbor Island Drive/Terminal 1—AM and PM peak hours
- North Harbor Drive/Rental Car Access Road—AM and PM peak hours
- North Harbor Drive / Laurel Street—PM peak hours
- Pacific Highway / Hawthorn Street—AM peak hours

The Proposed Project would therefore contribute to a significant long term-cumulative impact at these intersections. The measures recommended to mitigate these impacts are set forth in Section 5.5 below.

Table 5-3. Long-Term (Cumulative) Intersection Operations

Intersection	Peak Hour	Year 2030 Delay[~~1~~2]	Year 2030 LOS[~~2~~3]	Year 2030 + Project Delay[1]	Year 2030 + Project LOS[2]	Δ[~~3~~4]	Sig?[~~4~~5]
North Harbor Drive / Terminal 2	AM	45.9	D	~~46.4~~ 46.3	D	~~0.5~~0.4	No
(West Airport Entrance)	PM	41.5	D	41.8	D	0.3	No
North Harbor Drive /Harbor Island Drive /	AM	51.2	D	56.9	E	**5.7**	**Yes**
Terminal 1 (East Airport Entrance)~~[1]~~	PM	86.6	F	89.1	F	**2.5**	**Yes**
North Harbor Drive /	AM	169.8	F	171.8	F	**2.0**	~~No~~Yes
Rental Car Access Road~~[1]~~	PM	159.0	F	163.7	F	**4.7**	**Yes**
North Harbor Drive /	AM	98.1	F	98.9	F	0.8	No
Laurel Street~~[1]~~	PM	124.1	F	127.0	F	**2.9**	**Yes**
North Harbor Drive /	AM	96.8	F	~~98.2~~ 97.4	F	~~1.4~~0.6	No
Hawthorn Street	PM	110.9	F	~~112.7~~111.6	F	~~1.8~~0.7	No
North Harbor Drive /	AM	42.0	D	~~45.2~~ 44.2	D	~~3.2~~2.2	No
Grape Street	PM	44.3	D	~~47.3~~ 46.8	D	~~3.0~~2.5	No
Pacific Highway /	AM	159.0	F	~~160.6~~159.9	F	~~1.6~~0.9	No
Laurel Street	PM	183.8	F	~~185.4~~184.8	F	~~1.6~~1.0	No
Pacific Highway /	AM	86.1	F	~~88.0~~ 87.5	F	~~1.9~~1.4	~~No~~Yes
Hawthorn Street	PM	55.9	E	~~56.2~~ 56.5	E	~~0.3~~0.6	No
Pacific Highway /	AM	16.8	B	16.9	B	0.1	No
Grape Street	PM	161.4	F	~~163.0~~162.4	F	~~1.6~~1.0	No
Harbor Island Drive /	AM	14.5	B	~~14.7~~ 14.6	B	~~0.2~~0.1	No
Sheraton Driveway	PM	14.5	B	~~15.2~~ 14.7	B	~~0.7~~0.2	No
Harbor Island Drive /	AM	8.6	A	9.0	A	0.4	No
Harbor Island Drive	PM	10.6	B	~~12.0~~ 11.8	B	~~1.6~~1.2	No

~~[1] The Year 2030 + Project and Sig? data are included from the Harbor Island Project Review Letter Report dated January 28, 2009, (see TIA), which includes a sensitivity analysis of a 175-room limited service hotel.~~
[~~1~~2] Average delay expressed in seconds per vehicle
[~~2~~3] Level of Service
[~~3~~4] Increase in delay due to the Project
[~~4~~5] Sig? denotes "Significant Impact"
Source: LLG ~~2009~~2010

114

Parking Impacts

Implementation of the cumulative projects listed in Table 5-1 and shown in Figure 5-1 could result in loss of public parking. However, the Project proposes shared parking with the marina facility and therefore would not reduce the amount of public parking available on East Harbor Island. The existing parking available on the Project site is part of the leasehold and is utilized for marina use. The hotel would be located within an existing parking lot and therefore would result in the elimination of 111 parking spaces. However as discussed further in Section 4.6, "Transportation, Traffic, and Parking," these two land uses (hotel and marina) are expected to have shared parking as the marina and hotel would have offsetting peak parking needs. A shared parking analysis was conducted for both weekday and weekend scenarios and determined that a maximum shared parking requirement of 381 parking spaces would be needed (see Table 4.6-7). The proposed 457 parking spaces would adequately serve the demand of the existing marina and the Proposed Project because the proposed parking supply would exceed the estimated 406 space parking requirement (without shared parking) and the 381 space shared parking requirement. Parking exists east of the Project site that is adequate to serve the existing restaurant uses and is not part of the Project site. Public parking in the vicinity of the Project site is located on the southern side of Harbor Island Drive and will not be affected by the Proposed Project. Because the Proposed Project would not result in a loss of public parking on East Harbor Island it would not contribute to any cumulative loss of public parking associated with the other cumulative projects listed in Table 5-1 and Figure 5-1.

Traffic-Based Hazards

Due to the geographic isolation of East Harbor Island, none of the cumulative projects would create traffic-based hazards that could affect the Project site or that could combine with the Project to create a significant cumulative impact.

5.3.7 Air Quality

Potential cumulative air quality impacts would result when cumulative projects' pollutant emissions would combine to degrade air quality conditions below acceptable levels. This could occur on a local level, such as through increases in vehicle emissions at congested intersections, at a regional level, or on a much larger level, such as the potential affect of greenhouse gas emissions on climate change. ICF Jones & Stokes prepared an Air Quality Technical Report for the Proposed Project in 2009, which includes a discussion of cumulative air quality impacts analysis. The air quality technical report is included as Appendix E to this EIR. The cumulative analysis results of this study are summarized in this section.

Neither the Port District nor the SDAPCD has established significance thresholds to determine whether a project would have a cumulatively considerable contribution to air quality. Therefore, the County of San Diego has identified

57791

thresholds (see below), set forth by the SDAPCD and South Coast Air Quality Management District (SCAQMD), for cumulative air quality impacts that are utilized for the analysis of the impacts of project construction and operation related to emissions of criteria pollutants.

The following thresholds are used to determine the cumulatively considerable net increase in emissions during the *construction phase*:

- A project that has a significant direct impact on air quality with regard to emissions of PM10, PM2.5, NO_X and/or ROGs, would also have a significant cumulatively considerable net increase.
- In the event direct impacts form the proposed project are less than significant, a project may still have a cumulatively considerable impact on air quality if the emissions of concern from the proposed project, in combination with the emissions of concern from other proposed projects or reasonably foreseeable future projects within the proximity relevant to the pollutants of concern, are in excess of direct air quality impact thresholds.

The following thresholds are used to determine the cumulatively considerable net increase in emissions during the operation phase:

- A project that does not conform to the RAQS and/or has a significant direct impact on air quality with regard to operational emissions of PM10, PM2.5, NO_x and/or ROGs, would also have a significant cumulatively considerable net increase.
- Projects that cause road intersections to operate at or below a LOS E and create a CO "hotspot" would create a cumulatively considerable net increase of CO.

Carbon Monoxide Emissions

The cumulative air quality analysis considers estimated Year 2030 traffic counts provided by LLG, which in turn were derived from regional growth projections published by SANDAG. Cumulative air quality impacts were examined in terms of CO concentrations received along sidewalks of busy intersections. On a larger scale, the project's contribution of greenhouse gas emissions was also discussed.

The air quality technical report presents a modeled estimate of baseline 2030 CO concentrations and the project's contribution to these concentrations, as received at the three intersections near the Project site that would accommodate Project traffic and represent the worst-case intersections with the longest peak hour delay. The intersections selected are: Laurel Street and North Harbor Drive; Rental Car Access Road and North Harbor Drive; and Terminal 1/Harbor Island Drive and North Harbor Drive. Estimates are given for the one-hour and the eight-hour CO concentrations, considering peak-hour traffic levels reported by LLG, and compares CO levels to California standards (20 ppm for the 1-hour average and 9.0 ppm for the 8-hour average). Table 5-4 shows the 2030 estimates of the one- and eight-hour CO concentrations and compares the estimates to the relevant state standards.

57791

As shown in Table 5-4, estimated cumulative conditions with and without the Project contributions to CO levels from vehicle traffic are below the state standards. Therefore, there is no significant cumulative impact, and the project's contribution to CO emissions is not cumulatively considerable.

Table 5-4. Year 2030 (Cumulative) Carbon Monoxide Concentrations

Intersection	Peak Period[1]	Maximum 1-Hour 2030 w/o Project[2] Concentration (20 ppm)[4]	Maximum 1-Hour 2030 w/ Project[3] Concentration (20 ppm)[4]	Significant 1-Hour Impact?	Maximum 8-Hour 2030 w/o Project[5] Concentration (9 ppm)[4]	Maximum 8-Hour 2030 w/ Project[6] Concentration (9 ppm)[4]	Significant 8-Hour Impact?
Laurel St & N Harbor Dr	AM	11.4	11.4	No	5.6	5.6	No
	PM	11.2	11.2	No	5.46	5.46	No
Rental Car Access Rd & N Harbor Dr	AM	11.8	11.8	No	5.88	5.88	No
	PM	11.5	11.5	No	5.67	5.67	No
Terminal 1/ Harbor Island Dr & N Harbor Dr	AM	11.1	11.1	No	5.39	5.39	No
	PM	11.4	11.4	No	5.6	5.6	No

Notes:

CALINE4 dispersion model output sheets and Emfac2007 emission factors are provided in Appendix E of this EIR.

ppm = parts per million

[1] Peak hour traffic volumes are based on the Traffic Impact Analysis prepared for the Project by LLG 2009.

[2] Highest 3 years SDAPCD 1-hour ambient background concentration (10.8 ppm) + 2030 without Project traffic CO 1-hour contribution.

[3] Highest 3 years SDAPCD 1-hour ambient background concentration (10.8 ppm) + 2030 with Project traffic CO 1-hour contribution.

[4] The state standard for the 1-hour average CO concentration is 20 ppm, and the 8-hour average concentration is 9.0 ppm.

[5] Highest 3 years SDAPCD 8-hour ambient background concentration (5.18 ppm) + 2030 without Project traffic CO 8-hour contribution.

[6] Highest 3years SDAPCD 8-hour ambient background concentration (5.18 ppm) + 2030 with Project traffic CO 8-hour contribution.

Source: Air Quality Technical Report (Appendix F of this EIR)

Criteria Pollutants

As stated in Section 4.7, the SDAB is currently in non-attainment for NAAQS 8-hour ozone as well as for CAAQS ozone, PM10, and PM2.5. Therefore, the emissions of concern within the SDAB are ozone precursors (ROG and NO_x), PM10, and PM2.5.

As discussed in Section 4.7, "Air Quality," the construction or operation of the Proposed Project would be below the significance thresholds for criteria pollutants. The nearest cumulative project is the Reuben E. Lee Restaurant Replacement (cumulative project 1), located at the east end of Harbor Island, approximately 500 feet east of the Project site. While construction could overlap with construction of the Proposed Project, it is expected that site disturbance activities for the Reuben E. Lee Restaurant Replacement will be minimal and likely not require a significant number of truck trips. Therefore, the cumulative emissions would not be expected to exceed SDAPCD thresholds and the

57291

cumulative contribution would be less than significant. In addition, although dispersion and settling properties of PM2.5 are different that for PM10, it can be reasonably assumed that the distance between nearby cumulative projects and the Proposed Project would not result in a cumulative impact for PM2.5. Therefore, there is no significant impact for PM10 and PM2.5, and impacts are not cumulatively considerable.

Other cumulative projects within proximity of the Proposed Project, including the 2701 North Harbor Demolition Project (cumulative project 3) and the San Diego International Airport Master Plan projects (cumulative project 5), could occur simultaneously with the Proposed Project. However, every project, with the exception of the Reuben E. Lee Restaurant Replacement, identified in the cumulative project list (Table 5-1) is over 2,500 feet away from the Proposed Project site. Based on screening methodology provided by the SCAQMD, projects at such a distance, in combination with the Proposed Project, would likely not contribute to a significant cumulative PM10 impact (see Air Quality Technical Report, Appendix F of this EIR). Therefore, there is no significant impact for PM10 and PM2.5, and impacts are not cumulatively considerable.

In addition to particulates, construction and operation of the Proposed Project would result in ROG and NO_x emissions; however, as discussed in Section 4.7, these emissions would be below the significance thresholds. According to the County of San Diego significance threshold described above, a project which conforms to the applicable General Plan and does not have emissions exceeding the significance thresholds will not create a cumulatively considerable net increase with respect to ozone since these emissions were accounted for in the RAQS. As discussed in Section 4.7, the Proposed Project was deemed consistent with the RAQS and would not result in a direct impact to air quality. Therefore, there is no significant cumulative impact for ozone, and the project's contribution is not cumulatively considerable.

Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions and their contribution to climate change are widely recognized as a global problem, and the State of California has recently acknowledged this phenomenon as a State concern. In addition, AB 32, passed by state legislature in 2006, states in part, that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." GHG emissions are a cumulative impact—resulting from past, current, and future projects—and the cumulative projects listed in Table 5-1 would all likely contribute to this widespread cumulative impact.

At the present time, no federal, state, or local law or regulation requires a lead agency to perform environmental review of a project's GHG emissions. AB 32, the primary legislative enactment which addresses GHG emissions, neither mentions CEQA nor requires a local agency to conduct environmental review of GHG emissions. Instead, it charges the ARB with the responsibility for regulating GHG emissions and requires the ARB to adopt GHG emission limits and reduction measures on or before January 1, 2011 (Health and Safety Code 38510, 38562).

57791

No provision of CEQA or the CEQA Guidelines presently requires a lead agency to perform environmental review of a project's GHG emissions. SB 97 directed the Governor's Office of Planning and Research (OPR) to adopt CEQA Guidelines concerning the effects and mitigation of GHG emissions by January 1, 2010. Although OPR released its proposed amendments to the CEQA Guidelines on April 13, 2009, the new Guidelines have not yet been finalized and will not go into effect until January 1, 2010. CEQA does not require a lead agency to consider proposed or draft regulations when evaluating a project and prohibits its provisions from being interpreted in a manner that imposes procedural or substantive requirements beyond those explicitly stated in CEQA or the CEQA Guidelines (CEQA Guidelines Section 21083.1).

In addition, no reported appellate judicial decision requires a lead agency to perform environmental review of a project's GHG emissions. The majority of trial court decisions that have considered the issue have ruled that CEQA does not require a lead agency to analyze the potential impacts of a project's GHG emissions. (See, e.g., *Unite-Here Local 30 v. San Diego Unified Port District,* San Diego County Superior Court No. 37-2008-00077646-CU-MC-CTL [addendum to master EIR found adequate because evidence of the effect of GHG emissions on global climate change does not constitute new information requiring additional environmental review, there is no legislative or judicial requirement for CEQA review of GHG emissions, and project design incorporated features to reduce GHG emissions]; *American Canyon Community United for Responsible Growth v. City of American Canyon*, Napa County Superior Court No. 26-27462 [addendum found adequate because AB 32 does not constitute "new information" requiring further environmental review]; *National Resources Defense Council v. Reclamation Board,* Sacramento County Superior Court No. 06 CS 01228 [addendum found adequate because climate change information does not constitute "new information" requiring further environmental review]; *Highland Springs Conference and Training Center v. City of Banning,* Riverside County Superior Court No. RIC 460950 [EIR found adequate because no law required city to consider global warming at the time it approved the project]; *Westfield, LLC v. City of Arcadia,* Los Angeles County Superior Court No. BS 108923 [EIR not required to analyze GHG emissions because SB 97 does not require it, there is no accepted methodology for doing so, and no single project can have a significant climate change impact]; *Center for Biological Diversity v. City of Perris,* Riverside County Superior Court No. RIC 477632 [EIR not required to analyze GHG emissions because there is no established standard for doing so].)

CEQA and the State CEQA Guidelines require the disclosure of the significant cumulative environmental effects, whether the project will make a cumulatively considerable contribution to any such effects, and, if so, mitigation measures intended to reduce the project's contribution (Section 15130 of the State CEQA Guidelines). The new CEQA Guidelines will provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents. In the interim, OPR has released a technical advisory, entitled *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review* (OPR 2008).CEQA currently has no thresholds for GHG emissions. As described by the OPR technical advisory, in absence of regulatory guidance or standards, lead agencies must undertake a project-by-project

57791

119

analysis, consistent with available guidance and current CEQA practice. In January 2009, OPR developed a preliminary draft regulatory guidance with respect to the analysis and mitigation of the potential effects of GHG emission. OPR held two workshops to present the amendments and obtain comments from the public. OPR is currently in the process of submitting its proposal to the California Resources Agency (OPR 2009).

On a state level, AB 32 identified that an acceptable level of GHG emissions in California in 2020 is 427 million metric tons of carbon dioxide equivalent (CO_2e), which is the same as the 1990 GHG emissions level, is approximately 12% less than current (480 million metric tons CO_2e in 2004) GHG emissions, and is approximately 28% less than 2020 "business as usual" (BAU) conditions (596 million metric tons CO_2e). To achieve these GHG reductions, there will have to be widespread reductions of GHG emissions throughout California, including within the Port of San Diego and the City of San Diego, within which the cumulative projects listed in Table 5-1 would occur. Some of those reductions will need to come in the form of changes in vehicle emissions and mileage, changes in the sources of electricity, and increases in energy efficiency by existing facilities as well as other measures. The remainder of the necessary GHG reductions will need to come from requiring new facility development to have lower carbon intensity than BAU conditions.

Given the overwhelming scope of global climate change, it is not anticipated that a single development project would have an individually discernable effect on global climate change (i.e., that any increase in global temperature or sea level could be attributed to the emissions resulting from a single project). Rather, it is more appropriate to conclude the substantial Proposed Project GHG emissions will combine with emissions across California, the U.S., and the globe to cumulatively contribute to global climate change. This amounts to a significant cumulative air quality impact. The Air Quality Technical Report for the Proposed Project identified that the following thresholds regarding the Project's GHG emissions would be cumulatively considerable if:

- the proposed project would conflict with or obstruct the goals or strategies of the California Global Warming Solutions Act of 2006 (AB 32) or related Executive Orders; or
- the proposed project would result in substantially increased exposure to the potential adverse effects of global warming identified in the California Global Warming Solutions Act of 2006.

The OPR technical advisory states that "lead agencies must describe the existing environmental conditions or setting, without the project, which normally constitutes the baseline physical conditions for determining whether a project's impacts are significant." Therefore, for purposes of analysis, GHG emissions generated from existing land uses at the Project site were considered BAU conditions. The existing land use generates GHG from motor vehicle trips to the parking lots and from electricity and natural gas consumption at the marina locker building. Similarly, the Proposed Project would result in GHG emissions due to vehicle trips and energy consumption. 57791

While the OPR draft CEQA guidelines referenced above are used for reference, the final OPR CEQA guidelines are expected to be released in early 2010. It is expected that the adopted guidelines will be similar to the draft guidelines referenced above.

As discussed previously, increased emissions of GHGs would contribute to global warming and the consequent adverse global environmental effects. Vehicular GHG emissions result from CO_2, CH_4, and N_2O that is released during the combustion of gasoline or diesel fuel. GHG emissions from stationary and area sources result mainly from the burning of natural gas for both heating and electricity. Increased GHG emissions could also potentially conflict with the requirement of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020.

For purposes of analysis, the existing land uses at the Project site operating under current conditions is considered the baseline, or business as usual (BAU), condition. For the BAU condition, it is assumed that existing land uses would continue to operate as they currently exist beyond the Project opening year (2012). Future GHG emissions from the Proposed Project are compared to what would have occurred under the baseline, or BAU, conditions. With this it is assumed that the existing facilities will continue to attract visitors and consume energy in the form of electricity and natural gas at the locker facility. This results in GHG emissions from motor vehicle trips and the consumption of energy (natural gas and electricity).

Both the existing conditions (BAU) and the Proposed Project would generate GHG emissions due to motor vehicle trips as well as natural gas and electricity consumption. Existing land uses consume an estimated 1,000 kilowatt-hours (kWh) of electricity per month and 30–60 therms per day, and also attract 150 customers/visitors (an estimated 300 vehicle trips) per day (Port District 2009c).

Table 5-5 presents the GHG emissions associated with the Project's onsite operations for both the BAU and Proposed Project. Because quantitative GHG guidelines, including thresholds, have not been developed by the SDAPCD, these emissions are provided for informational purposes only. GHG emissions of CO_2, CH_4, N_2O, and CO_2e are presented for the year 2012, the anticipated Project opening year. As shown in Table 5-5, existing conditions generate an estimated 1,083 metric tons of CO_2e per year. The majority of these emissions (89%) are from motor vehicle trips to the existing facilities, while stationary (6%) and area sources (5%) comprise the remainder. Existing land uses consume an estimated 12 megawatt-hours (MWh) of electricity and 10,958 therms of natural gas annually. The Proposed Project would generate approximately 3,549 metric tons of CO_2e per year. The majority of project-related GHG emissions would be from mobile sources (66%). The Proposed Project would result in a net increase of 2,465 metric tons of CO_2e per year from operational emissions (mobile, area, stationary sources) over BAU conditions. The Proposed Project would consume approximately 1,308 MWh of electricity and 131,490 therms of natural gas per year, resulting in approximately 829 metric tons of CO_2e per year from stationary sources. The remaining 9% of GHG emissions would be from area sources.

57791

Table 5-5. Estimate of Existing and Proposed Onsite Operational Greenhouse Gas Emissions

	Pounds per day				Metric Tons per year			
	CO_2	CH_4	N_2O	CO_2e[1]	CO_2	CH_4	N_2O	CO_2e[1]
Existing Conditions (BAU)								
Mobile Source[2]	5,598	0.56	0.67	5,817	927	0.09	0.11	963
Area Source[3]	350	--	--	350	58	--	--	58
Stationary Source	375	0.03	0.0009	376	62	0.01	< 0.01	62
Total	**6,323**	**0.60**	**0.67**	**6,544**	**1,047**	**0.10**	**0.11**	**1,083**
Proposed Project (175-room Hotel)								
Mobile Source[2]	12,023	2.30	2.74	12,920	1,991	0.38	0.45	2,139
Area Source[3]	1683	--	--	1,683	279	--	--	279
Stationary Source	6808	0.51	0.04	6,831	1,127	0.08	0.01	1,131
Total	**20,515**	**2.80**	**2.77**	**21,434**	**3,396**	**0.46**	**0.46**	**3,549**

[1] Global Warming Potential is 21 for CH_4 and 310 for N_2O; General Reporting Protocol, California Climate Action Registry (CCAR 2009). Calculation: $CO_2e = (CO_2 \times 1) + (CH_4 \times 21) + (N_2O \times 310)$

[2] Mobile Source CO_2emissions are for summer

[3] Area Source CO_2 emissions are for winter

Emissions calculation worksheets are provided in Appendix F

Source: Air Quality Technical Report (Appendix F of this EIR)

Project construction would also result in approximately 422 metric tons of CO_2 in total over the 18-month construction period. The majority of these emissions would be in 2011, when demolition, site grading, paving, and most of the hotel construction would take place.

In the absence of formally adopted quantitative emission thresholds, a lead agency may choose to use consistency with adopted programs and policies to examine the significance of a project's impact. The California Climate Action Team (CAT, established by Executive Order S-3-05), has recommended strategies to reduce GHG emissions to meet the goals of AB 32. In addition, the California Air Pollution Control Officers Association (CAPCOA) report, "CEQA & Climate Change," includes numerous GHG-reducing measures. The June 2008 OPR technical advisory mentioned above provides a recommended approach for conducting climate change analysis and includes examples of general GHG reduction measures that have been employed by public agencies. The Proposed Project includes numerous GHG-reducing measures, including exceeding Title 24, Part 6 standards by 15%, that are consistent with the strategies proposed by CAT, CAPCOA, and OPR that result in reduced GHG emissions with project construction and operation, as listed in Table 5-6. The design features described in Table 5-6 will be incorporated as conditions of approval of the Proposed Project.

57791

122

Table 5-6. Proposed Project Design Features and GHG Reductions

Strategy and Design Feature	Reduction	Source
Construction		
Reuse or recycle at least 75% of construction materials (including soil, asphalt, concrete, metal, and lumber)	Tons of CO_2e saved per ton of recycled material: Steel (1.79 CO_2e ton saved) Wood (2.46) Asphalt (0.03) Concrete (0.02)	EPA 2009a
Use 10% of building materials and products that are locally or regionally (or within 500 miles) extracted and manufactured, when available	Low GHG reduction[1]	CAPCOA 2008
Use alternative fuel types for 50% of construction equipment (e.g., biodiesel)	Biodiesel tailpipe emissions are 10% lower than petroleum but lifecycle emissions are 78% lower	EPA 2009a
Implement Green Building Initiatives, including low VOC emitting finishes, adhesives, and sealants	Low GHG reduction[1]	CAPCOA 2008
Building Sustainability		
Install efficient HVAC system with refrigerant with an Ozone Depletion Potential of zero	1.25% reduction	SMAQMD 2007
Install Energy Star, "cool," or light-colored roofing for at least 75% of the roof area, cool pavements, and shade trees	0.5–1% reduction for roofing for Energy Star—Cool Roofs stay 50–60°F cooler	SMAQMD 2007
Use dual pane low-E windows with a minimum of 0.30 solar heat gain coefficient	Energy Star–compliant light bulbs consume up to 450 lbs less CO_2 over lifetime than conventional bulbs	EPA 2009b
Install R-value optimized wall and roof installation	Too generic to specify reduction	N/A
Use better-than-code energy efficient lighting throughout building and site	Reducing indoor lighting energy consumption could reduce approximately 45% of electricity consumption	CEC 2006
Utilize filtered and controlled natural ventilation to reduce heating and air conditioning demand by 10%	Cooling and ventilation comprise almost 40% of electricity use in hotels	CEC 2006
Incorporate engineering design system measures—variable speed chillers, fans, and pumps; boiler and chiller controls; heat recovery; smart auto thermostats; and CO_2 sensors for meeting room	Too generic to specify reduction	N/A
Use only Energy Star appliances for all eligible equipment and fixtures	Energy Star appliances and fixtures use 10–15% and 75%	EPA 2009b

57791

Strategy and Design Feature	Reduction	Source
	less energy, respectively	
Use solar heating, automatic covers, and efficient pumps and motors for pools and spas	20–70% reduction in hot water energy needs	CAPCOA 2008
Install light emitting diodes (LEDs) for 50% of all outdoor lighting (except in parking lots, which would use T-5 lighting or equivalent)	Low GHG reduction[1]	CAPCOA 2008
Limit hours of outdoor lighting for 100% of the site lighting by using photocell controls	Low GHG reduction[1]	CAPCOA 2008
Utilize natural daylight for 75% of the regularly occupied spaces	Low GHG reduction[1]	CAPCOA 2008
Water Conservation and Efficiency		
Install or reuse drought-tolerant landscaping trees and incorporate vines on selected walls to reduce potable water demand for irrigation by at least 50%	Low GHG reduction[1]	CAPCOA 2008
Use low-flow plumbing features on all fixtures and appliances to reduce potable water use by at least 20%	20% reduction in water use will reduce daily water use by approximately 7,000 gallons per day and lower GHG emissions associated with water distribution and treatment	EPA 2009c
Install water-efficient irrigation systems and devices, including drip irrigation, soil moisture-based irrigation controls, and/or drought-tolerant landscaping to reduce potable water use for irrigation by at least 50%	Low GHG reduction[1]	CAPCOA 2008
Install only low-flow (0.125 gallons per flush) or waterless urinals	Will provide 87.5 to 100% water savings versus federal standards for urinals (1 gallon per flush)	EPA 2009c
Install only low-flow toilets (1.28 gallons per flush), faucets (1.0 gallons per minute), and showers (2.0 gallons per minute)	Low GHG reduction[1]	CAPCOA 2008
Install sensor-activated lavatory faucets (0.5 gallons per minute) in public restrooms	Low GHG reduction[1]	CAPCOA 2008
Install moisture sensors that suspend irrigation during unfavorable weather conditions (rain, wind)	Too generic to specify reduction	N/A
Educate patrons about water conservation using interior and exterior signage	Too generic to specify reduction	N/A
Solid Waste		
Provide interior and exterior storage areas for recyclables and green waste, and provide adequate recycling containers on site	Too generic to specify reduction	N/A
Provide education and publicity about recycling and reducing waste, using signage, and a	Too generic to specify reduction	N/A

57791

124

Strategy and Design Feature	Reduction	Source
presenting a case study		
Transportation		
Limit idling time for commercial vehicles, including deliveries and construction vehicles to 5 minutes	Reducing idling time to 5 minutes will reduce GHG emissions 75% and save 145 lbs of CO_2 per delivery	EMFAC2007
Install bicycle parking facilities	1–5% reduction	CAPCOA 2008
Provide a shuttle service between the hotel and the airport	Low GHG reduction[1]	CAPCOA 2008

[1] The scoring system in CAPCOA 2008 system entails ratings of high, moderate, and low that refer to the level of the measure to provide a substantive, reasonably certain (e.g., documented emission reductions with proven technologies), and long-term reduction of GHG emissions. Design Features designated as having a low GHG reduction potential are still assumed to have a net-benefit, albeit small, GHG reduction potential.

N/A = Not Applicable

Source: Sunroad 2009; ICF Jones & Stokes 2009

Implementation of the Proposed Project would increase short-term GHG emissions as a result of Project construction and increase long-term GHG emissions as a result of Project operations. The Project design features, listed in Table 5-6, would be consistent with the strategies published by the CAT, CAPCOA, and the OPR Technical Advisory. The Proposed Project would not conflict with or obstruct the goals or strategies of AB 32 or related Executive Order nor would it substantially increase exposure to the potential adverse effects of global warming. Therefore, the cumulative contribution of the Project is less than significant.

5.3.8 Noise

Potential cumulative noise impacts would result when projects combine to generate noise levels in excess of the City of San Diego Noise Ordinance standards, either during construction or operation. The primary noise sources in the vicinity of the Project site are related to traffic on the local roadways and aircraft takeoffs and landings at SDIA. Therefore, projects that would combine to increase traffic or air traffic noise received by residences or other receptors in excess of relevant City standards would result in a significant cumulative impact. Neither the Project nor any of the cumulative projects would result in significant increases in air traffic, and as such, this issue is not discussed below.

This section summarizes the cumulative noise analysis provided in the Noise Technical Report prepared by ICF Jones & Stokes, attached as Appendix G to this EIR.

The cumulative noise analysis used the 2030 traffic conditions, as estimated by LLG in the traffic study, to determine the traffic noise that would result from increased cumulative trips. Existing and anticipated noise levels were modeled at various locations along the roadways affected by Project traffic, including hotels,

57791

residences, and recreational areas. These areas are subject to the City's transient residential, residential, or recreational noise standards, respective of the land use—all of which are 65 dBA. Table 5-7 compares the estimated 2030 noise levels at the modeling locations without the Project to the estimated 2030 levels with the addition of Project traffic noise. The project-related increase is also shown. A significant cumulative impact would occur where 2030 conditions would cause noise at a modeling location to exceed the City's 65-dBA threshold. Where ambient noise levels already exceed 65 dBA, the Proposed Project's contribution would be cumulatively considerable where the Proposed Project causes an increase of three dBA or greater at those areas exceeding 65 dBA.

Table 5-7 identifies that two modeling locations subject to the City's 65-dBA residential threshold (M-5 and M-7) are anticipated to exceed the cumulative threshold under 2030 conditions. At these locations, the Proposed Project's contribution is estimated at zero dBA. Because the Proposed Project would not increase noise at these locations by three or more dBA, the Proposed Project's contribution to these significant cumulative impacts is not cumulatively considerable. Therefore, no mitigation is necessary.

As shown in Table 5-7, the Proposed Project would not cause any of the other modeling locations to exceed the 65-dBA threshold or cause an increase of three dBA or greater at those areas exceeding 65 dBA. Thus, the Proposed Project's contribution to cumulative noise at the Project site is not significant and no mitigation is necessary.

5.3.9 Geology and Soils

Potential cumulative geology and soils impacts would result from projects that combine to create unstable geologic conditions or substantially contribute to coastal erosion. The Proposed Project does not entail a water-based component; therefore, cumulative impacts related to dredging of San Diego Bay or other water-based activities are not addressed in this discussion.

Harbor Island's geographic isolation limits the ways in which other projects could combine with the Project to result in cumulative geological impacts. The Reuben E. Lee Restaurant Replacement (cumulative project 1) would be subject to the same liquefiable soil conditions and seismic conditions that affect the Project site. As a result, this cumulative project would be required to comply with the same CBC regulations to which the Project is subject. This cumulative project would observe similar fault setbacks as those identified for the Proposed Project in order to prevent significant geologic hazards or damage to structures and paved areas. This does not constitute a significant cumulative geology and soils impact, as the two projects would have the same effects independent of each other and their combination does not worsen the impact.

Given the distance between the cumulative projects and the Proposed Project, and the nature of geologic impacts, no significant adverse cumulative geology and soils impacts are anticipated.

57791

Table 5-7. Cumulative Traffic Noise Modeling

Receptor	Land Use Type / Noise Standard	2030 Without Project (dBA)	2030 With Project (dBA)	Project-Related Noise Increase (dBA)	Relevant Noise Standard Exceeded?	Project-Related Increase 3 dBA or more?
M-1: Harbor Island Drive Park, West Harbor Island	Recreation / 65	62	62	0	No	No
M-2: Hotel adjacent to Harbor Island Drive	Transient Residential / 65	51	51	0	No	No
M-3: Harbor Island Drive Park, East Harbor Island	Recreation / 65	62	62	0	No	No
M-4: Boat / Marina area, East Harbor Island	Recreation / 65	44	44	0	No	No
M-5: Residences in the vicinity of Laurel Street	Residential / 65	69	69	0	**Yes**	No
M-6: Residences in the vicinity of Hawthorne Street	Residential / 65	63	63	0	No	No
M-7: Residences in the vicinity of Grape Street	Residential / 65	67	67	0	**Yes**	No
M-8: Proposed Project site	Transient Residential / 65	58	59	1	No	No

Note: Figure 4.8-3 in Section 4.8, "Noise," identifies the noise receptor sites.
Source: Noise Technical Report (Appendix G of this EIR)

127

5.3.10 Public Services and Utilities

Cumulative impacts on public services and utilities—including water, sewer, solid waste, police, fire protection, gas and electric, and schools—would result when projects combine to increase demand on public services such that additional services must be constructed or provided. This usually would result from the incremental addition of people occupying an area or incremental construction of new or larger buildings requiring the provision of public services and utilities. As discussed in Section 4.10, "Public Services and Utilities," the Project would have no impact on schools; therefore, this impact is not discussed below. For a cumulative discussion regarding parks, see Section 5.3.11 below.

As discussed in Section 4.10.4.1, the City Fire Department determined that the Proposed Project would place an increased demand on fire protection and emergency response services from the City of San Diego Fire Department in an area where such services are currently inadequate. Because one of the responding stations is above the current workload capacity, the Fire Department has indicated that a new fire station is necessary in the area. This deficiency is the result of past cumulative development in the area, and primarily due to the removal of the U.S. Navy's fire station on NTC, which previously provided support to the City Fire Department and which was removed as a part of Liberty Station development. This is a significant cumulative impact resulting from past projects, and future implementation of the cumulative projects listed in Table 5-1 will further contribute to this impact. The proposed project's contribution to this significant impact is cumulatively considerable and warrants mitigation.

Most of the cumulative projects listed in Table 5-1 represent new development and redevelopment of old uses within the jurisdiction of the Port District. The Port District's Harbor Police Department patrols activity on land around San Diego Bay. The City of San Diego Police Department also provides law enforcement services for areas in the City, within Port jurisdiction, that generate tax revenue (i.e., hotels, restaurants, etc.). The Proposed Project does not result in a significant environmental impact associated with the law enforcement services provided by the Harbor Police Department. Therefore, there is no significant cumulative impact on the law enforcement services of the Harbor Police.

The cumulative development will increase the scale of activity in the area and result in additional traffic on roads policed by the City Police Department. The City Police Department determined that the Proposed Project would result in a considerable new commercial facility that would require additional law enforcement services from the City of San Diego Police Department. The City of San Diego Police Department has indicated that the Proposed Project would generate a need for an additional 2.5 police officers. Although the Proposed Project would result in the need for new officers, the City Police Department has indicated that current police facilities have the capacity to house these additional officers. Construction of a new police facility is not needed in order to maintain acceptable response times and service ratios. Thus, the Proposed Project would not result in an adverse physical impact by requiring a new or physically altered

57791

128

police facility in order to maintain acceptable response times and service ratios. Therefore, there is no significant cumulative impact on the law enforcement services of the City Police Department.

Because the cumulative impact area is fully developed and the cumulative projects generally consist of infill and redevelopment projects, the cumulative impact on utilities is determined by the ability for existing infrastructure to accommodate the developments. Future development will eventually require upgrades in larger infrastructure for the City's water and sewer conveyance systems, which will be identified by the City as the need arises. As discussed in Chapter 3 and Section 4.10, the Proposed Project includes realignment of existing sewer lines and realignment and enlargement of existing water lines adjacent to the Project site. The construction associated with these realignment activities would result in less-than-significant impacts. The Proposed Project would not result in the need to upgrade other existing facilities. In addition, the Proposed Project's water service and sewer connection/usage fees will help fund future infrastructure upgrades, ensuring that project's contribution to future cumulative demand on utilities infrastructure. Therefore, the Proposed Project would not contribute to an adverse physical impact by requiring that new public utilities be constructed by the City.

The stormwater conveyance facilities serving the Project site are limited to the Project site itself and immediately surrounding areas on East Harbor Island, and none of the cumulative projects would affect these facilities. Therefore, there is no cumulative impact on stormwater facilities.

As discussed above in Section 4.10, solid waste collection at the Project site is provided by City of San Diego Franchised Waste Haulers. These waste haulers can dispose at any of the landfills in San Diego County. The Proposed Project would generate an increased amount of solid waste compared to the existing facilities because there would be increased occupation and activity at the Project site. The Proposed Project and the cumulative projects listed in Table 5-1 would likely utilize San Diego County landfills, further decreasing their capacities. According to the City of San Diego, projects that include the construction, demolition, or renovation of 40,000 square feet or more of building space would generate approximately 60 tons of waste or more, and are considered to have cumulative impacts on solid waste facilities. The Proposed Project includes construction of an approximately 117,000-square-foot hotel. Therefore, in accordance with City significance thresholds, the Proposed Project would contribute to a significant cumulative solid waste impact.

It is anticipated that electrical and gas connections would be made with an existing 12-kV power line and 2-inch high pressure gas lines located within Harbor Island Drive. SDG&E provided a "will serve" letter stating that the site would be served by SDG&E for electric and gas service. SDG&E indicated that the existing substation has electrical capacity to handle the Proposed Project (Jones 2009). SDG&E also concluded that the proposed 500 cfh would not exceed the available supply of natural gas for the area or require the construction of new or expanded natural gas facilities other than those directly installed to provide service to the facility or any pipe that may need to be relocated due to any road realignment (Saunders 2009). Therefore, the Proposed Project would

57791

not contribute to an adverse physical impact by requiring that new gas or electric utilities be constructed by SDG&E.

The Proposed Project will incorporate various sustainability and energy conservation measures that will reduce the Project's consumption of water and energy consumption. As described in Chapter 3, "Project Description," these include construction, energy conservation, water conservation, solid waste, and transportation measures that would reduce the Project's consumption of electricity, natural gas, and gasoline. With implementation of these measures, the Proposed Project would be conserving energy in accordance with the intent of the Title 24 goal of reducing energy consumption statewide and with the intent of the SDG&E Resource Plan to reduce demand for energy associated with individual projects within San Diego County. As discussed in Section 4.10, to address long-term energy needs of San Diego County, SDG&E has filed a resource plan with the CPUC, which proposes a mix of conservation, demand response, generation, and transmission to provide reliable energy for the next 20 years. Considering the project would implement measures consistent with the statewide Title 24 goals and with the Countywide goals of the SDG&E resource plan, the increase in demand associated with the Proposed Project would not result in a significant cumulative impact on energy supply.

5.3.11 Recreation

Potential cumulative recreation impacts would result when projects combine to place limitations on existing recreational facilities, or substantially increase demand on existing recreational facilities such that expansion of those facilities would be necessary.

Several of the cumulative projects listed in Table 5-1, in addition to recent past projects located around the bay, include recreation facilities such as parks or promenade components that represent a cumulative benefit on recreation by increasing the amount of recreational area available to the public. This has occurred and will continue to occur in compliance with requirements of the California Coastal Act, and compliance with the PMP. The PMP identifies construction of parks, plazas, public shoreline access, and vista points to enhance the recreational experience around San Diego Bay, and calls for the provision of "a variety of public access and carefully selected active and passive recreational facilities suitable for all age groups including families with children throughout all seasons of the year." Therefore, there is no adverse cumulative recreation impact to which the Project would contribute. There is a cumulative benefit on recreation, and the Project would contribute to this by constructing a public promenade along the northern side of the Project site.

57791

130

5.4 Significant Cumulative Impacts

The Proposed Project would contribute to significant cumulative impacts with respect to transportation, traffic, and parking; and public services and utilities. The significant impacts are presented below.

5.4.1 Transportation, Traffic, and Parking

TR-C1: Project traffic would contribute to the degradation of operations at the North Harbor Drive/Harbor Island Drive/Terminal 1 intersection in excess of City of San Diego thresholds during the AM and PM peak hours.

TR-C2: Project traffic would contribute to the degradation of operations at the North Harbor Drive/Rental Car Access Road intersection in excess of City of San Diego thresholds during the AM and PM peak hours.

TR-C3: Project traffic would contribute to the degradation of operations at the North Harbor Drive/Laurel Street intersection in excess of City of San Diego thresholds during the PM peak hours.

TR-C4: Project traffic would contribute to the degradation of operations at the Pacific Highway/Hawthorn Street intersection in excess of City of San Diego thresholds during the AM peak hours.

TR-C5: Project traffic would contribute to the degradation of operations on the 'North Harbor Drive between Harbor Island Drive and Rental Car Access Road' street segment in excess of City of San Diego thresholds.

TR-C6: Project traffic would contribute to the degradation of operations on the 'North Harbor Drive between Rental Car Access Road and Laurel Street' street segment in excess of City of San Diego thresholds.

5.4.2 Public Services and Utilities

Fire Protection

PUB-C1: The Proposed Project would contribute to cumulative demands on the fire protection and emergency response service of the City of San Diego Fire Department. Due to one of the responding fire stations being above its annual workload capacity, the Fire Department has indicated that a new fire station is necessary in the area. The increased demand for fire protection service associated with the Proposed Project would contribute to the need for the City to construct an additional fire station.

57791

131

Solid Waste

PUB-C2: The Proposed Project involves commercial construction of more than 40,000 square feet; therefore, it would contribute to a significant cumulative impact on solid waste facilities.

5.5 Mitigation Measures

5.5.1 Transportation, Traffic, and Parking

The affected intersections and street segments are under the exclusive jurisdiction of the City of San Diego. As such, the following measures can and should be implemented under the direction of the City to reduce traffic impacts to less-than-significant levels.

MM TR-C1: North Harbor Drive / Harbor Island Drive / Terminal 1 intersection (East Airport Entrance).

The Project Applicant shall contribute a fair share percentage of ~~8.9~~9.0% towards restriping the northbound approach to provide a left-turn lane, a shared left-turn/thru lane, a thru lane, and a right-turn lane. The fair share contribution shall be paid to the City of San Diego traffic impact fee program. The improvements at this intersection shall include the following: remove the northbound right-turn lane's "free" movement and introduce right-turn "overlap" phasing; retain the north/south "split" signal phasing; and restripe the eastbound approach to convert the right-turn lane to a shared thru/right-turn lane. Modifications to the triangular median in the southeast portion of the intersection are expected.

MM TR-C2: North Harbor Drive / Rental Car Access Road intersection.

The Project Applicant shall contribute a fair share percentage of 1.8% towards the reconfiguration of the westbound approach to provide an additional thru lane. To accommodate the additional lane, widening and modifications to the median / roadway shall be required. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.

MM TR-C3: North Harbor Drive / Laurel Street intersection.

The Project Applicant shall contribute a fair share percentage of ~~1.8~~2.2% towards the reconfiguration of the eastbound approach to provide a third left-turn lane and restriping the south-bound approach to provide a single shared left-turn/right-turn lane. To accommodate the additional lane, widening and modifications to the median/roadway shall be required. All three eastbound lanes on Laurel Street shall continue to Pacific Highway, where the number 1 lane would trap into the left-turn lane(s). An overhead sign bridge(s) shall be implemented to instruct drivers of the trap lane. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.

57791

MM TR-C4: Pacific Highway / Hawthorn Street intersection.

The Project Applicant shall contribute a fair share percentage of 1.7% towards restriping the westbound approach of Hawthorn Street to provide a dedicated left-turn lane in addition to the three through lanes. To accommodate the additional lane, all curbside parking on Hawthorn Street will have to be prohibited between Pacific Highway and the railroad tracks. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.

MM TR-C5: North Harbor Drive between Harbor Island Drive and Rental Car Access Road street segment.

The Project Applicant shall contribute a fair share percentage of 2.3% towards the addition of one lane. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.

MM TR-C6: North Harbor Drive between Rental Car Access Road and Laurel Street street segment.

The Project Applicant shall contribute a fair share percentage of 0.9% towards the addition of one lane. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.

5.5.2 Public Services and Utilities

Fire Protection

Significant cumulative impact PUB-C1, the Proposed Project's contribution of demand to the City Fire Department's fire protection and emergency response services, is similar to its project-level impact (see Section 4.10, "Public Services and Utilities"). The Proposed Project would place demand on a fire station that is above its annual response workload capacity—conditions that are likely to worsen further with the addition of cumulative development. Implementation of Mitigation Measure MM PUB-1 could mitigate the Proposed Project's contribution to this cumulative impact to a less-than-significant level.

Solid Waste

MM PUB-C1: Prior to the issuance of any demolition, grading, or construction permits, the Project Applicant shall prepare a waste management plan and submit it for approval to the City's Environmental Services Department. The plan shall include the following, as applicable:

- Tons of waste anticipated to be generated
- Material type of waste to be generated
- Source separation techniques for waste generated

57791

- How materials will be reused on site
- Name and location of recycling, reuse, and landfill facilities where recyclables and waste will be taken if not reused on site
- A "buy-recycled" program for green construction products, including mulch and compost
- How the project will aim to reduce the generation of construction/ demolition debris
- How waste reduction and recycling goals will be communicated to subcontractors
- A timeline for each of the three main phases of the Project (demolition, construction, and occupancy)
- How the Refuse and Recyclable Materials Storage Regulations will be incorporated into construction design of building's waste area
- How compliance with the Recycling Ordinance will be incorporated into the operational phase
- International Standards of Operations, or other certification, if any

In addition, as discussed in Section 3.2.6, "Design Features," the Project Applicant has committed to implement the following recycling measures. These measures shall be included in the Waste Management Plan:

- Provide interior and exterior storage areas for recyclables and green waste and provide adequate recycling containers on site.
- Provide education and publicity about recycling and reducing waste, using signage and a case study.

5.6 Significance of Impacts after Mitigation

5.6.1 Transportation, Traffic, and Parking

A summary of the impacts after implementation of the improvements described in Mitigation Measures MM TR-C1, MM TR-C2, ~~and~~ MM TR-C3, and MM TR-C4 is provided in Table 5-8. A summary of the impacts after implementation of the improvements described in Mitigation Measures MM TR-C5 and MM TR-C6 is provided in Table 5-9.

57791

134

Table 5-8. Cumulative (Year 2030) Intersection Mitigation Analysis

Intersection	Peak Hour	Year 2030 with Project and Mitigation Delay[1]	LOS[2]	Mitigation
North Harbor Drive / Harbor Island Drive / Terminal 1	AM PM	24.6~~5~~ ~~55.9~~ 59.7	C E	Restripe NB approach and change RT movement from "free to "overlap" (LT, LT/Thru, Thru, RT) Restripe EB approach (LT, 3 Thru, Thru/RT
North Harbor Drive / Rental Car Access Road	AM PM	~~96.5~~ 96.1 ~~97.6~~ 96.9	F F	Add 1 WB Thru Lane
North Harbor Drive / Laurel Street	AM PM	49.5~~8~~ ~~49.2~~ 48.6	D D	EB Triple LT and Restripe SB approach (Shared LT/RT)
Pacific Highway / Hawthorn Street	AM PM	18.4 28.5	B C	Restripe WB approach (LT, 2 Thru, Thru/RT)

[1] Average delay expressed in seconds per vehicle
[2] LOS = Level of Service
RT = right turn; LT = left turn; WB = westbound; EB = eastbound; NB = northbound; SB = southbound
Source: LLG ~~2009~~2010

Table 5-9. Cumulative (Year 2030) Street Segment Mitigation Analysis

Street Segment	Existing Classification	Existing Capacity	Year 2030 with Project and Mitigation: Mitigation Classification	Mitigation Capacity	ADT	V/C	LOS	Δ[1]	Mitigation
North Harbor Drive, Harbor Island Drive to Rental Car Access Road	7-lane Prime	65,000	8-lane Prime	70,000	112,755	1.611	F	(0.112)	Add 1 lane
North Harbor Drive, Rental Car Access Road to Laurel Street	6-lane Prime	60,000	7-lane Prime	65,000	162,355	2.498	F	(0.196)	Add 1 lane

[1] Project mitigation-induced decrease in the Volume to Capacity (V/C) ratio.
Source: LLG 2010

57791

135

Implementation of Mitigation Measures MM TR-C1 through MM TR-C6~~, MM TR-C2, and MM TR-C3~~ would mitigate the traffic impacts of the Proposed Project to less-than-significant levels. However, the intersections and street segments to be improved are within the jurisdiction of the City of San Diego. The mitigation measures are, therefore, contingent upon the action of the City of San Diego and are outside of the jurisdiction of the Port District. In addition, the City does not have an adopted plan or program that lists these intersection or street segment improvements. Therefore, the Port District cannot assure that these measures would be implemented, and the impacts would remain significant and unmitigated until the mitigation is implemented.

5.6.2 Public Services and Utilities

Fire Protection

Implementation of Mitigation Measure MM PUB-1 could mitigate the Proposed Project's impacts on fire services to a less-than-significant level. However, this mitigation measure entails establishment by the City Fire Marshal of a development impact fee program, by which the Project Applicant would pay impact fees for its demand on fire services. This mitigation measure is contingent upon action of the City of San Diego, is outside of the jurisdiction of the Port District, and may not be feasible. The City has identified the construction of the fire station at Liberty Station (former Naval Training Center) as a Tier-2, low priority, project. The City has also not identified any financing plans that will assure that the station is constructed. Because the construction of this fire station is not identified as a high priority by the City, the Port District cannot assure that this mitigation measure would be implemented, and the cumulative impact would remain significant and unmitigated.

Solid Waste

Implementation of Mitigation Measure MM PUB-C1 would mitigate the Project's cumulative impact on solid waste facilities to below a level of significance.

57791

130

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Chapter 6
Alternatives

In accordance with Section 15126.6 of the State CEQA Guidelines, EIRs are required to evaluate the "comparative merits" of a "...range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." The lead agency is responsible for determining the "reasonable range of potentially feasible alternatives" with the intent of fostering "informed decisionmaking [*sic*] and public participation." The discussion of alternatives is to focus on "alternatives...capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." CEQA Guidelines define "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors" (State CEQA Guidelines Section 15364).

The inclusion of an alternative in an EIR does not mean that the alternative is in fact "feasible." The final decision regarding the feasibility of alternatives lies with the decision-maker for a given project who must make the necessary findings addressing the potential feasibility of reducing the severity of significant environmental effects (PRC Section 21081; see also CEQA Guidelines Section 15091).

Two alternatives to the Proposed Project are described below and discussed in terms of their merits comparative to the Project. These include the (1) No Project Alternative and (2) Reduced Project Alternative. The No Project Alternative is a required element of an EIR pursuant to Section 15126.6(e) of the State CEQA Guidelines that examines the environmental effects that would occur if the project were not to proceed. The other alternative is discussed in this chapter as part of the "reasonable range of alternatives" selected by the Port District. The following discussion also presents information on various alternatives to the Proposed Project that were considered but rejected by the Port District, and that are not discussed in further detail.

6.1 Alternatives Considered but Rejected

CEQA Guidelines Section 15126.6(f)(2) suggests that an EIR's alternatives analysis identify alternative locations for the project, and that only locations that would avoid or substantially lessen any of the significant effects of the project need to be considered. For purposes of this alternatives analysis, the Port District has examined its inventory of land within its jurisdiction and identified ~~31~~ 32 Port District parcels, as identified on Table 6-1, that could theoretically accommodate the Proposed Project. The Port District determined that none of these sites are feasible alternative sites because they either (a) already have a project proposal pending; (b) already have a tenant currently occupying the site; or (c) are not a feasible site due to size, physical constraints, and/or location, as indicated in the table.

Table 6-1. Port District Parcel Potential Alternative Locations

District Parcel Number(s)	Existing Tenant and/or Occupant	Reason Site Is Infeasible[1]
Planning District 1: Shelter Island/La Playa		
001-024	Shelter Pointe	a, b
002-019	Best Western	b
002-018	Silvergate Yacht Club	b, c
002-017	Bay Club Hotel & Marina	b, c
003-010	Bartell Hotels—Humphrey's by the Bay	b
003-020	Bali Hai	b, c
Planning District 2: Lindbergh Field/Harbor Island		
005-001	Shelter Island, Inc. – Tom Ham's Lighthouse Restaurant	b
005-002	Harbor Island West Marina	b
005-007	San Diego Airport Hilton	b
006-001, 003	Sheraton Harbor Island Hotel	b
007-020	San Diego County Regional Airport Authority	b
005-008	Marina Cortez~~/Woodfin Suite Hotels, Inc.~~	a, b
007-017	Sunroad Asset Management – Island Prime Restaurant, former Reuben E. Lee Restaurant	b
Planning District 3: Centre City Embarcadero		
018-002	Five-Star Parking/Lane Field	a
018-054, 076	San Diego Seaport Village Ltd.	a, b
019-001	Hyatt Regency Hotel	b
019-003	Pacific Gateway Ltd./Marriott San Diego	b
019-005, 017	San Diego Convention Center	b
019-015	Fifth Avenue Landing Spinnaker Hotel	a
019-044	Hilton San Diego Convention Center Hotel	b

District Parcel Number(s)	Existing Tenant and/or Occupant	Reason Site Is Infeasible[1]
Planning District 5: National City Bayfront		
028-010	National City Marina	b
028-007	Pasha Automotive	c
Planning District 6: Coronado Bayfront		
058-007	Port Coronado Associates – Coronado Ferry Landing	b
057-002	Ferry Landing Associates – Il Fornaio/Arthur's Steakhouse	a, b
057-011	Coronado Marriott Resort	b
055-001	Coronado Yacht Club	b
Planning District 7: Chula Vista Bayfront		
031-019	Chula Vista Marina/RV Park	b
032-017	California Yacht Marina	b, c
032-019	Port District	c
Planning District 8: Silver Strand South		
046-001	Grand Caribe, Inc.	c
046-006	Port District/Grand Caribe Isle South	c
Planning District 9: South Bay Saltlands		
034-002	Pond 20	c

[1] Reasons for determining the Project to be infeasible in the alternative location:

a = site has a pending project proposal

b = site has a tenant currently occupying the site

c = site is not feasible due to size, physical constraints, and/or location

Source: San Diego Unified Port District 2009

Because no alternative locations have been identified that would avoid or substantially lessen impacts associated with the Project site, these potential alternatives have been rejected from further consideration, and no alternative sites are further analyzed in this Draft EIR.

The Port District has no authority for project approval on land outside its jurisdictional boundaries. Thus, non–Port District lands are not feasible sites for consideration as Project alternatives, and no additional alternative locations are discussed in detail below.

The existing PMP indicates that a 500-room hotel would be constructed on the parcel located west of the Project site. The Project proposes a smaller hotel with fewer rooms. The Port District considered an alternative that would achieve strict compliance with the PMP by constructing a hotel as suggested in the PMP. This "larger-hotel alternative" was rejected as a Project alternative and is not discussed in detail below because such an alternative would not avoid or substantially reduce any of the impacts assessed for the Proposed Project and the

57791

parcel is under a long-term lease with the existing tenant. In fact, this potential PMP-based alternative would increase Project-related impacts because it would entail a greater construction effort and operate a larger facility than under the Proposed Project. The larger-scale construction effort would increase impacts on air quality due to pollutant emissions, noise due to construction activity, and water quality due to the greater potential for construction-related polluted runoff entering San Diego Bay. Operating a larger hotel would increase impacts on traffic, noise, and air quality due to generation of a higher number of traffic trips; would increase water quality impacts due to the greater potential for polluted runoff on a larger site; would increase public services demand due to the larger facilities and higher level of onsite activity; and has the potential to result in an aesthetics impact due to a larger, taller building. The larger-hotel alternative would not meet the intent of Project alternatives as indicated in Section 15126.6(b) of the State CEQA Guidelines, which states that the alternatives discussion "shall focus on alternatives…which are capable of avoiding or substantially lessening any significant effects of the project," and is not necessary for consideration as an alternative for CEQA purposes.

In past iterations of the Project, the Project Applicant considered including an alternative whereby a larger hotel with more units would be built and an allotment of the units would be made available as timeshares. The Coastal Commission has generally expressed opposition to similar projects within their jurisdiction due to the potential limitation on public coastal access that can result from an ownership element in coastal hotel projects. Because of this opposition and because the Project now proposes a smaller hotel whose size would be sufficient as a rental-only facility, the timeshare alternative is considered infeasible for legal and economic reasons, and has been eliminated from further consideration in this Draft EIR.

6.2 Analysis of Alternatives under Consideration

This section discusses the merits of each of the project alternatives, in comparison to those of the Proposed Project, including an examination of whether the alternatives would avoid or substantially reduce the significant impacts identified for the Proposed Project in Chapter 4 of this Draft EIR, identification of any additional impacts resulting from the alternatives that would not result from the Proposed Project, and consideration of the alternatives' respective relationships to the Project's basic objectives, as listed in Chapter 2, "Introduction," of this Draft EIR.

6.2.1 No Project Alternative

57791

The No Project Alternative is a CEQA-required alternative that assumes no Project development would occur and none of the Project's other components would be implemented. Under the No Project Alternative, the Port District would maintain existing conditions with the Project site, with the existing facilities and parking areas left intact. No new development or alterations would

141

be implemented on this portion of East Harbor Island, including structures, parking lots, landscaping, and extension of the public promenade. The PMP would not be amended to account for the Proposed Project, but would remain as is, with its current plan to construct a 500-room hotel on the parcel immediately west of the Project site (currently a SDIA employee parking lot).

Because it would entail no physical modification of the Project site, the No Project Alternative would avoid the Project-related significant impacts to Biological Resources; Hazards and Hazardous Materials; Transportation, Traffic, and Parking (Cumulative); Noise; Geology and Soils; and Public Services and Utilities (Direct and Cumulative) that were assessed for the Proposed Project. It would not, however, meet any of the Project objectives. This alternative would also preclude the Proposed Project's beneficial effects on public access because there would be no enhancement and extension of the promenade behind the proposed hotel.

Land Use, Water Use, and Coastal Access

The No Project Alternative would not avoid or reduce a significant land use, water use, or coastal access impact as no significant impact associated with the Proposed Project has been identified. Under the No Project Alternative, the Port District would not amend the PMP. The existing plan and land use designations for the East Harbor Island Subarea (Subarea 23) would remain, though the Port District would have the ability to amend this in the future as part of another project. The public promenade would not be extended along the basin side of the hotel, thereby precluding the benefits on coastal access associated with the Proposed Project. The No Project Alternative would not conflict with surrounding land uses and water uses, as it would not modify the Project site from its existing conditions, and uses would remain the same.

In summary, the No Project Alternative would not result in any additional land use or water use impacts not anticipated for the Proposed Project, but this alternative would preclude the coastal access benefits resulting from the Project-related promenade extension.

Biological Resources

The No Project Alternative would avoid the significant biological resources impact assessed for the Proposed Project. Under this alternative, no trees or other vegetation would be removed from the Project site, thereby avoiding impacts on raptors or migratory birds that may be nesting on or adjacent to the Project site (Significant Impact BIO-1). The No Project Alternative would not result in impacts on biological resources, and the associated mitigation measure would not be required if the No Project Alternative were selected.

57791

Aesthetics

The No Project Alternative would not avoid or reduce a significant aesthetics impact as no significant impact associated with the Proposed Project has been identified. Under this alternative the Project site would remain in its existing condition with the marina locker building and parking lot. The Proposed Project would introduce a new source of light and glare into the area; however, this is not anticipated to be substantial nor is it anticipated to adversely affect day or nighttime views in the area. However, under the No Project Alternative, no new sources of light or glare would be introduced into the area.

Hazards and Hazardous Materials

The No Project Alternative would avoid the Proposed Project's significant hazardous materials impact. Because this alternative would not entail grading work, there would be no potential for workers to encounter contaminated soils, but, any potentially hazardous soil conditions would remain in place and may be encountered during future construction activities. Therefore, the No Project Alternative would avoid Significant Impact HZ-1. The No Project Alternative would not result in any other impacts related to hazards or hazardous materials, and no mitigation would be required.

Hydrology and Water Quality

The No Project Alternative would not avoid or reduce a significant hydrology and water quality impact as no significant impact associated with the Proposed Project has been identified. The Proposed Project would improve the onsite storm drains and would be required to implement long-term (operational) BMPs (as identified in a USMP). These improvements would increase the treatment of stormwater from the Proposed Project site beyond the existing conditions. Thus, implementation of the Proposed Project would result in a slight water quality benefit.

Transportation, Traffic, and Parking

The No Project Alternative would avoid the significant cumulative traffic impacts assessed for the Proposed Project. This alternative proposes no new development and, therefore, no increase in traffic generated on the Project site, which would avoid the Project-related increases in congestion at the intersections and street segments where significant impacts were assessed for the Proposed Project, including North Harbor Drive/Harbor Island Drive/Terminal 1 (TR-C1), North Harbor Drive/Rental Car Access Road (TR-C2), ~~and~~ North Harbor Drive/Laurel Street (TR-C3), Pacific Highway/Hawthorn Street (TR-C4), North Harbor Drive between Harbor Island Drive and Rental Car Access Road (TR-

C5), and North Harbor Drive between Rental Car Access Road and Laurel Street (TR-C6).

Under the No Project Alternative, traffic would continue to increase in the vicinity of the Project site as a result of local and regional growth. The "Existing + Cumulative Projects" columns of Tables 4.6-5 and 4.6-6 identify the near-term (Year 2012) street segment and intersection operations of the "No Project Alternative." The "Year 2030" columns of Tables 5-2 and 5-3 identify the long-term (Year 2030) street segment and intersection operations of the "No Project Alternative." The "Existing + Cumulative Projects" and "Year 2030" columns on these tables identify the traffic conditions associated with regional growth, without the Project. ~~By 2012, one studied street segment (North Harbor Drive from Rental Car Access Road to Laurel Street) is anticipated to degrade to unacceptable conditions due to this growth, as shown in Table 4.6-5. By 2030, this growth is anticipated to degrade conditions at the following street segments to unacceptable conditions: two consecutive segments of North Harbor Drive between Harbor Island Drive and Laurel Street; one segment of Pacific Highway north of Laurel Street; two consecutive segments of Laurel Street from North Harbor Drive to east of Pacific Highway; and one segment of Grape Street east of Pacific Highway (see Table 5-2). Seven studied intersections are also anticipated to degrade to unacceptable conditions by 2030 (with or without the Proposed Project), including North Harbor Drive/Harbor Island Drive/Terminal 1; North Harbor Drive/Rental Car Access Road; North Harbor Drive/Laurel Street; North Harbor Drive/Hawthorn Street; Pacific Highway/Laurel Street; Pacific Highway/Hawthorn Street; and Pacific Highway/Grape Street (see Table 5-3). Therefore, a~~Although this alternative would avoid a cumulatively considerable contribution of Project-related traffic at the ~~three~~ four intersections and two street segments listed in Significant Impacts TR-C1 through TR-C6, ~~TR-C2, and TR-C3,~~ the No Project Alternative would not completely avoid the long-term impacts ~~significant cumulative impacts~~ on the circulation system that would be attributed to anticipated growth not associated with the Proposed Project.

Air Quality

The No Project Alternative would not avoid or reduce a significant air quality impact as no significant impact associated with the Proposed Project has been identified. The No Project Alternative would have no impact on air quality, as it would entail no construction activity, no increased traffic, and no other pollutant generators. This alternative would have a lesser impact on air quality than would the Proposed Project.

Noise

The No Project Alternative would avoid the significant noise impacts assessed for operation of the Proposed Project. Because the No Project Alternative would not construct the onsite hotel, this alternative would not result in interior noise levels exceeding relevant standards, and would thereby avoid Significant Impact

57791

NOI-1. The mitigation measures required for the Proposed Project to reduce noise impacts associated with interior levels at the hotel would not be required if the No Project Alternative were selected. The No Project Alternative would not result in additional noise impacts not identified for the Proposed Project. Therefore, the No Project Alternative would result in reduced noise impacts compared to the Proposed Project.

Geology and Soils

The No Project Alternative would avoid the significant geological impact assessed for the Proposed Project. This alternative would avoid new construction on land with the potential for liquefaction in the vicinity of the seismic faults, thereby avoiding Significant Impact GEO-1. The mitigation measures required for the Proposed Project to reduce geology impacts associated with existing soil conditions and location of fault lines would not be required if the No Project Alternative were selected, as no new construction would occur. However, any potentially hazardous geological conditions would remain in place and may be encountered during future construction activities. The No Project Alternative would not result in additional Geology and Soils impacts not identified for the Proposed Project. Therefore, the No Project Alternative would avoid the geology and soils impacts associated with the Proposed Project.

Public Services and Utilities

The No Project Alternative would avoid the significant public services and utilities impacts assessed for the Proposed Project. This alternative would not construct new structures on the Project site or increase the intensity of use, thereby avoiding the increase in demand placed on fire and emergency response services of the City Fire Department (Significant Impacts PUB-1 and PUB-C1). Under this alternative, there is no impact related to fire and emergency response services and thus, mitigation would not be required. However, even under the No Project Alternative, the City Fire Department facilities serving the Project site are above their workload capacity and a new fire station in the area is still needed.

In addition, because this alternative proposes no new development, it would generate no solid waste, and therefore would avoid the cumulative solid waste impact attributed to the Proposed Project (Significant Impact PUB-C2) and preclude preparation of a waste management plan for submittal to the City. The No Project Alternative would not result in additional public services and utilities impacts not identified for the Proposed Project. Therefore, the No Project Alternative would avoid the public services and utilities impacts associated with the Proposed Project.

53291

145

Recreation

The No Project Alternative would not avoid or reduce a significant recreation impact as no significant impact associated with the Proposed Project has been identified. The No Project Alternative would not substantially increase use of existing recreational facilities on the Project site or in the vicinity. Under this alternative, the promenade would not be extended along the basin side of the hotel, and public access would not be enhanced on the Project site.

Feasibility and Relationship to Project Objectives

The No Project Alternative is a feasible alternative, as defined by CEQA, because it could be "accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors" (State CEQA Guidelines Section 15364). However, the No Project Alternative does not meet any of the Project objectives. It would not entail any improvements that would promote East Harbor Island as a public waterfront destination nor would the commercial recreational uses on East Harbor Island be diversified. By omitting the aesthetic improvements of the Project site and the extension of the promenade behind the hotel, the No Project Alternative would not improve or promote public access to the coast.

Summary

None of the significant impacts assessed for the Proposed Project would occur under the No Project Alternative because the alternative would not conduct any of the Project-related construction activity and would not implement any of the features of the Proposed Project. Although this alternative would avoid the Proposed Project's significant impacts, implementing the No Project Alternative would also omit the improvements to coastal access and recreation associated with the Proposed Project. Furthermore, the No Project Alternative would not achieve any of the objectives of the Project, as outlined in Chapter 2, "Introduction," of this EIR.

6.2.2 Reduced Project Alternative

The Reduced Project Alternative entails construction and operation of a smaller hotel than the Proposed Project. This alternative was selected for analysis because a reduction in the ~~scale of project construction~~ number of hotel rooms—and the related reduction in onsite activity—would reduce and in some cases avoid the significant cumulative traffic impacts identified for the Proposed Project. Under this alternative, the Project site would still undergo redevelopment, with construction of a hotel and parking areas and extension of the promenade behind the hotel, but the ~~scale of project construction would be smaller~~ hotel would have fewer hotel rooms than that of the Proposed Project.

57791

The development footprint would be identical to that of the Proposed Project. The Reduced Project Alternative would entail a reduction in the number of rooms in the onsite hotel by 60% and 30%, from a total of 175 rooms described for the Proposed Project to 69 rooms and 123 rooms, but would retain the same amount of meeting space and common areas set forth in the Proposed Project. The reduction in rooms would be accomplished by reducing the height of the hotel building from four stories to two stories (69 rooms) or three stories (123 rooms). The parking areas and promenade improvements would be the same as in the Proposed Project.

Land Use, Water Use, and Coastal Access

The Reduced Project Alternative would not avoid or reduce a significant land use, water use, or coastal access impact as no significant impact associated with the Proposed Project has been identified. As with the Proposed Project, the Reduced Project Alternative would require a PMP Amendment to realign the roadway and traffic circle and to allow a total of 500 hotel rooms in multiple hotels to be allowed across all of East Harbor Island. Because the Reduced Project Alternative would consist of all the components of the Proposed Project, its land and water use impacts would be similar to the Proposed Project. The Reduced Project Alternative would entail construction of a promenade along the basin side of the hotel, and as such would have the same coastal access benefits as the Proposed Project.

The hotel facility that would be constructed and operated under the Reduced Project Alternative would consist of fewer hotel rooms than the Proposed Project. With approval by the BPC and certification by the California Coastal Commission of the proposed PMP Amendment, multiple hotels would be allowed on East Harbor Island totaling 500 rooms. Therefore, the reduction in hotel rooms allowed under this alternative would not create an additional conflict with the PMP and Precise Plan because if the number of hotel rooms were reduced, it is reasonable to assume that additional rooms would be developed on another portion of East Harbor Island in accordance with the PMP Amendment.

Biological Resources

The Reduced Project Alternative would not avoid the significant biological resources impact identified for the Proposed Project. Because this alternative would entail the same clearing of trees and other vegetation present on the Project site as the Proposed Project, this alternative could also have a significant impact on any nesting raptors or migratory birds (Significant Impact BIO-1). The slightly smaller scale and shorter duration of construction associated with a smaller hotel building would represent a slight reduction in the potential for impacts on nesting birds, but this impact would not be eliminated and this alternative would require implementation of the mitigation measures identified for the Proposed Project to avoid impacts on birds, including preconstruction surveys and, if necessary, constraints on construction.

57291

147

The Reduced Project Alternative would not entail any impacts on biological resources that were not identified for the Proposed Project. Therefore, no additional mitigation would be required to reduce impacts to less-than-significant levels.

Aesthetics

The Reduced Project Alternative would not avoid or reduce a significant aesthetics impact as no significant impact associated with the Proposed Project has been identified. The alternative would entail construction of a multi-level hotel structure similar in appearance to that of the Proposed Project and in a similar location, though slightly smaller in scale due to the decrease in the number of rooms.

Hazards and Hazardous Materials

The Reduced Project Alternative would not avoid or substantially reduce the significant hazardous materials impact identified for the Proposed Project (Significant Impact HZ-1). Reduction in the scale of Project construction does not reduce the hazardous materials impacts because they are related to conditions that currently exist on the Project site. Similar to the Proposed Project, this alternative would entail grading of soil that is potentially contaminated. The alternative would have the potential to expose workers to those materials during work. Therefore, this alternative would require the mitigation measures identified for the Proposed Project calling for implementation of safety procedures with respect to discovery of contaminated soil. If such materials are discovered, remediation prior to the commencement of onsite work would be required. These mitigation measures would reduce Significant Impact HZ-1 to a less-than-significant level. The Reduced Project Alternative would not result in any additional impacts not identified for the Proposed Project.

Hydrology and Water Quality

The Reduced Project Alternative would not avoid or reduce a significant hydrology and water quality impact as no significant impact associated with the Proposed Project has been identified. The Reduced Project Alternative consists of constructing a smaller hotel than the Proposed Project, and as such, the scale of construction would be smaller, as would permanent onsite activity. As with the Proposed Project, this alternative would require the Project Applicant to develop and implement a project-specific SWPPP and a project-specific USMP consistent with Port District requirements. The SWPPP and USMP would identify BMPs that would be implemented to minimize or avoid pollutants and/or sediment entering runoff during construction and operations, respectively.

The Reduced Project Alternative would not result in any additional impacts that were not attributed to the Proposed Project and would require no additional mitigation.

Transportation, Traffic, and Parking

The previously circulated Draft EIR was circulated for a 45-day public review period from December 10, 2009 to January 23, 2010. Comments received on the Draft EIR indicated that the traffic analysis did not use the standard roadway classifications and capacities, and the most recent significance thresholds adopted by the City of San Diego. The previously circulated Draft EIR included a ~~The~~ 69-room Reduced Project Alternative that would eliminate the significant cumulative traffic impacts assessed for the Proposed Project. Reanalysis of that alternative using the City's latest significance thresholds and roadway classifications and capacities identifies that the 69-room Reduced Project Alternative would avoid all significant traffic impacts with the exception of two intersections: North Harbor Drive/Rental Car Access Road and North Harbor Drive/Laurel Street.

This alternative has been revised to include analysis of both a 69-room hotel and a 123-room hotel, given that the 69-room hotel no longer eliminated all of the significant cumulative traffic impacts assessed for the Proposed Project. Both a 69-room hotel and a 123-room hotel would reduce ~~avoid~~ traffic impacts because ~~it~~ they would reduce the capacity of the hotel by 106 rooms and 52 rooms, respectively, so that ~~a~~ significantly ~~smaller number of~~ less people would travel to and from the Project site. Table 6-2 compares the Long-Term (Year 2030) intersection operations of the Proposed Project and each scenario of the Reduced Project Alternative. Table 6-3 compares the Long-Term (Year 2030) street segment operations of the Proposed Project and each scenario of the Reduced Project Alternative. The analysis for each scenario of the Reduced Project Alternative follows the same methodology as analysis for the Proposed Project (see Section 4.6, "Transportation, Traffic, and Parking," of this EIR), and compares the alternative's trip estimates to those of the Proposed Project.

~~The~~ Each scenario of the Reduced Project Alternative would reduce the total number of trips generated on the Project site - the 69-room scenario would reduce the total number of trips generated by the Project by 742 ADT and the 123-room scenario would reduce the total number of trips by 365 ADT when compared to the Proposed Project. This equates to a total reduction in traffic of approximately 61% and 30%, respectively.

~~As shown on Table 6-2, the~~ The 69-room and 123-room scenarios of this alternative would reduce the number of inbound AM peak-hour trips by 24 and 11, respectively, and the number of outbound AM peak-hour trips by 36 and 18, respectively, while reducing the inbound and outbound PM peak-hour trips associated with the 69-room hotel by 40 and 27, respectively, and reducing the inbound and outbound PM peak-hour trips associated with the 123-room hotel by 20 and 13, respectively.

149

This reduction in trips is ~~considerable~~ directly proportionate to the reduction in the number of hotel rooms and would ~~eliminate~~ reduce, and in some cases eliminate, the significant long-term cumulative ~~intersection~~ traffic impacts attributed to the Proposed Project. Table 6-2 shows how both scenarios of the Reduced Project Alternative would reduce, and in some cases eliminate, the intersection delay impacts as described in Significant Impacts TR-C1 through TR-C4. Table 6-3 shows how both scenarios of the Reduced Project Alternative would eliminate the street segment delay impacts as described in Significant Impacts TR-C5 and TR-C6. ~~The three affected intersections—North Harbor Drive/Harbor Island Drive/Terminal 1, North Harbor Drive/Rental Car Access Road, and North Harbor Drive/Laurel Street—would all operate at LOS F during both AM and PM peak hours in the long-term (year 2030), with the exception of North Harbor Drive/Harbor Island Drive/Terminal 1, which would operate at LOS D during AM peak hours. The Proposed Project would add 5.7 and 2.5 seconds of delay to the AM and PM peak hours, respectively, at the North Harbor Drive/Harbor Island Drive/Terminal 1 intersection. The Reduced Project Alternative would add reduced delays of 2.3 and 0.6 seconds for AM and PM peak hours, respectively, for the same intersection thus eliminating Significant Impact TR-C1. Similarly, this alternative would reduce the PM peak hour delay at the North Harbor Drive/Rental Car Access Road intersection from 4.7 to 1.8 seconds thereby avoiding Significant Impact TR-C2. Finally, this alternative would also reduce the PM peak-hour delay at the North Harbor Drive/Laurel Street intersection from 2.9 to 1.9 seconds thus eliminating Significant Impact TR-C3. Therefore, the Reduced Project Alternative would result in less-than-significant long-term (cumulative) impacts on the three intersections assessed for the Proposed Project and would not require implementation of the mitigation measures identified for Significant Impacts TR-C1–C3. The reduction in trips associated with the Reduced Project Alternative would avoid the significant cumulative impacts attributed to the Proposed Project.~~

Table 6-2. Reduced Project Alternative—Long-Term (Year 2030) Intersection Operations

Intersection	Peak Hour	Year 2030[1]		Year 2030 + Original Project (175-room hotel with 600 slip marina)				Year 2030 + Significance Reduction Project Alternative (69-room hotel with 600 slip marina)				Year 2030 + Significance Reduction Project Alternative (123-room hotel with 600 slip marina)			
		Delay[2]	LOS[3]	Delay	LOS	Δ[4]	Sig?[5]	Delay	LOS	Δ[4]	Sig?[5]	Delay	LOS	Δ[4]	Sig?[5]
N. Harbor Dr./Harbor Island Dr./Terminal 1 (East Airport Entrance)	AM	51.2	D	56.9	E	**5.7**	**Yes**	53.5	D	2.3	No	55.0	D	3.8	No
	PM	86.6	F	89.1	F	**2.5**	**Yes**	87.2	F	0.6	No	88.3	F	**1.7**	**Yes**
N. Harbor Drive/Rental Car Access Rd.	AM	169.8	F	171.8	F	**2.0**	**~~No~~Yes**	170.6	F	0.8	No	171.2	F	**1.4**	**Yes**
	PM	159.0	F	163.7	F	**4.7**	**Yes**	160.8	F	**1.8**	**~~No~~Yes**	161.8	F	**2.8**	**Yes**
N. Harbor Drive/Laurel Street	AM	98.1	F	98.9	F	0.8	No	98.2	F	0.1	No	98.7	F	0.6	No
	PM	124.1	F	127.0	F	**2.9**	**Yes**	126.0	F	**1.9**	**~~No~~Yes**	126.7	F	**2.6**	**Yes**
Pacific Highway/Hawthorn Street	AM	86.1	F	87.5	F	**1.4**	**Yes**	86.7	F	0.6	No	87.1	F	1.0	No
	PM	55.9	E	56.5	E	0.6	No	56.2	E	0.3	No	56.4	E	0.5	No

[1] Year 2030 traffic volumes obtained from ~~original~~ Traffic Study dated ~~January 16, 2009~~October 19, 2010

[2] Average delay expressed in seconds per vehicle

[3] Level of Service

[4] Increase in delay due to project

[5] Sig? denotes "Significant Impact"

Source: LLG ~~2009~~2010

Table 6-3. Reduced Project Alternative—Long-Term (Year 2030) Street Segment Operations

Street Segment	Buildout Capacity (LOS E)[a]	Year 2030			Year 2030 + Original Project (175-room hotel with 600 slip marina)					Year 2030 + Significance Reduction Project Alternative (69-room hotel with 600 slip marina)					Year 2030 + Significance Reduction Project Alternative (123-room hotel with 600 slip marina)				
		ADT[b]	V/C[c]	LOS[d]	ADT[b]	V/C[c]	LOS[d]	Δ[e]	Sig?[f]	ADT[b]	V/C[c]	LOS[d]	Δ[e]	Sig?[f]	ADT[b]	V/C[c]	LOS[d]	Δ[e]	Sig?[f]
N. Harbor Drive: Harbor Island Drive to Rental Car Access Road	65,000	112,020	1.723	F	112,755	1.735	F	**0.012**	**Yes**	112,310	1.728	F	0.005	No	112,536	1.731	F	0.008	No
N. Harbor Drive: Rental Car Access Road to Laurel Street	60,000	161,620	2.694	F	162,355	2.706	F	**0.012**	**Yes**	161,910	2.699	F	0.005	No	162,136	2.702	F	0.008	No

[a] Capacities based on City of San Diego's Roadway Classification & LOS table.
[b] Average Daily Traffic
[c] Volume to Capacity ratio
[d] Level of Service
[e] Δ denoted a project-induced increase in the Volume to Capacity ratio.
[f] Sig? denotes "Significant Impact"
Source: LLG 2010

57791

Air Quality

The Reduced Project Alternative would not avoid or reduce a significant air quality impact as no significant impact associated with the Proposed Project has been identified. In general, air quality impacts of the Reduced Project Alternative would be less than those of the Proposed Project because the smaller scale of construction would reduce the amount of pollutants emitted by Project construction and because the reduction in size of the operation would reduce the number of Project-related vehicle trips that would emit pollutants. The Reduced Project Alternative does not propose any facilities or uses that would generate emissions not identified for the Proposed Project and would not result in additional impacts beyond those identified for the Proposed Project. Therefore, as under the Proposed Project, these impacts are less than significant and no mitigation would be required.

Noise

The Reduced Project Alternative would reduce the amount of noise generated by Project construction (on a temporary basis) but would not avoid or substantially reduce the significant impacts identified for the Proposed Project. As discussed in Section 4.8, "Noise," the Proposed Project is anticipated to result in a significant impacts related to traffic noise levels affecting interior noise levels at the hotel. Reducing the number of trips generated by the Project would also reduce these received noise levels, but not to the extent that it would eliminate this impact. Reducing the number of hotel rooms would reduce the number of guests that could be exposed to excessive interior noise levels, but this would not avoid or substantially reduce the impact (Significant Impact NOI-1). The mitigation measure required for the Proposed Project to reduce interior noise levels in the hotel would still be required if the Reduced Project Alternative were selected.

A smaller hotel would mean fewer daily trips to or from the Project site, meaning that traffic noise (the main noise source generated during the operational phase) would also be reduced when compared to the Proposed Project. As discussed in Section 4.8, "Noise," of this Draft EIR, the Proposed Project is anticipated to result in less-than-significant impacts related to Project-generated traffic noise. Implementing the Reduced Project Alternative would further reduce these impacts. The Reduced Project Alternative would not result in any impacts that were not identified for the Proposed Project; therefore, no additional mitigation would be required.

Geology and Soils

The Reduced Project Alternative would not avoid or substantially reduce the significant impacts assessed for the Proposed Project because, like the Proposed Project, this alternative would entail construction on an area of East Harbor

57791

153

Island that may be subject to liquefaction conditions in seismic events (Significant Impact GEO-1). The configuration of the hotel in relation to the fault lines beneath the eastern end of the peninsula and the soils underlying the Project site would be similar to the Proposed Project, and, therefore, this alternative would similarly erect structures in a hazardous geological area. The mitigation measures required for the Proposed Project to reduce geology impacts associated with existing soil conditions and location of fault lines would also be required if the Reduced Project Alternative were selected. The Reduced Project Alternative would not result in any additional Geology and Soils impacts not identified for the Proposed Project, and no additional mitigation would be required.

Public Services and Utilities

The Reduced Project Alternative would reduce public services and utilities demands when compared to the Proposed Project, but it would not avoid or substantially reduce the significant impacts identified for the Proposed Project. This alternative proposes a smaller hotel and, accordingly, fewer hotel guests and a lesser amount of on-site activity than the Proposed Project, thereby reducing the demand on fire and emergency response services of the City Fire Department. As discussed in Section 4.10 and Chapter 5, "Cumulative Impacts," the Proposed Project's significant fire services impact is largely a product of the City Fire Department's existing difficulties in meeting response goals in the vicinity of the Project site, and their inadequate coverage of the area due to a lack of fire stations. As such, any increase in demand on this already overburdened agency, including that of the Reduced Project Alternative, would constitute significant direct and cumulative impacts (Significant Impacts PUB-1 and PUB-C1) and would warrant mitigation. Mitigation Measure MM PUB-1 calls for establishment of a development impact fee program by the City Fire Department; however, because implementation of this measure is outside of the jurisdiction of the Port District, the impact was noted as significant and unmitigated. The Reduced Project Alternative would reduce the Project's monetary contribution to this prospective impact fee program, but would generally not change this mitigation or its disposition outside of the Port District's jurisdiction. Therefore, this alternative would also result in a significant and unmitigated impact.

The Reduced Project Alternative would reduce the demand on law enforcement services of the City Police Department when compared to the Proposed Project. Although no significant environmental impact was identified for the increased demand on the City Police Department's law enforcement services, the Reduced Project Alternative would reduce demand and thus the monetary contribution to the Police Department when compared to the Proposed Project.

Like the Proposed Project, the Reduced Project Alternative involves commercial development exceeding 40,000 square feet and would be served by the same landfills as the Proposed Project. By the City's standards, this alternative's development would generate enough solid waste to constitute a potentially significant cumulative solid waste impact, as identified for the Proposed Project (Significant Impact PUB-C2). This alternative would require preparation of a

52791

154

waste management plan for submittal to the City's Environmental Services Department to mitigate this solid waste impact, similar to the Proposed Project, which would reduce this impact to a less-than-significant level.

By operating a smaller-scale hotel on the Project site, this alternative would reduce demand on the City's water and wastewater facilities, as well as reduce the energy consumed on site. These impacts were determined to be less than significant for the Proposed Project; therefore, this alternative would also result in a less-than-significant impact. The Reduced Project Alternative would not result in any additional Public Services and Utilities impacts not identified for the Proposed Project, and no additional mitigation would be required.

Recreation

The Reduced Project Alternative would not avoid or reduce a significant recreation impact as no significant impact associated with the Proposed Project has been identified. The Reduced Project Alternative would include all of the recreational components of the Proposed Project, including the extended and enhanced promenade along the basin side of the proposed hotel. Like the Proposed Project, this alternative would enhance public access at the Project site.

Feasibility and Relationship to Project Objectives

Although it would accomplish several of the Project objectives, the Reduced Project Alternative would not accomplish the following Project objectives set forth in Section 2.2 of the Draft EIR:

> *Implement the Port Master Plan's goal to develop East Harbor Island with commercial recreation uses*: Hotels are designated as commercial recreation uses in the Port Master Plan (PMP). The existing PMP anticipates the development of a high quality 500 room hotel on East Harbor Island (Subarea 23). This hotel was anticipated on the parcel immediately west of the Project site, which is currently used for San Diego International Airport (SDIA) employee parking. The PMP Amendment associated with the Proposed Project (175-room limited service hotel) would allow the 500 rooms to be constructed by way of several smaller hotels on East Harbor Island. The proposed 175-room hotel would be included in the 500 rooms. The Reduced Project Alternative would reduce the number of hotel rooms on the Project site and increase the number of hotel rooms to be developed on other sites in the subarea. In addition, there presently are no plans to redevelop any of the other sites designated Commercial Recreation in the Harbor Island Planning District (Planning District 2). Accordingly, a reduction in the number of hotel rooms developed on the Project site by either 30% (123-room hotel) or 60% (69-room hotel) would further delay and potentially make it more difficult for the Port District to a) achieve the Project objective of developing East Harbor Island with the commercial

57791

155

recreation uses envisioned in the PMP, and b) achieve the PMP's existing goal of developing 500 hotel rooms on East Harbor Island.

Increase public use of the waterfront by providing additional visitor serving commercial recreation uses: Hotels are designated as commercial recreation uses in the PMP. The existing PMP anticipated the development of a high quality hotel of approximately 500 rooms for the east end of Harbor Island (Subarea 23). This hotel was anticipated on the parcel immediately west of the Project site, which is currently used for SDIA employee parking. The PMP Amendment associated with the Proposed Project (a 175-room limited service hotel) would allow the 500 rooms to be constructed by way of several smaller hotels on East Harbor Island. The proposed 175-room hotel would be included in the 500 rooms. The Reduced Project Alternative would reduce the number of hotel rooms on the Project site by either 30% (123-room hotel) or 60% (69-room hotel). Such a substantial reduction in the number of hotel rooms would result in fewer commercial recreation facilities and users and would be contrary to the Project objective of increasing public use of the waterfront. In addition, a reduction in the number of hotel rooms may result in the need for increased room rates in order to offset the loss of revenue which would result from a substantial reduction in the number of hotel rooms.

Provide a hotel that is in close proximity to San Diego International Airport as well as San Diego Bay, in order to minimize the need for vehicle miles traveled from arrival point: The Reduced Project Alternative would reduce the number of hotel rooms on the Project site by either 30% (123-room hotel) or 60% (69-room hotel). There presently are no plans to develop or redevelop any other sites designated Commercial Recreation on Harbor Island to provide additional hotel rooms in close proximity to the SDIA. As a result, the Reduced Project Alternative would increase, rather than minimize, vehicle miles traveled by requiring persons seeking lodging in close proximity to the SDIA to travel further to downtown San Diego or other more distant locations to find available lodging.

Provide a hotel that is a financially viable operation while minimizing the aesthetic changes on East Harbor Island: The Reduced Project Alternative would reduce the number of hotel rooms on the Project site by either 30% (123-room hotel) or 60% (69-room hotel). According to the Project Applicant, a substantial reduction in the number of hotel rooms would result in an equivalent reduction in project revenues without a corresponding reduction in operating costs and would not provide sufficient revenue to provide a commercially viable return on investment. As a result, the Reduced Project Alternative may make it impossible to accomplish the Project objective of providing a hotel that is a financially viable operation while minimizing the aesthetic changes on East Harbor Island.

~~The Reduced Project Alternative may not be a feasible alternative in terms of CEQA because there is an economic factor that would impair the ability of the Project Applicant to accomplish the Project in a successful manner (see State CEQA Guidelines Section 15364). According to the Project Applicant, operating~~

~~a smaller hotel on the Project site would not constitute a viable commercial enterprise, as the facility would need enough rooms to generate a profit and keep the operation in business. Therefore, this alternative may not be a feasible alternative in terms of CEQA. This alternative meets all of the Project objectives. with the exception of the "financially viable operation" objective, because it proposes improvements that are similar to those of the Proposed Project, which would promote East Harbor Island as a public waterfront destination and provide the promenade enhancement that would promote coastal public access.~~

Summary

The Reduced Project Alternative would ~~avoid~~ reduce the Project's contribution of trips to significant cumulative traffic impacts at intersections listed as Significant Impacts TR-C1, TR-C2, ~~and~~ TR-C3, and TR-C4 and would eliminate the significant cumulative traffic impacts at the street segments listed as Significant Impacts TR-C5 and TR-C6. However, even though the cumulative traffic impacts associated with the Reduced Project Alternative are less than those of the Proposed Project, ~~I~~implementing this alternative would ~~not~~ still require mitigation for ~~these~~ some of the impacts.

This alternative would not reduce or substantially avoid any of the other significant impacts identified for the Project, and would require all other mitigation measures to reduce the impacts to a less-than-significant level. As with the Proposed Project, this alternative would result in significant impacts related to Biological Resources, Hazards and Hazardous Materials, Noise, Geology and Soils, and Public Services. Mitigation would be required to reduce these impacts to a less-than-significant level. As with the Proposed Project, the mitigation identified for impacts on the City Fire Department may not be feasible, and the Reduced Project Alternative may result in a significant and unmitigated impact related to fire protection facilities.

By reducing the size of the proposed hotel and the scale of construction, the Reduced Project Alternative would reduce many of the less-than-significant impacts attributed to the Proposed Project, including construction- and traffic-related noise and air pollution emissions.

The Reduced Project Alternative would achieve some of the Project objectives stated in Section 2.2 of this EIR. However, the Reduced Project Alternative may not be feasible because it would not achieve several of the fundamental objectives of the Project, and thus would be undesirable from a policy standpoint.

~~The Reduced Project Alternative would achieve most of the Project objectives, as stated in Section 2.2 of this EIR; however, this alternative may not be feasible for economic reasons, as defined in Section 15364 of the State CEQA Guidelines.~~

Appendix B

Port Master Plan Amendment

San Diego Unified Port District
Port Master Plan Amendment

DRAFT

East Harbor Island Subarea Port Master Plan Amendment

Existing/Proposed Plan Text and Plan Graphics

~~December 2009~~
November 2010

*Note: Text to be **deleted** shown ~~stricken~~ and text to be **added** shown underlined.*
Text in italics is for clarification only and is not part of the Plan Amendment.

57791

The 1980 Port Master Plan was certified by vote of the California Coastal Commission (CCC) on January 21, 1981. Subsequent amendments, all of which have been incorporated into this copy, are listed below:

Amendment Title	BPC Res. No.	CCC Certification Date
Coronado Tidelands	83-133	12 Apr 1984
Convention Center and Option Site Hotel	84-290	14 Mar 1985
Bay Mooring and Anchorage Management Plan	84-304	25 Apr 1985
Chula Vista Bayside Park Extension	84-379	27 Aug 1985
Crosby Street Site	86-365	27 Feb 1987
Shelter Island Roadstead	88-212	15 Nov 1988
Coronado Boatyard/The Wharf	89-383	11 Apr 1990
East Harbor Island Hotel	90-170	14 Sep 1990
Seaport Village Street Relocation	92-74	11 Jun 1992
NASSCO Ways Modification	92-118	11 Jun 1992
Solar Turbines Incorporated	92-190	13 Oct 1992
Lindbergh Field Immediate Action Program	92-406	13 Apr 1993
Driscoll Boatyard Expansion	93-033	14 May 1993
National City Marina	94-152	11 Aug 1994
Design Refinements to IAP	95-223	15 Dec 1995
San Diego Convention Center Expansion	95-389	12 Jan 1996
A-9 Cruiser Anchorage	95-266	11 Apr 1996
Convair Lagoon	96-135	12 Nov 1996
Imperial Beach Oceanfront	97-187	10 Dec 1997
--Chula Vista Industrial Business Park Expansion	97-227	10 Mar 1998
South Embarcadero Redevelopment Program I	98-136	15 Oct 1998
North Embarcadero Alliance Visionary Plan	2000-83	14 Mar 2001
Former Naval Training Center Land Transfer	2000-166	12 Jun 2001
D Street Fill Mitigation Site	2001-86	11 Sep 2001
South Embarcadero Redevelopment Program 2	2001-72	12 Dec 2001
National Distribution Center, National City	2001-99	12 Dec 2001
South Bay Boat Yard, Chula Vista	2001-190	12 Dec 2001
Glorietta Bay Redevelopment	2001-65	05 Feb 2003
America's Cup Harbor	2002-120	12 Jun 2003
Fifth Avenue Landing Spinnaker Hotel	2004-66	12 Aug 2004
Old Police Headquarters	2006-29	10 Aug 2006
National City Aquatic Center	2006-162	15 Feb 2007
Broadway Pier Cruise Ship Terminal	2009-37	03 Feb 2009
East Harbor Island Subarea	2011-XX	XX XX 2011

TABLE 4
PORT MASTER PLAN
LAND AND WATER USE ALLOCATION SUMMARY

LAND USE	ACRES Existing	ACRES Revised	WATER USE	ACRES Existing	ACRES Revised	TOTAL ACRES Existing	TOTAL ACRES Revised	% OF TOTAL Existing	% OF TOTAL Revised
COMMERCIAL	**~~373.5~~**	**373.1**	**COMMERCIAL**	**383.0**		**~~756.5~~**	**756.1**	**14%**	
Marine Sales and Services	18.8		Marine Services Berthing	17.7					
Airport Related Commercial	38.0								
Commercial Fishing	8.3		Commercial Fishing Berthing	18.8					
Commercial Recreation	~~304.1~~	303.7	Recreational Boat Berthing	335.4					
Sportfishing	4.3		Sportfishing Berthing	11.1					
INDUSTRIAL	**1206.4**		**INDUSTRIAL**	**217.7**		**1424.1**		**26%**	
Aviation Related Industrial	152.9		Specialized Berthing	170.5					
Industrial Business Park	113.7		Terminal Berthing	47.2					
Marine Related Industrial	322.1								
Marine Terminal	149.6								
International Airport	468.1								
PUBLIC RECREATION	**~~280.5~~**	**281.0**	**PUBLIC RECREATION**	**681.0**		**~~961.5~~**	**962.0**	**18%**	
Open Space	~~19.0~~	18.7	Open Bay/Water	681.0					
Park/Plaza	146.4								
Golf Course	97.8								
Promenade	~~17.3~~	18.1							
CONSERVATION	**399.2**		**CONSERVATION**	**1058.6**		**1457.8**		**27%**	
Wetlands	304.9		Estuary	1058.6					
Habitat Replacement	94.3								
PUBLIC FACILITIES	**~~222.9~~**	**222.8**	**PUBLIC FACILITIES**	**394.3**		**~~617.2~~**	**617.1**	**12%**	
Harbor Services	2.7		Harbor Services	10.5					
City Pump Station	0.4		Boat Navigation Corridor	284.6					
Streets	~~210.8~~	219.7	Boat Anchorage	25.0					
			Ship Navigation Corridor	50.0					
			Ship Anchorage	24.2					
MILITARY	**25.9**		**MILITARY**	**125.6**		**151.5**		**3%**	
Navy Fleet School	25.9		Navy Small Craft Berthing	6.2					
			Navy Ship Berthing	119.4					
TOTAL LAND AREA	**2508.4**		**TOTAL WATER AREA**	**2860.3**					
			MASTER PLAN LAND AND WATER ACREAGE TOTAL			**5368.6**		**100%**	

Draft

(DRAFT 09-14-09)

161

Development of unleased parcels on Harbor Island is expected to be completed with the construction of ~~the~~ hotels on the east basin. Along Harbor Drive, from the Navy Estuary to the Coast Guard facility, planning concepts focus on providing a sense of entry into downtown San Diego for travelers coming via Lindbergh Field and Point Loma, with activities and landscape features that strengthen the image of San Diego as a pleasant place to visit. Considerable attention must be paid to improvements in the general appearance of existing industrial uses and the planned expansion of these uses. Public park, pedestrian promenade and open space are reserved on the bayside and in the circulation gateway of Harbor Island. Coastal access is enhanced by a shoreline park with leisure facilities, including restroom, and a 1.3 mile bayside public pathway.

A public access plan will be prepared and implemented for each hotel development on Harbor Island as the hotels are developed or redeveloped. The public access plans will include information on signage, amenities, and public information to inform and invite the public to and around Harbor Island and downtown San Diego. *[moved from East Harbor Island Subarea text on page 4]*

All hotel developments on Harbor Island should provide or participate in shuttle service to and from the airport. All development shall provide information regarding other transit opportunities. *[moved from East Harbor Island Subarea text on page 4]*

A parking management plan will be prepared for each hotel development on Harbor Island as the hotels are developed or redeveloped. *[moved from East Harbor Island Subarea text on page 4]*

Land and Water Use Allocations

The Harbor Island/Lindbergh Field Planning District contains an approximate total of 996 acres, consisting of about 816 acres of tidelands and 180 acres of submerged tidelands. **Table 8** summarizes the land and water use allocations proposed in the Precise Plan. As in the Shelter Island Planning District, a significant portion of the area is already developed and is under long term lease commitment. ~~The east end of the Harbor Island peninsula is vacant and thus offers development potential uncomplicated by the presence of structures or lease interest.~~ A balanced allocation of use activities is provided within the major use categories of commercial, industrial, public recreation, and public facilities.

The use allocation table, the **Precise Plan Map**, and the following text supplement the general plan guideline presented in the preceding part of this document.

Harbor Island/Lindbergh Field Planning Subareas

Planning District 2 has been divided into nine subareas ***(Figure 10)*** to provide a more specific explanation of the intent of the Plan.

Spanish Landing Park

Spanish Landing Park, subarea 21, extends along the north bank of the Harbor Island West Basin and occupies 11.2 acres of land. Another 1.3 acres is designated for promenade in the form of a bicycle and pedestrian path. This area is completely developed except for the possibility of a fishing pier near the west end. Approximately one mile of public access to the shore is provided by this park. Historic markers located in the park commemorate Juan Rodriguez Cabrillo's discovery of San Diego Bay in 1542, and the exploratory party of Gaspar de Portola in 1769-70.

West Harbor Island

West Harbor Island, subarea 22, has been completely developed with commercial

57791

162

recreational uses such as hotels, restaurants, marinas, and marine related commercial business. No changes to this 37.7-acre commercial recreation area are anticipated.

East Harbor Island

The east end of Harbor Island, subarea 23, ~~has been~~ is the last subarea to complete phased development and is designated commercial recreation. ~~The last project, a~~Future development in this subarea includes two or more hotels totaling ~~high quality hotel of~~ approximately 500 rooms. ~~which are~~ These hotels ~~is~~ will be sited to be responsive to views of San Diego Bay~~, the airport,~~ and the downtown San Diego skyline. Maximum building heights will be ~~establish~~ consistent~~cy~~ with adopted aircraft approach paths and Federal Aviation Administration (FAA) regulations. ~~The hotel~~Hotels ~~complex~~ may include~~s~~ typical supporting facilities such as swimming pools, spas, commercial retail, restaurants, cocktail lounges, meeting and conference space, recreational facilities, including piers, and ancillary uses. A marina of approximately 550 slips is located adjacent to the hotels and occupies most of the basin. The eastern end of the peninsula is anchored by restaurants, which are uniquely sited on the water's edge.

The existing promenade along the southern side of Harbor Island Drive will be extended to the eastern portion of the East Harbor Island subarea and along Harbor Island East Basin frontage as the subarea is developed or redeveloped. The promenade will provide pedestrian access around East Harbor Island and will connect the hotel developments, marina, and restaurants to the rest of Harbor Island. The promenade will be located to provide views of the San Diego Bay, the downtown San Diego skyline, and the Harbor Island East Basin. ~~Public access will be maintained along the promenade. Private uses shall not obstruct the public promenades.~~ When the promenade is located within a private leasehold or on a Port development site, improvements and the promenade will be sited to allow uninterrupted pedestrian flow. Benches and ~~overlooks~~ viewing decks adjacent to the promenade will be sited to provide multiple viewing opportunities in a manner that does not obstruct pedestrian flow. Public access and other path-finding signage, as well as signage identifying that the promenade is open to the public, will be placed at strategic locations throughout East Harbor Island to guide guests and visitors to and from public use areas, restaurants, and other facilities.

~~A public access plan will be prepared and implemented for each hotel development. The public access plans will include information on signage, amenities, and public information to inform and invite the public to and around East Harbor Island and downtown San Diego.~~ *[moved to introductory text on page 3]*

~~All hotel developments should provide shuttle service to and from the airport and information regarding other transit opportunities.~~ *[moved to introductory text on page 3]*

~~A parking management plan will be prepared for each hotel development.~~ *[moved to introductory text on page 3]*

As the East Harbor Island subarea is developed or redeveloped, Harbor Island Drive may be resized and realigned to optimize use of East Harbor Island. This may allow for increased and enhanced public enjoyment of the bay. The promenade and new public access features (i.e. benches) will provide enhanced open space and public access opportunities within the East Harbor Island subarea. Proportionate to the type and extent of development or redevelopment, activating uses such as restaurants, outdoor seating and dining areas, and retail shops open to the public ~~may~~ will be integrated into the hotel development or redevelopment.

57791

163

A public promenade parallels the active ship channel of the bay and ~~i~~ensures pedestrian and bicycle coastal access. Landscaped open space on Harbor Island Drive is retained with the street design of an upgraded and modified "T" intersection. Utility capacity is expanded to meet increased service needs.

TABLE 8
Precise Plan Land and Water Use Allocation

HARBOR ISLAND/LINDBERGH FIELD: PLANNING DISTRICT 2

LAND USE	ACRES Existing	ACRES Revised	WATER USE	ACRES	TOTAL ACRES Existing	TOTAL ACRES Revised	%OF TOTAL
COMMERCIAL	~~90.6~~	90.2	**COMMERCIAL**	105.8	~~196.4~~	196.0	20%
Airport Related Commercial	38.0						
Commercial Recreation	~~52.6~~	52.2	Recreational Boat Berthing	105.8			
INDUSTRIAL	631.8		**INDUSTRIAL**	11.2	643.0		65%
Aviation Related Industrial	130.6						
Industrial Business Park	33.1		Specialized Berthing	11.2			
International Airport	468.1						
PUBLIC RECREATION	~~26.2~~	26.7	**PUBLIC RECREATION**	45.0	~~71.2~~	71.7	7%
Open Space	~~7.5~~	7.2	Open Bay/Water	45.0			
Park	16.4						
Promenade	~~2.3~~	3.1					
PUBLIC FACILITIES	~~66.8~~	66.7	**PUBLIC FACILITIES**	18.0	~~84.8~~	84.7	8%
Harbor Services	1.3		Harbor Services	5.3			
Streets	~~65.5~~	65.4	Boat Navigation Corridor	12.7			
TOTAL LAND AREA	**815.4**		**TOTAL WATER AREA**	**180.0**			
PRECISE PLAN LAND AND WATER ACREAGE TOTAL					**995.4**		**100%**

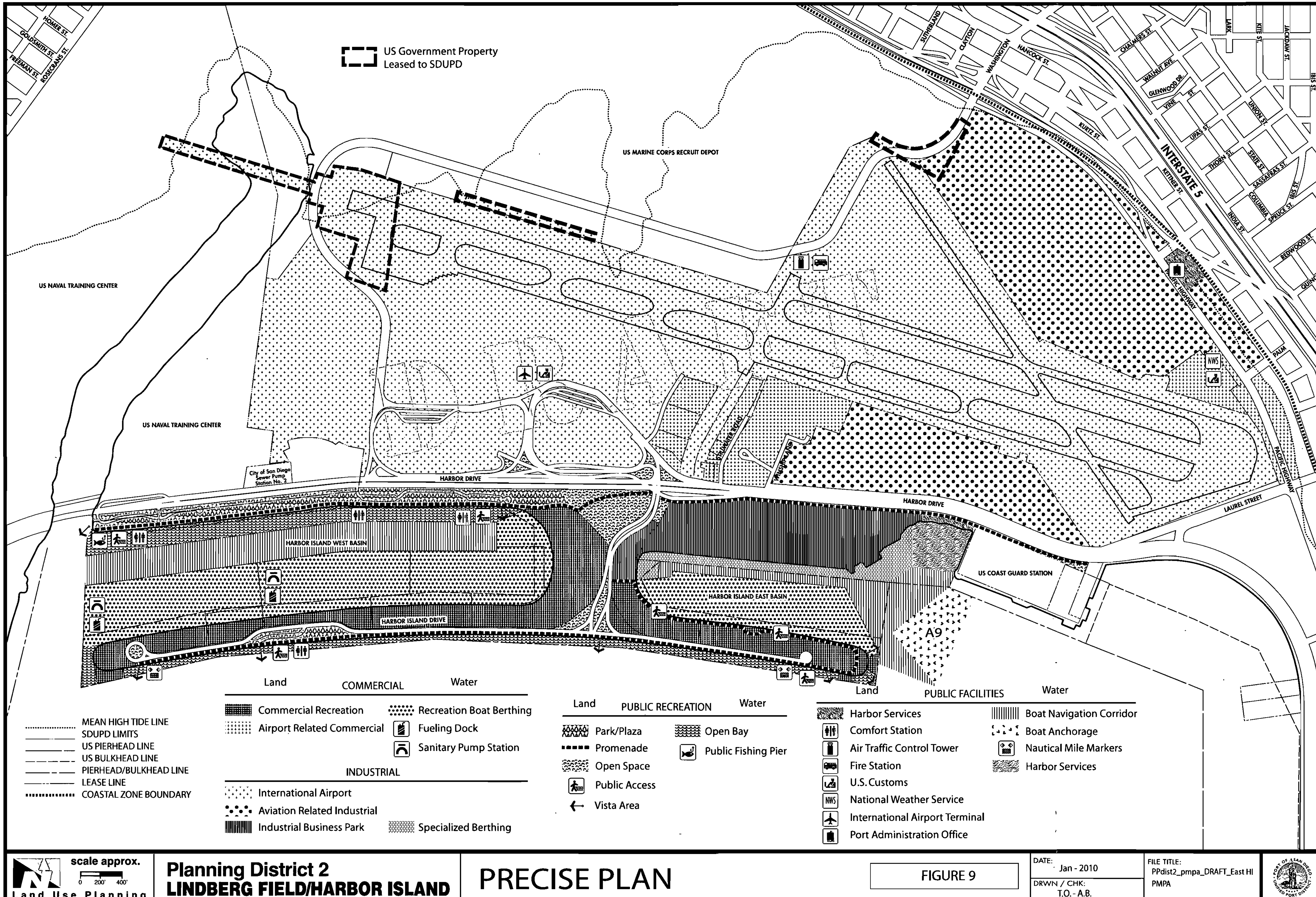
Note: Does not include:
Leased Federal Land 22.5 acres
State Submerged Tidelands 41.3 acres
Leased Uplands 4.1 acres

Revised acreage includes:
East Harbor Island Subarea PMPA – CCC on XXXX XX, 2011

Revised: 9-14-09

57791

165


US Government Property Leased to SDUPD
US MARINE CORPS RECRUIT DEPOT
US NAVAL TRAINING CENTER
US NAVAL TRAINING CENTER
City of San Diego Sewer Pump Station No. 2
HARBOR DRIVE
HARBOR DRIVE
HARBOR ISLAND WEST BASIN
HARBOR ISLAND DRIVE
HARBOR ISLAND EAST BASIN
US COAST GUARD STATION
LAUREL STREET
PACIFIC HIGHWAY
INTERSTATE 5
KETTNER ST.
INDIA ST.
A9
HOMER ST.
GOLDSMITH ST.
FREEMAN ST.
ROSECRANS ST.
SUTHERLAND
CLAYTON
WASHINGTON
HANCOCK ST.
KURTZ ST.
CHALMERS ST.
WALNUT AVE.
GLENWOOD DR.
VINE ST.
UPAS ST.
THORN ST.
STATE ST.
SASSAFRAS ST.
COLUMBIA
SPRUCE ST.
REDWOOD ST.
QUINCE
PALM
LARK
KITE ST.
JACKDAW ST.
IBIS ST.
UNION ST.
NWS
COMMERCIAL
Land
Water
Commercial Recreation
Airport Related Commercial
Recreation Boat Berthing
Fueling Dock
Sanitary Pump Station
INDUSTRIAL
International Airport
Aviation Related Industrial
Industrial Business Park
Specialized Berthing
PUBLIC RECREATION
Land
Water
Park/Plaza
Promenade
Open Space
Public Access
Vista Area
Open Bay
Public Fishing Pier
PUBLIC FACILITIES
Land
Water
Harbor Services
Comfort Station
Air Traffic Control Tower
Fire Station
U.S. Customs
National Weather Service
International Airport Terminal
Port Administration Office
Boat Navigation Corridor
Boat Anchorage
Nautical Mile Markers
Harbor Services
MEAN HIGH TIDE LINE
SDUPD LIMITS
US PIERHEAD LINE
US BULKHEAD LINE
PIERHEAD/BULKHEAD LINE
LEASE LINE
COASTAL ZONE BOUNDARY
scale approx.
0 200' 400'
Land Use Planning
Planning District 2
LINDBERG FIELD/HARBOR ISLAND
PRECISE PLAN
FIGURE 9
DATE: Jan - 2010
DRWN / CHK: T.O. - A.B.
FILE TITLE: PPdist2_pmpa_DRAFT_East HI PMPA
PORT OF SAN DIEGO UNIFIED PORT DISTRICT

57791

166

Project List

A listing of projects and appealable classifications is shown in Table 9.

TABLE 9: PROJECT LIST HARBOR ISLAND/LINDBERGH FIELD: PLANNING DISTRICT 2	SUBAREA ↓	DEVELOPER ↓	APPEALABLE ↓	FISCAL YEAR
1. HOTELS ~~COMPLEX~~: up to 500 rooms in multiple hotels, including restaurants, cocktail lounges, meeting and conference space; parking; landscapinge; public promenade; realignment of traffic circle and roadway	23	T	Y	~~1993-94~~ 2012-2016
2. PORT ADMINISTRATION BUILDING RENOVATION: Renovate building; Construct parking structure; install landscaping	29	P	N	1993-95
3. AIRPORT ACCESS ROAD: Construct	27	P	Y	1995-96
4. FUEL FACILITY: Expansion to north side of airport	25	P	N	1992-93
5. ACCESS ROADS: Revise airport internal road system	26	P	N	1993-94
6. LAUREL STREET: Widen between Harbor Drive and Pacific Highway	27	P	Y	1994-95
7. NEW AIRPORT TERMINAL: Construct facility; apron; taxiway	26	P	N	1993-95
8. ANCHORAGE FACILITY: Install perimeter marker buoys at Anchorage A-9	23	P	Y	1995-96
9. CONVAIR LAGOON: Sediment remediation	24	T	N	1996-97
10. INTERIM EMPLOYEE PARKING LOT: Construct airport employee parking lot and staging area for taxis, shuttle vans and charter buses; replace storm drain	26	P	N	2001-03

P- Port District N- No
T- Tenant Y- Yes

(Revised 11/16/09)

57791

Appendix E

Traffic Impact and Parking Analysis

57791

168

REVISIONS TO
TRAFFIC IMPACT & PARKING ANALYSIS
(APPENDIX E OF EIR)

The Traffic Impact and Parking Analysis (Traffic Study) and all of its relevant appendices have been updated to consider only the *175-Room Hotel Project*. For ease in your review, below is a summary of sections/documents which have been revised:

- ***Updated Significance Criteria***—see Section 5.0 of Traffic Study. Tables 5-1, 6-2, 9–1, 9–2, 10–1, 10–2, 14–1, and 14-3 in the Traffic Study have been revised to as a result of the updated significance criteria or revised street classifications and capacities. Tables 9-3 and 14-2 are new.
- ***Mitigation for new intersection and street segment impacts***—see Section 14.0 of Traffic Study.
- ***Reduced Project Alternative Letter Report***—this letter report analyzes the traffic impacts associated with two reduced project scenarios – a 69-room hotel and a 123-room hotel. This letter report supersedes the "Significance Avoidance Project Alternative Letter Report" that was included as includes as Appendix H of the previous Traffic Study.
- ***Parking Study***—see Appendix F of the revised Traffic Study. This was Appendix E in the previous Traffic Study. *The project requires 381 parking spaces. This is consistent with the conclusions provided in the previously-circulated Draft EIR.*

The following document did not require revisions, but has been relocated:

- ***Construction Traffic Analysis***—see Section 13.0 of Traffic Study

In order to avoid any confusion, please consider the following documents from the previously circulated Draft EIR to be superseded:

- Traffic Impact Study (January 16, 2009)
- Significance Avoidance Project Alternative Letter Report (April 28, 2009)
- Revised Project Review Letter Report (October 27, 2009)

57791

LINSCOTT
LAW &
GREENSPAN
engineers

TRAFFIC IMPACT STUDY & PARKING STUDY

HARBOR ISLAND

San Diego, California
October 19, 2010

LLG Ref. 3-04-1437-3

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57791

170

EXECUTIVE SUMMARY

Linscott, Law & Greenspan, Engineers (LLG) has prepared this *Traffic Impact and Parking Analysis* to determine the potential traffic impacts on the local circulation system and determine parking requirements for the *Harbor Island* project in the City of San Diego. The project site is located on the east side of Harbor Island and currently contains a 600-slip marina.

The project includes the construction of a *175-room limited service hotel* while maintaining the existing 600-slip marina. The analyses for both the Traffic Impact Study and the Parking Study (contained in ***Appendix F***) considered this project.

Analysis at eleven intersections and several street segments in the study area were performed under near-term and long-term conditions. In the Near-Term, the project is calculated to have no significant impacts. In the Long-Term (Year 2030), the project is calculated to have significant cumulative impacts at four intersections and two street segments:

- N. Harbor Dr./Harbor Island Dr./Terminal 1
- N. Harbor Dr./Rental Car Access Road
- N. Harbor Dr./Laurel Street
- Pacific Highway / Hawthorn Street
- N. Harbor Drive between Harbor Island Drive and Rental Car Access Road
- N. Harbor Drive between Rental Car Access Road and Laurel Street

Mitigation measures recommended in Section 14.0 of this report would reduce the project impacts listed above to a level of 'not significant'. For the purposes of this report, a level of 'not significant' reflects allowable delay increases within the defined thresholds.

A "reduced project" alternative that would reduce significant impacts is contained in ***Appendix I.***

57791

TABLE OF CONTENTS

SECTION PAGE

57791

172

TABLE OF CONTENTS *(continued)*

SECTION	PAGE

APPENDICES

APPENDIX

57791

LIST OF FIGURES

LIST OF TABLES

57791

TRAFFIC IMPACT & PARKING ANALYSIS

HARBOR ISLAND

San Diego, California
October 19, 2010

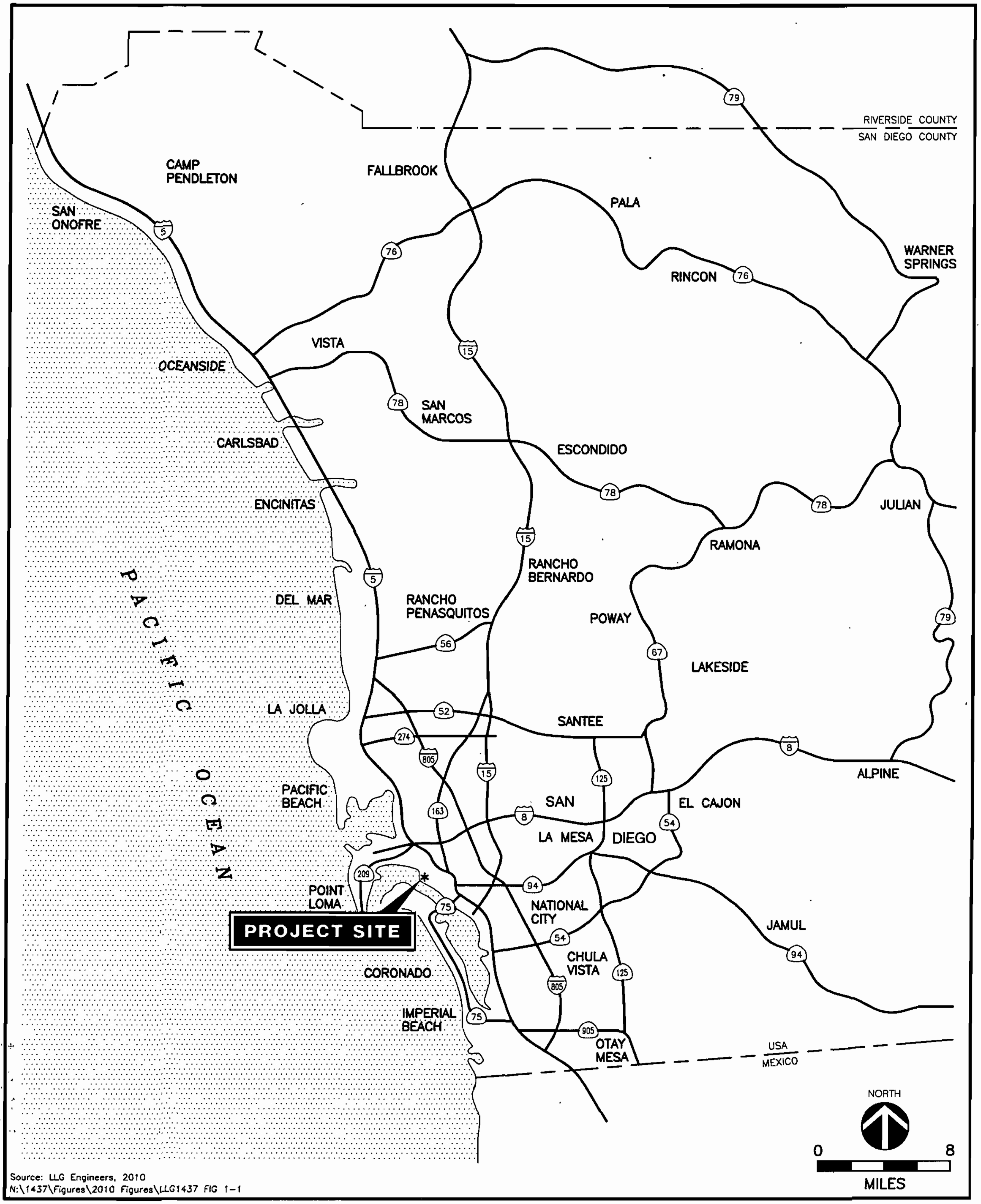
1.0 INTRODUCTION

This Traffic Impact and Parking Analysis has been prepared to determine the potential traffic impacts on the local circulation system and determine parking requirements for the *Harbor Island* project in the City of San Diego. The project site is located on the east side of Harbor Island. ***Figure 1–1*** shows a vicinity map, and a more detailed project area map is depicted in ***Figure 1–2***. The additional traffic generated by the project has been added to the existing on-street traffic volumes and the traffic impacts were analyzed at eleven key intersections and several street segments within the project area under both Near-Term and Long-Term conditions. In addition, the parking demand/supply was assessed for the project.

Included in this traffic assessment are the following:

- Project Description
- Existing Conditions Assessment
- Project Traffic Generation/Distribution/Assignment
- Cumulative Projects Discussion
- Near-Term and Long-Term (Year 2030) Intersection/Street Segment Analyses
- Parking Demand/Supply Analysis
- Construction Traffic Analysis
- Significance of Impacts/Mitigation Measures

57791



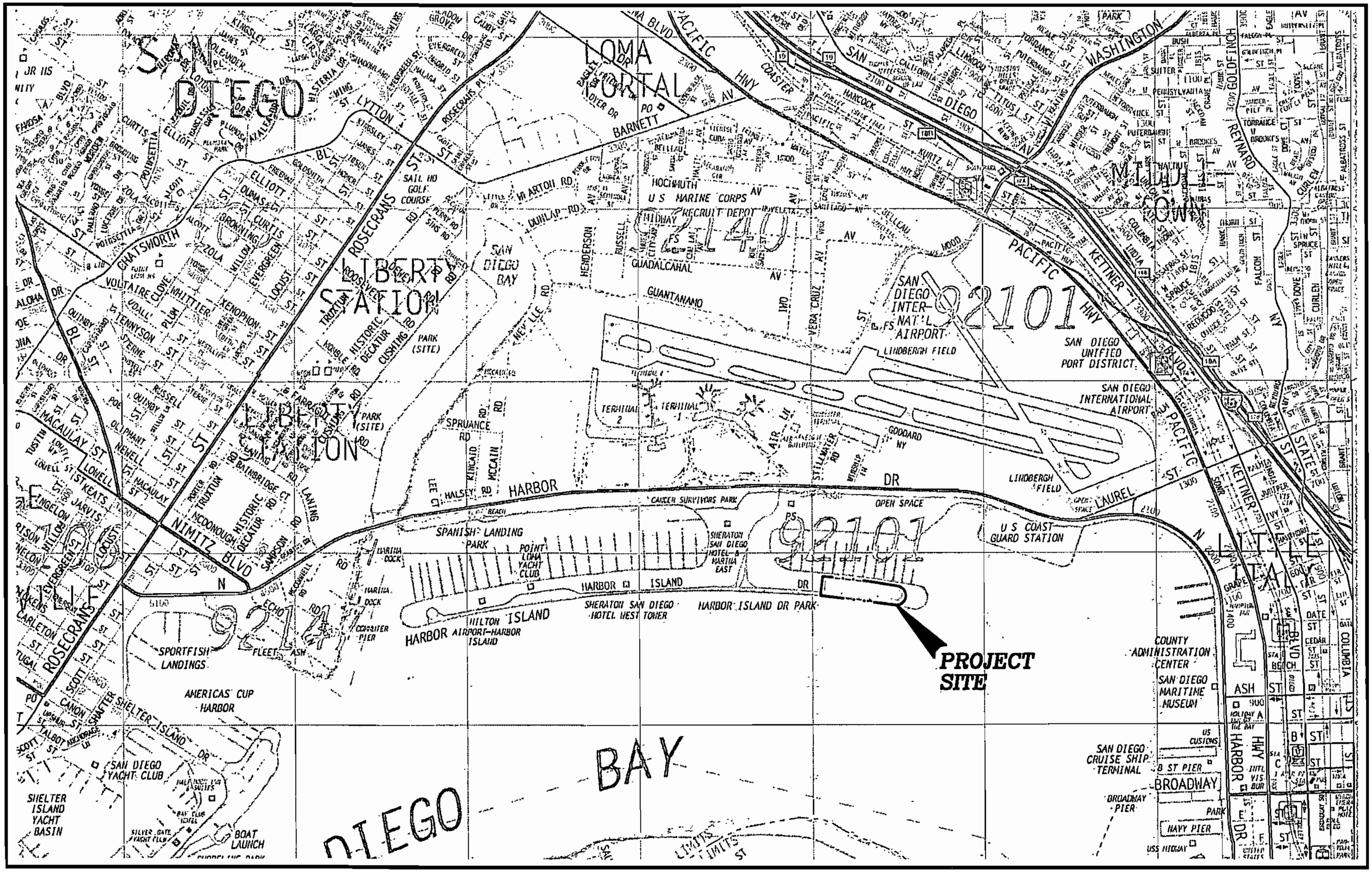
LINSCOTT LAW & GREENSPAN engineers

Figure 1-1

Vicinity Map

HARBOR ISLAND

57791



Source: Thomas Guide, 2010
N:\1437\Figures\2010 Figures\LLG1437 FIG 1-2

NORTH

NOT TO SCALE

LINSCOTT LAW & GREENSPAN engineers

Figure 1-2

Project Area Map

57791

HARBOR ISLAND

LLG

2.0 PROJECT DESCRIPTION

2.1 Project Location

The *Harbor Island* project is located on the east side of Harbor Island in the City of San Diego. The existing site contains a 600-slip marina with a clubhouse. Just east of the project site, at the terminus of the eastern strip of Harbor Island Drive, are two other land uses, including a quality stand-alone restaurant called *Island Prime* and a non-functioning entity called the *Reuben E. Lee*. The *Reuben E. Lee*, a 250-foot-long craft that served as a restaurant, is located in the water at the eastern end of the island. The restaurant closed its doors in 2003, but is currently planned to re-open as a restaurant by 2013. Two gate controlled parking lots currently serve the marina site, providing a total of 568 parking spaces.

2.2 Project Description

The proposed project plans to build a limited service hotel of approximately 175 rooms. The project will be located at the east end of the Sunroad leasehold and will replace an existing locker building and some parking associated with the marina. The project will be approximately 117,000 square feet consisting of hotel rooms, limited meeting space (approximately 5,000 square feet), and common areas. Construction is expected to be enclosed within a four story structure with a projected "Opening Day" in April 2012. No changes are proposed for the 600-slip marina and clubhouse. Direct parking access to the marina and the proposed hotel will be provided.

As part of the development, the project proposes to modify the existing traffic circle currently located at the terminus of Harbor Island Drive by slightly reducing the overall size of the circle. The project also proposes to narrow the eastern portion of Harbor Island Drive along the property frontage from four lanes to three lanes (1 westbound and 2 eastbound lanes). This narrowing only includes a small portion of the entire roadway, the most eastern portion before the dead end. These actions are not identified within the Port Master Plan, and as such an amendment to the Port Master Plan is required.

Figure 2–1 depicts the site plan.

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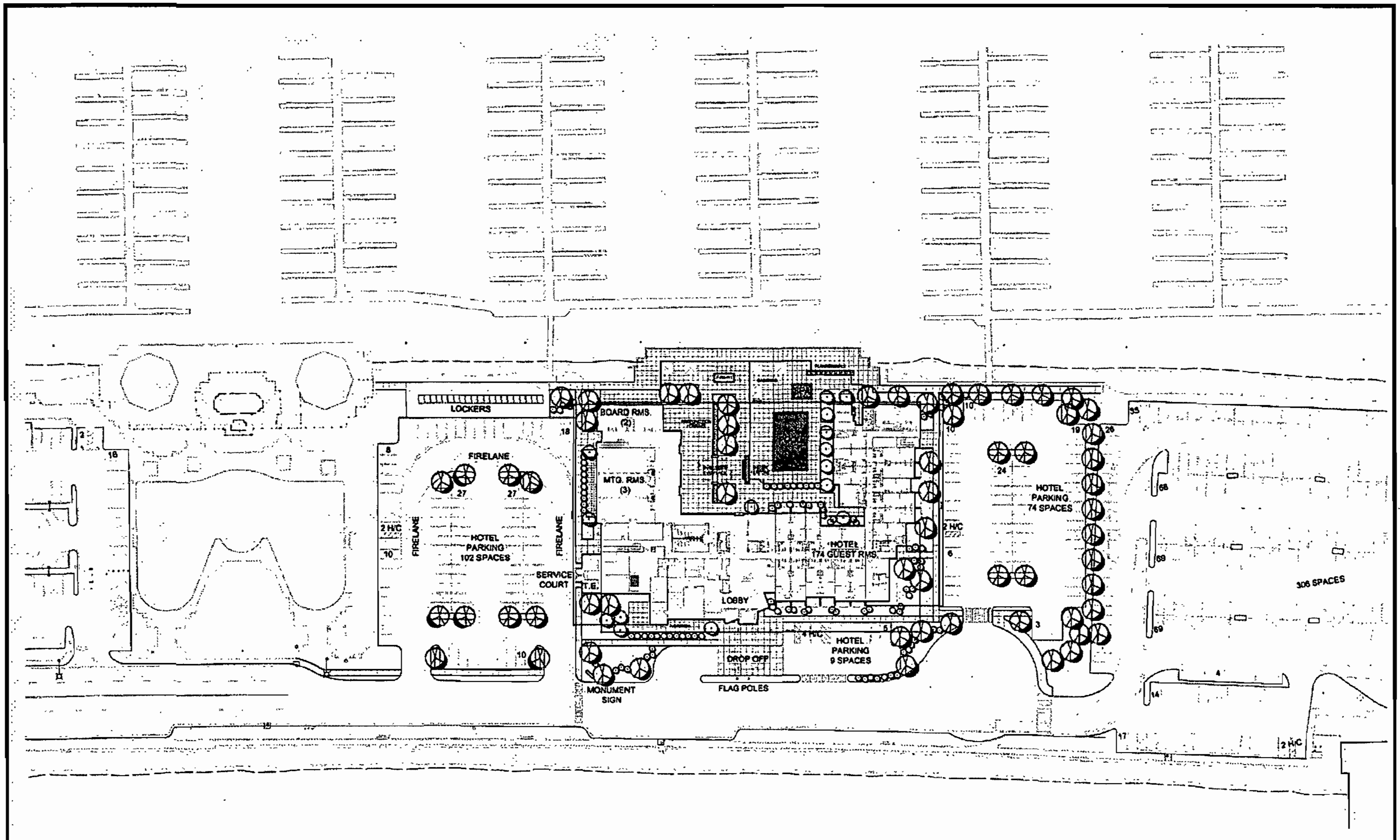

Source: Awbrey Cook McGill Architects, 2009
N:\1437\Figures\2010 Figures\LLG1437 FIG2-1

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Figure 2-1

Site Plan

HARBOR ISLAND

179

57791

3.0 EXISTING CONDITIONS

Figure 3–1 shows an existing conditions diagram, including signalized intersections and lane configurations.

3.1 Existing Street Network

According to the City of San Diego Street Design Manual (November 2002) *Six-Lane Primary Arterials* should be 98 feet wide in 142 feet of Right-of-Way (R/W), providing six through lanes, bike lanes, a raised median, and left-turn lanes. An additional 10 feet of roadway and R/W are needed at approaches intersecting 4 and 6-lane streets to provide dual left-turn lanes. *Six-Lane Major Streets* should be 112 feet wide in 140 to 152 feet of R/W, providing six through lanes, bike lanes, a raised median, left-turn lanes and curbside parking. An additional 10 feet of roadway and R/W are needed at approaches intersecting 4 and 6-lane streets to provide dual left-turn lanes. *Four-Lane Major Streets* should be 76 feet wide in 120 feet of R/W, providing four through lanes, bike lanes, a raised median, and left-turn lanes. An additional 10 feet of roadway and R/W are needed at approaches intersecting 4 and 6-lane streets to provide dual left-turn lanes. *Four-Lane Collectors with a Two-Way Left-Turn Lane* should be 82 feet wide in 110 to 122 feet of R/W, providing four through lanes, bike lanes, left-turn lanes, and curbside parking. *Two-Lane Collectors* should be 36 feet wide in 60 to 86 feet of R/W and provide two through lanes and curbside parking.

The following is a brief description of the streets in the project area.

North Harbor Drive is classified as a Six-Lane Primary Arterial. Currently, North Harbor Drive is a six-lane divided roadway in the project area with the exception of the following segments: west of Nimitz Boulevard, North Harbor Drive is a four-lane divided roadway; between Harbor Island Drive and the Coast Guard Station and between Hawthorn Street and Grape Street, North Harbor Drive is a seven-lane divided roadway. The speed limit ranges between 40 and 45 mph. Parking is generally prohibited. Bus stops are provided at regular intervals. Bike lanes are also provided between Nimitz Boulevard and the entrance to Terminal 2 at the San Diego International Airport.

Pacific Highway is classified as a Six-Lane Major Arterial. Currently, Pacific Highway is a six-lane divided roadway in the project area. The speed limit ranges between 35 and 40 mph. Bus stops and bike lanes are provided. Parking is generally allowed south of Laurel Street, but is prohibited north of Laurel Street.

Laurel Street is classified as a Four-Lane Major Arterial between North Harbor Drive and Pacific Highway, and as a Four-lane Collector east of Pacific Highway. Currently, Laurel Street is a five-lane undivided roadway between North Harbor Drive and Pacific Highway. However, the second and third westbound lanes (along the airport frontage) merge into one lane at the end of the segment. This merge condition essentially does not allow for full capacity of the two lanes; therefore, the analysis presented later in this report considered this segment as having only four lanes. East of Pacific Highway, Laurel Street is a four-lane undivided roadway. The speed limit is 40 mph. Bus stops are provided. There are no bike lanes, and parking is prohibited.

Hawthorn Street is a one-way westbound roadway in the project area and is classified as a Three-Lane Major Arterial. Currently, Hawthorn Street provides three travel lanes from North Harbor Drive to just east of State Street. The speed limit is 30 mph. Parking is generally allowed except between North Harbor Drive and Pacific Highway. There are no bus stops or bike lanes.

Grape Street is a one-way eastbound roadway in the project area and is classified as a Three-Lane Major Arterial. Currently, Grape Street provides three travel lanes from North Harbor Drive to just east of State Street. There is no posted speed limit in the project area. There are no bus stops or bike lanes, and parking is generally allowed.

Harbor Island Drive operates as a Major Arterial between North Harbor Drive and the Harbor Island waterfront. For this portion of the roadway four lanes of divided roadway are provided. Harbor Island Drive along the waterfront operates as a local Collector. For this portion of the roadway, four lanes of undivided roadway are provided. The speed limit in the project area is 35 mph. No curbside parking is allowed; however, three-hour parking pullouts are provided along the south side of the street at regular intervals.

3.2 Existing Traffic Volumes

Table 3–1 is a summary of the most recent available average daily traffic volumes (ADTs) from LLG counts conducted by Traffic Data Services Southwest in August 2008 as well as counts obtained from the City of San Diego *Machine Count Traffic Volumes–City Streets dated 1/1/2003 to 3/28/2008* records. Manual hand counts at the study area intersections were conducted in August 2008.

Figure 3–2 shows the Existing Traffic Volumes. ***Appendix A*** contains the manual count sheets.

57294

TABLE 3–1
EXISTING TRAFFIC VOLUMES

Street Segment	ADT[a]	Date	Source[b]
N. Harbor Drive			
West of Terminal 2 (West Airport Entrance)	27,730[c]	Aug 2008	LLG
Terminal 2 (West Airport Entrance) to Harbor Island Drive	29,750	Aug 2008	LLG
Harbor Island Drive to Rental Car Access Road	81,000	Aug 2008	LLG
Rental Car Access Road to Laurel Street	82,790	Aug 2008	LLG
Laurel Street to Hawthorn Street	54,260	Aug 2008	LLG
Hawthorn Street to Grape Street	37,830	Aug 2008	LLG
South of Grape Street	17,690[c]	Aug 2008	LLG
Pacific Highway			
North of Laurel Street	18,150[c]	Aug 2008	LLG
Laurel Street to Hawthorn Street	9,760[c]	Aug 2008	LLG
Hawthorn Street to Grape Street	18,460	Jun 2007	City of San Diego
South of Grape Street	16,940[c]	Aug 2008	LLG
Laurel Street			
N. Harbor Dr. to Pacific Highway	36,390	Aug 2008	LLG
East of Pacific Highway	27,620	Mar 2007	City of San Diego
Hawthorn Street			
N. Harbor Dr. to Pacific Highway	25,770	Aug 2008	LLG
East of Pacific Highway	23,480	Mar 2008	City of San Diego
Grape Street			
N. Harbor Dr. to Pacific Highway	23,130	Aug 2008	LLG
East of Pacific Highway	20,330[c]	Aug 2008	LLG
Harbor Island Drive			
N. Harbor Drive to Harbor Island Drive	16,330	Aug 2008	LLG
West of Harbor Island Drive	8,610[c]	Aug 2008	LLG
East of Harbor Island Drive	6,940	Aug 2008	LLG

Footnotes:

a. Average Daily Traffic Volumes.

b. LLG commissioned counts conducted by Traffic Data Services Southwest in August 2008.
City of San Diego counts obtained from *City of San Diego's Machine Count Traffic Counts—City Streets 1/1/2003 to 3/28/2008.*

c. ADT was derived from LLG conducted AM/PM peak hour counts in August 2008.

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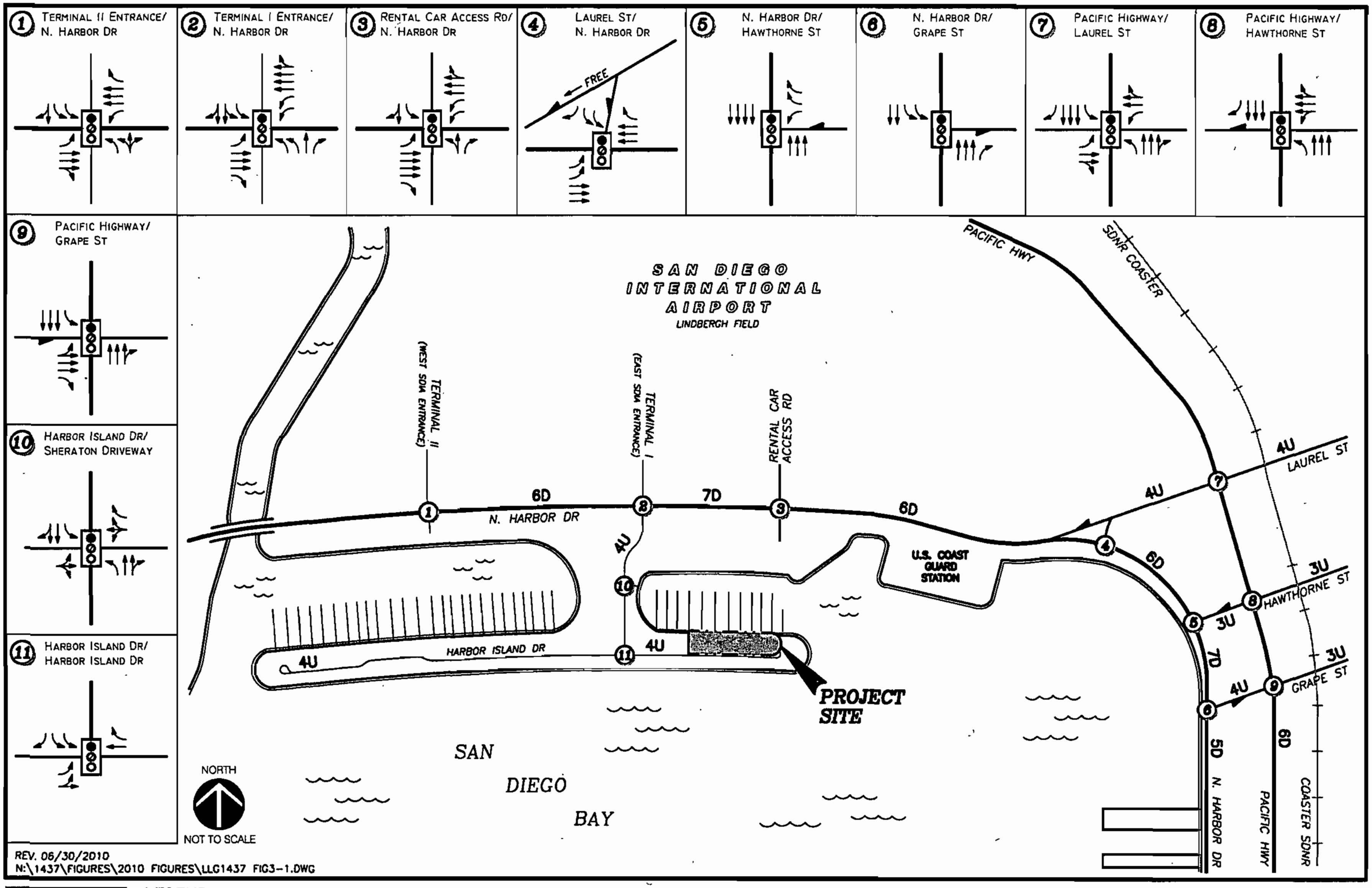

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LEGEND

- Traffic Signal
- BL – Bike Lane
- BS – Bus Stop
- NP – No Parking
- TWLTL – Two-Way Left-Turn Lane
- 2U – Two lane undivided roadway
- 4D – Four lane divided roadway

Figure 3-1

Existing Conditions Diagram

HARBOR ISLAND

183

57791

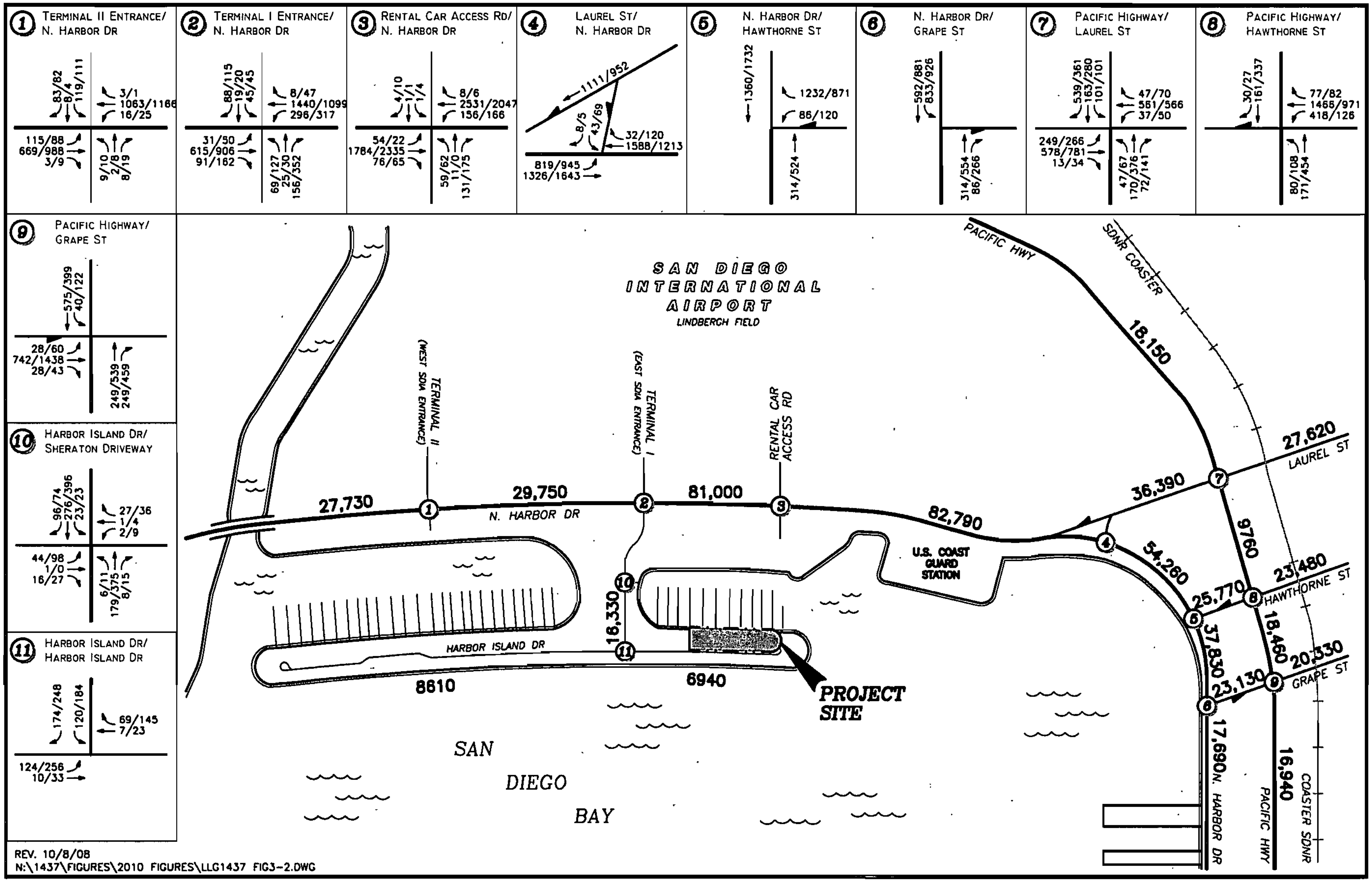

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Figure 3-2

Existing Traffic Volumes AM/PM Peak Hours & ADT

Harbor Island

184

57791

4.0 ANALYSIS APPROACH AND METHODOLOGY

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized and unsignalized intersections, as well as for roadway segments.

4.1 Intersections

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 16 of the *2000 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 6) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). Signalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in ***Appendix B.***

4.2 Street Segments

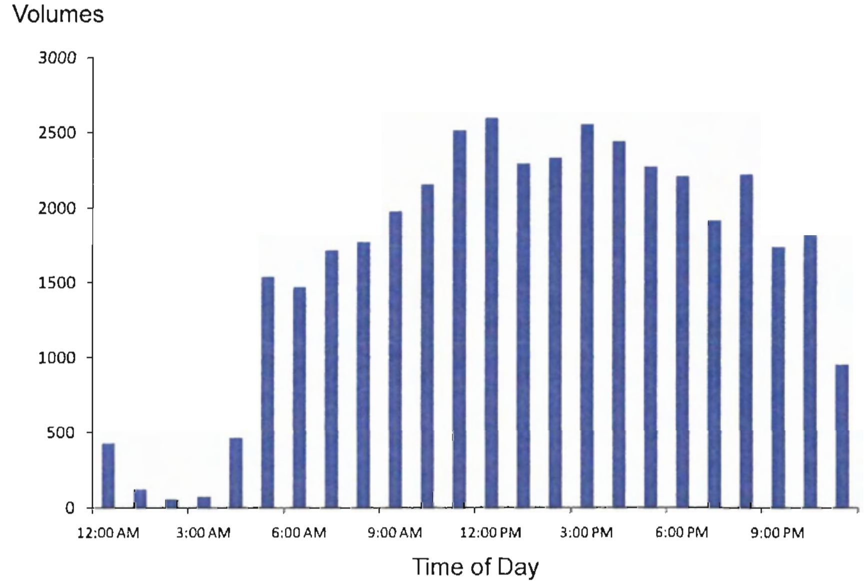
Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of San Diego's *Roadway Classification, Level of Service, and ADT Table*. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics that act predominantly as a "typical" or "standard" roadway with the daily traffic peaking in the AM peak period (7:00-9:00am) and PM peak period (4:00-6:00pm) and the peak periods accounting for approximately 20% of the total daily volume. Volumes occurring between the AM and PM peak periods are lower, and if shown graphically, would appear as a valley between two peaks.

N. Harbor Drive, along with Laurel, Hawthorn, and Grape Streets, are not typical roadways. As shown in the following chart, N. Harbor Drive maintains peak volumes throughout the day (i.e. there is no valley between 9:00am and 4:00pm), and the AM and PM peak periods account for only 11% of the total daily volume. This situation is *unique* to an airport location (i.e. traffic is distributed more uniformly throughout the day), and as such the roadway actually can accommodate a higher daily capacity (ADT) than a typical roadway, about double what the City's ADT table shows.

Despite this fact, this Traffic Impact Study conservatively used the standard capacities provided in the *City of San Diego's Roadway Classification Capacity Table*, which is attached in ***Appendix C***.

57791

NORTH HARBOR DRIVE
EASTBOUND HOURLY TRAFFIC VOLUMES



Note: Traffic data commissioned by LLG on Wednesday, August 20, 2008. Location: N. Harbor Drive between Terminal 1 and U.S. Coast Guard Station.

4.3 Arterial Segments

An ***arterial segment*** analysis provides a detailed level of analysis beyond the street segment analysis. If a street segment is calculated to have an unacceptable LOS based on ADT volumes, then a detailed arterial analysis can be conducted to determine a more appropriate LOS, which includes the effects of adjacent intersection volumes, posted speed limits, distance between intersections and friction from driveways. Arterial analysis worksheets are included in ***Appendix D***.

57791

5.0 SIGNIFICANCE CRITERIA

According to the City of San Diego's *Significance Determination Thresholds* report dated January 2007, a project is considered to have a significant impact if the new project traffic has decreased the operations of surrounding roadways by a City defined threshold. For projects deemed complete on or after January 1, 2007, the City defined threshold by roadway type or intersection is shown in ***Table 5–1***.

The impact is designated either a "direct" or "cumulative" impact. According to the City's *Significance Determination Thresholds* report,

> "*Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term)."
>
> "*Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative)."
>
> It is possible that a project's near term (direct) impacts may be reduced in the long term, as future projects develop and provide additional roadway improvements (for instance, through implementation of traffic phasing plans). In such a case, the project may have direct impacts but not contribute considerably to a cumulative impact."
>
> For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions."

If the project exceeds the thresholds in *Table 5–1*, then the project may be considered to have a significant "direct" or "cumulative" project impact. A significant impact can also occur if a project causes the Level of Service to degrade from D to E, even if the allowable increases in *Table 5–1* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

57791

TABLE 5–1
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

<table>
<tr><th rowspan="3">Level of Service with Project[b]</th><th colspan="6">Allowable Increase Due to Project Impacts[a]</th></tr>
<tr><th colspan="2">Freeways</th><th colspan="2">Roadway Segments</th><th>Intersections</th><th>Ramp Metering</th></tr>
<tr><th>V/C</th><th>Speed (mph)</th><th>V/C</th><th>Speed (mph)</th><th>Delay (sec.)</th><th>Delay (min.)</th></tr>
<tr><td>E</td><td>0.010</td><td>1.0</td><td>0.02</td><td>1.0</td><td>2.0</td><td rowspan="2">1.0[c]</td></tr>
<tr><td>F</td><td>0.005</td><td>0.5</td><td>0.01</td><td>0.5</td><td>1.0</td></tr>
</table>

Footnotes:

a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note b), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped locations). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

c. The impact is only considered significant if the total delay exceeds 15 minutes.

General Notes:

1. Delay = Average control delay per vehicle measured in seconds for intersections, or minutes for ramp meters.
2. LOS = Level of Service
3. V/C = Volume to Capacity Ratio (capacity at LOS E should be used)
4. Speed = Arterial speed measured in miles per hour for Congestion Management Program (CMP) analyses

57791

6.0 ANALYSIS OF EXISTING CONDITIONS

The following is a discussion of the existing Intersection and Street Segment operations in the project area.

6.1 Peak Hour Intersection Levels of Service

Table 6–1 shows that all of the key intersections in the project area are currently operating at acceptable LOS D or better.

6.2 Daily Street Segment Levels of Service

Table 6–2 shows that the street segments in the project area are currently operating at acceptable LOS D or better, with the exception of the following:

- N. Harbor Drive, Harbor Island Drive to Rental Car Access Road—LOS F
- N. Harbor Drive, Rental Car Access Road to Laurel Street—LOS F
- Laurel Street, N. Harbor Drive to Kettner Boulevard—LOS E
- Hawthorn Street, N. Harbor Drive to Pacific Highway—LOS F
- Hawthorn Street, Pacific Highway to Kettner Boulevard—LOS E
- Grape Street, N. Harbor Drive to Kettner Boulevard—LOS E

57791

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Delay[a]	LOS[b]
N. Harbor Drive / Terminal 2 (West Airport Entrance)	Signal	AM PM	17.7 17.2	B B
N. Harbor Dr. / Harbor Island Dr. / Terminal 1 (East Airport Entrance)	Signal	AM PM	20.1 22.3	C C
N. Harbor Drive / Rental Car Access Road	Signal	AM PM	23.8 20.0	C C
N. Harbor Drive / Laurel Street	Signal	AM PM	23.0 39.2	C D
N. Harbor Drive / Hawthorn Street	Signal	AM PM	25.2 30.0	C C
N. Harbor Drive / Grape Street	Signal	AM PM	22.9 20.7	C C
Pacific Highway / Laurel Street	Signal	AM PM	27.8 35.9	C D
Pacific Highway / Hawthorn Street	Signal	AM PM	15.8 12.6	B B
Pacific Highway / Grape Street	Signal	AM PM	10.3 19.0	B B
Harbor Island Drive / Sheraton Driveway	Signal	AM PM	12.7 14.1	B B
Harbor Island Drive / Harbor Island Drive	Signal	AM PM	7.4 7.6	A A

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service. See *Appendix B* for delay thresholds.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

57791

TABLE 6–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Classification [a]	Existing Capacity (LOS E) [a]	ADT[b]	V/C[c]	LOS[d]
N. Harbor Drive					
Nimitz Blvd. to Terminal 2 (West Airport Entrance)	6-ln Prime	60,000	27,730	0.462	B
Terminal 2 (West Airport Entrance) to Harbor Island Dr.	6-ln Prime	60,000	29,750	0.496	B
Harbor Island Dr. to Rental Car Access Road	7-ln Prime	65,000	81,000	1.246	F
Rental Car Access Road to Laurel Street	6-ln Prime	60,000	82,790	1.380	F
Laurel Street to Hawthorn Street	6-ln Prime	60,000	54,260	0.904	D
Hawthorn Street to Grape Street	7-ln Prime	65,000	37,830	0.582	C
South of Grape Street	5-ln Prime	55,000	17,690	0.322	A
Pacific Highway					
North of Laurel Street	6-ln Major	50,000	18,150	0.363	A
Laurel Street to Hawthorn Street	6-ln Major	50,000	9,760	0.195	A
Hawthorn Street to Grape Street	6-ln Major	50,000	18,460	0.369	A
South of Grape Street	6-ln Major	50,000	16,940	0.339	A
Laurel Street					
N. Harbor Dr. to Pacific Highway	4-ln Major	40,000	36,390	0.910	E
East of Pacific Highway	4-ln Collector	30,000	27,620	0.921	E
Hawthorn Street					
N. Harbor Dr. to Pacific Highway	3-ln Major (one-way)	25,000	25,770	1.031	F
East of Pacific Highway	3-ln Major (one-way)	25,000	23,480	0.939	E
Grape Street					
N. Harbor Dr. to Pacific Highway	3-ln Major (one-way)	25,000	23,130	0.925	E
East of Pacific Highway	3-ln Major (one-way)	25,000	20,330	0.813	E
Harbor Island Drive					
N. Harbor Dr. to Harbor Island Dr.	4-ln Major	40,000	16,330	0.408	B
West of Harbor Island Dr.	4-ln Collector	30,000	8,610	0.287	A
East of Harbor Island Dr.	4-ln Collector	30,000	6,940	0.231	A

Footnotes:

a. Classifications and Capacities based on City of San Diego's Roadway Classification & LOS table (See Appendix C).
b. Average Daily Traffic
c. Volume to Capacity ratio
d. Level of Service

57791

7.0 CUMULATIVE PROJECTS

To account for the extensive development occurring near the project area in downtown San Diego, LLG derived a growth factor, based on Year 2030 volumes obtained from SANDAG, to account for near-term background traffic. By comparing existing volumes to Year 2030 volumes, LLG calculated a percentage of growth over a span of 22 years (Year 2008 to Year 2030). Assuming the Year 2012 as "Opening Day", LLG determined what portion of this growth would occur by this year, and calculated a "growth factor" for the eight corridors in the project area—N. Harbor Drive, Pacific Highway, Laurel Street, Hawthorn Street, Grape Street, Harbor Island Drive (connecting N. Harbor Drive to Harbor Island Drive), and Harbor Island Drive. The growth factors range from 2.6% to 14.8% for the four years. The growth factors were applied to the existing turn movements and ADTs in order to generate the cumulative projects volumes.

Appendix E contains the Cumulative Growth Factor Calculation Sheets.

Figure 7–1 shows the Existing + Cumulative Projects traffic volumes.

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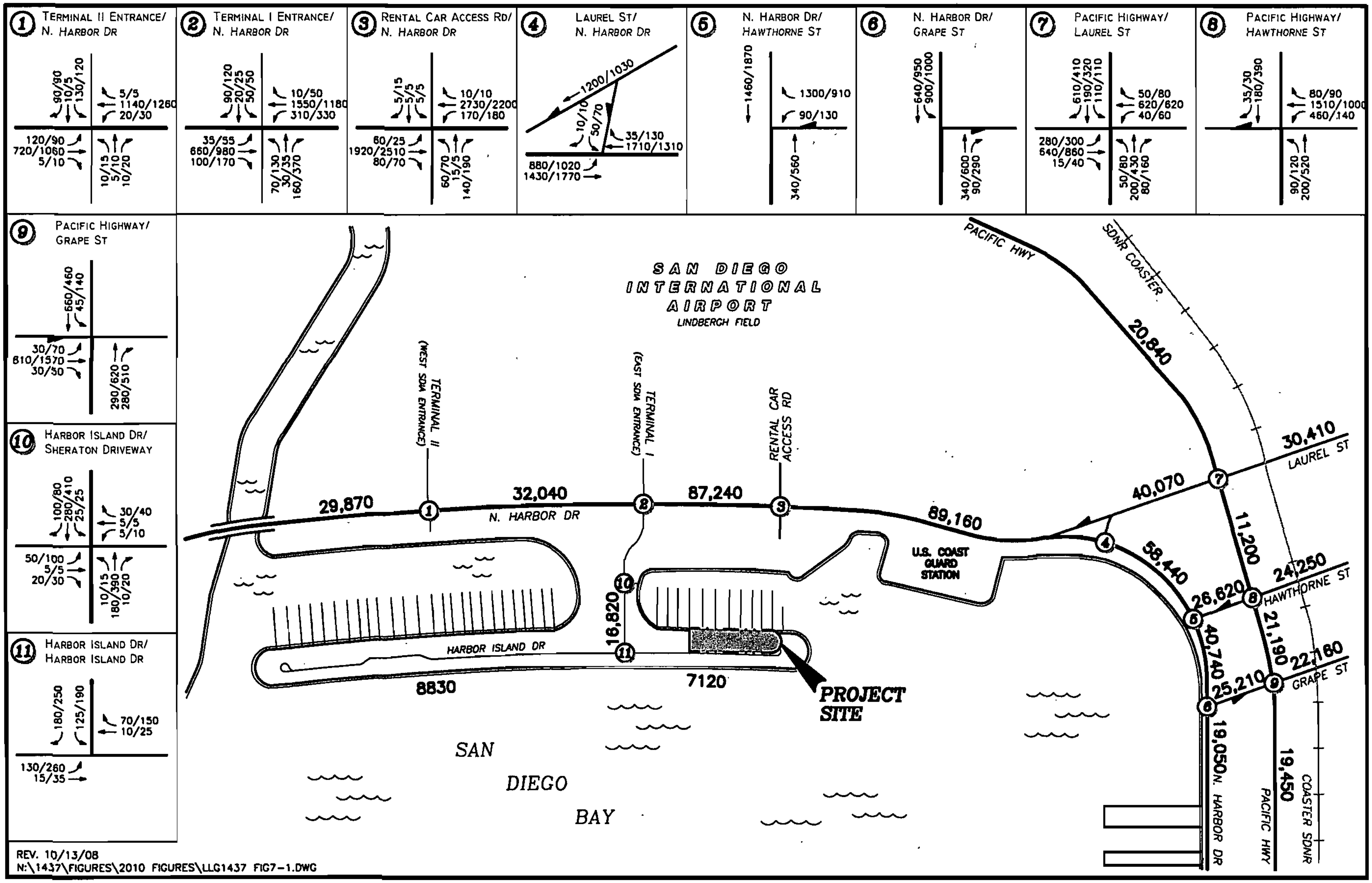

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Figure 7-1

Existing + Cumulative Projects Traffic Volumes AM/PM Peak Hours & ADT

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193

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8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

8.1 Trip Generation

Trip generation estimates for the proposed development were based on *The City of San Diego Trip Generation Manual, May 2003* and *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates*. The active component of the existing site includes a 600-slip marina with an ancillary building. The project proposes no changes in land use intensity for the 600-slip marina. The City of San Diego "Marina" rate was used to calculate the traffic generation for the marina. In addition to the existing marina, the project plans to construct a 175-room limited service hotel. SANDAG's "Business Hotel" Rate was used to calculate the traffic generated by the hotel as it best fits the description of the type of hotel proposed by the project.

Table 8–1 tabulates the total net project traffic generation. The existing marina is calculated to generate approximately 2,400 ADT with 22 inbound / 50 outbound trips during the AM peak hour and 101 inbound / 67 outbound trips during the PM peak hour. These trips were subtracted from the total trips calculated for the development, resulting in a total net project trips for the project of approximately 1,225 ADT with 39 inbound / 59 outbound trips during the AM peak hour and 66 inbound / 44 outbound trips during the PM peak hour.

TABLE 8–1
PROJECT TRIP GENERATION

Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour				PM Peak Hour			
		Rate	Volume	% of ADT[c]	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
Proposed Project											
Hotel	175rooms	7 /room[a]	1,225	8%	40:60	39	59	9%	60:40	66	44
Marina	600berths	4 /berth[b]	2,400	3%	30:70	22	50	7%	60:40	101	67
Subtotal (proposed project):		—	**3,625**	—	—	**61**	**109**	—	—	**167**	**111**
Existing Marina (600 berths)		—	*-2,400*	—	—	*-22*	*-50*	—	—	*-101*	*-67*
Net Project Trips:		—	**1,225**	—	—	**39**	**59**	—	—	**66**	**44**

Footnotes:

a. Rate is based on SANDAG's *(Not So)* Brief Guide of Vehicular Traffic Generation Rates, "*Business Hotel.*"
b. Rate is based on City of San Diego's Trip Generation Rate Summary Table and includes "ancillary uses".
c. ADT = Average Daily Traffic

57791

8.2 Trip Distribution/Assignment

Project-generated traffic was distributed and assigned to the study area network. The directional distribution of the development traffic approaching and departing the site is a function of access parameters, roadway system characteristics (i.e. project's proximity to the San Diego International Airport), near-term and future travel patterns, and the efficiency of the study area roadways.

Project trip distribution for the *Harbor Island* project was based on the *SANDAG Series 11* Select Zone Assignment with a 2030 horizon year. The Model distributes project trips to the surrounding network on a regional level based on network zone trip productions and attractions.

Figure 8–1 depicts the estimated project traffic distribution in the site environs. ***Figure 8–2*** shows the Project traffic volumes. ***Figure 8–3*** shows the resultant Existing + Cumulative Projects + Project traffic volumes.

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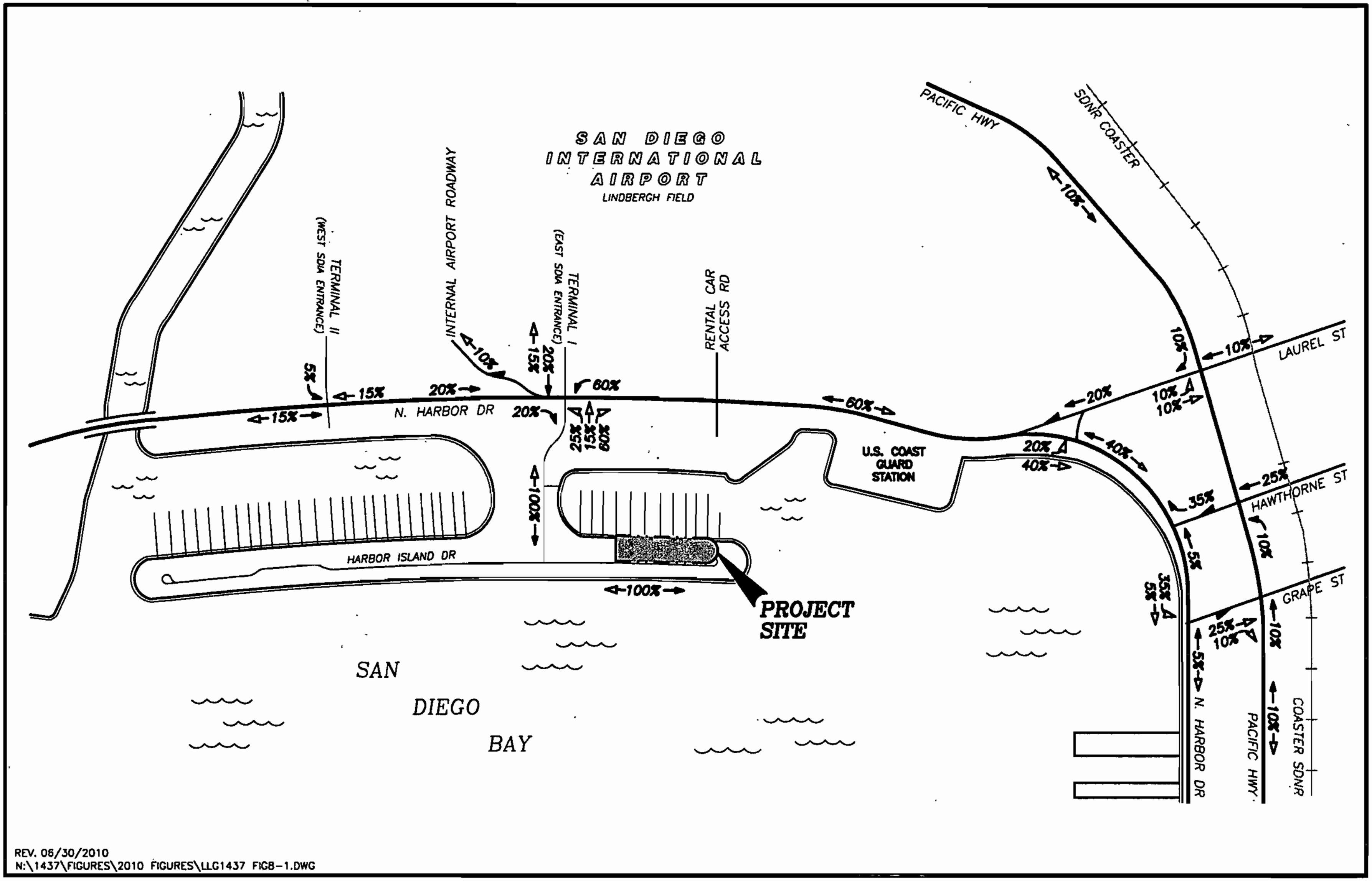

LEGEND

XX% – Regional Trip Distribution
XX% – Outbound Distribution
XX% – Inbound Distribution

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Figure 8-1

Regional Traffic Distribution

HARBOR ISLAND

57791

196

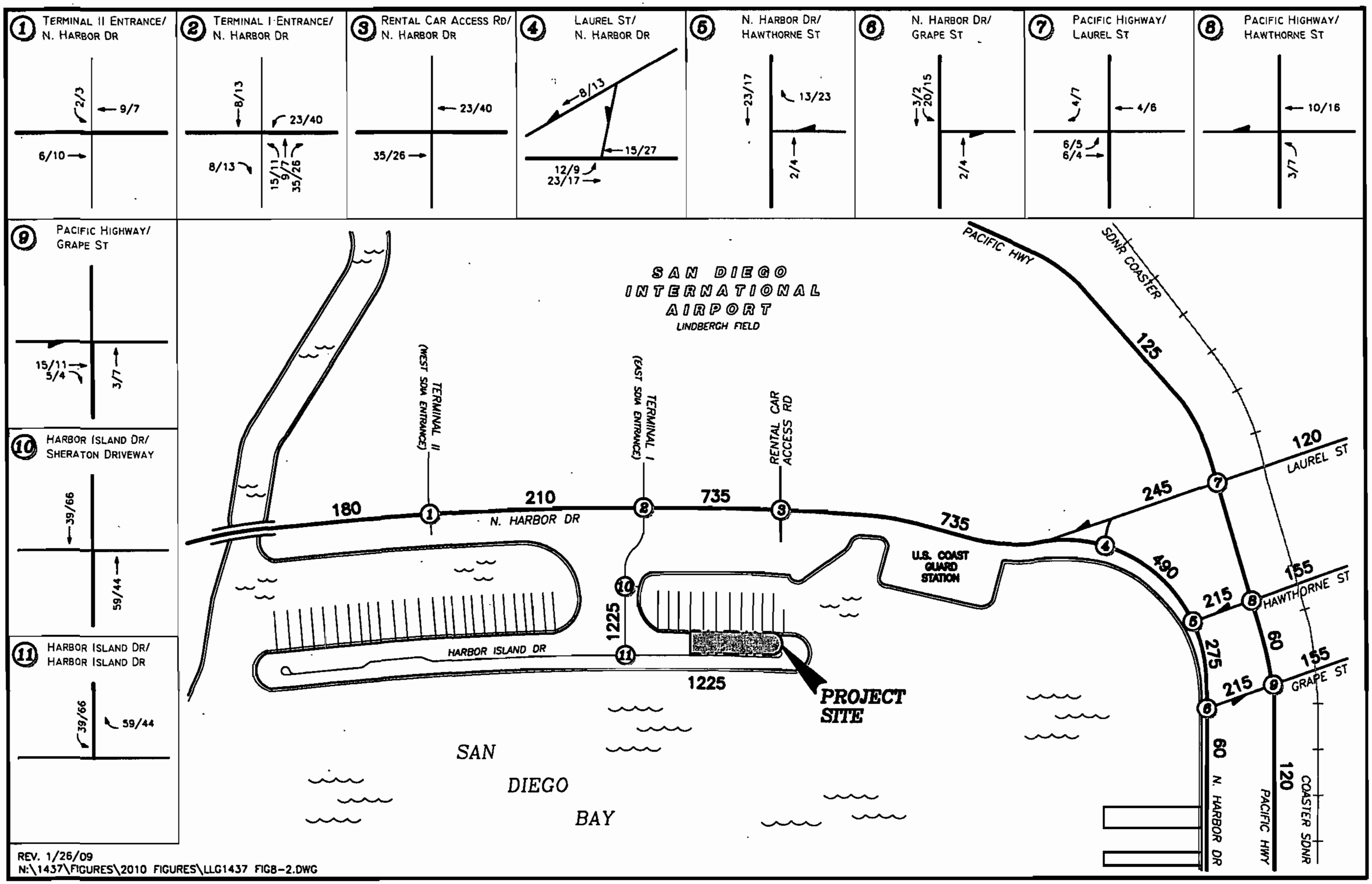

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Figure 8-2

Project Traffic Volumes AM/PM Peak Hours & ADT

HARBOR ISLAND

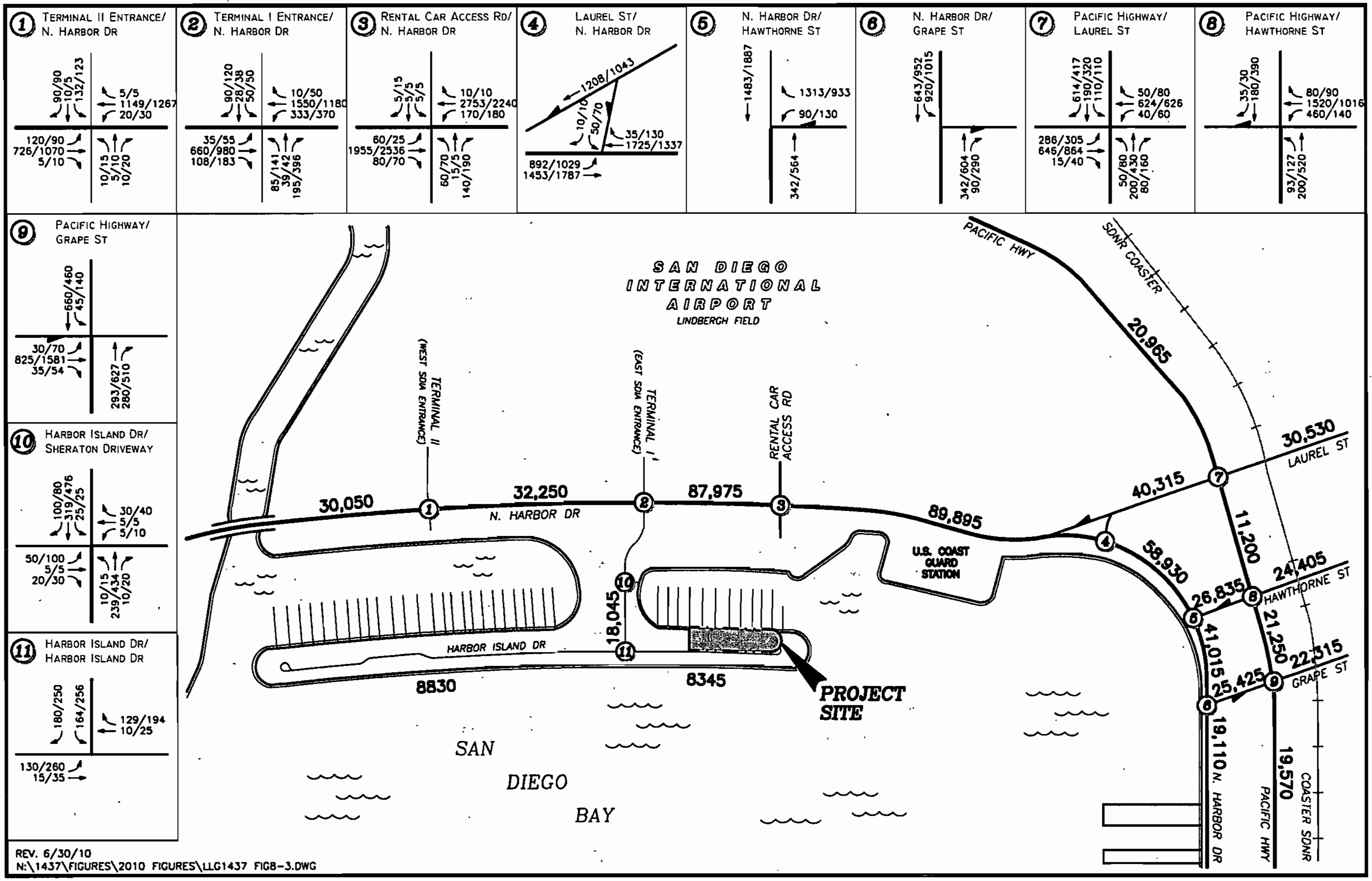

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Figure 8-3

Existing + Cumulative Projects + Project Traffic Volumes AM/PM Peak Hours & ADT

HARBOR ISLAND

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9.0 ANALYSIS OF NEAR-TERM SCENARIOS

The following is a discussion of the results of the intersection, segment, and arterial analyses for the Near-Term scenario. ***Tables 9–1, 9–2,*** and 9–3 summarize the Near-Term Intersection Operations, Street Segment Operations, and Arterial Operations, respectively.

9.1 Existing + Cumulative Projects

9.1.1 *Intersection Analysis*

With the addition of cumulative projects traffic volumes, *Table 9–1* shows that the intersections in the project area continue to operate at acceptable LOS D or better.

9.1.2 *Segment Operations*

Similarly, with the addition of cumulative projects traffic volumes, *Table 9–2* shows that the street segments in the project area are calculated to continue operating at acceptable LOS D or better with the exception of the following:

- N. Harbor Drive, Harbor Island Drive to Rental Car Access Road—LOS F
- N. Harbor Drive, Rental Car Access Road to Laurel Street—LOS F
- N. Harbor Drive, Laurel Street to Hawthorn Street—LOS E
- Laurel Street, N. Harbor Drive to Kettner Boulevard—LOS F
- Hawthorn Street, N. Harbor Drive to Pacific Highway—LOS F
- Hawthorn Street, Pacific Highway to Kettner Boulevard—LOS E
- Grape Street, N. Harbor Drive to Pacific Highway—LOS F
- Grape Street, Pacific Highway to Kettner Boulevard—LOS E

9.2 Existing + Cumulative Projects + Project

9.2.1 *Intersection Analysis*

With the addition of the project traffic volumes, minor changes in delays at the study intersections are calculated as compared to the Existing + Cumulative Projects scenario. *Table 9–1* shows that the intersections in the project area are calculated to continue operating at acceptable LOS D or better.

The project is calculated to have no significant impacts at the study intersections in the Near-Term.

9.2.2 *Segment Operations*

With the addition of project traffic volumes, the changes in volume-to-capacity values are minimal as compared to the Existing + Cumulative Projects scenario. *Table 9–2* shows that the street segments in the project area are calculated to continue operating at acceptable LOS D or better with the exception of the following:

- N. Harbor Drive, Harbor Island Drive to Rental Car Access Road—LOS F
- N. Harbor Drive, Rental Car Access Road to Laurel Street—LOS F
- N. Harbor Drive, Laurel Street to Hawthorn Street—LOS E
- Laurel Street, N. Harbor Drive to Kettner Boulevard—LOS F

57791

- Hawthorn Street, N. Harbor Drive to Pacific Highway—LOS F
- Hawthorn Street, Pacific Highway to Kettner Boulevard—LOS E
- Grape Street, N. Harbor Drive to Pacific Highway—LOS F
- Grape Street, Pacific Highway to Kettner Boulevard—LOS E

Field observations reveal that the "failing" street segments operate without major congestion. Despite the City's threshold, indicating these segments are failing, no significant project impact is expected since the segments are built to their ultimate roadway classification and no significant impacts were calculated for the arterials (Section 9.3) or adjacent intersections (Section 9.1). ***Therefore, no significant segment impacts are expected under Near-Term conditions.***

9.3 Arterial Levels of Service

Arterial analysis was performed for N. Harbor Drive between Harbor Island Drive and Rental Car Access Road and between Rental Car Access Road and Laurel Street under Near-Term conditions. The results of the analysis are shown in ***Table 9–3***.

All roadway segments operate at acceptable speeds, LOS C or better. ***No significant arterial impacts were calculated under Near-Term conditions.***

57791

TABLE 9–1
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Cumulative Projects		Existing + Cumulative Projects + Project			Sig?[d]
			Delay[a]	LOS[b]	Delay	LOS	Delay	LOS	Δ[c]	
N. Harbor Dr./Terminal 2 (West Airport Entrance)	Signal	AM	17.7	B	18.4	B	18.5	B	0.1	No
		PM	17.2	B	17.5	B	17.6	B	0.1	No
N. Harbor Dr./Harbor Island Dr./ Terminal 1 (East Airport Entrance)	Signal	AM	20.1	C	29.7	C	31.0	C	1.3	No
		PM	22.3	C	31.4	C	35.3	D	3.9	No
N. Harbor Drive/Rental Car Access Road	Signal	AM	23.8	C	30.4	C	31.7	C	1.3	No
		PM	20.0	C	25.9	C	27.4	C	1.5	No
N. Harbor Drive/Laurel Street	Signal	AM	23.0	C	27.1	C	28.8	C	1.7	No
		PM	39.2	D	45.3	D	46.6	D	1.3	No
N. Harbor Drive/Hawthorn Street	Signal	AM	25.2	C	35.2	D	35.8	D	0.6	No
		PM	30.0	C	41.3	D	41.8	D	0.5	No
N. Harbor Drive/Grape Street	Signal	AM	22.9	C	32.5	C	32.6	C	0.1	No
		PM	20.7	C	36.3	D	38.0	D	1.7	No
Pacific Highway/Laurel Street	Signal	AM	27.8	C	36.1	D	36.9	D	0.8	No
		PM	35.9	D	44.6	D	46.4	D	1.8	No
Pacific Highway/Hawthorn Street	Signal	AM	15.8	B	18.4	B	18.7	B	0.3	No
		PM	12.6	B	13.1	B	13.2	B	0.1	No
Pacific Highway/Grape Street	Signal	AM	10.3	B	11.4	B	11.5	B	0.1	No
		PM	19.0	B	21.8	C	22.1	C	0.3	No
Harbor Island Drive/Sheraton Driveway	Signal	AM	12.7	B	14.1	B	14.3	B	0.2	No
		PM	14.1	B	14.2	B	14.2	B	0.0	No
Harbor Island Drive/Harbor Island Drive	Signal	AM	7.4	A	7.6	A	8.0	A	0.4	No
		PM	7.6	A	8.2	A	8.2	A	0.0	No

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service. See *Appendix B* for delay thresholds.
c. Δ denotes an increase in delay due to project.
d. Sig? denotes "Significant Impact"

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

57791

TABLE 9–2
NEAR-TERM STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E)[a]	Existing			Existing + Cumulative Projects			Existing + Cumulative Projects + Project				Sig?[f]
		ADT[b]	V/C[c]	LOS[d]	ADT	V/C	LOS	ADT	V/C	LOS	Δ[e]	
N. Harbor Drive												
West of Terminal 2 (SDIA)	60,000	27,730	0.462	B	29,870	0.498	B	30,050	0.501	B	0.003	No
Terminal 2 (SDIA) to Harbor Island Dr.	60,000	29,750	0.496	B	32,040	0.534	B	32,250	0.538	B	0.004	No
Harbor Island Dr. to Rental Car Access Rd.	65,000	81,000	1.246	**F**	87,240	1.342	**F**	87,975	1.353	**F**	**0.011**	**No[g]**
Rental Car Access Road to Laurel St.	60,000	82,790	1.380	**F**	89,160	1.486	**F**	89,895	1.498	**F**	**0.012**	**No[g]**
Laurel Street to Hawthorn Street	60,000	54,260	0.904	D	58,440	0.974	**E**	58,930	0.982	**E**	0.008	No
Hawthorn Street to Grape Street	65,000	37,830	0.582	C	40,740	0.627	C	41,015	0.631	C	0.004	No
South of Grape Street	55,000	17,690	0.322	A	19,050	0.346	A	19,110	0.347	A	0.001	No
Pacific Highway												
North of Laurel Street	50,000	18,150	0.363	A	20,840	0.417	B	20,965	0.419	B	0.002	No
Laurel Street to Hawthorn Street	50,000	9,760	0.195	A	11,200	0.224	A	11,200	0.224	A	0.000	No
Hawthorn Street to Grape Street	50,000	18,460	0.369	A	21,190	0.424	B	21,250	0.425	B	0.001	No
South of Grape Street	50,000	16,940	0.339	A	19,450	0.389	A	19,570	0.391	A	0.002	No
Laurel Street												
N. Harbor Dr. to Pacific Highway	40,000	36,390	0.910	**E**	40,070	1.002	**F**	40,315	1.008	**F**	0.006	No
East of Pacific Highway	30,000	27,620	0.921	**E**	30,410	1.014	**F**	30,530	1.018	**F**	0.004	No
Hawthorn Street												
N. Harbor Dr. to Pacific Highway	25,000	25,770	1.031	**F**	26,620	1.065	**F**	26,835	1.073	**F**	0.008	No
East of Pacific Highway	25,000	23,480	0.939	**E**	24,250	0.970	**E**	24,405	0.976	**E**	0.006	No
Grape Street												
N. Harbor Dr. to Pacific Highway	25,000	23,130	0.925	**E**	25,210	1.008	**F**	25,425	1.017	**F**	0.009	No
East of Pacific Highway	25,000	20,330	0.813	**E**	22,160	0.886	**E**	22,315	0.893	**E**	0.007	No
Harbor Island Drive												
N. Harbor Dr. to Harbor Island Dr.	40,000	16,330	0.408	B	16,820	0.421	B	18,045	0.451	B	0.030	No
West of Harbor Island Dr.	30,000	8,610	0.287	A	8,830	0.294	A	8,830	0.294	A	0.000	No
East of Harbor Island Dr.	30,000	6,940	0.231	A	7,120	0.237	A	8,345	0.278	A	0.041	No

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table (See *Appendix C*).
b. Average Daily Traffic
c. Volume to Capacity ratio
d. Level of Service
e. Δ denotes a project-induced increase in the Volume to Capacity ratio.
f. Sig? denotes "Significant Impact"
g. Despite the threshold exceeded, no significant impact is expected since the segment is built to its ultimate roadway classification and no impact was calculated for the arterial or adjacent intersections.

57791

TABLE 9–3
NEAR-TERM ARTERIAL OPERATIONS

Arterial Segment	Period	Direction	Existing		Existing + Cumulative Projects		Existing + Cumulative Project + Project		Speed Decrease	Sig[c]
			Speed[a]	LOS[b]	Speed	LOS	Speed	LOS		
N. Harbor Drive Harbor Island Dr. to Rental Car Access Rd.	AM	EB	20.4	B	20.2	B	20.1	B	0.1	No
		WB	15.9	C	14.2	C	13.8	C	0.4	No
	PM	EB	17.8	C	15.8	C	15.4	C	0.4	No
		WB	18.5	C	17.1	C	16.9	C	0.2	No
N. Harbor Drive Rental Car Access Rd. to Laurel St.	AM	EB	22.4	B	22.4	B	22.4	B	0.0	No
		WB	18.8	C	18.2	C	18.2	C	0.0	No
	PM	EB	22.0	B	22.0	B	22.0	B	0.0	No
		WB	19.4	B	19.3	B	19.3	B	0.0	No

Footnotes:

a. Speed in miles per hour.
b. Level of Service.
c. Sig = significant project impact based on significance criteria.

57791

10.0 ANALYSIS OF LONG-TERM SCENARIOS

The following is a discussion of the Year 2030 without and with project operations. It is necessary to estimate future traffic volumes in order to determine if the planned circulation system could accommodate project traffic volumes.

The source for the Year 2030 traffic volumes is the Series 11 Forecast Model from SANDAG. The San Diego International Airport is assumed at its current location for the Year 2030.

Figure 10–1 illustrates the Year 2030 without Project Traffic Volumes. ***Figure 10–2*** illustrates the Year 2030 with Project Traffic Volumes.

10.1 Year 2030 Without Project

10.1.1 *Intersection Analysis*

Table 10–1 summarizes the future intersection operations for the Year 2030. As shown, intersection operations degrade considerably in the long-term as compared to the near-term, with some of the study area intersections calculated to operate at LOS D or better, but many operating at LOS E or F as outlined below:

- N. Harbor Dr./Harbor Island Dr./Terminal 1—LOS F in the PM peak hour
- N. Harbor Dr./Rental Car Access Road—LOS F in the AM and PM peak hours
- N. Harbor Dr./Laurel Street—LOS F in the AM and PM peak hours
- N. Harbor Dr./Hawthorn Street—LOS F in the AM and PM peak hours
- Pacific Highway/Laurel Street—LOS F in the AM and PM peak hours
- Pacific Highway/Hawthorn Street—LOS F in the AM and LOS E in the PM peak hours
- Pacific Highway/Grape Street—LOS F in the PM peak hour

10.1.2 *Segment Operations*

Table 10–2 summarizes the future street segment operations for the Year 2030. As shown, all study area segments are calculated to operate at LOS D or better, with the exception of the following segments:

- N. Harbor Drive, West of Terminal 2 (SDIA)—LOS F
- N. Harbor Drive, Harbor Island Drive to Rental Car Access Road—LOS F
- N. Harbor Drive, Rental Car Access Road to Laurel Street—LOS F
- N. Harbor Drive, Laurel Street to Hawthorn Street—LOS F
- Pacific Highway, North of Laurel Street—LOS F
- Laurel Street, N. Harbor Drive to Kettner Boulevard—LOS F
- Hawthorn Street, N. Harbor Drive to Kettner Boulevard—LOS F
- Grape Street, N. Harbor Drive to Kettner Boulevard—LOS F

57791

10.2 Year 2030 With Project

10.2.1 *Intersection Analysis*

With the addition of the project traffic volumes, intersection operations are similar to Year 2030. *Table 10–1* shows that the following intersections in the project area are calculated to operate at LOS E or F:

- N. Harbor Dr./Harbor Island Dr./Terminal 1—LOS E in the AM & LOS F in the PM peak hours
- N. Harbor Dr./Rental Car Access Road—LOS F in the AM and PM peak hours
- N. Harbor Dr./Laurel Street—LOS F in the AM and PM peak hours
- N. Harbor Dr./Hawthorn Street—LOS F in the AM and PM peak hours
- Pacific Highway/Laurel Street—LOS F in the AM and PM peak hours
- Pacific Highway/Hawthorn Street—LOS F in the AM and LOS E in the PM peak hours
- Pacific Highway/Grape Street—LOS F in the PM peak hour

The project is calculated to have significant impacts at the following intersections in the Long-Term (Year 2030):

- N. Harbor Dr./Harbor Island Dr./Terminal 1—AM and PM peak hours
- N. Harbor Dr./Rental Car Access Road—AM and PM peak hours
- N. Harbor Dr./Laurel Street—PM peak hour
- Pacific Highway/Hawthorn Street—AM peak hour

The significance of these impacts is discussed later in Section 14.0 of this report.

10.2.2 *Segment Operations*

With the addition of project traffic volumes, *Table 10–2* shows that the following street segments in the project area are calculated to continue operating at LOS F:

- N. Harbor Drive, West of Terminal 2 (SDIA)—LOS F
- N. Harbor Drive, Harbor Island Drive to Rental Car Access Road—LOS F
- N. Harbor Drive, Rental Car Access Road to Laurel Street—LOS F
- N. Harbor Drive, Laurel Street to Hawthorn Street—LOS F
- Pacific Highway, North of Laurel Street—LOS F
- Laurel Street, N. Harbor Drive to Kettner Boulevard—LOS F
- Hawthorn Street, N. Harbor Drive to Kettner Boulevard—LOS F
- Grape Street, N. Harbor Drive to Kettner Boulevard—LOS F

The project is calculated to have significant impacts at the following segments in the Long-Term (Year 2030):

- N. Harbor Drive, Harbor Island Drive to Rental Car Access Road
- N. Harbor Drive, Rental Car Access Road to Laurel Street

57791

The significance of these impacts is discussed later in Section 14.0 of this report.

Table 10–1
Long-Term (Year 2030) Intersection Operations

Intersection	Peak Hour	Year 2030 Delay[a]	Year 2030 LOS[b]	Year 2030 + Project Delay	Year 2030 + Project LOS	Year 2030 + Project Δ[c]	Sig?[d]
N. Harbor Drive / Terminal 2 (West Airport Entrance)	AM	45.9	D	46.3	D	0.4	No
	PM	41.5	D	41.8	D	0.3	No
N. Harbor Dr. / Harbor Island Dr. / Terminal 1 (East Airport Entrance)	AM	51.2	D	56.9	**E**	**5.7**	**Yes**
	PM	86.6	**F**	89.1	**F**	**2.5**	**Yes**
N. Harbor Drive / Rental Car Access Road	AM	169.8	**F**	171.8	**F**	**2.0**	**Yes**
	PM	159.0	**F**	163.7	**F**	**4.7**	**Yes**
N. Harbor Drive / Laurel Street	AM	98.1	**F**	98.9	**F**	0.8	No
	PM	124.1	**F**	127.0	**F**	**2.9**	**Yes**
N. Harbor Drive / Hawthorn Street	AM	96.8	**F**	97.4	**F**	0.6	No
	PM	110.9	**F**	111.6	**F**	0.7	No
N. Harbor Drive / Grape Street	AM	42.0	D	44.2	D	2.2	No
	PM	44.3	D	46.8	D	2.5	No
Pacific Highway / Laurel Street	AM	159.0	**F**	159.9	**F**	0.9	No
	PM	183.8	**F**	184.8	**F**	1.0	No
Pacific Highway / Hawthorn Street	AM	86.1	**F**	87.5	**F**	**1.4**	**Yes**
	PM	55.9	**E**	56.5	**E**	0.6	No
Pacific Highway / Grape Street	AM	16.8	B	16.9	B	0.1	No
	PM	161.4	**F**	162.4	**F**	1.0	No
Harbor Island Drive / Sheraton Driveway	AM	14.5	B	14.6	B	0.1	No
	PM	14.5	B	14.7	B	0.2	No
Harbor Island Drive / Harbor Island Drive	AM	8.6	A	9.0	A	0.4	No
	PM	10.6	B	11.8	B	1.2	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service. See *Appendix B* for delay thresholds.
c. Δ denotes an increase in delay due to project.
d. Sig? denotes "Significant Impact"

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

57791

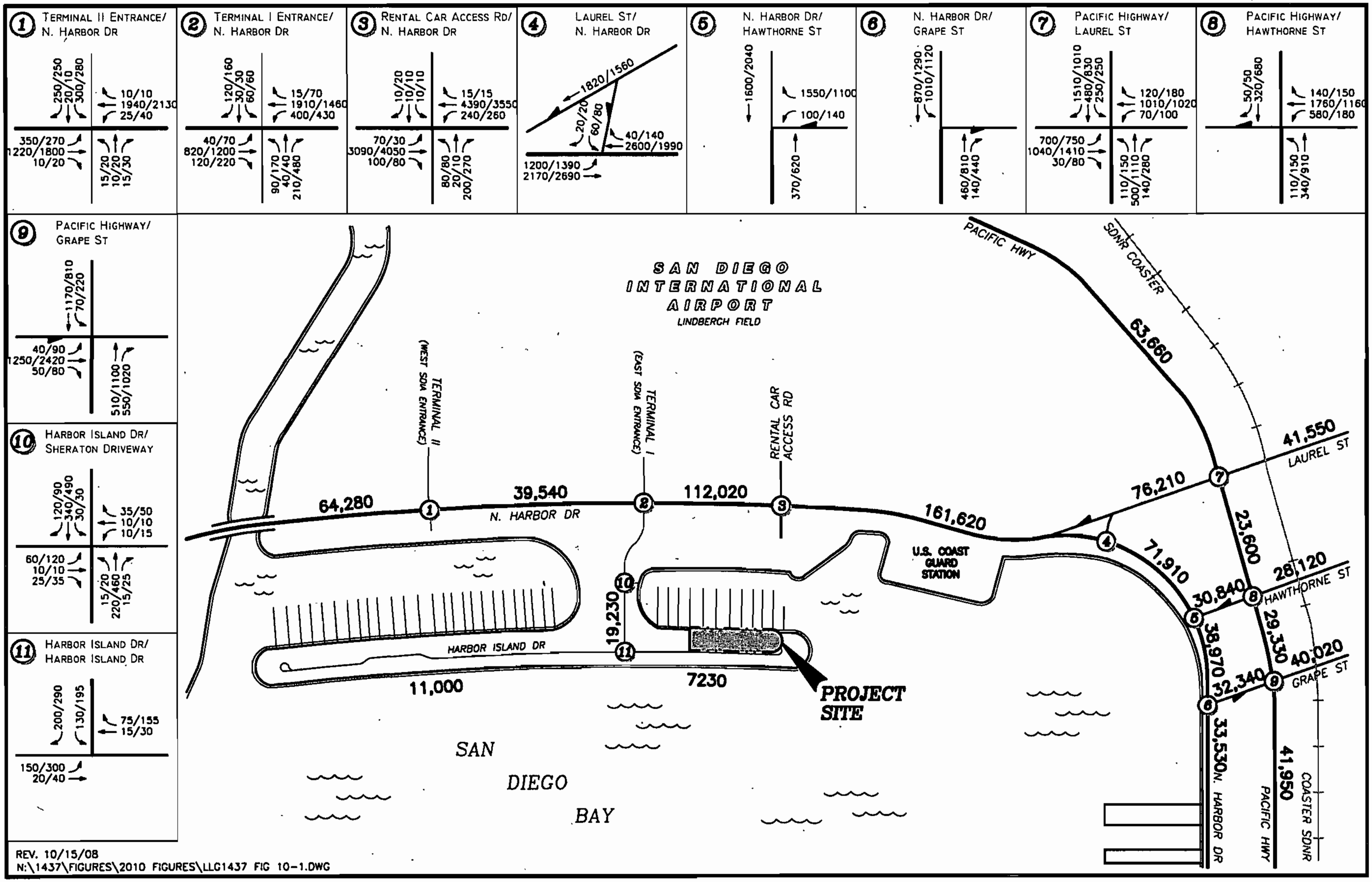
TABLE 10–2
LONG-TERM (YEAR 2030) STREET SEGMENT OPERATIONS

Street Segment	Buildout Capacity (LOS E)[a]	Year 2030			Year 2030 + Project				Sig?[f]
		ADT[b]	V/C[c]	LOS[d]	ADT	V/C	LOS	Δ[e]	
N. Harbor Drive									
Nimitz Blvd. to Terminal 2 (SDIA)	60,000	64,280	1.071	**F**	64,460	1.074	**F**	0.003	No
Terminal 2 (SDIA) to Harbor Island Dr.	60,000	39,540	0.659	C	39,750	0.663	C	0.004	No
Harbor Island Dr. to Rental Car Access Rd.	65,000	112,020	1.723	**F**	112,755	1.735	**F**	**0.012**	**Yes**
Rental Car Access Road to Laurel Street	60,000	161,620	2.694	**F**	162,355	2.706	**F**	**0.012**	**Yes**
Laurel Street to Hawthorn Street	60,000	71,910	1.199	**F**	72,400	1.207	**F**	0.008	No
Hawthorn Street to Grape Street	65,000	38,970	0.600	C	39,245	0.604	C	0.004	No
South of Grape Street	55,000	33,530	0.610	C	33,590	0.611	C	0.001	No
Pacific Highway									
North of Laurel Street	50,000	63,660	1.273	**F**	63,785	1.276	**F**	0.003	No
Laurel Street to Hawthorn Street	50,000	23,600	0.472	B	23,600	0.472	B	0.000	No
Hawthorn Street to Grape Street	50,000	29,330	0.587	C	29,390	0.588	C	0.001	No
South of Grape Street	50,000	41,950	0.839	D	42,070	0.841	D	0.002	No
Laurel Street									
N. Harbor Dr. to Pacific Highway	40,000	76,210	1.905	**F**	76,455	1.911	**F**	0.006	No
East of Pacific Highway	30,000	41,550	1.385	**F**	41,670	1.389	**F**	0.004	No
Hawthorn Street									
N. Harbor Dr. to Pacific Highway	25,000	30,840	1.234	**F**	31,055	1.242	**F**	0.008	No
East of Pacific Highway	25,000	28,120	1.125	**F**	28,275	1.131	**F**	0.006	No
Grape Street									
N. Harbor Dr. to Pacific Highway	25,000	32,340	1.294	**F**	32,555	1.302	**F**	0.008	No
East of Pacific Highway	25,000	40,020	1.601	**F**	40,175	1.607	**F**	0.006	No
Harbor Island Drive									
N. Harbor Dr. to Harbor Island Dr.	40,000	19,230	0.481	B	20,455	0.511	C	0.030	No
West of Harbor Island Dr.	30,000	11,000	0.367	B	11,000	0.367	B	0.000	No
East of Harbor Island Dr.	30,000	7,230	0.241	A	8,455	0.282	A	0.041	No

Footnotes:

a. Capacities based on City of San Diego's Roadway Classification & LOS table (See *Appendix C*).
b. Average Daily Traffic
c. Volume to Capacity ratio
d. Level of Service
e. Δ denotes a project-induced increase in the Volume to Capacity ratio
f. Sig? denotes "Significant Impact".

57791



LINSCOTT LAW & GREENSPAN engineers

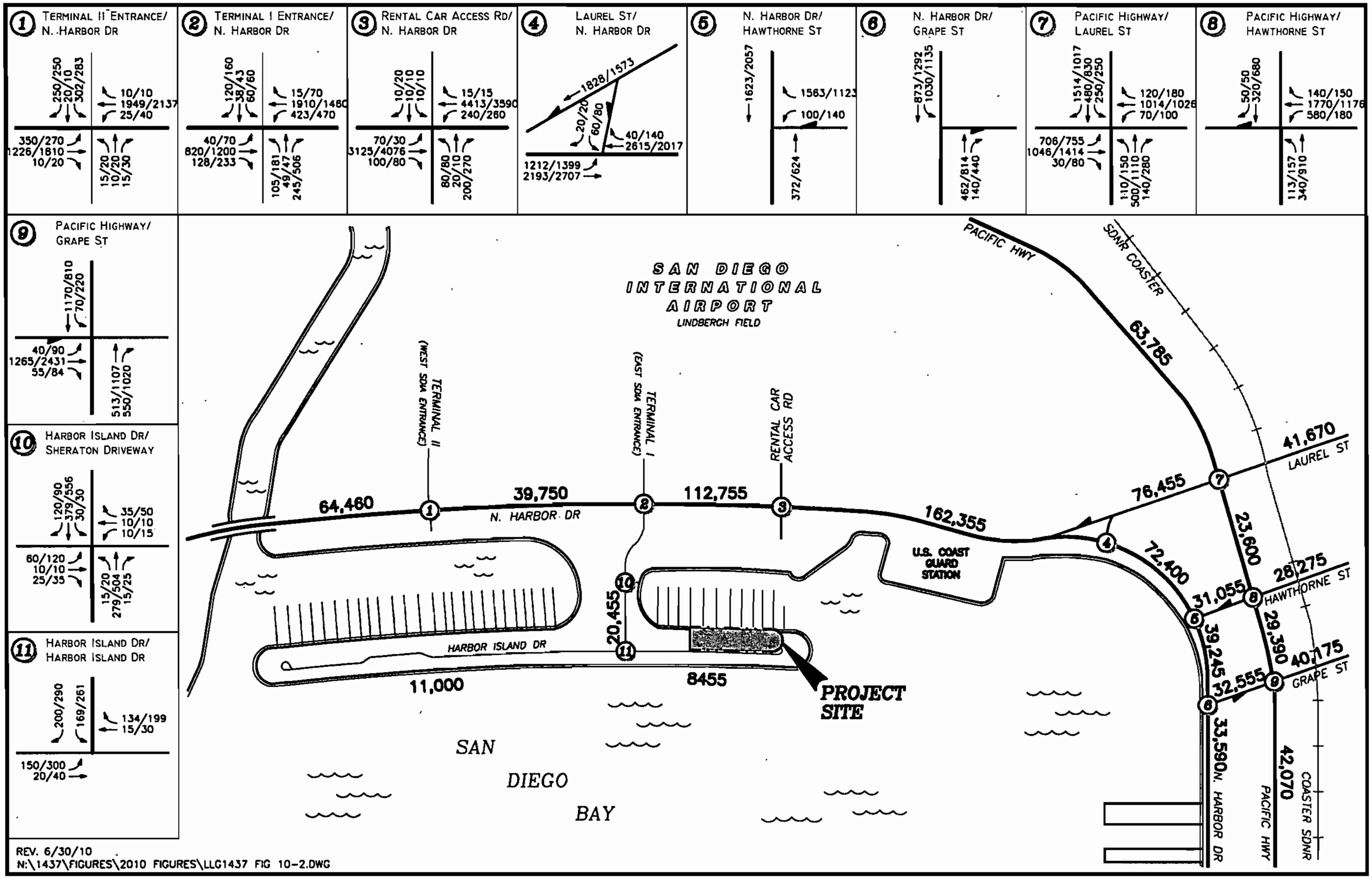
NORTH

NOT TO SCALE

Figure 10-1

Year 2030 Without Project Traffic Volumes AM/PM Peak Hours & ADT

HARBOR ISLAND



NORTH

NOT TO SCALE

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Figure 10-2

Year 2030 With Project Traffic Volumes AM/PM Peak Hours & ADT

HARBOR ISLAND

209

57791

11.0 SITE PLAN ASSESSMENT

The site plan contained in *Figure 2–1* was evaluated for access and circulation issues. Based on this evaluation, LLG offers the following observations.

The site plan shows several driveways on Harbor Island Drive, two serving the westerly parking lot, one serving the easterly parking lot, and two serving the hotel drop-off. No operational problems are anticipated with the proposed driveway locations.

A cul-de-sac is proposed at the east end of the site, providing a turn-around for the general public. The easterly parking lot and the parking field for Island Prime and the Rueben E. Lee are accessed off the turn-around.

The parking lots have no dead-end aisles, which is good. The drop-off area is sufficiently large.

57791

12.0 PARKING DEMAND/SUPPLY ANALYSIS

A parking assessment was undertaken to determine the required parking supply for the *Harbor Island* project. The analysis was performed in two parts. First, a required parking supply was calculated based on the project description with no shared parking considered. Then, a shared parking analysis was performed to account for the different peak parking demands between the marina and hotel land uses of the proposed project.

Without shared parking, a net parking requirement of 306 spaces for the marina and 105 spaces for the hotel is calculated. Since shared parking between the two land uses of the proposed project is expected, a shared parking analysis was performed, using the net parking requirements. The analysis was done for both weekday and weekend scenarios. The calculations show a peak parking demand occurring on a *Weekday* at 7:00PM with 381 spaces required for the development. Therefore, ***a net shared parking requirement of 381 spaces is needed for the Harbor Island project.***

The project proposes 457 spaces of surface parking, which will meet the 381-space shared-parking calculated demand for the project.

The Parking Study, dated July 2, 2010, is contained in ***Appendix F***.

57791

13.0 CONSTRUCTION TRAFFIC

Construction of the project may contribute to traffic delays that are temporary in nature. Construction traffic relates to the traffic generated from construction vehicles. Construction vehicles consist primarily of heavy trucks and worker vehicles. Delay incurred from this activity is of concern since it occurs for a longer period of time and may involve a high number of vehicles. There are several different types of construction activity, including grading, concrete pours, and building structures. Each construction activity has its own intensity and duration. A simple ADT calculation for each construction activity is outlined below based on information provided by SUNROAD Enterprises. A passenger car equivalence (PCE) was applied to large construction trucks.

- **Grading—1 month**
  - 1 heavy trucks/day x 2 trips/heavy truck x 2 PCE = 4 ADT
  - 5 workers vehicles/day x 2 trips/worker vehicle = 10 ADT
  - ***Total*** = ***14 ADT***
- **Concrete pours—1 month**
  - 3 heavy trucks/day x 2 trips/heavy truck x 3 PCE = 18 ADT
  - 15 workers vehicles/day x 2 trips/worker vehicle = 30 ADT
  - ***Total*** = ***48 ADT***
- **Building Structures—8 months at maximum activity**
  - 25 workers vehicles/day x 2 trips/worker vehicle = 50 ADT
  - ***Total*** = ***50 ADT***

The above shows that the maximum construction traffic of 50 ADT is considerably lower than the daily project trips of 1,225 ADT and would be temporary in nature (i.e., 8 months). Therefore, the construction traffic is not expected to cause any significant direct traffic impacts.

LLG also reviewed the possibility of concurrent construction activity due to other cumulative projects in the project vicinity. Based on this review, it was determined that the *2701 North Harbor Drive Demolition* project is anticipated to overlap with the *Harbor Island* project and potentially contribute to a cumulative construction traffic impact. Due to the close proximity of these projects, construction traffic is expected to utilize the same roadways.

The *2701 North Harbor Drive Demolition* project is estimated to generate approximately 206 ADT of construction traffic (see ***Appendix H*** for detailed information). The *Harbor Island* project is estimated to generate 50 ADT of construction traffic during its most traffic intensive phase, as shown in the above calculations. Therefore, the total cumulative construction traffic is 256 ADT (206 + 50).

The cumulative construction traffic (256 ADT) is considerably less than the traffic generated by the land development of the *Harbor Island* project (1,225 ADT) and will be temporary in nature. Since

57791

no Near-Term significant impacts were identified with the *Harbor Island* project, the cumulative construction would not trigger any impacts as well.

Finally, construction traffic control plans must be prepared to identify the routes for heavy construction vehicles and the hours of construction activity. This will reduce the potential impacts and avoid the commuter peak hours. The traffic control plans will detail the work zones and lane closures/transitions. They will be prepared to the requirements of the San Diego Area Regional Standard Drawings & Caltrans standards to the satisfaction of the City Engineer prior to the commencement of work.

57791

14.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

14.1 Significance of Impacts

14.1.1 *Intersection Impacts*

In the Near-Term, the project is calculated to have no significant impacts at the study intersections.

In the Long-Term (Year 2030), the project is calculated to have significant impacts at the following intersections:

- N. Harbor Dr./Harbor Island Dr./Terminal 1—AM and PM peak hours
- N. Harbor Dr./Rental Car Access Road—AM and PM peak hours
- N. Harbor Dr./Laurel Street—PM peak hours
- Pacific Highway/Hawthorn Street—AM peak hour

14.1.2 *Street Segment Impacts*

In the Near-Term, the project is calculated to have no significant impacts at the study street segments.

In the Long-Term, the project is calculated to have significant impacts at the following segments:

- N. Harbor Drive, Harbor Island Drive to Rental Car Access Road—LOS F
- N. Harbor Drive, Rental Car Access Road to Laurel Street—LOS F

14.2 Mitigation Measures and Analyses

The project is calculated to have significant impacts at four study intersections and two street segments. The following summarizes the recommended mitigation measures and project cost participation. ***Table 14–1*** reports the results of intersection mitigation analysis for the Long-Term (Year 2030). ***Table 14–2*** reports the results of street segment mitigation analysis for the Long-Term (Year 2030). ***Table 14–3*** contains the fair-share calculations. The recommended intersection mitigation measures are illustrated in ***Figure 14–1.*** The mitigation intersection calculation sheets are contained in ***Appendix G***.

As shown in the tables, the proposed mitigation would reduce the project impacts to a level of 'not significant'. For the purposes of this report, a level of 'not significant' reflects allowable delay increases within the defined thresholds. Mitigation feasibility would also need to be verified by the Civil Engineer.

LLG reviewed the *San Diego Airport Master Plan–Final Environmental Impact Report* dated April 2008. As part of the Master Plan, there are several segments along North Harbor Drive that are impacted and require mitigation. The specific mitigation includes the widening of North Harbor Drive to nine (9) lanes between Terminal 1 and Rental Car Access Road and seven (7) lanes between Rental Car Access Road and Hawthorn Street. The *Harbor Island* project has three impacted intersections and two impacted street segments contained within this corridor. The following

57791

suggested mitigation measures take into account the planned improvements for North Harbor Drive and would mitigate the long-term intersection impacts.

LLG recommends the *Harbor Island* project contribute a fair share towards the intersection and street segment improvements as part of the San Diego Airport Master Plan planned segment improvements for North Harbor Drive, and that the intersection and street segment configuration/improvements described below be specifically included with the North Harbor Drive widening improvements.

14.2.1 *Intersection Mitigation*

For the Long-Term intersection impacts, the following mitigation measures are suggested:

- ***N. Harbor Dr./Harbor Island Dr./Terminal 1 (East Airport Entrance):*** The applicant will contribute a fair share percentage of 9.0% towards restriping the northbound approach to provide a left-turn lane, a shared left-turn/thru lane, a thru lane, and a right-turn lane. Remove the northbound right-turn lane from a "free" movement and introduce right-turn "overlap" phasing. Retain the north/south "split" signal phasing. Restripe the eastbound approach to convert the right-turn lane to a shared thru/right-turn lane. Modifications to the triangular median in the southeast portion of the intersection are expected. Modifications to the traffic signal timing in conjunction with the change in lane designations are also recommended.

- ***N. Harbor Drive/Rental Car Access Road:*** The applicant will contribute a fair share percentage of 1.8% towards the reconfiguration of the westbound approach to provide an additional thru lane. To accommodate the additional lane, widening and modifications to the median/roadway will be required. Modifications to the traffic signal timing in conjunction with the change in lane destination are also recommended

- ***N. Harbor Drive/Laurel Street:*** The applicant will contribute a fair share percentage of 2.2% towards the reconfiguration of the eastbound approach to provide a third left-turn lane and restriping the southbound approach to provide a single shared left-turn/right-turn lane. To accommodate the additional lane, widening and modifications to the median/roadway will be required. It is recommended that all three eastbound lanes on Laurel Street continue to Pacific Highway, where the number one lane would trap into the left-turn lane(s). An overhead sign bridge(s) may be needed to instruct drivers of the trap lane. Modifications to the traffic signal timing in conjunction with the change in lane destination are also recommended.

- ***Pacific Highway/Hawthorn Street:*** The applicant will contribute a fair share percentage of 1.7% towards restriping the westbound approach of Hawthorn Street to provide a dedicated left-turn lane in addition to the three through lanes. To accommodate the additional lane, all curbside parking on Hawthorn Street will have to be prohibited between Pacific Highway and the railroad tracks. Modifications to the traffic signal timing in conjunction with the change in lane destination are also recommended.

57791

14.2.2 *Street Segment Mitigation*

For the Long-Term street segment impacts, the following mitigation measures are suggested:

- ***N. Harbor Drive between Harbor Island Drive and Rental Car Access Road:*** The applicant will contribute a fair share percentage of 2.3% towards the addition of one lane. Based on forecast volumes, such improvements are desirable.

- ***N. Harbor Drive between Rental Car Access Road and Laurel Street:*** The applicant will contribute a fair share percentage of 0.9% towards the addition of one lane. Based on forecast volumes, such improvements are desirable.

57791

TABLE 14–1
LONG-TERM (YEAR 2030) INTERSECTION MITIGATION ANALYSIS

Intersection	Peak Hour	Year 2030		Year 2030 With Project		Year 2030 With Project and Mitigation		Mitigation
		Delay[a]	LOS[b]	Delay	LOS	Delay	LOS	
N. Harbor Dr./Harbor Island Dr./ Terminal 1	AM PM	51.2 86.6	D F	56.9 89.1	E F	24.6 59.7	C E	Restripe NB Approach and change RT movement from "free" to "overlap" (LT, LT/Thru, Thru, RT) Restripe EB Approach (LT, 3 Thru, Thru/RT)
N. Harbor Dr./Rental Car Access Road	AM PM	169.8 159.0	F F	171.8 163.7	F F	96.1 96.9	F F	Add 1 WB Thru Lane
N. Harbor Dr./Laurel St.	AM PM	98.1 124.1	F F	98.9 127.0	F F	49.5 48.6	D D	EB Triple LT and Restripe SB approach (Shared LT/RT)
Pacific Highway/Hawthorn St.	AM PM	86.1 55.9	F E	87.5 56.5	F E	18.4 28.5	B C	Restripe WB Approach (LT, 2 Thru, Thru/RT)

Footnotes:
a. Average delay expressed in seconds per vehicle.
b. Level of Service.

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

57791

TABLE 14–2
LONG-TERM (YEAR 2030) STREET SEGMENT MITIGATION ANALYSIS

Street Segment	Classification	Capacity[a]	Year 2030			Year 2030 + Project			Year 2030 + Project with Mitigation						Mitigation
			ADT[b]	V/C[c]	LOS[d]	ADT	V/C	LOS	Mitigation Classification	Mitigation Capacity	ADT	V/C	LOS	Δ[e]	
N. Harbor Drive															
Harbor Island Dr. to Rental Car Access Rd.	7-ln Prime	65,000	112,020	1.723	**F**	112,755	1.735	**F**	8-ln Prime	70,000	112,755	1.611	**F**	(0.112)	Add 1 lane
Rental Car Access Road to Laurel Street	6-ln Prime	60,000	161,620	2.694	**F**	162,355	2.706	**F**	7-ln Prime	65,000	162,355	2.498	**F**	(0.196)	Add 1 lane

Footnotes:
a. Capacity based on roadway classification operating at LOS E.
b. Average Daily Traffic.
c. Volume to Capacity.
d. Level of Service.
e. Δ denotes a project mitigation-induced increase or (decrease) in the Volume to Capacity ratio.

218
57791

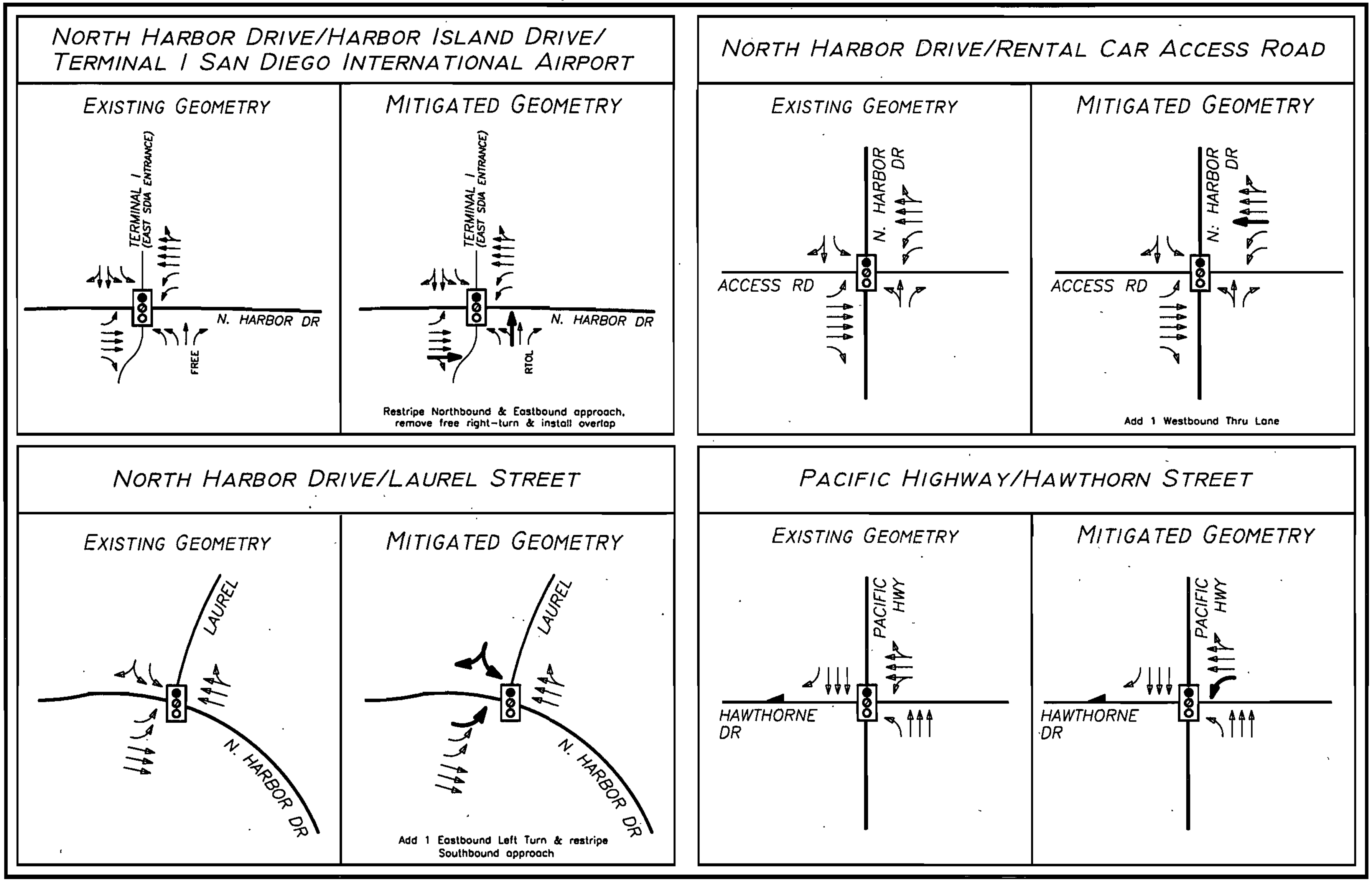
Table 14–3 shows the preliminary fair-share calculations for the intersections where the *Harbor Island* project has cumulative impacts. Cumulative impacts are long-term by definition and require a financial contribution as mitigation, proportional to the project percentage of traffic growth over existing conditions. The traffic volumes for the fair share calculations can be found on *Figures 3–2, 8–2,* and *10–2.*

TABLE 14–3
FAIR SHARE CALCULATIONS

Facility	Formula[a] (Peak Hour Volumes)	Project Percentage
Intersections[b]		
N. Harbor Drive/Harbor Island Drive/Terminal 1	208 / (8,453 – 6,153)	9.0%
N. Harbor Drive/Rental Car Access Road	124 / (16,744 – 9,709)	1.8%
N. Harbor Drive/Laurel Street	103 / (12,503 – 7,811)	2.2%
Pacific Highway/Hawthorn Street	36 / (6,616 – 4,508)	1.7%
Street Segments[c]		
N. Harbor Drive between Harbor Island Dr. and Rental Car Access Rd.	735 112,755 – 81,000	2.3%
N. Harbor Drive between Rental Car Access Road and Laurel St.	735 162,355 – 82,790	0.9%

Footnotes:
a. Formula = Project Trips ÷ (Future Traffic with Project – Existing Traffic without Project).
b. Calculations are based on combined AM & PM peak hour volumes.
c. Calculations based on ADTs.

57791



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REV. 7/1/10
N:\1437\Figures\2010Figures\LLG1437 FIG14-1

NORTH

NOT TO SCALE

Figure 14-1

Intersection Mitigation Diagram

HARBOR ISLAND

57791

220

15.0 CONCLUSIONS

This *Traffic Impact and Parking Analysis* has been prepared to determine the potential traffic impacts on the local circulation system and determine parking requirements for the *Harbor Island* project in the City of San Diego. The project site is located on the east side of Harbor Island.

The proposed project plans to build a limited service hotel of approximately 175 rooms. The project will be located at the east end of the Sunroad leasehold and will replace an existing locker building and some parking associated with the marina. The project will be approximately 117,000 square feet consisting of hotel rooms, limited meeting space (approximately 5,000 square feet), and common areas. Construction is expected to be enclosed within a four story structure with a projected "Opening Day" in April 2012. No changes are proposed for the 600-slip marina and clubhouse. Direct parking access to the marina and the proposed hotel will be provided.

As part of the development, the project proposes to modify the existing traffic circle currently located at the terminus of Harbor Island Drive by slightly reducing the overall size of the circle. The project also proposes to narrow the eastern portion of Harbor Island Drive along the property frontage from four lanes to three lanes (1 westbound and 2 eastbound lanes). These actions are not identified within the Port Master Plan, and as such an amendment to the Port Master Plan is required.

The total net project trip calculation is approximately 1,225 ADT with 39 inbound / 59 outbound trips during the AM peak hour and 66 inbound / 44 outbound trips during the PM peak hour.

A parking assessment was undertaken to determine the required parking supply for the *Harbor Island* project. Both a "non-shared" and a "shared' parking analysis were conducted. Ultimately, 381 parking spaces are recommended for the development. Since the project proposes 457 spaces of surface parking, the 381-space calculated demand for the project will adequately be met.

Analysis at eleven intersections and several street segments in the study area were performed under near-term and long-term conditions. In the Near-Term, the project is calculated to have no significant impacts. In the Long-Term (Year 2030), the project is calculated to have significant cumulative impacts at four intersections and two street segments:

- N. Harbor Dr./Harbor Island Dr./Terminal 1
- N. Harbor Dr./Rental Car Access Road
- N. Harbor Dr./Laurel Street
- Pacific Highway / Hawthorn Street
- N. Harbor Drive between Harbor Island Drive and Rental Car Access Road
- N. Harbor Drive between Rental Car Access Road and Laurel Street

Mitigation measures recommended in Section 14.0 of this report would reduce the project impacts listed above to a level of 'not significant'. For the purposes of this report, a level of 'not significant' reflects allowable delay increases within the defined thresholds.

5.151

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TECHNICAL APPENDICES

HARBOR ISLAND

San Diego, California
October 19, 2010

LLG Ref. 3-04-1437-3

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57791

222

APPENDIX A

MANUAL STREET SEGMENT AND INTERSECTION COUNT SHEETS

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site: [17401] N. Harbor Dr - Just E/O of Terminal II
Input A: 2 - East bound. - Added to totals. (1)
Input B: 4 - West bound. - Excluded from totals. (0)
Survey Duration: 3:25 Monday, August 18, 2008 => 8:39 Friday, August 22, 2008
File: Z:\mcdata\LLG\2008\174\1740122Aug2008.EC0 (Plus)
Identifier: A5558BK6 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm: Event Count
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: **4:00 Monday, August 18, 2008 => 0:00 Friday, August 22, 2008**
Name: Factory default profile
Scheme: Count events divided by two.
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Events = 118277 / 118517 (99.80%)

*** Monday, August 18, 2008=13682 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**119**	**363**	**486**	**710**	**705**	**750**	**812**	**929**	**872**	**907**	**950**	**1027**	**1103**	**849**	**674**	**604**	**559**	**463**	**543**	**257**	
-	-	-	-	18	73	102	129	167	175	205	249	191	270	243	221	**300**	223	177	170	141	141	109	91	42
-	-	-	-	24	94	96	187	168	192	210	221	230	206	221	223	**299**	237	159	144	135	118	132	87	23
-	-	-	-	28	106	148	198	184	181	204	212	208	215	238	**289**	275	202	172	158	169	99	163	51	15
-	-	-	-	49	90	140	196	186	202	193	247	243	216	248	**294**	229	187	166	132	114	105	139	28	22

PM Peak 1530 - 1630 (1182), PM PHF=0.98

*** Tuesday, August 19, 2008=13711, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
102	**47**	**28**	**42**	**127**	**321**	**465**	**687**	**737**	**716**	**736**	**875**	**944**	**912**	**905**	**998**	**1047**	**867**	**822**	**631**	**577**	**464**	**460**	**201**	
42	8	12	6	16	61	89	162	180	161	182	229	**222**	237	216	218	**242**	241	225	165	166	111	170	59	34
23	10	7	11	23	87	116	149	197	165	175	202	**245**	226	229	266	**257**	215	189	158	130	121	133	55	26
15	24	4	13	27	90	116	199	200	196	171	223	**230**	249	219	248	**276**	197	195	153	161	119	85	52	26
22	5	5	12	61	83	144	177	160	194	208	**221**	247	200	241	266	**272**	214	213	155	120	113	72	35	16

AM Peak 1145 - 1245 (918), AM PHF=0.94 PM Peak 1600 - 1700 (1047), PM PHF=0.95

*** Wednesday, August 20, 2008=14377, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
102	**47**	**28**	**39**	**141**	**290**	**467**	**677**	**725**	**801**	**824**	**976**	**1042**	**992**	**923**	**1078**	**1080**	**979**	**829**	**665**	**557**	**471**	**405**	**239**	
34	17	4	7	18	50	97	127	168	160	199	214	**246**	269	209	244	**286**	265	228	161	146	121	110	81	41
26	14	11	9	22	56	88	167	174	222	196	221	**241**	231	251	253	**271**	264	199	154	149	123	124	64	23
26	8	9	9	39	98	121	184	186	211	181	**279**	259	239	241	**286**	246	222	222	181	143	119	72	52	18
16	8	4	14	62	86	161	199	197	208	248	**262**	296	253	222	**295**	277	228	180	169	119	108	99	42	17

AM Peak 1130 - 1230 (1028), AM PHF=0.92 PM Peak 1530 - 1630 (1138), PM PHF=0.96

*** Thursday, August 21, 2008=14598, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
99	**47**	**39**	**44**	**137**	**314**	**463**	**668**	**804**	**814**	**815**	**922**	**922**	**951**	**1010**	**1045**	**1097**	**993**	**843**	**784**	**623**	**531**	**357**	**276**	
41	14	13	7	26	67	87	137	203	184	194	217	**219**	258	257	265	303	249	220	219	164	164	93	99	-
23	14	8	12	28	86	100	163	191	215	194	**226**	199	220	275	233	274	245	219	194	147	140	80	82	-
18	8	9	8	29	80	107	195	198	198	210	**222**	240	247	246	285	270	251	211	203	155	112	91	50	-
17	11	9	17	54	81	169	173	212	217	217	**257**	264	226	232	262	250	248	193	168	157	115	93	45	-

AM Peak 1115 - 1215 (924), AM PHF=0.90

EB Avg 14230
WB Avg. 15520
total : 29,750

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17401] N. Harbor Dr - Just E/O of Terminal II**
Input A:	2 - East bound. - Excluded from totals. (0)
Input B:	4 - West bound. - Added to totals. (1)
Survey Duration:	3:25 Monday, August 18, 2008 => 8:39 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\1740122Aug2008.EC0 (Plus)
Identifier:	A5558BK6 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**4:00 Monday, August 18, 2008 => 0:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 118277 / 118517 (99.80%)

*** Monday, August 18, 2008=15336 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**135**	**427**	**760**	**956**	**877**	**897**	**896**	**974**	**1174**	**946**	**881**	**942**	**950**	**1064**	**844**	**783**	**639**	**515**	**407**	**269**	
-	-	-	-	17	71	131	225	228	224	217	230	**307**	272	225	255	228	260	234	213	168	128	109	70	30
-	-	-	-	41	110	176	247	227	247	196	243	**281**	235	204	229	237	301	237	199	162	143	97	85	19
-	-	-	-	25	113	224	253	187	214	235	259	**280**	228	218	242	236	259	168	208	157	121	102	64	20
-	-	-	-	52	133	229	231	235	212	248	242	**306**	211	234	216	249	244	205	163	152	123	99	50	16

PM Peak 1200 - 1300 (1174), PM PHF=0.96

*** Tuesday, August 19, 2008=15014, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
85	**39**	**26**	**48**	**145**	**360**	**776**	**990**	**838**	**804**	**804**	**878**	**996**	**934**	**846**	**910**	**1007**	**1104**	**929**	**706**	**620**	**502**	**453**	**214**	
30	9	8	6	18	61	134	**227**	213	216	160	216	240	266	201	232	257	**254**	232	205	165	151	128	79	24
19	12	8	12	39	97	166	**271**	241	182	228	235	265	228	249	194	235	**313**	199	191	155	113	121	60	30
20	10	5	9	34	75	214	**258**	164	200	204	218	235	220	200	240	264	**299**	250	163	143	138	116	40	33
16	8	5	21	54	127	**262**	234	220	206	212	209	256	220	196	244	**251**	238	248	147	157	100	88	35	19

AM Peak 0645 - 0745 (1018), AM PHF=0.94 PM Peak 1645 - 1745 (1117), PM PHF=0.89

*** Wednesday, August 20, 2008=15484, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
106	**33**	**28**	**47**	**134**	**352**	**718**	**1074**	**825**	**862**	**829**	**973**	**1088**	**1056**	**896**	**928**	**1004**	**1045**	**840**	**734**	**687**	**514**	**475**	**236**	
24	15	10	10	20	49	122	283	233	225	214	204	**290**	**296**	227	247	221	274	215	213	184	150	139	95	30
30	5	6	8	38	72	166	300	213	222	206	244	**285**	**263**	241	208	253	292	205	197	185	132	127	65	30
33	8	4	7	30	99	186	250	171	202	188	**263**	260	**286**	203	220	261	252	204	171	167	124	106	46	21
19	5	8	22	46	132	244	241	208	213	221	**262**	**253**	211	225	253	269	227	216	153	151	108	103	30	10

AM Peak 1130 - 1230 (1100), AM PHF=0.95 PM Peak 1245 - 1345 (1098), PM PHF=0.93

*** Thursday, August 21, 2008=16074, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
91	**56**	**35**	**58**	**136**	**364**	**749**	**1025**	**799**	**851**	**878**	**1007**	**1065**	**1078**	**1003**	**981**	**1122**	**1124**	**920**	**723**	**664**	**583**	**475**	**287**	
30	13	11	10	18	59	124	**215**	199	214	229	267	238	282	243	234	256	262	247	214	169	185	152	89	-
30	16	10	10	42	82	168	**271**	209	217	213	258	278	232	259	236	312	311	248	192	166	140	138	81	-
21	11	6	17	35	96	201	**292**	192	200	218	240	269	291	250	260	263	287	192	155	160	128	103	73	-
10	16	8	21	41	127	**256**	247	199	220	218	242	280	273	251	251	291	264	233	162	169	130	82	44	-

AM Peak 0645 - 0745 (1034), AM PHF=0.89

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17402W] N. Harbor Dr - Just W/O of Rental Car Road**
Input A:	4 - West bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	3:46 Monday, August 18, 2008 => 9:01 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\17402W22Aug2008.EC0 (Plus)
Identifier:	M280P4JB MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**4:00 Monday, August 18, 2008 => 0:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 167412 / 167622 (99.87%)

*** Monday, August 18, 2008=42444 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	1060	2569	2383	2662	2577	2461	2483	2652	2684	2308	2299	2316	2132	2076	2018	1844	2161	1718	1356	685	
-	-	-	-	145	554	520	676	700	627	601	643	657	600	536	624	560	514	528	453	530	435	316	243	77
-	-	-	-	203	698	586	664	616	607	590	675	666	575	567	562	531	527	490	466	533	445	322	174	42
-	-	-	-	290	742	627	677	600	609	633	691	720	562	589	544	517	504	491	487	563	452	369	164	45
-	-	-	-	422	575	650	645	661	618	659	643	641	571	607	586	524	531	509	438	535	386	349	104	49

PM Peak 1200 - 1300 (2684), PM PHF=0.93

*** Tuesday, August 19, 2008=40163, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
213	105	86	211	1037	2322	2310	2480	2377	2252	2304	2494	2420	2197	2171	2139	2129	2201	2095	1710	1760	1463	1166	521	
77	34	18	15	162	504	472	643	589	557	564	612	615	574	533	540	536	548	519	412	432	422	363	197	61
42	38	21	35	187	597	594	627	602	552	580	626	613	547	568	495	559	546	579	428	480	374	316	136	60
45	21	27	67	261	637	581	609	568	595	592	621	632	544	539	543	498	564	519	412	419	382	251	100	68
49	12	20	94	427	584	663	601	618	548	568	635	560	532	531	561	536	543	478	458	429	285	236	88	24

AM Peak 0645 - 0745 (2542), AM PHF=0.96 PM Peak 1200 - 1300 (2420), PM PHF=0.96

*** Wednesday, August 20, 2008=41737, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
213	66	70	225	1143	2331	2260	2651	2458	2434	2484	2540	2556	2272	2135	2213	2122	2169	2071	1822	2053	1608	1264	577	
61	21	18	27	170	418	482	679	651	595	651	654	648	588	515	587	510	568	521	512	577	412	358	231	81
60	9	18	40	218	656	537	672	637	577	589	594	659	615	525	542	537	551	532	468	549	458	344	153	53
68	21	14	69	299	673	563	664	548	653	622	644	623	537	569	557	542	521	510	453	461	367	310	94	46
24	15	20	89	456	584	678	636	622	609	622	648	626	532	526	527	533	529	508	389	466	371	252	99	27

AM Peak 0645 - 0745 (2693), AM PHF=0.99 PM Peak 1200 - 1300 (2556), PM PHF=0.97

*** Thursday, August 21, 2008=43067, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
207	100	93	252	997	2243	2137	2477	2369	2487	2435	2621	2638	2268	2318	2358	2413	2414	2349	1915	2230	1731	1261	754	
81	25	18	26	162	490	443	598	551	641	665	635	629	589	551	546	612	569	619	519	544	501	328	266	-
53	29	23	36	181	602	508	626	569	633	537	675	708	580	594	546	620	607	619	469	572	452	316	197	-
46	22	23	80	277	599	563	612	624	576	603	624	678	565	580	598	587	617	556	385	550	427	295	153	-
27	24	29	110	377	552	623	641	625	637	630	687	623	534	593	668	594	621	555	542	564	351	322	138	-

AM Peak 1145 - 1245 (2702), AM PHF=0.95

WB Avg. 41660
EB Avg. 39340
total : 81,000

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17402E] N. Harbor Dr - Just W/O of Rental Car Road**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	3:45 Monday, August 18, 2008 => 11:55 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\17402E22Aug2008.EC0 (Plus)
Identifier:	A6483S3X MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**4:00 Monday, August 18, 2008 => 2:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 157961 / 157986 (99.98%)

*** Monday, August 18, 2008=39614 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**383**	**1628**	**1546**	**1939**	**2030**	**2175**	**2281**	**2444**	**2410**	**2290**	**2399**	**2447**	**2642**	**2163**	**1894**	**1834**	**2124**	**1924**	**1794**	**1267**	
-	-	-	-	35	293	393	464	485	497	602	580	575	658	572	644	**755**	593	458	541	521	585	393	453	130
-	-	-	-	75	391	341	476	494	530	537	627	608	542	621	614	**699**	567	489	453	454	461	381	404	100
-	-	-	-	103	512	411	481	494	596	546	616	622	545	589	598	**637**	498	402	408	568	462	537	241	48
-	-	-	-	170	432	401	518	557	552	596	621	605	545	617	**591**	551	505	545	432	581	416	483	169	58

PM Peak 1545 - 1645 (2682), PM PHF=0.89

*** Tuesday, August 19, 2008=37663, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
336	**221**	**59**	**69**	**348**	**1443**	**1487**	**1667**	**1845**	**1852**	**2093**	**2252**	**2399**	**2274**	**2260**	**2362**	**2410**	**2076**	**2296**	**1636**	**2046**	**1712**	**1660**	**860**	
130	63	18	16	20	280	345	427	407	419	505	598	**604**	568	535	606	**613**	526	541	394	522	471	466	315	136
100	57	12	14	49	354	382	417	468	433	468	540	**547**	552	549	564	**577**	473	566	405	477	422	439	200	105
48	70	12	15	86	412	372	443	466	496	553	546	**595**	588	579	563	**648**	498	601	392	571	411	417	192	115
58	31	17	24	193	397	388	380	504	504	567	**568**	653	566	597	**629**	572	579	588	445	476	408	338	153	72

AM Peak 1145 - 1245 (2314), AM PHF=0.96 PM Peak 1545 - 1645 (2467), PM PHF=0.95

*** Wednesday, August 20, 2008=39630, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
428	**120**	**54**	**71**	**466**	**1536**	**1472**	**1716**	**1769**	**1979**	**2154**	**2515**	**2598**	**2296**	**2334**	**2556**	**2438**	**2275**	**2210**	**1915**	**2221**	**1737**	**1819**	**951**	
136	28	20	12	42	303	362	416	427	473	557	580	**610**	608	589	698	648	597	482	516	474	400	526	385	165
105	30	15	11	70	330	333	390	448	491	494	657	**647**	592	573	604	591	591	532	489	611	402	433	238	129
115	41	11	16	133	459	392	473	435	478	502	613	**656**	580	577	579	595	544	637	492	645	492	423	197	85
72	21	8	32	221	444	385	437	459	537	601	**665**	**685**	516	595	675	604	543	559	418	491	443	437	131	74

AM Peak 1145 - 1245 (2578), AM PHF=0.97 PM Peak 1200 - 1300 (2598), PM PHF=0.95

*** Thursday, August 21, 2008=40733, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
453	**129**	**62**	**97**	**391**	**1399**	**1364**	**1606**	**1788**	**2050**	**2253**	**2171**	**2494**	**2431**	**2505**	**2511**	**2801**	**2397**	**2454**	**2079**	**2403**	**2224**	**1514**	**1157**	
165	37	15	27	36	277	351	375	413	465	581	546	**614**	626	634	672	**775**	642	649	624	574	669	386	384	235
129	41	15	20	69	364	306	434	452	516	496	557	**589**	588	586	584	**669**	533	637	517	600	589	334	388	84
85	27	12	26	106	393	327	393	436	533	538	573	**634**	635	605	593	**682**	594	577	451	659	471	366	208	0
74	24	20	24	180	365	380	404	487	536	638	**495**	657	582	680	662	**675**	628	591	487	570	495	428	177	0

AM Peak 1145 - 1245 (2332), AM PHF=0.92 PM Peak 1600 - 1700 (2801), PM PHF=0.90

*** Friday, August 22, 2008=319 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
319	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
235	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
84	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57791

TDSSW, Inc.
Event Counts

EventCount-19 -- English (ENU)

Datasets:

Site: [17404] !N. Harbor Dr - Btwn Laurel St & Hawthorn St
Input A: 3 - South bound. - Excluded from totals. (0)
Input B: 1 - North bound. - Added to totals. (1)
Survey Duration: 4:12 Monday, August 18, 2008 => 7:47 Friday, August 22, 2008
File: Z:\mcdata\LLG\2008\174\UM17404822.EC0 (Base)
Identifier: A56563M0 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm: Event Count
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: **5:00 Monday, August 18, 2008 => 7:00 Friday, August 22, 2008**
Name: Factory default profile
Scheme: Count events divided by two.
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Events = 168286 / 169153 (99.49%)

*** Monday, August 18, 2008=26530 (Incomplete) , 15 minute drops**

substitute

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**1543**	**1687**	**1793**	**1561**	**1531**	**1548**	**1657**	**1763**	**1548**	**1616**	**1546**	**1473**	**1399**	**1320**	**1104**	**1249**	**1016**	**758**	**418**	
-	-	-	-	-	354	343	435	385	382	374	390	**424**	421	419	402	394	381	351	268	319	271	194	138	47
-	-	-	-	-	443	420	470	460	392	354	431	**428**	370	387	386	366	352	312	296	302	268	179	108	25
-	-	-	-	-	406	469	474	355	384	410	411	**469**	383	410	393	373	339	330	287	338	244	206	108	31
-	-	-	-	-	340	455	414	361	373	410	425	**442**	374	400	365	340	327	327	253	290	233	179	64	41

PM Peak 1200 - 1300 (1763), PM PHF=0.94

*** Tuesday, August 19, 2008=26282, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
144	**72**	**76**	**193**	**790**	**1475**	**1626**	**1685**	**1471**	**1450**	**1444**	**1560**	**1641**	**1535**	**1529**	**1493**	**1548**	**1521**	**1296**	**1106**	**1068**	**888**	**666**	**5**	
47	21	10	16	126	335	298	**455**	399	359	346	408	**412**	386	405	388	412	362	355	304	251	242	184	5	0
25	23	21	36	142	387	420	**429**	393	330	381	389	**388**	394	396	353	377	406	333	255	277	205	191	0	0
31	15	23	59	223	374	**451**	410	350	389	360	386	**422**	389	380	364	353	396	307	261	264	228	175	0	0
41	13	22	82	299	379	**457**	391	329	372	357	377	**419**	366	348	388	406	357	301	286	276	213	116	0	0

AM Peak 0630 - 0730 (1792), AM PHF=0.98 PM Peak 1200 - 1300 (1641), PM PHF=0.97

*** Wednesday, August 20, 2008=106, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**2**	**6**	**17**	**5**	**9**	**8**	**6**	**4**	**4**	**9**	**5**	**4**	**5**	**5**	**2**	**5**	**3**	**3**	**2**	**2**	**0**	
0	0	0	0	0	**3**	2	3	2	0	1	2	**4**	2	2	3	0	1	1	1	2	0	0	0	0
0	0	0	0	1	**7**	0	3	4	1	0	0	**2**	1	0	1	4	0	0	0	1	0	0	0	0
0	0	0	1	4	**4**	2	0	2	4	3	1	**0**	1	2	0	0	1	2	2	0	0	0	0	0
0	0	0	1	1	**3**	1	3	0	1	0	1	**3**	1	0	1	1	0	2	0	0	2	2	0	0

AM Peak 0500 - 0600 (17), AM PHF=0.61 PM Peak 1200 - 1300 (9), PM PHF=0.56

NOT USABLE DATA

*** Thursday, August 21, 2008=64, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**0**	**0**	**0**	**2**	**1**	**8**	**2**	**1**	**0**	**10**	**2**	**10**	**4**	**6**	**2**	**3**	**2**	**7**	**1**	**0**	**3**	**0**	**0**	
0	0	0	0	0	0	0	**0**	0	0	1	0	**6**	1	0	2	1	0	4	0	0	0	0	0	0
0	0	0	0	0	0	0	**2**	0	0	9	1	**1**	1	2	0	0	1	1	0	0	1	0	0	0
0	0	0	0	0	1	**2**	0	1	0	0	1	**3**	2	2	0	1	1	2	1	0	2	0	0	0
0	0	0	0	2	0	**6**	0	0	0	0	0	**0**	0	2	0	1	0	0	0	0	0	0	0	0

AM Peak 0630 - 0730 (10), AM PHF=0.42 PM Peak 1200 - 1300 (10), PM PHF=0.42

*** Friday, August 22, 2008=1 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
0	**1**	**0**	**0**	**0**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
0	1	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SB 26282 + 418 = 26,700

NB Avg = 28,920

total : 55,620

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17404] !N. Harbor Dr - Btwn Laurel St & Hawthorn St**
Input A:	3 - South bound. - Added to totals. (1)
Input B:	1 - North bound. - Excluded from totals. (0)
Survey Duration:	4:12 Monday, August 18, 2008 => 7:47 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\UM17404822.EC0 (Base)
Identifier:	A56563M0 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**5:00 Monday, August 18, 2008 => 7:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 168286 / 169153 (99.49%)

*** Monday, August 18, 2008=28149 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**955**	**959**	**1243**	**1354**	**1535**	**1735**	**1877**	**1923**	**1830**	**1779**	**1908**	**2073**	**1580**	**1397**	**1248**	**1358**	**1268**	**1230**	**897**	
-	-	-	-	-	166	248	284	310	359	458	466	470	508	418	508	**486**	406	354	364	326	393	287	293	90
-	-	-	-	-	244	180	297	333	365	445	498	472	461	473	522	**598**	407	347	324	299	303	254	285	85
-	-	-	-	-	290	253	302	338	403	411	457	487	441	458	444	**494**	396	328	289	368	292	369	183	50
-	-	-	-	-	255	278	360	373	408	421	456	494	420	430	434	**495**	371	368	271	365	280	320	136	39

PM Peak 1600 - 1700 (2073), PM PHF=0.87

*** Tuesday, August 19, 2008=27086, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
264	**160**	**54**	**50**	**229**	**905**	**930**	**1115**	**1267**	**1284**	**1535**	**1716**	**1802**	**1787**	**1672**	**1846**	**1838**	**1519**	**1665**	**1153**	**1325**	**1195**	**1130**	**645**	
90	44	14	13	15	170	240	289	283	281	374	440	**425**	483	428	464	**491**	386	381	311	362	341	305	222	100
85	33	17	11	27	227	214	294	319	285	351	439	**432**	410	381	**475**	427	362	470	281	314	275	290	158	69
50	57	11	10	51	268	248	283	335	345	399	428	**453**	465	420	**473**	450	355	401	287	355	297	288	147	83
39	26	12	16	136	240	228	249	330	373	411	**409**	492	429	443	**434**	470	416	413	274	294	282	247	118	47

AM Peak 1145 - 1245 (1719), AM PHF=0.95 PM Peak 1515 - 1615 (1873), PM PHF=0.95

*** Wednesday, August 20, 2008=29605, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
299	**90**	**45**	**56**	**318**	**1027**	**983**	**1240**	**1304**	**1459**	**1696**	**1966**	**2084**	**2128**	**1829**	**1994**	**1877**	**1682**	**1616**	**1419**	**1464**	**1119**	**1201**	**709**	
100	28	18	10	29	212	259	297	305	330	439	435	**491**	**574**	452	519	489	443	373	410	323	289	342	270	116
69	20	9	11	44	231	210	306	321	376	423	511	**521**	**560**	474	504	509	455	385	350	372	278	304	189	91
83	25	10	11	88	282	260	315	325	361	405	521	**534**	**542**	471	456	434	395	449	392	383	297	259	153	68
47	17	8	24	157	302	254	322	353	392	429	**499**	**538**	452	432	515	445	389	409	267	386	255	296	97	58

AM Peak 1145 - 1245 (2045), AM PHF=0.96 PM Peak 1245 - 1345 (2214), PM PHF=0.96

*** Thursday, August 21, 2008=30058, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
333	**107**	**63**	**70**	**239**	**863**	**881**	**1088**	**1229**	**1496**	**1668**	**1757**	**1934**	**2115**	**1932**	**2071**	**2101**	**1899**	**1804**	**1516**	**1550**	**1504**	**1038**	**800**	
116	33	18	15	24	174	229	251	274	322	392	**499**	459	537	478	516	509	**560**	467	422	339	440	278	244	151
91	30	13	18	48	211	203	286	303	366	392	**396**	434	521	477	553	**539**	484	487	429	379	426	241	279	84
68	28	12	19	63	249	202	244	305	397	399	**455**	499	497	497	501	**553**	431	405	346	424	322	251	154	56
58	16	20	18	104	229	247	307	347	411	**485**	407	542	560	480	501	**500**	424	445	319	408	316	268	123	81

AM Peak 1045 - 1145 (1835), AM PHF=0.92 PM Peak 1615 - 1715 (2152), PM PHF=0.96

*** Friday, August 22, 2008=404 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
372	**32**	**0**	**0**	**0**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
151	32	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
84	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
81	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site: **[17403] N. Harbor Dr - Btwn Coast Guard Station & Laurel St**
Input A: 2 - East bound. - Added to totals. (1)
Input B: 4 - West bound. - Excluded from totals. (0)
Survey Duration: 4:03 Monday, August 18, 2008 => 4:35 Thursday, August 21, 2008
File: Z:\mcdata\LLG\2008\174\1740322Aug2008.EC0 (Base)
Identifier: A56374S4 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm: Event Count
Data type: *Axle sensors - Separate (Count)*

Profile:

Filter time: **5:00 Monday, August 18, 2008 => 4:00 Thursday, August 21, 2008**
Name: Factory default profile
Scheme: Count events divided by two.
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Events = 251267 / 253323 (99.19%)

*** Monday, August 18, 2008=41825 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**1563**	**1511**	**1878**	**2097**	**2343**	**2496**	**2706**	**2642**	**2579**	**2542**	**2736**	**2854**	**2321**	**2031**	**1937**	**2218**	**2070**	**1903**	**1398**	
-	-	-	-	-	273	389	429	484	543	638	655	621	723	606	736	**785**	632	510	581	536	648	423	474	141
-	-	-	-	-	370	329	464	500	576	615	717	650	616	652	742	**766**	589	511	468	475	458	411	447	117
-	-	-	-	-	504	398	460	517	618	585	652	683	653	640	663	**704**	587	467	442	611	497	562	282	59
-	-	-	-	-	416	395	525	596	606	658	682	688	587	644	595	**599**	513	543	446	596	467	507	195	61

PM Peak 1600 - 1700 (2854), PM PHF=0.91

*** Tuesday, August 19, 2008=39729, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
378	**232**	**62**	**66**	**322**	**1397**	**1430**	**1665**	**1893**	**1958**	**2267**	**2427**	**2521**	**2502**	**2393**	**2613**	**2583**	**2222**	**2440**	**1708**	**2131**	**1824**	**1758**	**937**	
141	71	22	16	18	255	355	429	410	451	537	**625**	620	656	595	696	**717**	588	562	467	577	520	464	333	149
117	57	12	14	42	352	354	402	467	427	503	**631**	590	583	574	653	**607**	510	619	391	500	425	475	218	107
59	73	13	13	81	410	367	449	515	535	**611**	596	613	669	582	627	**678**	532	653	415	583	452	451	213	123
61	31	15	23	181	380	354	385	501	545	**616**	575	698	594	642	**637**	581	592	606	435	471	427	368	173	70

AM Peak 1030 - 1130 (2483), AM PHF=0.98 PM Peak 1545 - 1645 (2639), PM PHF=0.92

*** Wednesday, August 20, 2008=41887, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
449	**128**	**53**	**70**	**434**	**1467**	**1433**	**1700**	**1854**	**2076**	**2345**	**2700**	**2757**	**2672**	**2512**	**2814**	**2583**	**2380**	**2291**	**2084**	**2326**	**1807**	**1897**	**1055**	
149	33	21	10	35	282	364	420	446	467	608	597	**629**	**701**	653	780	690	654	534	601	486	426	543	435	176
107	34	14	13	56	305	315	404	472	504	561	715	**711**	**743**	607	685	630	595	542	486	582	425	488	270	146
123	40	10	15	125	452	368	427	449	546	547	696	**706**	642	636	626	642	588	641	558	673	525	425	221	93
70	21	8	32	218	428	386	449	487	559	629	**692**	**711**	586	616	723	621	543	574	439	585	431	441	129	80

AM Peak 1145 - 1245 (2738), AM PHF=0.96 PM Peak 1230 - 1330 (2861), PM PHF=0.96

*** Thursday, August 21, 2008=836 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
495	**155**	**84**	**102**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
176	43	23	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
146	44	19	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93	39	16	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	29	26	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

EB Avg. 40810
WB Avg. 41980
total: 82,790

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17403] N. Harbor Dr - Btwn Coast Guard Station & Laurel St**
Input A:	2 - East bound. - Excluded from totals. (0)
Input B:	4 - West bound. - Added to totals. (1)
Survey Duration:	4:03 Monday, August 18, 2008 => 4:35 Thursday, August 21, 2008
File:	Z:\mcdata\LLG\2008\174\1740322Aug2008.EC0 (Base)
Identifier:	A56374S4 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**5:00 Monday, August 18, 2008 => 4:00 Thursday, August 21, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 251267 / 253323 (99.19%)

* Monday, August 18, 2008=42343 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**2600**	**2533**	**2734**	**2625**	**2643**	**2500**	**2752**	**2726**	**2353**	**2403**	**2413**	**2178**	**2139**	**2098**	**1868**	**2193**	**1695**	**1265**	**625**	
-	-	-	-	-	556	498	664	682	671	592	672	**667**	635	557	619	593	570	538	450	547	435	324	214	71
-	-	-	-	-	697	641	694	692	638	573	700	**684**	591	629	578	510	530	524	472	559	439	281	163	41
-	-	-	-	-	756	678	692	631	651	655	702	**703**	531	578	594	546	492	505	492	579	448	334	146	44
-	-	-	-	-	591	716	684	620	683	680	678	**672**	596	639	622	529	547	531	454	508	373	326	102	47

PM Peak 1200 - 1300 (2726), PM PHF=0.97

* Tuesday, August 19, 2008=40959, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
203	**102**	**85**	**237**	**1132**	**2357**	**2493**	**2526**	**2393**	**2366**	**2292**	**2514**	**2526**	**2270**	**2256**	**2182**	**2214**	**2195**	**2085**	**1742**	**1768**	**1466**	**1068**	**487**	
71	31	17	21	169	510	466	**667**	584	557	546	615	**652**	580	560	534	591	540	567	434	446	406	275	178	58
41	36	19	39	201	610	**653**	630	638	600	587	675	**619**	584	568	548	580	558	552	421	478	361	312	135	52
44	21	28	80	309	603	**644**	589	581	592	564	581	**636**	554	572	553	495	583	499	427	426	360	239	88	58
47	14	21	97	453	634	**730**	640	590	617	595	643	**619**	552	556	547	548	514	467	460	418	339	242	86	20

AM Peak 0615 - 0715 (2694), AM PHF=0.92 PM Peak 1200 - 1300 (2526), PM PHF=0.97

* Wednesday, August 20, 2008=43009, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
188	**64**	**69**	**254**	**1249**	**2388**	**2432**	**2706**	**2522**	**2518**	**2590**	**2667**	**2648**	**2376**	**2322**	**2298**	**2167**	**2248**	**2086**	**1853**	**2057**	**1587**	**1187**	**533**	
58	16	18	29	186	438	496	**700**	679	616	679	645	**685**	613	548	579	539	607	548	514	595	420	348	218	76
52	11	18	45	253	665	586	**700**	646	618	650	638	**663**	618	543	577	564	534	503	469	540	460	322	143	49
58	21	14	76	326	703	593	**660**	589	648	634	702	**670**	591	610	581	538	569	498	459	471	352	290	83	40
20	16	19	104	484	582	**757**	646	608	636	627	682	**630**	554	621	561	526	538	537	411	451	355	227	89	26

AM Peak 0645 - 0745 (2817), AM PHF=0.93 PM Peak 1200 - 1300 (2648), PM PHF=0.97

* Thursday, August 21, 2008=678 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
191	**97**	**103**	**287**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
76	24	20	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49	28	23	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	20	28	96	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	25	32	124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17404] N. Harbor Drive Btwn Laurel St. & Hawthorn St.**
Input A:	1 - North bound. - Excluded from totals. (0)
Input B:	3 - South bound. - Added to totals. (1)
Survey Duration:	14:19 Monday, August 25, 2008 => 10:20 Friday, August 29, 2008
File:	Z:\mcdata\LLG\2008\174\1740429Aug2008.EC0 (Plus)
Identifier:	M280P4JB MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**19:00 Monday, August 25, 2008 => 8:00 Friday, August 29, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 172300 / 172814 (99.70%)

*** Monday, August 25, 2008=3993 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**999**	**1038**	**879**	**775**	**302**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273	255	240	199	120	31
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	263	262	212	231	72	31
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	264	224	177	67	26
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	216	257	203	168	43	16

*** Tuesday, August 26, 2008=25242, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
104	**39**	**58**	**232**	**797**	**1404**	**1587**	**1666**	**1417**	**1428**	**1375**	**1478**	**1484**	**1389**	**1348**	**1341**	**1340**	**1463**	**1215**	**1021**	**1006**	**974**	**743**	**333**	
31	14	10	21	118	315	324	**423**	361	368	331	370	**357**	335	341	352	356	380	335	275	234	242	230	112	39
31	8	9	38	158	341	412	**432**	371	363	351	321	**368**	361	383	348	330	391	318	242	273	238	224	93	14
26	6	25	87	235	375	**443**	404	331	355	354	383	**385**	360	304	329	321	356	245	270	237	248	147	69	22
16	11	14	86	286	373	**408**	407	354	342	339	404	**374**	333	320	312	333	336	317	234	262	246	142	59	17

AM Peak 0630 - 0730 (1706), AM PHF=0.96 PM Peak 1200 - 1300 (1484), PM PHF=0.96

*** Wednesday, August 27, 2008=26359, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
92	**37**	**65**	**205**	**962**	**1576**	**1659**	**1698**	**1601**	**1436**	**1395**	**1592**	**1667**	**1517**	**1415**	**1490**	**1480**	**1325**	**1257**	**1000**	**1132**	**872**	**613**	**273**	
39	11	13	16	155	376	359	**444**	415	360	311	377	**437**	361	382	369	398	375	329	236	302	222	192	102	38
14	8	16	43	172	387	397	**444**	402	362	356	381	**444**	400	361	378	355	331	326	256	300	218	165	64	25
22	12	17	72	278	387	**438**	414	387	361	386	421	**407**	382	318	367	365	322	237	234	251	231	132	55	33
17	6	19	74	357	426	**465**	396	397	353	342	413	**379**	374	354	376	362	297	365	274	279	201	124	52	19

AM Peak 0630 - 0730 (1791), AM PHF=0.96 PM Peak 1200 - 1300 (1667), PM PHF=0.94

*** Thursday, August 28, 2008=27708, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
115	**48**	**64**	**259**	**838**	**1464**	**1645**	**1721**	**1538**	**1534**	**1559**	**1703**	**1702**	**1699**	**1478**	**1573**	**1500**	**1562**	**1300**	**1066**	**1153**	**970**	**874**	**343**	
38	11	17	22	136	311	336	**446**	330	367	382	365	**443**	417	404	396	386	408	369	279	303	236	231	128	34
25	8	14	53	174	409	398	**461**	462	388	367	437	**445**	446	372	401	359	419	336	271	284	249	263	102	1
33	12	18	88	239	367	**454**	441	407	387	426	462	**414**	437	353	388	364	372	310	258	289	244	196	54	0
19	17	15	96	289	377	**457**	373	339	392	384	439	**400**	399	349	388	391	363	285	258	277	241	184	59	0

AM Peak 0630 - 0730 (1818), AM PHF=0.99 PM Peak 1200 - 1300 (1702), PM PHF=0.96

*** Friday, August 29, 2008=35 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
35	**0**	**0**	**0**	**0**	**0**	**0**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57791

SB Avg. 26440
NB Avg. 27820
total: 54260

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17404] N. Harbor Drive Btwn Laurel St. & Hawthorn St.**
Input A:	1 - North bound. - Added to totals. (1)
Input B:	3 - South bound. - Excluded from totals. (0)
Survey Duration:	14:19 Monday, August 25, 2008 => 10:20 Friday, August 29, 2008
File:	Z:\mcdata\LLG\2008\174\1740429Aug2008.EC0 (Plus)
Identifier:	M280P4JB MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**19:00 Monday, August 25, 2008 => 8:00 Friday, August 29, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 172300 / 172814 (99.70%)

*** Monday, August 25, 2008=5432 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1270**	**1223**	**1164**	**1002**	**773**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	346	281	351	237	282	89
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	305	270	322	216	221	59
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	311	288	297	312	165	60
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	308	384	194	237	105	46

*** Tuesday, August 26, 2008=26216, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
254	**98**	**32**	**43**	**248**	**800**	**914**	**1053**	**1150**	**1356**	**1487**	**1557**	**1670**	**1690**	**1617**	**1762**	**1594**	**1707**	**1932**	**1369**	**1101**	**1127**	**991**	**664**	
89	41	9	4	30	198	237	201	278	316	332	432	**430**	425	430	474	437	436	**479**	350	241	273	241	244	126
59	27	6	6	41	195	216	291	263	342	344	389	**426**	400	364	451	439	442	**515**	321	283	314	216	173	91
60	13	8	14	72	215	213	299	308	335	389	347	**391**	395	426	419	364	381	**445**	379	304	276	309	120	54
46	17	9	19	105	192	248	262	301	363	422	**389**	423	470	397	418	354	448	**493**	319	273	264	225	127	31

AM Peak 1145 - 1245 (1636), AM PHF=0.95 PM Peak 1800 - 1900 (1932), PM PHF=0.94

*** Wednesday, August 27, 2008=27235, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
302	**92**	**38**	**68**	**308**	**949**	**998**	**1129**	**1236**	**1364**	**1568**	**1519**	**1774**	**1680**	**1706**	**1893**	**1834**	**1580**	**1569**	**1336**	**1336**	**1209**	**1090**	**657**	
126	31	16	16	28	232	269	267	281	345	360	366	**421**	394	473	492	**424**	417	356	378	284	396	289	247	101
91	23	9	13	40	245	243	280	278	335	381	391	**438**	408	422	443	**474**	477	415	314	371	352	281	174	79
54	24	7	18	95	240	228	302	343	318	405	370	**438**	446	403	443	**488**	338	412	329	349	240	304	116	42
31	14	6	21	145	232	258	280	334	366	422	**392**	477	432	408	**515**	448	348	386	315	332	221	216	120	25

AM Peak 1145 - 1245 (1689), AM PHF=0.96 PM Peak 1545 - 1645 (1901), PM PHF=0.92

*** Thursday, August 28, 2008=30019, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
247	**86**	**40**	**79**	**247**	**859**	**915**	**1119**	**1192**	**1414**	**1589**	**1804**	**1934**	**2128**	**2102**	**2144**	**2039**	**1829**	**2041**	**1377**	**1419**	**1220**	**1274**	**921**	
101	29	15	11	38	171	223	253	264	291	378	468	**488**	553	**614**	525	541	470	445	381	320	339	317	306	60
79	16	11	22	34	220	218	286	271	335	404	415	**468**	461	**528**	614	522	459	451	375	335	350	312	286	0
42	22	7	23	72	248	210	274	344	365	379	446	**456**	474	**520**	497	532	565	581	274	390	242	336	218	0
25	19	7	23	103	220	264	306	313	423	428	**475**	522	**640**	440	508	444	335	564	347	374	289	309	111	0

AM Peak 1145 - 1245 (1887), AM PHF=0.97 PM Peak 1345 - 1445 (2302), PM PHF=0.90

*** Friday, August 29, 2008=60 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
60	**0**	**0**	**0**	**0**	**0**	**0**	**0**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
60	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17405] N. Harbor Dr - Btwn Hawthorn St & Grape St**
Input A:	2 - South bound. - Excluded from totals. (0)
Input B:	4 - North bound. - Added to totals. (1)
Survey Duration:	4:28 Monday, August 18, 2008 => 1:17 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\17405A22Aug2008.EC0 (Plus)
Identifier:	A573BVAY MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**5:00 Monday, August 18, 2008 => 1:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 150622 / 150879 (99.83%)

* Monday, August 18, 2008=7179 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	154	231	327	315	390	485	496	565	439	470	518	473	537	435	359	343	295	219	128	
-	-	-	-	-	40	47	73	63	101	104	112	134	120	110	151	109	160	127	97	90	77	57	38	21
-	-	-	-	-	26	58	86	85	100	98	124	157	116	117	125	123	137	108	96	91	80	59	36	8
-	-	-	-	-	40	63	91	64	103	160	122	135	107	132	129	110	125	91	86	79	65	54	31	8
-	-	-	-	-	48	63	77	103	86	123	138	139	96	111	113	131	115	109	80	83	73	49	23	8

PM Peak 1200 - 1300 (565), PM PHF=0.90

* Tuesday, August 19, 2008=7545, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
45	30	19	11	57	178	274	309	295	339	421	517	541	501	527	512	536	588	478	386	371	271	230	109	
21	8	5	2	5	47	62	71	78	78	107	139	139	126	148	140	130	150	136	121	100	78	69	40	9
8	10	6	5	8	42	55	76	57	82	104	121	126	134	134	113	132	158	137	92	97	58	70	28	12
8	6	5	2	9	47	75	87	86	81	116	142	125	120	140	116	115	147	99	75	75	64	56	17	17
8	6	3	2	35	42	82	75	74	98	94	115	151	121	105	143	159	133	106	98	99	71	35	24	7

AM Peak 1130 - 1230 (522), AM PHF=0.92 PM Peak 1645 - 1745 (614), PM PHF=0.97

* Wednesday, August 20, 2008=9248, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
45	21	8	17	180	361	431	484	493	484	564	628	618	603	570	557	556	632	443	471	411	324	242	105	
9	8	5	5	14	91	97	109	157	117	132	170	161	151	151	164	135	168	120	127	132	81	72	33	25
12	3	3	3	34	89	111	134	108	115	144	139	158	172	144	130	134	182	95	122	100	96	66	33	15
17	7	0	5	60	91	103	125	115	123	161	171	137	142	151	141	164	143	112	129	91	82	54	26	5
7	3	0	4	72	90	120	116	113	129	127	148	162	138	124	122	123	139	116	93	88	65	50	13	7

AM Peak 1130 - 1230 (638), AM PHF=0.93 PM Peak 1630 - 1730 (637), PM PHF=0.88

* Thursday, August 21, 2008=8483, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
52	39	19	13	92	167	244	329	313	408	485	566	614	578	584	587	612	639	515	429	415	336	282	165	
25	8	4	2	7	35	53	78	72	102	111	142	159	137	137	156	158	161	147	109	108	91	90	49	27
15	8	7	2	19	47	41	73	65	99	106	144	163	142	146	135	165	187	140	114	93	90	102	44	18
5	10	3	3	23	40	74	98	88	98	134	148	124	162	173	160	146	165	117	112	108	89	41	41	14
7	13	5	6	43	45	76	80	88	109	134	132	168	137	128	136	143	126	111	94	106	66	49	31	14

AM Peak 1130 - 1230 (602), AM PHF=0.92 PM Peak 1645 - 1745 (656), PM PHF=0.88

* Friday, August 22, 2008=73 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57791

NB Avg. 8430
SB Avg. 29400
total: 37830

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17405] N. Harbor Dr - Btwn Hawthorn St & Grape St**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	4 - West bound. - Excluded from totals. (0)
Survey Duration:	4:28 Monday, August 18, 2008 => 1:17 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\17405A22Aug2008.EC0 (Plus)
Identifier:	A573BVAY MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**5:00 Monday, August 18, 2008 => 1:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 150622 / 150879 (99.83%)

*** Monday, August 18, 2008=29494 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**983**	**1031**	**1299**	**1480**	**1674**	**1943**	**2023**	**1970**	**1986**	**1865**	**1926**	**1821**	**1690**	**1493**	**1398**	**1393**	**1326**	**1255**	**938**	
-	-	-	-	-	172	266	295	350	394	500	514	463	**572**	459	456	417	428	364	403	319	408	296	314	93
-	-	-	-	-	257	198	318	351	398	488	485	**501**	488	470	566	508	422	390	363	328	330	224	294	90
-	-	-	-	-	287	263	323	380	444	456	515	**508**	486	444	435	427	447	365	302	369	279	385	186	52
-	-	-	-	-	267	304	363	399	438	499	509	**498**	440	492	469	469	393	374	330	377	309	350	144	40

PM Peak 1215 - 1315 (2079), PM PHF=0.91

*** Tuesday, August 19, 2008=28295, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
275	**164**	**54**	**53**	**229**	**910**	**994**	**1175**	**1320**	**1396**	**1621**	**1878**	**1865**	**1814**	**1845**	**1834**	**1756**	**1631**	**1747**	**1269**	**1402**	**1184**	**1225**	**654**	
93	45	15	14	16	169	259	303	302	318	387	457	**447**	**495**	515	418	436	429	432	351	371	340	338	226	101
90	37	14	11	25	223	221	306	334	329	376	472	**473**	437	405	490	464	408	453	292	340	273	335	161	75
52	55	12	10	51	277	264	295	349	360	404	466	**484**	474	440	458	458	375	424	324	357	310	297	148	86
40	27	13	18	137	241	250	271	335	389	454	**483**	**461**	408	485	468	398	419	438	302	334	261	255	119	48

AM Peak 1145 - 1245 (1887), AM PHF=0.97 PM Peak 1215 - 1315 (1913), PM PHF=0.97

*** Wednesday, August 20, 2008=29850, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
310	**92**	**47**	**57**	**325**	**1050**	**1029**	**1311**	**1410**	**1599**	**1799**	**1953**	**1922**	**2014**	**1820**	**1755**	**1779**	**1731**	**1587**	**1543**	**1581**	**1158**	**1235**	**743**	
101	29	19	10	28	203	276	305	327	383	423	439	**432**	**543**	448	406	437	457	413	448	353	285	352	285	114
75	18	11	11	48	244	221	328	337	415	494	531	**519**	476	439	486	451	385	411	395	395	297	303	190	95
86	28	9	12	87	285	274	336	361	393	419	457	**483**	516	476	425	430	454	321	401	410	287	279	165	73
48	17	8	24	162	318	258	342	385	408	463	**526**	**488**	479	457	438	461	435	442	299	423	289	301	103	57

AM Peak 1145 - 1245 (1960), AM PHF=0.93 PM Peak 1215 - 1315 (2033), PM PHF=0.94

*** Thursday, August 21, 2008=30055, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
339	**110**	**67**	**79**	**255**	**851**	**930**	**1156**	**1313**	**1580**	**1808**	**1869**	**1891**	**1944**	**1896**	**1876**	**1884**	**1857**	**1768**	**1583**	**1612**	**1499**	**1076**	**812**	
114	30	20	17	31	177	253	255	282	361	446	**494**	411	471	**521**	419	451	493	459	422	362	376	281	255	158
95	34	14	20	48	216	202	312	316	365	445	**468**	482	**506**	437	521	455	506	494	399	411	402	255	276	94
73	31	11	22	62	229	213	257	347	413	**444**	442	485	**490**	445	492	494	433	385	373	383	374	257	168	65
57	15	22	20	114	229	262	332	368	441	**473**	465	513	**477**	493	444	484	425	430	389	456	347	283	113	82

AM Peak 1030 - 1130 (1879), AM PHF=0.95 PM Peak 1315 - 1415 (1994), PM PHF=0.96

*** Friday, August 22, 2008=399 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
399	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
158	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17406E] Laurel St - Btwn N. Harbor Dr & Pacific Hwy**
Input A:	2 - East bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	6:18 Monday, August 18, 2008 => 8:45 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\17406E22Aug2008.EC0 (Base)
Identifier:	A5922K3W MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**7:00 Monday, August 18, 2008 => 8:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 66275 / 66693 (99.37%)

* Monday, August 18, 2008=15819 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**773**	**823**	**976**	**953**	**1078**	**1049**	**983**	**1068**	**1083**	**1174**	**1005**	**794**	**834**	**964**	**899**	**765**	**598**	
-	-	-	-	-	-	-	163	214	251	263	272	247	270	242	275	**310**	288	201	249	222	264	178	216	50
-	-	-	-	-	-	-	204	178	237	226	262	251	219	310	301	**297**	259	210	190	232	213	163	183	37
-	-	-	-	-	-	-	203	199	250	232	266	276	289	245	257	**289**	242	181	204	240	218	223	126	13
-	-	-	-	-	-	-	203	232	238	232	278	275	205	271	250	**278**	216	202	191	270	204	201	73	32

PM Peak 1600 - 1700 (1174), PM PHF=0.95

* Tuesday, August 19, 2008=15543, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
132	**80**	**15**	**21**	**95**	**531**	**566**	**651**	**718**	**820**	**904**	**918**	**955**	**921**	**939**	**1049**	**1023**	**886**	**923**	**692**	**899**	**760**	**705**	**340**	
50	31	7	4	2	87	152	162	146	206	212	**245**	250	228	244	307	**259**	242	202	205	226	211	190	130	65
37	22	1	2	17	145	136	151	165	175	202	**213**	225	223	205	235	**274**	196	200	146	206	166	192	72	40
13	20	4	6	21	153	146	181	204	230	**257**	256	221	258	237	222	**250**	192	266	163	256	175	180	89	47
32	7	3	9	55	146	132	157	203	209	**233**	204	259	212	253	**285**	240	256	255	178	211	208	143	49	31

AM Peak 1030 - 1130 (948), AM PHF=0.92 PM Peak 1545 - 1645 (1068), PM PHF=0.94

* Wednesday, August 20, 2008=16722, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
183	**49**	**10**	**18**	**120**	**518**	**498**	**604**	**642**	**797**	**828**	**1006**	**1076**	**1055**	**1020**	**1246**	**1107**	**1008**	**932**	**861**	**1086**	**806**	**811**	**441**	
65	11	4	0	10	92	110	143	160	188	222	238	**245**	250	251	**325**	296	265	184	236	262	180	230	190	59
40	14	5	2	16	81	121	135	163	178	179	235	**278**	293	259	**341**	248	289	218	197	246	167	206	106	56
47	17	0	5	35	175	129	175	152	201	194	**262**	258	270	258	**257**	297	231	237	222	318	238	194	99	30
31	7	1	11	59	170	138	151	167	230	233	**271**	295	242	252	**323**	266	223	293	206	260	221	181	46	33

AM Peak 1130 - 1230 (1056), AM PHF=0.95 PM Peak 1500 - 1600 (1246), PM PHF=0.91

* Thursday, August 21, 2008=17844, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
178	**60**	**30**	**37**	**116**	**535**	**490**	**626**	**758**	**894**	**952**	**941**	**1070**	**1143**	**1115**	**1176**	**1192**	**1123**	**1107**	**950**	**1082**	**1023**	**699**	**547**	
59	20	8	8	8	89	135	152	177	197	245	215	**244**	294	273	**319**	327	296	297	281	259	297	193	192	105
56	13	9	8	15	144	97	160	189	227	230	232	**273**	272	259	**296**	291	300	292	284	268	285	165	176	42
30	15	6	10	32	159	124	163	190	231	232	**258**	255	305	**293**	286	296	256	272	210	309	221	141	106	36
33	12	7	11	61	143	134	151	202	239	245	**236**	298	272	**290**	275	278	271	246	175	246	220	200	73	35

AM Peak 1130 - 1230 (1011), AM PHF=0.93 PM Peak 1430 - 1530 (1198), PM PHF=0.94

* Friday, August 22, 2008=345 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
218	**127**	**0**	**0**	**0**	**0**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
105	38	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	52	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	32	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	5	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57291

EB Avg. 16700

WB Avg. 19690

total: 36,390

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17406W] Laurel St - Btwn N. Harbor Dr & Pacific Hwy**
Input A:	4 - West bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	6:19 Monday, August 18, 2008 => 12:01 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\17406W22Aug2008.EC0 (Plus)
Identifier:	1387F8VW MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**7:00 Monday, August 18, 2008 => 3:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 77333 / 78077 (99.05%)

*** Monday, August 18, 2008=18093 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**1219**	**1299**	**1374**	**1275**	**1464**	**1333**	**1149**	**1134**	**1142**	**1036**	**1019**	**1003**	**919**	**1094**	**775**	**596**	**262**	
-	-	-	-	-	-	-	286	328	341	304	396	**310**	296	241	307	283	268	271	222	270	203	169	101	27
-	-	-	-	-	-	-	284	321	348	295	369	**361**	308	290	258	258	251	249	230	304	194	130	71	19
-	-	-	-	-	-	-	289	321	317	343	371	**338**	241	294	270	250	241	227	257	273	221	149	48	17
-	-	-	-	-	-	-	360	329	368	333	328	**324**	304	309	307	245	259	256	210	247	157	148	42	16

PM Peak 1200 - 1300 (1333), PM PHF=0.92

*** Tuesday, August 19, 2008=18491, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
79	**42**	**17**	**55**	**376**	**1027**	**1047**	**1041**	**1155**	**1130**	**1147**	**1271**	**1169**	**1011**	**1039**	**1015**	**946**	**1010**	**952**	**804**	**833**	**663**	**458**	**204**	
27	18	6	4	49	222	200	270	248	246	265	**308**	**296**	261	251	238	226	264	246	186	220	173	115	74	32
19	12	4	7	58	267	273	258	316	323	288	**325**	**329**	271	252	268	278	246	255	204	225	168	133	57	18
17	7	6	24	101	275	248	236	291	267	310	**298**	**271**	250	267	253	231	249	243	212	192	173	81	44	15
16	5	1	20	168	263	326	277	300	294	284	**340**	**273**	229	269	256	211	251	208	202	196	149	129	29	13

AM Peak 1100 - 1200 (1271), AM PHF=0.93 PM Peak 1200 - 1300 (1169), PM PHF=0.89

*** Wednesday, August 20, 2008=19406, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
78	**26**	**11**	**51**	**384**	**970**	**974**	**1032**	**1111**	**1216**	**1230**	**1334**	**1200**	**1128**	**1102**	**1111**	**950**	**1032**	**1089**	**890**	**928**	**781**	**511**	**267**	
32	4	4	5	50	129	184	252	274	287	333	**344**	**328**	288	242	265	242	270	258	222	259	239	160	113	30
18	7	2	14	71	299	229	264	274	318	294	**308**	**299**	287	272	287	260	266	251	227	225	219	149	72	19
15	6	3	10	90	313	227	251	279	300	284	**339**	**276**	270	282	302	221	244	265	221	235	158	118	29	21
13	9	2	22	173	229	334	265	284	311	319	**343**	**297**	283	306	257	227	252	315	220	209	165	84	53	10

AM Peak 1100 - 1200 (1334), AM PHF=0.97 PM Peak 1200 - 1300 (1200), PM PHF=0.91

*** Thursday, August 21, 2008=21169, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
80	**35**	**36**	**69**	**361**	**1085**	**965**	**1082**	**1201**	**1313**	**1267**	**1397**	**1365**	**1109**	**1141**	**1243**	**1207**	**1204**	**1215**	**1050**	**1101**	**799**	**537**	**307**	
30	11	9	4	57	242	213	263	245	337	316	347	**317**	298	271	324	313	269	329	267	265	225	148	114	41
19	13	8	8	47	278	225	285	327	306	302	331	**375**	260	268	279	297	308	312	250	282	227	115	78	24
21	6	14	23	101	313	248	241	315	334	316	344	**346**	298	310	316	296	306	279	224	248	200	125	66	27
10	5	5	34	156	252	279	293	314	336	333	**375**	**327**	253	292	324	301	321	295	309	306	147	149	49	25

AM Peak 1145 - 1245 (1413), AM PHF=0.94 PM Peak 1200 - 1300 (1365), PM PHF=0.91

*** Friday, August 22, 2008=173 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
117	**56**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
41	20	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	20	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	11	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	5	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17407] Hawthorn St - Btwn N. Harbor Dr & Pacific Hwy** ONE-WAY STREET
Input A:	4 - West bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	5:17 Monday, August 18, 2008 => 8:56 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\1740722Aug2008.EC0 (Plus)
Identifier:	M278T7ZB MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**6:00 Monday, August 18, 2008 => 1:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 99573 / 100784 (98.80%)

*** Monday, August 18, 2008=22151 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**1908**	**1814**	**1508**	**1374**	**1386**	**1501**	**1628**	**1518**	**1399**	**1210**	**1167**	**1045**	**1063**	**909**	**1030**	**786**	**621**	**284**	
-	-	-	-	-	-	364	460	366	321	349	362	**423**	407	380	296	318	249	264	222	261	210	166	100	28
-	-	-	-	-	-	472	489	483	335	331	387	**368**	377	342	305	296	262	252	243	250	199	147	78	22
-	-	-	-	-	-	529	453	346	352	324	386	**439**	363	335	327	299	266	264	223	281	200	160	65	27
-	-	-	-	-	-	543	412	313	366	382	366	**398**	371	342	282	254	268	283	221	238	177	148	41	21

PM Peak 1200 - 1300 (1628), PM PHF=0.93

*** Tuesday, August 19, 2008=23659, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
98	**44**	**62**	**232**	**818**	**1479**	**1752**	**1630**	**1356**	**1350**	**1335**	**1385**	**1538**	**1381**	**1377**	**1211**	**1168**	**1111**	**1126**	**916**	**836**	**729**	**518**	**207**	
28	16	8	23	137	327	307	**466**	339	348	327	317	366	**379**	347	291	324	254	300	226	199	198	129	78	26
22	13	11	39	148	396	**466**	426	397	301	360	393	**379**	339	339	308	285	283	309	212	210	171	164	51	34
27	9	20	76	230	362	**481**	362	314	352	311	323	**452**	305	347	311	294	284	257	243	207	181	131	41	25
21	6	23	94	303	394	**498**	376	306	349	337	352	**341**	358	344	301	265	290	260	235	220	179	94	37	6

AM Peak 0615 - 0715 (1911), AM PHF=0.96 PM Peak 1215 - 1315 (1551), PM PHF=0.86

*** Wednesday, August 20, 2008=25843, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
91	**25**	**60**	**243**	**858**	**1494**	**1660**	**1838**	**1474**	**1496**	**1513**	**1615**	**1830**	**1577**	**1374**	**1280**	**1254**	**1191**	**1278**	**1059**	**1060**	**756**	**581**	**236**	
26	7	12	28	147	288	318	**496**	418	357	410	349	**428**	416	324	300	304	320	363	336	332	203	161	106	24
34	2	14	40	175	398	375	**475**	389	364	375	401	**412**	384	358	343	277	249	308	252	302	199	152	58	18
25	9	13	75	216	417	427	**462**	306	383	360	447	**564**	405	331	327	346	322	301	245	218	175	141	40	20
6	7	21	100	320	391	**540**	405	361	392	368	418	**426**	372	361	310	327	300	306	226	208	179	127	32	9

AM Peak 0645 - 0745 (1973), AM PHF=0.91 PM Peak 1200 - 1300 (1830), PM PHF=0.81

*** Thursday, August 21, 2008=27807, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
71	**41**	**59**	**273**	**832**	**1516**	**1758**	**1768**	**1531**	**1576**	**1638**	**1845**	**2163**	**1795**	**1659**	**1383**	**1376**	**1303**	**1336**	**1110**	**1111**	**807**	**565**	**291**	
24	12	5	30	141	347	338	472	361	365	383	404	**542**	482	446	333	342	342	355	317	297	211	135	100	32
18	10	12	43	157	395	421	442	382	377	403	491	**556**	506	408	345	352	357	353	256	297	226	147	80	35
20	8	15	92	233	382	498	405	415	424	373	459	**552**	415	409	336	372	293	333	251	277	192	135	58	29
9	11	27	108	301	392	501	449	373	410	479	**491**	**513**	392	396	369	310	311	295	286	240	178	148	53	16

AM Peak 1145 - 1245 (2141), AM PHF=0.96 PM Peak 1200 - 1300 (2163), PM PHF=0.97

*** Friday, August 22, 2008=112 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
112	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Avg. = 25,770

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	[17408] Grape St - Btwn N. Harbor Dr & Pacific Hwy ONE · WAY STREET
Input A:	2 - East bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	4:50 Monday, August 18, 2008 => 11:49 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\1740822Aug2008.EC0 (Plus)
Identifier:	A594KV0T MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**5:00 Monday, August 18, 2008 => 1:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 93783 / 93901 (99.87%)

*** Monday, August 18, 2008=24023 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	-	-	-	-	812	791	930	1053	1314	1512	1578	1546	1608	1650	1697	1511	1365	1097	1117	1166	1195	1170	911	
-	-	-	-	-	144	201	247	222	303	369	431	388	456	392	428	353	392	241	333	252	345	288	314	85
-	-	-	-	-	206	168	214	257	302	368	368	365	373	388	466	386	325	286	294	266	336	181	295	70
-	-	-	-	-	249	203	204	281	356	355	368	420	407	393	395	396	356	288	248	308	239	370	170	53
-	-	-	-	-	213	219	265	293	353	420	411	373	372	477	408	376	292	282	242	340	275	331	132	35

PM Peak 1445 - 1545 (1766), PM PHF=0.93

*** Tuesday, August 19, 2008=22486, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
243	157	47	50	192	706	742	783	935	950	1202	1336	1432	1510	1554	1592	1484	1265	1380	959	1176	986	1213	592	
85	47	11	13	13	145	171	214	221	201	286	315	339	434	426	364	370	366	345	285	319	289	357	206	89
70	39	11	8	24	167	166	210	213	223	291	353	346	334	389	468	381	320	350	211	284	227	333	142	70
53	44	13	9	45	204	225	191	246	246	279	335	372	384	353	383	392	267	342	250	295	271	291	134	85
35	27	12	20	110	190	180	168	255	280	346	333	375	358	386	377	341	312	343	213	278	199	232	110	41

AM Peak 1145 - 1245 (1390), AM PHF=0.93 PM Peak 1445 - 1545 (1601), PM PHF=0.86

*** Wednesday, August 20, 2008=23005, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
285	72	41	48	201	670	620	837	836	1058	1194	1319	1440	1651	1585	1603	1463	1383	1215	1147	1370	1084	1174	709	
89	21	16	10	19	127	153	215	211	248	291	296	314	418	406	423	394	383	346	336	278	245	345	262	101
70	15	8	7	35	133	146	199	181	262	297	335	374	365	373	425	361	340	302	294	378	262	285	186	84
85	22	7	10	57	215	171	205	222	269	277	326	383	433	404	398	337	372	246	305	357	281	287	164	68
41	14	10	21	90	195	150	218	222	279	329	362	369	435	402	357	371	288	321	212	357	296	257	97	52

AM Peak 1145 - 1245 (1433), AM PHF=0.94 PM Peak 1430 - 1530 (1654), PM PHF=0.97

*** Thursday, August 21, 2008=23913, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
305	93	57	67	198	639	702	807	931	1057	1280	1440	1445	1569	1660	1628	1483	1492	1336	1189	1332	1400	1084	719	
101	32	18	13	23	142	190	192	187	219	311	389	329	391	425	392	365	433	346	265	292	330	287	213	140
84	23	11	23	41	154	166	217	239	264	322	351	393	396	396	444	369	402	390	328	332	361	281	249	82
68	24	11	19	46	185	151	171	234	278	295	351	361	403	408	414	389	351	291	271	315	394	260	158	57
52	14	17	12	88	158	195	227	271	296	352	349	362	379	431	378	360	306	309	325	393	315	256	99	76

AM Peak 1045 - 1145 (1443), AM PHF=0.93 PM Peak 1445 - 1545 (1681), PM PHF=0.95

*** Friday, August 22, 2008=355 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
355	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Avg. = 23,130

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17409] Harbor Island Dr - Btwn N. Harbor Dr & Sheraton Drwy**
Input A:	1 - North bound. - Added to totals. (1)
Input B:	3 - South bound. - Excluded from totals. (0)
Survey Duration:	5:37 Monday, August 18, 2008 => 9:08 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\1740922Aug2008.EC0 (Base)
Identifier:	A564FEQH MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**6:00 Monday, August 18, 2008 => 7:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 62504 / 62633 (99.79%)

*** Monday, August 18, 2008=6903 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**129**	**204**	**267**	**361**	**369**	**372**	**442**	**566**	**578**	**477**	**505**	**437**	**442**	**394**	**380**	**338**	**372**	**270**	
-	-	-	-	-	-	24	52	55	77	91	99	100	171	**163**	133	134	142	112	99	106	104	96	93	44
-	-	-	-	-	-	24	48	59	87	99	82	108	126	**145**	106	108	96	127	106	98	68	89	75	29
-	-	-	-	-	-	36	35	76	98	79	91	134	130	**132**	124	133	91	94	86	90	78	96	54	19
-	-	-	-	-	-	45	69	77	99	100	100	100	**139**	138	114	130	108	109	103	86	88	91	48	10

PM Peak 1345 - 1445 (579), PM PHF=0.89

*** Tuesday, August 19, 2008=7513, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
102	**48**	**26**	**33**	**53**	**100**	**148**	**245**	**252**	**326**	**382**	**387**	**443**	**652**	**548**	**515**	**510**	**450**	**472**	**412**	**405**	**390**	**381**	**233**	
44	16	6	15	5	27	28	48	56	78	104	103	**115**	**198**	144	125	126	114	127	103	116	88	93	80	43
29	18	6	5	11	24	29	68	65	72	71	91	**95**	**146**	137	126	122	119	111	109	89	99	94	49	32
19	10	7	6	21	21	45	64	60	90	92	89	**117**	**163**	131	149	148	105	125	90	103	118	120	55	21
10	4	7	7	16	28	46	65	71	86	115	**104**	116	**145**	136	115	114	112	109	110	97	85	74	49	31

AM Peak 1145 - 1245 (431), AM PHF=0.92 PM Peak 1300 - 1400 (652), PM PHF=0.82

*** Wednesday, August 20, 2008=8429, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
127	**44**	**29**	**30**	**53**	**88**	**133**	**219**	**225**	**316**	**342**	**677**	**650**	**683**	**647**	**564**	**544**	**463**	**497**	**502**	**447**	**431**	**435**	**283**	
43	8	9	9	9	13	29	52	49	81	91	100	**183**	**153**	176	168	109	102	111	120	115	95	97	100	64
32	8	5	3	13	25	20	62	64	74	66	**165**	155	**221**	175	116	115	124	129	124	125	93	117	83	44
21	10	9	5	14	19	41	58	60	84	90	**198**	162	**182**	150	149	167	116	150	134	109	140	118	58	31
31	18	6	13	17	31	43	47	52	77	95	**214**	**150**	127	146	131	153	121	107	124	98	103	103	42	23

AM Peak 1115 - 1215 (760), AM PHF=0.89 PM Peak 1245 - 1345 (706), PM PHF=0.80

*** Thursday, August 21, 2008=8738, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
162	**66**	**43**	**40**	**50**	**107**	**146**	**246**	**221**	**340**	**387**	**403**	**533**	**799**	**695**	**628**	**637**	**514**	**561**	**492**	**482**	**465**	**394**	**327**	
64	13	9	12	9	24	35	52	56	68	105	109	**114**	170	**176**	164	141	123	138	133	125	112	93	112	48
44	25	11	10	12	24	30	71	58	76	81	115	**123**	**170**	165	174	159	128	137	114	129	114	90	95	47
31	18	10	12	11	27	39	59	44	98	93	88	**142**	**263**	182	152	178	137	154	140	110	131	104	70	42
23	10	13	6	18	32	42	64	63	98	108	**91**	154	**196**	172	138	159	126	132	105	118	108	107	50	37

AM Peak 1145 - 1245 (470), AM PHF=0.83 PM Peak 1315 - 1415 (805), PM PHF=0.77

*** Friday, August 22, 2008=270 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
174	**88**	**8**	**0**	**0**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
48	23	8	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	27	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	22	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	16	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57791

NB Avg. 8230

SB Avg. 8100

total: 16,330

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:
Site: [17409] Harbor Island Dr - Btwn N. Harbor Dr & Sheraton Drwy
Input A: 1 - North bound. - Excluded from totals. (0)
Input B: 3 - South bound. - Added to totals. (1)
Survey Duration: 5:37 Monday, August 18, 2008 => 9:08 Friday, August 22, 2008
File: Z:\mcdata\LLG\2008\174\1740922Aug2008.EC0 (Base)
Identifier: A564FEQH MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm: Event Count
Data type: Axle sensors - Separate (Count)

Profile:
Filter time: **6:00 Monday, August 18, 2008 => 7:00 Friday, August 22, 2008**
Name: Factory default profile
Scheme: Count events divided by two.
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Events = 62504 / 62633 (99.79%)

* Monday, August 18, 2008=6207 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**222**	**363**	**335**	**319**	**351**	**407**	**456**	**508**	**494**	**382**	**427**	**393**	**372**	**310**	**318**	**272**	**182**	**96**	
-	-	-	-	-	-	46	58	88	65	79	99	100	134	**131**	88	101	95	102	89	85	63	50	42	15
-	-	-	-	-	-	39	102	73	86	82	104	121	107	**119**	84	115	91	86	80	79	73	53	15	7
-	-	-	-	-	-	58	116	80	76	110	85	107	125	**132**	94	120	102	94	74	77	83	33	24	14
-	-	-	-	-	-	79	87	94	92	80	119	128	**142**	112	116	91	105	90	67	77	53	46	15	13

PM Peak 1345 - 1445 (524), PM PHF=0.92

* Tuesday, August 19, 2008=7380, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
49	**22**	**35**	**128**	**317**	**291**	**252**	**356**	**375**	**332**	**373**	**455**	**493**	**529**	**481**	**437**	**480**	**435**	**416**	**317**	**269**	**240**	**196**	**102**	
15	4	7	13	89	74	34	72	106	69	84	79	**111**	139	**135**	106	110	125	116	102	69	58	71	34	21
7	8	9	16	58	69	56	86	96	75	88	103	**122**	115	**134**	88	122	100	105	80	63	60	50	31	11
14	6	13	40	85	60	79	94	79	98	88	**127**	126	**145**	97	120	108	112	93	72	76	69	41	20	14
13	4	6	59	85	88	83	104	94	90	113	**146**	134	**130**	115	123	140	98	102	63	61	53	34	17	8

AM Peak 1130 - 1230 (506), AM PHF=0.87 PM Peak 1330 - 1430 (544), PM PHF=0.94

* Wednesday, August 20, 2008=8349, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
54	**36**	**34**	**135**	**325**	**260**	**247**	**427**	**431**	**453**	**539**	**550**	**591**	**549**	**502**	**412**	**476**	**495**	**533**	**405**	**300**	**260**	**211**	**124**	
21	11	6	11	72	55	45	87	99	104	137	124	**129**	**146**	132	110	95	113	155	128	85	49	64	42	29
11	7	11	19	72	64	47	92	99	108	141	128	**142**	**153**	124	97	130	110	139	97	74	77	56	36	18
14	12	7	43	81	63	79	132	112	121	147	153	**161**	117	133	104	131	121	114	101	79	66	46	25	7
8	6	10	62	100	78	76	116	121	120	114	**145**	**159**	133	113	101	120	151	125	79	62	68	45	21	8

AM Peak 1145 - 1245 (577), AM PHF=0.90 PM Peak 1230 - 1330 (619), PM PHF=0.96

* Thursday, August 21, 2008=8583, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
62	**47**	**45**	**155**	**313**	**291**	**258**	**396**	**452**	**434**	**394**	**613**	**595**	**534**	**543**	**516**	**546**	**514**	**533**	**380**	**301**	**310**	**189**	**162**	
29	6	11	14	83	71	53	73	114	89	82	98	**162**	148	124	112	126	129	155	105	83	85	56	51	27
18	16	15	25	71	79	51	98	84	121	92	133	**149**	146	132	114	150	143	134	104	80	77	49	44	21
7	12	10	46	71	58	61	96	132	106	115	128	**141**	141	154	125	142	117	126	74	75	91	46	36	18
8	13	9	70	88	83	93	129	122	118	105	**254**	**143**	99	133	165	128	125	118	97	63	57	38	31	9

AM Peak 1145 - 1245 (706), AM PHF=0.69 PM Peak 1200 - 1300 (595), PM PHF=0.92

* Friday, August 22, 2008=132 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
75	**47**	**10**	**0**	**0**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
27	11	10	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	14	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	12	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	10	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site: [17410E] Harbor Island Dr - E/O Harbor Island Dr
Input A: 2 - East bound. - Added to totals. (1)
Input B: 0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration: 5:47 Monday, August 18, 2008 => 8:59 Friday, August 22, 2008
File: Z:\mcdata\LLG\2008\174\17410E22Aug2008.EC0 (Base)
Identifier: A570G7NP MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm: Event Count
Data type: Axle sensors - Separate (Count)

Profile:

Filter time: **6:00 Monday, August 18, 2008 => 2:00 Friday, August 22, 2008**
Name: Factory default profile
Scheme: Count events divided by two.
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Events = 12437 / 12445 (99.94%)

* Monday, August 18, 2008=2381 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**72**	**87**	**109**	**123**	**101**	**161**	**193**	**236**	**199**	**126**	**170**	**190**	**154**	**123**	**124**	**102**	**69**	**42**	
-	-	-	-	-	-	20	22	23	25	21	29	36	**62**	43	28	38	43	36	33	35	28	20	16	7
-	-	-	-	-	-	15	17	21	35	24	43	50	**49**	58	27	45	44	40	36	28	21	20	9	4
-	-	-	-	-	-	14	22	34	40	31	34	52	**75**	52	33	49	45	44	26	30	33	17	10	5
-	-	-	-	-	-	23	26	31	23	25	55	**55**	50	46	38	38	58	34	28	31	20	12	7	5

PM Peak 1245 - 1345 (241), PM PHF=0.80

* Tuesday, August 19, 2008=3052, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
21	**12**	**21**	**100**	**233**	**144**	**99**	**92**	**114**	**120**	**119**	**179**	**211**	**230**	**186**	**169**	**191**	**203**	**177**	**146**	**86**	**98**	**61**	**40**	
7	2	4	6	**70**	39	19	22	36	22	32	29	48	**64**	52	45	44	71	42	41	19	29	21	10	9
4	5	5	13	**43**	40	22	28	22	28	27	45	49	**52**	41	33	51	43	39	42	20	22	17	13	3
5	2	8	33	**51**	31	35	17	20	40	21	49	56	**60**	42	38	40	52	43	36	25	33	11	8	7
5	3	4	48	**69**	34	23	25	36	30	39	56	**58**	54	51	53	56	37	53	27	22	14	12	9	2

AM Peak 0400 - 0500 (233), AM PHF=0.83 PM Peak 1245 - 1345 (234), PM PHF=0.91

* Wednesday, August 20, 2008=3510, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
21	**14**	**22**	**105**	**224**	**135**	**80**	**113**	**139**	**194**	**254**	**295**	**265**	**243**	**220**	**148**	**175**	**184**	**202**	**167**	**93**	**125**	**51**	**41**	
9	4	3	7	65	37	13	20	37	41	76	48	**57**	**66**	64	33	43	35	58	50	26	32	15	13	7
3	4	8	12	49	30	24	24	29	35	56	**83**	**72**	64	54	38	44	38	57	50	24	34	11	12	7
7	4	5	33	48	29	20	29	32	59	48	**86**	**70**	62	42	39	44	48	50	35	23	27	12	8	3
2	2	6	53	62	39	23	40	41	59	74	**78**	**66**	51	60	38	44	63	37	32	20	32	13	8	6

AM Peak 1115 - 1215 (304), AM PHF=0.88 PM Peak 1215 - 1315 (274), PM PHF=0.95

* Thursday, August 21, 2008=3445, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
23	**14**	**23**	**125**	**206**	**157**	**86**	**121**	**123**	**152**	**133**	**185**	**236**	**241**	**224**	**184**	**213**	**212**	**227**	**180**	**130**	**126**	**70**	**54**	
7	2	7	10	61	48	15	33	27	34	40	46	**54**	**75**	53	33	45	48	52	57	34	32	20	17	9
7	5	5	23	50	32	20	33	22	58	26	45	**64**	55	52	48	50	65	58	44	37	35	21	16	9
3	3	6	36	41	38	23	21	34	30	33	36	**62**	64	63	51	51	46	70	40	29	34	16	11	7
6	4	5	56	54	39	28	34	40	30	34	**58**	**56**	47	56	52	67	53	47	39	30	25	13	10	6

AM Peak 1145 - 1245 (238), AM PHF=0.93 PM Peak 1215 - 1315 (257), PM PHF=0.86

* Friday, August 22, 2008=49 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
31	**18**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
9	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

EB Aug. 3340
WB Aug. 3600
total: 6940

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17410W] Harbor Island Dr - E/O Harbor Island Dr**
Input A:	4 - West bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	5:48 Monday, August 18, 2008 => 8:59 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\17410W22Aug2008.EC0 (Plus)
Identifier:	M293M05F MC56-6 [MC55] (c)Microcom 02/03/01
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**6:00 Monday, August 18, 2008 => 2:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 13898 / 13920 (99.84%)

* Monday, August 18, 2008=2970 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**46**	**48**	**68**	**120**	**113**	**112**	**192**	**292**	**273**	**190**	**214**	**182**	**201**	**164**	**166**	**186**	**234**	**169**	
-	-	-	-	-	-	12	3	25	19	34	24	35	86	**88**	58	69	47	50	28	41	50	59	57	28
-	-	-	-	-	-	8	12	6	38	29	30	48	55	**74**	43	46	44	60	53	37	41	51	48	16
-	-	-	-	-	-	13	12	16	35	22	27	56	**61**	56	47	50	37	44	41	47	48	67	30	6
-	-	-	-	-	-	13	21	21	28	28	31	53	**90**	55	42	49	54	47	42	41	47	57	34	6

PM Peak 1330 - 1430 (313), PM PHF=0.87

* Tuesday, August 19, 2008=3352, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
56	**29**	**20**	**20**	**38**	**46**	**63**	**54**	**83**	**115**	**129**	**126**	**198**	**362**	**258**	**212**	**197**	**190**	**180**	**197**	**202**	**205**	**233**	**139**	
28	11	5	12	3	13	11	16	18	26	36	33	**44**	**110**	73	55	60	54	42	51	48	53	51	46	17
16	15	4	1	6	12	15	15	23	22	28	22	**41**	**79**	69	62	48	58	33	50	52	47	60	32	15
6	1	3	4	14	7	19	8	19	40	15	38	**61**	**91**	43	45	48	36	53	52	55	70	82	25	10
6	2	8	3	15	14	18	15	23	27	50	**33**	52	**82**	73	50	41	42	52	44	47	35	40	36	20

AM Peak 1145 - 1245 (179), AM PHF=0.73 PM Peak 1300 - 1400 (362), PM PHF=0.82

* Wednesday, August 20, 2008=3780, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
62	**24**	**13**	**23**	**25**	**35**	**38**	**52**	**93**	**148**	**183**	**321**	**330**	**364**	**290**	**252**	**203**	**141**	**205**	**214**	**190**	**216**	**206**	**152**	
17	5	3	6	7	7	8	13	19	31	54	48	**94**	**72**	86	72	56	34	48	48	49	56	47	45	30
15	5	4	3	6	6	10	11	23	33	51	76	**83**	**125**	74	57	36	37	54	64	57	48	53	51	21
10	7	3	4	6	7	6	11	18	46	36	**78**	71	**104**	65	57	58	35	56	48	33	64	52	29	19
20	7	3	10	6	15	14	17	33	38	42	**119**	**82**	63	65	66	53	35	47	54	51	48	54	27	13

AM Peak 1130 - 1230 (374), AM PHF=0.79 PM Peak 1245 - 1345 (383), PM PHF=0.77

* Thursday, August 21, 2008=3673, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
83	**33**	**25**	**24**	**30**	**32**	**48**	**57**	**69**	**139**	**148**	**162**	**196**	**320**	**308**	**265**	**255**	**204**	**244**	**215**	**197**	**198**	**243**	**178**	
30	1	5	8	7	6	10	13	22	29	47	42	**37**	**88**	76	71	45	38	61	54	49	45	50	53	28
21	16	5	7	7	6	7	15	12	33	26	45	**56**	**84**	86	72	69	52	62	57	45	46	52	63	16
19	10	7	6	8	10	16	15	13	47	38	42	**43**	**89**	59	62	65	55	62	68	50	56	53	39	13
13	6	8	3	8	10	15	14	22	30	37	**33**	**60**	59	87	60	76	59	59	36	53	51	88	23	23

AM Peak 1145 - 1245 (169), AM PHF=0.75 PM Peak 1245 - 1345 (321), PM PHF=0.90

* Friday, August 22, 2008=122 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
80	**42**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
28	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

57791

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site:	**[17411W] Laural Street Merge to Harbor Drive** ONE · WAY
Input A:	4 - West bound. - Added to totals. (1)
Input B:	0 - Unused or unknown. - Excluded from totals. (0)
Survey Duration:	6:30 Monday, August 18, 2008 => 9:06 Friday, August 22, 2008
File:	Z:\mcdata\LLG\2008\174\17411W22Aug2008.EC0 (Base)
Identifier:	A5613NK0 MC56-1 [MC55] (c)Microcom 07/06/99
Algorithm:	Event Count
Data type:	Axle sensors - Separate (Count)

Profile:

Filter time:	**7:00 Monday, August 18, 2008 => 7:00 Friday, August 22, 2008**
Name:	Factory default profile
Scheme:	Count events divided by two.
Units:	Non metric (ft, mi, ft/s, mph, lb, ton)
In profile:	Events = 72605 / 72999 (99.46%)

*** Monday, August 18, 2008=17081 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**1189**	**1260**	**1325**	**1178**	**1335**	**1213**	**1049**	**1058**	**1081**	**971**	**950**	**926**	**869**	**1071**	**767**	**581**	**258**	
-	-	-	-	-	-	-	275	324	335	278	355	**288**	272	217	285	274	245	245	200	266	200	167	96	27
-	-	-	-	-	-	-	287	309	335	271	342	**323**	285	273	249	235	228	234	216	296	193	125	73	19
-	-	-	-	-	-	-	281	314	300	311	342	**306**	226	270	247	225	233	211	247	262	218	141	47	14
-	-	-	-	-	-	-	346	313	355	318	296	**296**	266	298	300	237	244	236	206	247	156	148	42	15

PM Peak 1200 - 1300 (1213), PM PHF=0.94

AM PK Hr. PM PK Hr.

*** Tuesday, August 19, 2008=17571, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
75	**40**	**18**	**55**	**370**	**1024**	**1028**	**1025**	**1111**	**1083**	**1070**	**1171**	**1075**	**930**	**972**	**948**	**871**	**952**	**905**	**755**	**811**	**641**	**445**	**196**	
27	17	6	4	49	217	193	262	243	238	251	**288**	**281**	245	236	221	211	251	236	165	212	172	112	73	30
19	13	4	7	56	266	266	253	304	314	273	**299**	**293**	251	240	252	262	230	242	190	223	166	125	54	16
14	7	7	24	98	277	253	236	274	257	281	**271**	**253**	227	240	232	201	233	237	200	186	159	83	40	14
15	3	1	20	167	264	316	274	290	274	265	**313**	**248**	207	256	243	197	238	190	200	190	144	125	29	11

AM Peak 1100 - 1200 (1171), AM PHF=0.94 PM Peak 1200 - 1300 (1075), PM PHF=0.92

*** Wednesday, August 20, 2008=18049, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
71	**25**	**11**	**51**	**379**	**958**	**940**	**993**	**1065**	**1114**	**1115**	**1209**	**1083**	**1000**	**1010**	**1011**	**883**	**951**	**975**	**811**	**888**	**756**	**497**	**253**	
30	4	4	6	50	128	184	243	269	261	304	**314**	**292**	246	226	233	225	252	234	208	248	228	154	112	30
16	7	2	14	69	298	226	254	267	294	280	**276**	**271**	267	238	260	239	235	227	205	217	213	146	67	16
14	6	3	10	88	309	211	239	264	282	244	**304**	**253**	246	264	278	204	227	243	200	219	155	116	26	18
11	8	2	21	172	223	319	257	265	277	287	**315**	**267**	241	282	240	215	237	271	198	204	160	81	48	9

AM Peak 1100 - 1200 (1209), AM PHF=0.96 PM Peak 1200 - 1300 (1083), PM PHF=0.93

*** Thursday, August 21, 2008=19736, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
73	**32**	**33**	**69**	**354**	**1076**	**941**	**1044**	**1168**	**1236**	**1138**	**1256**	**1230**	**980**	**1003**	**1145**	**1122**	**1119**	**1117**	**966**	**1056**	**761**	**520**	**297**	
30	10	9	4	54	240	212	251	244	316	293	313	**292**	269	229	291	300	253	302	249	252	217	141	114	41
16	12	6	9	46	277	217	278	319	294	273	301	**328**	228	233	259	275	287	290	232	270	213	114	73	24
18	5	13	22	98	306	236	235	305	317	286	303	**316**	257	280	292	269	278	262	205	242	189	122	63	25
9	5	5	34	156	253	276	280	300	309	286	**339**	**294**	226	261	303	278	301	263	280	292	142	143	47	25

AM Peak 1145 - 1245 (1275), AM PHF=0.94 PM Peak 1200 - 1300 (1230), PM PHF=0.94

*** Friday, August 22, 2008=167 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
115	**51**	**0**	**0**	**0**	**0**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	
41	16	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	20	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	10	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	5	0	0	0	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ADT Avg. = 18,450

57791

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: S. Tillman
Board No.: D1-2172
Loc: Terminal II Entrance & Harbor Dr.

File Name : 08174010
Site Code : 00174010
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Terminal II Entrance Southbound					Harbor Drive Westbound					Spanish Landing Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	41	1	31	0	73	4	206	0	0	210	1	1	3	0	5	31	121	1	3	153	3	441	444
07:15	24	3	20	1	47	4	322	0	0	326	2	0	4	0	6	30	124	0	3	154	4	533	537
07:30	32	4	14	1	50	3	260	1	0	264	2	1	2	0	5	38	170	0	3	208	4	527	531
07:45	27	0	25	0	52	2	257	2	0	261	2	0	0	0	2	27	153	1	2	181	2	496	498
Total	124	8	90	2	222	13	1045	3	0	1061	7	2	9	0	18	126	568	2	11	696	13	1997	2010
08:00	36	1	24	0	61	7	224	0	0	231	3	1	2	2	6	20	152	2	11	174	13	472	485
08:15	22	4	17	1	43	8	244	1	0	253	1	1	1	0	3	28	182	2	3	212	4	511	515
08:30	35	5	27	0	67	7	175	0	0	182	2	0	3	0	5	39	172	1	4	212	4	466	470
08:45	19	3	25	0	47	2	232	0	0	234	5	1	4	0	10	32	139	5	9	176	9	467	476
Total	112	13	93	1	218	24	875	1	0	900	11	3	10	2	24	119	645	10	27	774	30	1916	1946
Grand Total	236	21	183	3	440	37	1920	4	0	1961	18	5	19	2	42	245	1213	12	38	1470	43	3913	3956
Apprch %	53.6	4.8	41.6			1.9	97.9	0.2			42.9	11.9	45.2			16.7	82.5	0.8					
Total %	6.0	0.5	4.7		11.2	0.9	49.1	0.1		50.1	0.5	0.1	0.5		1.1	6.3	31.0	0.3		37.6	1.1	98.9	

	Terminal II Entrance Southbound				Harbor Drive Westbound				Spanish Landing Northbound				Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:15																
Volume	119	8	83	210	16	1063	3	1082	9	2	8	19	115	599	3	717	2028
Percent	56.7	3.8	39.5		1.5	98.2	0.3		47.4	10.5	42.1		16.0	83.5	0.4		
07:15 Volume	24	3	20	47	4	322	0	326	2	0	4	6	30	124	0	154	533
Peak Factor																	0.951
High Int.	08:00				07:15				07:15				07:30				
Volume	36	1	24	61	4	322	0	326	2	0	4	6	38	170	0	208	
Peak Factor				0.861				0.830				0.792				0.862	

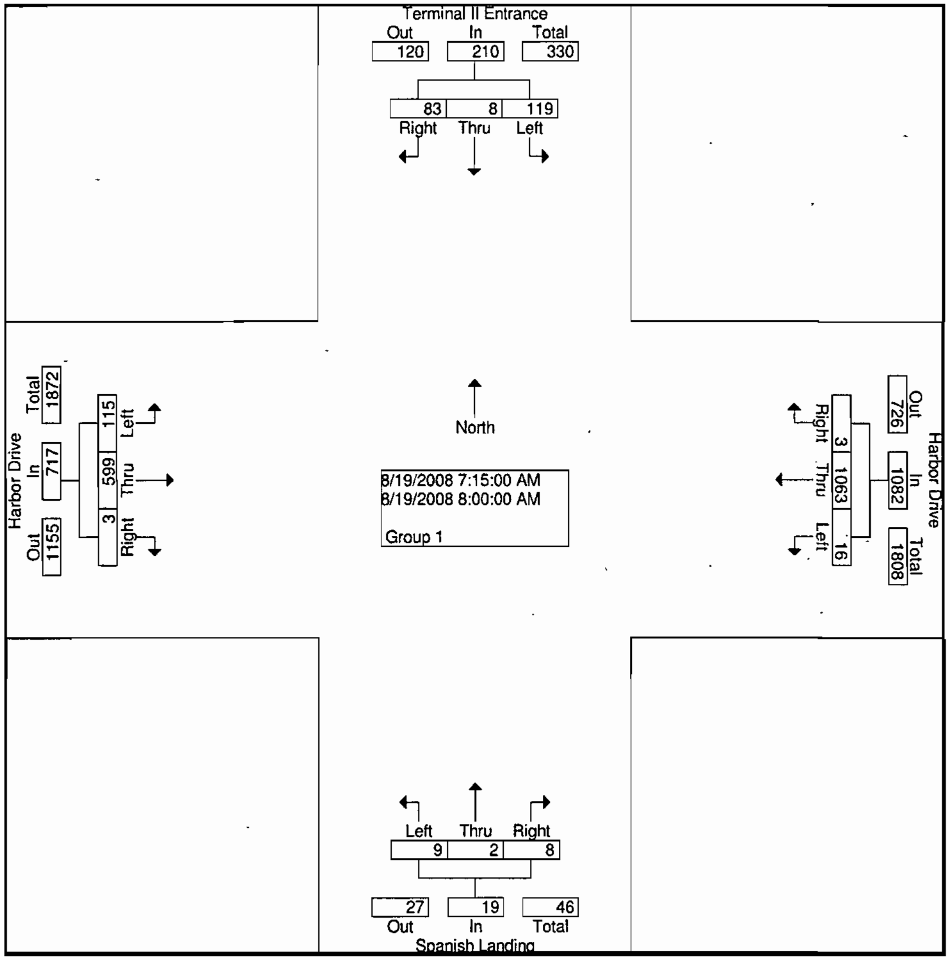
245

57791

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: S. Tillman
Board No.: D1-2172
Loc: Terminal II Entrance & Harbor Dr.

File Name : 08174010
Site Code : 00174010
Start Date : 8/19/2008
Page No : 2



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246

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P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: S. Tillman
Board No.: D1-2172
Loc: Terminal II Entrance & Harbor Dr.

File Name : 08174011
Site Code : 00174011
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Terminal II Entrance Southbound					Harbor Drive Westbound					Spanish Landing Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	34	5	29	1	68	6	267	2	0	275	2	3	8	1	13	21	217	1	10	239	12	595	607
16:15	23	2	20	0	45	3	257	2	0	262	2	6	5	0	13	24	247	4	1	275	1	595	596
16:30	29	4	18	0	51	3	275	0	0	278	1	3	3	0	7	15	262	2	2	279	2	615	617
16:45	25	0	17	0	42	7	271	1	0	279	5	3	10	1	18	24	253	4	4	281	5	620	625
Total	111	11	84	1	206	19	1070	5	0	1094	10	15	26	2	51	84	979	11	17	1074	20	2425	2445
17:00	38	0	26	0	64	7	286	0	0	293	2	0	4	1	6	31	215	1	5	247	6	610	616
17:15	19	0	21	1	40	8	334	0	0	342	2	2	2	1	6	18	202	2	2	222	4	610	614
17:30	31	6	17	0	54	9	292	0	0	301	1	4	3	0	8	50	189	5	6	244	6	607	613
17:45	26	1	20	0	47	5	270	1	0	276	1	6	6	0	13	33	197	2	6	232	6	568	574
Total	114	7	84	1	205	29	1182	1	0	1212	6	12	15	2	33	132	803	10	19	945	22	2395	2417
Grand Total	225	18	168	2	411	48	2252	6	0	2306	16	27	41	4	84	216	1782	21	36	2019	42	4820	4862
Apprch %	54.7	4.4	40.9			2.1	97.7	0.3			19.0	32.1	48.8			10.7	88.3	1.0					
Total %	4.7	0.4	3.5		8.5	1.0	46.7	0.1		47.8	0.3	0.6	0.9		1.7	4.5	37.0	0.4		41.9	0.9	99.1	

	Terminal II Entrance Southbound				Harbor Drive Westbound				Spanish Landing Northbound				Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:30																
Volume	111	4	82	197	25	1166	1	1192	10	8	19	37	88	932	9	1029	2455
Percent	56.3	2.0	41.6		2.1	97.8	0.1		27.0	21.6	51.4		8.6	90.6	0.9		
16:45 Volume	25	0	17	42	7	271	1	279	5	3	10	18	24	253	4	281	620
Peak Factor																	0.990
High Int.	17:00				17:15				16:45				16:45				
Volume	38	0	26	64	8	334	0	342	5	3	10	18	24	253	4	281	
Peak Factor				0.770				0.871				0.514				0.915	

247

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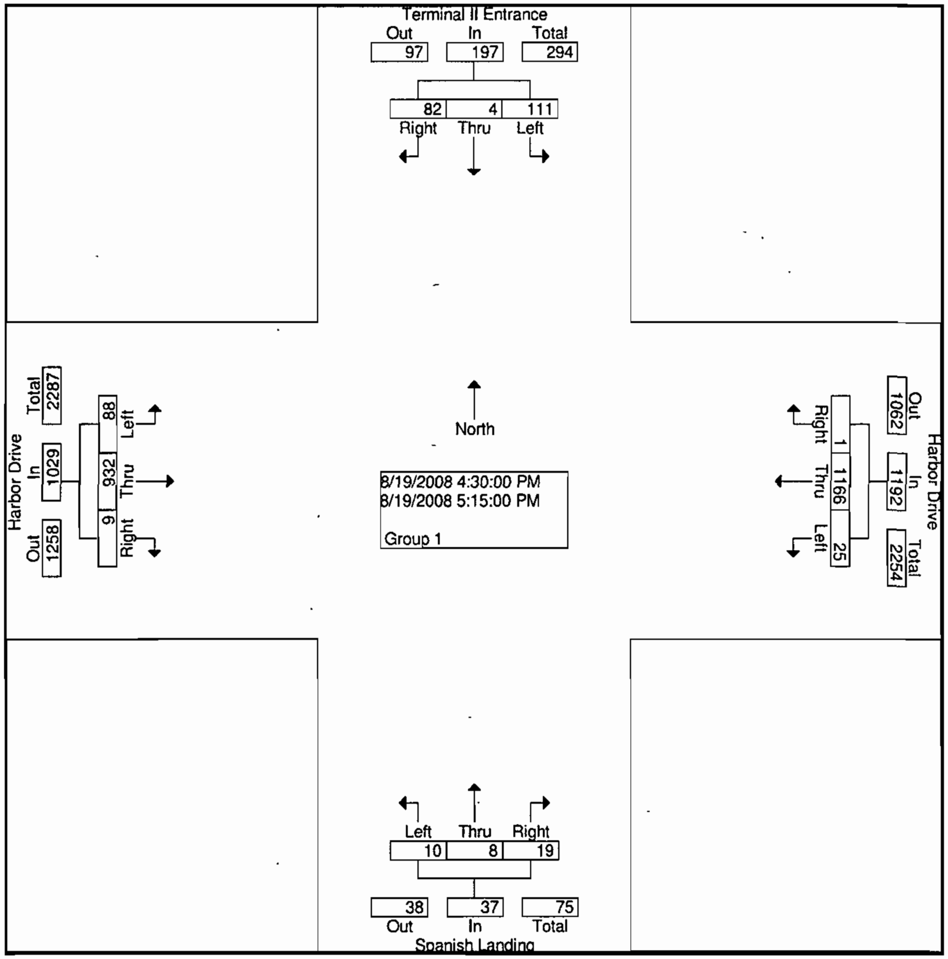
TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: S. Tillman
Board No.: D1-2172
Loc: Terminal II Entrance & Harbor Dr.

File Name : 08174011
Site Code : 00174011
Start Date : 8/19/2008
Page No : 2



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TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: D. Wellman & G. Scalice
Board No.: D1-1426 & D1-1427
Loc: Harbor Island Dr. & Harbor Dr.

File Name : 08174020
Site Code : 00174020
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Harbor Island Drive Southbound					Harbor Drive Westbound					Harbor Island Drive Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	11	3	25	11	39	47	383	2	15	432	12	4	28	21	44	14	124	20	0	158	47	673	720
07:15	15	3	22	0	40	86	399	2	6	487	18	9	42	8	69	2	144	17	0	163	14	759	773
07:30	7	5	24	3	36	58	326	1	6	385	19	4	42	11	65	15	151	21	0	187	20	673	693
07:45	11	4	19	0	34	81	382	5	3	468	19	4	38	11	61	4	164	25	0	193	14	756	770
Total	44	15	90	14	149	272	1490	10	30	1772	68	21	150	51	239	35	583	83	0	701	95	2861	2956
08:00	12	7	23	0	42	71	333	0	3	404	13	8	34	5	55	10	156	28	0	194	8	695	703
08:15	15	4	34	0	53	54	323	4	3	381	21	5	38	6	64	8	166	31	0	205	9	703	712
08:30	14	2	22	0	38	52	259	0	6	311	20	7	33	4	60	13	151	25	0	189	10	598	608
08:45	16	0	31	0	47	65	332	1	5	398	20	6	40	6	66	10	130	31	0	171	11	682	693
Total	57	13	110	0	180	242	1247	5	17	1494	74	26	145	21	245	41	603	115	0	759	38	2678	2716
Grand Total	101	28	200	14	329	514	2737	15	47	3266	142	47	295	72	484	76	1186	198	0	1460	133	5539	5672
Apprch %	30.7	8.5	60.8			15.7	83.8	0.5			29.3	9.7	61.0			5.2	81.2	13.6					
Total %	1.8	0.5	3.6		5.9	9.3	49.4	0.3		59.0	2.6	0.8	5.3		8.7	1.4	21.4	3.6		26.4	2.3	97.7	

	Harbor Island Drive Southbound				Harbor Drive Westbound				Harbor Island Drive Northbound				Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:15																
Volume	45	19	88	152	296	1440	8	1744	69	25	156	250	31	615	91	737	2883
Percent	29.6	12.5	57.9		17.0	82.6	0.5		27.6	10.0	62.4		4.2	83.4	12.3		
07:15 Volume	15	3	22	40	86	399	2	487	18	9	42	69	2	144	17	163	759
Peak Factor																	0.950
High Int.	08:00				07:15				07:15				08:00				
Volume	12	7	23	42	86	399	2	487	18	9	42	69	10	156	28	194	
Peak Factor				0.905				0.895				0.906				0.950	

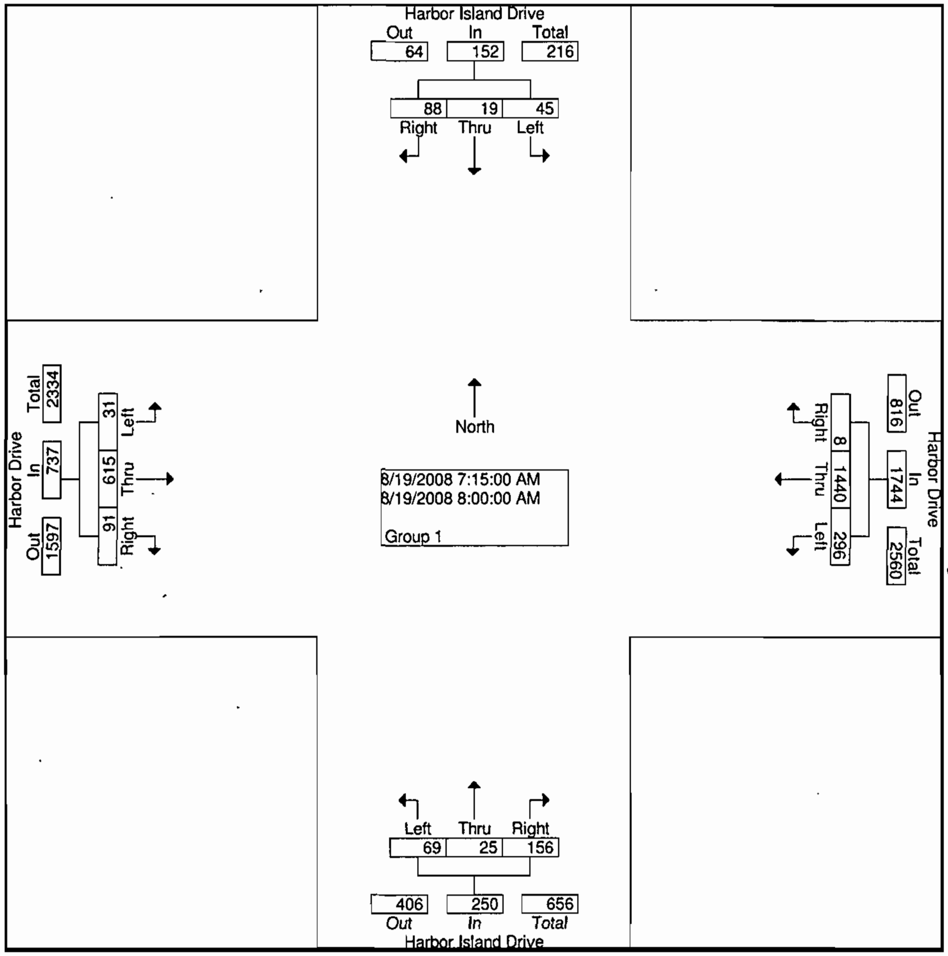
249

57791

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: D. Wellman & G. Scalice
Board No.: D1-1426 & D1-1427
Loc: Harbor Island Dr. & Harbor Dr.

File Name : 08174020
Site Code : 00174020
Start Date : 8/19/2008
Page No : 2



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TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: D. Wellman & G. Scalice
Board No.: D1-1426 & D1-1427
Loc: Harbor Island Dr. & Harbor Dr.

File Name : 08174021
Site Code : 00174021
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Harbor Island Drive Southbound					Harbor Drive Westbound					Harbor Island Drive Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	14	2	29	0	45	72	317	1	4	390	41	9	76	20	126	18	216	34	0	268	24	829	853
16:15	15	5	23	2	43	84	275	0	8	359	25	8	90	4	123	8	235	32	0	275	14	800	814
16:30	10	4	40	0	54	79	276	2	12	357	43	5	105	8	153	14	223	53	0	290	20	854	874
16:45	12	4	25	1	41	64	225	44	9	333	24	5	91	12	120	18	224	45	0	287	22	781	803
Total	51	15	117	3	183	299	1093	47	33	1439	133	27	362	44	522	58	898	164	0	1120	80	3264	3344
17:00	8	7	27	1	42	90	323	1	8	414	35	12	66	5	113	10	224	32	0	266	14	835	849
17:15	8	5	28	0	41	68	342	0	2	410	29	7	77	14	113	19	172	36	0	227	16	791	807
17:30	9	5	44	0	58	66	316	4	3	386	27	9	64	2	100	17	155	38	0	210	5	754	759
17:45	11	6	26	1	43	74	304	3	3	381	30	10	77	4	117	11	198	26	0	235	8	776	784
Total	36	23	125	2	184	298	1285	8	16	1591	121	38	284	25	443	57	749	132	0	938	43	3156	3199
Grand Total	87	38	242	5	367	597	2378	55	49	3030	254	65	646	69	965	115	1647	296	0	2058	123	6420	6543
Apprch %	23.7	10.4	65.9			19.7	78.5	1.8			26.3	6.7	66.9			5.6	80.0	14.4					
Total %	1.4	0.6	3.8		5.7	9.3	37.0	0.9		47.2	4.0	1.0	10.1		15.0	1.8	25.7	4.6		32.1	1.9	98.1	

	Harbor Island Drive Southbound				Harbor Drive Westbound				Harbor Island Drive Northbound				Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:15																
Volume	45	20	115	180	317	1099	47	1463	127	30	352	509	50	906	162	1118	3270
Percent	25.0	11.1	63.9		21.7	75.1	3.2		25.0	5.9	69.2		4.5	81.0	14.5		
16:30 Volume	10	4	40	54	79	276	2	357	43	5	105	153	14	223	53	290	854
Peak Factor																	0.957
High Int.	16:30				17:00				16:30				16:30				
Volume	10	4	40	54	90	323	1	414	43	5	105	153	14	223	53	290	
Peak Factor				0.833				0.883				0.832				0.964	

251

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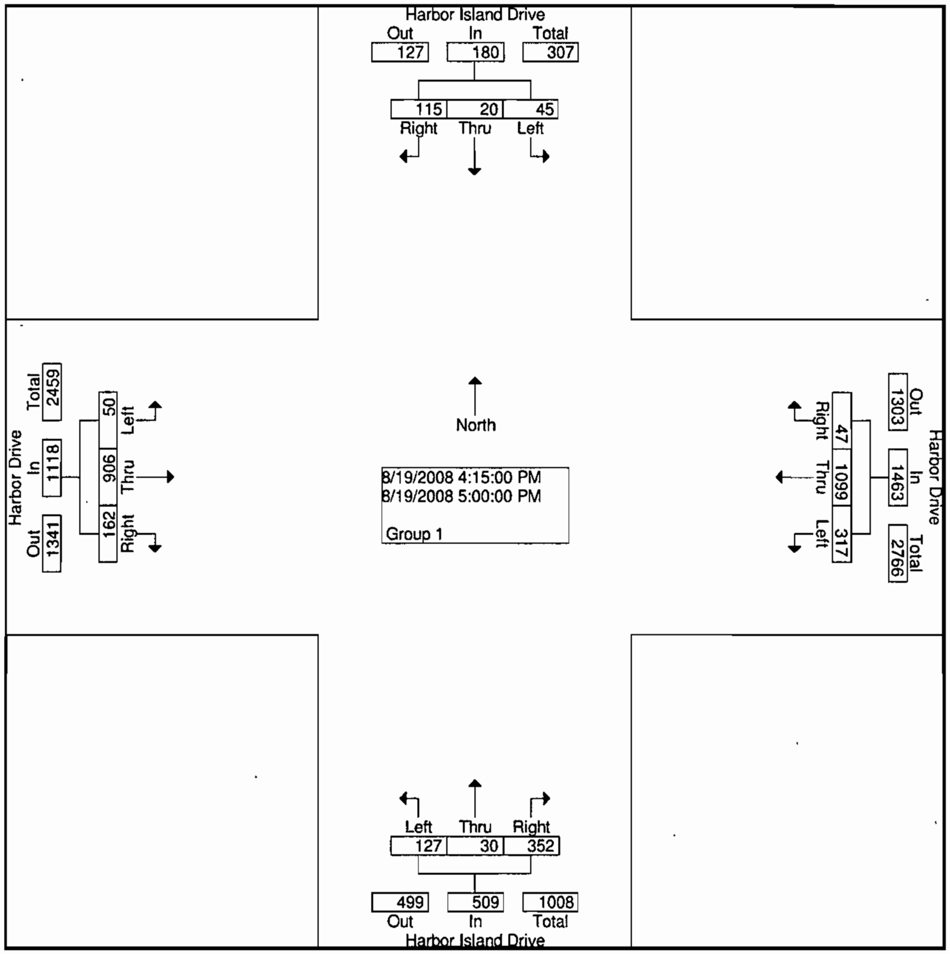
TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: D. Wellman & G. Scalice
Board No.: D1-1426 & D1-1427
Loc: Harbor Island Dr. & Harbor Dr.

File Name : 08174021
Site Code : 00174021
Start Date : 8/19/2008
Page No : 2



252

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P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: B. Reid & J. Shelton
Board No.: D1-2173 & D1-1430
Loc: Rental Car Road & Harbor Dr.

File Name : 08174030
Site Code : 00174030
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Parking Lot Southbound					Harbor Drive Westbound					Rental Car Road Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	0	0	1	0	1	39	677	1	2	717	11	0	19	20	30	3	425	16	0	444	22	1192	1214
07:15	0	0	1	0	1	48	656	6	1	710	7	0	11	16	18	6	410	17	0	433	17	1162	1179
07:30	0	1	0	0	1	15	646	4	0	665	12	0	17	21	29	3	455	12	0	470	21	1165	1186
07:45	1	0	2	0	3	31	700	2	0	733	9	0	17	20	26	5	377	13	0	395	20	1157	1177
Total	1	1	4	0	6	133	2679	13	3	2825	39	0	64	77	103	17	1667	58	0	1742	80	4676	4756
08:00	0	1	1	0	2	36	666	1	0	703	12	1	30	15	43	4	402	19	0	425	15	1173	1188
08:15	0	0	1	0	1	40	614	2	0	656	16	0	27	13	43	5	480	14	0	499	13	1199	1212
08:30	0	0	0	1	0	45	601	3	1	649	13	0	42	10	55	3	474	22	0	499	12	1203	1215
08:45	1	0	2	0	3	35	650	2	0	687	18	10	32	18	60	42	428	21	0	491	18	1241	1259
Total	1	1	4	1	6	156	2531	8	1	2695	59	11	131	56	201	54	1784	76	0	1914	58	4816	4874
Grand Total	2	2	8	1	12	289	5210	21	4	5520	98	11	195	133	304	71	3451	134	0	3656	138	9492	9630
Apprch %	16.7	16.7	66.7			5.2	94.4	0.4			32.2	3.6	64.1			1.9	94.4	3.7					
Total %	0.0	0.0	0.1		0.1	3.0	54.9	0.2		58.2	1.0	0.1	2.1		3.2	0.7	36.4	1.4		38.5	1.4	98.6	

	Parking Lot Southbound				Harbor Drive Westbound				Rental Car Road Northbound				Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	08:00																
Volume	1	1	4	6	156	2531	8	2695	59	11	131	201	54	1784	76	1914	4816
Percent	16.7	16.7	66.7		5.8	93.9	0.3		29.4	5.5	65.2		2.8	93.2	4.0		
08:45 Volume	1	0	2	3	35	650	2	687	18	10	32	60	42	428	21	491	1241
Peak Factor																	0.970
High Int.	08:45				08:00				08:45				08:15				
Volume	1	0	2	3	36	666	1	703	18	10	32	60	5	480	14	499	
Peak Factor				0.500				0.958				0.838				0.959	

253

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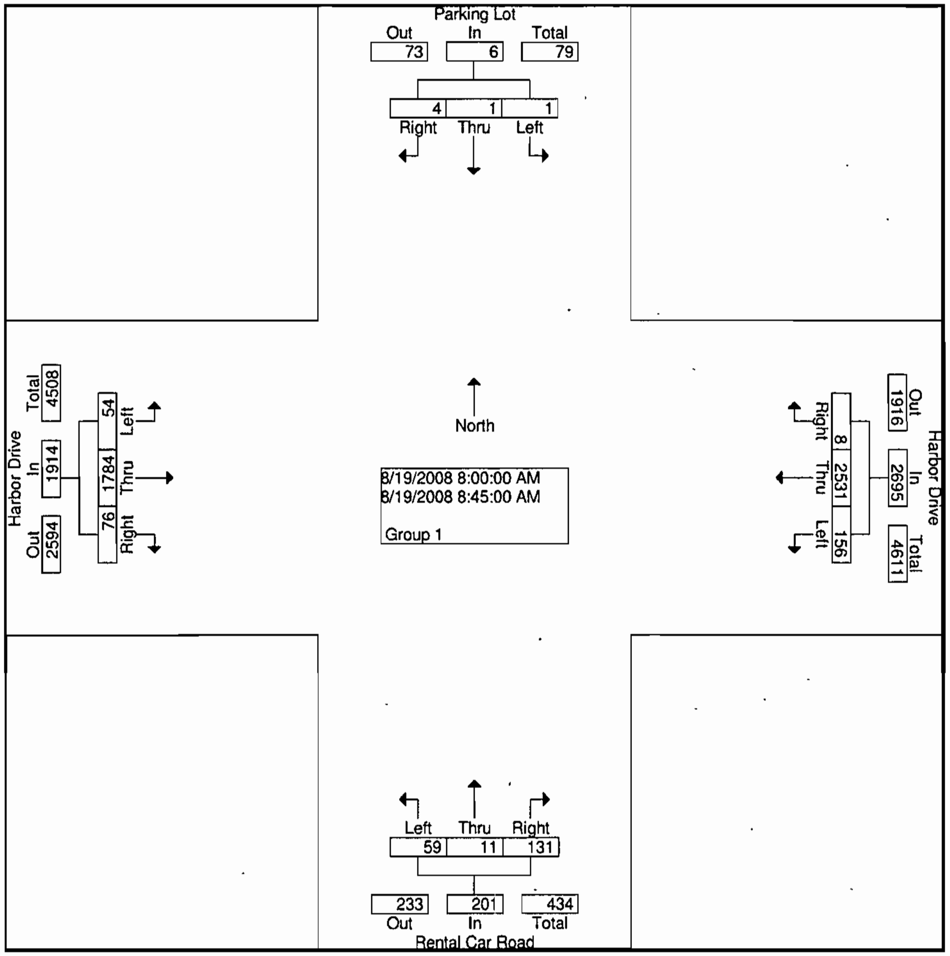
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: B. Reid & J. Shelton
Board No.: D1-2173 & D1-1430
Loc: Rental Car Road & Harbor Dr.

File Name : 08174030
Site Code : 00174030
Start Date : 8/19/2008
Page No : 2



254

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TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: B. Reid & J. Shelton
Board No.: D1-2173 & D1-1430
Loc: Rental Car Road & Harbor Dr.

File Name : 08174031
Site Code : 00174031
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Parking Lot Southbound					Harbor Drive Westbound					Rental Car Road Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	2	0	1	0	3	34	501	1	0	536	13	0	55	20	68	5	600	16	0	621	20	1228	1248
16:15	0	0	3	0	3	47	545	1	0	593	16	0	34	27	50	2	566	16	0	584	27	1230	1257
16:30	1	0	5	0	6	41	448	2	0	491	17	0	44	21	61	11	627	17	0	655	21	1213	1234
16:45	1	1	1	0	3	44	553	2	0	599	16	0	42	11	58	4	542	16	0	562	11	1222	1233
Total	4	1	10	0	15	166	2047	6	0	2219	62	0	175	79	237	22	2335	65	0	2422	79	4893	4972
17:00	2	0	3	1	5	57	518	2	1	577	14	0	27	15	41	3	502	20	0	525	17	1148	1165
17:15	4	0	2	0	6	24	553	1	0	578	12	0	42	24	54	4	457	14	0	475	24	1113	1137
17:30	3	0	2	0	5	45	543	1	0	589	14	0	33	21	47	1	492	14	0	507	21	1148	1169
17:45	1	0	2	1	3	38	546	0	1	584	19	0	38	27	57	4	553	14	0	571	29	1215	1244
Total	10	0	9	2	19	164	2160	4	2	2328	59	0	140	87	199	12	2004	62	0	2078	91	4624	4715
Grand Total	14	1	19	2	34	330	4207	10	2	4547	121	0	315	166	436	34	4339	127	0	4500	170	9517	9687
Apprch %	41.2	2.9	55.9			7.3	92.5	0.2			27.8	0.0	72.2			0.8	96.4	2.8					
Total %	0.1	0.0	0.2		0.4	3.5	44.2	0.1		47.8	1.3	0.0	3.3		4.6	0.4	45.6	1.3		47.3	1.8	98.2	

	Parking Lot Southbound				Harbor Drive Westbound				Rental Car Road Northbound				Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:00																
Volume	4	1	10	15	166	2047	6	2219	62	0	175	237	22	2335	65	2422	4893
Percent	26.7	6.7	66.7		7.5	92.2	0.3		26.2	0.0	73.8		0.9	96.4	2.7		
16:15 Volume	0	0	3	3	47	545	1	593	16	0	34	50	2	566	16	584	1230
Peak Factor																	0.995
High Int.	16:30				16:45				16:00				16:30				
Volume	1	0	5	6	44	553	2	599	13	0	55	68	11	627	17	655	
Peak Factor				0.625				0.926				0.871				0.924	

255

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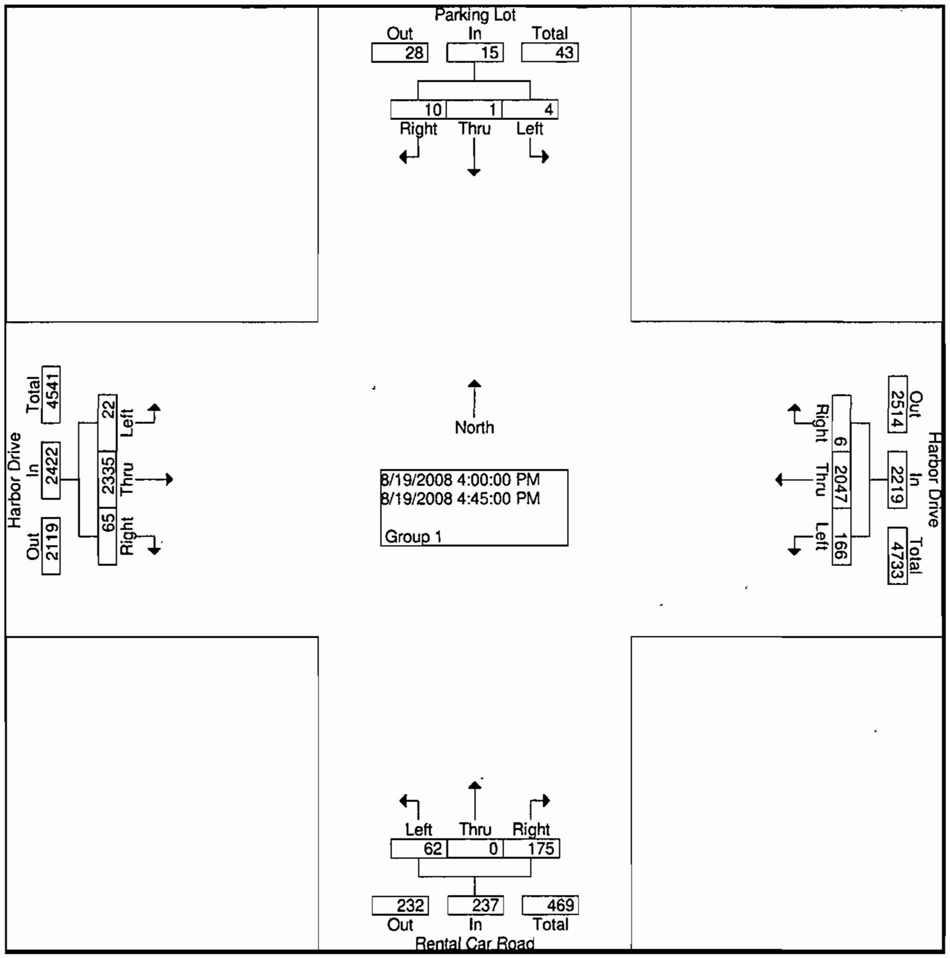
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: B. Reid & J. Shelton
Board No.: D1-2173 & D1-1430
Loc: Rental Car Road & Harbor Dr.

File Name : 08174031
Site Code : 00174031
Start Date : 8/19/2008
Page No : 2



256

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TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: C. Niggel
Board No.: D1-1424
Loc: Laurel Street & Harbor Dr.

File Name : 08174040
Site Code : 00174040
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Laurel Street Southbound					Harbor Drive Westbound					Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	6	0	3	2	9	0	470	13	3	483	0	0	0	0	0	156	302	0	0	458	5	950	955
07:15	1	0	1	2	2	0	448	10	0	458	0	0	0	0	0	138	262	0	0	400	2	860	862
07:30	1	0	1	26	2	0	429	15	1	444	0	0	0	0	0	183	309	0	0	492	27	938	965
07:45	5	0	0	15	5	0	422	9	0	431	0	0	0	0	0	161	261	0	0	422	15	858	873
Total	13	0	5	45	18	0	1769	47	4	1816	0	0	0	0	0	638	1134	0	0	1772	49	3606	3655
08:00	8	0	1	18	9	0	408	13	1	421	0	0	0	0	0	163	298	0	0	461	19	891	910
08:15	9	0	2	10	11	0	438	6	1	444	0	0	0	0	0	188	328	0	0	516	11	971	982
08:30	13	0	4	14	17	0	385	7	4	392	0	0	0	0	0	237	352	0	0	589	18	998	1016
08:45	13	0	1	3	14	0	357	6	1	363	0	0	0	0	0	231	348	0	0	579	4	956	960
Total	43	0	8	45	51	0	1588	32	7	1620	0	0	0	0	0	819	1326	0	0	2145	52	3816	3868
Grand Total	56	0	13	90	69	0	3357	79	11	3436	0	0	0	0	0	1457	2460	0	0	3917	101	7422	7523
Apprch %	81.2	0.0	18.8			0.0	97.7	2.3			0.0	0.0	0.0			37.2	62.8	0.0					
Total %	0.8	0.0	0.2		0.9	0.0	45.2	1.1		46.3	0.0	0.0	0.0		0.0	19.6	33.1	0.0		52.8	1.3	98.7	

	Laurel Street Southbound				Harbor Drive Westbound				Northbound				Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	08:00																
Volume	43	0	8	51	0	1588	32	1620	0	0	0	0	819	1326	0	2145	3816
Percent	84.3	0.0	15.7		0.0	98.0	2.0		0.0	0.0	0.0		38.2	61.8	0.0		
08:30 Volume	13	0	4	17	0	385	7	392	0	0	0	0	237	352	0	589	998
Peak Factor																	0.956
High Int.	08:30				08:15				6:45:00 AM				08:30				
Volume	13	0	4	17	0	438	6	444	0	0	0	0	237	352	0	589	
Peak Factor				0.750				0.912								0.910	

257

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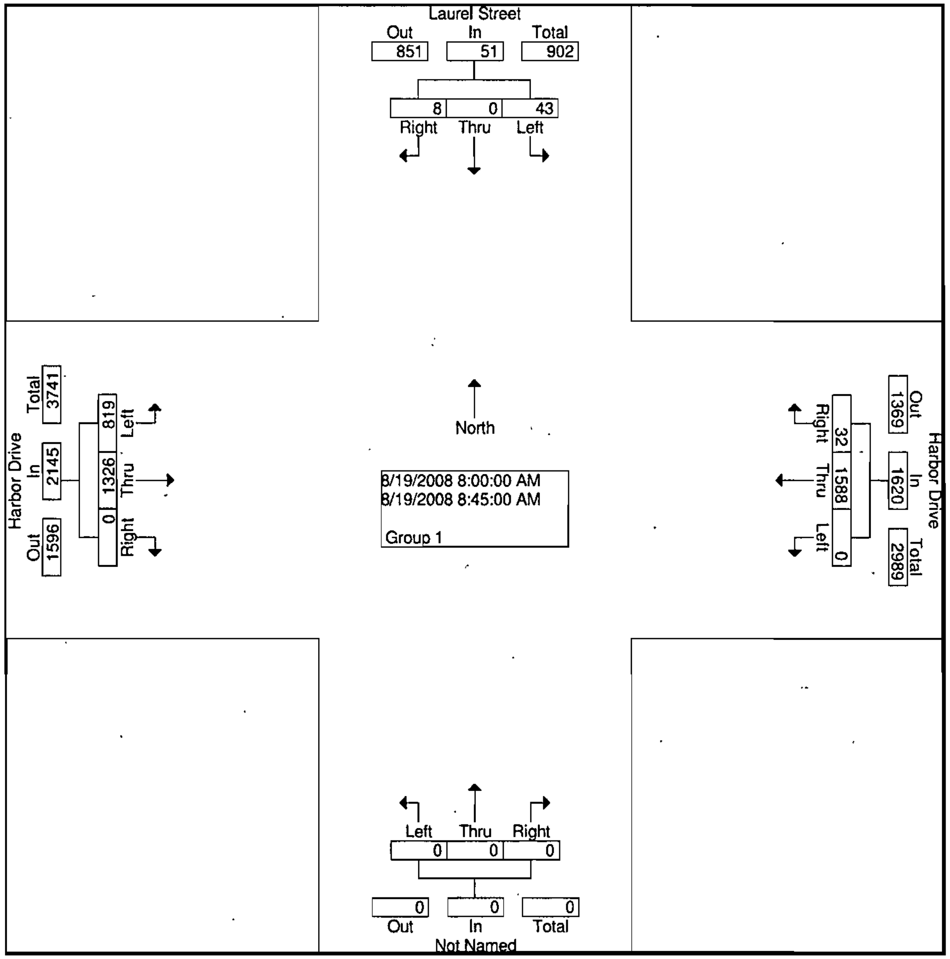
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: C. Niggel
Board No.: D1-1424
Loc: Laurel Street & Harbor Dr.

File Name : 08174040
Site Code : 00174040
Start Date : 8/19/2008
Page No : 2



258

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TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: C. Niggel
Board No.: D1-1424
Loc: Laurel Street & Harbor Dr.

File Name : 08174041
Site Code : 00174041
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Laurel Street Southbound					Harbor Drive Westbound					Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	18	0	2	4	20	0	300	28	2	328	0	0	0	0	0	261	419	0	0	680	6	1028	1034
16:15	14	0	1	9	15	0	320	29	0	349	0	0	0	0	0	229	409	0	0	638	9	1002	1011
16:30	19	0	2	9	21	0	260	27	1	287	0	0	0	0	0	265	416	0	0	681	10	989	999
16:45	18	0	0	5	18	0	333	36	2	369	0	0	0	0	0	190	399	0	0	589	7	976	983
Total	69	0	5	27	74	0	1213	120	5	1333	0	0	0	0	0	945	1643	0	0	2588	32	3995	4027
17:00	11	0	1	9	12	0	314	15	0	329	0	0	0	0	0	220	352	0	0	572	9	913	922
17:15	16	0	0	11	16	0	356	23	2	379	0	0	0	0	0	186	334	0	0	520	13	915	928
17:30	13	0	1	9	14	0	324	20	2	344	0	0	0	0	0	193	324	0	0	517	11	875	886
17:45	12	0	0	14	12	0	319	11	2	330	0	0	0	0	0	246	396	0	0	642	16	984	1000
Total	52	0	2	43	54	0	1313	69	6	1382	0	0	0	0	0	845	1406	0	0	2251	49	3687	3736
Grand Total	121	0	7	70	128	0	2526	189	11	2715	0	0	0	0	0	1790	3049	0	0	4839	81	7682	7763
Apprch %	94.5	0.0	5.5			0.0	93.0	7.0			0.0	0.0	0.0			37.0	63.0	0.0					
Total %	1.6	0.0	0.1		1.7	0.0	32.9	2.5		35.3	0.0	0.0	0.0		0.0	23.3	39.7	0.0		63.0	1.0	99.0	

	Laurel Street Southbound				Harbor Drive Westbound				Northbound				Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:00																
Volume	69	0	5	74	0	1213	120	1333	0	0	0	0	945	1643	0	2588	3995
Percent	93.2	0.0	6.8		0.0	91.0	9.0		0.0	0.0	0.0		36.5	63.5	0.0		
16:00 Volume	18	0	2	20	0	300	28	328	0	0	0	0	261	419	0	680	1028
Peak Factor																	0.972
High Int.	16:30				16:45				3:45:00 PM				16:30				
Volume	19	0	2	21	0	333	36	369	0	0	0	0	265	416	0	681	
Peak Factor				0.881				0.903								0.950	

259

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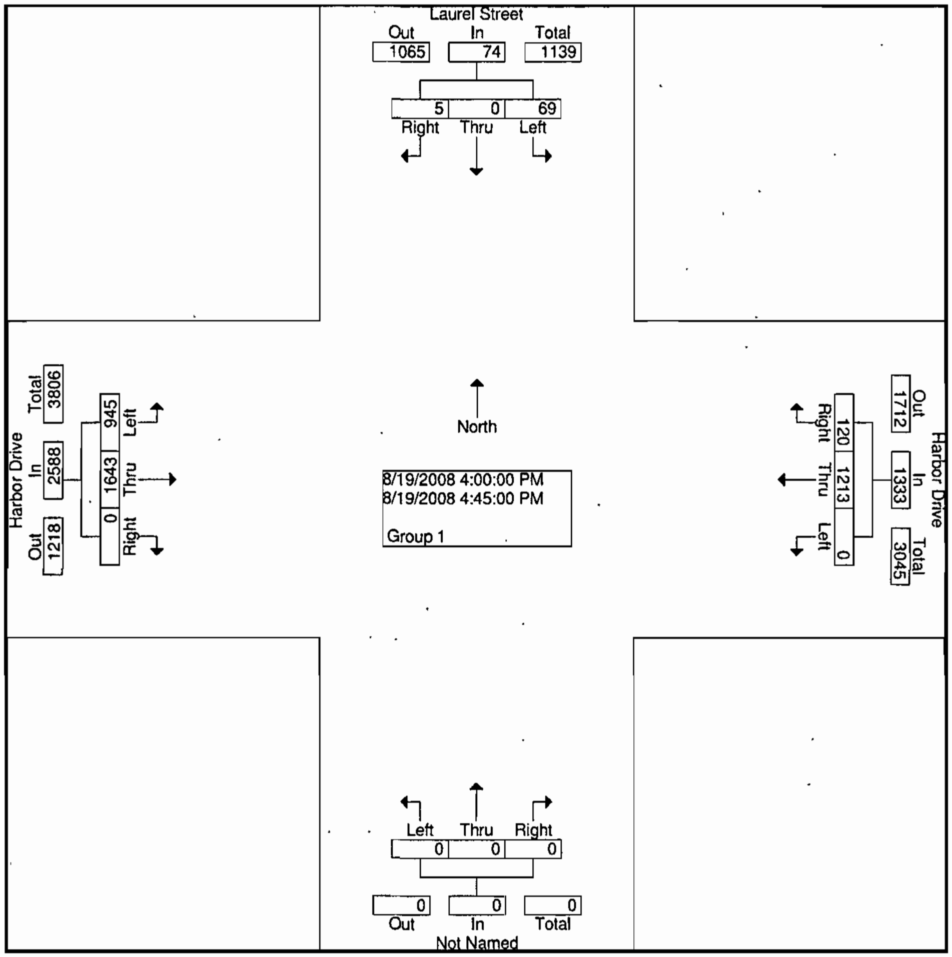
TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: C. Niggel
Board No.: D1-1424
Loc: Laurel Street & Harbor Dr.

File Name : 08174041
Site Code : 00174041
Start Date : 8/19/2008
Page No : 2



260

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TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: L. McCoy
Board No.: D1-2279
Loc: Hawthorn St. & Harbor Dr.

File Name : 08174050
Site Code : 00174050
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Harbor Drive Southbound					Hawthorne Street Westbound					Harbor Drive Northbound					Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	0	295	0	0	295	13	0	402	3	415	0	81	0	7	81	0	0	0	0	0	10	791	801
07:15	0	293	0	0	293	19	0	370	4	389	0	72	0	4	72	0	0	0	0	0	8	754	762
07:30	0	294	0	0	294	15	0	328	5	343	0	89	0	3	89	0	0	0	0	0	8	726	734
07:45	0	259	0	0	259	15	0	326	1	341	0	81	0	2	81	0	0	0	0	0	3	681	684
Total	0	1141	0	0	1141	62	0	1426	13	1488	0	323	0	16	323	0	0	0	0	0	29	2952	2981
08:00	0	300	0	0	300	20	0	317	3	337	0	90	0	7	90	0	0	0	0	0	10	727	737
08:15	0	354	0	0	354	23	0	359	4	382	0	64	0	1	64	0	0	0	0	0	5	800	805
08:30	0	365	0	0	365	25	0	283	0	308	0	91	0	2	91	0	0	0	0	0	2	764	766
08:45	0	341	0	0	341	18	0	273	3	291	0	69	0	4	69	0	0	0	0	0	7	701	708
Total	0	1360	0	0	1360	86	0	1232	10	1318	0	314	0	14	314	0	0	0	0	0	24	2992	3016
Grand Total	0	2501	0	0	2501	148	0	2658	23	2806	0	637	0	30	637	0	0	0	0	0	53	5944	5997
Apprch %	0.0	100.0	0.0			5.3	0.0	94.7			0.0	100.0	0.0			0.0	0.0	0.0					
Total %	0.0	42.1	0.0		42.1	2.5	0.0	44.7		47.2	0.0	10.7	0.0		10.7	0.0	0.0	0.0		0.0	0.9	99.1	

	Harbor Drive Southbound				Hawthorne Street Westbound				Harbor Drive Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	08:00																
Volume	0	1360	0	1360	86	0	1232	1318	0	314	0	314	0	0	0	0	2992
Percent	0.0	100.0	0.0		6.5	0.0	93.5		0.0	100.0	0.0		0.0	0.0	0.0		
08:15 Volume	0	354	0	354	23	0	359	382	0	64	0	64	0	0	0	0	800
Peak Factor																	0.935
High Int.	08:30				08:15				08:30				6:45:00 AM				
Volume	0	365	0	365	23	0	359	382	0	91	0	91					
Peak Factor				0.932				0.863				0.863					

261

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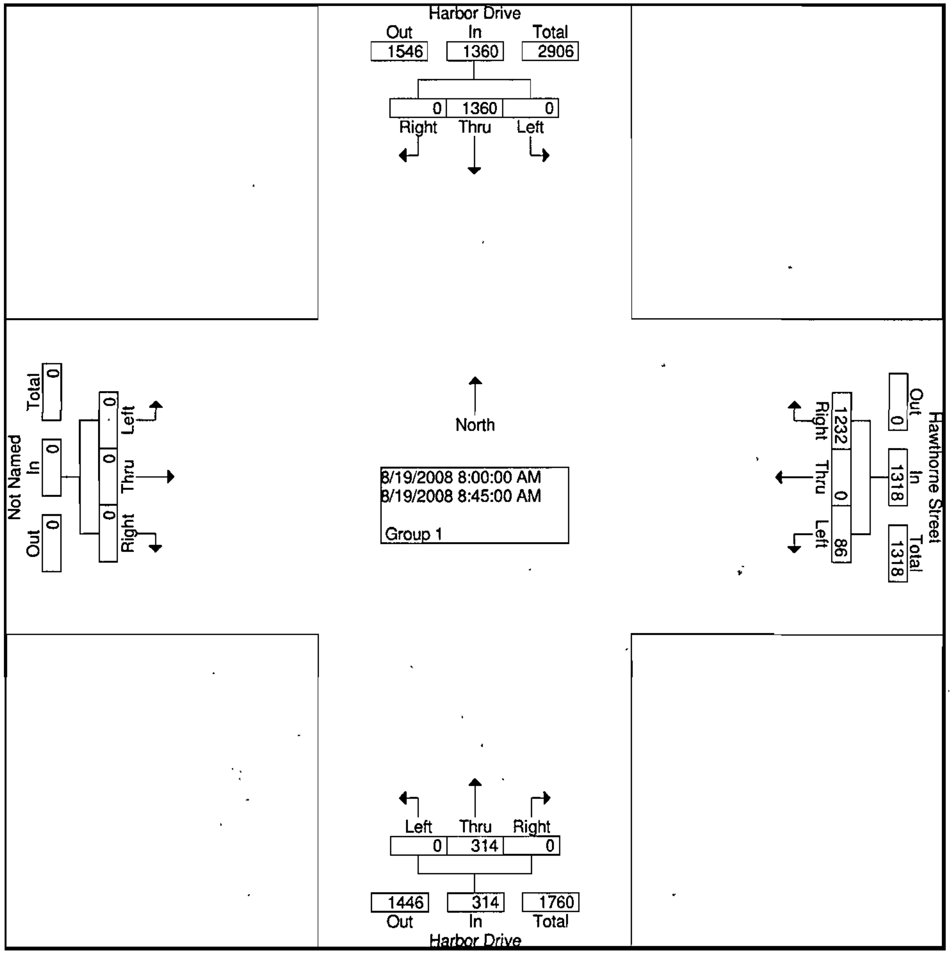
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: L. McCoy
Board No.: D1-2279
Loc: Hawthorn St. & Harbor Dr.

File Name : 08174050
Site Code : 00174050
Start Date : 8/19/2008
Page No : 2



262

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Weather: Clear & Dry
Counted By: L. McCoy
Board No.: D1-2279
Loc: Hawthorn St. & Harbor Dr.

File Name : 08174051
Site Code : 00174051
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Harbor Drive Southbound					Hawthorn Street Westbound					Harbor Drive Northbound					Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	0	441	0	0	441	32	0	244	2	276	0	135	0	0	135	0	0	0	0	0	2	852	854
16:15	0	432	0	0	432	36	0	197	4	233	0	125	0	5	125	0	0	0	0	0	9	790	799
16:30	0	441	0	0	441	34	0	213	2	247	0	111	0	6	111	0	0	0	0	0	8	799	807
16:45	0	418	0	0	418	18	0	217	5	235	0	153	0	7	153	0	0	0	0	0	12	806	818
Total	0	1732	0	0	1732	120	0	871	13	991	0	524	0	18	524	0	0	0	0	0	31	3247	3278
17:00	0	410	0	0	410	27	0	196	1	223	0	155	0	2	155	0	0	0	0	0	3	788	791
17:15	0	355	0	0	355	27	0	215	0	242	0	163	0	3	163	0	0	0	0	0	3	760	763
17:30	0	331	0	0	331	27	0	215	3	242	0	134	0	4	134	0	0	0	0	0	7	707	714
17:45	0	384	0	0	384	30	0	213	4	243	0	128	0	9	128	0	0	0	0	0	13	755	768
Total	0	1480	0	0	1480	111	0	839	8	950	0	580	0	18	580	0	0	0	0	0	26	3010	3036
Grand Total	0	3212	0	0	3212	231	0	1710	21	1941	0	1104	0	36	1104	0	0	0	0	0	57	6257	6314
Apprch %	0.0	100.0	0.0			11.9	0.0	88.1			0.0	100.0	0.0			0.0	0.0	0.0					
Total %	0.0	51.3	0.0		51.3	3.7	0.0	27.3		31.0	0.0	17.6	0.0		17.6	0.0	0.0	0.0		0.0	0.9	99.1	

	Harbor Drive Southbound				Hawthorn Street Westbound				Harbor Drive Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:00																
Volume	0	1732	0	1732	120	0	871	991	0	524	0	524	0	0	0	0	3247
Percent	0.0	100.0	0.0		12.1	0.0	87.9		0.0	100.0	0.0		0.0	0.0	0.0		
16:00 Volume	0	441	0	441	32	0	244	276	0	135	0	135	0	0	0	0	852
Peak Factor																	0.953
High Int.	16:00				16:00				16:45				3:45:00 PM				
Volume	0	441	0	441	32	0	244	276	0	153	0	153					
Peak Factor				0.982				0.898				0.856					

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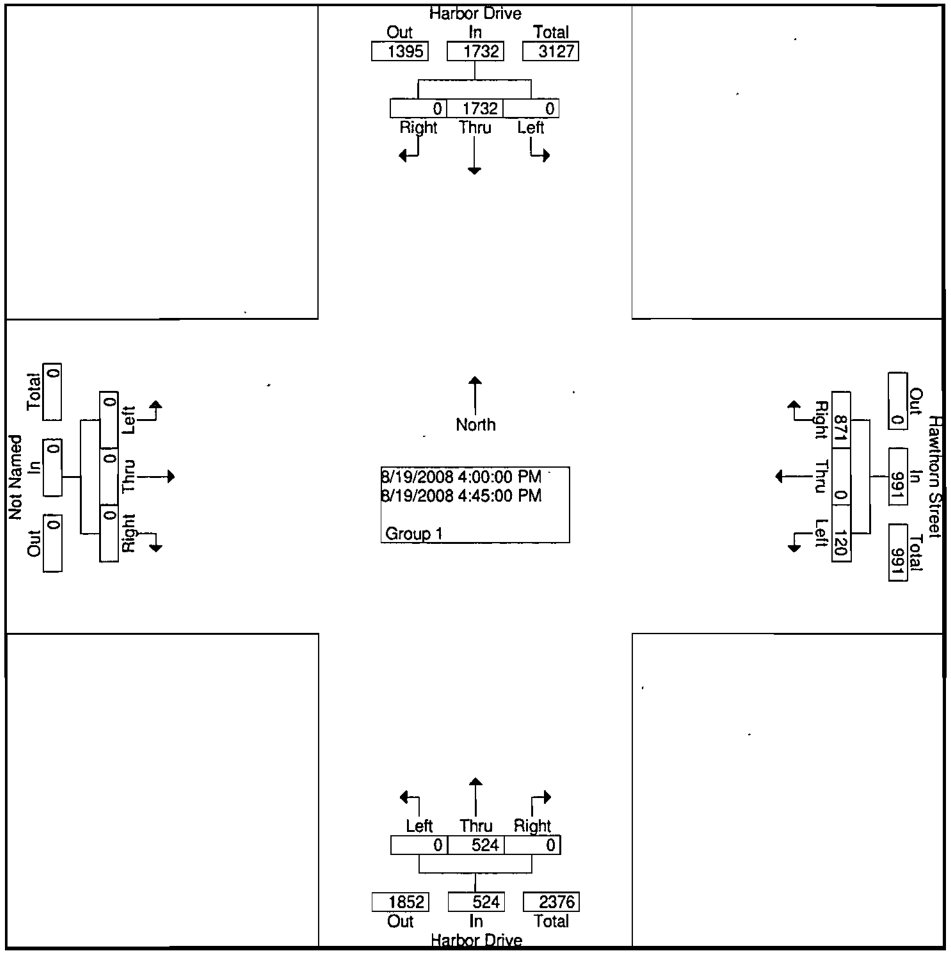
Weather: Clear & Dry
Counted By: L. McCoy
Board No.: D1-2279
Loc: Hawthorn St. & Harbor Dr.

File Name : 08174051
Site Code : 00174051
Start Date : 8/19/2008
Page No : 2



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264

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(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: J. Hanna
Board No.: D1-2278
Loc: Grape St. & Harbor Dr.

File Name : 08174060
Site Code : 00174060
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Harbor Drive Southbound					Grape Street Westbound					Harbor Drive Northbound					Parking lot exit Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	214	106	0	0	320	0	0	0	0	0	0	74	14	5	88	0	1	0	21	1	26	409	435
07:15	184	133	0	0	317	0	0	0	2	0	1	69	8	4	78	2	2	0	26	4	32	399	431
07:30	181	131	0	0	312	0	0	0	1	0	0	94	18	7	112	0	0	0	35	0	43	424	467
07:45	151	131	0	0	282	0	0	0	2	0	0	76	10	9	86	0	5	0	31	5	42	373	415
Total	730	501	0	0	1231	0	0	0	5	0	1	313	50	25	364	2	8	0	113	10	143	1605	1748
08:00	191	129	0	0	320	0	0	0	3	0	0	90	21	6	111	0	0	1	21	1	30	432	462
08:15	206	153	0	0	359	0	0	0	1	0	0	62	20	3	82	0	0	0	18	0	22	441	463
08:30	220	159	0	0	379	0	0	0	2	0	0	93	20	6	113	0	2	0	29	2	37	494	531
08:45	216	151	0	0	367	0	0	0	3	0	0	69	25	5	94	1	0	0	30	1	38	462	500
Total	833	592	0	0	1425	0	0	0	9	0	0	314	86	20	400	1	2	1	98	4	127	1829	1956
Grand Total	1563	1093	0	0	2656	0	0	0	14	0	1	627	136	45	764	3	10	1	211	14	270	3434	3704
Apprch %	58.8	41.2	0.0			0.0	0.0	0.0			0.1	82.1	17.8			21.4	71.4	7.1					
Total %	45.5	31.8	0.0		77.3	0.0	0.0	0.0		0.0	0.0	18.3	4.0		22.2	0.1	0.3	0.0		0.4	7.3	92.7	

	Harbor Drive Southbound				Grape Street Westbound				Harbor Drive Northbound				Parking lot exit Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	08:00																
Volume	833	592	0	1425	0	0	0	0	0	314	86	400	1	2	1	4	1829
Percent	58.5	41.5	0.0		0.0	0.0	0.0		0.0	78.5	21.5		25.0	50.0	25.0		
08:30 Volume	220	159	0	379	0	0	0	0	0	93	20	113	0	2	0	2	494
Peak Factor																	0.926
High Int.	08:30				6:45:00 AM				08:30				08:30				
Volume	220	159	0	379	0	0	0	0	0	93	20	113	0	2	0	2	
Peak Factor				0.940								0.885				0.500	

265

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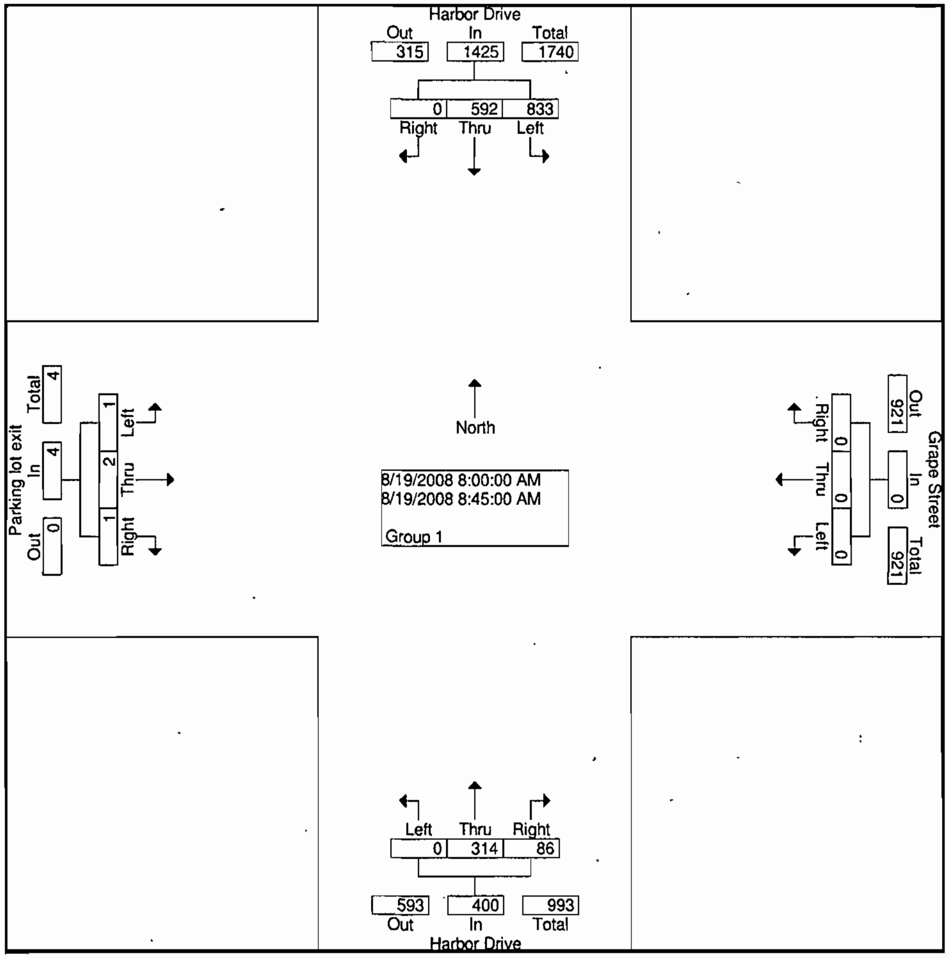
Weather: Clear & Dry
Counted By: J. Hanna
Board No.: D1-2278
Loc: Grape St. & Harbor Dr.

File Name : 08174060
Site Code : 00174060
Start Date : 8/19/2008
Page No : 2



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266

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(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: J. Hanna
Board No.: D1-2278
Loc: Grape St. & Harbor Dr.

File Name : 08174061
Site Code : 00174061
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Harbor Drive Southbound					Westbound					Harbor Drive Northbound					Grape Street Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	238	181	0	0	419	0	0	0	0	0	0	146	66	6	212	0	32	1	0	33	6	664	670
16:15	242	203	0	0	445	0	0	0	1	0	0	128	63	18	191	1	36	0	0	37	19	673	692
16:30	234	235	0	0	469	0	0	0	0	0	0	114	66	25	180	2	24	0	0	26	25	675	700
16:45	207	213	0	0	420	0	0	0	1	0	0	156	66	16	222	0	32	2	0	34	17	676	693
Total	921	832	0	0	1753	0	0	0	2	0	0	544	261	65	805	3	124	3	0	130	67	2688	2755
17:00	243	190	0	0	433	0	0	0	2	0	0	156	71	11	227	2	10	0	0	12	13	672	685
17:15	237	166	0	0	403	0	0	0	3	0	0	167	53	5	220	1	2	0	0	3	8	626	634
17:30	202	165	0	0	367	0	0	0	2	0	0	143	59	22	202	0	3	1	0	4	24	573	597
17:45	255	188	0	0	443	0	0	0	0	0	0	135	59	21	194	0	0	1	0	1	21	638	659
Total	937	709	0	0	1646	0	0	0	7	0	0	601	242	59	843	3	15	2	0	20	66	2509	2575
Grand Total	1858	1541	0	0	3399	0	0	0	9	0	0	1145	503	124	1648	6	139	5	0	150	133	5197	5330
Apprch %	54.7	45.3	0.0			0.0	0.0	0.0			0.0	69.5	30.5			4.0	92.7	3.3					
Total %	35.8	29.7	0.0		65.4	0.0	0.0	0.0		0.0	0.0	22.0	9.7		31.7	0.1	2.7	0.1		2.9	2.5	97.5	

	Harbor Drive Southbound				Westbound				Harbor Drive Northbound				Grape Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:15																
Volume	926	841	0	1767	0	0	0	0	0	554	266	820	5	102	2	109	2696
Percent	52.4	47.6	0.0		0.0	0.0	0.0		0.0	67.6	32.4		4.6	93.6	1.8		
16:45 Volume	207	213	0	420	0	0	0	0	0	156	66	222	0	32	2	34	676
Peak Factor																	0.997
High Int.	16:30				3:45:00 PM				17:00				16:15				
Volume	234	235	0	469	0	0	0	0	0	156	71	227	1	36	0	37	
Peak Factor				0.942								0.903				0.736	

267

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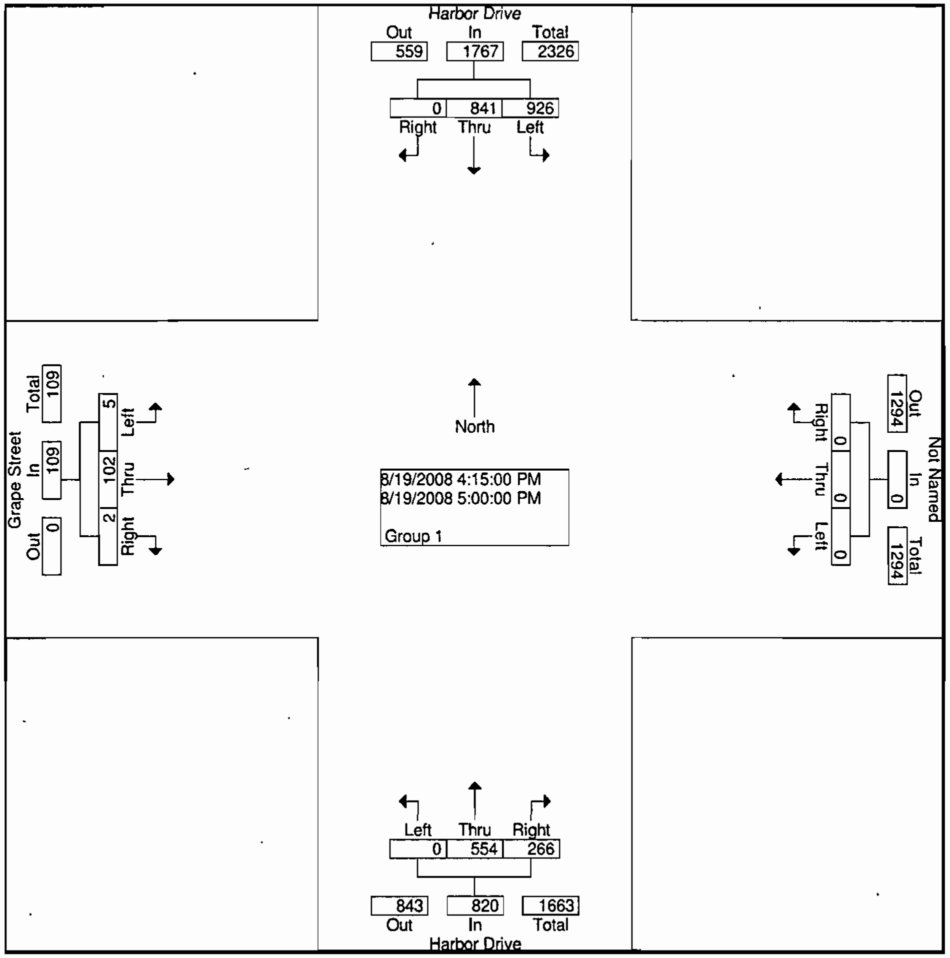
Weather: Clear & Dry
Counted By: J. Hanna
Board No.: D1-2278
Loc: Grape St. & Harbor Dr.

File Name : 08174061
Site Code : 00174061
Start Date : 8/19/2008
Page No : 2



268

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P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: B. Vockeroth
Board No.: D1-1432
Loc: Laurel St & Pacific Hwy

File Name : 08174070
Site Code : 00174070
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Pacific Hwy Southbound					Laural Street Westbound					Pacific Hwy Northbound					Laural Street Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	3	31	116	14	150	7	139	9	7	155	14	28	11	2	53	58	107	2	5	167	28	525	553
07:15	11	30	114	4	155	10	127	7	1	144	16	43	7	1	66	55	88	2	1	145	7	510	517
07:30	6	38	102	5	146	7	111	11	0	129	13	38	11	1	62	53	112	4	0	169	6	506	512
07:45	15	57	138	2	210	9	135	8	1	152	13	49	5	1	67	65	106	3	0	174	4	603	607
Total	35	156	470	25	661	33	512	35	9	580	56	158	34	5	248	231	413	11	6	655	45	2144	2189
08:00	7	41	122	2	170	6	118	4	0	128	8	46	11	0	65	41	117	1	0	159	2	522	524
08:15	27	37	156	2	220	8	155	15	4	178	16	29	20	4	65	44	146	3	0	193	10	656	666
08:30	33	54	110	0	197	10	133	9	0	152	16	44	16	0	76	87	119	3	1	209	1	634	635
08:45	34	31	151	1	216	13	155	19	0	187	7	51	25	1	83	77	196	6	1	279	3	765	768
Total	101	163	539	5	803	37	561	47	4	645	47	170	72	5	289	249	578	13	2	840	16	2577	2593
Grand Total	136	319	1009	30	1464	70	1073	82	13	1225	103	328	106	10	537	480	991	24	8	1495	61	4721	4782
Apprch %	9.3	21.8	68.9			5.7	87.6	6.7			19.2	61.1	19.7			32.1	66.3	1.6					
Total %	2.9	6.8	21.4		31.0	1.5	22.7	1.7		25.9	2.2	6.9	2.2		11.4	10.2	21.0	0.5		31.7	1.3	98.7	

	Pacific Hwy Southbound				Laural Street Westbound				Pacific Hwy Northbound				Laural Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	08:00																
Volume	101	163	539	803	37	561	47	645	47	170	72	289	249	578	13	840	2577
Percent	12.6	20.3	67.1		5.7	87.0	7.3		16.3	58.8	24.9		29.6	68.8	1.5		
08:45 Volume	34	31	151	216	13	155	19	187	7	51	25	83	77	196	6	279	765
Peak Factor																	0.842
High Int.	08:15				08:45				08:45				08:45				
Volume	27	37	156	220	13	155	19	187	7	51	25	83	77	196	6	279	
Peak Factor				0.913				0.862				0.870				0.753	

269

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Weather: Clear & Dry
Counted By: B. Vockeroth
Board No.: D1-1432
Loc: Laurel St & Pacific Hwy

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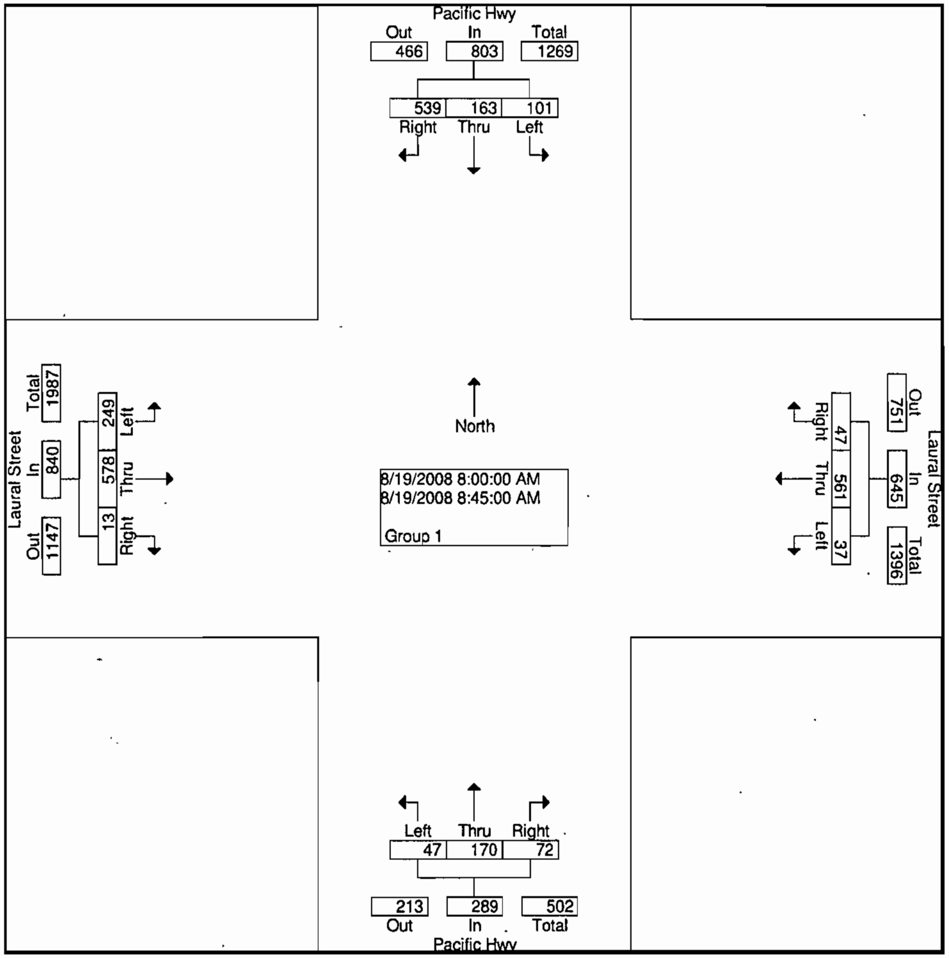
File Name : 08174070
Site Code : 00174070
Start Date : 8/19/2008
Page No : 2



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270

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Weather: Clear & Dry
Counted By: B. Vockeroth
Board No.: D1-1432
Loc: Laurel St & Pacific Hwy

File Name : 08174071
Site Code : 00174071
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Pacific Hwy Southbound					Laural Street Westbound					Pacific Hwy Northbound					Laural Street Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	22	63	88	0	173	8	145	22	0	175	13	71	26	0	110	79	210	12	3	301	3	759	762
16:15	19	70	107	1	196	17	157	16	0	190	19	110	32	4	161	79	188	11	0	278	5	825	830
16:30	27	84	75	0	186	9	128	25	0	162	18	90	54	0	162	59	220	10	2	289	2	799	801
16:45	32	59	71	5	162	14	138	9	0	161	15	84	20	3	119	73	186	8	1	267	9	709	718
Total	100	276	341	6	717	48	568	72	0	688	65	355	132	7	552	290	804	41	6	1135	19	3092	3111
17:00	23	67	108	0	198	10	143	20	0	173	15	92	35	1	142	55	187	5	2	247	3	760	763
17:15	40	84	80	0	204	13	128	21	0	162	14	108	21	0	143	54	152	6	0	212	0	721	721
17:30	39	73	74	6	186	8	161	14	0	183	23	108	25	0	156	44	149	5	0	198	6	723	729
17:45	34	78	74	1	186	10	144	15	0	169	16	71	14	0	101	51	190	1	1	242	2	698	700
Total	136	302	336	7	774	41	576	70	0	687	68	379	95	1	542	204	678	17	3	899	11	2902	2913
Grand Total	236	578	677	13	1491	89	1144	142	0	1375	133	734	227	8	1094	494	1482	58	9	2034	30	5994	6024
Apprch %	15.8	38.8	45.4			6.5	83.2	10.3			12.2	67.1	20.7			24.3	72.9	2.9					
Total %	3.9	9.6	11.3		24.9	1.5	19.1	2.4		22.9	2.2	12.2	3.8		18.3	8.2	24.7	1.0		33.9	0.5	99.5	

	Pacific Hwy Southbound				Laural Street Westbound				Pacific Hwy Northbound				Laural Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:15																
Volume	101	280	361	742	50	566	70	686	67	376	141	584	266	781	34	1081	3093
Percent	13.6	37.7	48.7		7.3	82.5	10.2		11.5	64.4	24.1		24.6	72.2	3.1		
16:15 Volume	19	70	107	196	17	157	16	190	19	110	32	161	79	188	11	278	825
Peak Factor																	0.937
High Int.	17:00				16:15				16:30				16:30				
Volume	23	67	108	198	17	157	16	190	18	90	54	162	59	220	10	289	
Peak Factor				0.937				0.903				0.901				0.935	

271

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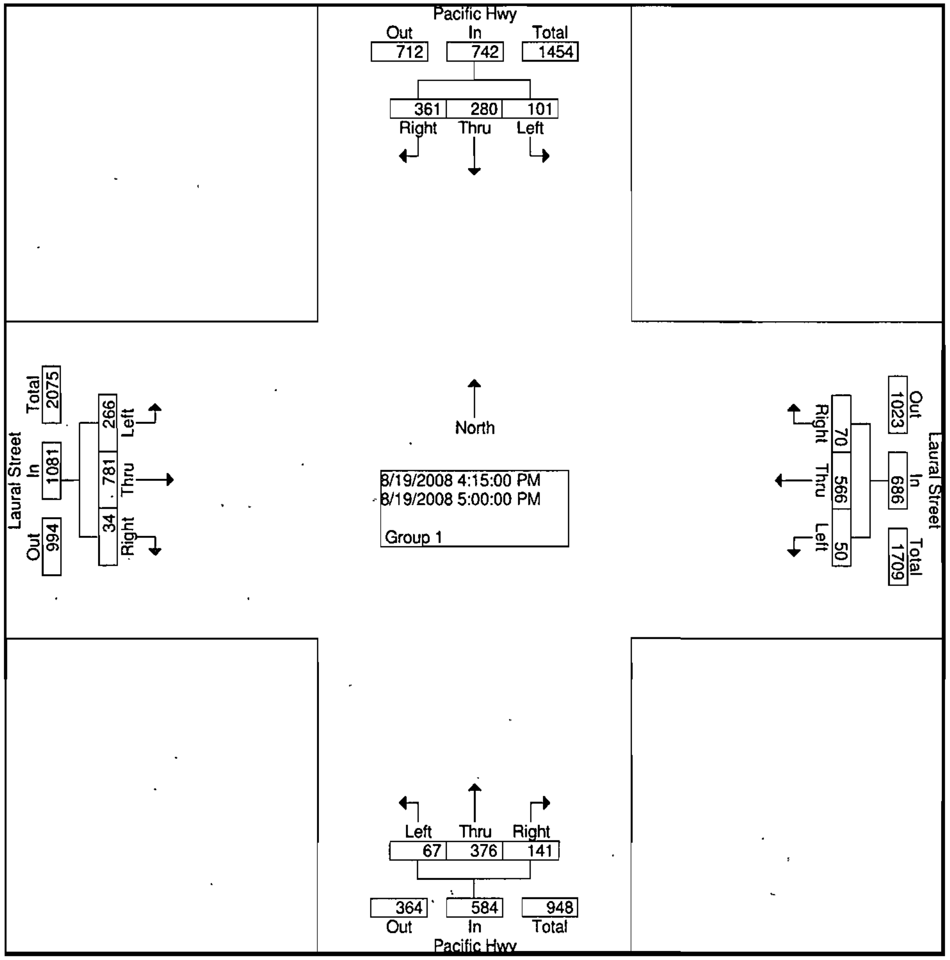
Weather: Clear & Dry
Counted By: B. Vockeroth
Board No.: D1-1432
Loc: Laurel St & Pacific Hwy

File Name : 08174071
Site Code : 00174071
Start Date : 8/19/2008
Page No : 2



272

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TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: J. Fort
Board No.: D1-1431
Loc: Hawthorn St & Pacific Hwy

File Name : 08174080
Site Code : 00174080
Start Date : 8/19/2008

Groups Printed- Group 1

	Pacific Hwy Southbound					Hawthorne Street Westbound					Pacific Hwy Northbound					Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	0	31	9	2	40	72	422	14	1	508	16	33	0	4	49	0	0	0	19	0	26	597	623
07:15	0	37	7	3	44	94	390	20	2	504	14	49	0	0	63	0	0	0	12	0	17	611	628
07:30	0	40	5	1	45	107	325	24	0	456	25	46	0	1	71	0	0	0	6	0	8	572	580
07:45	0	53	9	0	62	145	329	19	2	493	25	43	0	0	68	0	0	0	13	0	15	623	638
Total	0	161	30	6	191	418	1466	77	5	1961	80	171	0	5	251	0	0	0	50	0	66	2403	2469
08:00	0	47	9	3	56	74	309	22	1	405	28	54	0	6	82	0	0	0	3	0	13	543	556
08:15	0	45	7	1	52	93	355	23	2	471	23	36	0	0	59	0	0	0	2	0	5	582	587
08:30	0	49	2	3	51	55	281	30	0	366	26	57	0	5	83	0	0	0	7	0	15	500	515
08:45	0	51	5	3	56	54	271	25	2	350	17	50	0	0	67	0	0	0	2	0	7	473	480
Total	0	192	23	10	215	276	1216	100	5	1592	94	197	0	11	291	0	0	0	14	0	40	2098	2138
Grand Total	0	353	53	16	406	694	2682	177	10	3553	174	368	0	16	542	0	0	0	64	0	106	4501	4607
Apprch %	0.0	86.9	13.1			19.5	75.5	5.0			32.1	67.9	0.0			0.0	0.0	0.0					
Total %	0.0	7.8	1.2		9.0	15.4	59.6	3.9		78.9	3.9	8.2	0.0		12.0	0.0	0.0	0.0		0.0	2.3	97.7	

	Pacific Hwy Southbound				Hawthorne Street Westbound				Pacific Hwy Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:00																
Volume	0	161	30	191	418	1466	77	1961	80	171	0	251	0	0	0	0	2403
Percent	0.0	84.3	15.7		21.3	74.8	3.9		31.9	68.1	0.0		0.0	0.0	0.0		
07:45 Volume	0	53	9	62	145	329	19	493	25	43	0	68	0	0	0	0	623
Peak Factor																	0.964
High Int.	07:45				07:00				07:30				6:45:00 AM				
Volume	0	53	9	62	72	422	14	508	25	46	0	71					
Peak Factor				0.770				0.965				0.884					

273

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Weather: Clear & Dry
Counted By: J. Fort
Board No.: D1-1431
Loc: Hawthorn St & Pacific Hwy

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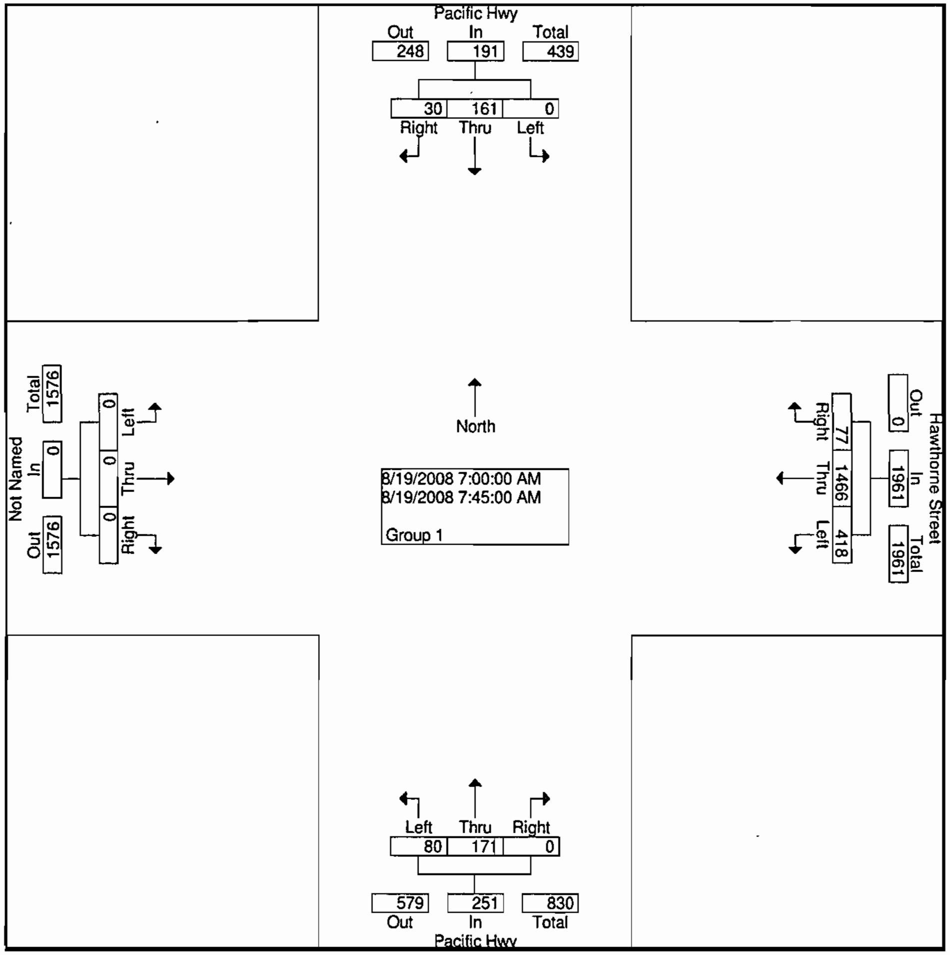
(619) 390-8495 Fax (866) 768-1818

File Name : 08174080
Site Code : 00174080
Start Date : 8/19/2008
Page No : 2



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274

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(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: J. Fort
Board No.: D1-1431
Loc: Hawthorn St & Pacific Hwy

File Name : 08174081
Site Code : 00174081
Start Date : 8/19/2008

Groups Printed- Group 1

	Pacific Hwy Southbound					Hawthorne Street Westbound					Pacific Hwy Northbound					Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	0	87	6	1	93	28	277	19	2	324	25	105	0	0	130	0	0	0	12	0	15	547	562
16:15	0	81	7	2	88	25	234	22	1	281	28	118	0	0	146	0	0	0	5	0	8	515	523
16:30	0	84	7	5	91	40	245	17	0	302	24	123	0	1	147	0	0	0	14	0	20	540	560
16:45	0	85	7	0	92	33	215	24	0	272	31	108	0	0	139	0	0	0	8	0	8	503	511
Total	0	337	27	8	364	126	971	82	3	1179	108	454	0	1	562	0	0	0	39	0	51	2105	2156
17:00	0	74	11	2	85	30	208	25	0	263	27	131	0	6	158	0	0	0	11	0	19	506	525
17:15	0	88	4	4	92	36	233	20	0	289	28	107	0	2	135	0	0	0	4	0	10	516	526
17:30	0	80	6	2	86	31	241	23	2	295	24	126	0	5	150	0	0	0	4	0	13	531	544
17:45	0	68	15	2	83	25	243	25	6	293	12	93	0	3	105	0	0	0	4	0	15	481	496
Total	0	310	36	10	346	122	925	93	8	1140	91	457	0	16	548	0	0	0	23	0	57	2034	2091
Grand Total	0	647	63	18	710	248	1896	175	11	2319	199	911	0	17	1110	0	0	0	62	0	108	4139	4247
Apprch %	0.0	91.1	8.9			10.7	81.8	7.5			17.9	82.1	0.0			0.0	0.0	0.0					
Total %	0.0	15.6	1.5		17.2	6.0	45.8	4.2		56.0	4.8	22.0	0.0		26.8	0.0	0.0	0.0		0.0	2.5	97.5	

	Pacific Hwy Southbound				Hawthorne Street Westbound				Pacific Hwy Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:00																
Volume	0	337	27	364	126	971	82	1179	108	454	0	562	0	0	0	0	2105
Percent	0.0	92.6	7.4		10.7	82.4	7.0		19.2	80.8	0.0		0.0	0.0	0.0		
16:00 Volume	0	87	6	93	28	277	19	324	25	105	0	130	0	0	0	0	547
Peak Factor																	0.962
High Int.	16:00				16:00				16:30				3:45:00 PM				
Volume	0	87	6	93	28	277	19	324	24	123	0	147					
Peak Factor				0.978				0.910				0.956					

275

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[redacted]

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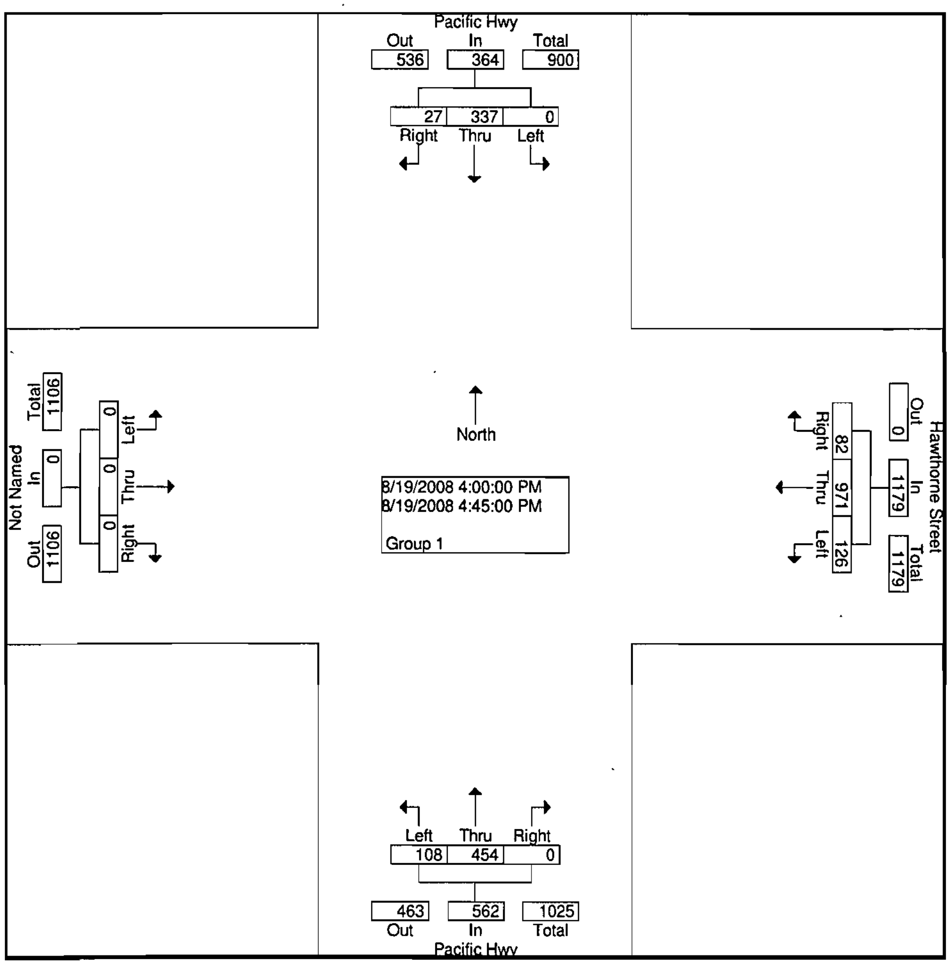
Weather: Clear & Dry
Counted By: J. Fort
Board No.: D1-1431
Loc: Hawthorn St & Pacific Hwy

File Name : 08174081
Site Code : 00174081
Start Date : 8/19/2008
Page No : 2



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276

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: B. Tymick
Board No.: D1-1429
Loc: Grape St & Pacific Hwy

File Name : 08174090
Site Code : 00174090
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Pacific Hwy Southbound					Grape Street Westbound					Pacific Hwy Northbound					Grape Street Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	12	96	0	0	108	0	0	0	2	0	0	35	34	5	69	13	199	9	7	221	14	398	412
07:15	4	120	0	1	124	0	0	0	2	0	0	57	52	6	109	8	187	8	2	203	11	436	447
07:30	5	141	0	0	146	0	0	0	0	0	0	70	57	5	127	10	186	11	2	207	7	480	487
07:45	15	181	0	1	196	0	0	0	4	0	0	51	74	5	125	3	166	3	4	172	14	493	507
Total	36	538	0	2	574	0	0	0	8	0	0	213	217	21	430	34	738	31	15	803	46	1807	1853
08:00	13	118	0	0	131	0	0	0	3	0	0	76	72	0	148	9	181	8	5	198	8	477	485
08:15	7	135	0	1	142	0	0	0	7	0	0	52	46	6	98	6	209	6	1	221	15	461	476
08:30	12	105	0	3	117	0	0	0	4	0	0	73	47	14	120	9	224	10	1	243	22	480	502
08:45	16	94	0	2	110	0	0	0	6	0	0	62	67	4	129	10	226	12	0	248	12	487	499
Total	48	452	0	6	500	0	0	0	20	0	0	263	232	24	495	34	840	36	7	910	57	1905	1962
Grand Total	84	990	0	8	1074	0	0	0	28	0	0	476	449	45	925	68	1578	67	22	1713	103	3712	3815
Apprch %	7.8	92.2	0.0			0.0	0.0	0.0			0.0	51.5	48.5			4.0	92.1	3.9					
Total %	2.3	26.7	0.0		28.9	0.0	0.0	0.0		0.0	0.0	12.8	12.1		24.9	1.8	42.5	1.8		46.1	2.7	97.3	

	Pacific Hwy Southbound				Grape Street Westbound				Pacific Hwy Northbound				Grape Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:30																
Volume	40	575	0	615	0	0	0	0	0	249	249	498	28	742	28	798	1911
Percent	6.5	93.5	0.0		0.0	0.0	0.0		0.0	50.0	50.0		3.5	93.0	3.5		
07:45 Volume	15	181	0	196	0	0	0	0	0	51	74	125	3	166	3	172	493
Peak Factor																	0.969
High Int.	07:45				6:45:00 AM				08:00				08:15				
Volume	15	181	0	196	0	0	0	0	0	76	72	148	6	209	6	221	
Peak Factor				0.784								0.841				0.903	

277

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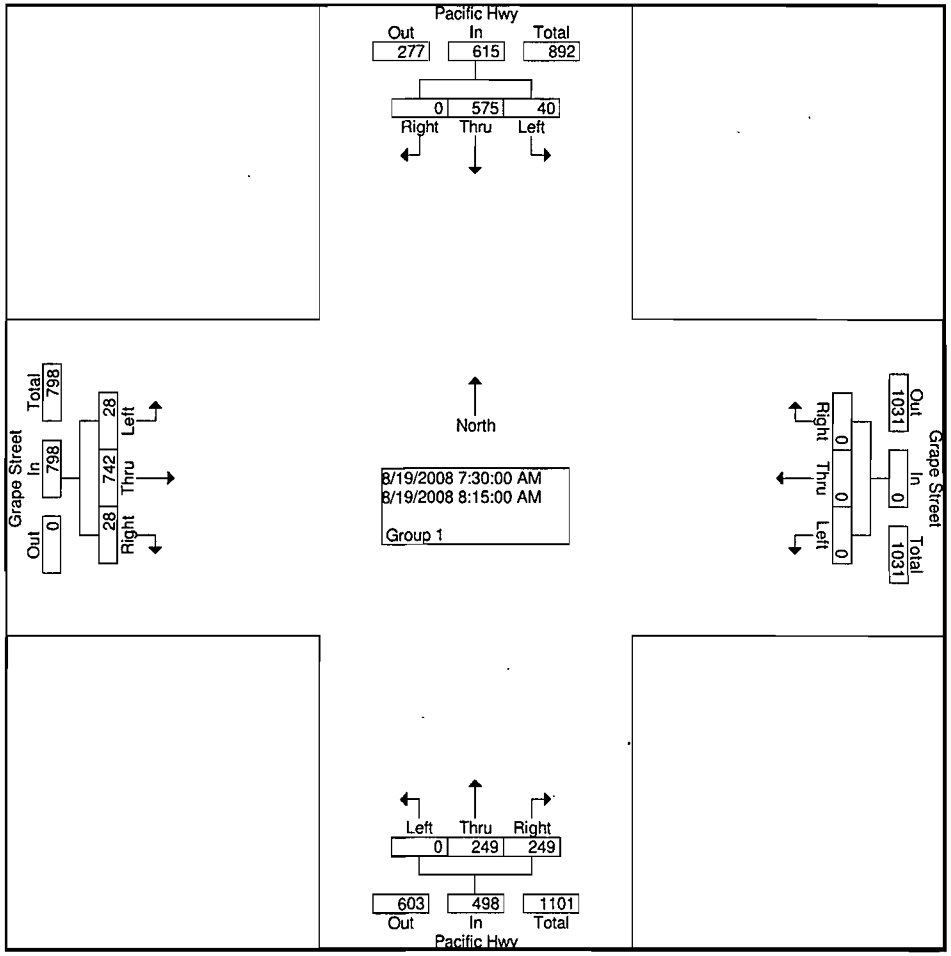
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: B. Tymick
Board No.: D1-1429
Loc: Grape St & Pacific Hwy

File Name : 08174090
Site Code : 00174090
Start Date : 8/19/2008
Page No : 2



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278

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P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: B. Tymick
Board No.: D1-1429
Loc: Grape St & Pacific Hwy

File Name : 08174091
Site Code : 00174091
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Pacific Hwy Southbound					Westbound					Pacific Hwy Northbound					Grape Street Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
15:59	36	86	0	1	122	0	0	0	2	0	0	113	139	6	252	9	377	8	4	394	13	768	781
16:14	32	98	0	0	130	0	0	0	3	0	0	138	123	14	261	11	386	13	2	410	19	801	820
16:29	32	110	0	4	142	0	0	0	5	0	0	143	117	10	260	12	362	6	7	380	26	782	808
16:44	32	93	0	3	125	0	0	0	2	0	0	116	88	14	204	14	337	14	5	365	24	694	718
16:59	26	98	0	1	124	0	0	0	1	0	0	142	131	17	273	23	398	10	2	431	21	828	849
17:14	42	93	0	0	135	0	0	0	3	0	0	127	92	3	219	9	315	5	2	329	8	683	691
17:29	34	67	0	0	101	0	0	0	3	0	0	141	92	20	233	8	295	27	1	330	24	664	688
17:44	26	72	0	2	98	0	0	0	4	0	0	91	55	8	146	14	291	8	8	313	22	557	579
Grand Total	260	717	0	11	977	0	0	0	23	0	0	1011	837	92	1848	100	2761	91	31	2952	157	5777	5934
Apprch %	26.6	73.4	0.0			0.0	0.0	0.0			0.0	54.7	45.3			3.4	93.5	3.1					
Total %	4.5	12.4	0.0		16.9	0.0	0.0	0.0		0.0	0.0	17.5	14.5		32.0	1.7	47.8	1.6		51.1	2.6	97.4	

	Pacific Hwy Southbound				Westbound				Pacific Hwy Northbound				Grape Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 15:59 to 17:44 - Peak 1 of 1																	
Intersection	16:14																
Volume	122	399	0	521	0	0	0	0	0	539	459	998	60	1483	43	1586	3105
Percent	23.4	76.6	0.0		0.0	0.0	0.0		0.0	54.0	46.0		3.8	93.5	2.7		
16:59 Volume	26	98	0	124	0	0	0	0	0	142	131	273	23	398	10	431	828
Peak Factor																	0.938
High Int.	16:29				3:44:00 PM				16:59				16:59				
Volume	32	110	0	142	0	0	0	0	0	142	131	273	23	398	10	431	
Peak Factor				0.917								0.914				0.920	

279

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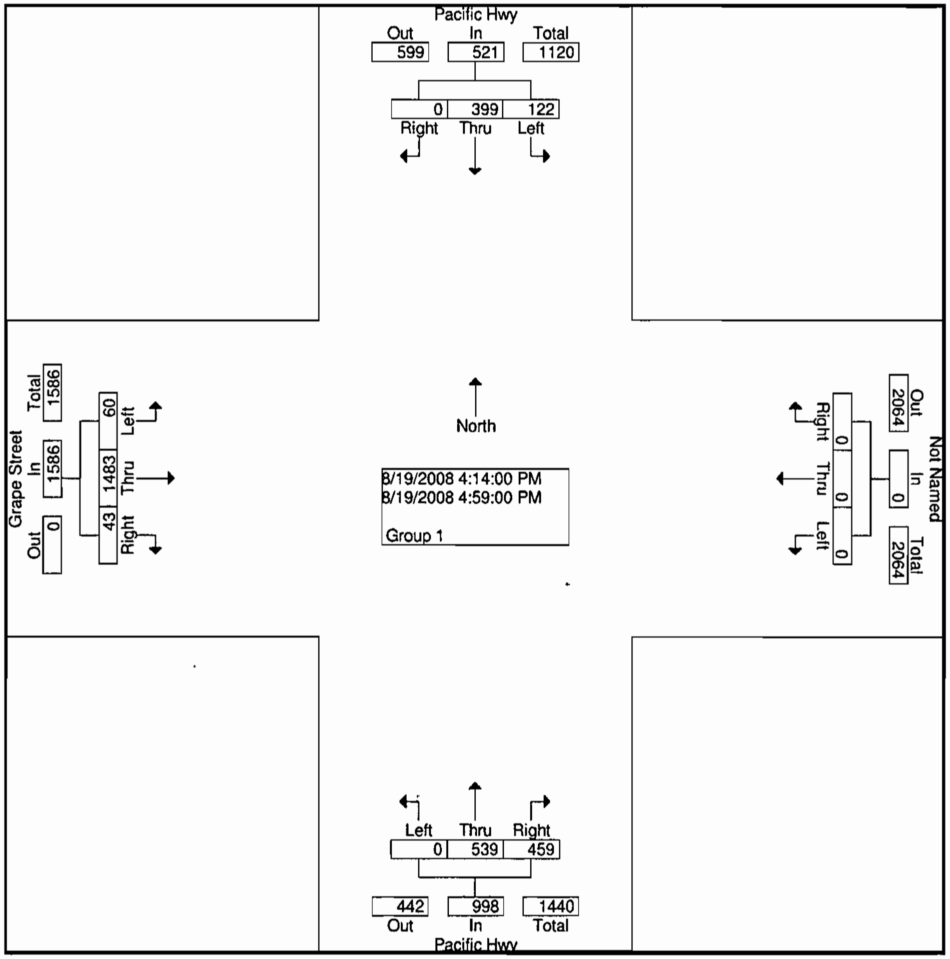
Weather: Clear & Dry
Counted By: B. Tymick
Board No.: D1-1429
Loc: Grape St & Pacific Hwy

File Name : 08174091
Site Code : 00174091
Start Date : 8/19/2008
Page No : 2



280

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Weather: Clear & Dry
Counted By: M. Parish
Board No.: D1-1306
Loc: Harbor Island Dr & Sheraton Drwy

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(619) 390-8495 Fax (866) 768-1818

File Name : 08174100
Site Code : 00174100
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Harbor Island Drive Southbound					Driveway Westbound					Harbor Island Drive Northbound					Sheraton Driveway Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	5	50	19	4	74	1	0	7	8	8	7	33	2	0	42	12	2	4	4	18	16	142	158
07:15	8	64	19	4	91	0	0	9	6	9	3	44	1	1	48	10	1	7	1	18	12	166	178
07:30	2	55	25	2	82	0	0	4	2	4	0	41	3	1	44	16	0	2	6	18	11	148	159
07:45	5	76	24	0	105	2	1	4	3	7	1	43	2	0	46	7	0	5	6	12	9	170	179
Total	20	245	87	10	352	3	1	24	19	28	11	161	8	2	180	45	3	18	17	66	48	626	674
08:00	8	81	28	3	117	0	0	10	4	10	2	38	2	0	42	11	0	2	3	13	10	182	192
08:15	4	59	11	0	74	2	0	3	1	5	2	36	0	0	38	8	1	2	4	11	5	128	133
08:30	5	45	6	4	56	0	0	4	6	4	0	25	0	0	25	2	0	1	0	3	10	88	98
08:45	7	63	11	0	81	2	0	11	2	13	1	43	1	0	45	1	0	5	3	6	5	145	150
Total	24	248	56	7	328	4	0	28	13	32	5	142	3	0	150	22	1	10	10	33	30	543	573
Grand Total	44	493	143	17	680	7	1	52	32	60	16	303	11	2	330	67	4	28	27	99	78	1169	1247
Apprch %	6.5	72.5	21.0			11.7	1.7	86.7			4.8	91.8	3.3			67.7	4.0	28.3					
Total %	3.8	42.2	12.2		58.2	0.6	0.1	4.4		5.1	1.4	25.9	0.9		28.2	5.7	0.3	2.4		8.5	6.3	93.7	

	Harbor Island Drive Southbound				Driveway Westbound				Harbor Island Drive Northbound				Sheraton Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	07:15																
Volume	23	276	96	395	2	1	27	30	6	166	8	180	44	1	16	61	666
Percent	5.8	69.9	24.3		6.7	3.3	90.0		3.3	92.2	4.4		72.1	1.6	26.2		
08:00 Volume	8	81	28	117	0	0	10	10	2	38	2	42	11	0	2	13	182
Peak Factor																	0.915
High Int.	08:00				08:00				07:15				07:15				
Volume	8	81	28	117	0	0	10	10	3	44	1	48	10	1	7	18	
Peak Factor				0.844				0.750				0.938				0.847	

281

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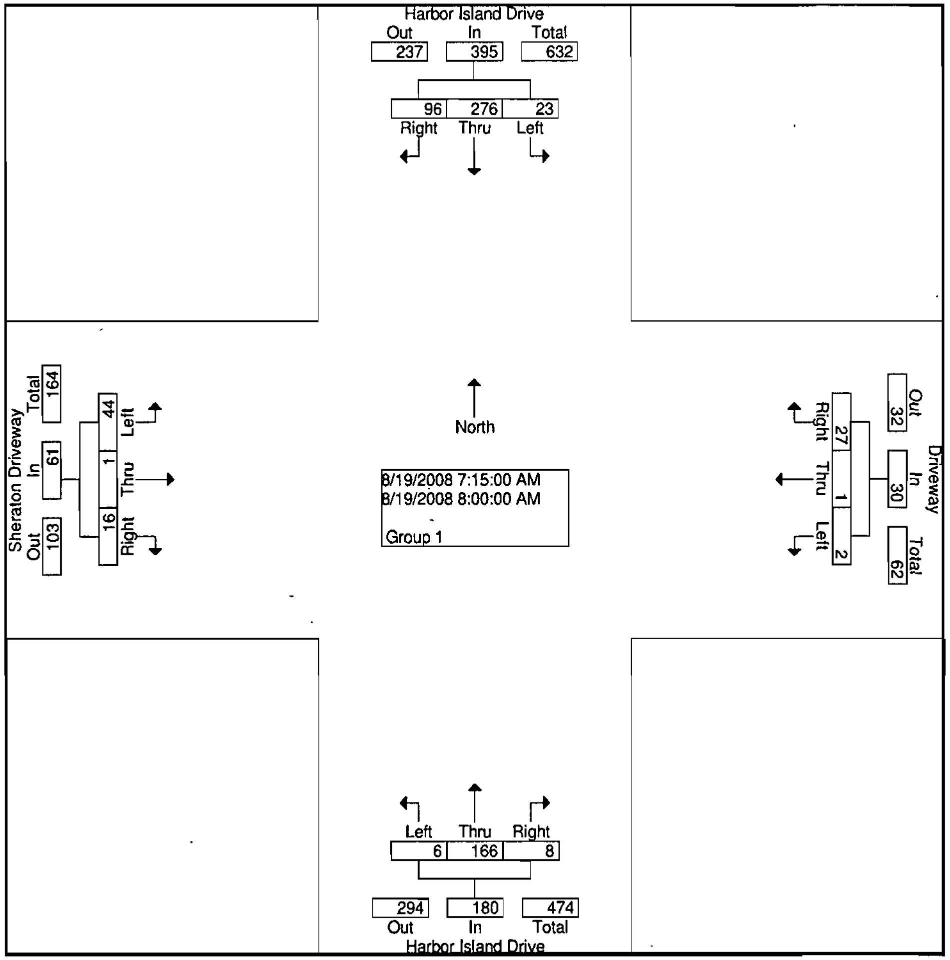
Weather: Clear & Dry
Counted By: M. Parish
Board No.: D1-1306
Loc: Harbor Island Dr & Sheraton Drwy

File Name : 08174100
Site Code : 00174100
Start Date : 8/19/2008
Page No : 2



282

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Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

Weather: Clear & Dry
Counted By: M. Parish
Board No.: D1-1306
Loc: Harbor Island Dr & Sheraton Drwy

File Name : 08174101
Site Code : 00174101
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Harbor Island Drive Southbound					Driveway Westbound					Harbor Island Drive Northbound					Sheriton Driveway Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	5	90	21	2	116	1	0	7	5	8	3	102	5	0	110	24	0	5	3	29	10	263	273
16:15	6	90	13	4	109	4	2	9	3	15	4	95	4	0	103	25	0	6	6	31	13	258	271
16:30	7	95	21	2	123	2	2	11	4	15	2	101	3	1	106	35	0	10	6	45	13	289	302
16:45	5	98	19	0	122	2	0	9	0	11	2	96	3	0	101	14	0	6	2	20	2	254	256
Total	23	373	74	8	470	9	4	36	12	49	11	394	15	1	420	98	0	27	17	125	38	1064	1102
17:00	5	111	16	2	132	2	0	12	3	14	5	81	1	0	87	17	0	3	7	20	12	253	265
17:15	2	68	10	2	80	0	0	6	1	6	5	81	5	2	91	22	0	4	5	26	10	203	213
17:30	2	94	19	2	115	1	1	10	5	12	3	75	2	1	80	24	0	4	3	28	11	235	246
17:45	4	79	23	5	106	0	0	6	8	6	2	76	6	1	84	24	0	7	5	31	19	227	246
Total	13	352	68	11	433	3	1	34	17	38	15	313	14	4	342	87	0	18	20	105	52	918	970
Grand Total	36	725	142	19	903	12	5	70	29	87	26	707	29	5	762	185	0	45	37	230	90	1982	2072
Apprch %	4.0	80.3	15.7			13.8	5.7	80.5			3.4	92.8	3.8			80.4	0.0	19.6					
Total %	1.8	36.6	7.2		45.6	0.6	0.3	3.5		4.4	1.3	35.7	1.5		38.4	9.3	0.0	2.3		11.6	4.3	95.7	

	Harbor Island Drive Southbound				Driveway Westbound				Harbor Island Drive Northbound				Sheriton Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:00																
Volume	23	373	74	470	9	4	36	49	11	394	15	420	98	0	27	125	1064
Percent	4.9	79.4	15.7		18.4	8.2	73.5		2.6	93.8	3.6		78.4	0.0	21.6		
16:30 Volume	7	95	21	123	2	2	11	15	2	101	3	106	35	0	10	45	289
Peak Factor																	0.920
High Int.	16:30				16:15				16:00				16:30				
Volume	7	95	21	123	4	2	9	15	3	102	5	110	35	0	10	45	
Peak Factor				0.955				0.817				0.955				0.694	

283

57791

Weather: Clear & Dry
Counted By: M. Parish
Board No.: D1-1306
Loc: Harbor Island Dr & Sheraton Drwy

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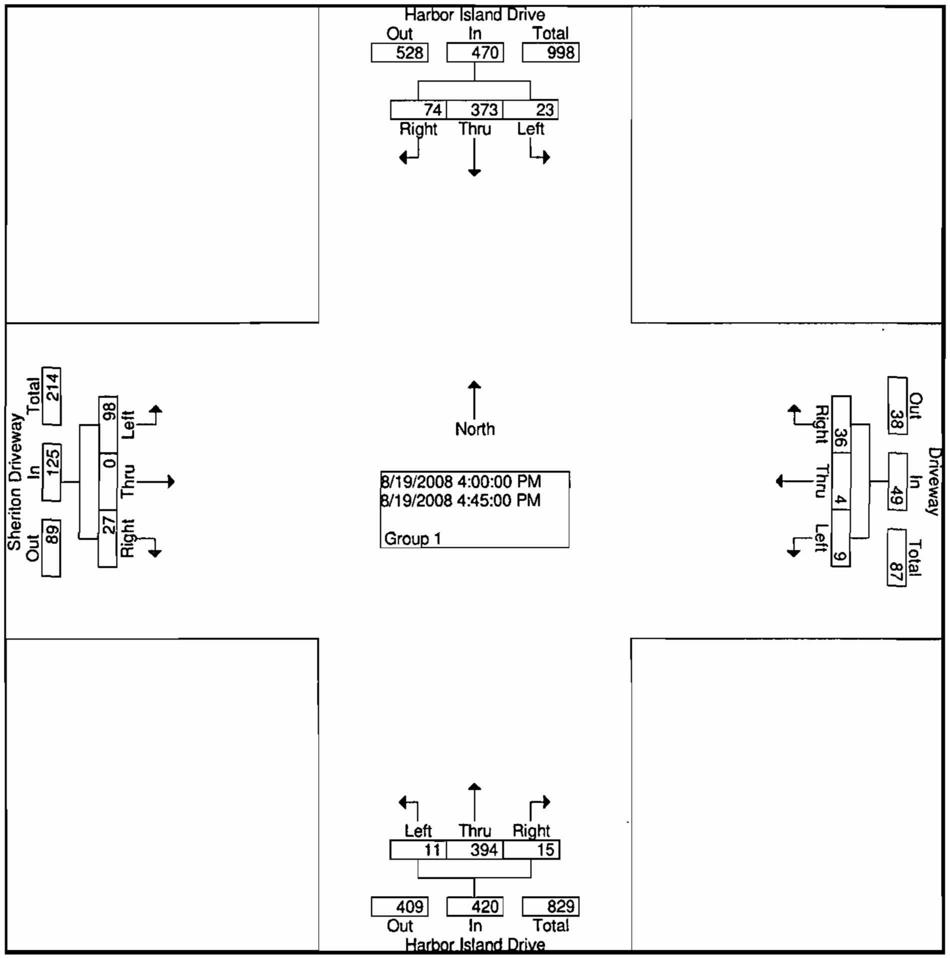
File Name : 08174101
Site Code : 00174101
Start Date : 8/19/2008
Page No : 2



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284

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Weather: Clear & Dry
Counted By: C. Hust
Board No.: D1-1428
Loc: Harbor Island Dr & Harbor Island Dr

File Name : 08174110
Site Code : 00174110
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Harbor Island Drive Southbound					Harbor Island Drive Westbound					Northbound					Harbor Island Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	21	0	33	0	54	0	0	14	0	14	0	0	0	0	0	25	3	0	2	28	2	96	98
07:15	24	0	39	0	63	0	1	12	0	13	0	0	0	0	0	35	4	0	0	39	0	115	115
07:30	16	0	45	0	61	0	0	6	0	6	0	0	0	0	0	40	0	0	1	40	1	107	108
07:45	22	0	55	0	77	0	0	13	0	13	0	0	0	0	0	38	0	0	0	38	0	128	128
Total	83	0	172	0	255	0	1	45	0	46	0	0	0	0	0	138	7	0	3	145	3	446	449
08:00	36	0	36	0	72	0	1	15	0	16	0	0	0	0	0	26	1	0	0	27	0	115	115
08:15	21	0	45	0	66	0	2	21	0	23	0	0	0	0	0	30	2	0	0	32	0	121	121
08:30	21	0	39	0	60	0	2	14	0	16	0	0	0	0	0	33	3	0	0	36	0	112	112
08:45	33	0	40	0	73	0	2	19	0	21	0	0	0	0	0	35	4	0	0	39	0	133	133
Total	111	0	160	0	271	0	7	69	0	76	0	0	0	0	0	124	10	0	0	134	0	481	481
Grand Total	194	0	332	0	526	0	8	114	0	122	0	0	0	0	0	262	17	0	3	279	3	927	930
Apprch %	36.9	0.0	63.1			0.0	6.6	93.4			0.0	0.0	0.0			93.9	6.1	0.0					
Total %	20.9	0.0	35.8		56.7	0.0	0.9	12.3		13.2	0.0	0.0	0.0		0.0	28.3	1.8	0.0		30.1	0.3	99.7	

	Harbor Island Drive Southbound				Harbor Island Drive Westbound				Northbound				Harbor Island Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
Intersection	08:00																
Volume	111	0	160	271	0	7	69	76	0	0	0	0	124	10	0	134	481
Percent	41.0	0.0	59.0		0.0	9.2	90.8		0.0	0.0	0.0		92.5	7.5	0.0		
08:45 Volume	33	0	40	73	0	2	19	21	0	0	0	0	35	4	0	39	133
Peak Factor																	0.904
High Int.	08:45				08:15				6:45:00 AM				08:45				
Volume	33	0	40	73	0	2	21	23	0	0	0	0	35	4	0	39	
Peak Factor				0.928				0.826								0.859	

285

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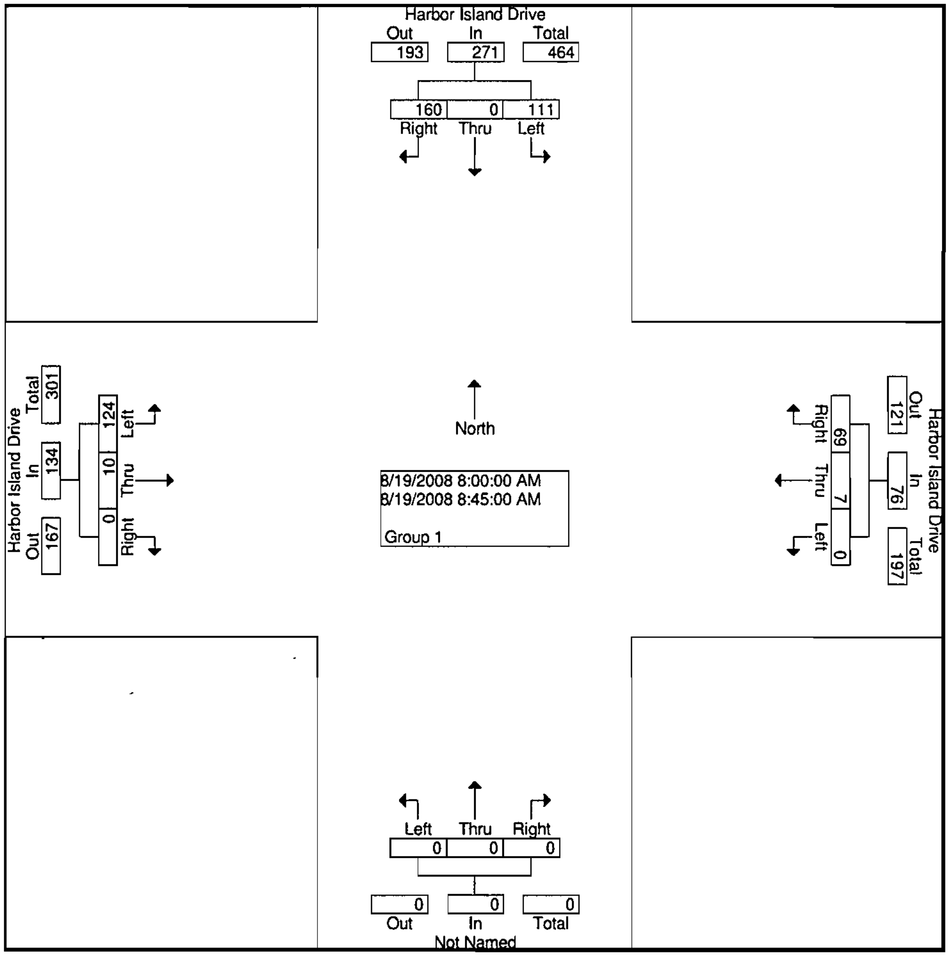
Weather: Clear & Dry
Counted By: C. Hust
Board No.: D1-1428
Loc: Harbor Island Dr & Harbor Island Dr

File Name : 08174110
Site Code : 00174110
Start Date : 8/19/2008
Page No : 2



286

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Weather : Clear & Dry
Counted By: C. Hust
Board No.: D1-1428
Loc: Harbor Island Dr & Harbor Island Dr

File Name : 08174111
Site Code : 00174111
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

	Harbor Island Drive Southbound					Harbor Island Drive Westbound					Northbound					Harbor Island Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	39	0	51	1	90	0	5	40	0	45	0	0	0	0	0	61	6	0	0	67	1	202	203
16:15	39	0	73	0	112	0	7	25	0	32	0	0	0	0	0	64	9	0	0	73	0	217	217
16:30	30	0	63	0	93	0	4	35	0	39	0	0	0	0	0	82	11	0	0	93	0	225	225
16:45	51	0	66	1	117	0	6	31	0	37	0	0	0	0	0	65	4	0	0	69	1	223	224
Total	159	0	253	2	412	0	22	131	0	153	0	0	0	0	0	272	30	0	0	302	2	867	869
17:00	64	0	46	0	110	0	6	51	0	57	0	0	0	0	0	45	9	0	0	54	0	221	221
17:15	35	0	55	0	90	0	2	49	0	51	0	0	0	0	0	45	6	0	0	51	0	192	192
17:30	47	0	43	0	90	0	6	26	0	32	0	0	0	0	0	49	4	0	0	53	0	175	175
17:45	31	0	50	0	81	0	2	32	0	34	0	0	0	0	0	57	6	0	0	63	0	178	178
Total	177	0	194	0	371	0	16	158	0	174	0	0	0	0	0	196	25	0	0	221	0	766	766
Grand Total	336	0	447	2	783	0	38	289	0	327	0	0	0	0	0	468	55	0	0	523	2	1633	1635
Apprch %	42.9	0.0	57.1			0.0	11.6	88.4			0.0	0.0	0.0			89.5	10.5	0.0					
Total %	20.6	0.0	27.4		47.9	0.0	2.3	17.7		20.0	0.0	0.0	0.0		0.0	28.7	3.4	0.0		32.0	0.1	99.9	

	Harbor Island Drive Southbound				Harbor Island Drive Westbound				Northbound				Harbor Island Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:15																
Volume	184	0	248	432	0	23	142	165	0	0	0	0	256	33	0	289	886
Percent	42.6	0.0	57.4		0.0	13.9	86.1		0.0	0.0	0.0		88.6	11.4	0.0		
16:30 Volume	30	0	63	93	0	4	35	39	0	0	0	0	82	11	0	93	225
Peak Factor																	0.984
High Int.	16:45				17:00				3:45:00 PM				16:30				
Volume	51	0	66	117	0	6	51	57	0	0	0	0	82	11	0	93	
Peak Factor				0.923				0.724								0.777	

287

57791

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Weather : Clear & Dry
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File Name : 08174111
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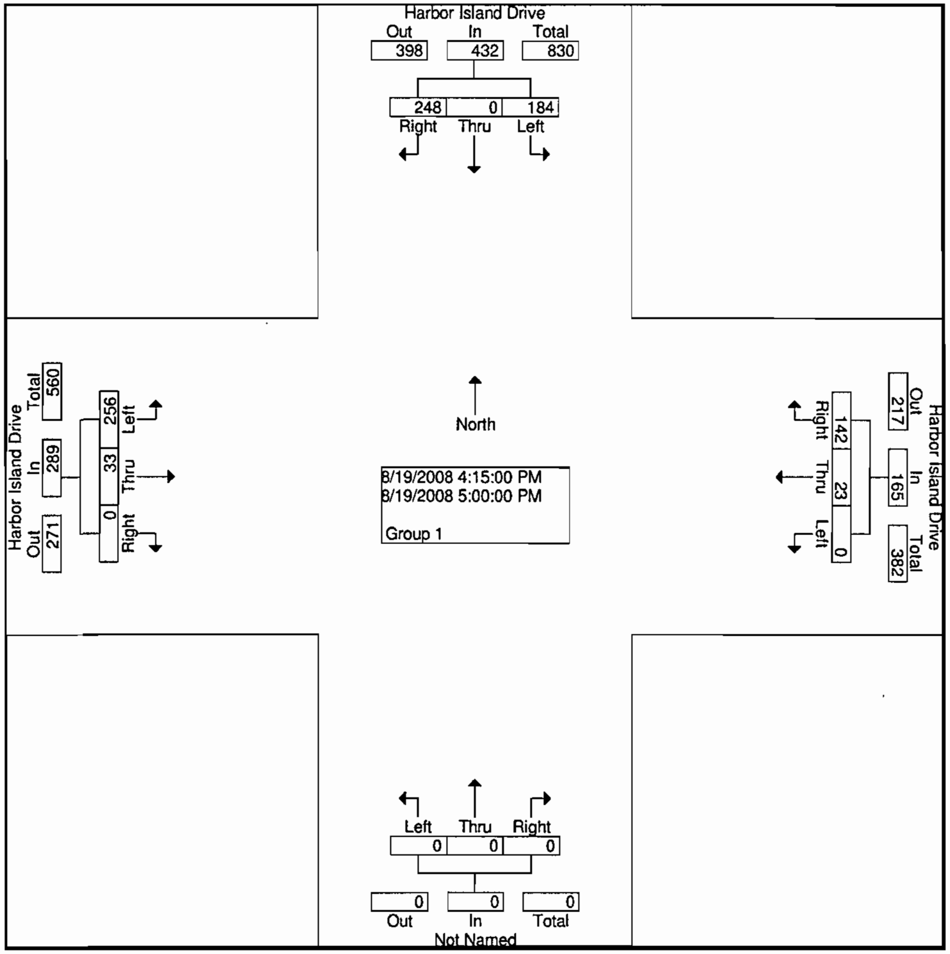

288

57791

Appendix B

Intersection Level of Service Criteria and Calculation Sheets

57791

2000 HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

In the 2000 Highway Capacity Manual (HCM), Level of Service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, Level of Service criteria are stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group or approach in question.

LEVEL OF SERVICE	CONTROLLED DELAY PER VEHICLE (SEC)		
A		≤	10.0
B	10.1	to	20.0
C	20.1	to	35.0
D	35.1	to	55.0
E	55.1	to	80.0
F		>	80.0

Level of Service A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This 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.

Level of Service B describes operations with delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level of Service C describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in the level. The number of vehicles stopping is significant at this level, although many still pass through the intersections without stopping.

Level of Service D describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. 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.

Level of Service E describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered 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.

Level of Service F describes operations with delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e. when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	4951	1483	1723	4951	1483	1637	1483		3343	1533	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4951	1483	1723	4951	1483	1637	1483		3343	1533	
Volume (vph)	115	669	3	16	1063	3	9	2	8	119	8	83
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	128	743	3	18	1181	3	10	2	9	132	9	92
RTOR Reduction (vph)	0	0	1	0	0	2	0	8	0	0	78	0
Lane Group Flow (vph)	128	743	2	18	1181	1	10	3	0	132	23	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.6	34.9	34.9	0.9	27.2	27.2	8.3	8.3		9.6	9.6	
Effective Green, g (s)	10.6	36.9	36.9	2.9	29.2	29.2	10.3	10.3		11.6	11.6	
Actuated g/C Ratio	0.14	0.50	0.50	0.04	0.40	0.40	0.14	0.14		0.16	0.16	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	248	2479	743	68	1962	588	229	207		526	241	
v/s Ratio Prot	c0.07	0.15		0.01	c0.24		c0.01	0.00		c0.04	0.02	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.52	0.30	0.00	0.26	0.60	0.00	0.04	0.02		0.25	0.10	
Uniform Delay, d1	29.2	10.8	9.2	34.4	17.6	13.4	27.4	27.3		27.2	26.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.1	0.0	2.1	0.5	0.0	0.1	0.0		0.3	0.2	
Delay (s)	31.0	10.9	9.2	36.4	18.2	13.4	27.5	27.4		27.5	26.7	
Level of Service	C	B	A	D	B	B	C	C		C	C	
Approach Delay (s)		13.8			18.4			27.4			27.2	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6233		3343	1814	1519	1568	2841	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6233		3343	1814	1519	1568	2841	
Volume (vph)	31	615	91	296	1440	8	69	25	156	45	19	88
Peak-hour factor, PHF	0.60	0.80	0.80	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	52	769	114	493	1800	10	86	31	195	56	24	110
RTOR Reduction (vph)	0	0	97	0	1	0	0	0	0	0	93	0
Lane Group Flow (vph)	52	769	17	493	1809	0	86	31	195	56	41	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	6.0	18.9	8.9	15.2	28.1		8.9	8.9	72.2	9.2	9.2	
Effective Green, g (s)	8.0	20.9	10.9	17.2	30.1		10.9	10.9	72.2	11.2	11.2	
Actuated g/C Ratio	0.11	0.29	0.15	0.24	0.42		0.15	0.15	1.00	0.16	0.16	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	191	1433	233	796	2599		505	274	1519	243	441	
v/s Ratio Prot	0.03	0.16	0.01	c0.15	c0.29		c0.03	0.02		c0.04	0.01	
v/s Ratio Perm									0.13			
v/c Ratio	0.27	0.54	0.07	0.62	0.70		0.17	0.11	0.13	0.23	0.09	
Uniform Delay, d1	29.4	21.6	26.3	24.6	17.3		26.7	26.5	0.0	26.7	26.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	0.4	0.1	1.4	0.8		0.2	0.2	0.2	0.5	0.1	
Delay (s)	30.2	22.0	26.5	26.0	18.1		26.9	26.7	0.2	27.2	26.2	
Level of Service	C	C	C	C	B		C	C	A	C	C	
Approach Delay (s)		23.0			19.8			10.2			26.5	
Approach LOS		C			B			B			C	

Intersection Summary

HCM Average Control Delay	20.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1501	3343	4948			1740	1501	1723	1562	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1501	3343	4948			1740	1501	1723	1562	
Volume (vph)	54	1784	76	156	2531	8	59	11	131	1	1	4
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	1982	84	173	2812	9	66	12	146	1	1	4
RTOR Reduction (vph)	0	0	39	0	0	0	0	0	127	0	4	0
Lane Group Flow (vph)	60	1982	46	173	2821	0	0	78	19	1	1	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.1	51.3	51.3	8.6	56.8			10.5	10.5	8.0	8.0	
Effective Green, g (s)	5.1	53.3	53.3	10.6	58.8			12.5	12.5	10.0	10.0	
Actuated g/C Ratio	0.05	0.54	0.54	0.11	0.60			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	89	3379	813	360	2957			221	191	175	159	
v/s Ratio Prot	c0.03	0.32		0.05	c0.57			c0.04		0.00	c0.00	
v/s Ratio Perm			0.03						0.01			
v/c Ratio	0.67	0.59	0.06	0.48	0.95			0.35	0.10	0.01	0.01	
Uniform Delay, d1	45.8	15.1	10.7	41.3	18.5			39.3	38.0	39.7	39.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	18.3	0.3	0.0	1.0	8.3			1.0	0.2	0.0	0.0	
Delay (s)	64.1	15.4	10.7	42.3	26.8			40.2	38.2	39.7	39.8	
Level of Service	E	B	B	D	C			D	D	D	D	
Approach Delay (s)		16.6			27.7			38.9			39.8	
Approach LOS		B			C			D			D	

Intersection Summary

HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3343	4951	4951	1519	3343	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3343	1382
Volume (vph)	819	1326	1588	32	43	8
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	910	1473	1764	36	48	9
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	910	1473	1764	36	48	9
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	20.5	66.3	40.8	84.9	8.6	84.9
Effective Green, g (s)	22.5	68.3	42.8	84.9	10.6	84.9
Actuated g/C Ratio	0.27	0.80	0.50	1.00	0.12	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	886	3983	2496	1519	417	1382
v/s Ratio Prot	c0.27	0.30	c0.36		c0.01	
v/s Ratio Perm				0.02		0.01
v/c Ratio	1.03	0.37	0.71	0.02	0.12	0.01
Uniform Delay, d1	31.2	2.3	16.2	0.0	33.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.3	0.1	0.9	0.0	0.1	0.0
Delay (s)	68.5	2.4	17.1	0.0	33.1	0.0
Level of Service	E	A	B	A	C	A
Approach Delay (s)		27.6	16.8		27.9	
Approach LOS		C	B		C	

Intersection Summary

HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0			3.0
Lane Util. Factor	1.00	0.88	0.94			0.64
Frpb, ped/bikes	1.00	0.98	1.00			0.96
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			0.85
Flt Protected	0.95	1.00	0.95			1.00
Satd. Flow (prot)	1723	2655	4859			3806
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1723	2655	4859			3806
Volume (vph)	86	1232	314	0	0	1360
Peak-hour factor, PHF	0.65	0.65	0.90	0.90	0.90	0.90
Adj. Flow (vph)	132	1895	349	0	0	1511
RTOR Reduction (vph)	0	139	0	0	0	1145
Lane Group Flow (vph)	132	1756	349	0	0	366
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	40.1	40.1	13.4			13.4
Effective Green, g (s)	42.1	42.1	15.4			15.4
Actuated g/C Ratio	0.66	0.66	0.24			0.24
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1142	1760	1178			923
v/s Ratio Prot	0.08		0.07			
v/s Ratio Perm		c0.66				c0.10
v/c Ratio	0.12	1.00	0.30			0.40
Uniform Delay, d1	3.9	10.7	19.6			20.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	20.8	0.1			0.3
Delay (s)	4.0	31.5	19.8			20.4
Level of Service	A	C	B			C
Approach Delay (s)	29.7		19.8		20.4	
Approach LOS	C		B		C	

Intersection Summary

HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	63.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰	↑↑
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)			3.0	3.0	3.0	3.0
Lane Util. Factor			0.91	1.00	0.97	0.95
Frpb, ped/bikes			1.00	0.98	1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00	1.00
Frt			1.00	0.85	1.00	1.00
Flt Protected			1.00	1.00	0.95	1.00
Satd. Flow (prot)			4951	1518	3343	3446
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			4951	1518	3343	3446
Volume (vph)	0	0	314	86	833	592
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	349	96	926	658
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	349	96	926	658
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			9.0	9.0	4.2	23.2
Effective Green, g (s)			11.0	11.0	6.2	23.2
Actuated g/C Ratio			0.47	0.47	0.27	1.00
Clearance Time (s)			5.0	5.0	5.0	5.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			2347	720	893	3446
v/s Ratio Prot			0.07		c0.28	c0.19
v/s Ratio Perm				0.06		
v/c Ratio			0.15	0.13	1.04	0.19
Uniform Delay, d1			3.5	3.4	8.5	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.0	0.1	40.1	0.0
Delay (s)			3.5	3.5	48.6	0.0
Level of Service			A	A	D	A
Approach Delay (s)	0.0		3.5			28.4
Approach LOS	A		A			C

Intersection Summary

HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	23.2	Sum of lost time (s)	3.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	4932		1723	3401		1723	4701		1723	4311	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4932		1723	3401		1723	4701		1723	4311	
Volume (vph)	249	578	13	37	561	47	47	170	72	101	163	539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	262	608	14	39	591	49	49	179	76	106	172	567
RTOR Reduction (vph)	0	3	0	0	9	0	0	58	0	0	236	0
Lane Group Flow (vph)	262	619	0	39	631	0	49	197	0	106	503	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.3	23.1		2.0	18.8		2.1	12.5		3.0	13.4	
Effective Green, g (s)	8.3	25.1		4.0	20.8		4.1	14.5		5.0	15.4	
Actuated g/C Ratio	0.14	0.41		0.07	0.34		0.07	0.24		0.08	0.25	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	236	2043		114	1167		117	1125		142	1096	
v/s Ratio Prot	c0.15	0.13		0.02	c0.19		0.03	0.04		c0.06	c0.12	
v/s Ratio Perm												
v/c Ratio	1.11	0.30		0.34	0.54		0.42	0.18		0.75	0.87dr	
Uniform Delay, d1	26.2	11.9		27.0	16.1		27.1	18.3		27.2	19.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	91.3	0.1		1.8	0.5		2.4	0.1		19.1	0.3	
Delay (s)	117.5	12.0		28.8	16.6		29.5	18.4		46.2	19.4	
Level of Service	F	B		C	B		C	B		D	B	
Approach Delay (s)		43.2			17.3			20.2			22.8	
Approach LOS		D			B			C			C	

Intersection Summary

HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4858		1723	4951			4821	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4858		1723	4951			4821	
Volume (vph)	0	0	0	418	1466	77	80	171	0	0	161	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	464	1629	86	89	190	0	0	179	33
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	0	0	0	2174	0	89	190	0	0	186	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					25.0		4.2	18.2			9.0	
Effective Green, g (s)					27.0		6.2	20.2			11.0	
Actuated g/C Ratio					0.51		0.12	0.38			0.21	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2466		201	1880			997	
v/s Ratio Prot							c0.05	0.04			c0.04	
v/s Ratio Perm					0.45							
v/c Ratio					46.40dl		0.44	0.10			0.19	
Uniform Delay, d1					11.7		21.9	10.6			17.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					4.1		1.6	0.0			0.1	
Delay (s)					15.8		23.4	10.7			17.5	
Level of Service					B		C	B			B	
Approach Delay (s)		0.0			15.8			14.7			17.5	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	53.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		3.0	3.0					3.0		3.0	3.0	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.92		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4941	1513					4537		1723	4951	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		4941	1513					4537		1723	4951	
Volume (vph)	28	742	28	0	0	0	0	249	249	40	575	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	31	824	31	0	0	0	0	277	277	44	639	0
RTOR Reduction (vph)	0	0	18	0	0	0	0	162	0	0	0	0
Lane Group Flow (vph)	0	855	13	0	0	0	0	392	0	44	639	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm							Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		17.8	17.8					11.7		2.4	19.1	
Effective Green, g (s)		19.8	19.8					13.7		4.4	21.1	
Actuated g/C Ratio		0.42	0.42					0.29		0.09	0.45	
Clearance Time (s)		5.0	5.0					5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		2086	639					1325		162	2227	
v/s Ratio Prot								0.09		0.03	c0.13	
v/s Ratio Perm		0.17	0.01									
v/c Ratio		0.41	0.02					0.30		0.27	0.29	
Uniform Delay, d1		9.5	7.9					12.9		19.8	8.1	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0					0.1		0.9	0.1	
Delay (s)		9.6	7.9					13.0		20.7	8.2	
Level of Service		A	A					B		C	A	
Approach Delay (s)		9.5			0.0			13.0			9.0	
Approach LOS		A			A			B			A	

Intersection Summary

HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	46.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥	↱	↰	↑↑↱		↰	↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			0.99	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			0.90	0.85	1.00	0.99		1.00	0.96	
Flt Protected		0.96			0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1672			1511	1431	1723	3420		1723	3280	
Flt Permitted		0.81			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1411			1470	1431	1723	3420		1723	3280	
Volume (vph)	44	1	16	2	1	27	6	179	8	23	276	96
Peak-hour factor, PHF	0.65	0.85	0.85	0.65	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	68	1	19	3	1	32	7	211	9	27	325	113
RTOR Reduction (vph)	0	9	0	0	5	17	0	3	0	0	31	0
Lane Group Flow (vph)	0	79	0	0	6	8	7	217	0	27	407	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		22.6			22.6	22.6	1.4	34.4		3.3	36.3	
Effective Green, g (s)		24.6			24.6	24.6	3.4	36.4		5.3	38.3	
Actuated g/C Ratio		0.33			0.33	0.33	0.05	0.48		0.07	0.51	
Clearance Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		461			480	467	78	1653		121	1668	
v/s Ratio Prot							0.00	0.06		c0.02	c0.12	
v/s Ratio Perm		c0.06			0.00	0.01						
v/c Ratio		0.17			0.01	0.02	0.09	0.13		0.22	0.24	
Uniform Delay, d1		18.1			17.1	17.2	34.5	10.7		33.1	10.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.0	0.0	0.5	0.0		0.9	0.1	
Delay (s)		18.3			17.2	17.2	35.0	10.8		34.0	10.5	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		18.3			17.2			11.5			11.8	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	75.3	Sum of lost time (s)	6.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1637	1652	1814	1519	3343	1503
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1637	1652	1814	1519	3343	1503
Volume (vph)	124	10	7	69	120	174
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	138	11	8	77	133	193
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	73	76	8	77	133	193
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Split			Free		Free
Protected Phases	4	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	9.2	9.2	3.1	59.8	32.5	59.8
Effective Green, g (s)	11.2	11.2	5.1	59.8	34.5	59.8
Actuated g/C Ratio	0.19	0.19	0.09	1.00	0.58	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	307	309	155	1519	1929	1503
v/s Ratio Prot	0.04	c0.05	0.00		0.04	
v/s Ratio Perm				0.05		c0.13
v/c Ratio	0.24	0.25	0.05	0.05	0.07	0.13
Uniform Delay, d1	20.7	20.7	25.1	0.0	5.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.1	0.1	0.0	0.2
Delay (s)	21.1	21.1	25.3	0.1	5.6	0.2
Level of Service	C	C	C	A	A	A
Approach Delay (s)		21.1	2.4		2.4	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	3.0
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1523	1770	5085	1523	1681	1558		3433	1560	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1523	1770	5085	1523	1681	1558		3433	1560	
Volume (vph)	88	988	9	25	1166	1	10	8	19	111	4	82
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	98	1098	10	28	1296	1	11	9	21	123	4	91
RTOR Reduction (vph)	0	0	5	0	0	1	0	18	0	0	77	0
Lane Group Flow (vph)	98	1098	5	28	1296	0	11	12	0	123	18	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.5	33.8	33.8	2.2	28.5	28.5	8.4	8.4		9.5	9.5	
Effective Green, g (s)	9.5	35.8	35.8	4.2	30.5	30.5	10.4	10.4		11.5	11.5	
Actuated g/C Ratio	0.13	0.48	0.48	0.06	0.41	0.41	0.14	0.14		0.16	0.16	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	228	2463	738	101	2099	629	237	219		534	243	
v/s Ratio Prot	c0.06	0.22		0.02	c0.25		0.01	c0.01		c0.04	0.01	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.43	0.45	0.01	0.28	0.62	0.00	0.05	0.05		0.23	0.07	
Uniform Delay, d1	29.7	12.5	9.9	33.4	17.1	12.7	27.5	27.5		27.3	26.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.1	0.0	1.5	0.5	0.0	0.1	0.1		0.2	0.1	
Delay (s)	31.0	12.7	9.9	34.9	17.6	12.7	27.5	27.6		27.5	26.8	
Level of Service	C	B	A	C	B	B	C	C		C	C	
Approach Delay (s)		14.1			18.0			27.6			27.2	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	73.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6191		3343	1814	1519	1568	2822	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6191		3343	1814	1519	1568	2822	
Volume (vph)	50	906	162	317	1099	47	127	30	352	45	20	115
Peak-hour factor, PHF	0.60	0.85	0.85	0.60	0.85	0.85	0.60	0.85	0.85	0.60	0.85	0.85
Adj. Flow (vph)	83	1066	191	528	1293	55	212	35	414	75	24	135
RTOR Reduction (vph)	0	0	160	0	3	0	0	0	0	0	115	0
Lane Group Flow (vph)	83	1066	31	528	1345	0	212	35	414	75	44	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	7.8	21.9	11.1	17.9	32.0		11.1	11.1	80.9	10.0	10.0	
Effective Green, g (s)	9.8	23.9	13.1	19.9	34.0		13.1	13.1	80.9	12.0	12.0	
Actuated g/C Ratio	0.12	0.30	0.16	0.25	0.42		0.16	0.16	1.00	0.15	0.15	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	209	1463	250	822	2602		541	294	1519	233	419	
v/s Ratio Prot	0.05	c0.22	0.02	c0.16	0.22		c0.06	0.02		0.05	0.02	
v/s Ratio Perm									c0.27			
v/c Ratio	0.40	0.73	0.12	0.64	0.52		0.39	0.12	0.27	0.32	0.11	
Uniform Delay, d1	32.8	25.6	29.0	27.3	17.4		30.3	29.0	0.0	30.8	29.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	1.8	0.2	1.7	0.2		0.5	0.2	0.4	0.8	0.1	
Delay (s)	34.1	27.4	29.2	29.0	17.5		30.8	29.2	0.4	31.6	29.9	
Level of Service	C	C	C	C	B		C	C	A	C	C	
Approach Delay (s)		28.1			20.8			11.7			30.5	
Approach LOS		C			C			B			C	

Intersection Summary

HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	80.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

303

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1502	3343	4949			1723	1502	1723	1527	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1502	3343	4949			1723	1502	1723	1527	
Volume (vph)	22	2335	65	166	2047	6	62	0	175	4	1	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	24	2594	72	184	2274	7	69	0	194	4	1	11
RTOR Reduction (vph)	0	0	23	0	0	0	0	0	169	0	10	0
Lane Group Flow (vph)	24	2594	49	184	2281	0	0	69	25	4	2	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	1.4	45.4	45.4	10.2	54.2			9.9	9.9	8.0	8.0	
Effective Green, g (s)	3.4	47.4	47.4	12.2	56.2			11.9	11.9	10.0	10.0	
Actuated g/C Ratio	0.04	0.51	0.51	0.13	0.60			0.13	0.13	0.11	0.11	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	63	3163	761	436	2975			219	191	184	163	
v/s Ratio Prot	0.01	c0.42		c0.06	c0.46			c0.04		c0.00	0.00	
v/s Ratio Perm			0.03						0.02			
v/c Ratio	0.38	0.82	0.06	0.42	0.77			0.32	0.13	0.02	0.01	
Uniform Delay, d1	44.0	19.5	11.8	37.4	13.8			37.1	36.2	37.4	37.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.8	1.8	0.0	0.7	1.2			0.8	0.3	0.0	0.0	
Delay (s)	47.8	21.3	11.8	38.1	15.0			37.9	36.5	37.4	37.4	
Level of Service	D	C	B	D	B			D	D	D	D	
Approach Delay (s)		21.2			16.7			36.9			37.4	
Approach LOS		C			B			D			D	

Intersection Summary

HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	5085	1560	3433	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3433	1419
Volume (vph)	945	1643	1213	120	69	5
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1050	1826	1348	133	77	6
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1050	1826	1348	133	77	6
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	13.5	44.1	25.6	62.7	8.6	62.7
Effective Green, g (s)	15.5	46.1	27.6	62.7	10.6	62.7
Actuated g/C Ratio	0.25	0.74	0.44	1.00	0.17	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	849	3739	2238	1560	580	1419
v/s Ratio Prot	c0.31	0.36	c0.27		c0.02	
v/s Ratio Perm				0.09		0.00
v/c Ratio	1.24	0.49	0.60	0.09	0.13	0.00
Uniform Delay, d1	23.6	3.4	13.4	0.0	22.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	116.7	0.1	0.5	0.1	0.1	0.0
Delay (s)	140.3	3.5	13.8	0.1	22.2	0.0
Level of Service	F	A	B	A	C	A
Approach Delay (s)		53.4	12.6		20.6	
Approach LOS		D	B		C	

Intersection Summary

HCM Average Control Delay	39.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0			3.0
Lane Util. Factor	1.00	0.88	0.94			0.64
Frpb, ped/bikes	1.00	0.98	1.00			0.96
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			0.85
Flt Protected	0.95	1.00	0.95			1.00
Satd. Flow (prot)	1770	2727	4990			3908
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1770	2727	4990			3908
Volume (vph)	120	871	524	0	0	1732
Peak-hour factor, PHF	0.60	0.60	0.85	0.85	0.85	0.85
Adj. Flow (vph)	200	1452	616	0	0	2038
RTOR Reduction (vph)	0	230	0	0	0	689
Lane Group Flow (vph)	200	1222	616	0	0	1349
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	25.3	25.3	29.3			29.3
Effective Green, g (s)	27.3	27.3	31.3			31.3
Actuated g/C Ratio	0.42	0.42	0.48			0.48
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	748	1152	2418			1894
v/s Ratio Prot	0.11		0.12			
v/s Ratio Perm		c0.45				c0.35
v/c Ratio	0.27	1.06	0.25			0.71
Uniform Delay, d1	12.1	18.6	9.8			13.1
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.2	44.3	0.1			1.3
Delay (s)	12.3	62.9	9.8			14.4
Level of Service	B	E	A			B
Approach Delay (s)	56.8		9.8		14.4	
Approach LOS	E		A		B	

Intersection Summary

HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰	↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0	3.0	3.0	3.0
Lane Util. Factor			0.91	1.00	0.97	0.95
Frpb, ped/bikes			1.00	0.98	1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00	1.00
Frt			1.00	0.85	1.00	1.00
Flt Protected			1.00	1.00	0.95	1.00
Satd. Flow (prot)			5085	1557	3433	3539
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			5085	1557	3433	3539
Volume (vph)	0	0	554	266	926	881
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	652	313	1089	1036
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	652	313	1089	1036
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			13.4	13.4	7.2	30.6
Effective Green, g (s)			15.4	15.4	9.2	30.6
Actuated g/C Ratio			0.50	0.50	0.30	1.00
Clearance Time (s)			5.0	5.0	5.0	5.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			2559	784	1032	3539
v/s Ratio Prot			0.13		c0.32	0.29
v/s Ratio Perm				c0.20		
v/c Ratio			0.25	0.40	1.06	0.29
Uniform Delay, d1			4.3	4.7	10.7	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.1	0.3	43.8	0.0
Delay (s)			4.4	5.1	54.5	0.0
Level of Service			A	A	D	A
Approach Delay (s)	0.0		4.6			27.9
Approach LOS	A		A			C

Intersection Summary

HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	30.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑↱		↰	↑↑↱		↰	↑↑↑↱		↰	↑↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.96		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5049		1770	3473		1770	4849		1770	4601	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5049		1770	3473		1770	4849		1770	4601	
Volume (vph)	266	781	34	50	566	70	67	376	141	101	280	361
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	296	868	38	56	629	78	74	418	157	112	311	401
RTOR Reduction (vph)	0	6	0	0	13	0	0	106	0	0	175	0
Lane Group Flow (vph)	296	900	0	56	694	0	74	469	0	112	537	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.3	21.8		2.1	18.6		2.1	13.1		3.0	14.0	
Effective Green, g (s)	7.3	23.8		4.1	20.6		4.1	15.1		5.0	16.0	
Actuated g/C Ratio	0.12	0.40		0.07	0.34		0.07	0.25		0.08	0.27	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	215	2003		121	1192		121	1220		148	1227	
v/s Ratio Prot	c0.17	0.18		0.03	c0.20		0.04	0.10		c0.06	c0.12	
v/s Ratio Perm												
v/c Ratio	1.38	0.45		0.46	0.58		0.61	0.38		0.76	0.44	
Uniform Delay, d1	26.4	13.3		26.9	16.2		27.2	18.6		26.9	18.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	196.0	0.2		2.8	0.7		8.8	0.2		19.6	0.3	
Delay (s)	222.3	13.4		29.7	16.9		36.0	18.8		46.5	18.5	
Level of Service	F	B		C	B		D	B		D	B	
Approach Delay (s)		64.9			17.8			20.8			22.3	
Approach LOS		E			B			C			C	

Intersection Summary

HCM Average Control Delay	35.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

308

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4994		1770	5085			5021	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4994		1770	5085			5021	
Volume (vph)	0	0	0	126	971	82	108	454	0	0	337	27
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	140	1079	91	120	504	0	0	374	30
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	0	0	0	1300	0	120	504	0	0	389	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					22.5		5.8	21.8			11.0	
Effective Green, g (s)					24.5		7.8	23.8			13.0	
Actuated g/C Ratio					0.45		0.14	0.44			0.24	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2253		254	2229			1202	
v/s Ratio Prot							c0.07	0.10			c0.08	
v/s Ratio Perm					0.26							
v/c Ratio					7.37dl		0.47	0.23			0.32	
Uniform Delay, d1					11.1		21.4	9.5			17.0	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					0.4		1.4	0.1			0.2	
Delay (s)					11.4		22.7	9.6			17.2	
Level of Service					B		C	A			B	
Approach Delay (s)		0.0			11.4			12.1			17.2	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0					3.0		3.0	3.0	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.93		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5073	1549					4687		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5073	1549					4687		1770	5085	
Volume (vph)	60	1438	43	0	0	0	0	539	459	122	399	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	1598	48	0	0	0	0	599	510	136	443	0
RTOR Reduction (vph)	0	0	28	0	0	0	0	66	0	0	0	0
Lane Group Flow (vph)	0	1665	20	0	0	0	0	1043	0	136	443	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm							Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		25.6	25.6					18.4		7.3	30.7	
Effective Green, g (s)		27.6	27.6					20.4		9.3	32.7	
Actuated g/C Ratio		0.42	0.42					0.31		0.14	0.49	
Clearance Time (s)		5.0	5.0					5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		2112	645					1442		248	2508	
v/s Ratio Prot								c0.22		c0.08	0.09	
v/s Ratio Perm		0.33	0.01									
v/c Ratio		0.79	0.03					0.91dr		0.55	0.18	
Uniform Delay, d1		16.8	11.4					20.4		26.5	9.3	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		2.0	0.0					1.8		2.5	0.0	
Delay (s)		18.8	11.5					22.3		29.0	9.4	
Level of Service		B	B					C		C	A	
Approach Delay (s)		18.6			0.0			22.3			14.0	
Approach LOS		B			A			C			B	

Intersection Summary

HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			0.99	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1719			1699	1471	1770	3513		1770	3436	
Flt Permitted		0.79			0.87	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1416			1535	1471	1770	3513		1770	3436	
Volume (vph)	98	0	27	9	4	36	11	375	15	23	396	74
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	109	0	30	10	4	40	12	417	17	26	440	82
RTOR Reduction (vph)	0	9	0	0	0	24	0	3	0	0	16	0
Lane Group Flow (vph)	0	130	0	0	14	16	12	431	0	26	506	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		24.3			24.3	24.3	1.4	24.9		2.9	26.4	
Effective Green, g (s)		26.3			26.3	26.3	3.4	26.9		4.9	28.4	
Actuated g/C Ratio		0.39			0.39	0.39	0.05	0.40		0.07	0.42	
Clearance Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		555			602	577	90	1408		129	1454	
v/s Ratio Prot							0.01	0.12		c0.01	c0.15	
v/s Ratio Perm		c0.09			0.01	0.01						
v/c Ratio		0.24			0.02	0.03	0.13	0.31		0.20	0.35	
Uniform Delay, d1		13.7			12.5	12.5	30.4	13.7		29.3	13.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.0	0.0	0.7	0.1		0.8	0.1	
Delay (s)		13.9			12.5	12.6	31.1	13.9		30.0	13.2	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		13.9			12.6			14.3			14.0	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	6.0
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↰↑	↑	↱	↰↰	↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1681	1704	1863	1560	3433	1544
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1681	1704	1863	1560	3433	1544
Volume (vph)	256	33	23	145	184	248
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	284	37	26	161	204	276
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	156	165	26	161	204	276
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Split			Free		Free
Protected Phases	4	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	12.8	12.8	2.9	53.6	22.9	53.6
Effective Green, g (s)	14.8	14.8	4.9	53.6	24.9	53.6
Actuated g/C Ratio	0.28	0.28	0.09	1.00	0.46	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	464	471	170	1560	1595	1544
v/s Ratio Prot	0.09	c0.10	0.01		0.06	
v/s Ratio Perm				0.10		c0.18
v/c Ratio	0.34	0.35	0.15	0.10	0.13	0.18
Uniform Delay, d1	15.5	15.5	22.4	0.0	8.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.5	0.4	0.1	0.0	0.3
Delay (s)	15.9	16.0	22.9	0.1	8.2	0.3
Level of Service	B	B	C	A	A	A
Approach Delay (s)		16.0	3.3		3.6	
Approach LOS		B	A		A	

Intersection Summary

HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	3.0
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

312

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰	↑↑↑	↱	↰	✥		↰↰	↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	4951	1482	1723	4951	1482	1637	1533		3343	1536	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4951	1482	1723	4951	1482	1637	1533		3343	1536	
Volume (vph)	120	720	5	20	1140	5	10	5	10	130	10	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	800	6	22	1267	6	11	6	11	144	11	100
RTOR Reduction (vph)	0	0	3	0	0	4	0	9	0	0	84	0
Lane Group Flow (vph)	133	800	3	22	1267	2	11	8	0	144	27	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.9	35.1	35.1	2.2	28.4	28.4	8.4	8.4		9.9	9.9	
Effective Green, g (s)	10.9	37.1	37.1	4.2	30.4	30.4	10.4	10.4		11.9	11.9	
Actuated g/C Ratio	0.14	0.49	0.49	0.06	0.40	0.40	0.14	0.14		0.16	0.16	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	248	2430	727	96	1991	596	225	211		526	242	
v/s Ratio Prot	c0.08	0.16		0.01	c0.26		c0.01	0.00		c0.04	0.02	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.54	0.33	0.00	0.23	0.64	0.00	0.05	0.04		0.27	0.11	
Uniform Delay, d1	30.0	11.7	9.8	34.2	18.2	13.5	28.3	28.3		28.0	27.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.1	0.0	1.2	0.7	0.0	0.1	0.1		0.3	0.2	
Delay (s)	32.2	11.8	9.8	35.4	18.8	13.5	28.4	28.3		28.3	27.5	
Level of Service	C	B	A	D	B	B	C	C		C	C	
Approach Delay (s)		14.7			19.1			28.4			28.0	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

313

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	4684	1458	3162	5895		3162	1716	1437	1483	2687	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1630	4684	1458	3162	5895		3162	1716	1437	1483	2687	
Volume (vph)	35	660	100	310	1550	10	70	30	160	50	20	90
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	58	1100	167	517	2583	17	88	38	200	62	25	112
RTOR Reduction (vph)	0	0	144	0	1	0	0	0	0	0	95	0
Lane Group Flow (vph)	58	1100	23	517	2599	0	88	38	200	62	42	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	6.5	22.8	9.0	17.3	33.6		9.0	9.0	78.8	9.7	9.7	
Effective Green, g (s)	8.5	24.8	11.0	19.3	35.6		11.0	11.0	78.8	11.7	11.7	
Actuated g/C Ratio	0.11	0.31	0.14	0.24	0.45		0.14	0.14	1.00	0.15	0.15	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	176	1474	204	774	2663		441	240	1437	220	399	
v/s Ratio Prot	0.04	0.23	0.02	c0.16	c0.44		c0.03	0.02		c0.04	0.02	
v/s Ratio Perm									0.14			
v/c Ratio	0.33	0.75	0.11	0.67	0.98		0.20	0.16	0.14	0.28	0.10	
Uniform Delay, d1	32.5	24.2	29.6	26.9	21.2		30.0	29.8	0.0	29.8	29.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	2.1	0.3	2.2	12.3		0.2	0.3	0.2	0.7	0.1	
Delay (s)	33.6	26.3	29.9	29.1	33.5		30.2	30.1	0.2	30.5	29.1	
Level of Service	C	C	C	C	C		C	C	A	C	C	
Approach Delay (s)		27.1			32.7			11.8			29.6	
Approach LOS		C			C			B			C	

Intersection Summary

HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1501	3343	4948			1744	1501	1723	1655	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1501	3343	4948			1744	1501	1723	1655	
Volume (vph)	60	1920	80	170	2730	10	60	15	140	5	5	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	2087	87	185	2967	11	65	16	152	5	5	5
RTOR Reduction (vph)	0	0	39	0	0	0	0	0	133	0	4	0
Lane Group Flow (vph)	65	2087	48	185	2978	0	0	81	19	5	6	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.1	51.2	51.2	8.7	56.8			10.6	10.6	8.1	8.1	
Effective Green, g (s)	5.1	53.2	53.2	10.7	58.8			12.6	12.6	10.1	10.1	
Actuated g/C Ratio	0.05	0.54	0.54	0.11	0.60			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	89	3366	810	363	2951			223	192	176	170	
v/s Ratio Prot	c0.04	0.33		0.06	c0.60			c0.05		0.00	c0.00	
v/s Ratio Perm			0.03						0.01			
v/c Ratio	0.73	0.62	0.06	0.51	1.01			0.36	0.10	0.03	0.03	
Uniform Delay, d1	46.1	15.7	10.8	41.5	19.9			39.3	38.0	39.8	39.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	26.2	0.4	0.0	1.1	18.8			1.0	0.2	0.1	0.1	
Delay (s)	72.3	16.1	10.8	42.6	38.7			40.3	38.2	39.9	39.9	
Level of Service	E	B	B	D	D			D	D	D	D	
Approach Delay (s)		17.5			38.9			39.0			39.9	
Approach LOS		B			D			D			D	

Intersection Summary

HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3343	4951	4951	1519	3343	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3343	1382
Volume (vph)	880	1430	1710	35	50	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	978	1589	1900	39	56	11
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	978	1589	1900	39	56	11
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	23.3	73.5	45.2	92.4	8.9	92.4
Effective Green, g (s)	25.3	75.5	47.2	92.4	10.9	92.4
Actuated g/C Ratio	0.27	0.82	0.51	1.00	0.12	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	915	4045	2529	1519	394	1382
v/s Ratio Prot	c0.29	0.32	c0.38		c0.02	
v/s Ratio Perm				0.03		0.01
v/c Ratio	1.07	0.39	0.75	0.03	0.14	0.01
Uniform Delay, d1	33.6	2.3	17.9	0.0	36.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	49.9	0.1	1.3	0.0	0.2	0.0
Delay (s)	83.5	2.3	19.2	0.0	36.7	0.0
Level of Service	F	A	B	A	D	A
Approach Delay (s)		33.3	18.9		30.7	
Approach LOS		C	B		C	

Intersection Summary			
HCM Average Control Delay	27.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	92.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0			3.0
Lane Util. Factor	1.00	0.88	0.94			0.64
Frpb, ped/bikes	1.00	0.98	1.00			0.97
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			0.85
Flt Protected	0.95	1.00	0.95			1.00
Satd. Flow (prot)	1723	2661	4859			3819
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1723	2661	4859			3819
Volume (vph)	90	1300	340	0	0	1460
Peak-hour factor, PHF	0.70	0.70	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	1857	378	0	0	1622
RTOR Reduction (vph)	0	357	0	0	0	1037
Lane Group Flow (vph)	129	1500	378	0	0	585
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	24.4	24.4	16.3			16.3
Effective Green, g (s)	26.4	26.4	18.3			18.3
Actuated g/C Ratio	0.52	0.52	0.36			0.36
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	897	1386	1754			1378
v/s Ratio Prot	0.07		0.08			
v/s Ratio Perm		c0.56				c0.15
v/c Ratio	0.14	1.08	0.22			0.42
Uniform Delay, d1	6.3	12.2	11.2			12.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	49.7	0.1			0.2
Delay (s)	6.4	61.9	11.3			12.4
Level of Service	A	E	B			B
Approach Delay (s)	58.3		11.3		12.4	
Approach LOS	E		B		B	

Intersection Summary

HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	50.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰	↑↑
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)			3.0	3.0	3.0	3.0
Lane Util. Factor			0.91	1.00	0.97	0.95
Frpb, ped/bikes			1.00	0.98	1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00	1.00
Frt			1.00	0.85	1.00	1.00
Flt Protected			1.00	1.00	0.95	1.00
Satd. Flow (prot)			4951	1518	3343	3446
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			4951	1518	3343	3446
Volume (vph)	0	0	340	90	900	640
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	370	98	978	696
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	370	98	978	696
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			9.1	9.1	4.2	23.3
Effective Green, g (s)			11.1	11.1	6.2	23.3
Actuated g/C Ratio			0.48	0.48	0.27	1.00
Clearance Time (s)			5.0	5.0	5.0	5.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			2359	723	890	3446
v/s Ratio Prot			0.07		c0.29	c0.20
v/s Ratio Perm				0.06		
v/c Ratio			0.16	0.14	1.10	0.20
Uniform Delay, d1			3.5	3.4	8.5	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.0	0.1	60.9	0.0
Delay (s)			3.5	3.5	69.5	0.0
Level of Service			A	A	E	A
Approach Delay (s)	0.0		3.5			40.6
Approach LOS	A		A			D

Intersection Summary

HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	23.3	Sum of lost time (s)	3.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	4932		1723	3402		1723	4711		1723	4314	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4932		1723	3402		1723	4711		1723	4314	
Volume (vph)	280	640	15	40	620	50	50	200	80	110	190	610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	295	674	16	42	653	53	53	211	84	116	200	642
RTOR Reduction (vph)	0	3	0	0	8	0	0	63	0	0	221	0
Lane Group Flow (vph)	295	687	0	42	698	0	53	232	0	116	621	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.3	24.0		2.0	19.7		2.1	13.8		3.0	14.7	
Effective Green, g (s)	8.3	26.0		4.0	21.7		4.1	15.8		5.0	16.7	
Actuated g/C Ratio	0.13	0.41		0.06	0.35		0.07	0.25		0.08	0.27	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	228	2042		110	1176		112	1185		137	1147	
v/s Ratio Prot	c0.17	0.14		0.02	c0.21		0.03	0.05		c0.07	c0.14	
v/s Ratio Perm												
v/c Ratio	1.29	0.34		0.38	0.59		0.47	0.20		0.85	0.98dr	
Uniform Delay, d1	27.2	12.5		28.2	16.9		28.3	18.5		28.5	19.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	160.8	0.1		2.2	0.8		3.1	0.1		35.6	0.5	
Delay (s)	188.1	12.6		30.4	17.7		31.4	18.6		64.1	20.3	
Level of Service	F	B		C	B		C	B		E	C	
Approach Delay (s)		65.2			18.4			20.5			25.6	
Approach LOS		E			B			C			C	

Intersection Summary

HCM Average Control Delay	36.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4854		1723	4951			4814	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4854		1723	4951			4814	
Volume (vph)	0	0	0	460	1510	80	90	200	0	0	180	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	511	1678	89	100	222	0	0	200	39
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	0	0	0	2273	0	100	222	0	0	208	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					27.7		5.9	20.3			9.4	
Effective Green, g (s)					29.7		7.9	22.3			11.4	
Actuated g/C Ratio					0.51		0.14	0.38			0.20	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2486		235	1904			946	
v/s Ratio Prot							c0.06	0.04			c0.04	
v/s Ratio Perm					0.47							
v/c Ratio					51.10dl		0.43	0.12			0.22	
Uniform Delay, d1					13.0		23.0	11.5			19.6	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					5.8		1.2	0.0			0.1	
Delay (s)					18.7		24.2	11.5			19.7	
Level of Service					B		C	B			B	
Approach Delay (s)		0.0			18.7			15.5			19.7	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		3.0	3.0					3.0		3.0	3.0	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.93		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4941	1512					4543		1723	4951	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		4941	1512					4543		1723	4951	
Volume (vph)	30	810	30	0	0	0	0	290	280	45	660	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	900	33	0	0	0	0	322	311	50	733	0
RTOR Reduction (vph)	0	0	19	0	0	0	0	151	0	0	0	0
Lane Group Flow (vph)	0	933	14	0	0	0	0	482	0	50	733	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm							Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		19.7	19.7					12.6		4.0	21.6	
Effective Green, g (s)		21.7	21.7					14.6		6.0	23.6	
Actuated g/C Ratio		0.42	0.42					0.28		0.12	0.46	
Clearance Time (s)		5.0	5.0					5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		2090	640					1293		202	2278	
v/s Ratio Prot								0.11		0.03	c0.15	
v/s Ratio Perm		0.19	0.01									
v/c Ratio		0.45	0.02					0.37		0.25	0.32	
Uniform Delay, d1		10.5	8.6					14.7		20.6	8.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0					0.2		0.6	0.1	
Delay (s)		10.7	8.6					14.9		21.2	8.9	
Level of Service		B	A					B		C	A	
Approach Delay (s)		10.6			0.0			14.9			9.7	
Approach LOS		B			A			B			A	

Intersection Summary

HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	51.3	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			0.99	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1676			1667	1431	1723	3411		1723	3277	
Flt Permitted		0.82			0.90	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1423			1551	1431	1723	3411		1723	3277	
Volume (vph)	50	5	20	5	5	30	10	180	10	25	280	100
Peak-hour factor, PHF	0.65	0.85	0.85	0.65	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	77	6	24	8	6	35	12	212	12	29	329	118
RTOR Reduction (vph)	0	9	0	0	0	22	0	5	0	0	37	0
Lane Group Flow (vph)	0	98	0	0	14	13	12	219	0	29	410	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		25.5			25.5	25.5	1.5	29.0		3.2	30.7	
Effective Green, g (s)		27.5			27.5	27.5	3.5	31.0		5.2	32.7	
Actuated g/C Ratio		0.38			0.38	0.38	0.05	0.43		0.07	0.45	
Clearance Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		538			587	541	83	1454		123	1474	
v/s Ratio Prot							0.01	0.06		c0.02	c0.13	
v/s Ratio Perm		c0.07			0.01	0.01						
v/c Ratio		0.18			0.02	0.02	0.14	0.15		0.24	0.28	
Uniform Delay, d1		15.1			14.2	14.2	33.2	12.8		31.9	12.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.0	0.0	0.8	0.0		1.0	0.1	
Delay (s)		15.3			14.2	14.2	34.0	12.8		32.9	12.7	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		15.3			14.2			13.9			13.9	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	72.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1637	1657	1814	1519	3343	1503
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1637	1657	1814	1519	3343	1503
Volume (vph)	130	15	10	70	125	180
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	144	17	11	78	139	200
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	78	83	11	78	139	200
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Split			Free		Free
Protected Phases	4	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	9.3	9.3	3.1	59.1	31.7	59.1
Effective Green, g (s)	11.3	11.3	5.1	59.1	33.7	59.1
Actuated g/C Ratio	0.19	0.19	0.09	1.00	0.57	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	313	317	157	1519	1906	1503
v/s Ratio Prot	0.05	c0.05	0.01		0.04	
v/s Ratio Perm				0.05		c0.13
v/c Ratio	0.25	0.26	0.07	0.05	0.07	0.13
Uniform Delay, d1	20.3	20.3	24.8	0.0	5.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.2	0.1	0.0	0.2
Delay (s)	20.7	20.8	25.0	0.1	5.7	0.2
Level of Service	C	C	C	A	A	A
Approach Delay (s)		20.8	3.1		2.5	
Approach LOS		C	A		A	

Intersection Summary

HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	3.0
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1522	1770	5085	1522	1681	1568		3433	1564	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1522	1770	5085	1522	1681	1568		3433	1564	
Volume (vph)	90	1060	10	30	1260	5	15	10	20	120	5	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	1178	11	33	1400	6	17	11	22	133	6	100
RTOR Reduction (vph)	0	0	5	0	0	3	0	19	0	0	85	0
Lane Group Flow (vph)	100	1178	6	33	1400	3	17	14	0	133	21	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.6	36.5	36.5	2.2	31.1	31.1	8.5	8.5		9.7	9.7	
Effective Green, g (s)	9.6	38.5	38.5	4.2	33.1	33.1	10.5	10.5		11.7	11.7	
Actuated g/C Ratio	0.12	0.50	0.50	0.05	0.43	0.43	0.14	0.14		0.15	0.15	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	221	2546	762	97	2189	655	230	214		522	238	
v/s Ratio Prot	c0.06	0.23		0.02	c0.28		c0.01	0.01		c0.04	0.01	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.45	0.46	0.01	0.34	0.64	0.00	0.07	0.07		0.25	0.09	
Uniform Delay, d1	31.2	12.5	9.6	35.0	17.2	12.5	29.0	28.9		28.8	28.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.1	0.0	2.1	0.6	0.0	0.1	0.1		0.3	0.2	
Delay (s)	32.7	12.6	9.6	37.1	17.8	12.5	29.1	29.1		29.0	28.2	
Level of Service	C	B	A	D	B	B	C	C		C	C	
Approach Delay (s)		14.1			18.3			29.1			28.6	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰↰	↑↑↑↱		↰↰	↑	↱	↰	↰↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6191		3343	1814	1519	1568	2829	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6191		3343	1814	1519	1568	2829	
Volume (vph)	55	980	170	330	1180	50	130	35	370	50	25	120
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.85	0.85	0.60	0.85	0.85
Adj. Flow (vph)	92	1633	283	550	1967	83	217	41	435	83	29	141
RTOR Reduction (vph)	0	0	171	0	4	0	0	0	0	0	121	0
Lane Group Flow (vph)	92	1633	112	550	2046	0	217	41	435	83	49	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	8.4	28.4	12.8	19.1	39.1		12.8	12.8	90.9	10.6	10.6	
Effective Green, g (s)	10.4	30.4	14.8	21.1	41.1		14.8	14.8	90.9	12.6	12.6	
Actuated g/C Ratio	0.11	0.33	0.16	0.23	0.45		0.16	0.16	1.00	0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	1656	251	776	2799		544	295	1519	217	392	
v/s Ratio Prot	0.05	c0.33	c0.07	c0.16	0.33		0.06	0.02		c0.05	0.02	
v/s Ratio Perm									0.29			
v/c Ratio	0.47	0.99	0.45	0.71	0.73		0.40	0.14	0.29	0.38	0.12	
Uniform Delay, d1	37.7	30.0	34.4	32.1	20.4		34.1	32.6	0.0	35.6	34.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.7	18.7	1.3	3.0	1.0		0.5	0.2	0.5	1.1	0.1	
Delay (s)	39.4	48.7	35.6	35.1	21.4		34.5	32.8	0.5	36.7	34.5	
Level of Service	D	D	D	D	C		C	C	A	D	C	
Approach Delay (s)		46.5			24.3			13.1			35.2	
Approach LOS		D			C			B			D	

Intersection Summary

HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

325

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑↑	↱	↰↰	↑↑↱			↰↑	↱	↰	↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00			1.00	0.98		0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00		1.00	
Satd. Flow (prot)	1723	6239	1503	3343	4947			1733	1503		1503	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00		1.00	
Satd. Flow (perm)	1723	6239	1503	3343	4947			1733	1503		1503	
Volume (vph)	25	2510	70	180	2200	10	70	5	190	0	0	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	2789	78	200	2444	11	78	6	211	0	0	11
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	182	0	10	0
Lane Group Flow (vph)	28	2789	54	200	2455	0	0	84	29	0	1	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.0	40.0	40.0	10.4	47.4			10.2	10.2		7.8	
Effective Green, g (s)	5.0	42.0	42.0	12.4	49.4			12.2	12.2		9.8	
Actuated g/C Ratio	0.06	0.48	0.48	0.14	0.56			0.14	0.14		0.11	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	97	2964	714	469	2765			239	207		167	
v/s Ratio Prot	0.02	c0.45		c0.06	c0.50			c0.05			c0.00	
v/s Ratio Perm			0.04						0.02			
v/c Ratio	0.29	0.94	0.08	0.43	0.89			0.35	0.14		0.01	
Uniform Delay, d1	40.0	22.0	12.6	34.7	17.1			34.5	33.5		35.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	1.6	6.9	0.0	0.6	3.9			0.9	0.3		0.0	
Delay (s)	41.6	29.0	12.7	35.4	20.9			35.4	33.8		35.0	
Level of Service	D	C	B	D	C			D	C		C	
Approach Delay (s)		28.6			22.0			34.3			35.0	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	5085	1560	3433	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3433	1419
Volume (vph)	1020	1770	1310	130	70	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1133	1967	1456	144	78	11
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1133	1967	1456	144	78	11
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	15.5	49.7	29.2	68.4	8.7	68.4
Effective Green, g (s)	17.5	51.7	31.2	68.4	10.7	68.4
Actuated g/C Ratio	0.26	0.76	0.46	1.00	0.16	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	878	3843	2319	1560	537	1419
v/s Ratio Prot	c0.33	0.39	c0.29		c0.02	
v/s Ratio Perm				0.09		0.01
v/c Ratio	1.29	0.51	0.63	0.09	0.15	0.01
Uniform Delay, d1	25.5	3.3	14.2	0.0	24.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	139.2	0.1	0.5	0.1	0.1	0.0
Delay (s)	164.7	3.4	14.7	0.1	25.0	0.0
Level of Service	F	A	B	A	C	A
Approach Delay (s)		62.4	13.4		21.9	
Approach LOS		E	B		C	

Intersection Summary

HCM Average Control Delay	45.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0			3.0
Lane Util. Factor	1.00	0.88	0.94			0.64
Frpb, ped/bikes	1.00	0.98	1.00			0.96
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			0.85
Flt Protected	0.95	1.00	0.95			1.00
Satd. Flow (prot)	1770	2725	4990			3905
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1770	2725	4990			3905
Volume (vph)	130	910	560	0	0	1870
Peak-hour factor, PHF	0.60	0.60	0.85	0.85	0.85	0.85
Adj. Flow (vph)	217	1517	659	0	0	2200
RTOR Reduction (vph)	0	185	0	0	0	689
Lane Group Flow (vph)	217	1332	659	0	0	1511
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	27.1	27.1	30.8			30.8
Effective Green, g (s)	29.1	29.1	32.8			32.8
Actuated g/C Ratio	0.43	0.43	0.48			0.48
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	759	1168	2410			1886
v/s Ratio Prot	0.12		0.13			
v/s Ratio Perm		c0.49				c0.39
v/c Ratio	0.29	1.14	0.27			0.80
Uniform Delay, d1	12.6	19.4	10.5			14.8
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.2	74.0	0.1			2.5
Delay (s)	12.8	93.4	10.5			17.3
Level of Service	B	F	B			B
Approach Delay (s)	83.3		10.5		17.3	
Approach LOS	F		B		B	

Intersection Summary

HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	67.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰	↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0	3.0	3.0	3.0
Lane Util. Factor			0.91	1.00	0.97	0.95
Frpb, ped/bikes			1.00	0.98	1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00	1.00
Frt			1.00	0.85	1.00	1.00
Flt Protected			1.00	1.00	0.95	1.00
Satd. Flow (prot)			5085	1557	3433	3539
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			5085	1557	3433	3539
Volume (vph)	0	0	600	290	1000	950
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	706	341	1176	1118
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	706	341	1176	1118
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			14.5	14.5	7.3	31.8
Effective Green, g (s)			16.5	16.5	9.3	31.8
Actuated g/C Ratio			0.52	0.52	0.29	1.00
Clearance Time (s)			5.0	5.0	5.0	5.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			2638	808	1004	3539
v/s Ratio Prot			0.14		c0.34	0.32
v/s Ratio Perm				c0.22		
v/c Ratio			0.27	0.42	1.17	0.32
Uniform Delay, d1			4.3	4.7	11.2	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.1	0.4	87.8	0.1
Delay (s)			4.3	5.1	99.1	0.1
Level of Service			A	A	F	A
Approach Delay (s)	0.0		4.6			50.8
Approach LOS	A		A			D

Intersection Summary

HCM Average Control Delay	36.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	31.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.96		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5046		1770	3469		1770	4847		1770	4597	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5046		1770	3469		1770	4847		1770	4597	
Volume (vph)	300	860	40	60	620	80	80	430	160	110	320	410
Peak-hour factor, PHF	0.90	0.92	0.90	0.90	0.92	0.90	0.90	0.92	0.90	0.90	0.92	0.90
Adj. Flow (vph)	333	935	44	67	674	89	89	467	178	122	348	456
RTOR Reduction (vph)	0	6	0	0	14	0	0	109	0	0	186	0
Lane Group Flow (vph)	333	973	0	67	749	0	89	536	0	122	618	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.3	21.9		2.7	19.3		2.9	13.0		3.7	13.8	
Effective Green, g (s)	7.3	23.9		4.7	21.3		4.9	15.0		5.7	15.8	
Actuated g/C Ratio	0.12	0.39		0.08	0.35		0.08	0.24		0.09	0.26	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	211	1967		136	1205		141	1186		165	1185	
v/s Ratio Prot	c0.19	c0.19		0.04	c0.22		0.05	0.11		c0.07	c0.13	
v/s Ratio Perm												
v/c Ratio	1.58	0.49		0.49	0.62		0.63	0.45		0.74	0.52	
Uniform Delay, d1	27.0	14.1		27.2	16.6		27.3	19.7		27.1	19.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	281.7	0.2		2.8	1.0		8.9	0.3		15.9	0.4	
Delay (s)	308.7	14.3		29.9	17.7		36.2	19.9		42.9	19.9	
Level of Service	F	B		C	B		D	B		D	B	
Approach Delay (s)		89.0			18.6			21.9			23.0	
Approach LOS		F			B			C			C	

Intersection Summary

HCM Average Control Delay	44.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4989		1770	5085			5024	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4989		1770	5085			5024	
Volume (vph)	0	0	0	140	1000	90	120	520	0	0	390	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	156	1111	100	133	578	0	0	433	33
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	1356	0	133	578	0	0	452	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					22.7		5.8	22.3			11.5	
Effective Green, g (s)					24.7		7.8	24.3			13.5	
Actuated g/C Ratio					0.45		0.14	0.44			0.25	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2241		251	2247			1233	
v/s Ratio Prot							c0.08	0.11			c0.09	
v/s Ratio Perm					0.27							
v/c Ratio					7.80dl		0.53	0.26			0.37	
Uniform Delay, d1					11.5		21.9	9.7			17.2	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					0.5		2.0	0.1			0.2	
Delay (s)					11.9		23.9	9.7			17.4	
Level of Service					B		C	A			B	
Approach Delay (s)		0.0			11.9			12.4			17.4	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0					3.0		3.0	3.0	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.93		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5072	1549					4694		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5072	1549					4694		1770	5085	
Volume (vph)	70	1570	50	0	0	0	0	620	510	140	460	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	1744	56	0	0	0	0	689	567	156	511	0
RTOR Reduction (vph)	0	0	33	0	0	0	0	55	0	0	0	0
Lane Group Flow (vph)	0	1822	23	0	0	0	0	1201	0	156	511	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm							Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		25.4	25.4					19.2		7.5	31.7	
Effective Green, g (s)		27.4	27.4					21.2		9.5	33.7	
Actuated g/C Ratio		0.41	0.41					0.32		0.14	0.50	
Clearance Time (s)		5.0	5.0					5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		2071	633					1483		251	2554	
v/s Ratio Prot								c0.26		c0.09	0.10	
v/s Ratio Perm		0.36	0.01									
v/c Ratio		0.88	0.04					1.01dr		0.62	0.20	
Uniform Delay, d1		18.3	11.9					21.1		27.1	9.2	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		4.6	0.0					3.4		4.7	0.0	
Delay (s)		23.0	11.9					24.5		31.8	9.3	
Level of Service		C	B					C		C	A	
Approach Delay (s)		22.6			0.0			24.5			14.6	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1722			1706	1472	1770	3507		1770	3432	
Flt Permitted		0.80			0.88	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1429			1542	1472	1770	3507		1770	3432	
Volume (vph)	100	5	30	10	5	40	15	390	20	25	410	80
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	111	6	33	11	6	44	17	433	22	28	456	89
RTOR Reduction (vph)	0	8	0	0	0	26	0	4	0	0	17	0
Lane Group Flow (vph)	0	142	0	0	17	18	17	451	0	28	528	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		24.1			24.1	24.1	1.3	23.4		2.8	24.9	
Effective Green, g (s)		26.1			26.1	26.1	3.3	25.4		4.8	26.9	
Actuated g/C Ratio		0.40			0.40	0.40	0.05	0.39		0.07	0.41	
Clearance Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		571			616	588	89	1364		130	1414	
v/s Ratio Prot							0.01	0.13		c0.02	c0.15	
v/s Ratio Perm		c0.10			0.01	0.01						
v/c Ratio		0.25			0.03	0.03	0.19	0.33		0.22	0.37	
Uniform Delay, d1		13.1			11.9	11.9	29.7	14.0		28.5	13.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.0	0.0	1.0	0.1		0.8	0.2	
Delay (s)		13.3			11.9	11.9	30.8	14.1		29.3	13.5	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		13.3			11.9			14.7			14.3	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	65.3	Sum of lost time (s)	6.0
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1681	1704	1863	1560	3433	1544
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1681	1704	1863	1560	3433	1544
Volume (vph)	260	35	25	150	190	250
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	289	39	28	167	211	278
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	160	168	28	167	211	278
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Split			Free		Free
Protected Phases	4	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	12.7	12.7	4.9	55.9	23.3	55.9
Effective Green, g (s)	14.7	14.7	6.9	55.9	25.3	55.9
Actuated g/C Ratio	0.26	0.26	0.12	1.00	0.45	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	442	448	230	1560	1554	1544
v/s Ratio Prot	0.10	c0.10	0.02		0.06	
v/s Ratio Perm				0.11		c0.18
v/c Ratio	0.36	0.38	0.12	0.11	0.14	0.18
Uniform Delay, d1	16.8	16.8	21.8	0.0	8.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.5	0.2	0.1	0.0	0.3
Delay (s)	17.3	17.4	22.0	0.1	9.0	0.3
Level of Service	B	B	C	A	A	A
Approach Delay (s)		17.3	3.3		4.0	
Approach LOS		B	A		A	

Intersection Summary

HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	3.0
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰	↑↑↑	↱	↰	✥		↰↰	↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	4951	1482	1723	4951	1482	1637	1533		3343	1536	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4951	1482	1723	4951	1482	1637	1533		3343	1536	
Volume (vph)	120	726	5	20	1149	5	10	5	10	132	10	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	807	6	22	1277	6	11	6	11	147	11	100
RTOR Reduction (vph)	0	0	3	0	0	4	0	9	0	0	84	0
Lane Group Flow (vph)	133	807	3	22	1277	2	11	8	0	147	27	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Actuated Green, G (s)	8.9	35.2	35.2	2.2	28.5	28.5	8.4	8.4		9.9	9.9	
Effective Green, g (s)	10.9	37.2	37.2	4.2	30.5	30.5	10.4	10.4		11.9	11.9	
Actuated g/C Ratio	0.14	0.49	0.49	0.06	0.40	0.40	0.14	0.14		0.16	0.16	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	248	2433	728	96	1995	597	225	211		526	241	
v/s Ratio Prot	c0.08	0.16		0.01	c0.26		c0.01	0.00		c0.04	0.02	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.54	0.33	0.00	0.23	0.64	0.00	0.05	0.04		0.28	0.11	
Uniform Delay, d1	30.1	11.7	9.8	34.2	18.2	13.5	28.4	28.3		28.1	27.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.1	0.0	1.2	0.7	0.0	0.1	0.1		0.3	0.2	
Delay (s)	32.3	11.8	9.8	35.4	18.9	13.5	28.4	28.4		28.4	27.6	
Level of Service	C	B	A	D	B	B	C	C		C	C	
Approach Delay (s)		14.6			19.1			28.4			28.0	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰↰	↑↑↑↱		↰↰	↑	↱	↰	↰↑↱	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	4684	1458	3162	5895		3162	1716	1437	1483	2732	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1630	4684	1458	3162	5895		3162	1716	1437	1483	2732	
Volume (vph)	35	660	108	333	1550	10	85	39	195	50	28	90
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.80	0.80	0.60	0.80	0.80
Adj. Flow (vph)	58	1100	180	555	2583	17	142	49	244	83	35	112
RTOR Reduction (vph)	0	0	153	0	1	0	0	0	0	0	95	0
Lane Group Flow (vph)	58	1100	27	555	2599	0	142	49	244	73	62	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	6.7	22.6	10.1	19.0	34.9		10.1	10.1	81.9	10.2	10.2	
Effective Green, g (s)	8.7	24.6	12.1	21.0	36.9		12.1	12.1	81.9	12.2	12.2	
Actuated g/C Ratio	0.11	0.30	0.15	0.26	0.45		0.15	0.15	1.00	0.15	0.15	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	173	1407	215	811	2656		467	254	1437	221	407	
v/s Ratio Prot	0.04	0.23	0.02	c0.18	c0.44		c0.04	0.03		c0.05	0.02	
v/s Ratio Perm									0.17			
v/c Ratio	0.34	0.78	0.12	0.68	0.98		0.30	0.19	0.17	0.33	0.15	
Uniform Delay, d1	33.9	26.2	30.3	27.5	22.1		31.1	30.6	0.0	31.2	30.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	2.9	0.3	2.4	12.7		0.4	0.4	0.3	0.9	0.2	
Delay (s)	35.1	29.1	30.6	29.9	34.8		31.5	31.0	0.3	32.1	30.5	
Level of Service	D	C	C	C	C		C	C	A	C	C	
Approach Delay (s)		29.6			34.0			13.9			31.0	
Approach LOS		C			C			B			C	

Intersection Summary

HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

336

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1501	3343	4948			1744	1501	1723	1655	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1501	3343	4948			1744	1501	1723	1655	
Volume (vph)	60	1955	80	170	2753	10	60	15	140	5	5	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	2125	87	185	2992	11	65	16	152	5	5	5
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	133	0	4	0
Lane Group Flow (vph)	65	2125	49	185	3003	0	0	81	19	5	6	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.1	51.2	51.2	8.7	56.8			10.6	10.6	8.1	8.1	
Effective Green, g (s)	5.1	53.2	53.2	10.7	58.8			12.6	12.6	10.1	10.1	
Actuated g/C Ratio	0.05	0.54	0.54	0.11	0.60			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	89	3366	810	363	2951			223	192	176	170	
v/s Ratio Prot	c0.04	0.34		0.06	c0.61			c0.05		0.00	c0.00	
v/s Ratio Perm			0.03						0.01			
v/c Ratio	0.73	0.63	0.06	0.51	1.02			0.36	0.10	0.03	0.03	
Uniform Delay, d1	46.1	15.9	10.8	41.5	19.9			39.3	38.0	39.8	39.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	26.2	0.4	0.0	1.1	21.1			1.0	0.2	0.1	0.1	
Delay (s)	72.3	16.2	10.8	42.6	41.0			40.3	38.2	39.9	39.9	
Level of Service	E	B	B	D	D			D	D	D	D	
Approach Delay (s)		17.6			41.1			39.0			39.9	
Approach LOS		B			D			D			D	

Intersection Summary

HCM Average Control Delay	31.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

57294

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3343	4951	4951	1519	3343	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3343	1382
Volume (vph)	892	1453	1725	35	50	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	991	1614	1917	39	56	11
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	991	1614	1917	39	56	11
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	23.3	74.1	45.8	93.0	8.9	93.0
Effective Green, g (s)	25.3	76.1	47.8	93.0	10.9	93.0
Actuated g/C Ratio	0.27	0.82	0.51	1.00	0.12	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	909	4051	2545	1519	392	1382
v/s Ratio Prot	c0.30	0.33	c0.39		c0.02	
v/s Ratio Perm				0.03		0.01
v/c Ratio	1.09	0.40	0.75	0.03	0.14	0.01
Uniform Delay, d1	33.8	2.3	17.9	0.0	36.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	57.5	0.1	1.3	0.0	0.2	0.0
Delay (s)	91.3	2.3	19.2	0.0	37.0	0.0
Level of Service	F	A	B	A	D	A
Approach Delay (s)		36.2	18.8		30.9	
Approach LOS		D	B		C	

Intersection Summary

HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0			3.0
Lane Util. Factor	1.00	0.88	0.94			0.64
Frpb, ped/bikes	1.00	0.98	1.00			0.97
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			0.85
Flt Protected	0.95	1.00	0.95			1.00
Satd. Flow (prot)	1723	2660	4859			3817
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1723	2660	4859			3817
Volume (vph)	90	1313	342	0	0	1483
Peak-hour factor, PHF	0.70	0.70	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	1876	380	0	0	1648
RTOR Reduction (vph)	0	323	0	0	0	1076
Lane Group Flow (vph)	129	1553	380	0	0	572
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	26.4	26.4	16.3			16.3
Effective Green, g (s)	28.4	28.4	18.3			18.3
Actuated g/C Ratio	0.54	0.54	0.35			0.35
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	929	1433	1687			1325
v/s Ratio Prot	0.07		0.08			
v/s Ratio Perm		c0.58				c0.15
v/c Ratio	0.14	1.08	0.23			0.43
Uniform Delay, d1	6.1	12.2	12.2			13.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	50.0	0.1			0.2
Delay (s)	6.1	62.2	12.2			13.4
Level of Service	A	E	B			B
Approach Delay (s)	58.6		12.2		13.4	
Approach LOS	E		B		B	

Intersection Summary

HCM Average Control Delay	35.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰	↑↑
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)			3.0	3.0	3.0	3.0
Lane Util. Factor			0.91	1.00	0.97	0.95
Frpb, ped/bikes			1.00	0.98	1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00	1.00
Frt			1.00	0.85	1.00	1.00
Flt Protected			1.00	1.00	0.95	1.00
Satd. Flow (prot)			4951	1518	3343	3446
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			4951	1518	3343	3446
Volume (vph)	0	0	342	90	920	643
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.94	0.92
Adj. Flow (vph)	0	0	372	98	979	699
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	372	98	979	699
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			9.1	9.1	4.2	23.3
Effective Green, g (s)			11.1	11.1	6.2	23.3
Actuated g/C Ratio			0.48	0.48	0.27	1.00
Clearance Time (s)			5.0	5.0	5.0	5.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			2359	723	890	3446
v/s Ratio Prot			0.08		c0.29	c0.20
v/s Ratio Perm				0.06		
v/c Ratio			0.16	0.14	1.10	0.20
Uniform Delay, d1			3.5	3.4	8.5	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.0	0.1	61.3	0.0
Delay (s)			3.5	3.5	69.9	0.0
Level of Service			A	A	E	A
Approach Delay (s)	0.0		3.5			40.8
Approach LOS	A		A			D

Intersection Summary

HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	23.3	Sum of lost time (s)	3.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.96		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	4932		1723	3402		1723	4711		1723	4313	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4932		1723	3402		1723	4711		1723	4313	
Volume (vph)	286	646	15	40	624	50	50	200	80	110	190	614
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	301	680	16	42	657	53	53	211	84	116	200	646
RTOR Reduction (vph)	0	3	0	0	8	0	0	62	0	0	199	0
Lane Group Flow (vph)	301	693	0	42	702	0	53	233	0	116	647	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	6.3	22.6		2.6	18.9		2.1	14.1		3.0	15.0	
Effective Green, g (s)	8.3	24.6		4.6	20.9		4.1	16.1		5.0	17.0	
Actuated g/C Ratio	0.13	0.39		0.07	0.34		0.07	0.26		0.08	0.27	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	230	1947		127	1141		113	1217		138	1177	
v/s Ratio Prot	c0.17	0.14		0.02	c0.21		0.03	0.05		c0.07	c0.15	
v/s Ratio Perm												
v/c Ratio	1.31	0.36		0.33	0.62		0.47	0.19		0.84	1.01dr	
Uniform Delay, d1	27.0	13.3		27.4	17.3		28.1	18.0		28.3	19.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	166.6	0.1		1.5	1.0		3.1	0.1		34.5	0.6	
Delay (s)	193.6	13.4		28.9	18.3		31.1	18.1		62.8	19.9	
Level of Service	F	B		C	B		C	B		E	B	
Approach Delay (s)		67.8			18.9			20.1			25.1	
Approach LOS		E			B			C			C	

Intersection Summary

HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↱		↰	↑↑↑			↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4855		1723	4951			4814	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4855		1723	4951			4814	
Volume (vph)	0	0	0	460	1520	80	93	200	0	0	180	35
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	511	1689	89	103	222	0	0	200	39
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	0	0	0	2284	0	103	222	0	0	208	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					27.7		5.9	20.3			9.4	
Effective Green, g (s)					29.7		7.9	22.3			11.4	
Actuated g/C Ratio					0.51		0.14	0.38			0.20	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2486		235	1904			946	
v/s Ratio Prot							c0.06	0.04			c0.04	
v/s Ratio Perm					0.47							
v/c Ratio					51.10dl		0.44	0.12			0.22	
Uniform Delay, d1					13.0		23.0	11.5			19.6	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					6.0		1.3	0.0			0.1	
Delay (s)					19.1		24.3	11.5			19.7	
Level of Service					B		C	B			B	
Approach Delay (s)		0.0			19.1			15.6			19.7	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑	↱					↑↑↱		↰	↑↑↑	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		3.0	3.0					3.0		3.0	3.0	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.93		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4942	1511					4545		1723	4951	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		4942	1511					4545		1723	4951	
Volume (vph)	30	825	35	0	0	0	0	293	280	45	660	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	917	39	0	0	0	0	326	311	50	733	0
RTOR Reduction (vph)	0	0	22	0	0	0	0	150	0	0	0	0
Lane Group Flow (vph)	0	950	17	0	0	0	0	487	0	50	733	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm							Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		20.2	20.2					12.5		4.0	21.5	
Effective Green, g (s)		22.2	22.2					14.5		6.0	23.5	
Actuated g/C Ratio		0.43	0.43					0.28		0.12	0.45	
Clearance Time (s)		5.0	5.0					5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		2122	649					1275		200	2250	
v/s Ratio Prot								0.11		0.03	c0.15	
v/s Ratio Perm		0.19	0.01									
v/c Ratio		0.45	0.03					0.38		0.25	0.33	
Uniform Delay, d1		10.4	8.5					15.0		20.8	9.0	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.2	0.0					0.2		0.7	0.1	
Delay (s)		10.6	8.5					15.2		21.5	9.1	
Level of Service		B	A					B		C	A	
Approach Delay (s)		10.5			0.0			15.2			9.9	
Approach LOS		B			A			B			A	

Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			0.99	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1676			1667	1431	1723	3420		1723	3292	
Flt Permitted		0.82			0.91	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1423			1552	1431	1723	3420		1723	3292	
Volume (vph)	50	5	20	5	5	30	10	239	10	25	319	100
Peak-hour factor, PHF	0.65	0.85	0.85	0.65	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	77	6	24	8	6	35	12	281	12	29	375	118
RTOR Reduction (vph)	0	9	0	0	0	22	0	3	0	0	31	0
Lane Group Flow (vph)	0	98	0	0	14	13	12	290	0	29	462	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		26.1			26.1	26.1	1.5	29.4		3.2	31.1	
Effective Green, g (s)		28.1			28.1	28.1	3.5	31.4		5.2	33.1	
Actuated g/C Ratio		0.38			0.38	0.38	0.05	0.43		0.07	0.45	
Clearance Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		543			592	546	82	1457		122	1478	
v/s Ratio Prot							0.01	0.08		c0.02	c0.14	
v/s Ratio Perm		c0.07			0.01	0.01						
v/c Ratio		0.18			0.02	0.02	0.15	0.20		0.24	0.31	
Uniform Delay, d1		15.2			14.2	14.2	33.7	13.3		32.4	13.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.0	0.0	0.8	0.1		1.0	0.1	
Delay (s)		15.3			14.3	14.3	34.5	13.3		33.4	13.1	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		15.3			14.3			14.2			14.3	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

344

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1637	1657	1814	1519	3343	1503
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1637	1657	1814	1519	3343	1503
Volume (vph)	130	15	10	129	164	180
Peak-hour factor, PHF	0.56	0.56	0.56	0.95	0.56	0.95
Adj. Flow (vph)	232	27	18	136	293	189
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	126	133	18	136	293	189
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Split			Free		Free
Protected Phases	4	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	12.0	12.0	2.9	55.0	25.1	55.0
Effective Green, g (s)	14.0	14.0	4.9	55.0	27.1	55.0
Actuated g/C Ratio	0.25	0.25	0.09	1.00	0.49	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	417	422	162	1519	1647	1503
v/s Ratio Prot	0.08	c0.08	0.01		c0.09	
v/s Ratio Perm				0.09		c0.13
v/c Ratio	0.30	0.32	0.11	0.09	0.18	0.13
Uniform Delay, d1	16.6	16.6	23.0	0.0	7.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.3	0.1	0.1	0.2
Delay (s)	17.0	17.0	23.4	0.1	7.8	0.2
Level of Service	B	B	C	A	A	A
Approach Delay (s)		17.0	2.8		4.8	
Approach LOS		B	A		A	

Intersection Summary

HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

345

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1522	1770	5085	1522	1681	1568		3433	1564	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1522	1770	5085	1522	1681	1568		3433	1564	
Volume (vph)	90	1070	10	30	1267	5	15	10	20	123	5	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	1189	11	33	1408	6	17	11	22	137	6	100
RTOR Reduction (vph)	0	0	5	0	0	3	0	19	0	0	85	0
Lane Group Flow (vph)	100	1189	6	33	1408	3	17	14	0	137	21	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.7	36.6	36.6	2.2	31.1	31.1	8.5	8.5		9.8	9.8	
Effective Green, g (s)	9.7	38.6	38.6	4.2	33.1	33.1	10.5	10.5		11.8	11.8	
Actuated g/C Ratio	0.13	0.50	0.50	0.05	0.43	0.43	0.14	0.14		0.15	0.15	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	223	2546	762	96	2183	653	229	214		525	239	
v/s Ratio Prot	c0.06	0.23		0.02	c0.28		c0.01	0.01		c0.04	0.01	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.45	0.47	0.01	0.34	0.64	0.00	0.07	0.07		0.26	0.09	
Uniform Delay, d1	31.2	12.5	9.6	35.1	17.4	12.6	29.1	29.0		28.8	28.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.4	0.1	0.0	2.1	0.7	0.0	0.1	0.1		0.3	0.2	
Delay (s)	32.7	12.7	9.7	37.3	18.0	12.6	29.2	29.2		29.1	28.2	
Level of Service	C	B	A	D	B	B	C	C		C	C	
Approach Delay (s)		14.2			18.4			29.2			28.7	
Approach LOS		B			B			C			C	

Intersection Summary

HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	77.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6191		3343	1814	1519	1568	2869	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6191		3343	1814	1519	1568	2869	
Volume (vph)	55	980	183	370	1180	50	141	42	396	50	38	120
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.85	0.85	0.60	0.85	0.85
Adj. Flow (vph)	92	1633	305	617	1967	83	235	49	466	83	45	141
RTOR Reduction (vph)	0	0	183	0	4	0	0	0	0	0	122	0
Lane Group Flow (vph)	92	1633	122	617	2046	0	235	49	466	83	64	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	8.4	27.9	13.7	20.8	40.3		13.7	13.7	93.1	10.7	10.7	
Effective Green, g (s)	10.4	29.9	15.7	22.8	42.3		15.7	15.7	93.1	12.7	12.7	
Actuated g/C Ratio	0.11	0.32	0.17	0.24	0.45		0.17	0.17	1.00	0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	192	1590	260	819	2813		564	306	1519	214	391	
v/s Ratio Prot	0.05	c0.33	c0.08	c0.18	0.33		0.07	0.03		c0.05	0.02	
v/s Ratio Perm									0.31			
v/c Ratio	0.48	1.03	0.47	0.75	0.73		0.42	0.16	0.31	0.39	0.16	
Uniform Delay, d1	38.8	31.6	34.9	32.5	20.7		34.6	33.1	0.0	36.7	35.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	29.8	1.3	4.0	1.0		0.5	0.2	0.5	1.2	0.2	
Delay (s)	40.7	61.4	36.3	36.5	21.7		35.1	33.3	0.5	37.8	35.7	
Level of Service	D	E	D	D	C		D	C	A	D	D	
Approach Delay (s)		56.7			25.1			13.5			36.4	
Approach LOS		E			C			B			D	

Intersection Summary

HCM Average Control Delay	35.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1503	3343	4947			1733	1503	1723	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1503	3343	4947			1733	1503	1723	1583	
Volume (vph)	25	2536	70	180	2240	10	70	5	190	5	5	15
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	2818	78	200	2489	11	78	6	211	6	6	17
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	182	0	15	0
Lane Group Flow (vph)	28	2818	54	200	2500	0	0	84	29	6	8	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.0	40.0	40.0	10.4	47.4			10.2	10.2	8.1	8.1	
Effective Green, g (s)	5.0	42.0	42.0	12.4	49.4			12.2	12.2	10.1	10.1	
Actuated g/C Ratio	0.06	0.47	0.47	0.14	0.56			0.14	0.14	0.11	0.11	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	97	2954	712	467	2755			238	207	196	180	
v/s Ratio Prot	0.02	0.45		c0.06	c0.51			c0.05		0.00	c0.01	
v/s Ratio Perm			0.04						0.02			
v/c Ratio	0.29	0.95	0.08	0.43	0.91			0.35	0.14	0.03	0.04	
Uniform Delay, d1	40.1	22.4	12.7	34.9	17.6			34.7	33.6	34.9	35.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	8.3	0.0	0.6	4.8			0.9	0.3	0.1	0.1	
Delay (s)	41.8	30.7	12.8	35.5	22.4			35.6	33.9	35.0	35.1	
Level of Service	D	C	B	D	C			D	C	D	D	
Approach Delay (s)		30.3			23.4			34.4			35.1	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	5085	1560	3433	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3433	1419
Volume (vph)	1029	1787	1337	130	70	10
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1143	1986	1486	144	78	11
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1143	1986	1486	144	78	11
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	15.6	50.2	29.6	68.9	8.7	68.9
Effective Green, g (s)	17.6	52.2	31.6	68.9	10.7	68.9
Actuated g/C Ratio	0.26	0.76	0.46	1.00	0.16	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	877	3852	2332	1560	533	1419
v/s Ratio Prot	c0.33	0.39	c0.29		c0.02	
v/s Ratio Perm				0.09		0.01
v/c Ratio	1.30	0.52	0.64	0.09	0.15	0.01
Uniform Delay, d1	25.7	3.3	14.3	0.0	25.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	144.8	0.1	0.6	0.1	0.1	0.0
Delay (s)	170.5	3.4	14.8	0.1	25.3	0.0
Level of Service	F	A	B	A	C	A
Approach Delay (s)		64.4	13.5		22.2	
Approach LOS		E	B		C	

Intersection Summary

HCM Average Control Delay	46.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0			3.0
Lane Util. Factor	1.00	0.88	0.94			0.64
Frpb, ped/bikes	1.00	0.98	1.00			0.96
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			0.85
Flt Protected	0.95	1.00	0.95			1.00
Satd. Flow (prot)	1770	2725	4990			3904
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1770	2725	4990			3904
Volume (vph)	130	933	564	0	0	1887
Peak-hour factor, PHF	0.60	0.60	0.85	0.85	0.85	0.84
Adj. Flow (vph)	217	1555	664	0	0	2246
RTOR Reduction (vph)	0	156	0	0	0	755
Lane Group Flow (vph)	217	1399	664	0	0	1491
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	29.0	29.0	29.7			29.7
Effective Green, g (s)	31.0	31.0	31.7			31.7
Actuated g/C Ratio	0.45	0.45	0.46			0.46
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	799	1230	2303			1801
v/s Ratio Prot	0.12		0.13			
v/s Ratio Perm		c0.51				c0.38
v/c Ratio	0.27	1.14	0.29			0.83
Uniform Delay, d1	11.8	18.8	11.5			16.1
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.2	72.3	0.1			3.3
Delay (s)	12.0	91.1	11.6			19.4
Level of Service	B	F	B			B
Approach Delay (s)	81.4		11.6		19.4	
Approach LOS	F		B		B	

Intersection Summary

HCM Average Control Delay	41.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	68.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰	↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0	3.0	3.0	3.0
Lane Util. Factor			0.91	1.00	0.97	0.95
Frpb, ped/bikes			1.00	0.98	1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00	1.00
Frt			1.00	0.85	1.00	1.00
Flt Protected			1.00	1.00	0.95	1.00
Satd. Flow (prot)			5085	1557	3433	3539
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			5085	1557	3433	3539
Volume (vph)	0	0	604	290	1015	952
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.86	0.85
Adj. Flow (vph)	0	0	711	341	1180	1120
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	711	341	1180	1120
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			14.7	14.7	7.3	32.0
Effective Green, g (s)			16.7	16.7	9.3	32.0
Actuated g/C Ratio			0.52	0.52	0.29	1.00
Clearance Time (s)			5.0	5.0	5.0	5.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			2654	813	998	3539
v/s Ratio Prot			0.14		c0.34	0.32
v/s Ratio Perm				c0.22		
v/c Ratio			0.27	0.42	1.18	0.32
Uniform Delay, d1			4.3	4.7	11.4	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.1	0.4	92.4	0.1
Delay (s)			4.3	5.0	103.8	0.1
Level of Service			A	A	F	A
Approach Delay (s)	0.0		4.5			53.3
Approach LOS	A		A			D

Intersection Summary

HCM Average Control Delay	38.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	32.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.96		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5046		1770	3469		1770	4846		1770	4594	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5046		1770	3469		1770	4846		1770	4594	
Volume (vph)	305	864	40	60	626	80	80	430	160	110	320	417
Peak-hour factor, PHF	0.90	0.92	0.90	0.90	0.92	0.90	0.90	0.92	0.90	0.90	0.92	0.90
Adj. Flow (vph)	339	939	44	67	680	89	89	467	178	122	348	463
RTOR Reduction (vph)	0	6	0	0	14	0	0	109	0	0	185	0
Lane Group Flow (vph)	339	977	0	67	755	0	89	536	0	122	626	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	5.3	22.1		2.7	19.5		2.9	13.1		3.7	13.9	
Effective Green, g (s)	7.3	24.1		4.7	21.5		4.9	15.1		5.7	15.9	
Actuated g/C Ratio	0.12	0.39		0.08	0.35		0.08	0.25		0.09	0.26	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	210	1974		135	1211		141	1188		164	1186	
v/s Ratio Prot	c0.19	c0.19		0.04	c0.22		0.05	0.11		c0.07	c0.14	
v/s Ratio Perm												
v/c Ratio	1.61	0.49		0.50	0.62		0.63	0.45		0.74	0.53	
Uniform Delay, d1	27.2	14.2		27.3	16.7		27.5	19.7		27.2	19.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	297.4	0.2		2.9	1.0		8.9	0.3		16.6	0.4	
Delay (s)	324.5	14.4		30.2	17.7		36.4	20.0		43.8	20.0	
Level of Service	F	B		C	B		D	C		D	C	
Approach Delay (s)		93.9			18.7			22.0			23.2	
Approach LOS		F			B			C			C	

Intersection Summary

HCM Average Control Delay	46.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4990		1770	5085			5024	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4990		1770	5085			5024	
Volume (vph)	0	0	0	140	1016	90	127	520	0	0	390	30
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	156	1129	100	141	578	0	0	433	33
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	1374	0	141	578	0	0	452	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					22.7		5.8	22.3			11.5	
Effective Green, g (s)					24.7		7.8	24.3			13.5	
Actuated g/C Ratio					0.45		0.14	0.44			0.25	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2241		251	2247			1233	
v/s Ratio Prot							c0.08	0.11			c0.09	
v/s Ratio Perm					0.28							
v/c Ratio					7.80dl		0.56	0.26			0.37	
Uniform Delay, d1					11.5		22.0	9.7			17.2	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					0.5		2.9	0.1			0.2	
Delay (s)					12.0		24.9	9.7			17.4	
Level of Service					B		C	A			B	
Approach Delay (s)		0.0			12.0			12.7			17.4	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0					3.0		3.0	3.0	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.93		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5072	1549					4697		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5072	1549					4697		1770	5085	
Volume (vph)	70	1581	54	0	0	0	0	627	510	140	460	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	1757	60	0	0	0	0	697	567	156	511	0
RTOR Reduction (vph)	0	0	35	0	0	0	0	55	0	0	0	0
Lane Group Flow (vph)	0	1835	25	0	0	0	0	1209	0	156	511	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm							Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		25.4	25.4					19.2		7.5	31.7	
Effective Green, g (s)		27.4	27.4					21.2		9.5	33.7	
Actuated g/C Ratio		0.41	0.41					0.32		0.14	0.50	
Clearance Time (s)		5.0	5.0					5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		2071	633					1484		251	2554	
v/s Ratio Prot								c0.26		c0.09	0.10	
v/s Ratio Perm		0.36	0.02									
v/c Ratio		0.89	0.04					1.01dr		0.62	0.20	
Uniform Delay, d1		18.4	11.9					21.1		27.1	9.2	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		5.0	0.0					3.6		4.7	0.0	
Delay (s)		23.4	12.0					24.7		31.8	9.3	
Level of Service		C	B					C		C	A	
Approach Delay (s)		23.0			0.0			24.7			14.6	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1722			1706	1471	1770	3510		1770	3445	
Flt Permitted		0.80			0.87	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1426			1540	1471	1770	3510		1770	3445	
Volume (vph)	100	5	30	10	5	40	15	434	20	25	476	80
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	111	6	33	11	6	44	17	482	22	28	529	89
RTOR Reduction (vph)	0	9	0	0	0	27	0	4	0	0	14	0
Lane Group Flow (vph)	0	141	0	0	17	17	17	500	0	28	604	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		24.0			24.0	24.0	1.3	25.3		2.8	26.8	
Effective Green, g (s)		26.0			26.0	26.0	3.3	27.3		4.8	28.8	
Actuated g/C Ratio		0.39			0.39	0.39	0.05	0.41		0.07	0.43	
Clearance Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		553			597	570	87	1428		127	1479	
v/s Ratio Prot							0.01	0.14		c0.02	c0.18	
v/s Ratio Perm		c0.10			0.01	0.01						
v/c Ratio		0.26			0.03	0.03	0.20	0.35		0.22	0.41	
Uniform Delay, d1		14.0			12.7	12.7	30.6	13.8		29.4	13.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.0	0.0	1.1	0.1		0.9	0.2	
Delay (s)		14.2			12.7	12.8	31.7	13.9		30.3	13.4	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		14.2			12.8			14.5			14.2	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	6.0
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1681	1704	1863	1560	3433	1544
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1681	1704	1863	1560	3433	1544
Volume (vph)	260	35	25	194	256	250
Peak-hour factor, PHF	0.60	0.60	0.60	0.95	0.60	0.95
Adj. Flow (vph)	433	58	42	204	427	263
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	239	252	42	204	427	263
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Split			Free		Free
Protected Phases	4	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	12.3	12.3	3.5	45.1	14.3	45.1
Effective Green, g (s)	14.3	14.3	5.5	45.1	16.3	45.1
Actuated g/C Ratio	0.32	0.32	0.12	1.00	0.36	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	533	540	227	1560	1241	1544
v/s Ratio Prot	0.14	c0.15	0.02		c0.12	
v/s Ratio Perm				0.13		c0.17
v/c Ratio	0.45	0.47	0.19	0.13	0.34	0.17
Uniform Delay, d1	12.3	12.3	17.8	0.0	10.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.6	0.4	0.2	0.2	0.2
Delay (s)	12.9	13.0	18.2	0.2	10.7	0.2
Level of Service	B	B	B	A	B	A
Approach Delay (s)		12.9	3.2		6.7	
Approach LOS		B	A		A	

Intersection Summary

HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	45.1	Sum of lost time (s)	6.0
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	4951	1472	1723	4951	1472	1637	1545		3343	1523	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4951	1472	1723	4951	1472	1637	1545		3343	1523	
Volume (vph)	350	1220	10	25	1940	10	15	10	15	300	20	250
Peak-hour factor, PHF	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	385	1326	11	27	2109	11	16	11	16	326	22	272
RTOR Reduction (vph)	0	0	5	0	0	4	0	14	0	0	226	0
Lane Group Flow (vph)	385	1326	6	27	2109	7	16	13	0	326	68	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Actuated Green, G (s)	16.1	55.6	55.6	2.9	42.4	42.4	8.6	8.6		15.1	15.1	
Effective Green, g (s)	18.1	57.6	57.6	4.9	44.4	44.4	10.6	10.6		17.1	17.1	
Actuated g/C Ratio	0.18	0.56	0.56	0.05	0.43	0.43	0.10	0.10		0.17	0.17	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	305	2790	830	83	2151	639	170	160		559	255	
v/s Ratio Prot	c0.22	0.27		0.02	c0.43		c0.01	0.01		c0.10	0.04	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	1.26	0.48	0.01	0.33	0.98	0.01	0.09	0.08		0.58	0.26	
Uniform Delay, d1	42.0	13.3	9.8	47.1	28.5	16.4	41.5	41.4		39.3	37.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	141.7	0.1	0.0	2.3	15.0	0.0	0.2	0.2		1.6	0.6	
Delay (s)	183.7	13.4	9.8	49.3	43.5	16.4	41.7	41.6		40.8	37.6	
Level of Service	F	B	A	D	D	B	D	D		D	D	
Approach Delay (s)		51.5			43.4			41.6			39.3	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	45.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	102.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰↰	↑↑↑↱		↰↰	↑	↱	↰	↰↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6230		3343	1814	1519	1568	2854	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6230		3343	1814	1519	1568	2854	
Volume (vph)	40	820	120	400	1910	15	90	40	210	60	30	120
Peak-hour factor, PHF	0.60	0.80	0.80	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	67	1025	150	667	2388	19	112	50	262	75	38	150
RTOR Reduction (vph)	0	0	127	0	1	0	0	0	0	0	126	0
Lane Group Flow (vph)	67	1025	23	667	2406	0	112	50	262	75	62	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	6.3	24.1	9.1	8.4	26.2		9.1	9.1	71.2	9.6	9.6	
Effective Green, g (s)	8.3	26.1	11.1	10.4	28.2		11.1	11.1	71.2	11.6	11.6	
Actuated g/C Ratio	0.12	0.37	0.16	0.15	0.40		0.16	0.16	1.00	0.16	0.16	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	201	1815	240	488	2468		521	283	1519	255	465	
v/s Ratio Prot	0.04	0.21	0.02	c0.20	c0.39		0.03	0.03		c0.05	0.02	
v/s Ratio Perm									c0.17			
v/c Ratio	0.33	0.56	0.10	1.37	0.98		0.21	0.18	0.17	0.29	0.13	
Uniform Delay, d1	28.9	18.0	25.8	30.4	21.2		26.2	26.1	0.0	26.2	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.4	0.2	177.8	12.7		0.2	0.3	0.2	0.6	0.1	
Delay (s)	29.9	18.4	25.9	208.2	33.9		26.5	26.4	0.2	26.8	25.6	
Level of Service	C	B	C	F	C		C	C	A	C	C	
Approach Delay (s)		19.9			71.7			10.3			26.0	
Approach LOS		B			E			B			C	

Intersection Summary

HCM Average Control Delay	51.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1500	3343	4948			1744	1500	1723	1655	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1500	3343	4948			1744	1500	1723	1655	
Volume (vph)	70	3090	100	240	4390	15	80	20	200	10	10	10
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	3253	105	253	4621	16	84	21	211	11	11	11
RTOR Reduction (vph)	0	0	30	0	0	0	0	0	183	0	10	0
Lane Group Flow (vph)	74	3253	75	253	4637	0	0	105	28	11	12	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.9	55.5	55.5	6.1	57.7			11.7	11.7	8.4	8.4	
Effective Green, g (s)	5.9	57.5	57.5	8.1	59.7			13.7	13.7	10.4	10.4	
Actuated g/C Ratio	0.06	0.57	0.57	0.08	0.59			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	100	3527	848	266	2905			235	202	176	169	
v/s Ratio Prot	0.04	0.52		c0.08	c0.94			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.02			
v/c Ratio	0.74	0.92	0.09	0.95	1.60			0.45	0.14	0.06	0.07	
Uniform Delay, d1	47.1	20.1	10.1	46.6	21.0			40.5	38.8	41.2	41.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	25.1	4.7	0.0	41.8	269.9			1.4	0.3	0.1	0.2	
Delay (s)	72.3	24.7	10.2	88.4	290.9			41.9	39.1	41.4	41.5	
Level of Service	E	C	B	F	F			D	D	D	D	
Approach Delay (s)		25.3			280.4			40.0			41.4	
Approach LOS		C			F			D			D	

Intersection Summary

HCM Average Control Delay	169.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	101.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3343	4951	4951	1519	3343	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3343	1382
Volume (vph)	1200	2170	2600	40	60	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1333	2411	2889	44	67	22
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1333	2411	2889	44	67	22
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	20.1	79.2	54.1	98.5	9.3	98.5
Effective Green, g (s)	22.1	81.2	56.1	98.5	11.3	98.5
Actuated g/C Ratio	0.22	0.82	0.57	1.00	0.11	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	750	4081	2820	1519	384	1382
v/s Ratio Prot	c0.40	0.49	c0.58		c0.02	
v/s Ratio Perm				0.03		0.02
v/c Ratio	1.78	0.59	1.02	0.03	0.17	0.02
Uniform Delay, d1	38.2	3.0	21.2	0.0	39.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	355.2	0.2	23.5	0.0	0.2	0.0
Delay (s)	393.4	3.2	44.7	0.0	39.6	0.0
Level of Service	F	A	D	A	D	A
Approach Delay (s)		142.1	44.1		29.8	
Approach LOS		F	D		C	

Intersection Summary

HCM Average Control Delay	98.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

57791

360

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0			3.0
Lane Util. Factor	1.00	0.88	0.94			0.64
Frpb, ped/bikes	1.00	0.98	1.00			0.96
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			0.85
Flt Protected	0.95	1.00	0.95			1.00
Satd. Flow (prot)	1723	2654	4859			3804
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1723	2654	4859			3804
Volume (vph)	100	1550	370	0	0	1600
Peak-hour factor, PHF	0.65	0.65	0.90	0.90	0.90	0.90
Adj. Flow (vph)	154	2385	411	0	0	1778
RTOR Reduction (vph)	0	115	0	0	0	1288
Lane Group Flow (vph)	154	2270	411	0	0	490
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	40.1	40.1	16.3			16.3
Effective Green, g (s)	42.1	42.1	18.3			18.3
Actuated g/C Ratio	0.63	0.63	0.28			0.28
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1092	1683	1339			1048
v/s Ratio Prot	0.09		0.08			
v/s Ratio Perm		c0.86				c0.13
v/c Ratio	0.14	1.35	0.31			0.47
Uniform Delay, d1	4.9	12.2	19.0			20.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	160.9	0.1			0.3
Delay (s)	4.9	173.1	19.2			20.3
Level of Service	A	F	B			C
Approach Delay (s)	162.9		19.2		20.3	
Approach LOS	F		B		C	

Intersection Summary

HCM Average Control Delay	96.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰	↑↑
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)			3.0	3.0	3.0	3.0
Lane Util. Factor			0.91	1.00	0.97	0.95
Frpb, ped/bikes			1.00	0.98	1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00	1.00
Frt			1.00	0.85	1.00	1.00
Flt Protected			1.00	1.00	0.95	1.00
Satd. Flow (prot)			4951	1517	3343	3446
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			4951	1517	3343	3446
Volume (vph)	0	0	460	140	1010	870
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	511	156	1122	967
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	511	156	1122	967
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			10.1	10.1	5.2	25.3
Effective Green, g (s)			12.1	12.1	7.2	25.3
Actuated g/C Ratio			0.48	0.48	0.28	1.00
Clearance Time (s)			5.0	5.0	5.0	5.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			2368	726	951	3446
v/s Ratio Prot			0.10		c0.34	c0.28
v/s Ratio Perm				0.10		
v/c Ratio			0.22	0.21	1.18	0.28
Uniform Delay, d1			3.8	3.8	9.0	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.0	0.1	91.9	0.0
Delay (s)			3.9	4.0	100.9	0.0
Level of Service			A	A	F	A
Approach Delay (s)	0.0		3.9			54.2
Approach LOS	A		A			D

Intersection Summary

HCM Average Control Delay	42.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	25.3	Sum of lost time (s)	3.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

362

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.97		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	4926		1723	3381		1723	4758		1723	4289	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4926		1723	3381		1723	4758		1723	4289	
Volume (vph)	700	1040	30	70	1010	120	110	500	140	250	480	1510
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	737	1095	32	74	1063	126	116	526	147	263	505	1589
RTOR Reduction (vph)	0	3	0	0	7	0	0	42	0	0	319	0
Lane Group Flow (vph)	737	1124	0	74	1182	0	116	631	0	263	1775	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	30.0	54.6		6.4	31.0		5.0	23.0		17.0	35.0	
Effective Green, g (s)	32.0	56.6		8.4	33.0		7.0	25.0		19.0	37.0	
Actuated g/C Ratio	0.26	0.47		0.07	0.27		0.06	0.21		0.16	0.31	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	456	2304		120	922		100	983		271	1312	
v/s Ratio Prot	c0.43	0.23		0.04	c0.35		c0.07	0.13		0.15	c0.41	
v/s Ratio Perm												
v/c Ratio	1.62	0.49		0.62	1.28		1.16	0.64		0.97	2.04dr	
Uniform Delay, d1	44.5	22.2		54.7	44.0		57.0	43.9		50.7	42.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	287.3	0.2		9.1	135.1		139.4	1.4		46.3	163.8	
Delay (s)	331.8	22.4		63.8	179.1		196.4	45.3		97.0	205.8	
Level of Service	F	C		E	F		F	D		F	F	
Approach Delay (s)		144.7			172.3			67.6			193.7	
Approach LOS		F			F			E			F	

Intersection Summary

HCM Average Control Delay	159.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	121.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	137.5%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57291

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4838		1723	4951			4837	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4838		1723	4951			4837	
Volume (vph)	0	0	0	580	1760	140	110	340	0	0	320	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	644	1956	156	122	378	0	0	356	56
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	36	0
Lane Group Flow (vph)	0	0	0	0	2748	0	122	378	0	0	376	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					24.7		6.0	21.7			10.7	
Effective Green, g (s)					26.7		8.0	23.7			12.7	
Actuated g/C Ratio					0.47		0.14	0.42			0.23	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2290		244	2080			1089	
v/s Ratio Prot							c0.07	0.08			c0.08	
v/s Ratio Perm					0.57							
v/c Ratio					42.93dl		0.50	0.18			0.34	
Uniform Delay, d1					14.8		22.4	10.3			18.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					94.5		1.6	0.0			0.2	
Delay (s)					109.4		24.0	10.3			18.5	
Level of Service					F		C	B			B	
Approach Delay (s)		0.0			109.4			13.6			18.5	
Approach LOS		A			F			B			B	

Intersection Summary

HCM Average Control Delay	86.1	HCM Level of Service	F
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		3.0	3.0					3.0		3.0	3.0	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.92		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4942	1508					4515		1723	4951	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		4942	1508					4515		1723	4951	
Volume (vph)	40	1250	50	0	0	0	0	510	550	70	1170	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	1389	56	0	0	0	0	567	611	78	1300	0
RTOR Reduction (vph)	0	0	22	0	0	0	0	102	0	0	0	0
Lane Group Flow (vph)	0	1433	34	0	0	0	0	1076	0	78	1300	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm							Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		24.7	24.7					19.1		6.6	30.7	
Effective Green, g (s)		26.7	26.7					21.1		8.6	32.7	
Actuated g/C Ratio		0.41	0.41					0.32		0.13	0.50	
Clearance Time (s)		5.0	5.0					5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		2018	616					1457		227	2476	
v/s Ratio Prot								c0.24		0.05	c0.26	
v/s Ratio Perm		0.29	0.02									
v/c Ratio		0.71	0.05					1.01dr		0.34	0.53	
Uniform Delay, d1		16.1	11.7					19.7		25.8	11.1	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		1.2	0.0					2.0		0.9	0.2	
Delay (s)		17.3	11.7					21.7		26.7	11.3	
Level of Service		B	B					C		C	B	
Approach Delay (s)		17.1			0.0			21.7			12.2	
Approach LOS		B			A			C			B	

Intersection Summary

HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇹			⇹	↱	↰	↑↑↱		↰	↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1682			1669	1432	1723	3404		1723	3280	
Flt Permitted		0.81			0.88	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1414			1513	1432	1723	3404		1723	3280	
Volume (vph)	60	10	25	10	10	35	15	220	15	30	340	120
Peak-hour factor, PHF	0.65	0.85	0.85	0.65	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	92	12	29	15	12	41	18	259	18	35	400	141
RTOR Reduction (vph)	0	8	0	0	0	25	0	5	0	0	38	0
Lane Group Flow (vph)	0	125	0	0	27	16	18	272	0	35	503	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		25.2			25.2	25.2	1.4	24.9		3.0	26.5	
Effective Green, g (s)		27.2			27.2	27.2	3.4	26.9		5.0	28.5	
Actuated g/C Ratio		0.40			0.40	0.40	0.05	0.40		0.07	0.42	
Clearance Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		565			604	572	86	1345		127	1373	
v/s Ratio Prot							0.01	0.08		c0.02	c0.15	
v/s Ratio Perm		c0.09			0.02	0.01						
v/c Ratio		0.22			0.04	0.03	0.21	0.20		0.28	0.37	
Uniform Delay, d1		13.5			12.5	12.4	31.1	13.5		29.8	13.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.0	0.0	1.2	0.1		1.2	0.2	
Delay (s)		13.7			12.5	12.4	32.3	13.6		31.0	13.8	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		13.7			12.5			14.8			14.8	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	6.0
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

366

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1637	1659	1814	1519	3343	1503
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1637	1659	1814	1519	3343	1503
Volume (vph)	150	20	15	75	130	200
Peak-hour factor, PHF	0.60	0.60	0.60	0.95	0.60	0.95
Adj. Flow (vph)	250	33	25	79	217	211
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	138	145	25	79	217	211
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Split			Free		Free
Protected Phases	4	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	12.4	12.4	2.9	54.2	23.9	54.2
Effective Green, g (s)	14.4	14.4	4.9	54.2	25.9	54.2
Actuated g/C Ratio	0.27	0.27	0.09	1.00	0.48	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	435	441	164	1519	1597	1503
v/s Ratio Prot	0.08	c0.09	0.01		0.06	
v/s Ratio Perm				0.05		c0.14
v/c Ratio	0.32	0.33	0.15	0.05	0.14	0.14
Uniform Delay, d1	16.0	16.0	22.7	0.0	7.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.4	0.1	0.0	0.2
Delay (s)	16.4	16.5	23.2	0.1	7.9	0.2
Level of Service	B	B	C	A	A	A
Approach Delay (s)		16.4	5.6		4.1	
Approach LOS		B	A		A	

Intersection Summary

HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	3.0
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1514	1770	5085	1514	1681	1585		3433	1554	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1514	1770	5085	1514	1681	1585		3433	1554	
Volume (vph)	270	1800	20	40	2130	10	20	20	30	280	10	250
Peak-hour factor, PHF	0.90	0.92	0.90	0.90	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	300	1957	22	44	2315	11	22	22	33	311	11	278
RTOR Reduction (vph)	0	0	8	0	0	4	0	29	0	0	231	0
Lane Group Flow (vph)	300	1957	14	44	2315	7	22	26	0	311	58	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Actuated Green, G (s)	9.1	51.3	51.3	2.3	44.5	44.5	8.8	8.8		14.4	14.4	
Effective Green, g (s)	11.1	53.3	53.3	4.3	46.5	46.5	10.8	10.8		16.4	16.4	
Actuated g/C Ratio	0.11	0.55	0.55	0.04	0.48	0.48	0.11	0.11		0.17	0.17	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	203	2800	834	79	2443	727	188	177		582	263	
v/s Ratio Prot	c0.17	0.38		0.02	c0.46		0.01	c0.02		c0.09	0.04	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	1.48	0.70	0.02	0.56	0.95	0.01	0.12	0.15		0.53	0.22	
Uniform Delay, d1	42.8	15.9	9.9	45.3	24.0	13.1	38.7	38.8		36.7	34.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	239.6	0.8	0.0	8.3	8.8	0.0	0.3	0.4		0.9	0.4	
Delay (s)	282.5	16.7	9.9	53.6	32.8	13.1	39.0	39.2		37.7	35.1	
Level of Service	F	B	A	D	C	B	D	D		D	D	
Approach Delay (s)		51.6			33.1			39.1			36.4	
Approach LOS		D			C			D			D	

Intersection Summary

HCM Average Control Delay	41.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6184		3343	1814	1519	1568	2821	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6184		3343	1814	1519	1568	2821	
Volume (vph)	70	1200	220	430	1460	70	170	40	480	60	30	160
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Adj. Flow (vph)	117	2000	367	717	2433	117	283	67	800	100	50	267
RTOR Reduction (vph)	0	0	169	0	4	0	0	0	0	0	228	0
Lane Group Flow (vph)	117	2000	198	717	2546	0	283	67	800	100	89	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	9.9	25.4	16.5	20.3	35.8		16.5	16.5	93.8	11.6	11.6	
Effective Green, g (s)	11.9	27.4	18.5	22.3	37.8		18.5	18.5	93.8	13.6	13.6	
Actuated g/C Ratio	0.13	0.29	0.20	0.24	0.40		0.20	0.20	1.00	0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	219	1446	304	795	2492		659	358	1519	227	409	
v/s Ratio Prot	0.07	c0.40	c0.13	c0.21	0.41		0.08	0.04		0.06	0.03	
v/s Ratio Perm									c0.53			
v/c Ratio	0.53	1.38	0.65	0.90	1.02		0.43	0.19	0.53	0.44	0.22	
Uniform Delay, d1	38.4	33.2	34.7	34.7	28.0		33.0	31.4	0.0	36.6	35.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	176.8	4.9	13.4	23.7		0.5	0.3	1.3	1.4	0.3	
Delay (s)	40.9	210.0	39.6	48.1	51.7		33.5	31.6	1.3	38.0	35.7	
Level of Service	D	F	D	D	D		C	C	A	D	D	
Approach Delay (s)		176.8			50.9			11.0			36.2	
Approach LOS		F			D			B			D	

Intersection Summary

HCM Average Control Delay	86.6	HCM Level of Service	F
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	93.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑↑	↱	↰↰	↑↑↑↱			↰↑	↱	↰	↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1500	3343	4947			1736	1500	1723	1603	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1500	3343	4947			1736	1500	1723	1603	
Volume (vph)	30	4050	80	260	3550	15	80	10	270	10	10	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	4500	89	289	3944	17	89	11	300	11	11	22
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	252	0	20	0
Lane Group Flow (vph)	33	4500	71	289	3961	0	0	100	48	11	13	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.3	53.6	53.6	9.1	60.4			11.5	11.5	8.5	8.5	
Effective Green, g (s)	4.3	55.6	55.6	11.1	62.4			13.5	13.5	10.5	10.5	
Actuated g/C Ratio	0.04	0.54	0.54	0.11	0.61			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	72	3378	812	361	3006			228	197	176	164	
v/s Ratio Prot	0.02	0.72		c0.09	c0.80			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.03			
v/c Ratio	0.46	1.33	0.09	0.80	1.32			0.44	0.24	0.06	0.08	
Uniform Delay, d1	48.1	23.5	11.3	44.7	20.2			41.1	40.0	41.7	41.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.6	151.6	0.0	12.0	145.3			1.3	0.6	0.1	0.2	
Delay (s)	52.6	175.1	11.4	56.7	165.5			42.5	40.7	41.8	41.9	
Level of Service	D	F	B	E	F			D	D	D	D	
Approach Delay (s)		171.1			158.1			41.1			41.9	
Approach LOS		F			F			D			D	

Intersection Summary

HCM Average Control Delay	159.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	102.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	5085	1560	3433	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3433	1419
Volume (vph)	1390	2690	1990	140	80	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1544	2989	2211	156	89	22
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1544	2989	2211	156	89	22
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	19.3	78.8	54.5	98.4	9.6	98.4
Effective Green, g (s)	21.3	80.8	56.5	98.4	11.6	98.4
Actuated g/C Ratio	0.22	0.82	0.57	1.00	0.12	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	743	4175	2920	1560	405	1419
v/s Ratio Prot	c0.45	0.59	c0.43		c0.03	
v/s Ratio Perm				0.10		0.02
v/c Ratio	2.08	0.72	0.76	0.10	0.22	0.02
Uniform Delay, d1	38.6	3.8	15.8	0.0	39.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	489.8	0.6	1.2	0.1	0.3	0.0
Delay (s)	528.3	4.4	16.9	0.1	39.6	0.0
Level of Service	F	A	B	A	D	A
Approach Delay (s)		182.9	15.8		31.7	
Approach LOS		F	B		C	

Intersection Summary

HCM Average Control Delay	124.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0			3.0
Lane Util. Factor	1.00	0.88	0.94			0.64
Frpb, ped/bikes	1.00	0.98	1.00			0.96
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			0.85
Flt Protected	0.95	1.00	0.95			1.00
Satd. Flow (prot)	1770	2725	4990			3903
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1770	2725	4990			3903
Volume (vph)	140	1100	620	0	0	2040
Peak-hour factor, PHF	0.60	0.60	0.85	0.85	0.85	0.85
Adj. Flow (vph)	233	1833	729	0	0	2400
RTOR Reduction (vph)	0	183	0	0	0	563
Lane Group Flow (vph)	233	1650	729	0	0	1837
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	25.0	25.0	35.0			35.0
Effective Green, g (s)	27.0	27.0	37.0			37.0
Actuated g/C Ratio	0.39	0.39	0.53			0.53
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	683	1051	2638			2063
v/s Ratio Prot	0.13		0.15			
v/s Ratio Perm		c0.61				c0.47
v/c Ratio	0.34	1.57	0.28			0.89
Uniform Delay, d1	15.2	21.5	9.1			14.7
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.3	261.1	0.1			5.3
Delay (s)	15.5	282.6	9.2			20.0
Level of Service	B	F	A			B
Approach Delay (s)	252.5		9.2		20.0	
Approach LOS	F		A		B	

Intersection Summary

HCM Average Control Delay	110.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0	3.0	3.0	3.0
Lane Util. Factor			0.91	1.00	0.97	0.95
Frpb, ped/bikes			1.00	0.98	1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00	1.00
Frt			1.00	0.85	1.00	1.00
Flt Protected			1.00	1.00	0.95	1.00
Satd. Flow (prot)			5085	1553	3433	3539
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			5085	1553	3433	3539
Volume (vph)	0	0	810	440	1120	1290
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	953	518	1318	1518
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	953	518	1318	1518
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			25.0	25.0	12.6	47.6
Effective Green, g (s)			27.0	27.0	14.6	47.6
Actuated g/C Ratio			0.57	0.57	0.31	1.00
Clearance Time (s)			5.0	5.0	5.0	5.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			2884	881	1053	3539
v/s Ratio Prot			0.19		c0.38	0.43
v/s Ratio Perm				c0.33		
v/c Ratio			0.33	0.59	1.25	0.43
Uniform Delay, d1			5.5	6.7	16.5	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.1	1.0	121.2	0.1
Delay (s)			5.6	7.7	137.7	0.1
Level of Service			A	A	F	A
Approach Delay (s)	0.0		6.3			64.0
Approach LOS	A		A			E

Intersection Summary

HCM Average Control Delay	44.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	47.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑↱		↰	↑↱		↰	↑↑↑↱		↰	↑↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.97		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5036		1770	3444		1770	4902		1770	4591	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5036		1770	3444		1770	4902		1770	4591	
Volume (vph)	750	1410	80	100	1020	180	150	1110	280	250	830	1010
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	833	1567	89	111	1133	200	167	1233	311	278	922	1122
RTOR Reduction (vph)	0	5	0	0	12	0	0	37	0	0	183	0
Lane Group Flow (vph)	833	1651	0	111	1321	0	167	1507	0	278	1861	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	29.0	48.5		11.5	31.0		6.0	30.0		10.0	34.0	
Effective Green, g (s)	31.0	50.5		13.5	33.0		8.0	32.0		12.0	36.0	
Actuated g/C Ratio	0.26	0.42		0.11	0.28		0.07	0.27		0.10	0.30	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	457	2119		199	947		118	1307		177	1377	
v/s Ratio Prot	c0.47	0.33		0.06	c0.38		0.09	0.31		c0.16	c0.41	
v/s Ratio Perm												
v/c Ratio	1.82	0.78		0.56	1.40		1.42	1.15		1.57	1.74dr	
Uniform Delay, d1	44.5	29.9		50.4	43.5		56.0	44.0		54.0	42.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	378.8	1.9		3.4	184.4		229.2	78.1		282.2	163.1	
Delay (s)	423.3	31.8		53.8	227.9		285.2	122.1		336.2	205.1	
Level of Service	F	C		D	F		F	F		F	F	
Approach Delay (s)		162.8			214.5			138.0			220.8	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	183.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	136.6%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.98		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4962		1770	5085			5026	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4962		1770	5085			5026	
Volume (vph)	0	0	0	180	1160	150	150	910	0	0	680	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	0	0	0	257	1657	214	214	1300	0	0	971	71
RTOR Reduction (vph)	0	0	0	0	19	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	0	2110	0	214	1300	0	0	1029	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					21.1		8.0	32.7			19.7	
Effective Green, g (s)					23.1		10.0	34.7			21.7	
Actuated g/C Ratio					0.36		0.16	0.54			0.34	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					1797		277	2766			1709	
v/s Ratio Prot							c0.12	0.26			c0.20	
v/s Ratio Perm					0.43							
v/c Ratio					8.86dl		0.77	0.47			0.60	
Uniform Delay, d1					20.3		25.8	8.9			17.5	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					84.5		12.5	0.1			0.6	
Delay (s)					104.9		38.4	9.0			18.1	
Level of Service					F		D	A			B	
Approach Delay (s)		0.0			104.9			13.2			18.1	
Approach LOS		A			F			B			B	

Intersection Summary

HCM Average Control Delay	55.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.4%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0					3.0		3.0	3.0	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.93		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5074	1548					4668		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5074	1548					4668		1770	5085	
Volume (vph)	90	2420	80	0	0	0	0	1100	1020	220	810	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	100	2689	89	0	0	0	0	1222	1133	244	900	0
RTOR Reduction (vph)	0	0	49	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	2789	40	0	0	0	0	2354	0	244	900	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm							Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		25.0	25.0					26.0		4.0	35.0	
Effective Green, g (s)		27.0	27.0					28.0		6.0	37.0	
Actuated g/C Ratio		0.39	0.39					0.40		0.09	0.53	
Clearance Time (s)		5.0	5.0					5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		1957	597					1867		152	2688	
v/s Ratio Prot								c0.50		c0.14	0.18	
v/s Ratio Perm		0.55	0.03									
v/c Ratio		1.43	0.07					1.80dr		1.61	0.33	
Uniform Delay, d1		21.5	13.6					21.0		32.0	9.5	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		194.3	0.0					121.8		300.8	0.1	
Delay (s)		215.8	13.6					142.8		332.8	9.5	
Level of Service		F	B					F		F	A	
Approach Delay (s)		209.6			0.0			142.8			78.5	
Approach LOS		F			A			F			E	

Intersection Summary

HCM Average Control Delay	161.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.4%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1726			1710	1472	1770	3505		1770	3438	
Flt Permitted		0.79			0.86	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1410			1507	1472	1770	3505		1770	3438	
Volume (vph)	120	10	35	15	10	50	20	460	25	30	490	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	11	39	17	11	56	22	511	28	33	544	100
RTOR Reduction (vph)	0	8	0	0	0	33	0	4	0	0	16	0
Lane Group Flow (vph)	0	175	0	0	28	23	22	535	0	33	628	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		23.7			23.7	23.7	1.2	22.6		2.6	24.0	
Effective Green, g (s)		25.7			25.7	25.7	3.2	24.6		4.6	26.0	
Actuated g/C Ratio		0.40			0.40	0.40	0.05	0.38		0.07	0.41	
Clearance Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		567			606	592	89	1349		127	1399	
v/s Ratio Prot							0.01	0.15		c0.02	c0.18	
v/s Ratio Perm		c0.12			0.02	0.02						
v/c Ratio		0.31			0.05	0.04	0.25	0.40		0.26	0.45	
Uniform Delay, d1		13.0			11.6	11.6	29.2	14.3		28.0	13.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			0.0	0.0	1.5	0.2		1.1	0.2	
Delay (s)		13.3			11.7	11.6	30.6	14.5		29.1	14.0	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		13.3			11.6			15.1			14.7	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1637	1659	1814	1519	3343	1503
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1637	1659	1814	1519	3343	1503
Volume (vph)	300	40	30	155	195	290
Peak-hour factor, PHF	0.45	0.45	0.45	0.92	0.45	0.92
Adj. Flow (vph)	667	89	67	168	433	315
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	368	388	67	168	433	315
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Split			Free		Free
Protected Phases	4	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	21.4	21.4	5.8	54.4	12.2	54.4
Effective Green, g (s)	23.4	23.4	7.8	54.4	14.2	54.4
Actuated g/C Ratio	0.43	0.43	0.14	1.00	0.26	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	704	714	260	1519	873	1503
v/s Ratio Prot	0.22	c0.23	0.04		c0.13	
v/s Ratio Perm				0.11		c0.21
v/c Ratio	0.52	0.54	0.26	0.11	0.50	0.21
Uniform Delay, d1	11.4	11.5	20.7	0.0	17.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.8	0.5	0.1	0.4	0.3
Delay (s)	12.1	12.4	21.3	0.1	17.5	0.3
Level of Service	B	B	C	A	B	A
Approach Delay (s)		12.2	6.2		10.3	
Approach LOS		B	A		B	

Intersection Summary

HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

378

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰	↑↑↑	↱	↰	✥		↰↰	↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	4951	1472	1723	4951	1472	1637	1545		3343	1523	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4951	1472	1723	4951	1472	1637	1545		3343	1523	
Volume (vph)	350	1226	10	25	1949	10	15	10	15	302	20	250
Peak-hour factor, PHF	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	385	1333	11	27	2118	11	16	11	16	328	22	272
RTOR Reduction (vph)	0	0	5	0	0	4	0	14	0	0	226	0
Lane Group Flow (vph)	385	1333	6	27	2118	7	16	13	0	328	68	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Actuated Green, G (s)	16.1	55.6	55.6	2.9	42.4	42.4	8.6	8.6		15.1	15.1	
Effective Green, g (s)	18.1	57.6	57.6	4.9	44.4	44.4	10.6	10.6		17.1	17.1	
Actuated g/C Ratio	0.18	0.56	0.56	0.05	0.43	0.43	0.10	0.10		0.17	0.17	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	305	2790	830	83	2151	639	170	160		559	255	
v/s Ratio Prot	c0.22	0.27		0.02	c0.43		c0.01	0.01		c0.10	0.04	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	1.26	0.48	0.01	0.33	0.98	0.01	0.09	0.08		0.59	0.26	
Uniform Delay, d1	42.0	13.3	9.8	47.1	28.6	16.4	41.5	41.4		39.3	37.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	141.7	0.1	0.0	2.3	15.8	0.0	0.2	0.2		1.6	0.6	
Delay (s)	183.7	13.4	9.8	49.3	44.4	16.4	41.7	41.6		40.9	37.6	
Level of Service	F	B	A	D	D	B	D	D		D	D	
Approach Delay (s)		51.3			44.3			41.6			39.3	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	46.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	102.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6230		3343	1814	1519	1568	2876	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6230		3343	1814	1519	1568	2876	
Volume (vph)	40	820	128	423	1910	15	105	49	245	60	38	120
Peak-hour factor, PHF	0.60	0.80	0.80	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	67	1025	160	705	2388	19	131	61	306	75	48	150
RTOR Reduction (vph)	0	0	135	0	1	0	0	0	0	0	126	0
Lane Group Flow (vph)	67	1025	25	705	2406	0	131	61	306	75	72	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	6.3	25.3	9.4	8.4	27.4		9.4	9.4	72.8	9.7	9.7	
Effective Green, g (s)	8.3	27.3	11.4	10.4	29.4		11.4	11.4	72.8	11.7	11.7	
Actuated g/C Ratio	0.11	0.38	0.16	0.14	0.40		0.16	0.16	1.00	0.16	0.16	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	196	1857	241	478	2516		523	284	1519	252	462	
v/s Ratio Prot	0.04	0.21	0.02	c0.21	c0.39		0.04	0.03		c0.05	0.03	
v/s Ratio Perm									c0.20			
v/c Ratio	0.34	0.55	0.10	1.47	0.96		0.25	0.21	0.20	0.30	0.16	
Uniform Delay, d1	29.7	17.9	26.3	31.2	21.1		26.9	26.8	0.0	26.9	26.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.4	0.2	224.8	9.7		0.3	0.4	0.3	0.7	0.2	
Delay (s)	30.8	18.3	26.5	256.0	30.8		27.2	27.2	0.3	27.6	26.5	
Level of Service	C	B	C	F	C		C	C	A	C	C	
Approach Delay (s)		20.0			81.8			10.7			26.8	
Approach LOS		C			F			B			C	

Intersection Summary

HCM Average Control Delay	56.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1500	3343	4948			1744	1500	1723	1655	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1500	3343	4948			1744	1500	1723	1655	
Volume (vph)	70	3125	100	240	4413	15	80	20	200	10	10	10
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	3289	105	253	4645	16	84	21	211	11	11	11
RTOR Reduction (vph)	0	0	30	0	0	0	0	0	183	0	10	0
Lane Group Flow (vph)	74	3289	75	253	4661	0	0	105	28	11	12	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.9	55.5	55.5	6.1	57.7			11.7	11.7	8.4	8.4	
Effective Green, g (s)	5.9	57.5	57.5	8.1	59.7			13.7	13.7	10.4	10.4	
Actuated g/C Ratio	0.06	0.57	0.57	0.08	0.59			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	100	3527	848	266	2905			235	202	176	169	
v/s Ratio Prot	0.04	0.53		c0.08	c0.94			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.02			
v/c Ratio	0.74	0.93	0.09	0.95	1.60			0.45	0.14	0.06	0.07	
Uniform Delay, d1	47.1	20.3	10.1	46.6	21.0			40.5	38.8	41.2	41.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	25.1	5.3	0.0	41.8	273.6			1.4	0.3	0.1	0.2	
Delay (s)	72.3	25.6	10.2	88.4	294.6			41.9	39.1	41.4	41.5	
Level of Service	E	C	B	F	F			D	D	D	D	
Approach Delay (s)		26.2			284.0			40.0			41.4	
Approach LOS		C			F			D			D	

Intersection Summary

HCM Average Control Delay	171.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	101.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3343	4951	4951	1519	3343	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3343	1382
Volume (vph)	1212	2193	2615	40	60	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1347	2437	2906	44	67	22
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1347	2437	2906	44	67	22
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	21.1	83.2	57.1	102.5	9.3	102.5
Effective Green, g (s)	23.1	85.2	59.1	102.5	11.3	102.5
Actuated g/C Ratio	0.23	0.83	0.58	1.00	0.11	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	753	4115	2855	1519	369	1382
v/s Ratio Prot	c0.40	0.49	c0.59		c0.02	
v/s Ratio Perm				0.03		0.02
v/c Ratio	1.79	0.59	1.02	0.03	0.18	0.02
Uniform Delay, d1	39.7	2.9	21.7	0.0	41.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	360.3	0.2	21.5	0.0	0.2	0.0
Delay (s)	400.0	3.1	43.2	0.0	41.6	0.0
Level of Service	F	A	D	A	D	A
Approach Delay (s)		144.4	42.5		31.4	
Approach LOS		F	D		C	

Intersection Summary

HCM Average Control Delay	98.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	102.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0			3.0
Lane Util. Factor	1.00	0.88	0.94			0.64
Frpb, ped/bikes	1.00	0.98	1.00			0.96
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			0.85
Flt Protected	0.95	1.00	0.95			1.00
Satd. Flow (prot)	1723	2655	4859			3805
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1723	2655	4859			3805
Volume (vph)	100	1563	372	0	0	1623
Peak-hour factor, PHF	0.65	0.65	0.94	0.94	0.94	0.94
Adj. Flow (vph)	154	2405	396	0	0	1727
RTOR Reduction (vph)	0	133	0	0	0	1257
Lane Group Flow (vph)	154	2272	396	0	0	470
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	39.1	39.1	15.6			15.6
Effective Green, g (s)	41.1	41.1	17.6			17.6
Actuated g/C Ratio	0.64	0.64	0.27			0.27
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1095	1687	1322			1035
v/s Ratio Prot	0.09		0.08			
v/s Ratio Perm		c0.86				c0.12
v/c Ratio	0.14	1.35	0.30			0.45
Uniform Delay, d1	4.7	11.8	18.7			19.6
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	160.1	0.1			0.3
Delay (s)	4.8	171.9	18.8			19.9
Level of Service	A	F	B			B
Approach Delay (s)	161.9		18.8		19.9	
Approach LOS	F		B		B	

Intersection Summary

HCM Average Control Delay	97.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	64.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)			3.0	3.0	3.0	3.0
Lane Util. Factor			0.91	1.00	0.97	0.95
Frpb, ped/bikes			1.00	0.98	1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00	1.00
Frt			1.00	0.85	1.00	1.00
Flt Protected			1.00	1.00	0.95	1.00
Satd. Flow (prot)			4951	1517	3343	3446
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			4951	1517	3343	3446
Volume (vph)	0	0	462	140	1030	873
Peak-hour factor, PHF	0.90	0.90	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	508	154	1132	959
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	508	154	1132	959
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			10.1	10.1	5.2	25.3
Effective Green, g (s)			12.1	12.1	7.2	25.3
Actuated g/C Ratio			0.48	0.48	0.28	1.00
Clearance Time (s)			5.0	5.0	5.0	5.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			2368	726	951	3446
v/s Ratio Prot			0.10		c0.34	c0.28
v/s Ratio Perm				0.10		
v/c Ratio			0.21	0.21	1.19	0.28
Uniform Delay, d1			3.8	3.8	9.0	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.0	0.1	96.2	0.0
Delay (s)			3.9	4.0	105.2	0.0
Level of Service			A	A	F	A
Approach Delay (s)	0.0		3.9			57.0
Approach LOS	A		A			E

Intersection Summary

HCM Average Control Delay	44.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	25.3	Sum of lost time (s)	3.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑↱		↰	↑↱		↰	↑↑↑↱		↰	↑↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.97		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1723	4926		1723	3381		1723	4758		1723	4288	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4926		1723	3381		1723	4758		1723	4288	
Volume (vph)	706	1046	30	70	1014	120	110	500	140	250	480	1514
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	743	1101	32	74	1067	126	116	526	147	263	505	1594
RTOR Reduction (vph)	0	2	0	0	7	0	0	42	0	0	332	0
Lane Group Flow (vph)	743	1131	0	74	1186	0	116	631	0	263	1767	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	31.0	52.8		8.2	30.0		5.0	22.0		18.0	35.0	
Effective Green, g (s)	33.0	54.8		10.2	32.0		7.0	24.0		20.0	37.0	
Actuated g/C Ratio	0.27	0.45		0.08	0.26		0.06	0.20		0.17	0.31	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	470	2231		145	894		100	944		285	1311	
v/s Ratio Prot	c0.43	0.23		0.04	c0.35		c0.07	0.13		0.15	c0.41	
v/s Ratio Perm												
v/c Ratio	1.58	0.51		0.51	1.33		1.16	0.67		0.92	2.01dr	
Uniform Delay, d1	44.0	23.5		53.0	44.5		57.0	44.8		49.7	42.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	271.4	0.2		3.0	154.6		139.4	1.8		33.5	161.7	
Delay (s)	315.4	23.7		56.0	199.1		196.4	46.6		83.3	203.7	
Level of Service	F	C		E	F		F	D		F	F	
Approach Delay (s)		139.2			190.7			68.7			190.3	
Approach LOS		F			F			E			F	

Intersection Summary

HCM Average Control Delay	159.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	121.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	138.0%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57794

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4831		1723	4951			4834	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4831		1723	4951			4834	
Volume (vph)	0	0	0	580	1770	140	113	340	0	0	320	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	644	1967	156	126	378	0	0	356	56
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	36	0
Lane Group Flow (vph)	0	0	0	0	2759	0	126	378	0	0	376	0
Confl. Peds. (#/hr)	15		15	16		16	15		15	15		15
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					24.7		6.1	21.6			10.7	
Effective Green, g (s)					26.7		7.9	23.6			12.7	
Actuated g/C Ratio					0.47		0.14	0.42			0.23	
Clearance Time (s)					5.0		4.8	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2291		242	2075			1090	
v/s Ratio Prot							c0.07	0.08			c0.08	
v/s Ratio Perm					0.57							
v/c Ratio					42.93dl		0.52	0.18			0.34	
Uniform Delay, d1					14.8		22.4	10.3			18.3	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					96.4		2.0	0.0			0.2	
Delay (s)					111.2		24.5	10.3			18.5	
Level of Service					F		C	B			B	
Approach Delay (s)		0.0			111.2			13.9			18.5	
Approach LOS		A			F			B			B	

Intersection Summary

HCM Average Control Delay	87.5	HCM Level of Service	F
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑	↱					↑↑↱		↰	↑↑↑	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		3.0	3.0					3.0		3.0	3.0	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.92		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		4942	1508					4516		1723	4951	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		4942	1508					4516		1723	4951	
Volume (vph)	40	1265	55	0	0	0	0	513	550	70	1170	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	44	1406	61	0	0	0	0	570	611	78	1300	0
RTOR Reduction (vph)	0	0	22	0	0	0	0	102	0	0	0	0
Lane Group Flow (vph)	0	1450	39	0	0	0	0	1079	0	78	1300	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm							Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		24.8	24.8					19.1		6.6	30.7	
Effective Green, g (s)		26.8	26.8					21.1		8.6	32.7	
Actuated g/C Ratio		0.41	0.41					0.32		0.13	0.50	
Clearance Time (s)		5.0	5.0					5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		2022	617					1455		226	2472	
v/s Ratio Prot								c0.24		0.05	c0.26	
v/s Ratio Perm		0.29	0.03									
v/c Ratio		0.72	0.06					1.01dr		0.35	0.53	
Uniform Delay, d1		16.2	11.7					19.8		25.9	11.1	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		1.2	0.0					2.1		0.9	0.2	
Delay (s)		17.4	11.8					21.9		26.8	11.3	
Level of Service		B	B					C		C	B	
Approach Delay (s)		17.2			0.0			21.9			12.2	
Approach LOS		B			A			C			B	

Intersection Summary

HCM Average Control Delay	16.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.96	
Flt Protected		0.97			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1681			1669	1432	1723	3413		1723	3292	
Flt Permitted		0.81			0.88	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1412			1512	1432	1723	3413		1723	3292	
Volume (vph)	60	10	25	10	10	35	15	279	15	30	379	120
Peak-hour factor, PHF	0.65	0.85	0.85	0.65	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	92	12	29	15	12	41	18	328	18	35	446	141
RTOR Reduction (vph)	0	8	0	0	0	25	0	4	0	0	32	0
Lane Group Flow (vph)	0	125	0	0	27	16	18	342	0	35	555	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		25.4			25.4	25.4	1.4	26.3		2.9	27.8	
Effective Green, g (s)		27.4			27.4	27.4	3.4	28.3		4.9	29.8	
Actuated g/C Ratio		0.39			0.39	0.39	0.05	0.41		0.07	0.43	
Clearance Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		556			595	564	84	1388		121	1410	
v/s Ratio Prot							0.01	0.10		c0.02	c0.17	
v/s Ratio Perm		c0.09			0.02	0.01						
v/c Ratio		0.22			0.05	0.03	0.21	0.25		0.29	0.39	
Uniform Delay, d1		14.0			13.0	12.9	31.8	13.6		30.7	13.7	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.0	0.0	1.3	0.1		1.3	0.2	
Delay (s)		14.2			13.1	13.0	33.1	13.7		32.0	13.9	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		14.2			13.0			14.7			14.9	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1637	1659	1814	1519	3343	1503
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1637	1659	1814	1519	3343	1503
Volume (vph)	150	20	15	134	169	200
Peak-hour factor, PHF	0.55	0.55	0.55	0.95	0.55	0.95
Adj. Flow (vph)	273	36	27	141	307	211
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	150	159	27	141	307	211
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Split			Free		Free
Protected Phases	4	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	12.5	12.5	4.9	57.0	24.6	57.0
Effective Green, g (s)	14.5	14.5	6.9	57.0	26.6	57.0
Actuated g/C Ratio	0.25	0.25	0.12	1.00	0.47	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	416	422	220	1519	1560	1503
v/s Ratio Prot	0.09	c0.10	0.01		c0.09	
v/s Ratio Perm				0.09		c0.14
v/c Ratio	0.36	0.38	0.12	0.09	0.20	0.14
Uniform Delay, d1	17.4	17.5	22.3	0.0	8.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.6	0.3	0.1	0.1	0.2
Delay (s)	18.0	18.1	22.6	0.1	9.0	0.2
Level of Service	B	B	C	A	A	A
Approach Delay (s)		18.0	3.7		5.4	
Approach LOS		B	A		A	

Intersection Summary

HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

57791

389

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5085	1514	1770	5085	1514	1681	1585		3433	1554	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5085	1514	1770	5085	1514	1681	1585		3433	1554	
Volume (vph)	270	1810	20	40	2137	10	20	20	30	283	10	250
Peak-hour factor, PHF	0.90	0.92	0.90	0.90	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	300	1967	22	44	2323	11	22	22	33	314	11	278
RTOR Reduction (vph)	0	0	8	0	0	4	0	29	0	0	231	0
Lane Group Flow (vph)	300	1967	14	44	2323	7	22	26	0	314	58	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Actuated Green, G (s)	9.1	51.3	51.3	2.3	44.5	44.5	8.8	8.8		14.5	14.5	
Effective Green, g (s)	11.1	53.3	53.3	4.3	46.5	46.5	10.8	10.8		16.5	16.5	
Actuated g/C Ratio	0.11	0.55	0.55	0.04	0.48	0.48	0.11	0.11		0.17	0.17	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	203	2797	833	79	2440	727	187	177		585	265	
v/s Ratio Prot	c0.17	0.39		0.02	c0.46		0.01	c0.02		c0.09	0.04	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	1.48	0.70	0.02	0.56	0.95	0.01	0.12	0.15		0.54	0.22	
Uniform Delay, d1	42.9	16.0	9.9	45.4	24.1	13.2	38.8	38.9		36.7	34.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	239.6	0.8	0.0	8.3	9.4	0.0	0.3	0.4		1.0	0.4	
Delay (s)	282.5	16.8	9.9	53.6	33.5	13.2	39.0	39.3		37.7	35.1	
Level of Service	F	B	A	D	C	B	D	D		D	D	
Approach Delay (s)		51.6			33.8			39.2			36.4	
Approach LOS		D			C			D			D	

Intersection Summary

HCM Average Control Delay	41.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	96.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6184		3343	1814	1519	1568	2852	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6184		3343	1814	1519	1568	2852	
Volume (vph)	70	1200	233	470	1460	70	181	47	506	60	43	160
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Adj. Flow (vph)	117	2000	388	783	2433	117	302	78	843	100	72	267
RTOR Reduction (vph)	0	0	178	0	4	0	0	0	0	0	229	0
Lane Group Flow (vph)	117	2000	210	783	2546	0	302	78	843	100	110	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	9.9	25.4	17.1	20.3	35.8		17.1	17.1	94.4	11.6	11.6	
Effective Green, g (s)	11.9	27.4	19.1	22.3	37.8		19.1	19.1	94.4	13.6	13.6	
Actuated g/C Ratio	0.13	0.29	0.20	0.24	0.40		0.20	0.20	1.00	0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	217	1437	312	790	2476		676	367	1519	226	411	
v/s Ratio Prot	0.07	c0.40	c0.14	c0.23	0.41		0.09	0.04		0.06	0.04	
v/s Ratio Perm									c0.56			
v/c Ratio	0.54	1.39	0.67	0.99	1.03		0.45	0.21	0.55	0.44	0.27	
Uniform Delay, d1	38.7	33.5	34.8	36.0	28.3		33.0	31.4	0.0	36.9	36.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	180.6	5.6	29.7	25.7		0.5	0.3	1.5	1.4	0.4	
Delay (s)	41.2	214.1	40.4	65.6	54.0		33.5	31.7	1.5	38.3	36.3	
Level of Service	D	F	D	E	D		C	C	A	D	D	
Approach Delay (s)		179.2			56.8			11.3			36.8	
Approach LOS		F			E			B			D	

Intersection Summary

HCM Average Control Delay	89.1	HCM Level of Service	F
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1500	3343	4947			1736	1500	1723	1603	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1500	3343	4947			1736	1500	1723	1603	
Volume (vph)	30	4076	80	260	3590	15	80	10	270	10	10	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	4529	89	289	3989	17	89	11	300	11	11	22
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	252	0	20	0
Lane Group Flow (vph)	33	4529	71	289	4006	0	0	100	48	11	13	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.3	53.6	53.6	9.1	60.4			11.5	11.5	8.5	8.5	
Effective Green, g (s)	4.3	55.6	55.6	11.1	62.4			13.5	13.5	10.5	10.5	
Actuated g/C Ratio	0.04	0.54	0.54	0.11	0.61			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	72	3378	812	361	3006			228	197	176	164	
v/s Ratio Prot	0.02	0.73		c0.09	c0.81			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.03			
v/c Ratio	0.46	1.34	0.09	0.80	1.33			0.44	0.24	0.06	0.08	
Uniform Delay, d1	48.1	23.5	11.3	44.7	20.2			41.1	40.0	41.7	41.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.6	155.4	0.0	12.0	152.0			1.3	0.6	0.1	0.2	
Delay (s)	52.6	178.9	11.4	56.7	172.2			42.5	40.7	41.8	41.9	
Level of Service	D	F	B	E	F			D	D	D	D	
Approach Delay (s)		174.8			164.4			41.1			41.9	
Approach LOS		F			F			D			D	

Intersection Summary

HCM Average Control Delay	163.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	102.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	5085	1560	3433	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3433	1419
Volume (vph)	1399	2707	2017	140	80	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1554	3008	2241	156	89	22
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1554	3008	2241	156	89	22
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	19.3	79.6	55.3	99.2	9.6	99.2
Effective Green, g (s)	21.3	81.6	57.3	99.2	11.6	99.2
Actuated g/C Ratio	0.21	0.82	0.58	1.00	0.12	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	737	4183	2937	1560	401	1419
v/s Ratio Prot	c0.45	0.59	c0.44		c0.03	
v/s Ratio Perm				0.10		0.02
v/c Ratio	2.11	0.72	0.76	0.10	0.22	0.02
Uniform Delay, d1	39.0	3.8	15.8	0.0	39.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	503.4	0.6	1.2	0.1	0.3	0.0
Delay (s)	542.4	4.4	17.0	0.1	40.0	0.0
Level of Service	F	A	B	A	D	A
Approach Delay (s)		187.7	15.9		32.1	
Approach LOS		F	B		C	

Intersection Summary

HCM Average Control Delay	127.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	99.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0			3.0
Lane Util. Factor	1.00	0.88	0.94			0.64
Frpb, ped/bikes	1.00	0.98	1.00			0.96
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			0.85
Flt Protected	0.95	1.00	0.95			1.00
Satd. Flow (prot)	1770	2725	4990			3903
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1770	2725	4990			3903
Volume (vph)	140	1123	624	0	0	2057
Peak-hour factor, PHF	0.60	0.60	0.85	0.85	0.85	0.85
Adj. Flow (vph)	233	1872	734	0	0	2420
RTOR Reduction (vph)	0	167	0	0	0	598
Lane Group Flow (vph)	233	1705	734	0	0	1822
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	26.0	26.0	34.0			34.0
Effective Green, g (s)	28.0	28.0	36.0			36.0
Actuated g/C Ratio	0.40	0.40	0.51			0.51
Clearance Time (s)	5.0	5.0	5.0			5.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	708	1090	2566			2007
v/s Ratio Prot	0.13		0.15			
v/s Ratio Perm		c0.63				c0.47
v/c Ratio	0.33	1.56	0.29			0.91
Uniform Delay, d1	14.5	21.0	9.7			15.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.3	258.5	0.1			6.4
Delay (s)	14.8	279.5	9.7			21.9
Level of Service	B	F	A			C
Approach Delay (s)	250.2		9.7		21.9	
Approach LOS	F		A		C	

Intersection Summary

HCM Average Control Delay	111.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰	↑↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			3.0	3.0	3.0	3.0
Lane Util. Factor			0.91	1.00	0.97	0.95
Frpb, ped/bikes			1.00	0.98	1.00	1.00
Flpb, ped/bikes			1.00	1.00	1.00	1.00
Frt			1.00	0.85	1.00	1.00
Flt Protected			1.00	1.00	0.95	1.00
Satd. Flow (prot)			5085	1553	3433	3539
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			5085	1553	3433	3539
Volume (vph)	0	0	814	440	1135	1292
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	958	518	1335	1520
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	958	518	1335	1520
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			25.0	25.0	12.6	47.6
Effective Green, g (s)			27.0	27.0	14.6	47.6
Actuated g/C Ratio			0.57	0.57	0.31	1.00
Clearance Time (s)			5.0	5.0	5.0	5.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			2884	881	1053	3539
v/s Ratio Prot			0.19		c0.39	0.43
v/s Ratio Perm				c0.33		
v/c Ratio			0.33	0.59	1.27	0.43
Uniform Delay, d1			5.5	6.7	16.5	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.1	1.0	128.1	0.1
Delay (s)			5.6	7.7	144.6	0.1
Level of Service			A	A	F	A
Approach Delay (s)	0.0		6.3			67.7
Approach LOS	A		A			E

Intersection Summary

HCM Average Control Delay	46.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	47.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.97		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5036		1770	3445		1770	4902		1770	4589	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5036		1770	3445		1770	4902		1770	4589	
Volume (vph)	755	1414	80	100	1026	180	150	1110	280	250	830	1017
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	839	1571	89	111	1140	200	167	1233	311	278	922	1130
RTOR Reduction (vph)	0	5	0	0	12	0	0	37	0	0	184	0
Lane Group Flow (vph)	839	1655	0	111	1328	0	167	1507	0	278	1868	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	28.0	51.1		8.9	32.0		6.0	30.0		10.0	34.0	
Effective Green, g (s)	30.0	53.1		10.9	34.0		8.0	32.0		12.0	36.0	
Actuated g/C Ratio	0.25	0.44		0.09	0.28		0.07	0.27		0.10	0.30	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	443	2228		161	976		118	1307		177	1377	
v/s Ratio Prot	c0.47	0.33		0.06	c0.39		0.09	0.31		c0.16	c0.41	
v/s Ratio Perm												
v/c Ratio	1.89	0.74		0.69	1.36		1.42	1.15		1.57	1.75dr	
Uniform Delay, d1	45.0	27.8		52.9	43.0		56.0	44.0		54.0	42.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	410.7	1.4		11.6	168.9		229.2	78.1		282.2	165.3	
Delay (s)	455.7	29.2		64.5	211.9		285.2	122.1		336.2	207.3	
Level of Service	F	C		E	F		F	F		F	F	
Approach Delay (s)		172.4			200.6			138.0			222.6	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	184.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	137.2%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4954		1770	5085			5021	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4954		1770	5085			5021	
Volume (vph)	0	0	0	180	1176	150	157	910	0	0	680	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.68
Adj. Flow (vph)	0	0	0	257	1680	214	224	1300	0	0	971	74
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	0	2133	0	224	1300	0	0	1036	0
Confl. Peds. (#/hr)	20		20	20		20	20		20	20		20
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					20.1		6.0	30.1			19.1	
Effective Green, g (s)					22.1		8.0	32.1			21.1	
Actuated g/C Ratio					0.37		0.13	0.53			0.35	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					1819		235	2711			1760	
v/s Ratio Prot							c0.13	0.26			c0.21	
v/s Ratio Perm					0.43							
v/c Ratio					9.18dl		0.95	0.48			0.59	
Uniform Delay, d1					19.0		25.9	8.8			16.0	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					84.0		45.4	0.1			0.5	
Delay (s)					103.0		71.4	8.9			16.5	
Level of Service					F		E	A			B	
Approach Delay (s)		0.0			103.0			18.1			16.5	
Approach LOS		A			F			B			B	

Intersection Summary

HCM Average Control Delay	56.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0					3.0		3.0	3.0	
Lane Util. Factor		0.91	1.00					0.91		1.00	0.91	
Frpb, ped/bikes		1.00	0.98					0.99		1.00	1.00	
Flpb, ped/bikes		1.00	1.00					1.00		1.00	1.00	
Frt		1.00	0.85					0.93		1.00	1.00	
Flt Protected		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)		5074	1548					4669		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5074	1548					4669		1770	5085	
Volume (vph)	90	2431	84	0	0	0	0	1107	1020	220	810	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.88	0.90
Adj. Flow (vph)	100	2701	93	0	0	0	0	1230	1133	242	920	0
RTOR Reduction (vph)	0	0	51	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	2801	42	0	0	0	0	2362	0	242	920	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm							Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases			4									
Actuated Green, G (s)		25.0	25.0					26.0		4.0	35.0	
Effective Green, g (s)		27.0	27.0					28.0		6.0	37.0	
Actuated g/C Ratio		0.39	0.39					0.40		0.09	0.53	
Clearance Time (s)		5.0	5.0					5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)		1957	597					1868		152	2688	
v/s Ratio Prot								c0.51		c0.14	0.18	
v/s Ratio Perm		0.55	0.03									
v/c Ratio		1.43	0.07					1.80dr		1.59	0.34	
Uniform Delay, d1		21.5	13.6					21.0		32.0	9.5	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		197.1	0.1					123.4		295.2	0.1	
Delay (s)		218.6	13.6					144.4		327.2	9.6	
Level of Service		F	B					F		F	A	
Approach Delay (s)		212.0			0.0			144.4			75.7	
Approach LOS		F			A			F			E	

Intersection Summary

HCM Average Control Delay	162.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Util. Factor		1.00			0.95	0.95	1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1726			1710	1472	1770	3508		1770	3448	
Flt Permitted		0.79			0.85	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1409			1506	1472	1770	3508		1770	3448	
Volume (vph)	120	10	35	15	10	50	20	504	25	30	556	90
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	133	11	39	17	11	56	22	560	28	33	618	100
RTOR Reduction (vph)	0	8	0	0	0	34	0	4	0	0	14	0
Lane Group Flow (vph)	0	175	0	0	28	22	22	584	0	33	704	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		23.6			23.6	23.6	1.3	23.7		2.6	25.0	
Effective Green, g (s)		25.6			25.6	25.6	3.3	25.7		4.6	27.0	
Actuated g/C Ratio		0.39			0.39	0.39	0.05	0.40		0.07	0.42	
Clearance Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		556			594	581	90	1389		125	1434	
v/s Ratio Prot							0.01	0.17		c0.02	c0.20	
v/s Ratio Perm		c0.12			0.02	0.02						
v/c Ratio		0.31			0.05	0.04	0.24	0.42		0.26	0.49	
Uniform Delay, d1		13.6			12.1	12.1	29.6	14.2		28.5	13.9	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			0.0	0.0	1.4	0.2		1.1	0.3	
Delay (s)		13.9			12.2	12.1	31.0	14.4		29.7	14.2	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		13.9			12.1			15.0			14.9	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1637	1659	1814	1519	3343	1503
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1637	1659	1814	1519	3343	1503
Volume (vph)	300	40	30	199	261	290
Peak-hour factor, PHF	0.45	0.45	0.45	0.92	0.45	0.92
Adj. Flow (vph)	667	89	67	216	580	315
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	368	388	67	216	580	315
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Split			Free		Free
Protected Phases	4	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	21.5	21.5	5.8	57.5	15.2	57.5
Effective Green, g (s)	23.5	23.5	7.8	57.5	17.2	57.5
Actuated g/C Ratio	0.41	0.41	0.14	1.00	0.30	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	669	678	246	1519	1000	1503
v/s Ratio Prot	0.22	c0.23	0.04		c0.17	
v/s Ratio Perm				0.14		c0.21
v/c Ratio	0.55	0.57	0.27	0.14	0.58	0.21
Uniform Delay, d1	13.0	13.1	22.3	0.0	17.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	1.2	0.6	0.2	0.8	0.3
Delay (s)	13.9	14.3	22.9	0.2	17.9	0.3
Level of Service	B	B	C	A	B	A
Approach Delay (s)		14.1	5.6		11.7	
Approach LOS		B	A		B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

57791

400

APPENDIX C

CITY OF SAN DIEGO ROADWAY CLASSIFICATION TABLE

57791

TABLE 2 (MODIFIED)
CITY OF SAN DIEGO ROADWAY CLASSIFICATIONS, LEVELS OF SERVICE (LOS) AND AVERAGE DAILY TRAFFIC (ADT)

STREET CLASSIFICATION	LANES	CROSS SECTIONS	LEVEL OF SERVICE				
			A	B	C	D	E
Freeway	8 lanes		60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes		45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes		30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	102/122	30,000	42,000	60,000	70,000	80,000
Prime Arterial	11 lanes		32,000	44,750	63,750	74,500	85,000
Prime Arterial	10 lanes		30,000	42,000	60,000	70,000	80,000
Prime Arterial	9 lanes		28,750	40,250	57,500	66,250	75,000
Prime Arterial	8 lanes		27,500	38,500	55,000	62,500	70,000
Prime Arterial	7 lanes		26,250	36,750	52,500	58,750	65,000
Prime Arterial	6 lanes	102/122	25,000	35,000	50,000	55,000	60,000
Prime Arterial	5 lanes		23,000	32,000	45,000	50,000	55,000
Major Arterial	6 lanes	102/122	20,000	28,000	40,000	45,000	50,000
Prime Arterial Major Arterial	4 lanes 5 lanes		17,500	24,500	35,000	40,000	45,000
Major Arterial	4 lanes	78/98	15,000	21,000	30,000	35,000	40,000
Collector	5 lanes		12,500	17,500	25,000	30,000	35,000
Collector (continuous left-turn lane)	4 lanes	72/92	10,000	14,000	20,000	25,000	30,000
Major Arterial (one-way)	3 lanes		8,500	11,750	15,000	20,000	25,000
Collector (no Center lane) (continuous left-turn lane)	4 lanes 3 lanes 2 lanes	64/84 50/70	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	40/60	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	50/70	2,500	3,500	5,000	6,500	8,000
Collector (multi-family)	2 lanes	40/60	2,500	3,500	5,000	6,500	8,000
Sub-collector (single-family)	2 lanes	36/56	—	—	2,200	—	—

Notes:

1. XXX/XXX = Curb to curb width (feet)/right of way (feet) based on the City of San Diego Street Design Manual.
2. XX,XXX = Approximate recommended ADT based on City of San Diego Street Design Manual
3. The volumes and the average daily level of service listed above are only intended as a general planning guideline.
4. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.
5. Shaded areas indicate LLG-derived ADT capacities.

57791

57791

APPENDIX D

ARTERIAL CALCULATION SHEETS

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	IV	25	77.3	17.7	95.0	0.54	20.4	B
Total	IV		77.3	17.7	95.0	0.54	20.4	B

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rental Car Access Rd	IV	25	58.0	28.0	86.0	0.38	15.9	C
Total	IV		58.0	28.0	86.0	0.38	15.9	C

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	IV	25	79.7	25.7	105.4	0.52	17.8	C
Total	IV		79.7	25.7	105.4	0.52	17.8	C

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rental Car Access Rd	IV	25	60.5	16.6	77.1	0.40	18.5	C
Total	IV		60.5	16.6	77.1	0.40	18.5	C

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	58.0	3.0	61.0	0.38	22.4	B
Total	IV		58.0	3.0	61.0	0.38	22.4	B

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	69.0	17.6	86.6	0.45	18.8	C
Total	IV		69.0	17.6	86.6	0.45	18.8	C

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	60.5	4.3	64.8	0.40	22.0	B
Total	IV		60.5	4.3	64.8	0.40	22.0	B

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	69.0	14.6	83.6	0.45	19.4	B
Total	IV		69.0	14.6	83.6	0.45	19.4	B

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	IV	25	77.3	18.4	95.7	0.54	20.2	B
Total	IV		77.3	18.4	95.7	0.54	20.2	B

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rental Car Access Rd	IV	25	58.0	38.2	96.2	0.38	14.2	C
Total	IV		58.0	38.2	96.2	0.38	14.2	C

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	IV	25	79.7	39.1	118.8	0.52	15.8	C
Total	IV		79.7	39.1	118.8	0.52	15.8	C

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rental Car Access Rd	IV	25	60.5	22.8	83.3	0.40	17.1	C
Total	IV		60.5	22.8	83.3	0.40	17.1	C

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	58.0	3.0	61.0	0.38	22.4	B
Total	IV		58.0	3.0	61.0	0.38	22.4	B

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	69.0	20.2	89.2	0.45	18.2	C
Total	IV		69.0	20.2	89.2	0.45	18.2	C

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	60.5	4.3	64.8	0.40	22.0	B
Total	IV		60.5	4.3	64.8	0.40	22.0	B

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	69.0	15.0	84.0	0.45	19.3	B
Total	IV		69.0	15.0	84.0	0.45	19.3	B

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	IV	25	77.3	18.7	96.0	0.54	20.1	B
Total	IV		77.3	18.7	96.0	0.54	20.1	B

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rental Car Access Rd	IV	25	58.0	40.8	98.8	0.38	13.8	C
Total	IV		58.0	40.8	98.8	0.38	13.8	C

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	IV	25	79.7	42.0	121.7	0.52	15.4	C
Total	IV		79.7	42.0	121.7	0.52	15.4	C

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Rental Car Access Rd	IV	25	60.5	23.7	84.2	0.40	16.9	C
Total	IV		60.5	23.7	84.2	0.40	16.9	C

57791

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	58.0	3.0	61.0	0.38	22.4	B
Total	IV		58.0	3.0	61.0	0.38	22.4	B

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	69.0	20.3	89.3	0.45	18.2	C
Total	IV		69.0	20.3	89.3	0.45	18.2	C

57794

Arterial Level of Service: EB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	60.5	4.3	64.8	0.40	22.0	B
Total	IV		60.5	4.3	64.8	0.40	22.0	B

Arterial Level of Service: WB N. Harbor Dr

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	IV	25	69.0	15.0	84.0	0.45	19.3	B
Total	IV		69.0	15.0	84.0	0.45	19.3	B

57791

416

APPENDIX E

CUMULATIVE PROJECTS
GROWTH FACTOR CALCULATION SHEETS

57791

Near-Term Cumulative Projects Calculation Sheet
SUNROAD Harbor Island Project—ADT Comparison
September 30, 2008

Segment	Existing 2005–2006	Year 2030	% difference	
Harbor Drive				
West of Terminal 2	27,730	64,280	79%	
Terminal 2 to Harbor Island Dr	29,750	39,540	28%	
Harbor Island Dr to Rental Car Road	81,000	112,020	32%	
Rental Car Road to Laurel Street	82,790	161,620	65%	
Laurel St to Hawthorn St	54,260	71,910	28%	
Hawthorn St to Grape St	37,830	38,970	3%	
South of Grape St	17,690	33,530	62%	
		Average:	***42%***	
	Year 2008 - Year 2030:	22 years	42%	*1.9% /year*
	Cumulative (Year 2008-2012):	4 years	**7.7%**	
Pacific Highway				
North of Laurel St	18,150	63,660	111%	
Laurel St to Hawthorn St	9,760	23,600	83%	
Hawthorn St to Grape St	18,460	29,330	45%	
South of Grape St	16,940	41,950	85%	
		Average:	***81%***	
	Year 2008 - Year 2030:	22 years	81%	*3.7% /year*
	Cumulative (Year 2008-2012):	4 years	**14.8%**	
Laurel St				
N. Harbor Dr. to Pacific Highway	36,390	76,210	71%	
Pacific Highway to Kettner Blvd.	27,620	41,550	40%	
		Average:	***56%***	
	Year 2008 - Year 2030:	22 years	56%	*2.5% /year*
	Cumulative (Year 2008-2012):	4 years	**10.1%**	
Hawthorn St.				
N. Harbor Dr. to Pacific Highway	25,770	30,840	18%	
Pacific Highway to Kettner Blvd.	23,480	28,120	18%	
		Average:	***18%***	
	Year 2008 - Year 2030:	22 years	18%	*0.8% /year*
	Cumulative (Year 2008-2012):	4 years	**3.3%**	
Grape St.				
N. Harbor Dr. to Pacific Highway	23,130	32,340	33%	
Pacific Highway to Kettner Blvd.	20,330	40,020	65%	
		Average:	***49%***	
	Year 2008 - Year 2030:	22 years	49%	*2.2% /year*
	Cumulative (Year 2008-2012):	4 years	**9.0%**	

57791

Segment	Existing 2005–2006	Year 2030	% difference	
Harbor Island Drive (connection)				
Harbor Dr to Harbor Island Dr	16,330	19,230	16%	
		Average:	***16%***	
Year 2008 - Year 2030:		22 years	16%	*0.7% /year*
Cumulative (Year 2008-2012):		4 years	$\boxed{\textbf{3.0\%}}$	
Harbor Island Drive				
West of Harbor Island Dr (connector)	8,610	11,000	24%	
East of Harbor Island Dr (connector)	6,940	7,230	4%	
		Average:	***14%***	
Year 2008 - Year 2030:		22 years	14%	*0.6% /year*
Cumulative (Year 2008-2012):		4 years	$\boxed{\textbf{2.6\%}}$	

57791

APPENDIX F

PARKING STUDY
FOR THE
SUNROAD HARBOR ISLAND PROJECT

57791

LINSCOTT
LAW &
GREENSPAN
engineers

PARKING STUDY

HARBOR ISLAND

San Diego, California
July 2, 2010

Prepared for:

SUNROAD Enterprises
4445 Eastgate Mall, Suite 400
San Diego, California 92121

LLG Ref. 3-04-1437-3

57791

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421

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

57791

PARKING STUDY

HARBOR ISLAND

San Diego, California
July 2, 2010

1.0 INTRODUCTION

A parking assessment was undertaken for the *Harbor Island* project to determine the existing site-generated parking demand and the future parking supply required for the proposed project.

The existing site is located on Harbor Island in the City of San Diego and contains a 600-slip marina with a clubhouse. The project area map is shown in ***Figure 1–1***. Two parking lots serve the site.

The proposed project plans to build a limited service hotel of approximately 175 rooms. The project will be located at the east end of the Sunroad leasehold and will replace an existing locker building and some parking associated with the marina. The project will be approximately 117,000 square feet consisting of hotel rooms, limited meeting space (approximately 5,000 square feet), and common areas. No changes are proposed for the 600-slip marina and clubhouse. Direct parking access to the marina and the proposed hotel will be provided. The development is slated to occur in one phase and is assessed for both weekday and weekend scenarios.

2.0 DATA COLLECTION

Linscott, Law & Greenspan, Engineers (LLG) conducted parking occupancy surveys at the existing site on Tuesday, August 30, 2005, Saturday, August 27, 2005 and Sunday, August 28, 2005. The counts were conducted in summer to account for increased summer activity. Data was collected from two lots that serve the site between the hours of 7:00AM to 7:00PM to best capture peak marina activity during the weekday and weekend.

Although the counts were conducted in Summer 2005, there have been no land use intensity changes since that time. As such, the counts continue to provide a sound basis from which to determine the proposed project parking requirement.

For the purposes of this report the lots will be referred to as Lots A and B as shown in ***Figure 1–2***. Lots A and B are gate controlled and serve the marina and clubhouse. ***Table 2–1*** summarizes the data collection.

57791

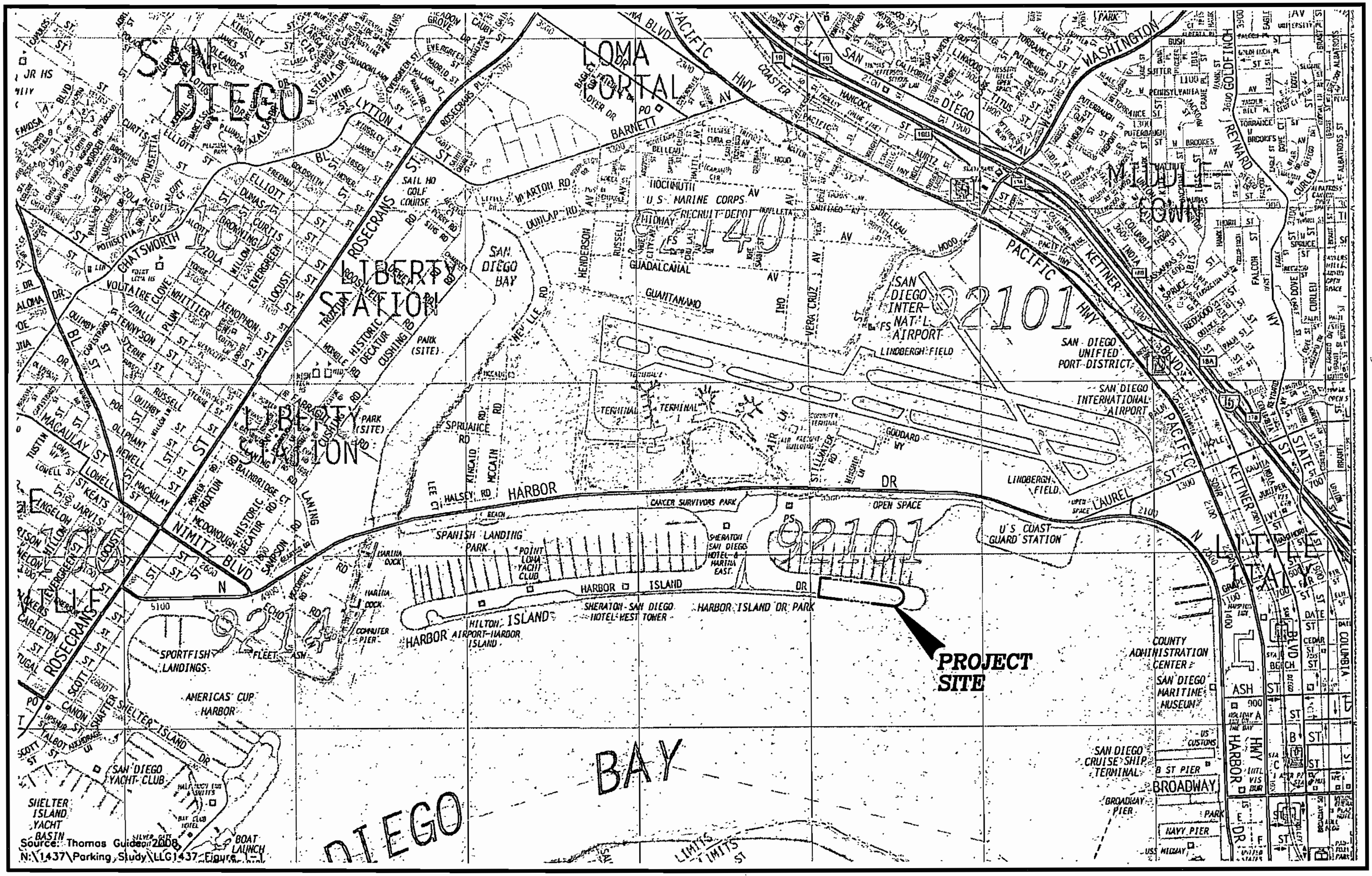

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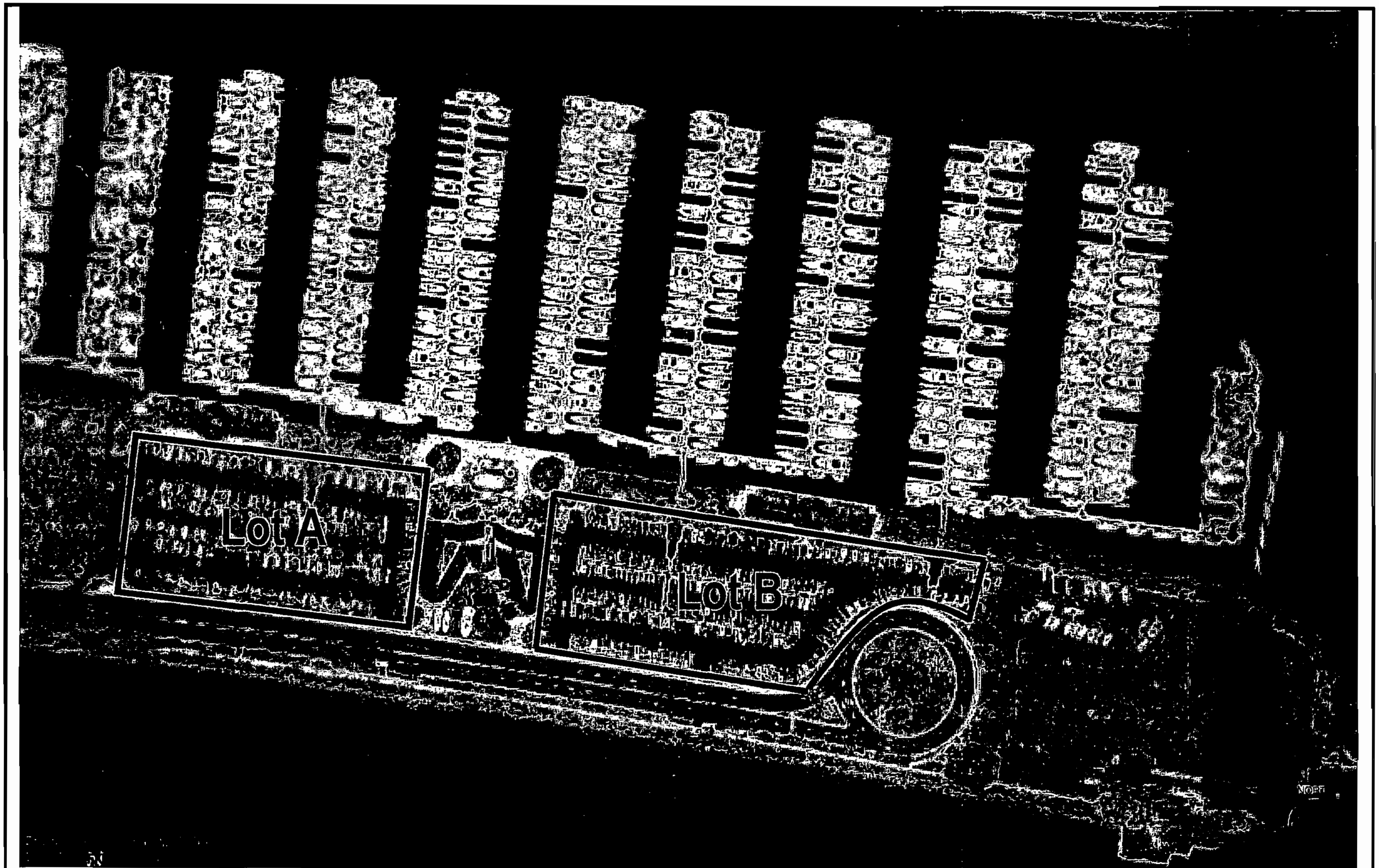
Figure 1-1

Project Area Map

Harbor Island Parking Study

57791

424



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425

57791

Figure 1-2

Existing Parking Configuration

TABLE 2–1
PARKING OCCUPANCY SURVEY—SUNROAD RESORT MARINA

Time	Marina Parking					
	Parking Lot A (Supply 277)		Parking Lot B (Supply 291)		Total Supply (568)	
	Demand	Surplus/ Deficiency	Demand	Surplus/ Deficiency	Demand	Surplus/ Deficiency
Saturday, August 27, 2005 (Weekend)						
7:00 AM	92	185	73	218	165	403
8:00 AM	94	183	69	222	163	405
9:00 AM	87	190	84	207	171	397
10:00 AM	105	172	83	208	188	380
11:00 AM	113	164	99	192	212	356
12:00 PM	126	151	111	180	237	331
1:00 PM	104	173	104	187	208	360
2:00 PM	111	166	108	183	219	349
3:00 PM	131	146	122	169	253	315
4:00 PM	137	140	129	162	266	302
5:00 PM	125	152	124	167	249	319
6:00 PM	109	168	93	198	202	366
7:00 PM	108	169	99	192	207	361
Sunday, August 28, 2005 (Weekend)						
7:00 AM	106	171	91	200	197	371
8:00 AM	102	175	96	195	198	370
9:00 AM	97	180	89	202	186	382
10:00 AM	92	185	86	205	178	390
11:00 AM	109	168	95	196	204	364
12:00 PM	110	167	94	197	204	364
1:00 PM	122	155	96	195	218	350
2:00 PM	139	138	91	200	230	338
3:00 PM	130	147	93	198	223	345
4:00 PM	117	160	94	197	211	357
5:00 PM	110	167	93	198	203	365
6:00 PM	99	178	92	199	191	377
7:00 PM	97	180	91	200	188	380

57791

TABLE 2–1 *(continued)*
PARKING OCCUPANCY SURVEY—SUNROAD RESORT MARINA

Time	Marina Parking					
	Parking Lot A (Supply 277)		Parking Lot B (Supply 291)		Total Supply (568)	
	Demand	Surplus/ Deficiency	Demand	Surplus/ Deficiency	Demand	Surplus/ Deficiency
Tuesday, August 30, 2005 (Weekday)						
7:00 AM	61	216	57	234	118	450
8:00 AM	55	222	60	231	115	453
9:00 AM	72	205	77	214	149	419
10:00 AM	68	209	77	214	145	423
11:00 AM	87	190	82	209	169	399
12:00 PM	98	179	75	216	173	395
1:00 PM	86	191	65	226	151	417
2:00 PM	76	201	77	214	153	415
3:00 PM	71	206	91	200	162	406
4:00 PM	73	204	79	212	152	416
5:00 PM	59	218	71	220	130	438
6:00 PM	132	145	70	221	202	366
7:00 PM	190	87	65	226	255	313

General Notes:
1. Peak parking demand for the marina is shaded.

3.0 EXISTING MARINA PARKING ASSESSMENT

The marina currently provides 600 slips with a total parking supply (*Lot A + Lot B*) of 568 spaces. The results, presented in *Table 2–1*, indicate the peak marina parking demand occurred on Saturday at 4:00PM with the maximum number of occupied parking spaces observed at 266. This represents an approximately 47% parking occupancy or a reserve capacity of 302 spaces. At the time of this data collection, only 87% of the slips or 522 slips were occupied. Therefore, the parking demand equates to a parking rate of approximately 0.51 spaces per slip (266 spaces ÷ 522 occupied slips), or inversely stated, 1 space per 1.96 slips.

LLG researched other sources for relevant parking data to further validate the data collected. Count data for Harbor Island from the *San Diego Unified Port District Tidelands Parking Guidelines* report was obtained. Excerpts of the data are attached in ***Appendix F–1***. Parking occupancy counts were conducted at four marinas on Harbor Island for this study. The exact dates of the counts were Friday, July 19, 1996 and Saturday, July 20, 1996. These dates were selected based on patterns of peak visitation to San Diego while avoiding the influence of any major event. Despite the data being almost twelve years old, the data provides some insight into parking demands on Harbor Island. The

57791

aggregate peak parking demand equates to a parking rate of 0.41 spaces per slip (or 1 space per 2.4 slips). This represents a slightly lower rate than the observed rate (0.41 versus 0.51 spaces per slip).

The suggested parking requirement for the existing Sunroad Resort Marina, per peak observed demand, is 0.51 spaces per slip. This is about one-half of the published Port's rate of 1.0 space per slip, per the *Tidelands Parking Guidelines*.

4.0 Harbor Island Project—Required Parking Supply

A parking assessment was also undertaken for the proposed *Harbor Island* project to determine if the parking provided will meet the site-generated demand. The analysis was performed in two parts. First, a required parking supply was calculated based on the project description with no shared parking considered. Then, a shared parking analysis was performed to account for the different peak parking demands of the marina and hotel land uses of the proposed project.

The *Harbor Island* project is slated to occur in one phase, proposing the development of a limited service hotel of approximately 175 rooms. No changes are proposed to the 600-slip marina and clubhouse.

4.1 Required Parking Supply Without Shared Parking

The parking requirements for the project were obtained from the following sources:

- San Diego Unified Port District Tidelands Parking Guidelines dated January 2001, Harbor Island Parking Rates
- The marina "observed" rate derived in Section 3.0 of this report

One adjustment factor (*Dedicated Airport Shuttle*) from the *San Diego Unified Port District Tidelands Parking Guidelines* dated January 2001 was also applied as appropriate. ***Appendix F–1*** contains excerpts from these parking guidelines. ***Table 4–1*** summarizes the required parking supply without shared parking.

The following is a description of the land uses within the proposed project and their respective parking rate calculations:

Hotel Parking Requirement—Per the *San Diego Unified Port District Tidelands Parking Guidelines*, a parking rate of 0.6 spaces per room is to be provided for a hotel development on Harbor Island. No deviation from the guidelines is proposed. Therefore, the ***gross*** parking requirement is 105 spaces. Since the hotel plans on providing a dedicated airport shuttle, a 5% reduction was applied, resulting in a ***net*** parking requirement of 100 spaces.

Marina Parking Requirement—The project proposes no changes to the existing marina, which will continue to contain a total of 600 slips. Using the "observed" rate of 0.51 spaces per slip, the marina requires a ***gross*** requirement of 306 spaces. No adjustment factors were applied to the marina parking demand; therefore, the ***net*** parking requirement is also 306 spaces.

57791

Total Parking Requirement without Shared Parking—Applying the parking demands for the land uses mentioned above, ***Table 4–1 calculates a total project gross parking requirement of 411 spaces and, with the "dedicated airport shuttle" adjustment factor applied, a total project net parking requirement of 406 spaces.***

TABLE 4–1
REQUIRED PARKING SUPPLY WITHOUT SHARED PARKING

Land Use	Size	Parking Rate	Gross Parking Requirement	Adjustment Factor Applied [c] *Dedicated Airport Shuttle (0%–5%)* %	#	Net Parking Requirement
Hotel	175 rooms	0.6 / room [a]	105	*-5%*	*-5*	100
Marina (Existing)	600 slips	0.51 / slip [b]	306	—	—	306
		Total:	**411**	—	**-5**	**406**

Footnotes:
a. Parking rate from the *San Diego Unified Port District Tidelands Parking Guidelines* dated January 2001—"Harbor Island" parking rates used.
b. "Site-specific" rate used in calculations (See Section 3.0 for details).
c. Adjustment factor from the *San Diego Unified Port District Tidelands Parking Guidelines* dated January 2001.

4.2 Required Parking Supply With Shared Parking

Shared parking between the hotel and marina land uses of the proposed project is expected. In particular, the marina component and the hotel component of the project would have opposite peak parking needs. The peak parking demand for the marina typically occurs during the day while the hotel typically occurs at night. In performing the shared parking analysis, LLG considered both weekday and weekend scenarios.

"Percentages of Peak Parking Demand" were obtained from two sources: the *City of San Diego Traffic Impact Study Manual July 1998, Parking Requirements* and *site-specific data.* Below is a brief description of the percentage assumptions that were used for each component of the project. ***Appendix** F–2* contains the Weekday and Weekend "Percentage of Peak Parking Demand" tables.

For the ***Hotel*** component of the project, the *City of San Diego's percentage of peak parking demand* was used. No alterations were made to the percentages.

For the ***Marina***, *site-specific data* was used to determine percentages for peak parking demand. The data collected in August 2005 for Lots A and B was used to derive percentages for peak parking demand. ***Appendix F–3*** contains the calculation sheet. Since the data only covered the hours of 7:00AM to 7:00PM, LLG assumed percentages for the hours of 6:00AM and 8:00PM–12:00AM.

The above percentages for peak parking demand were applied to the ***net*** required parking demand numbers that were calculated in *Table 4–1*. ***Table 4–2*** summarizes the results of the shared parking analysis for the project on a weekday and weekend basis.

57791

TABLE 4–2
HARBOR ISLAND PROJECT—HOURLY PARKING DEMAND WITH SHARED PARKING

	WEEKDAY			WEEKEND		
	Hotel 175 rooms	**Marina** 600 slips	**Total**	**Hotel** 175 rooms	**Marina** 600 slips	**Total**
Required Spaces without Shared Parking:	**100**	**306**	**406**	**100**	**306**	**406**
6:00 AM	100	46	146	90	46	136
7:00 AM	95	141	236	80	233	313
8:00 AM	85	138	223	75	233	308
9:00 AM	85	177	262	70	230	300
10:00 AM	80	174	254	60	236	296
11:00 AM	75	202	277	55	266	321
12:00 PM	70	208	278	50	282	332
1:00 PM	70	181	251	50	272	322
2:00 PM	70	184	254	50	288	338
3:00 PM	60	193	253	50	306	356
4:00 PM	65	181	246	50	306	356
5:00 PM	60	156	216	60	291	351
6:00 PM	65	242	307	65	251	316
7:00 PM	75	306	381	70	254	324
8:00 PM	85	230	315	70	230	300
9:00 PM	90	153	243	75	153	228
10:00 PM	90	92	182	85	92	177
11:00 PM	100	46	146	95	46	141
12:00 AM	100	46	146	100	46	146
Required Parking Supply with Shared Parking:			**381**			**356**

Total Parking Requirement with Shared Parking—As shown in *Table 4–2*, the peak parking demand on a *Weekday* occurs at 7:00PM with 381 spaces required for the development. On a *Weekend* basis, the peak parking demand occurs at 3:00PM and 4:00PM with 356 spaces required for the development. Therefore, ***a net shared parking requirement of 381 spaces is needed.***

57791

5.0 CONCLUSIONS

A parking assessment was undertaken for the existing marina located on Harbor Island Drive in the City of San Diego. The marina currently has 600 slips with an 87% occupancy rate. Based on data that was obtained during the summer months to account for increased activity, the parking demand equated to a parking rate of approximately 0.51 spaces per slip, or inversely stated, 1 parking space per 1.96 slips. ***The suggested parking requirement for the existing Sunroad Resort Marina, per peak observed demand, is 0.51 spaces per slip.***

A parking assessment was also undertaken for the proposed *Harbor Island* project. The project proposes to build a limited service hotel of approximately 175 rooms. The project will be located at the east end of the Sunroad leasehold and will replace an existing locker building and some parking.

In order to determine the parking requirement for the *Harbor Island* project, both a "without" and "with" shared parking analysis between the marina and hotel land uses of the proposed project was performed.

As shown in *Table 4–1*, ***without shared parking, a total net parking requirement is 406 spaces.***

Using the net parking requirements that were calculated in *Table 4–1,* a shared parking analysis was performed. The analysis was done for both weekday and weekend scenarios. ***With shared parking, a net shared parking requirement of 381 spaces is needed.***

The proposed 457 spaces of surface parking is expected to adequately serve the proposed project.

57791

APPENDIX F-1

EXCERPTS FROM SAN DIEGO UNIFIED PORT DISTRICT TIDELANDS PARKING GUIDELINES

57791

TIDELANDS PARKING GUIDELINES
SAN DIEGO UNIFIED PORT DISTRICT

INTRODUCTION/SUMMARY

Purpose and Intent of the Parking Guidelines

The San Diego Unified Port District (District) retained Katz, Okitsu & Associates (KOA) and Wilbur Smith Associates (WSA) to develop a set of parking guidelines for use throughout the District. The internal guidelines are intended to address the generalized parking requirements for potential project uses in the following districts:

- Harbor Island;
- Shelter Island;
- North Embarcadero;
- Coronado; and
- South Bay (Combined National City, Chula Vista, Imperial Beach)

The South Embarcadero and Seaport Village Guidelines were previously evaluated separately by Wilbur Smith Associates, [1] and portions of these documents are included in the appendices to this document.

The parking guidelines are based on parking surveys conducted in the tidelands districts to determine the parking characteristics of specific uses. The guidelines also reflect the knowledge obtained from other recognized national sources of research data on parking requirements. The individual tidelands districts vary significantly in their transportation and land use characteristics. For this reason, it was clear from the onset of the development of the guidelines, that the guidelines must be sensitive to the unique features of each of the districts. In addition, the guidelines must be able to address the full range of potential uses that would likely be considered in each of the districts. These include hotels, marinas, marine sales and service, restaurants, retail, conference centers, and office uses. The guidelines also were intended to assist in addressing the parking requirements of special uses and to provide for parking for public bay access.

The Parking Guidelines as depicted in these ten pages were approved by the Board of Port Commissioners with the support of the Port Tenants Association on December 12, 2000. Any development project and/or use of District tidelands shall be subject to these parking Guidelines as modified, if required, by the California Coastal Commission.

January 5, 2001

57791

[1] *Tidelands Parking Study - Embarcadero Area, Wilbur Smith Associates, September 20, 1995; Seaport Village parking ratios shown in attached table.*

Table 1
Suggested Base Unadjusted Parking Demand Rates by District [1]

Land Use	Unit	Harbor Island	Shelter Island	North Embarcadero[2] [7]	South Embarcadero	Coronado	South Bay[3]
Restaurant	Seat[4]	0.25	0.25	0.14	0.13	0.25	0.25
Restaurant	ksf [5]	9.3	9.3	9.3	-	9.3	9.3
Marine Sales/Service	ksf	3.9	3.9	3.9	-	3.9	3.9
Marina	slip	1.0	1.0	0.4	0.33	1.0	1.0
Retail	ksf	4.7	4.7	4.7	2.8	4.7	4.7
Office	ksf	2.8	2.8	2.8	-	2.8	2.8
Hotel Uses							
Hotel	room	0.6	1.1	0.7	0.5	1.0	1.1
Hotel Restaurant	Seat[4]	0.12	0.14	0.14	0.13	0.11	(6)
Hotel Restaurant	ksf [5]	8.0	9.3	8.5	-	7.3	(6)
Hotel Conference	ksf	1.2	1.7	1.4	1.55	1.6	(6)
Hotel Dock Slip	berth	0.4	0.4	0.4	0.33	0.3	(6)
Hotel Retail	ksf	2.50	3.0	2.7	2.8	2.2	(6)

Notes:

[1] The parking rates provided in these guidelines may not agree with those of the local jurisdictions adjacent to each of the Tidelands districts. This is because the Tidelands parking rates reflect the specific characteristics of waterfront-oriented uses and developments, whereas a local city's parking requirements are meant to be applied on a broad city-wide basis.

[2] The parking rates provided in these guidelines differ somewhat from those in the North Embarcadero Alliance Visionary Plan. The parking rates in the Visionary Plan were intended as a planning tool to guide the long range development plans of the area, where as the parking rates in these guidelines are intended for immediate application to specific development projects in the North Embarcadero.

[3] South Bay includes National City, Chula Vista and Imperial Beach.

[4] The area-to-seat ratio for restaurants is assumed to be approximately 15 s.f. per seat.

[5] The square footage of restaurants represents the "gross" area of the building footprint, which includes everything such as a kitchen.

[6] A composite parking demand rate for all uses in a hotel is used for this district which is reflected in the per room rate above.

[7] For the South Embarcadero and Seaport Village consult the following documents (excerpts attached): Tidelands Parking Study Embarcadero Area, Wilbur Smith Associates, September 20, 1995; Seaport Village parking ratios shown in attached table.

57791

Table 2
SUGGESTED DEMAND ADJUSTMENT FACTORS BY DISTRICT

Type of Adjustment Adjustment Range	Impact on Parking Requirements	Harbor Island	Shelter Island	Embarcadero*	Coronado	South Bay [1]
Proximity to Transit	Reduction	0-3%	0-3%	0-12%	0-3%	0-3%
Access to Airport [2]	Reduction	0-5%	0-3%	0-5%	0-3%	0-2%
Shared Parking Potential [9]	Reduction	0-20%	0-8%	0-20%	0-8%	0-3%
Proximity to Public Waterfront Amenities for Public Access [3]	Increase	0-5%	0-5%	0-25%	0-5%	0-3%
Displacement of Existing Parking [4]	Increase	Must be determined on a project-specific basis.				
Existing Parking Shortfall/Surplus [5]	Increase	Must be determined on a project-specific basis.				
Employee Trip Reduction Programs [6]	Incentive/ Reduction	Must be determined on a project-specific basis. Should not exceed 25% including the proximity to transit reduction determined above.				
Dedicated Airport Shuttle Service [7]	Incentive/ Reduction	Hotel uses only. Must be determined on a project specific basis. Should not exceed the proximity to airport reduction determined above.				
Dedicated Water Transportation Service [8]	Incentive/ Reduction	Hotels/Restaurant/Retail uses only. Must be determined on a project specific basis. Should not exceed 10%.				

Notes:
1. *(1) South Bay includes National City, Chula Vista, and Imperial Beach.*
2. *(2) This factor does not apply to Marine Sales/Service and Marina/Hotel Marina uses.*
3. *(3) Waterfront park and open space amenities attract visitors and recreational users. These users will also patronize the adjacent hotel, restaurant and retail uses resulting in a benefit to the development due to the amenities. This adjustment is designed to ensure that sufficient parking is provided to accommodate public access to these uses. Because of the site specific nature of this adjustment it can only be determined by a review of each individual project based upon a study of existing public access parking.*
4. *(4) This factor applies to new developments that displace parking that serves adjacent uses.*
5. *(5) This factor applies to new developments that are in an area where a parking shortfall exists. An increase in parking may be necessary to help address the existing problem. In some cases a surplus of area parking may allow a development to reduce its parking requirement.*
6. *(6) This factor applies to new developments that provide trip reduction measures such as carpool parking, motorcycle parking, secure bicycle parking, off-site employee parking, transit passes or other incentives to reduce employee use of single occupant vehicles. A monitoring program will be required for this provision to take effect.*
7. *(7) This factor applies to new hotel developments that provide a dedicated, regularly scheduled airport shuttle service.*
8. *(8) This factor applies to hotel, restaurant, or retail uses that are adjacent to or provide a dedicated water taxi or ferry service that operates in a manner which would offer an alternative to using an automobile to reach the site.*
9. *(9) This factor applies to any development or the area surrounding the development which includes a variety of uses which complement each other in terms of parking. The project or area should be evaluated using the ULI shared use parking methodology, which will determine the extent of the parking reduction that is appropriate.*

**North and South Embarcadero*

57791

435

APPENDIX F-2

PERCENTAGE OF PEAK PARKING DEMAND TABLES

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LINSCOTT
LAW &
GREENSPAN
engineers

PERCENTAGE OF PEAK PARKING DEMAND (WEEKDAY)

PROJECT #: 3-04-1437-3

PROJECT NAME: Harbor Island Project

LAND USE	Hotel	Marina
SOURCE	City of SD (Visitor Accomodations)	LLG[1] (Observed)
HOUR OF DAY	Weekday	Weekday
6:00 AM	100%	15%
7:00 AM	95%	46%
8:00 AM	85%	45%
9:00 AM	85%	58%
10:00 AM	80%	57%
11:00 AM	75%	66%
12:00 PM	70%	68%
1:00 PM	70%	59%
2:00 PM	70%	60%
3:00 PM	60%	63%
4:00 PM	65%	59%
5:00 PM	60%	51%
6:00 PM	65%	79%
7:00 PM	75%	100%
8:00 PM	85%	75%
9:00 PM	90%	50%
10:00 PM	90%	30%
11:00 PM	100%	15%
12:00 AM	100%	15%

Notes:
LLG—Linscott, Law & Greenspan, Engineers
City of SD—City of San Diego Traffic Impact Study Manual July 1998, Parking Requirements

1. LLG made adjustments to some percentages to better reflect the site.

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LINSCOTT
LAW &
GREENSPAN
engineers

PERCENTAGE OF PEAK PARKING DEMAND (WEEKEND)

PROJECT #: **3-04-1437-3**

PROJECT NAME: **Harbor Island Project**

LAND USE	Hotel	Marina
SOURCE	City of SD (Visitor Accomodations)	LLG[1] (Observed)
HOUR OF DAY	Weekend	Weekend
6:00 AM	90%	15%
7:00 AM	80%	76%
8:00 AM	75%	76%
9:00 AM	70%	75%
10:00 AM	60%	77%
11:00 AM	55%	87%
12:00 PM	50%	92%
1:00 PM	50%	89%
2:00 PM	50%	94%
3:00 PM	50%	100%
4:00 PM	50%	100%
5:00 PM	60%	95%
6:00 PM	65%	82%
7:00 PM	70%	83%
8:00 PM	70%	75%
9:00 PM	75%	50%
10:00 PM	85%	30%
11:00 PM	95%	15%
12:00 AM	100%	15%

Notes:
LLG—Linscott, Law & Greenspan, Engineers
City of SD—City of San Diego Traffic Impact Study Manual July 1998, Parking Requirements

1. LLG made adjustments to some percentages to better reflect the site.

57791

APPENDIX F-3

PERCENTAGE OF PEAK PARKING DEMAND CALCULATIONS FOR THE EXISTING MARINA

57791

% of Peak Parking Demand Calculations

Existing Marina (Lots A & B)

	% of Peak Parking Demand *factored up 100%*		% of Peak Parking Demand *factored up 100%*		Working Columns		
START TIME	**Weekday (Tuesday)**	% of Occupancy Tuesday	**Weekend (Sat/Sun avg)**	% of Occupancy (Sat/Sun avg)	Sat	Sun	Avg.
7:00 AM	**46%**	21%	**76%**	32%	29%	35%	32%
8:00 AM	**45%**	20%	**76%**	32%	29%	35%	32%
9:00 AM	**58%**	26%	**75%**	31%	30%	33%	31%
10:00 AM	**57%**	26%	**77%**	32%	33%	31%	32%
11:00 AM	**66%**	30%	**87%**	37%	37%	36%	37%
12:00 PM	**68%**	30%	**92%**	39%	42%	36%	39%
1:00 PM	**59%**	27%	**89%**	38%	37%	38%	38%
2:00 PM	**60%**	27%	**94%**	40%	39%	40%	40%
3:00 PM	**63%**	29%	**100%**	42%	45%	39%	42%
4:00 PM	**59%**	27%	**100%**	42%	47%	37%	42%
5:00 PM	**51%**	23%	**95%**	40%	44%	36%	40%
6:00 PM	**79%**	36%	**82%**	35%	36%	34%	35%
7:00 PM	**100%**	45%	**83%**	35%	36%	33%	35%

Notes:

1. % derived based on parking data shown in Table 2-1 of the Parking Study.
2. Bold percentages used for Shared Parking Analysis.

57791

APPENDIX G

MITIGATION CALCULATION SHEETS

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86		0.97	0.86		0.91	0.91	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6092		3343	6231		1568	3204	1542	1568	2869	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.79	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6092		3343	6231		1568	2592	1542	1568	2869	
Volume (vph)	40	820	128	423	1910	15	105	49	245	60	38	120
Peak-hour factor, PHF	0.60	0.80	0.80	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	67	1025	160	705	2388	19	131	61	306	75	48	150
RTOR Reduction (vph)	0	22	0	0	1	0	0	0	125	0	110	0
Lane Group Flow (vph)	67	1163	0	705	2406	0	66	126	181	75	88	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot		pt+ov	Prot		
Protected Phases	7	4		3	8		5	2	2 3	1	6	
Permitted Phases												
Actuated Green, G (s)	8.5	28.1		24.3	43.9		10.2	20.1	39.2	10.5	20.7	
Effective Green, g (s)	10.5	30.1		26.3	45.9		12.2	24.1	41.2	12.5	24.7	
Actuated g/C Ratio	0.11	0.32		0.28	0.49		0.13	0.26	0.44	0.13	0.27	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	195	1976		947	3082		206	754	685	211	764	
v/s Ratio Prot	0.04	0.19		c0.21	c0.39		0.04	0.02	c0.12	c0.05	0.02	
v/s Ratio Perm								0.02			0.02	
v/c Ratio	0.34	0.59		0.74	0.78		0.32	0.17	0.26	0.36	0.12	
Uniform Delay, d1	38.0	26.2		30.2	19.3		36.5	26.6	16.3	36.5	25.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.1	0.5		3.2	1.3		0.9	0.1	0.2	1.0	0.1	
Delay (s)	39.0	26.6		33.4	20.6		37.4	26.7	16.5	37.5	25.8	
Level of Service	D	C		C	C		D	C	B	D	C	
Approach Delay (s)		27.3			23.5			21.8			29.1	
Approach LOS		C			C			C			C	

Intersection Summary

HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	92.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86		0.97	0.86		0.91	0.91	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6060		3343	6189		1568	3183	1525	1568	2849	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.65	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6060		3343	6189		1568	2151	1525	1568	2849	
Volume (vph)	70	1200	233	470	1460	70	181	47	506	60	43	160
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Adj. Flow (vph)	117	2000	388	783	2433	117	302	78	843	100	72	267
RTOR Reduction (vph)	0	26	0	0	5	0	0	0	102	0	136	0
Lane Group Flow (vph)	117	2362	0	783	2545	0	151	229	741	100	203	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	8.8	41.3		19.1	51.6		14.5	25.8	30.4	12.1	21.0	
Effective Green, g (s)	10.8	43.3		21.1	53.6		16.5	29.8	34.4	14.1	25.0	
Actuated g/C Ratio	0.10	0.42		0.20	0.52		0.16	0.29	0.33	0.14	0.24	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	179	2528		680	3196		249	782	549	213	686	
v/s Ratio Prot	0.07	c0.39		0.23	0.41		c0.10	c0.05	c0.27	0.06	0.04	
v/s Ratio Perm								0.04	0.21		0.03	
v/c Ratio	0.65	0.93		1.15	0.80		0.61	0.29	1.35	0.47	0.30	
Uniform Delay, d1	44.7	28.9		41.4	20.6		40.6	28.8	34.7	41.4	32.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.3	7.2		84.4	1.4		4.1	0.2	169.4	1.6	0.2	
Delay (s)	53.0	36.1		125.8	22.1		44.8	29.0	204.1	43.0	32.4	
Level of Service	D	D		F	C		D	C	F	D	C	
Approach Delay (s)		36.9			46.4			151.7			34.9	
Approach LOS		D			D			F			C	

Intersection Summary

HCM Average Control Delay	59.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	103.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.86			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1500	3343	6235			1744	1500	1723	1655	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1500	3343	6235			1744	1500	1723	1655	
Volume (vph)	70	3125	100	240	4413	15	80	20	200	10	10	10
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	3289	105	253	4645	16	84	21	211	11	11	11
RTOR Reduction (vph)	0	0	30	0	0	0	0	0	182	0	10	0
Lane Group Flow (vph)	74	3289	75	253	4661	0	0	105	29	11	12	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	4.0	55.5	55.5	5.0	56.5			11.7	11.7	8.4	8.4	
Effective Green, g (s)	6.0	57.5	57.5	7.0	58.5			13.7	13.7	10.4	10.4	
Actuated g/C Ratio	0.06	0.57	0.57	0.07	0.58			0.14	0.14	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	103	3566	857	233	3626			238	204	178	171	
v/s Ratio Prot	0.04	0.53		c0.08	c0.75			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.02			
v/c Ratio	0.72	0.92	0.09	1.09	1.29			0.44	0.14	0.06	0.07	
Uniform Delay, d1	46.5	19.5	9.7	46.8	21.0			39.9	38.3	40.7	40.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	21.2	4.6	0.0	83.7	130.6			1.3	0.3	0.1	0.2	
Delay (s)	67.6	24.1	9.8	130.5	151.6			41.2	38.6	40.8	40.9	
Level of Service	E	C	A	F	F			D	D	D	D	
Approach Delay (s)		24.6			150.6			39.5			40.9	
Approach LOS		C			F			D			D	

Intersection Summary

HCM Average Control Delay	96.1	HCM Level of Service	F
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	100.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

57791

444

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.86			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1500	3343	6234			1736	1500	1723	1603	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1500	3343	6234			1736	1500	1723	1603	
Volume (vph)	30	4076	80	260	3590	15	80	10	270	10	10	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	4529	89	289	3989	17	89	11	300	11	11	22
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	247	0	20	0
Lane Group Flow (vph)	33	4529	72	289	4006	0	0	100	53	11	13	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.3	57.7	57.7	4.0	59.4			11.5	11.5	8.4	8.4	
Effective Green, g (s)	4.3	59.7	59.7	6.0	61.4			13.5	13.5	10.4	10.4	
Actuated g/C Ratio	0.04	0.59	0.59	0.06	0.60			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	73	3666	881	197	3767			231	199	176	164	
v/s Ratio Prot	0.02	c0.73		c0.09	0.64			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.04			
v/c Ratio	0.45	1.24	0.08	1.47	1.06			0.43	0.27	0.06	0.08	
Uniform Delay, d1	47.5	20.9	9.1	47.8	20.1			40.5	39.6	41.2	41.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.4	108.4	0.0	235.7	35.0			1.3	0.7	0.1	0.2	
Delay (s)	51.9	129.4	9.1	283.5	55.1			41.8	40.3	41.3	41.5	
Level of Service	D	F	A	F	E			D	D	D	D	
Approach Delay (s)		126.5			70.5			40.7			41.5	
Approach LOS		F			E			D			D	

Intersection Summary			
HCM Average Control Delay	96.9	HCM Level of Service	F
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	101.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	0.94	0.91	0.91	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.99	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	4859	4951	4951	1519	1678	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	4859	4951	4951	1519	1678	
Volume (vph)	1212	2193	2615	40	60	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1347	2437	2906	44	67	22
RTOR Reduction (vph)	0	0	0	0	11	0
Lane Group Flow (vph)	1347	2437	2906	44	78	0
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		
Protected Phases	7	4	8		6	
Permitted Phases				Free		
Actuated Green, G (s)	26.0	89.2	58.2	110.4	11.2	
Effective Green, g (s)	28.0	91.2	60.2	110.4	13.2	
Actuated g/C Ratio	0.25	0.83	0.55	1.00	0.12	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	1232	4090	2700	1519	201	
v/s Ratio Prot	c0.28	0.49	c0.59		c0.05	
v/s Ratio Perm				0.03		
v/c Ratio	1.09	0.60	1.08	0.03	0.39	
Uniform Delay, d1	41.2	3.3	25.1	0.0	44.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	55.1	0.2	42.0	0.0	1.3	
Delay (s)	96.3	3.5	67.1	0.0	46.1	
Level of Service	F	A	E	A	D	
Approach Delay (s)		36.5	66.1		46.1	
Approach LOS		D	E		D	

Intersection Summary

HCM Average Control Delay	49.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

57265

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	0.94	0.91	0.91	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.99	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	4990	5085	5085	1560	1733	
Flt Permitted	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	4990	5085	5085	1560	1733	
Volume (vph)	1399	2707	2017	140	80	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1554	3008	2241	156	89	22
RTOR Reduction (vph)	0	0	0	0	8	0
Lane Group Flow (vph)	1554	3008	2241	156	103	0
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		
Protected Phases	7	4	8		6	
Permitted Phases				Free		
Actuated Green, G (s)	24.2	86.1	56.9	108.2	12.1	
Effective Green, g (s)	26.2	88.1	58.9	108.2	14.1	
Actuated g/C Ratio	0.24	0.81	0.54	1.00	0.13	
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	1208	4140	2768	1560	226	
v/s Ratio Prot	c0.31	0.59	c0.44		c0.06	
v/s Ratio Perm				0.10		
v/c Ratio	1.29	0.73	0.81	0.10	0.46	
Uniform Delay, d1	41.0	4.6	20.1	0.0	43.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	135.3	0.7	1.8	0.1	1.5	
Delay (s)	176.3	5.2	21.9	0.1	45.0	
Level of Service	F	A	C	A	D	
Approach Delay (s)		63.5	20.5		45.0	
Approach LOS		E	C		D	

Intersection Summary

HCM Average Control Delay	48.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	108.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↑↑↑↱		↰	↑↑↑			↑↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	
Lane Util. Factor				1.00	0.91		1.00	0.91			0.91	
Frpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	
Frt				1.00	0.99		1.00	1.00			0.98	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1723	4890		1723	4951			4837	
Flt Permitted				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)				1723	4890		1723	4951			4837	
Volume (vph)	0	0	0	580	1770	140	113	340	0	0	320	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	644	1967	156	126	378	0	0	356	56
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	36	0
Lane Group Flow (vph)	0	0	0	644	2112	0	126	378	0	0	376	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)				24.7	24.7		6.0	21.7			10.7	
Effective Green, g (s)				26.7	26.7		8.0	23.7			12.7	
Actuated g/C Ratio				0.47	0.47		0.14	0.42			0.23	
Clearance Time (s)				5.0	5.0		5.0	5.0			5.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				816	2315		244	2080			1089	
v/s Ratio Prot				0.37	c0.43		c0.07	0.08			c0.08	
v/s Ratio Perm												
v/c Ratio				0.79	0.91		0.52	0.18			0.34	
Uniform Delay, d1				12.5	13.8		22.4	10.3			18.4	
Progression Factor				1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2				5.1	6.0		1.8	0.0			0.2	
Delay (s)				17.6	19.8		24.3	10.3			18.5	
Level of Service				B	B		C	B			B	
Approach Delay (s)		0.0			19.3			13.8			18.5	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	
Lane Util. Factor				1.00	0.91		1.00	0.91			0.91	
Frpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes				1.00	1.00		1.00	1.00			1.00	
Frt				1.00	0.98		1.00	1.00			0.99	
Flt Protected				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)				1770	4987		1770	5085			5026	
Flt Permitted				0.95	1.00		0.95	1.00			1.00	
Satd. Flow (perm)				1770	4987		1770	5085			5026	
Volume (vph)	0	0	0	180	1176	150	157	910	0	0	680	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	0	0	0	257	1680	214	224	1300	0	0	971	71
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	257	1873	0	224	1300	0	0	1033	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)				20.1	20.1		6.0	30.0			19.0	
Effective Green, g (s)				22.1	22.1		8.0	32.0			21.0	
Actuated g/C Ratio				0.37	0.37		0.13	0.53			0.35	
Clearance Time (s)				5.0	5.0		5.0	5.0			5.0	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				651	1834		236	2707			1756	
v/s Ratio Prot				0.15	c0.38		c0.13	0.26			c0.21	
v/s Ratio Perm												
v/c Ratio				0.39	1.02		0.95	0.48			0.59	
Uniform Delay, d1				14.1	19.0		25.8	8.8			16.0	
Progression Factor				1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2				0.4	26.6		44.0	0.1			0.5	
Delay (s)				14.4	45.6		69.9	9.0			16.5	
Level of Service				B	D		E	A			B	
Approach Delay (s)		0.0			41.9			17.9			16.5	
Approach LOS		A			D			B			B	

Intersection Summary

HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

57291

APPENDIX H

2701 NORTH HARBOR DRIVE DEMOLITION PROJECT
EXCERPT

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REPORT

2701 NORTH HARBOR DRIVE DEMOLITION PROJECT TRAFFIC IMPACT STUDY

Prepared for

San Diego Unified Port District
3165 Pacific Highway
San Diego, CA 95814

URS Project No. 27687023

April 2009

57791

URS

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San Diego, CA 92108-4314
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451

TABLE 8–7
"ALTERNATIVE 6" ILV OPERATIONS

Intersection	Peak Hour	Year 2015		Year 2030	
		ILV[a]	Capacity[b]	ILV	Capacity
Encinitas Boulevard / I-5 Ramps / Saxony Road	AM	~~1,120~~1,085	Under	~~1,266~~1,231	Near
	PM	~~1,175~~1,150	Under	~~1,397~~1,357	Near

Footnotes:

a. ILV = Intersecting Lane Vehicles.

b. CAPACITY is shown as *UNDER* capacity, *NEAR* capacity or *OVER* capacity;

Under Capacity = <1200 ILV/Hour
Near Capacity = >1200 but < 1500 ILV/Hour
Over Capacity = >1500 ILV/Hour

57791

may be conservative based upon recently observed declines in traffic. This analysis method was selected to analyze conservative higher estimated traffic volumes.

2.1.2 Trip Generation

Trip generation as used in this analysis represents the two-way trips that will be generated by the Proposed Project and is estimated based on information provided in terms of the amount of cubic yards (cy) of waste materials that will be removed from the Project site. The number of employees who will be working at the site on a daily basis is also taken into account. Truck trips have been converted to passenger car equivalents (PCEs) using a factor of three (one truck = three passenger cars). Trip generation for the Proposed Project was estimated for the following timeframes: daily (weekday) and weekday morning peak commuting hour. Table 1, Trip Generation – Truck Trips, shows the calculations of number of trucks per day for the Proposed Project. Table 2 summarizes Proposed Project-related trip generation.

Peak hour trip generation assumed that the Proposed Project will be completed in 24 months, and analyzes the peak months of Proposed Project activities considering the number of employees accessing the site in addition to number of trucks. This is assumed to occur in the last part of the fist year of Proposed Project schedule.

Table 1
Trip Generation – Truck Trips

Haul Type	Number of Loads
Debris Removal	10,100
Deliveries	200
Soils Import	400
Total Loads	10,700
Total Truck Trips[a]	21,400
Truck Trips/Month[b]	892
Truck Trips/Day[c]	42

a. Total number of loads for the duration of the Project multiplied by two (inbound and outbound).
b. Total truck trips per month based on 24-month Project duration.
c. Trips per day based on 22 working days per month.

57791

453

Figure 8–1 "Alternative 6" Conditions—Year 2015

57791

Table 2
Summary of Project Trip Generation

Trip Type	Number of Truck Loads or Persons Per Day[a]	Trip Generation			
		Daily Trips (Two-way)	AM Peak Hour[b]		
			Inbound	Outbound	Total
Debris Removal Trucks	19	38	1	1	2
Other Trucks	2	4	1	1	2
Total Trucks Per Day[c]	21	42	2	2	4
Total Truck PCE[d]		***126***	**6**	**6**	***12***
Employees[e]	40	80	40	0	40
Total PCEs		**206**	**46**	**6**	**52**

a. Trucks have been rounded to the nearest whole number.

b. The AM peak hour is one hour between 7:00 a.m. and 9:00 a.m. The daily construction time period is projected to be 7:00 a.m. to 3:30 p.m. (Late evening work hours may occur, however were not analyzed, as they are off-peak in relation to the adjacent roadway traffic.)

c. 13% of truck trips occur in the peak hour.

d. PCE factor of 3.0 passenger cars per truck.

e. 100% of employees arrive in the peak hour.

2.1.3 Trip Distribution

Trip distribution percentages for Proposed Project-related traffic have been developed based on site ingress and egress at the intersection of North Harbor Drive and Project site primary access driveway. Likely travel routes of haul trucks to the various landfills have been considered.

Truck traffic is expected to use the interstate system to access the Project site via the surrounding roadway network. The majority of truck traffic will carry debris from the Project site to landfills in the vicinity of the Proposed Project. Local landfills that may be used include Miramar Landfill near SR-52 and Convoy Road, Otay Landfill in Chula Vista, east of I-805, and Sycamore Landfill located north of SR-52 and west of I-15. Specific routes to the landfills would be determined using the shortest time interstate route, and by the traffic conditions at the time of haul activities. Truck traffic is estimated to average no more than 2-3 trucks per hour during the AM peak hour for peak operations. This is about 1 truck every 20 minutes. This will not noticeably impact peak hour LOS calculations. Employees exiting the site will access on-ramps outside of the PM peak hour and do not trigger thresholds for analysis.

The Proposed Project includes hauling hazardous materials/waste from the site to appropriate landfill facilities. Unless posted otherwise, roads can accommodate hazardous waste traffic provided they are handled in a safe manner and in accordance to existing regulations. As discussed in Section 4.6, Hazards and Hazardous Materials, of the Proposed Project EIR, the transportation of hazardous waste must be done by a transporter registered with the DTSC. Unless specifically exempted, hazardous waste transporters must comply with the California Highway Patrol Regulations; the California State Fire

57791

455

Figure 8–2 "Alternative 6" Conditions—Year 2030

57791

Appendix I

Reduced Project Alternative Letter Report

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Las Vegas

October 19, 2010

Mr. Tom Story
SUNROAD Enterprises
4445 Eastgate Mall, Suite 400
San Diego, CA 92121

LLG Reference: 3-04-1437-3

Subject: **Harbor Island Traffic Impact Study—Reduced Project Alternative**
City of San Diego

Dear Tom:

Linscott, Law & Greenspan, Engineers (LLG) produced a Traffic Impact Study and Parking Study dated October 19, 2010 for the *Harbor Island* project. The project site is located on the east side of Harbor Island and currently contains a 600-slip marina. The analyses in these reports were based on a project description that included the construction of a *175-room limited service hotel* while maintaining the existing 600-slip marina. The analyses resulted in a parking requirement of 381 spaces, four long-term intersection impacts and two long-term segment impacts.

The trip generation in the original Traffic Impact Study dated October 19, 2010 calculated the total net project trips at approximately 1,225 ADT with 39 inbound / 59 outbound trips during the AM peak hour and 66 inbound / 44 outbound trips during the PM peak hour.

Eleven intersections and several street segments were analyzed under both Near-Term and Long-Term conditions in the Traffic Impact Study dated October 19, 2010. In the Near-Term, the original project was calculated to have no significant impacts. In the Long-Term (Year 2030), the original project was calculated to have significant cumulative impacts at the following four intersections and two segments:

- N. Harbor Dr./Harbor Island Dr./Terminal 1
- N. Harbor Dr./Rental Car Access Road
- N. Harbor Dr./Laurel Street
- Pacific Highway/Hawthorn Street
- N. Harbor Drive between Harbor Island Drive and Rental Car Access Road
- N. Harbor Drive between Rental Car Access Road and Laurel Street

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57794

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The Draft EIR for the project evaluates a "Reduced Project Alternative." Specifically, the "Reduced Project Alternative" considers a two-story hotel containing 69-rooms and a three-story hotel containing 123 rooms. This letter report analyzes the potentially significant traffic impacts associated with these two scenarios.

69-ROOM HOTEL SCENARIO

The "69-room Hotel Reduced Project Alternative" scenario is calculated to generate approximately 483 ADT with 15 inbound / 23 outbound trips during the AM peak hour and 26 inbound / 17 outbound trips during the PM peak hour. ***Tables 1*** and ***2*** provide a comparison between the intersection and street segment results from the Traffic Impact Study dated October 19, 2010 (*175-room hotel with 600-slip marina*) and the 69-Room Hotel Scenario (*69-room hotel with 600-slip marina*).

As shown in *Table 1*, a decrease in delay at the intersections is calculated, resulting in a reduction of two cumulative intersection impacts. ***Two intersection impacts remain significant*** under the 69-Room Hotel Scenario. As shown in *Table 2,* the street segment volume-to-capacity ratio is reduced within an acceptable threshold, resulting in no cumulative street segment impacts under the 69-Room Hotel Scenario.

The calculation sheets are included in ***Attachment A***.

TABLE 1
LONG-TERM (YEAR 2030) INTERSECTION OPERATIONS—"69-ROOM HOTEL SCENARIO"

Intersection	Peak Hour	Year 2030[a]		Year 2030 + Project (*175-room hotel with 600 slip marina*)				Year 2030 + 69-room Hotel with 600 slip marina			
		Delay[b]	LOS[c]	Delay	LOS	Δ[d]	Sig?[e]	Delay	LOS	Δ[d]	Sig?[e]
N. Harbor Dr./Harbor Island Dr./ Terminal 1 (East Airport Entrance)	AM	51.2	D	56.9	E	**5.7**	**Yes**	53.5	D	2.3	No
	PM	86.6	F	89.1	F	**2.5**	**Yes**	87.2	F	0.6	No
N. Harbor Drive / Rental Car Access Rd.	AM	169.8	F	171.8	F	**2.0**	**Yes**	170.6	F	0.8	No
	PM	159.0	F	163.7	F	**4.7**	**Yes**	160.8	F	**1.8**	**Yes**
N. Harbor Drive / Laurel Street	AM	98.1	F	98.9	F	0.8	No	98.2	F	0.1	No
	PM	124.1	F	127.0	F	**2.9**	**Yes**	126.0	F	**1.9**	**Yes**
Pacific Highway / Hawthorn Street	AM	86.1	F	87.5	F	**1.4**	**Yes**	86.7	F	0.6	No
	PM	55.9	E	56.5	E	0.6	No	56.2	E	0.3	No

Footnotes:
a. Year 2030 traffic volumes obtained from original Traffic Study dated October 19, 2010.
b. Average delay expressed in seconds per vehicle.
c. Level of Service.
d. Δ denotes an increase in delay due to project.
e. Sig? denotes "Significant Impact"

SIGNALIZED DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

57791

459

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TABLE 2
LONG-TERM (YEAR 2030) STREET SEGMENT OPERATIONS—"69-ROOM HOTEL SCENARIO"

Street Segment	Buildout Capacity (LOS E)[a]	Year 2030			Year 2030 + Project *(175-room hotel with 600 slip marina)*					Year 2030 + 69-room Hotel with 600 slip marina				
		ADT[b]	V/C[c]	LOS[d]	ADT	V/C	LOS	Δ[e]	Sig?[f]	ADT	V/C	LOS	Δ[e]	Sig?[f]
N. Harbor Drive														
Harbor Island Dr. to Rental Car Access Rd.	65,000	112,020	1.723	F	112,755	1.735	F	**0.012**	**Yes**	112,310	1.728	F	0.005	No
Rental Car Access Rd. to Laurel St.	60,000	161,620	2.694	F	162,355	2.706	F	**0.012**	**Yes**	161,910	2.699	F	0.005	No

Footnotes:
a. Capacities based on City of San Diego's Roadway Classification & LOS table (See *Appendix C*).
b. Average Daily Traffic
c. Volume to Capacity ratio
d. Level of Service
e. Δ denotes a project-induced increase in the Volume to Capacity ratio
f. Sig? denotes "Significant Impact".

123-ROOM HOTEL SCENARIO

The "123-room Hotel Reduced Project Alternative" scenario is calculated to generate approximately 860 ADT with 28 inbound / 41 outbound trips during the AM peak hour and 46 inbound / 31 outbound trips during the PM peak hour. ***Tables 3*** and ***4*** provide a comparison between the intersection and street segment results from the Traffic Impact Study dated October 19, 2010 (*175-room hotel with 600-slip marina*) and the 123-Room Hotel Scenario (*123-room hotel with 600-slip marina*).

As shown in *Table 3*, a decrease in delay at the intersections is calculated, resulting in a reduction of one cumulative intersection impact. ***Three intersection impacts remain significant*** under the 123-Room Hotel Scenario. As shown in *Table 4*, the street segment volume-to-capacity ratio is reduced within an acceptable threshold, resulting in no cumulative street segment impacts under the 123-Room Hotel Scenario.

The calculation sheets are included in ***Attachment A***.

57791

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TABLE 3
LONG-TERM (YEAR 2030) INTERSECTION OPERATIONS—"123-ROOM HOTEL SCENARIO"

Intersection	Peak Hour	Year 2030[a]		Year 2030 + Project (175-room hotel with 600 slip marina)				Year 2030 + 123-room Hotel with 600 slip marina			
		Delay[b]	LOS[c]	Delay	LOS	Δ[d]	Sig?[e]	Delay	LOS	Δ[d]	Sig?[e]
N. Harbor Dr./Harbor Island Dr./ Terminal 1 (East Airport Entrance)	AM	51.2	D	56.9	E	**5.7**	**Yes**	55.0	D	3.8	No
	PM	86.6	F	89.1	F	**2.5**	**Yes**	88.3	F	**1.7**	**Yes**
N. Harbor Drive / Rental Car Access Rd.	AM	169.8	F	171.8	F	**2.0**	**Yes**	171.2	F	**1.4**	**Yes**
	PM	159.0	F	163.7	F	**4.7**	**Yes**	161.8	F	**2.8**	**Yes**
N. Harbor Drive / Laurel Street	AM	98.1	F	98.9	F	0.8	No	98.7	F	0.6	No
	PM	124.1	F	127.0	F	**2.9**	**Yes**	126.7	F	**2.6**	**Yes**
Pacific Highway / Hawthorn Street	AM	86.1	F	87.5	F	**1.4**	**Yes**	87.1	F	1.0	No
	PM	55.9	E	56.5	E	0.6	No	56.4	E	0.5	No

Footnotes:
a. Year 2030 traffic volumes obtained from original Traffic Study dated July 2, 2010.
b. Average delay expressed in seconds per vehicle.
c. Level of Service.
d. Δ denotes an increase in delay due to project.
e. Sig? denotes "Significant Impact"

SIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

TABLE 4
LONG-TERM (YEAR 2030) STREET SEGMENT OPERATIONS—"123-ROOM HOTEL SCENARIO"

Street Segment	Buildout Capacity (LOS E)[a]	Year 2030			Year 2030 + Project (175-room hotel with 600 slip marina)					Year 2030 + 123-room Hotel with 600 slip marina				
		ADT[b]	V/C[c]	LOS[d]	ADT	V/C	LOS	Δ[e]	Sig?[f]	ADT	V/C	LOS	Δ[e]	Sig?[f]
N. Harbor Drive														
Harbor Island Dr. to Rental Car Access Rd.	65,000	112,020	1.723	**F**	112,755	1.735	**F**	**0.012**	**Yes**	112,536	1.731	**F**	0.008	No
Rental Car Access Rd. to Laurel St.	60,000	161,620	2.694	**F**	162,355	2.706	**F**	**0.012**	**Yes**	162,136	2.702	**F**	0.008	No

Footnotes:
a. Capacities based on City of San Diego's Roadway Classification & LOS table (See *Appendix C*).
b. Average Daily Traffic
c. Volume to Capacity ratio
d. Level of Service
e. Δ denotes a project-induced increase in the Volume to Capacity ratio
f. Sig? denotes "Significant Impact".

57791

LINSCOTT LAW & GREENSPAN engineers

CONCLUSIONS

As demonstrated in this *Letter Report*, the "Reduced Project Alternative," consisting of either a 69-room or a 123-room limited service hotel with 600-slip marina, is calculated to generate less project trips than the original project analyzed in the Traffic Impact Study dated October 19, 2010. This reduction in project trips is substantial enough to warrant a reduction in impacts.

Considering a "69-room Hotel Scenario," two significant cumulative intersection impacts are calculated. As compared to the original Traffic Study, this project alternative reduces the cumulative intersection impacts by two and results in no street segment impacts.

Considering a "123-room Hotel Scenario," three significant cumulative intersection impacts are calculated. As compared to the original Traffic Study, this project alternative reduces the cumulative intersection impacts by one and results in no street segment impacts.

Sincerely,
Linscott, Law & Greenspan, Engineers

Lisa Carr
Transportation Planner II

cc: John P. Keating, P.E.
File

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Attachment A

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engineers

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰↰	↑↑↑↱		↰↰	↑	↱	↰	↰↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6230		3343	1814	1519	1568	2860	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6230		3343	1814	1519	1568	2860	
Volume (vph)	40	820	123	409	1910	15	99	43	224	60	33	120
Peak-hour factor, PHF	0.60	0.80	0.80	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	67	1025	154	682	2388	19	124	54	280	75	41	150
RTOR Reduction (vph)	0	0	130	0	1	0	0	0	0	0	126	0
Lane Group Flow (vph)	67	1025	24	682	2406	0	124	54	280	75	65	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	6.3	25.3	9.3	8.4	27.4		9.3	9.3	72.7	9.7	9.7	
Effective Green, g (s)	8.3	27.3	11.3	10.4	29.4		11.3	11.3	72.7	11.7	11.7	
Actuated g/C Ratio	0.11	0.38	0.16	0.14	0.40		0.16	0.16	1.00	0.16	0.16	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	1859	240	478	2519		520	282	1519	252	460	
v/s Ratio Prot	0.04	0.21	0.02	c0.20	c0.39		c0.04	0.03		c0.05	0.02	
v/s Ratio Perm									c0.18			
v/c Ratio	0.34	0.55	0.10	1.43	0.96		0.24	0.19	0.18	0.30	0.14	
Uniform Delay, d1	29.7	17.9	26.3	31.2	21.0		26.9	26.7	0.0	26.9	26.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.4	0.2	203.9	9.5		0.2	0.3	0.3	0.7	0.1	
Delay (s)	30.7	18.2	26.5	235.1	30.5		27.2	27.1	0.3	27.5	26.3	
Level of Service	C	B	C	F	C		C	C	A	C	C	
Approach Delay (s)		19.9			75.7			10.7			26.7	
Approach LOS		B			E			B			C	

Intersection Summary

HCM Average Control Delay	53.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	72.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6184		3343	1814	1519	1568	2833	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6184		3343	1814	1519	1568	2833	
Volume (vph)	70	1200	225	446	1460	70	174	43	490	60	35	160
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Adj. Flow (vph)	117	2000	375	743	2433	117	290	72	817	100	58	267
RTOR Reduction (vph)	0	0	173	0	4	0	0	0	0	0	228	0
Lane Group Flow (vph)	117	2000	202	743	2546	0	290	72	817	100	97	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	9.9	25.4	16.7	20.3	35.8		16.7	16.7	94.0	11.6	11.6	
Effective Green, g (s)	11.9	27.4	18.7	22.3	37.8		18.7	18.7	94.0	13.6	13.6	
Actuated g/C Ratio	0.13	0.29	0.20	0.24	0.40		0.20	0.20	1.00	0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	218	1443	307	793	2487		665	361	1519	227	410	
v/s Ratio Prot	0.07	c0.40	c0.13	c0.22	0.41		0.09	0.04		0.06	0.03	
v/s Ratio Perm									c0.54			
v/c Ratio	0.54	1.39	0.66	0.94	1.02		0.44	0.20	0.54	0.44	0.24	
Uniform Delay, d1	38.5	33.3	34.7	35.2	28.1		33.0	31.4	0.0	36.7	35.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	178.1	5.0	18.2	24.3		0.5	0.3	1.4	1.4	0.3	
Delay (s)	41.0	211.4	39.7	53.4	52.4		33.5	31.7	1.4	38.1	35.9	
Level of Service	D	F	D	D	D		C	C	A	D	D	
Approach Delay (s)		177.5			52.7			11.1			36.4	
Approach LOS		F			D			B			D	

Intersection Summary

HCM Average Control Delay	87.2	HCM Level of Service	F
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	94.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1500	3343	4948			1744	1500	1723	1655	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1500	3343	4948			1744	1500	1723	1655	
Volume (vph)	70	3104	100	240	4399	15	80	20	200	10	10	10
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	3267	105	253	4631	16	84	21	211	11	11	11
RTOR Reduction (vph)	0	0	30	0	0	0	0	0	183	0	10	0
Lane Group Flow (vph)	74	3267	75	253	4647	0	0	105	28	11	12	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.9	55.5	55.5	6.1	57.7			11.7	11.7	8.4	8.4	
Effective Green, g (s)	5.9	57.5	57.5	8.1	59.7			13.7	13.7	10.4	10.4	
Actuated g/C Ratio	0.06	0.57	0.57	0.08	0.59			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	100	3527	848	266	2905			235	202	176	169	
v/s Ratio Prot	0.04	0.52		c0.08	c0.94			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.02			
v/c Ratio	0.74	0.93	0.09	0.95	1.60			0.45	0.14	0.06	0.07	
Uniform Delay, d1	47.1	20.2	10.1	46.6	21.0			40.5	38.8	41.2	41.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	25.1	4.9	0.0	41.8	271.4			1.4	0.3	0.1	0.2	
Delay (s)	72.3	25.0	10.2	88.4	292.4			41.9	39.1	41.4	41.5	
Level of Service	E	C	B	F	F			D	D	D	D	
Approach Delay (s)		25.6			281.9			40.0			41.4	
Approach LOS		C			F			D			D	

Intersection Summary

HCM Average Control Delay	170.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	101.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1500	3343	4947			1736	1500	1723	1603	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1500	3343	4947			1736	1500	1723	1603	
Volume (vph)	30	4060	80	260	3566	15	80	10	270	10	10	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	4511	89	289	3962	17	89	11	300	11	11	22
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	252	0	20	0
Lane Group Flow (vph)	33	4511	71	289	3979	0	0	100	48	11	13	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.3	53.6	53.6	9.1	60.4			11.5	11.5	8.5	8.5	
Effective Green, g (s)	4.3	55.6	55.6	11.1	62.4			13.5	13.5	10.5	10.5	
Actuated g/C Ratio	0.04	0.54	0.54	0.11	0.61			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	72	3378	812	361	3006			228	197	176	164	
v/s Ratio Prot	0.02	0.72		c0.09	c0.80			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.03			
v/c Ratio	0.46	1.34	0.09	0.80	1.32			0.44	0.24	0.06	0.08	
Uniform Delay, d1	48.1	23.5	11.3	44.7	20.2			41.1	40.0	41.7	41.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.6	153.0	0.0	12.0	148.0			1.3	0.6	0.1	0.2	
Delay (s)	52.6	176.6	11.4	56.7	168.2			42.5	40.7	41.8	41.9	
Level of Service	D	F	B	E	F			D	D	D	D	
Approach Delay (s)		172.5			160.6			41.1			41.9	
Approach LOS		F			F			D			D	

Intersection Summary

HCM Average Control Delay	160.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	102.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

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Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3343	4951	4951	1519	3343	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3343	1382
Volume (vph)	1205	2179	2606	40	60	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1339	2421	2896	44	67	22
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1339	2421	2896	44	67	22
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	20.1	78.2	53.1	97.4	9.2	97.4
Effective Green, g (s)	22.1	80.2	55.1	97.4	11.2	97.4
Actuated g/C Ratio	0.23	0.82	0.57	1.00	0.11	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	759	4077	2801	1519	384	1382
v/s Ratio Prot	c0.40	0.49	c0.58		c0.02	
v/s Ratio Perm				0.03		0.02
v/c Ratio	1.76	0.59	1.03	0.03	0.17	0.02
Uniform Delay, d1	37.6	3.0	21.2	0.0	38.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	349.3	0.2	26.5	0.0	0.2	0.0
Delay (s)	386.9	3.2	47.7	0.0	39.1	0.0
Level of Service	F	A	D	A	D	A
Approach Delay (s)		139.9	47.0		29.5	
Approach LOS		F	D		C	

Intersection Summary

HCM Average Control Delay	98.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	5085	1560	3433	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3433	1419
Volume (vph)	1393	2697	2001	140	80	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1548	2997	2223	156	89	22
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1548	2997	2223	156	89	22
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	19.3	79.5	55.2	99.1	9.6	99.1
Effective Green, g (s)	21.3	81.5	57.2	99.1	11.6	99.1
Actuated g/C Ratio	0.21	0.82	0.58	1.00	0.12	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	738	4182	2935	1560	402	1419
v/s Ratio Prot	c0.45	0.59	c0.44		c0.03	
v/s Ratio Perm				0.10		0.02
v/c Ratio	2.10	0.72	0.76	0.10	0.22	0.02
Uniform Delay, d1	38.9	3.8	15.7	0.0	39.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	498.5	0.6	1.2	0.1	0.3	0.0
Delay (s)	537.4	4.4	16.9	0.1	39.9	0.0
Level of Service	F	A	B	A	D	A
Approach Delay (s)		185.9	15.8		32.0	
Approach LOS		F	B		C	

Intersection Summary

HCM Average Control Delay	126.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4838		1723	4951			4837	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4838		1723	4951			4837	
Volume (vph)	0	0	0	580	1764	140	112	340	0	0	320	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	644	1960	156	124	378	0	0	356	56
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	36	0
Lane Group Flow (vph)	0	0	0	0	2752	0	124	378	0	0	376	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					24.7		6.0	21.7			10.7	
Effective Green, g (s)					26.7		8.0	23.7			12.7	
Actuated g/C Ratio					0.47		0.14	0.42			0.23	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2290		244	2080			1089	
v/s Ratio Prot							c0.07	0.08			c0.08	
v/s Ratio Perm					0.57							
v/c Ratio					42.93dl		0.51	0.18			0.34	
Uniform Delay, d1					14.8		22.4	10.3			18.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					95.3		1.7	0.0			0.2	
Delay (s)					110.1		24.0	10.3			18.5	
Level of Service					F		C	B			B	
Approach Delay (s)		0.0			110.1			13.7			18.5	
Approach LOS		A			F			B			B	

Intersection Summary

HCM Average Control Delay	86.7	HCM Level of Service	F
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.98		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4963		1770	5085			5027	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4963		1770	5085			5027	
Volume (vph)	0	0	0	180	1167	150	153	910	0	0	680	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.69	0.70
Adj. Flow (vph)	0	0	0	257	1667	214	219	1300	0	0	986	71
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	10	0
Lane Group Flow (vph)	0	0	0	0	2120	0	219	1300	0	0	1047	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					20.1		6.0	30.6			19.6	
Effective Green, g (s)					22.1		8.0	32.6			21.6	
Actuated g/C Ratio					0.36		0.13	0.54			0.36	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					1807		233	2731			1789	
v/s Ratio Prot							c0.12	0.26			c0.21	
v/s Ratio Perm					0.43							
v/c Ratio					9.18dl		0.94	0.48			0.59	
Uniform Delay, d1					19.3		26.1	8.7			15.9	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					84.2		42.0	0.1			0.5	
Delay (s)					103.5		68.1	8.9			16.4	
Level of Service					F		E	A			B	
Approach Delay (s)		0.0			103.5			17.4			16.4	
Approach LOS		A			F			B			B	

Intersection Summary

HCM Average Control Delay	56.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	60.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6230		3343	1814	1519	1568	2869	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6230		3343	1814	1519	1568	2869	
Volume (vph)	40	820	126	416	1910	15	100	46	235	60	36	120
Peak-hour factor, PHF	0.60	0.80	0.80	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	67	1025	158	693	2388	19	125	58	294	75	45	150
RTOR Reduction (vph)	0	0	133	0	1	0	0	0	0	0	126	0
Lane Group Flow (vph)	67	1025	25	693	2406	0	125	58	294	75	69	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	6.3	25.3	9.3	8.4	27.4		9.3	9.3	72.7	9.7	9.7	
Effective Green, g (s)	8.3	27.3	11.3	10.4	29.4		11.3	11.3	72.7	11.7	11.7	
Actuated g/C Ratio	0.11	0.38	0.16	0.14	0.40		0.16	0.16	1.00	0.16	0.16	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	1859	240	478	2519		520	282	1519	252	462	
v/s Ratio Prot	0.04	0.21	0.02	c0.21	c0.39		0.04	0.03		c0.05	0.02	
v/s Ratio Perm									c0.19			
v/c Ratio	0.34	0.55	0.10	1.45	0.96		0.24	0.21	0.19	0.30	0.15	
Uniform Delay, d1	29.7	17.9	26.3	31.2	21.0		26.9	26.8	0.0	26.9	26.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.4	0.2	213.9	9.5		0.2	0.4	0.3	0.7	0.2	
Delay (s)	30.7	18.2	26.5	245.0	30.5		27.2	27.1	0.3	27.5	26.4	
Level of Service	C	B	C	F	C		C	C	A	C	C	
Approach Delay (s)		20.0			78.5			10.6			26.7	
Approach LOS		B			E			B			C	

Intersection Summary

HCM Average Control Delay	55.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	72.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

57791

472

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	1.00	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1723	4951	1542	3343	6184		3343	1814	1519	1568	2842	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1723	4951	1542	3343	6184		3343	1814	1519	1568	2842	
Volume (vph)	70	1200	229	458	1460	70	178	45	498	60	39	160
Peak-hour factor, PHF	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Adj. Flow (vph)	117	2000	382	763	2433	117	297	75	830	100	65	267
RTOR Reduction (vph)	0	0	176	0	4	0	0	0	0	0	228	0
Lane Group Flow (vph)	117	2000	206	763	2546	0	297	75	830	100	104	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Over	Prot			Split		Free	Split		
Protected Phases	7	4	2	3	8		2	2		6	6	
Permitted Phases									Free			
Actuated Green, G (s)	9.9	25.4	17.0	20.3	35.8		17.0	17.0	94.3	11.6	11.6	
Effective Green, g (s)	11.9	27.4	19.0	22.3	37.8		19.0	19.0	94.3	13.6	13.6	
Actuated g/C Ratio	0.13	0.29	0.20	0.24	0.40		0.20	0.20	1.00	0.14	0.14	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	217	1439	311	791	2479		674	365	1519	226	410	
v/s Ratio Prot	0.07	c0.40	c0.13	c0.23	0.41		0.09	0.04		0.06	0.04	
v/s Ratio Perm									c0.55			
v/c Ratio	0.54	1.39	0.66	0.96	1.03		0.44	0.21	0.55	0.44	0.25	
Uniform Delay, d1	38.6	33.4	34.7	35.6	28.2		33.0	31.4	0.0	36.9	35.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	179.8	5.2	23.5	25.4		0.5	0.3	1.4	1.4	0.3	
Delay (s)	41.2	213.2	40.0	59.1	53.6		33.5	31.6	1.4	38.3	36.2	
Level of Service	D	F	D	E	D		C	C	A	D	D	
Approach Delay (s)		178.7			54.9			11.2			36.6	
Approach LOS		F			D			B			D	

Intersection Summary

HCM Average Control Delay	88.3	HCM Level of Service	F
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

57791

473

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1500	3343	4948			1744	1500	1723	1655	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1500	3343	4948			1744	1500	1723	1655	
Volume (vph)	70	3115	100	240	4406	15	80	20	200	10	10	10
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	74	3279	105	253	4638	16	84	21	211	11	11	11
RTOR Reduction (vph)	0	0	30	0	0	0	0	0	183	0	10	0
Lane Group Flow (vph)	74	3279	75	253	4654	0	0	105	28	11	12	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	3		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	3.9	55.5	55.5	6.1	57.7			11.7	11.7	8.4	8.4	
Effective Green, g (s)	5.9	57.5	57.5	8.1	59.7			13.7	13.7	10.4	10.4	
Actuated g/C Ratio	0.06	0.57	0.57	0.08	0.59			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	100	3527	848	266	2905			235	202	176	169	
v/s Ratio Prot	0.04	0.53		c0.08	c0.94			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.02			
v/c Ratio	0.74	0.93	0.09	0.95	1.60			0.45	0.14	0.06	0.07	
Uniform Delay, d1	47.1	20.2	10.1	46.6	21.0			40.5	38.8	41.2	41.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	25.1	5.1	0.0	41.8	272.5			1.4	0.3	0.1	0.2	
Delay (s)	72.3	25.3	10.2	88.4	293.5			41.9	39.1	41.4	41.5	
Level of Service	E	C	B	F	F			D	D	D	D	
Approach Delay (s)		25.9			282.9			40.0			41.4	
Approach LOS		C			F			D			D	

Intersection Summary

HCM Average Control Delay	171.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	101.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1723	6239	1500	3343	4947			1737	1500	1723	1603	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1723	6239	1500	3343	4947			1737	1500	1723	1603	
Volume (vph)	30	4068	80	260	3578	15	80	10	270	10	10	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	33	4520	89	289	3976	17	88	11	297	11	11	22
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	252	0	20	0
Lane Group Flow (vph)	33	4520	71	289	3993	0	0	99	45	11	13	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot		Perm	Prot			Split		Perm	Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4						2			
Actuated Green, G (s)	2.3	53.6	53.6	9.1	60.4			11.5	11.5	8.4	8.4	
Effective Green, g (s)	4.3	55.6	55.6	11.1	62.4			13.5	13.5	10.4	10.4	
Actuated g/C Ratio	0.04	0.54	0.54	0.11	0.61			0.13	0.13	0.10	0.10	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0			5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	72	3381	813	362	3009			229	197	175	162	
v/s Ratio Prot	0.02	0.72		c0.09	c0.81			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.03			
v/c Ratio	0.46	1.34	0.09	0.80	1.33			0.43	0.23	0.06	0.08	
Uniform Delay, d1	48.0	23.5	11.3	44.7	20.1			41.0	39.9	41.7	41.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.6	153.7	0.0	11.6	149.5			1.3	0.6	0.2	0.2	
Delay (s)	52.6	177.2	11.3	56.3	169.6			42.3	40.5	41.8	42.0	
Level of Service	D	F	B	E	F			D	D	D	D	
Approach Delay (s)		173.1			161.9			40.9			42.0	
Approach LOS		F			F			D			D	

Intersection Summary

HCM Average Control Delay	161.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	102.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3343	4951	4951	1519	3343	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3343	1382
Volume (vph)	1208	2187	2611	40	60	20
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.89	0.89
Adj. Flow (vph)	1342	2430	2901	44	67	22
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1342	2430	2901	44	67	22
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	20.1	78.2	53.1	97.4	9.2	97.4
Effective Green, g (s)	22.1	80.2	55.1	97.4	11.2	97.4
Actuated g/C Ratio	0.23	0.82	0.57	1.00	0.11	1.00
Clearance Time (s)	5.0	5.0	5.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	759	4077	2801	1519	384	1382
v/s Ratio Prot	c0.40	0.49	c0.59		c0.02	
v/s Ratio Perm				0.03		0.02
v/c Ratio	1.77	0.60	1.04	0.03	0.17	0.02
Uniform Delay, d1	37.6	3.0	21.2	0.0	38.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	351.0	0.2	27.1	0.0	0.2	0.0
Delay (s)	388.7	3.2	48.3	0.0	39.1	0.0
Level of Service	F	A	D	A	D	A
Approach Delay (s)		140.4	47.5		29.5	
Approach LOS		F	D		C	

Intersection Summary

HCM Average Control Delay	98.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	104.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	5085	5085	1560	3433	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3433	1419
Volume (vph)	1396	2702	2009	140	80	20
Peak-hour factor, PHF	0.90	0.90	0.89	0.89	0.90	0.90
Adj. Flow (vph)	1551	3002	2257	157	89	22
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1551	3002	2257	157	89	22
Confl. Peds. (#/hr)	10			10	10	10
Turn Type	Prot			Free		Free
Protected Phases	7	4	8		6	
Permitted Phases				Free		Free
Actuated Green, G (s)	19.3	80.4	56.1	99.5	9.6	99.5
Effective Green, g (s)	21.3	82.4	58.1	99.5	11.1	99.5
Actuated g/C Ratio	0.21	0.83	0.58	1.00	0.11	1.00
Clearance Time (s)	5.0	5.0	5.0		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	735	4211	2969	1560	383	1419
v/s Ratio Prot	c0.45	0.59	c0.44		c0.03	
v/s Ratio Perm				0.10		0.02
v/c Ratio	2.11	0.71	0.76	0.10	0.23	0.02
Uniform Delay, d1	39.1	3.6	15.5	0.0	40.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	504.2	0.6	1.2	0.1	0.3	0.0
Delay (s)	543.3	4.2	16.7	0.1	40.6	0.0
Level of Service	F	A	B	A	D	A
Approach Delay (s)		187.8	15.6		32.6	
Approach LOS		F	B		C	

Intersection Summary

HCM Average Control Delay	126.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	99.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4838		1723	4951			4837	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4838		1723	4951			4837	
Volume (vph)	0	0	0	580	1767	140	113	340	0	0	320	50
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	644	1963	156	126	378	0	0	356	56
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	36	0
Lane Group Flow (vph)	0	0	0	0	2755	0	126	378	0	0	376	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					24.7		6.0	21.7			10.7	
Effective Green, g (s)					26.7		8.0	23.7			12.7	
Actuated g/C Ratio					0.47		0.14	0.42			0.23	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					2290		244	2080			1089	
v/s Ratio Prot							c0.07	0.08			c0.08	
v/s Ratio Perm					0.57							
v/c Ratio					42.93dl		0.52	0.18			0.34	
Uniform Delay, d1					14.8		22.4	10.3			18.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					95.8		1.8	0.0			0.2	
Delay (s)					110.7		24.3	10.3			18.5	
Level of Service					F		C	B			B	
Approach Delay (s)		0.0			110.7			13.8			18.5	
Approach LOS		A			F			B			B	

Intersection Summary

HCM Average Control Delay	87.1	HCM Level of Service	F
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.91		1.00	0.91			0.91	
Frpb, ped/bikes					1.00		1.00	1.00			1.00	
Flpb, ped/bikes					1.00		1.00	1.00			1.00	
Frt					0.99		1.00	1.00			0.99	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4965		1770	5085			5026	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4965		1770	5085			5026	
Volume (vph)	0	0	0	180	1172	150	155	910	0	0	680	50
Peak-hour factor, PHF	0.70	0.70	0.70	0.71	0.69	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	0	0	0	254	1699	214	221	1300	0	0	971	71
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	0	2149	0	221	1300	0	0	1029	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type				Prot			Prot					
Protected Phases				3	8		5	2			6	
Permitted Phases												
Actuated Green, G (s)					21.1		7.0	31.5			19.5	
Effective Green, g (s)					23.1		9.0	33.5			21.5	
Actuated g/C Ratio					0.37		0.14	0.54			0.34	
Clearance Time (s)					5.0		5.0	5.0			5.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					1832		254	2721			1726	
v/s Ratio Prot							c0.12	0.26			c0.20	
v/s Ratio Perm					0.43							
v/c Ratio					9.07dl		0.87	0.48			0.60	
Uniform Delay, d1					19.8		26.2	9.1			17.0	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					84.1		26.0	0.1			0.6	
Delay (s)					103.9		52.2	9.2			17.5	
Level of Service					F		D	A			B	
Approach Delay (s)		0.0			103.9			15.5			17.5	
Approach LOS		A			F			B			B	

Intersection Summary

HCM Average Control Delay	56.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

57791