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

REVISIONS TO DRAFT ENVIRONMENTAL IMPACT REPORT

Unified Port of San Diego

July 2013

State Clearinghouse Number 2006021027
UPD Number 83356-EIR-783

Revisions to the Draft Environmental Impact Report

for the

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

SCH No. 2006021027

UPD No. 83356-EIR-635

July 2013

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

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Table of Contents

Appendices

Tables

Figures

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Acronyms and Abbreviations

AB	Assembly Bill
ac	acre
ADT	Average Daily Traffic
AIA	Airport Influence Area
ALUC	Airport Land Use Commission
ALUC Plan/ALCUP	Airport Land Use Compatibility Plan
AM/a.m.	morning
APCD	Air Pollution Control District
ARB	Air Resources Board
BAU	business as usual
BMP/BMPs	Best Management Practice/Best Management Practices
CA	California
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAC	California Administrative Code
CD	compact disk
CAFÉ	corporate average fuel economy
CalEEMod	California Emission Estimator Model
CalEPA	California EPA
CalFire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CBC	California Building Code
CCAP	California Climate Action Plan
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CH_4	methane
CMP	Congestion Management Plan
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent
CPUC	California Public Utilities Commission
CWA	Clean Water Act
dB	decibel
dB(A)	A-weighted decibel

DEH	County Department of Environmental Health
°	degrees, as in degrees Fahrenheit
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
et seq.	and the following
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FGC	Fish and Game Code
FHWA	Federal Highway Administration
ft.	feet
g	grams
GCC	global climate change
GHG	greenhouse gas
g/l	gram per liter
GPD	gallons per day
gpm	gallons per minute
GWP	global warming potential
HAPs	Hazardous Air Pollutants
HCFC	hydrochlorofluorocarbons
HCM	Highway Capacity Manual
HMD	Hazardous Materials Division
Hr/hr	hour
H_2S	hydrogen sulfide
HUD	Federal Department of Housing and Urban Development
I-	Interstate, as in I-5
Inc.	incorporated
JURMP	Jurisdictional Urban Runoff Plan
KOP/KOPs	key observation point/key observation points
kV	kilovolts
lb/lbs	pound/pounds
LCFS	Low Carbon Fuel Standard
LEED	Leadership in Energy and Environmental Design
Leq	equivalent continuous sound level
LID	Low Impact Development
LOS	level of service
MBTA	Migratory Bird Treaty Act
MHPA	Multi Habitat Planning Area
MM	Mitigation Measure
MMT	million metric tons
$MMTCO_2e$	million metric tons equivalent CO_2
mph	miles per hour
MSCP	Multiple Species Conservation Program
MT	metric tons

NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
NASNI	Naval Air Station North Island
NF_3	nitrogen trifluoride
NOI	Notice of Intent
No.	number
NO	nitrogen oxide
NOx	oxides of nitrogen
NO_2	nitrogen dioxide
NPDES	National Pollution Discharge Elimination System
N_2O	nitrous oxide
O_3	ozone
Pb	lead
PCB/PCBs	polychlorinated biphenyl/polychlorinated biphenyls
PFC	perfluorocarbon
PFFP	Public Facilities Financing Program
PM/p.m.	afternoon
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter of 10 microns in diameter or smaller
PMP	Port Master Plan
ppm	parts per million
PRC	Public Resources Code
Psi	pounds per square inch
PVC	polyvinyl chloride
RAQS	Regional Air Quality Strategy
ROG	Reactive Organic Gas
RPS	Renewable Portfolio Standards
RWQCB	Regional Water Quality Control Board
RPZ/RPZs	Runway Protection Zone/Runway Protection Zones
SAA	State Aeronautics Act
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCH	State Clearinghouse
SDAB	San Diego Air Basin
SDCRAA	San Diego County Regional Airport Authority
SDG&E	San Diego Gas and Electric
SDIA	San Diego International Airport
SDPD	San Diego Police Department
sec.	second(s)
sf	square feet
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SOx	sulfur monoxide
SO_2	sulfur dioxide

SUSMP	Standard Urban Stormwater Mitigation
SWRCB	State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
TAC(s)	Toxic Air Contaminant(s)
TNM	Traffic Noise Model
UBC	Uniform Building Code
UFC	Uniform Fire Code
UNFCCC	United Nations Framework Convention on Climate Change
UPD	Unified Port District
URAP	Urban Runoff Action Plan
U.S./US	United States
USFWS	U.S. Fish and Wildlife Service
USMP	Urban Stormwater Mitigation Plan
UWMP	Urban Water Management Plan
v/c	vehicle to capacity ratio
VOC	Volatile Organic Compounds
WMP	Waste Management Plan
WURMP	Watershed Urban Stormwater Mitigation Plan

Chapter 1
Executive Summary

The Revisions to Draft EIR is intended to comply with a writ of mandate issued by the San Diego Superior Court on May 9, 2012, pursuant to the judgment entered in a lawsuit entitled *Unite Here Local 30, et al. v. San Diego Unified Port District, et al.*, San Diego Superior Court Case No. 37-2011000094537-CU-TT-CTL ("Lawsuit"). The Lawsuit challenged the adequacy of the Final Environmental Impact Report for the *Sunroad Harbor Island Hotel Project and Port Master Plan Amendment* ("Final EIR"), which was certified by the Board of Port Commissioners on June 14, 2011. Although it determined the Final EIR was adequate with respect to the Sunroad Harbor Island 175-room Hotel Project ("175-room hotel project"), the Superior Court held that the Final EIR did not adequately address the potential impacts associated with the Port Master Plan Amendment ("proposed PMP Amendment"). On August 14, 2012, the Board of Port Commissioners adopted a resolution setting aside certification of the Final EIR and approval of the PMP Amendment and directing staff to prepare the additional environmental review necessary to evaluate the proposed PMP Amendment, which would allow development of two or three hotels on East Harbor Island with a combined total of not more than 500 rooms, rather than a single, 500-room hotel. Accordingly, the Revisions to Draft EIR has been prepared to analyze the potential impacts of the development of multiple hotels allowed under the proposed PMP Amendment. The PMP Amendment is summarized beginning in Section 1.3.7 of this Executive Summary.

Revisions to Draft EIR

The existing certified Port Master Plan Precise Plan text for the Harbor Island Planning District (Planning District 2) allows the development of a high quality, full-service hotel of up to 500 rooms within Planning District 2, Subarea 23 (East Harbor Island). The proposed PMP Amendment includes revising the Project List for Planning District 2 to allow development of two or three hotels with a cumulative total of 500 hotel rooms, rather than a single, 500-room hotel, as well as the reconfiguration of a portion of East Harbor Island Drive and the traffic circle at its eastern terminus.

The proposed PMP Amendment has been further clarified to state that: (1) there will be no change in the maximum number of 500 hotel rooms that may be developed; and (2) up to 500 hotel rooms may be provided in up to three hotels at up to two areas within the East Harbor Island Subarea. The potential locations of the hotels are identified in Figure 9.1-5, *Area for Hotel Development within the East Harbor Island Subarea of the Port Master Plan*. One of the potential hotel locations is the location of the 175-room hotel project and ancillary facilities on a parcel currently leased by Sunroad Marina Partners, LP and located at 955 Harbor Island Drive.

The potential environmental effects of the 175-room hotel project are analyzed in Chapter 4 (Environmental Analysis) and Chapter 5 (Cumulative Impacts) of this EIR. In accordance with the writ of mandate, the potential environmental effects of the proposed PMP Amendment are analyzed in Chapter 9.

CEQA Guidelines Section 15088.5 requires that a summary of the revisions made to the previously circulated Draft EIR be included as part of the chapters or portions of the Draft EIR which are revised and circulated for review. Therefore, provided below is a summary of the changes and/or additions made to the previously circulated Draft EIR.

- This Chapter 1.0, Executive Summary, has been revised to refer to the Proposed Project as the "Sunroad Harbor Island Hotel Project and East Harbor Island Subarea Port Master Plan Amendment," to identify revisions to the proposed Port Master Plan Amendment, and to add Table 1-4, Matrix of Significant Impacts and Mitigation Measures for PMP Amendment.

- Section 2.7 of the Draft EIR has been revised to add the following information to the end of that section:

    - Chapter 9, "Port Master Plan Amendment," provides an analysis of the significant environmental impacts and mitigation measures, as applicable, for the proposed PMP Amendment for the following areas:

        - Land Use, Water Use, and Coastal Access (Section 9.2.1)
        - Biological Resources (Section 9.2.2)
        - Aesthetics (Section 9.2.3)
        - Hazards and Hazardous Materials (Section 9.2.4)
        - Hydrology and Water Quality (Section 9.2.5)
        - Transportation, Traffic, and Parking (Section 9.2.6)
        - Air Quality (Section 9.2.7)
        - Noise (Section 9.2.8)
        - Geology and Soils (Section 9.2.9)
        - Public Services and Utilities (Section 9.2.10)

    - Recreation (9.2.11)
    - Cumulative Impacts (9.3)

- Chapter 9, Port Master Plan Amendment, has been added to provide the analysis of the significant environmental impacts and to identify mitigation measures, where applicable, for the proposed Port Master Plan Amendment.
- Appendix B (Port Master Plan Amendment) has been minimally revised to clarify and correct some content. The text that is highlighted denotes the 2013 revisions.
- Appendix E-1 has been added to provide the analysis of the potential transportation impacts associated with the PMP Amendment.
- Appendix F-1 has been added to provide the analysis of the potential air quality impacts associated with the PMP Amendment.
- Appendix G-1 has been added to provide the analysis of the potential noise impacts associated with the PMP Amendment.
- Appendix I-3 has been added to provide the analysis of the potential water and sewer impacts associated with the PMP Amendment.
- Appendix J has been added to provide the analysis of the potential greenhouse gas emissions associated with the PMP Amendment.
- Appendix K has been added to include the Wave Uprush Study.

Public Review and Comments

Pursuant to CEQA Guidelines Section 15088.5(f)(2), the Port District requests that reviewers limit their comments to the chapters or portions of the EIR which are revised in this document. The Port District will respond only to comments received during the review period that relate to chapters or portions of the EIR which are revised in this document. The Port District previously provided written responses to comments received on the chapters or portions of the EIR that are not being revised and recirculated. Those responses are contained in the Final EIR that was certified by the Board of Port Commissioners on June 14, 2011, and considered by the San Diego Superior Court in the Lawsuit.

The Revisions to the Draft EIR will be available for a 45-day period for review and comment by the public and public agencies from Wednesday, July 10, 2013 to Monday, August 26, 2013. Comments on this Revisions to the Draft EIR must be received by 4:00 p.m. on Monday, August 26, 2013 and must be submitted in writing to:

San Diego Unified Port District
ATTN: Anna Buzaitis
Environmental and Land Use Management
P.O. Box 120488
San Diego, CA 92112-0488

A hard copy of the Revisions to 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 compact disc (CD) copy of the Revisions to Draft EIR also can be obtained by contacting the Office of the District Clerk at (619) 686-6206. This Revisions to Draft EIR can be viewed online at www.portofsandiego.org/sunroad-harbor-island-hotel.html, and is also available for review, during normal operation hours for the duration of the public review period, at the following libraries:

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

1.1 Proposed 175-room Hotel 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 for the Proposed 175-Room Hotel

The ~~Proposed Project~~ proposed 175-room hotel site is located in the southern portion of San Diego County at the northern end of San Diego Bay. The ~~Project~~

proposed 175-room hotel 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~~ proposed 175-room hotel site is the location of the ~~Proposed Project~~ proposed 175-room hotel 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~~ proposed 175-room hotel site is currently developed with a marina locker building, parking lots, traffic circle, and part of Harbor Island Drive. The ~~Project~~ vicinity for the proposed 175-room hotel refers to areas near the ~~Project~~ proposed 175-room hotel site but that are located outside of where improvements for the 175-room hotel are proposed.

Existing Conditions and Surrounding Land Uses

The ~~Project~~ proposed 175-room hotel 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~~ proposed 175-room hotel 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~~ proposed 175-room hotel 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~~ 175-room hotel 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.

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~~ 175-room hotel 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~~ 175-room hotel 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~~ proposed 175-room hotel 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~~ at the site of the proposed 175-room hotel, as well as future hotels on East Harbor Island.

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 for 175-room Hotel

The ~~Proposed Project~~ proposed 175-room hotel 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 for the proposed 175-room hotel as proposed in this Draft EIR includes the following physical changes to the ~~Project~~ site proposed for development of the 175-room hotel:

- 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 previously used by SDIA for employee parking) to be ~~spread across multiple hotels (together totaling no more than 500 rooms) on East Harbor Island~~ located in up to three hotels in up to two areas of the East Harbor Island Subarea, with a combined maximum of not more than 500 rooms.

1.3.1 Proposed 175-room Hotel

The floor area of the proposed 175-room 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.

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~~ proposed 175-room hotel 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~~ proposed 175-room hotel site (along the bay) would not be altered as a part of the ~~Proposed Project~~ proposed 175-room hotel project.

The ~~Project~~ 175-room hotel project proposes enhanced public access within East Harbor Island. The ~~Project~~ proposed 175-room hotel 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

The proposed 175-room hotel project would include a~~A~~ total of 457 parking spaces in two parking lots 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. A 72-space parking lot would be located east of the hotel, and a 101-space lot would be located west of the proposed 175-room 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~~ proposed 175-room hotel 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~~ proposed 175-room hotel project site is not a part of the ~~Proposed Project~~ proposed 175-room hotel project. The existing parking available on the ~~Project~~ site of the proposed 175-room hotel is part of the leasehold and is utilized for marina use. Public parking in the vicinity of the ~~Project~~ proposed 175-room hotel site is located on the southern side of Harbor Island Drive and will not be affected by the ~~Proposed Project~~ proposed 175-room hotel project.

1.3.4 Roadway and Infrastructure Realignment

Roadway Realignment

The section of Harbor Island Drive located immediately south of the proposed 175-room 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 175-room hotel would increase demands on existing infrastructure systems including water supply and wastewater treatment. Water and sewer pipelines currently extend through the ~~Project~~ site of the proposed 175-room hotel. The Project Utility Plan for the 175-room hotel proposes that certain existing facilities be removed and new facilities would be placed underneath Harbor Island Drive. Water and sewer pipelines serving the proposed 175-room 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~~ proposed 175-room hotel 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~~ proposed 175-room hotel site. From this connection point the redundant loop would extend within Harbor Island Drive to the ~~Project~~ proposed 175-room hotel 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~~ proposed 175-room hotel site. A stormwater drainage system would be connected with these existing facilities to collect stormwater runoff from the

~~Project~~ proposed 175-room hotel 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~~ proposed 175-room hotel 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 of the proposed 175-room hotel 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~~ proposed 175-room hotel 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 to18 months in duration.

The construction staging area would be on the ~~Project~~ site of the proposed 175-room hotel, 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~~ proposed 175-room hotel 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~~ proposed 175-room hotel. 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~~ proposed 175-room 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 proposed 175-room hotel ~~P~~project. The changes warranting a PMP Amendment also 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~~ located in up to three hotels in up to two locations of the East Harbor Island Subarea, with a combined maximum of not more than 500 rooms. The ~~P~~proposed 175-room hotel ~~P~~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 existing certified PMP was proposed for the westernmost parcel of East Harbor Island (the parcel located west of the proposed 175-room hotel ~~Project~~ site). This parcel ~~is currently~~ was previously used by SDIA for employee parking and is currently used to park overflow rental cars. Although the Proposed Project generally includes those uses outlined in this description, the PMP would need to be amended to allow those uses, including the proposed 175-room hotel project, on all of East Harbor Island.~~, including the Project site.~~ The portion of the 175-room hotel ~~Project~~ project site that the hotel would be constructed on, as well as other areas within East Harbor Island where other hotels could occur, 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 and are part of the proposed 175-room hotel project.

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 for Commercial Recreation uses. ~~The last project, a~~ Future development in this subarea includes up to three hotels with a combined total of no more than ~~high quality hotel of approximately~~ 500 rooms.~~,~~ The hotels would be located on the marina parcel or west of the marina parcel (former airport employee parking lot); no hotels would be sited on the restaurant parcel on the easternmost end of the island. 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~~ly~~ with adopted aircraft approach paths and Federal Aviation Administration (FAA) regulations. ~~The hotel~~ Hotels ~~complex~~ may includes typical supporting facilities and ancillary uses such as swimming pools, spas,

~~commercial~~ retail shops, restaurants, cocktail lounges, meeting and conference space, and 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. 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 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.

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 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 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, aFuture 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 consistentcy 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]*~~

~~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 iensures 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 no more than ~~multiple~~ three hotels with a

cumulative total of 500 rooms on two sites and include the traffic circle/road realignment; ~~and~~

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

- adding language to the introductory Planning District 2 text that indicates that as each hotel development on Harbor Island is developed or redeveloped it will: (1) prepare and implement a public access plan; (2) provide or participate in shuttle service to and from the airport; and (3) prepare a parking management program.

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~~ previously circulated chapters of the Draft EIR 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.). The Revisions to Draft EIR provides an analysis of the potential environmental impacts associated with the proposed PMP Amendment. ~~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 (address in the Draft EIR) at this time. Any future development would require a project-level analysis at the time that development is proposed. In accordance with CEQA Guidelines Section 15168, future hotel proposals would be reviewed against this EIR to determine if an additional environmental document would need to be prepared. Accordingly, the potential environmental effects of the remaining development allowed under the proposed PMP Amendment (i.e., 325 hotel rooms in one or two hotels at one other area of East Harbor Island) are analyzed in Chapter 9 at a program level.

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

Land Use	Acres Existing	Acres Revised
Commercial	~~90.6~~	91.3
Airport-related Commercial	38.0	
Commercial Recreation	~~52.6~~	53.3
Industrial	631.8	
Aviation-related Industrial	130.6	
Industrial Business Park	33.1	
International Airport	468.1	
Public Recreation	~~26.2~~	25.6
Open Space	~~7.5~~	6.1
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~~2013

1.4 Impact Summary

The ~~P~~proposed 175-room hotel ~~P~~project would result in significant project impacts on Biological Resources; Hazards and Hazardous Materials; Geology and Soils; Noise; and Public Services and Utilities. The proposed 175-room hotel ~~P~~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 associated with the proposed 175-room hotel project.

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~~ 175-room hotel project compared with the alternatives.

The proposed PMP Amendment would result in significant impacts on Biological Resources, Hazards and Hazardous Materials, Parking, Noise, Geology and Soils, and Public Services and Utilities. The proposed PMP Amendment would contribute to cumulative impacts related to Transportation and Traffic; Noise; and Public Services and Utilities. Table 1-4 presents the significant impacts and proposed mitigation measures associated with the PMP Amendment.

Table 1-2. Matrix of Significant Impacts and Mitigation Measures for 175-room Hotel Project

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	Project Level Impacts for 175-room Hotel Project	
	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.

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: 1. Except for stone columns and HEAT Anchor methods, dewatering shall be	Less than significant

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

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. III. The Project Applicant shall consult with a geotechnical engineer regarding	

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	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. IX. In addition to the extensive mitigation measures listed above, the Geotech Study	

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	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 in the vicinity of Liberty Station in the amount determined by the City of San Diego. This fire station is within the Peninsula Public Facilities Financing Plan, Fiscal Year 2001 community boundary. The fair share contribution shall be paid to the City of San Diego and will be deposited into the Developer Contribution Fund No. 200636. 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 in the vicinity of 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 in the vicinity of Liberty Station (former Naval Training Center) as a Tier-2, low priority project. This fire station would be the primary location for which emergency fire, rescue and medical resources would be provided to the Proposed Project. The fire station is

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
		identified as a proposed project in the Fire Station Master Plan (February 2009) and is within the Peninsula Public Facilities Financing Plan, Fiscal Year 2001 community boundary. Final location for the required facility shall be determined by the Fire Rescue Department, to ensure compliance with National Response time standards. Although implementation of mitigation measure MM PUB-1 could mitigate impacts of the Proposed Project on fire services to a less-than-significant level, the mitigation measure is within the jurisdiction of the City of San Diego and not the Port District. Accordingly, the Port District cannot assure that this mitigation measure would be implemented when needed, and the impact is considered

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
		significant and unmitigated.
	Cumulative Impacts for 175-room Hotel Project	
	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 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 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 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
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.	
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 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	

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	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.	District cannot assure that these measures would be implemented, and the impacts would remain significant and unmitigated until the mitigation is implemented.
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.	
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.	
	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	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	Implementation of Mitigation Measure MM PUB-1 could mitigate the Proposed Project's impacts on

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
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.	Proposed Project's contribution to this cumulative impact to a less-than-significant level.	fire services to a less-than-significant level. However, this mitigation measure entails establishment by the City of San Diego 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 and is outside of the jurisdiction of the Port District. Because the Port District cannot assure that this mitigation measure would be implemented when needed, the cumulative impact is considered 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	Implementation of Mitigation Measure MM PUB-C1 would mitigate the Project's cumulative impact on solid waste facilities

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	■ 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 ■ 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.	to below a level of significance.

Table 1-3. Impact and Level of Significance Comparison of Proposed 175-room Hotel 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 & street segments)	SU	NI	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

Table 1-4. Matrix of Significant Impacts and Mitigation Measures for PMP Amendment

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	Project Level Impacts for PMP Amendment	
	Biological Resources (Section 9.2.2)	
BIO-2: Removal of the mature trees during construction of future hotels, as well as noise from construction activity, could impede the use of bird breeding sites on and adjacent to the East Harbor Island Subarea. 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-2: 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: 3. Conduct all vegetation removal during the non-breeding season (between September 1 and January 31). OR 4. 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 survey 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.

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	confirmed that no new nests have been established.	
	Hazards and Hazardous Materials (Section 9.2.4)	
HZ-2: Construction crews could encounter undocumented areas of contamination and other construction-related hazards during construction of future hotels within the East Harbor Island Subarea.	**MM HZ-2a:** Prior to the initiation of construction activities, the Project Applicant for each hotel shall prepare and submit to the Port District's Environmental and Land Use Management 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-2b:** Prior to the initiation of construction activities, the Project Applicant for each hotel shall prepare a Site Safety Plan to address possible hazardous materials present within the East Harbor Island Subarea 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 hotel development to reduce potential health and safety hazards to workers and the public.	Less than significant

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	Parking (Section 9.2.6)	
PARK-1: An inadequate parking supply may result if future hotel development occurs on the western marina parking lot.	**MM PARK-1: Inadequate Parking.** a. Prior to the approval of a Coastal Development Permit for future development of a hotel on the existing west marina parking lot, the design of the proposed hotel development shall provide adequate on-site parking in accordance with the Port District parking guidelines for the proposed hotel development and for the shared parking requirements of the existing marina and the proposed 175-room hotel; and b. Prior to demolition or removal of any parking spaces in the existing west marina parking lot which are required for the shared parking of the existing marina and the proposed 175-room hotel, the Project Applicant shall submit to the Port District for its review and approval a Parking Management Plan, which shall provide adequate parking to satisfy the shared parking requirements for the existing marina and the proposed 175-room hotel during construction of the new hotel and replacement parking spaces.	Less than significant
	Noise (Section 9.2.8)	
NOI-2: Future hotels allowed under the proposed PMP Amendment would be constructed within an area that could result in interior noise levels exceeding the 45dBA CNEL threshold due to single-event aircraft noise. 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-2: Reduction of interior noise levels below 45-dBA (CNEL) interior noise requirement.** Future hotels 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: 5. Acoustically rated dual pane windows and sliding glass door assemblies 6. Heavy-weight drapes and thick carpets for sound absorption The following minimal performance requirements shall be adhered to as they pertain to interior/exterior sound transmission loss:	Less than significant

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	■ 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	
	Geology and Soils (Section 9.2.9)	
GEO-2: Future hotel development could be subject to liquefaction, and foundations and structures could be damaged by ground settlement.	**MM GEO-2:** 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 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	Less than significant

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

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation

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 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

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	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. 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	

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
	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. 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 9.2.10)	
PUB-2: 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 PMP Amendment may contribute to the need for the City to provide additional facilities and/or expanded services.	**MM PUB-2:** Prior to the issuance of a certificate of occupancy for future hotels allowed by the PMP Amendment, the Project Applicant(s) shall pay its fair share of the cost of constructing a new fire station in the vicinity of Liberty Station in the amount determined by the City of San Diego. This fire station is within the Peninsula Public Facilities Financing Plan, Fiscal Year 2001 community boundary. The fair share contribution shall be paid to the City of San Diego and will be deposited into the Developer Contribution Fund No. 200636. In the event the City of San Diego has not determined the amount of the fair share of the cost of constructing a new fire station in the vicinity of Liberty Station at the time a future hotel project requests issuance of a certificate of occupancy, the Project Applicant(s) 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-2 could mitigate impacts of the PMP Amendment 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

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
		District. The City has identified the construction of the fire station in the vicinity of Liberty Station (former Naval Training Center) as a Tier-2, low priority project. This fire station would be the primary location for which emergency fire, rescue and medical resources would be provided to future hotels that could be located within the PMP Amendment area. The fire station is identified as a proposed project in the Fire Station Master Plan (February 2009) and is within the Peninsula Public Facilities Financing Plan, Fiscal Year 2001 community boundary. Final location for the required facility shall be determined by the Fire Rescue Department, to ensure compliance with National Response time standards. Although

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
		implementation of mitigation measure MM PUB-2 could mitigate impacts of the PMP Amendment on fire services to a less-than-significant level, the mitigation measure is within the jurisdiction of the City of San Diego and not the Port District. Accordingly, the Port District cannot assure that this mitigation measure would be implemented when needed, and the impact is considered significant and unmitigated.
PUB-3: The downstream sewer system does not have capacity to incorporate the added demand resulting from the additional 325 hotel rooms that could occur under the proposed PMP Amendment.	**MM PUB-3:** Prior to the construction of the second hotel within the PMP Amendment area, the Project Applicant(s) shall replace the existing 8-inch sewer and four manholes as indicated in Figure 9.2.10-1, to the satisfaction of the City of San Diego Engineer.	Less than significant
	Cumulative Impacts for PMP Amendment (Section 9.3)	
	Transportation, Traffic, and Parking	
TR-C7: Project traffic would contribute to the degradation of operations at the	**MM TR-C7: North Harbor Drive / Harbor Island Drive / Terminal 1 intersection**	Implementation of Mitigation Measures

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
North Harbor Drive/Harbor Island Drive/Terminal 1 intersection in excess of City of San Diego thresholds during the AM and PM peak hours.	**(East Airport Entrance).** The Project Applicant shall contribute a fair share percentage of 19.9% 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 from a "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. Modifications to the traffic signal timing in conjunction with the change in lane designations are also recommended.	MM TR-C7 through MM TR-C16 would mitigate impacts of the proposed PMP Amendment 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.
TR-C8: 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-C8: North Harbor Drive / Rental Car Access Road intersection.** The Project Applicant shall contribute a fair share percentage of 3.6% 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. Modifications to the traffic signal timing in conjunction with the change in lane destination are also recommended. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	
TR-C9: 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 AM and PM peak hours.	**MM TR-C9: North Harbor Drive / Laurel Street intersection.** The Project Applicant shall contribute a fair share percentage of 4.6% 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 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. Modifications to the traffic signal timing in conjunction with the change in lane destination are also recommended. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	
TR-C10: Project traffic would contribute to the degradation of operations at the	**MM TR-C10: Pacific Highway/Laurel Street intersection.**	

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
Pacific Highway/Laurel Street intersection in excess of City of San Diego thresholds during the AM and PM peak hours.	Dual southbound right-turn and eastbound left-turn lanes are needed to accommodate the anticipated traffic volumes, but do not appear feasible due to right-of-way constraints on at least three of the corners of the intersection.	
TR-C11: Project traffic would contribute to the degradation of operations at the Pacific Highway/Grape Street intersection in excess of City of San Diego thresholds during the PM peak hours.	**MM TR-C11: Pacific Highway/Grape Street intersection.** A northbound right-turn lane is needed to accommodate the anticipated traffic volumes, but may not be feasible due to right-of-way constraints.	
TR-C12: 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-C12: North Harbor Drive between Harbor Island Drive and Rental Car Access Road street segment.** The Project Applicant shall contribute a fair share percentage of 5.8% towards the addition of one westbound lane along the street segment. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	
TR-C13: 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-C13: North Harbor Drive between Rental Car Access Road and Laurel Street street segment.** The Project Applicant shall contribute a fair share percentage of 2.4% towards the addition of one westbound lane along the street segment. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	
TR-C14: Project traffic would contribute to the degradation of operations on the 'North Harbor Drive between Laurel Street and Hawthorn Street' street segment in excess of City of San Diego thresholds.	**MM TR-C14: North Harbor Drive between Laurel Street and Hawthorn Street street segment.** The Project Applicant shall contribute a fair share percentage of 7.1% towards the addition of one southbound lane along the street segment. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
TR-C15: Project traffic would contribute to the degradation of operations on the 'Laurel Street between North Harbor Drive and Pacific Highway' street segment in excess of City of San Diego thresholds.	**MM TR-C15: Laurel Street between North Harbor Drive and Pacific Highway street segment.** The Project Applicant shall contribute a fair share percentage of 1.4% towards the addition of one eastbound lane along the street segment. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	
TR-C16: Project traffic would contribute to the degradation of operations on the 'Laurel Street between Pacific Highway and Kettner Boulevard' street segment in excess of City of San Diego thresholds.	**MM TR-C16: Laurel Street between Pacific Highway and Kettner Boulevard street segment.** The Project Applicant shall contribute a fair share percentage of 2.7% towards the addition of one eastbound lane along the street segment. The fair share contribution shall be paid to the City of San Diego traffic impact fee program.	
	Noise	
NOI-C1: If exterior usable areas, such as pool decks, patios, balconies, and outdoor eating areas, are located in areas where greater than 65-dBA CNEL noise levels would occur, then a significant impact would result.	**MM NOI-C1: Reduction of interior noise levels below 45-dBA (CNEL) interior noise requirement.** Because future cumulative sound levels would exceed 60 dBA CNEL at the hotel building façades, an interior noise analysis evaluating proposed exterior wall construction, windows, and doors shall be completed after building plans are finalized to ensure that noise levels within habitable rooms will be 45 dBA CNEL or less, as required by California Code of Regulations, Title 24: Noise Insulation Standard and the City's CEQA significance determination thresholds. This analysis shall be submitted to the City's Building Inspection Department prior to obtaining a building permit. The project applicant shall implement the noise reduction measures recommended in the interior noise analysis which may include but are not limited to sound-rated windows, a closed-windows option, and mechanical ventilation meeting applicable California Building Code (CBC) requirements.	Less than significant
NOI-C2: Because building facades on the project site would be exposed to noise levels exceeding 60 dBA CNEL,	**MM NOI-C2: Reduction of exterior noise impacts.** The plans and specifications for future hotel development shall provide that all exterior	Less than significant

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
the potential for an interior noise impact would exist.	noise-sensitive elements of future hotels shall be positioned in areas exposed to 65 dBA CNEL or below. If exterior use areas are subject to noise levels greater than 65 dBA CNEL, the design of the project shall incorporate measures such as noise barriers to reduce exterior noise levels to below 65 dBA CNEL. Noise barriers such as walls are commonly used to reduce outdoor noise levels from transportation sources. The effectiveness of a barrier depends on the distance from the source to the barrier, the distance from the receiver to the barrier, and the relative height of the barrier above the line-of-sight between the source and receiver. Noise barriers incorporated into project design shall block this line-of-sight, be constructed of solid material (such as concrete masonry), and be long enough to prevent sound from flanking around the ends, and shall have a minimum density of 3.5 pounds/square foot and have no gaps or cracks through or below the barrier. Where preservation of views is desired, transparent materials such as glass or Plexiglas can be used.	
	Public Services and Utilities	
PUB-C3: The proposed PMP Amendment 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-C3, the PMP Amendment'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 9.2.10, "Public Services and Utilities"). The PMP Amendment 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-2 could mitigate the PMP Amendment's contribution to this cumulative impact to a less-than-significant level.	Implementation of Mitigation Measure MM PUB-2 could mitigate potential impacts associated with future hotel development allowed under the proposed PMP Amendment on fire services to a less-than-significant level. However, this mitigation measure entails establishment by the City of San Diego of a development impact fee program, by which the Project Applicant would pay impact fees for its

Significant Impact	Proposed Mitigation	Level of Significance After Mitigation
		demand on fire services. This mitigation measure is contingent upon action of the City of San Diego and is outside of the jurisdiction of the Port District. Because the Port District cannot assure that this mitigation measure would be implemented when needed, the cumulative impact is considered significant and unmitigated until the mitigation is implemented.
PUB-C4: The PMP Amendment 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-C2:** Prior to the issuance of any demolition, grading, or construction permits for hotels within the PMP Amendment area, the Project Applicant(s) 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-C2 would mitigate the cumulative impact on solid waste facilities associated with future hotel development that could occur under the proposed PMP Amendment to below a level of significance.

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.	
	Air Quality	
SLR-C1: Sea level rise projected to occur by the year 2100 is assumed to have the potential to result in a significant impact on future hotel development allowed under the proposed PMP Amendment. Mitigation would be required to ensure that, when such future hotel development is proposed, it will take into account the updated information regarding future sea level rise available at that time and its design will include the adaptive strategies, if any, necessary to accommodate potential sea level rise.	**MM SLR-C1:** Prior to the approval of a Coastal Development Permit for future hotel development that could occur under the proposed PMP Amendment, the project applicant shall retain a qualified engineer who shall prepare for the Port District's review and approval an up-to-date, site specific analysis of the potential impacts of sea level rise by the year 2100 on the proposed hotel development. The report shall determine whether adaptive strategies for accommodating the potential for sea level rise and the potential for more frequent wave overtopping and wave-induced impact forces are necessary and, if so, shall recommend appropriate adaptive strategies such as the use of perimeter floodwalls or other flood barriers around either the outer margins of Harbor Island or the proposed development to be incorporated into the design of the proposed development.	The implementation of mitigation measure MM SLR-C1 would mitigate the potential significant impacts of sea level rise by the year 2100 to below a level of significance.

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Chapter 2
Introduction

2.1 Background

The project addressed in this Draft Environmental Impact Report (EIR) is 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 September 2, 2008, the Board of Port Commissioners (BPC) directed staff to proceed with environmental review of the Proposed Project. The easternmost portion of East Harbor Island, which includes the proposed 175-room Sunroad Harbor Island Hotel Project site, is currently leased to Sunroad Marina Partners, LP (Sunroad). Because the PMP's 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~~ at the site of the proposed 175-room hotel, as well as future hotels on East Harbor Island for a cumulative total of no more than 500 hotel rooms.

2.2 Project Objectives

The objectives of the Proposed Project are as follows:

- Implement the Port Master Plan's goal to develop East Harbor Island with commercial recreation uses.
- Increase public use of the waterfront by providing additional visitor serving commercial recreation uses.
- Enhance public access to the waterfront by providing additional publicly accessible facilities and amenities consistent with the Port Master Plan.
- Promote East Harbor Island as a public water front destination.
- Strengthen the existing water-oriented commercial recreation uses on East Harbor Island.
- Provide a hotel that draws on the existing water-oriented commercial recreation uses on East Harbor Island.

- 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.
- Provide a hotel that is a financially viable operation while minimizing the aesthetic changes on East Harbor Island.
- Amend the PMP to allow the development of several small hotels that will provide a total of 500 rooms in place of one large 500-room hotel in Planning District 2, Subarea 23 (East Harbor Island).

2.3 Environmental Procedures

This Draft EIR has been prepared in compliance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) and the procedures for implementation of CEQA set forth in the State Guidelines (14 California Code of Regulations [CEQA Guidelines], Section 15000 et seq.). This Draft EIR has also been prepared in compliance with the Port District's Guidelines for Compliance with CEQA (Resolution 97-191).

The Port District will be the Lead Agency for the purpose of preparing this Draft EIR, as defined by Section 15051 of the CEQA Guidelines. All other agencies are considered responsible agencies, as defined by Section 15381 of the CEQA Guidelines.

2.4 Environmental Impact Report Scoping

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.

2.5 Scope of this Draft Environmental Impact Report

The areas of environmental impact to be addressed in this Draft EIR were initially identified in the environmental considerations section of the NOP, in accordance with the Port District's Procedures of Environmental Review. The comments received in response to the NOP and during the public scoping meeting were also used to determine the scope of this Draft EIR. The impact analysis documented in this Draft EIR focuses on potential significant adverse effects, which have been identified in the following areas:

- Land Use, Water Use, and Coastal Access
- Biological Resources
- Aesthetics
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Transportation, Traffic, and Parking
- Air Quality
- Noise
- Geology and Soils
- Public Services and Utilities
- Recreation

In addition, the preliminary environmental review of the Proposed Project identified a number of environmental issue areas where no significant impacts are anticipated as a result of implementing the Project: agriculture resources, cultural resources, mineral resources, and population and housing. These issue areas are described in Section 7.3, "Effects Found Not to Be Significant," of this Draft EIR, and are not discussed in further detail (CEQA Guidelines, Section 15128).

2.6 Intended Uses of this Draft Environmental Impact Report

This Draft EIR will be considered by the Board of Port Commissioners, the California Coastal Commission (Coastal Commission), and the San Diego

County Regional Airport Authority (SDCRAA) in their respective decisions regarding the following actions associated with the Proposed Project:

- Port District: EIR certification, Coastal Development Permit issuance, Port Master Plan Amendment adoption
- California Coastal Commission: Port Master Plan Amendment certification
- San Diego County Regional Airport Authority: Airport Land Use Compatibility Plan (ALUCP) Determination of Consistency

The Coastal Commission may consider the information contained in this EIR in its decision to approve the Project. As the primary jurisdictional authority under the California Coastal Act (Coastal Act), the Coastal Commission must certify that the proposed PMP Amendment is consistent with the provisions of the Coastal Act.

The proposed PMP Amendment would not involve subsequent construction of any additional hotel rooms not anticipated by the current PMP (500 rooms). This Draft EIR contains a project-level analysis of a hotel of up to 175 rooms. All future development projects proposed in accordance with the PMP Amendment would require project-level environmental analysis at the time applications are submitted to the Port District.

2.7 Organization of this Report

This Draft EIR provides a comprehensive analysis of the significant environmental impacts, mitigation measures, and alternatives for the Proposed Project. In order to describe the direct, indirect, and cumulative impacts; mitigation measures; and alternatives, this Draft EIR is organized as follows:

- Chapter 1, "Executive Summary," provides summarized information of procedures, Project description, impacts, and mitigation measures.
- Chapter 2, "Introduction," provides background on, and the procedural compliance of, the Proposed Project and the Draft EIR.
- Chapter 3, "Project Description and Environmental Setting," describes the Project location and environmental setting, and provides a detailed description of the ~~Project~~ proposed 175-room hotel project.
- Chapter 4, "Environmental Analysis," provides an analysis of the significant environmental impacts and mitigation measures for the ~~Proposed Project~~ proposed 175-room hotel for the following areas:
  - Land Use, Water Use, and Coastal Access (Section 4.1);
  - Biological Resources (Section 4.2);
  - Aesthetics (Section 4.3);
  - Hazards and Hazardous Materials (Section 4.4);

- Hydrology and Water Quality (Section 4.5);
- Transportation, Traffic, and Parking (Section 4.6);
- Air Quality (Section 4.7);
- Noise (Section 4.8);
- Geology and Soils (Section 4.9);
- Public Services and Utilities (Section 4.10); and
- Recreation (Section 4.11).

- Chapter 5, "Cumulative Impacts," includes a comprehensive review of past, present, and probable future cumulative projects and an analysis of their potential cumulative effects on the environment for the proposed 175-room hotel project.
- Chapter 6, "Alternatives," discusses design alternatives that would avoid or reduce the impacts assessed for the Project. Two alternatives are considered: the No Project Alternative and the Reduced Project Alternative.
- Chapter 7, "Other Required Considerations," includes growth-inducing impacts, unavoidable and irreversible significant environmental effects, and effects found not to be significant.
- Chapter 8, "References, Consultations, and List of Preparers," provides a list of the references cited in this Draft EIR, agencies contacted, and individuals and parties who assisted in the preparation of this Draft EIR.
- Chapter 9, "Port Master Plan Amendment," provides an analysis of the significant environmental impacts and mitigation measures for the proposed PMP Amendment for the following areas:
  - Land Use, Water Use, and Coastal Access (Section 9.2.1)
  - Biological Resources (Section 9.2.2)
  - Aesthetics (Section 9.2.3)
  - Hazards and Hazardous Materials (Section 9.2.4)
  - Hydrology and Water Quality (Section 9.2.5)
  - Transportation, Traffic, and Parking (Section 9.2.6)
  - Air Quality (Section 9.2.7)
  - Noise (Section 9.2.8)
  - Geology and Soils (Section 9.2.9)
  - Public Services and Utilities (Section 9.2.10)
  - Recreation (9.2.11)
  - Cumulative Impacts (9.3)

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Chapter 9.0
Introduction to Port Master Plan Amendment

This chapter is intended to comply with a writ of mandate issued by the San Diego Superior Court on May 9, 2012, pursuant to the judgment entered in a lawsuit entitled *Unite Here Local 30, et al. v. San Diego Unified Port District, et al.,* San Diego Superior Court Case No. 37-2011000094537-CU-TT-CTL ("Lawsuit"). The Lawsuit challenged the adequacy of the Final Environmental Impact Report for the *Sunroad Harbor Island Hotel Project and East Harbor Island Subarea Port Master Plan Amendment* ("Final EIR"), which was certified by the Board of Port Commissioners on June 14, 2011. Although it determined the Final EIR was adequate with respect to the Sunroad Harbor Island 175-room Hotel Project ("175-room hotel"), the Superior Court held that the Final EIR did not adequately address the potential impacts associated with the Port Master Plan Amendment ("proposed PMP Amendment"). Accordingly, this chapter has been prepared to analyze the potential impacts of the development of multiple hotels allowed under the Proposed PMP Amendment.

Background

In 1990, the San Diego Unified Port District (Port District) certified a Program Environmental Impact Report for the East Harbor Island Hotel, Infrastructure and Plan Amendment project ("1990 PEIR"). The 1990 PEIR addressed an Amendment to the Port Master Plan to allow: (1) the development of a resort-oriented, first-class hotel of 400 to 500 guest rooms on Harbor Island, including restaurants and cocktail lounges, meeting and conference rooms, recreation facilities, such as a swimming pool and tennis courts, on-site parking, and extensive landscaping; (2) the incorporation of 1.24 acres of adjacent land into the proposed hotel site; (3) the replacement of the main Harbor Island Drive traffic circle with a modified "T" intersection; and (4) the upgrading of sewer capacity to accommodate the proposed hotel development. The proposed hotel was to be located on approximately 7.56 acres on the westernmost portion of East Harbor Island.

The 1990 PEIR addressed the environmental impacts of amending the Port Master Plan ("PMP") to allow the development of a 400- to 500-room hotel on a specific site which is currently developed as a parking lot. The 1990 PEIR concluded that significant environmental impacts associated with Traffic/Circulation/Parking, Visual Quality, and Endangered Species (California least tern) could result from the PMP Amendment, but all impacts would be mitigated to below a level of significance with the incorporation of the recommended mitigation measures. Although the PMP was amended to allow development of a 400-500 room hotel, the hotel project evaluated in the 1990 PEIR was never constructed.

In December 2009, the Port District prepared a Draft EIR for the *Sunroad Harbor Island Hotel Project and East Harbor Island Subarea Port Master Plan*

Amendment. The Sunroad Harbor Island Hotel project proposed to replace the existing marina locker building and surface parking with a 175-room four-story limited service hotel on a site currently leased to Sunroad Marina Partners, LP and located to the east of the hotel site evaluated in the 1990 PEIR. Although the proposed PMP Amendment did not propose any change in the maximum number of hotel rooms allowed on East Harbor Island, it did allow the development of "multiple hotels." The proposed PMP Amendment also addressed changes in land use resulting from reconfiguring an eastern portion of Harbor Island Drive and the traffic circle at its eastern terminus. The Draft EIR determined that all project-related and cumulative impacts could be mitigated to a level below significance, except the cumulative impacts to traffic and fire protection services.

In November 2010, the Port District prepared Recirculated Portions of the Draft EIR, which revised the traffic analysis in the Draft EIR to address the most recent significance thresholds adopted by the City of San Diego. The Recirculated Portions of the Draft EIR also updated the traffic analysis to address a reduction in size of the proposed hotel from 210 rooms to 175 rooms.

On June 14, 2011, the Port District certified the *Sunroad Harbor Island Hotel Project & East Harbor Island Subarea Port Master Plan Amendment Final Environmental Impact Report* ("Final EIR"), which included the Draft EIR, the Recirculated Portions of the Draft EIR, and the supporting technical appendices. The Port District also adopted the East Harbor Island Subarea Port Master Plan Amendment and granted concept approval for the 175-room hotel.

On July 15, 2011, the Lawsuit was filed which claimed the Final EIR was inadequate. On April 18, 2012, the San Diego Superior Court found that the Final EIR was adequate with respect to the proposed 175-room hotel project, but did not adequately analyze the potential impacts associated with development of multiple hotels with a combined total of not more than 500 rooms allowed under the proposed PMP Amendment. Accordingly, the Superior Court entered a judgment and issued a writ of mandate requiring the Port District to set aside its certification of the Final EIR, its adoption of the East Harbor Island Subarea PMP Amendment, and its conceptual approval for the 175-room hotel and to perform the additional environmental review of the PMP Amendment required by CEQA. On August 14, 2012, the Port District complied with the writ of mandate by adopting a resolution setting aside certification of the Final EIR and approval of the PMP Amendment and directing staff to prepare the additional environmental review necessary to evaluate the proposed PMP Amendment, which would allow multiple hotels on East Harbor Island with a combined total of not more than 500 rooms.

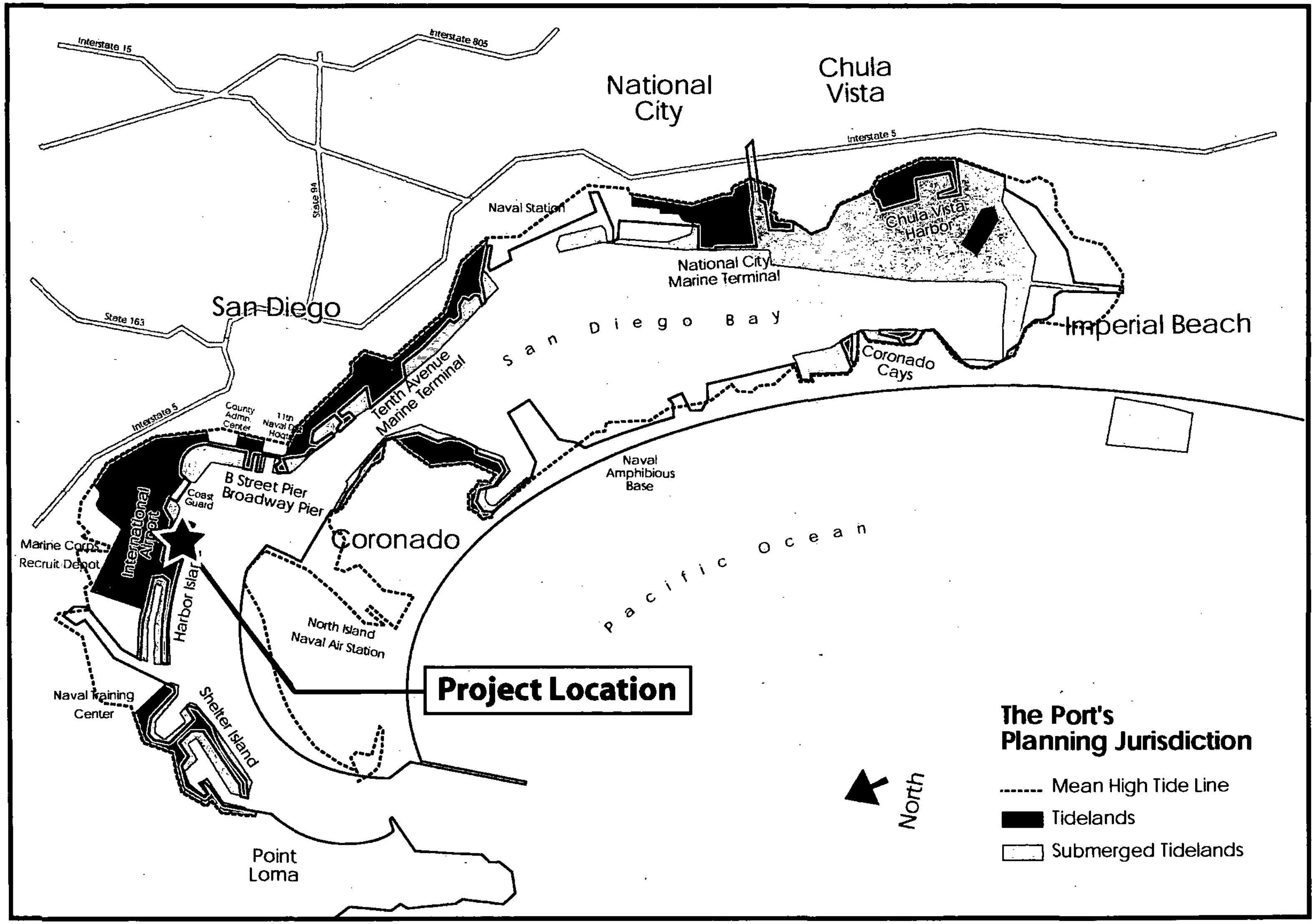
Section 9.1
Port Master Plan Amendment Project Description

The existing certified PMP allows for one hotel with up to 500 rooms and ancillary facilities on one site in the westernmost portion of the East Harbor Island Subarea. The proposed PMP Amendment would allow up to three hotels in up to two locations in the East Harbor Island Subarea with a combined maximum of not more than 500 rooms. The PMP Amendment also provides for reconfiguration of a portion of East Harbor Island Drive and the traffic circle at its eastern terminus, as well as a variety of public access improvements including an extended public promenade along the waterfront. The text of the proposed PMP Amendment is set forth in Appendix B of the Draft EIR.

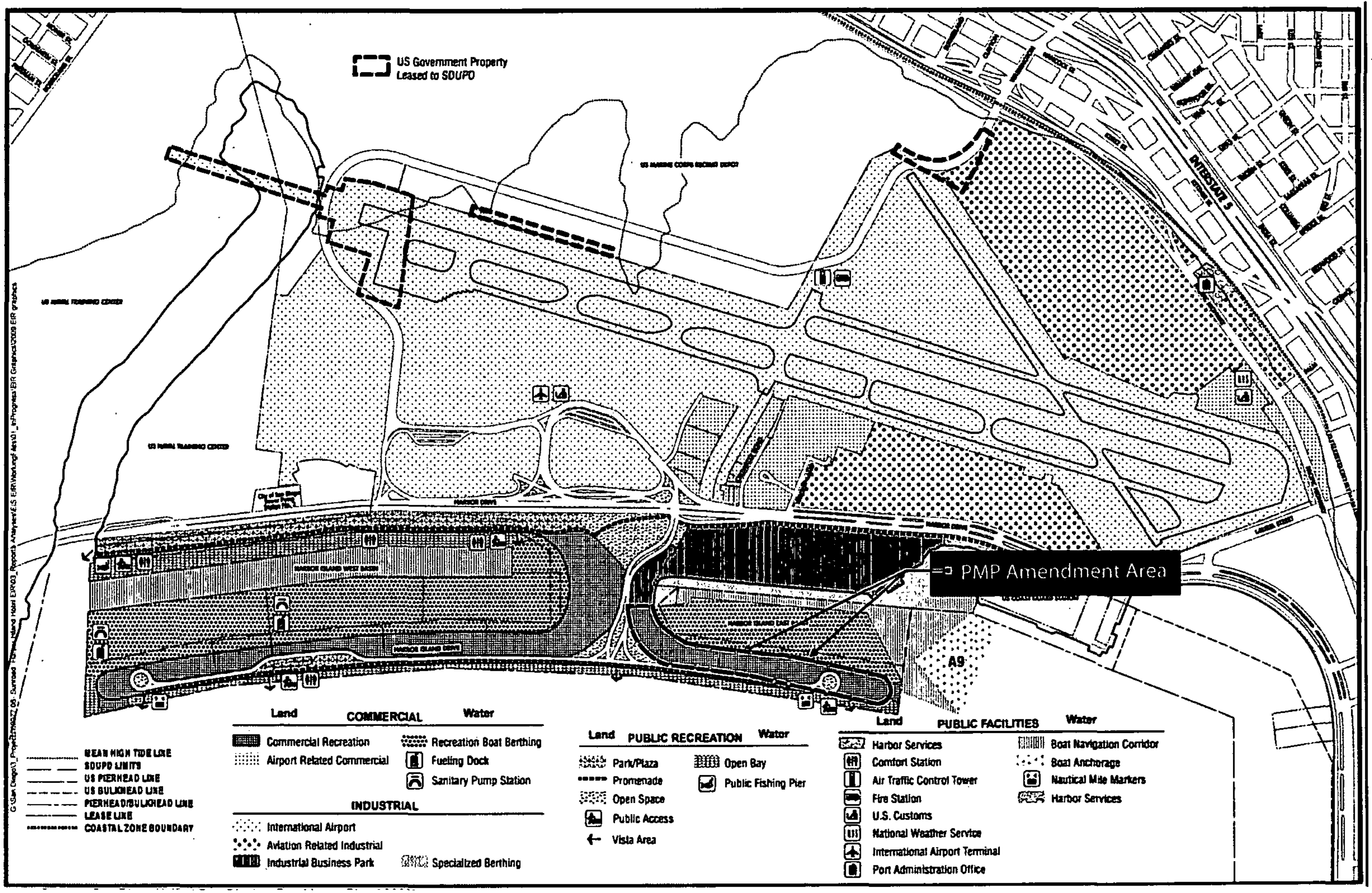
9.1.1 Environmental Setting

The PMP Amendment will apply to East Harbor Island, which is located in the southern portion of San Diego County at the northern end of San Diego Bay. (See Figure 9.1-1, *Vicinity Map.*) East Harbor Island is designated as Subarea 23 of the Lindbergh Field/Harbor Island Planning District (Planning District 2) in the current PMP. (See Figure 9.1-2, *Existing Port Master Plan Planning District 2 Precise Plan*, and Figure 9.1-3, *Planning District 2 Subareas.*)

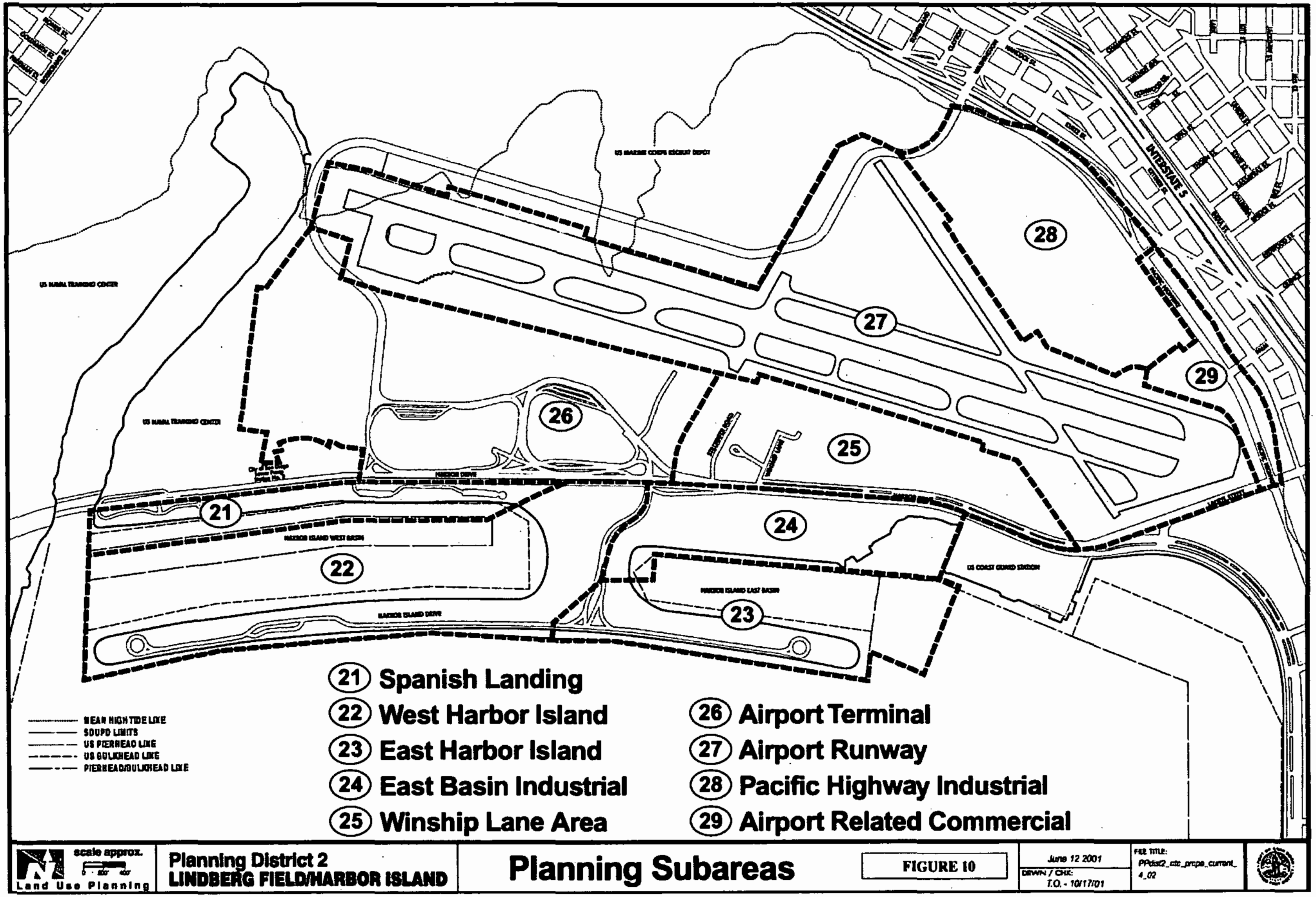
Existing development within Subarea 23 includes the Island Prime restaurant and the site of the approved Reuben E. Lee restaurant reconstruction project at the east end of East Harbor Island. The Sunroad Resort Marina and commercial recreational uses associated with the marina facility, i.e., a marina (docks and slips), a marina office/sales building, and surface parking lots, are located north and west of the restaurants. Harbor Island Drive terminates in a traffic circle located in the eastern portion of the Subarea 23. The westernmost portion of East Harbor Island contains a parking lot that is currently used to park overflow rental cars and was formerly used as employee parking for the San Diego International Airport.



Vicinity Map
Figure 9.1-1



Existing Port Master Plan Planning District 2 Precise Plan
Figure 9.1-2



Planning District 2 Subareas
Figure 9.1-3

9.1.2 Existing Certified Port Master Plan

The landside of East Harbor Island is designated for Commercial Recreation uses in the existing certified PMP. 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 current PMP thus allows for the development of one hotel with up to 500 rooms and ancillary facilities on one site in the westernmost portion of the East Harbor Island Subarea.

9.1.3 Proposed Port Master Plan Amendment

The proposed PMP Amendment would allow up to three hotels in two locations in the East Harbor Island Subarea, with a combined maximum of not more than 500 rooms. The PMP Amendment also provides for reconfiguration of a portion of East Harbor Island Drive and the traffic circle at its eastern terminus, as well as a variety of public access improvements including an extended public promenade along the waterfront.

The proposed PMP Amendment would revise the description of the East Harbor Island Subarea as follows:

> The east end of Harbor Island, subarea 23, ~~has been~~ is the last subarea to complete phased development and is designated for Commercial Recreation uses. ~~The last project, a~~ Future development in this subarea includes up to three hotels with a combined total of no more than ~~high quality hotel of approximately~~ 500 rooms.~~,~~ The hotels would be located on the marina parcel or west of the marina parcel (former airport employee parking lot); no hotels would be sited on the restaurant parcel on the easternmost end of the island. 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~~ly~~ with adopted aircraft approach paths and Federal Aviation Administration (FAA) regulations. ~~The hotel~~ Hotels ~~complex~~ may includes typical supporting facilities and ancillary uses such as swimming pools, spas, ~~commercial~~ retail shops, restaurants, cocktail lounges, meeting and conference space, and 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. 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 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.

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 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:

- adding language to the introductory Planning District 2 text that indicates that as each hotel development on Harbor Island is developed or redeveloped it will: (1) prepare and implement a public access plan; (2) provide or participate in shuttle service to and from the airport; and (3) prepare a parking management program;
- updating the Precise Plan map, as identified in Figure 9 of the PMP Amendment;
- updating the Lindbergh Field/Harbor Island: Planning District 2 project list to change the 500-room hotel to no more than three hotels with a cumulative total of 500 rooms on two locations and include the traffic circle/road realignment and public access improvements; and
- updating the land use acreage tables within the PMP to reflect increased promenade acreage, decreased street acreage, reduced open space acreage, and increased commercial recreation acreage.

Table 9.1-1, *Precise Plan Land Use Allocation—Lindbergh Field/Harbor Island: Planning District 2*, includes the revised Land Use acreages for Lindbergh

Field/Harbor Island: Planning District 2 from the PMP Amendment. Appendix B of the Draft EIR includes each of the components of the proposed PMP Amendment.

Table 9.1-1. Precise Plan Land Use Allocation—Lindbergh Field/Harbor Island: Planning District 2

Land Use	Acres Existing	Acres Revised
Commercial	~~90.6~~	91.3
Airport-related Commercial	38.0	
Commercial Recreation	~~52.6~~	53.3
Industrial	631.8	
Aviation-related Industrial	130.6	
Industrial Business Park	33.1	
International Airport	468.1	
Public Recreation	~~26.2~~	25.6
Open Space	~~7.5~~	6.1
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

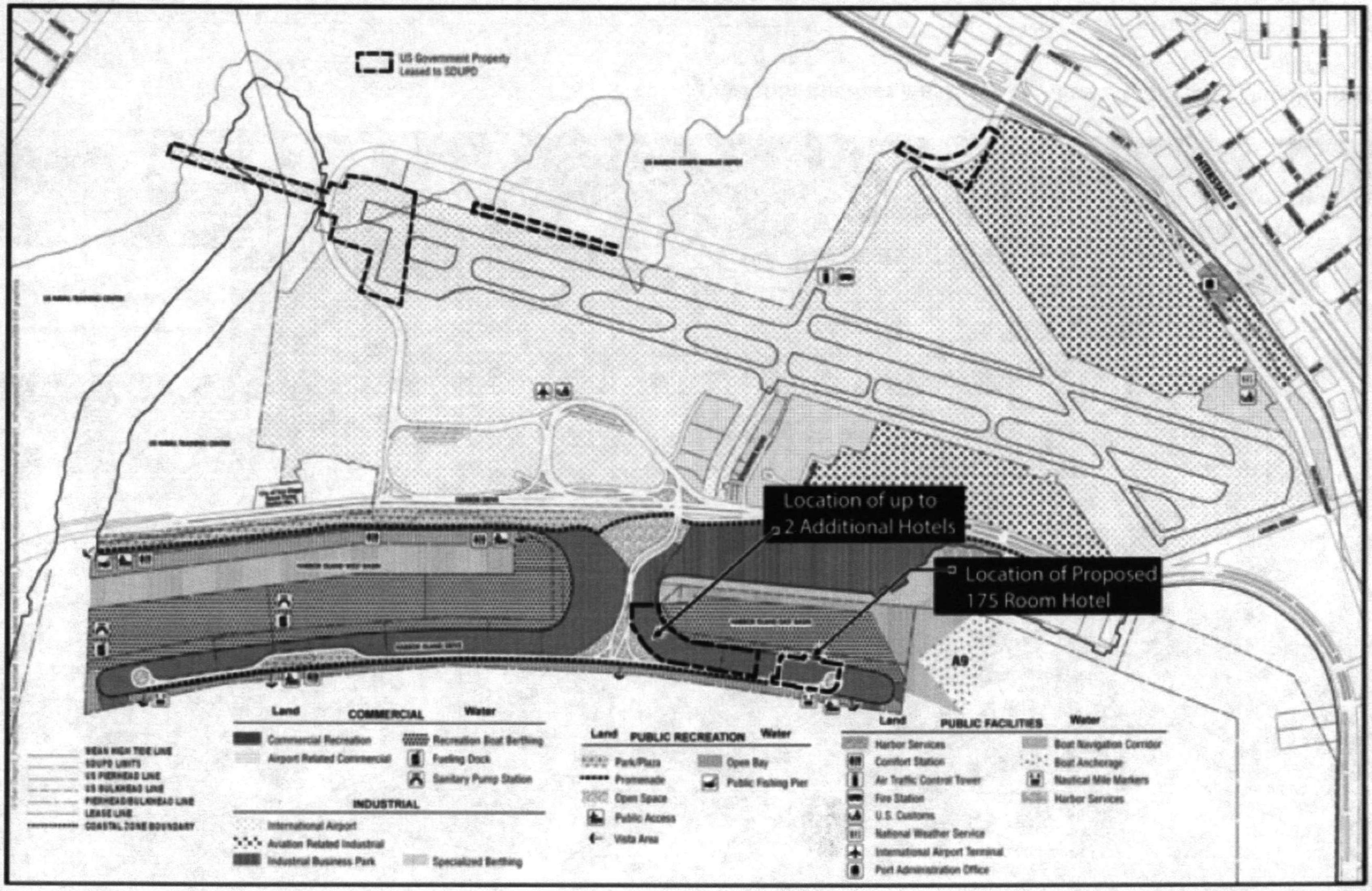
Source: Port District 2013

To date, the Port District has received a proposal to develop a hotel in one location in the area within the PMP allowed for hotel development under the proposed PMP Amendment. The Sunroad Harbor Island Hotel project proposes a 175-room hotel and ancillary facilities on a leasehold currently leased by Sunroad Marina Partners, LP, at 955 Harbor Island Drive. The potential environmental effects of the proposed 175-room hotel project are analyzed at a project level in Chapter 4 of the Draft EIR.

Figure 9.1-4, *Existing Port Master Plan Planning District 2 Precise Plan Showing Possible Locations for Proposed Hotels*, shows the location of the proposed 175-room hotel and the location where up to two additional hotels could occur within the East Harbor Island Subarea; and Figure 9.1-5, *Area within the Port Master Plan Allowed for Hotel Development*, provides an aerial photograph of the East Harbor Island Subarea where hotel development could occur under the PMP Amendment. The potential locations where hotels can be located are limited to the western portion of East Harbor Island due to faulting in the eastern portion of the subarea (see Figure 9.1-6, *Fault Location Map*). In light of the location of the proposed 175-room Sunroad Harbor Island Hotel and the geologic constraints on the eastern portion of the PMP area, the development of up to two additional hotels could only occur within the surface parking areas located west of the existing marina office.

The Port District has not received a proposal to develop any of the remaining 325 hotel rooms that would be allowed on East Harbor Island under the proposed PMP Amendment. Accordingly, the potential environmental effects of the remaining development allowed under the proposed PMP Amendment (i.e., 325 hotel rooms in one or two hotels at one other location) are analyzed in Section 9.2 of this chapter at a program level.

The location where future potential hotels would be located under the PMP Amendment is presently occupied by surface parking lots. All or portions of the existing parking lots would be demolished to allow construction of the additional hotels allowed under the proposed PMP Amendment.



Existing Port Master Plan Planning District 2 Precise Plan Showing Possible Locations for Proposed Hotels
Figure 9.1-4

Area Within the Port Master Plan Allowed for Hotel Development
Figure 9.1-5

Fault Location Map
Figure 9.1-6

As described in the Chapter 3 of the Draft EIR, the proposed 175-room hotel would be a low-rise hotel of four stories. Because no site-specific proposal for the development of additional hotel(s) has been received, the environmental analysis in Section 9.2 assumes that the hotel development allowed by the proposed PMP Amendment would consist of either: (a) one additional hotel in the location shown in Figure 9.1-7, providing up to 325 rooms and ancillary facilities in a structure up to 10-stories in height ; or (b) two additional hotels developed in the location shown in Figure 9.1-8, with 325 rooms and proportionate ancillary facilities equally distributed between the hotels. Like the 175-room hotel, one or two hotels providing the remaining 325 rooms that could development on East Harbor Island would have surface parking.

Proportionate to the type and extent of future hotel development, activating uses such as restaurants, outdoor seating and dining areas, and retail shops open to the public would be integrated into the development of each hotel. All future hotel development allowed by the proposed PMP Amendment would include construction of a public promenade within the proposed leasehold of either hotel along Harbor Island East Basin frontage. As stated in the proposed PMP Amendment, when fully realized, 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. Located to provide views of the San Diego Bay, the downtown San Diego skyline, and the Harbor Island East Basin, the promenade will be sited to allow uninterrupted pedestrian flow. Benches and viewing decks along the promenade will be located in a manner that will enhance viewing opportunities while not obstructing pedestrian flow. Public access and other path-finding signage, as well as signage identifying that the promenade is open to the public, will be incorporated into the design of the promenade to guide guests and visitors to and from public use areas, restaurants, and other facilities.

Location of Proposed 175-Room Hotel and Location for One Additional Hotel
Figure 9.1-7

Location of Proposed 175-Room Hotel and Possible Location for Up To Two Additional Hotels
Figure 9.1-8

Section 9.2

Environmental Analysis

Chapter 4 of the Draft EIR analyzed the potential environmental effects that may result from construction and operation of the proposed 175-room Sunroad Harbor Island Hotel project. This section of Chapter 9.0 analyzes the potential environmental impacts that may result from future development of the remaining 325 hotel rooms, which would be allowed to develop under the proposed PMP Amendment in up to two additional hotels.

The following subsections of Chapter 9 provide information relating to the same 11 environmental topics analyzed in Chapter 4 of the previously circulated Draft EIR. Because the Introduction and Existing Conditions for the analysis of future hotel development allowed under the proposed PMP Amendment are the same as those presented in the Draft EIR, the "Introduction" and discussion of "Existing Conditions" in Sections 4.1 through 4.11 are incorporated by reference in this section and are not repeated here. Each subsection that follows presents the criteria used to determine whether an impact would be significant ("Impact Significance Criteria"), analyzes the potential for significant impacts ("Analysis of Project Impacts"), summarizes the significant impacts ("Significant Impacts"), identifies mitigation measures ("Mitigation Measures") for each significant impact, and discusses the significance of impacts after mitigation ("Significance of Impacts after Mitigation") has been applied.

To date, the Port District has received only one proposal to develop a hotel in one location of the area within the PMP allowed for hotel development under the proposed PMP Amendment - the 175-room Sunroad Harbor Island Hotel. No proposals have been solicited or submitted for development of the remaining 325 hotel rooms allowed under the proposed PMP Amendment, nor is it known if those rooms would be developed as a single hotel or as two hotels in the area allowed for hotel development under the proposed PMP Amendment. Therefore, the potential environmental effects of the proposed PMP Amendment are analyzed in this section at a "program" level. The analysis assumes that future hotel development will consist of a maximum of 325 additional rooms and proportionate ancillary facilities in one or two hotels. For each environmental topic, the analysis identifies and evaluates the reasonable "worst case" scenario for the future development that may occur (i.e., as one approximately 10-story structure or two approximately four-story structures). When site-specific development proposals are received for the future hotel development allowed under the PMP Amendment, they will be subject to further review pursuant to State CEQA Guidelines Section 15168.

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Section 9.2.1
Land Use, Water Use, and Coastal Access

The proposed PMP Amendment would not involve a change in land use to accommodate the total allotment of 500 hotel rooms by way of two or three hotels on East Harbor Island; the PMP Amendment area already has the proper land use designation to accommodate hotel use. There are no plans for developing more than the proposed 175-room hotel addressed in the Draft EIR at this time. Any future development would require a project-level analysis at the time that development is proposed. In accordance with CEQA Guidelines Section 15168, future hotel proposals would be reviewed against this EIR to determine if an additional environmental document would need to be prepared. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future hotel development allowed under the proposed PMP Amendment, this analysis assumes that the reasonable worst case scenario that could occur with respect to land use impacts would be development of up to two additional hotels with no more than a total of 325 rooms, in addition to the proposed 175-room hotel evaluated in the Draft EIR.

9.2.1.1 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of impacts associated with future development of up to two additional hotels with up to 325 total rooms on East Harbor Island. Impacts are considered significant if the future hotel development allowed under the proposed PMP Amendment would result in any of the following:

- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- conflict with any applicable habitat conservation plan or natural community conservation plan.

9.2.1.2 Analysis of Impacts

9.2.1.2.1 Physically Divide a Community

The future hotel development of up to two additional hotels providing up to 325 rooms allowed by the proposed PMP Amendment would be compatible with the existing surrounding uses and would not physically divide an established community on East Harbor Island. Because no residential housing exists within the Port District's jurisdiction, an established community does not exist within the PMP Amendment area and no impacts would occur.

9.2.1.2.2 Conflict with any Applicable Land Use Plan, Policy, or Regulation

Port Master Plan

The proposed PMP Amendment is generally consistent with the overall goals of the PMP. Like the existing PMP, the proposed PMP Amendment would allow a maximum of 500 hotel rooms to be developed on East Harbor Island. Although the existing PMP indicates the 500 rooms would be provided in one hotel on the parcel currently used for overflow rental car parking, the proposed PMP Amendment would allow the 500 rooms to be allocated among two sites, with 175 rooms to be developed on the Sunroad Marina site and the remaining 325 rooms to be developed within the PMP Amendment area as shown in Figure 9.1.5. The location for the proposed 175-room hotel and the area where up to two hotels could develop are designated in the existing PMP for Commercial Recreation use, which allows hotel development. The following discussion evaluates the proposed PMP Amendment's compatibility with the relevant portions of the PMP.

Planning Goals

Section II of the PMP sets forth planning goals and related policies for development and operation of land within the Port District's jurisdiction. Pertinent goals and related policies are presented below. The PMP Amendment area is limited to the land-side, and, as such, PMP goals related to direct impacts on or modifications to the bay are not addressed.

Goal I Provide for the present use and enjoyment of the bay and tidelands in such a way as to maintain options and opportunities for future use and enjoyment.

Goal II The Port District, as trustee for the people of California, will administer the tidelands to provide the greatest economic, social, and aesthetic benefits to present and future generations.

Goal III The Port District will assume leadership and initiative in determining and regulating the use of the bay and tidelands.

- Encourage industry and employment generating activities which will enhance the diversity and stability of the economic base.
- Encourage private enterprise to operate those necessary activities with both high and low margins of economic return.

Goal IV The Port District, in recognition of the possibility that its actions may inadvertently tend to subsidize or enhance certain other activities, will emphasize the general welfare of statewide considerations over more local ones and public benefits over private ones.

- Develop the multiple purpose use of the tidelands for the benefit of all the people while giving due consideration to the facts and circumstances related to the development of tideland port facilities.
- Encourage non-exclusory uses on tidelands.

Goal VI The Port District will integrate the tidelands into a functional regional transportation network.

- Providing pedestrian linkages.

Goal VIII The Port District will enhance and maintain the bay and tidelands as an attractive physical and biological entity.

- Each activity, development, and construction should be designed to best facilitate its particular function, which function should be integrated with and related to the site and surroundings of that activity.
- Views should be enhanced through view corridors, the preservation of panoramas, accentuation of vistas, and shielding of the incongruous and inconsistent.

Goal IX The Port District will insure physical access to the bay except as necessary to provide for the safety and security, or to avoid interference with waterfront activities.

- Provide "windows to the water" at frequent and convenient locations around the entire periphery of the bay with public right-of-way, automobile parking and other appropriate facilities.

- Provide access along the waterfront wherever possible with promenades and paths where appropriate, and elimination of unnecessary barricades which extend into the water.

Goal X The quality of water in San Diego Bay will be maintained at such a level as will permit human water contact activities.

Goal XIII The Port District will maintain its master plan current, relevant, and workable, in tune with circumstances, technology, and interest of the people of California.

- Provide for the multiple purpose use of land and water to promote the advantageous development of the Port District.

Providing for the remaining 325 rooms in up to two hotels, in addition to the proposed 175-room hotel, in the East Harbor Island Subarea is consistent with **Goal I** and **Goal II** of the PMP. The addition of new hotels will enhance the opportunity for the public to access the Harbor Island East Basin, while also providing a greater economic use of East Harbor Island. The existing PMP Amendment area contains surface parking lots, a traffic circle, a roadway, restaurants, and marina buildings. The architecture and landscaping of the future hotel developments allowed by the PMP Amendment will be designed to enhance the aesthetic experience of the area. As required for the proposed 175-room hotel, development of up to two hotels on East Harbor Island would be required to provide a basin-side public promenade, thereby increasing public accessibility.

In conformance with **Goal III**, the future construction of additional hotels will encourage employment to enhance the diversity and stability of the Port District's economic base. By allowing up to two additional hotels with up to 325 rooms, the multiple-purpose use of tidelands on East Harbor Island would be expanded. Having multiple-purpose uses on East Harbor Island is consistent with **Goal IV** and **Goal XIII** of the PMP.

Future hotel development provided by the PMP Amendment would be required to include a basin-side public promenade similar to that proposed for the 175-room hotel. The provision for this promenade would be encouraging a non-exclusory use on tidelands (**Goals IV and VI**). Future hotels would also conform to **Goal IX** by enhancing physical access to the waterfront. No free existing public parking would be eliminated, and each hotel developed under the proposed PMP Amendment will be required to provide adequate parking in accordance with the Port District's parking standards.

The aesthetic improvement of replacing surface parking lots with future hotels would serve to enhance and maintain the bay and tidelands as an attractive physical entity, in conformance with **Goal VIII**. Also addressing this goal, future hotel development would integrate with the proposed 175-room hotel, the existing marina, and restaurant uses in Subarea 23. The future hotel development allowed by the PMP Amendment would complement the existing uses on East Harbor Island.

The additional two hotels that could develop in accordance with the proposed PMP Amendment would occur as two low-rise (four-story) hotels, similar to that proposed for the 175-room hotel, or as one mid-rise hotel (up to ten stories). These hotels would be visible from the surrounding area, including from the existing public promenade located on the south side of Harbor Island Drive, and would be in keeping with existing development on East Harbor Island. The low- to mid-rise nature of future hotels would not significantly compromise existing views in the surrounding areas, and the PMP Amendment would not conflict with the policy included under **Goal VIII** related to view enhancement.

The Port District maintains Vista Areas at key scenic locations (usually located in public recreation uses) throughout its planning jurisdiction. These Vista Areas are indicated on Precise Plan maps. There are six existing Vista Areas located in Planning District 2, as shown on Figure 9.1-2, *Existing Port Master Plan Planning District 2 Precise Plan*. The Vista Areas closest to the PMP Amendment area are located along the bayside public promenade and are focused south towards the bay. Therefore, construction of future hotels would not obstruct views in these Vista Areas. The four other Vista Areas, located on West Harbor Island, north and south of the Harbor Island West Basin, are similarly focused towards the south and the bay. Although the future development allowed under the PMP Amendment would be visible within panoramic views from the vista locations, as discussed in Section 9.2.3, *Aesthetics*, the hotel development allowed under the PMP Amendment would not significantly impact views of these Vista Areas. The PMP Amendment would not conflict with the policy under **Goal VIII** related to scenic views.

Therefore, the future development of up to two additional hotels providing a combined total of 325 rooms, when combined with the proposed 175-room hotel, would not result in conflicts with Port Master Plan Planning Goals.

PMP Interpretation

Hotel use is an allowed use in the PMP's Commercial Recreation land use designation. Therefore, the future hotel development allowed under the proposed PMP Amendment would be consistent with the Commercial Recreation land use designation applied to Subarea 23. The proposed PMP Amendment would not affect the Recreational Boat Berthing or Boat Navigation Corridor water use designations that are located north of Subarea 23, as no in-water work is proposed. The proposed PMP Amendment would not conflict with Section III, *Master Plan Interpretation*, of the PMP.

The PMP Amendment would add "Class III" coastal access to East Harbor Island by constructing a public promenade along the Harbor Island East Basin side of the hotels. Class III indicates a publically accessible recreational opportunity that is developed on leased land and is maintained by the lessee. The Port District intends to connect a promenade through leased parcels on the northern side of Harbor Island to maximize recreational opportunities and enhance the public attractiveness of land within Port District jurisdiction in the future. The promenade developed consistent with the proposed PMP Amendment would connect the hotels on East Harbor Island. Enhancing and extending the promenade along the basin would not conflict with Section III of the PMP.

Precise Plan

Implementation of the proposed PMP Amendment would not conflict with the Commercial Recreation designation on Subarea 23 in the existing Precise Plan. The future hotels would be located within an area designated Commercial Recreation in the Precise Plan. Under the proposed PMP Amendment, the 500-room hotel listed in the existing certified Precise Plan's project list (Table 9 of the PMP) would be amended to allow the 500 rooms to be developed in up to three smaller hotels on East Harbor Island and to delete completed or obsolete projects. Additionally, the PMP Amendment revises the discussion of Subarea 23 to identify that no more than three hotels with a combined total of no more than 500 total hotel rooms can be developed on East Harbor Island. Those hotels would include the proposed 175-room hotel project, plus up to two additional hotels with a combined total of no more than 325 rooms. The future development of 325 rooms in up to two additional hotels, when combined with the proposed 175-room hotel, would not result in land use impacts associated with the Precise Plan.

San Diego International Airport ALUCP

The PMP Amendment area falls within the San Diego International Airport (SDIA) Airport Influence Area (AIA); however, the proposed PMP Amendment would not conflict with the goals and conditions set forth in the Airport Land Use Compatibility Plan (ALUCP) for SDIA related to noise, Runway Protection Zones (RPZs), and building height. The proposed PMP Amendment area is located outside the SDIA 60 decibel (dBA) community noise equivalent level (CNEL) noise contour. Aircraft noise is still audible within the PMP Amendment area; however, appropriate mitigation measures are proposed to address interior noise levels in future hotel developments (see Section 9.2.8, *Noise*). The proposed PMP Amendment area is not located within a RPZ. Therefore, the future hotel development allowed under the PMP Amendment would not conflict with the ALUCP.

California Coastal Act and Coastal Access

In accordance with the Coastal Act, the proposed PMP Amendment would need to be reviewed and certified by the Coastal Commission. Once the Coastal Commission has certified the PMP Amendment, the Port District would have the authority to issue Coastal Development Permits (CDPs) for future development projects that are consistent with the proposed PMP Amendment. Any CDP that would be issued by the Port District for future hotel developments would be appealable to the Coastal Commission.

The proposed PMP Amendment would be consistent with Section 30212 of the Coastal Act, as it would include a new public promenade along the basin side of the proposed hotels. Benches and landscaping would be interspersed throughout the promenade. Due to the potential hotel locations in proximity to an existing marina and restaurants, the proposed PMP Amendment would be consistent with Section 30250 of the Coastal Act, as it would be located in an existing developed area. Therefore, the proposed PMP Amendment would be in substantial conformance with the Coastal Act.

Public Trust Doctrine

The proposed PMP Amendment allows future development of commercial projects that involve visitor-serving uses and coastal access and hotels within the Port District's tidelands. These types of proposed uses are consistent with the Public Trust Doctrine. Therefore, the proposed PMP Amendment would not conflict with the Public Trust Doctrine.

Compatibility with Onsite and Surrounding Uses

Existing development within the East Harbor Island Subarea includes the Sunroad Resort Marina and its ancillary uses (marina office/sales, café, restrooms, swimming pool), surface parking lots, and restaurants. Harbor Island Drive terminates in a traffic circle located in the eastern portion of the subarea. Downtown San Diego is located east of the subarea. San Diego Bay is located south and east of the PMP Amendment area. Some industrial uses are located north of the PMP Amendment area, while Naval Air Station (NAS) North Island facilities are located across the bay, south of East Harbor Island. In addition, there are several existing hotels located on West Harbor Island, west of the PMP Amendment area.

In addition to the proposed 175-room hotel, the PMP Amendment would allow for the future development of 325 hotel rooms to occur in up to two hotels. Whether constructed as two low-rise (four stories) hotels or as one mid-rise (10 stories) hotel, future hotels would be of a smaller scale than other existing hotels on Harbor Island and would provide surface parking, which would be compatible with the existing commercial recreation development (marina and restaurant) on

East Harbor Island, as well as the commercial water use and industrial land use near the potential sites. Future hotel development provided by the PMP Amendment would be required to include a basin-side public promenade similar to that proposed for the 175-room hotel, which would be compatible with the proposed hotel uses and existing uses on East Harbor Island. Therefore, the future hotel development allowed under the proposed PMP Amendment would be compatible with the planned and existing surrounding uses on East Harbor Island, and there would be no impact.

Patronage of the future hotels would increase the intensity of use on East Harbor Island. This increased intensity would not present any compatibility issues with the existing marina and restaurant uses on East Harbor Island. The future hotel development would be complementary to the existing uses on East Harbor Island because the hotels would provide an additional source of customers for the restaurants and the marina. The design of future hotels would include on-site vehicle and pedestrian access and would not result in conflicts with access to restaurants and the marina. Therefore, the future hotel development would be compatible with the planned and existing uses on East Harbor Island. The PMP Amendment does not include any improvements to the Harbor Island East Basin, the water area immediately north of the PMP Amendment, and the PMP Amendment area does not include any components that would restrict or conflict with existing water uses in the surrounding area.

9.2.1.2.3 Conflict with any Applicable Habitat Conservation Plan

The PMP provides for protection of biological resources and states that the Port District will remain sensitive to the needs of and will cooperate with other communities and agencies in bay and tideland development, including implementation of the City of San Diego's Multiple Species Conservation Program (MSCP) and Environmentally Sensitive Lands (ESL) Ordinance. However, the Port District retains all land use and mitigation rights and decisions on areas within the Port District's jurisdiction.

East Harbor Island falls within the boundaries of the MSCP. The City MSCP Subarea Plan does not identify East Harbor Island as being within the Multiple Habitat Planning Area (MHPA). In addition, no biological resources conservation is planned for East Harbor Island as part of the MSCP. Therefore, implementation of the proposed PMP Amendment would not conflict with the provisions of an approved local biological resources conservation plan.

9.2.1.3. Significant Impacts

The proposed PMP Amendment, which would allow development of the proposed 175-room hotel plus up to two additional hotels providing up to 325 rooms for a combined total of no more than three hotels and 500 rooms, does not conflict with the overall goals of the PMP. Future hotel development allowed under the proposed PMP Amendment would enhance the opportunity for usage and enjoyment of East Harbor Island through the construction of commercial (hotel) and public access/recreation (promenade) uses. The proposed PMP Amendment would not conflict with surrounding land uses, water uses, or coastal access. Therefore, the proposed PMP Amendment would not result in any significant conflicts with the PMP. The proposed PMP Amendment would also not conflict with the ALUCP, the Coastal Act, or the Public Trust Doctrine. The PMP Amendment would not obstruct land or water use in the vicinity of the site, and would improve coastal access by enhancing the existing promenade and extending a promenade along the basin side of the East Harbor Island Subarea. Therefore, the future hotel development allowed under the PMP Amendment would not result in a significant impact on land use, water use, or coastal access.

9.2.1.4 Mitigation Measures

The proposed PMP Amendment would not result in significant impacts on land use, water use, or coastal access. As a result, no mitigation would be required.

9.2.1.5 Significance of Impacts after Mitigation

No mitigation measures are required because the proposed PMP Amendment would not result in significant land use, water use, or coastal access impacts.

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Biological Resources

The proposed PMP Amendment would allow the development of up to 500 hotel rooms in up to three hotels on East Harbor Island. One of these hotels, consisting of 175 rooms and ancillary facilities, is the Sunroad Harbor Island Hotel Project. No proposal has been received for the development of the remaining 325 rooms in up to two additional hotels. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future development allowed under the PMP Amendment, this analysis assumes that the reasonable worst case scenario that could occur with respect to impacts to biological resources would be either the development of two additional low-rise (four-story) hotels with a total of no more than 325 rooms, or one additional 10-story hotel with no more than a total of 325 rooms, as either scenario would have similar impacts on biological resources as discussed in this subsection. When specific development proposals are received, they will be evaluated pursuant to CEQA Guidelines Section 15168 to determine whether additional environmental review would be needed.

This section is based on the biological resources analysis presented in the *Marine Resources Assessment, Sunroad Hotel Project, Sunroad Marina, Harbor Island, San Diego, California* report (Biological Assessment) prepared for the *Sunroad Harbor Island Hotel Project and Port Master Plan Amendment* EIR by Weston Solutions, Inc. in September 2006. The Biological Assessment is based on surveys of the submerged tidelands, intertidal area, and visible vegetation on the adjacent filled tidelands, as described in Section 4.4.2, *Existing Conditions*, of the Draft EIR. The Biological Assessment is provided in full as Appendix C of the Draft EIR.

9.2.2.1 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of impacts associated with biological resources resulting from future development allowed under the proposed PMP Amendment. Impacts are considered significant if future hotel development would result in:

- a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;

- a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites;
- a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

9.2.2.2 Analysis of Impacts Associated with the PMP Amendment

9.2.2.2.1 Candidate, Sensitive, or Special Status Species

The proposed PMP Amendment would not conflict with on-site and surrounding land uses. Like the development of the proposed 175-room hotel, the development of up to two additional hotels that would be allowed under the proposed PMP Amendment would have construction and operation phases.

Construction

There is potential for birds protected by the Migratory Bird Treaty Act (MBTA) to nest in the existing mature trees in areas where the future hotels could be constructed and in areas off-site to the east and west. Additionally, some avian species protected by the MBTA nest on the existing manufactured structures. Sensitive and listed species including California brown pelican, California least tern, western snowy plovers, and black skimmers have the potential to forage at or adjacent to the East Harbor Island Subarea. These species are also protected under the MBTA. Any removal of existing trees as a part of future development located in the subarea could impede the use of bird breeding sites. Noise from construction activities could also impede the use of bird breeding sites in existing trees located within East Harbor Island.

The MBTA prohibits take of nearly all native birds. Similar provisions within the Fish and Game Code (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 could occur and mitigation would be required. Mitigation Measure MM BIO-2 (see Section 9.2.2.4, *Mitigation Measures*) would reduce the significant impact associated with MBTA- and FGC-covered bird species to a level less than significant.

Equipment for all demolition and construction associated with future hotel development would be land-based, thus minimizing impacts on the intertidal and submerged tidelands. However, without proper controls, stormwater runoff from the demolition and construction areas could flow into San Diego Bay, thereby affecting local water quality and potentially resulting in an impact on plant and wildlife species. As discussed in Section 9.2.5, *Hydrology and Water Quality*, construction of future hotels allowed by the proposed PMP Amendment would include preparation and implementation of a Storm Water Pollution Protection Plan (SWPPP) as mandated under the National Pollution Discharge Elimination System (NPDES) permit and Stormwater Management and Discharge Control Ordinance. The SWPPP would identify short-term, project-specific Best Management Practices (BMPs) that would minimize pollutants and/or sediments entering runoff during the construction stage of the hotels. Because all hotels allowed under the proposed PMP Amendment would be required to design and implement a SWPPP prior to any construction activities, significant short-term impacts on water quality and sensitive biological resources in the bay would not occur. Therefore, construction impacts on water quality and sensitive biological resources associated with future hotel developments allowed by the proposed PMP Amendment would be less than significant.

Operations

As part of the Biological Assessment, no threatened or endangered species were observed within either the filled tidelands where future hotel development could occur or the submerged tidelands adjacent to East Harbor Island. The proposed PMP Amendment would involve construction of up to three hotels within previously developed areas on East Harbor Island. As a result, operation of up to two hotels, in addition to the proposed 175-room hotel, would not result in a direct impact on threatened or endangered species, or in the loss of any foraging habitat for raptors.

On a permanent basis related to future hotel operations, stormwater that flows from hotels developed in East Harbor Island into San Diego Bay could have an adverse affect on water quality and biological resources without implementation of measures to minimize pollutants in stormwater from entering the bay. Following construction, BMPs for all hotel development allowed by the proposed PMP Amendment would be implemented consistent with the Standard Urban Stormwater Mitigation Plan (SUSMP) requirements in accordance with the Port's Stormwater Management and Discharge Control Ordinance, as discussed in Section 9.2.5, *Hydrology and Water Quality*. Implementation of construction and post-construction stormwater controls that adhere to the SUSMP would avoid significant water quality–related impacts associated with the future hotel development allowed by the PMP Amendment and therefore would avoid long-term impacts on sensitive biological resources in the bay.

9.2.2.2.2 Riparian Habitat or other Sensitive Natural Community

No federally or state protected wetlands or other riparian areas, as defined under Section 404 of the Clean Water Act or Section 1602 of the FGC code, are located within the East Harbor Island Subarea. East Harbor Island is a fully developed, man-made peninsula created with fill materials and is almost completely paved for parking and commercial recreational uses. Therefore, implementation of the proposed PMP Amendment would not result in direct impacts on riparian habitat.

Based on the Biological Assessment, there are several beds of eelgrass of various sizes within the Harbor Island East Basin (see Figure 9.2.2-1, *Eel Grass Survey Areas*). Eelgrass beds, an essential fish habitat under the Magnuson-Stevens Act, require substantial amounts of sunlight for growth and survival. As part of the Draft EIR, an eelgrass survey was conducted to determine the location and density of eelgrass that could be affected by the proposed 175-room hotel project. Within the subtidal zone in the area surveyed, 30 eelgrass beds were identified. These beds occur as isolated patches within the nearshore waters north of the eastern end of East Harbor Island and were observed in relatively shallow and well-lit areas with little or no shading from overlying docks or boats. Approximately 42,759 square feet (0.98 acre) of eelgrass vegetation was observed, which represents less than 4% of the subtidal area surveyed. The beds range in size from 38 (.0009 acre) to 26,016 square feet (0.59 acre), the largest being an eelgrass mitigation area between the Reuben E. Lee and the seawall east of the marina slips. This large eelgrass bed was created in 1989 as mitigation for impacts on eelgrass resulting from the creation of the Sunroad Resort Marina.

Source: Weston Solutions, Inc.

Eelgrass Survey Area
Figure 9.2.2-1

The Draft EIR determined that the proposed 175-room hotel would not result in significant impacts to eelgrass. The development of up to two additional hotels on East Harbor Island within the area shown on Figure 9.1-5 would also not affect eelgrass beds. Comparing areas where eelgrass beds occur with the area where future hotels can be located (see Figure 9.2.2-1, *Eelgrass Survey Areas*), no eelgrass beds are located proximate to areas where future hotel development could occur. Future development of up to an additional two hotels of four-stories in height would not create shading that could adversely affect eelgrass, as no eelgrass occurs in areas where shadows from the hotels would fall. Similarly, construction of a single 10-story hotel, in addition to the proposed 175-room hotel, located in the western portion of East Harbor Island would also not affect eelgrass, as no eelgrass occurs within the western portion of the boat basin. Therefore, the future hotel development allowed under the proposed PMP Amendment would not result in significant impacts to eelgrass beds.

9.2.2.2.3 Federally Protected Wetlands

No federally protected wetlands, as defined under Section 404 of the Clean Water Act, are located on East Harbor Island where future hotels could be developed as allowed in the proposed PMP Amendment. East Harbor Island is a fully developed, man-made peninsula created with fill and is almost completely paved for parking and commercial recreational uses. The hotel development associated with the proposed PMP Amendment would not conflict with on-site and surrounding land uses, and would not impact federally or state protected wetlands, because all construction activities would be land-based and both construction and operational activities would adhere to the SWPPP and SUSMP, avoiding the potential for significant water quality–related indirect impacts. Therefore, there would be no impacts to federally protected wetlands.

9.2.2.2.4 Movement of Fish or Wildlife Species

Construction

The proposed PMP Amendment would not conflict with on-site and surrounding land uses. Like the development of the proposed 175-room hotel, all construction activities and equipment staging required for up to two additional hotels totaling 325 rooms would be land-based. Construction site runoff could potentially impair water quality and potentially cause fish to temporarily migrate outside of the vicinity of the subarea. Coastal pelagic fish species are considered to have low site fidelity, and minor disturbances during construction activities would not be biologically significant. As previously discussed, all hotel development would be required to implement construction BMPs. Implementation of BMPs for surface runoff, such as the erosion control measures discussed in Section 9.2.5, *Hydrology and Water Quality*, would ensure that water runoff into the bay would not significantly affect the movement of fish located near East Harbor Island. Therefore, the hotel development allowed under the proposed PMP Amendment would be compatible with the surrounding uses, would not impair water quality, and would not potentially cause fish to temporarily migrate outside of the vicinity of East Harbor Island.

Operation

Future hotel development that would be allowed under the proposed PMP Amendment would be land-based and occur in previously disturbed areas void of native vegetation and habitat. Therefore, development consistent with the proposed PMP Amendment would not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Impacts would be less than significant and mitigation would not be required.

Stormwater flow from hotels that could develop under the the proposed PMP Amendment could have an adverse affect on water quality and biological resources in San Diego Bay, if stormwater is allowed to enter the bay. However, following construction, BMPs would be implemented consistent with the SUSMP, as discussed in Section 4.5 (Hydrology and Water Quality) of the Draft EIR and subsection 9.2.5, *Hydrology and Water Quality*, of this chapter. Implementation of post-construction stormwater controls that adhere to the SUSMP would avoid significant water quality–related impacts and therefore avoid long-term impacts on sensitive biological resources in the bay.

9.2.2.2.5 Local Policies or Ordinances

The PMP provides for protection of biological resources and states that the Port District will remain sensitive to the needs of and will cooperate with other communities and other agencies in bay and tideland development, including the City of San Diego's Multiple Species Conservation Program (MSCP) and Environmentally Sensitive Lands (ESL) Ordinance. East Harbor Island falls within the boundaries of the MSCP. However, the City MSCP Subarea Plan does not identify East Harbor Island as being within the Multi Habitat Preservation Plan (MHPA). In addition, no biological resources conservation is planned for East Harbor Island as a part of the PMP. The proposed PMP Amendment would be consistent with the land use goals of the MSCP, is not located within an MHPA, and would not conflict with the local policies or ordinances protecting biological resources.

9.2.2.2.6 Provisions of a Habitat Conservation Plan

Implementation of the proposed PMP Amendment, would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Thus, no impacts would occur.

9.2.2.3 Significant Impacts

BIO-2: Removal of mature trees during construction of future hotels, as well as noise from construction activity, could impede the use of bird breeding sites on and adjacent to the Subarea. The MBTA prohibits take of nearly all native birds. Under the MBTA, "take" means 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 could occur and mitigation is required.

9.2.2.4 Mitigation Measures

MM BIO-2: 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:

3. Conduct all vegetation removal during the non-breeding season (between September 1 and January 31).

OR

4. 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 survey 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 confirmed that no new nests have been established.

9.2.2.5 Significance of Impacts after Mitigation

The proposed PMP Amendment, which would allow development of the proposed 175-room hotel plus up to two additional hotels providing up to 325 additional hotel rooms, has the potential to result in significant impacts to nesting birds. Implementation of mitigation measure MM BIO-2 would reduce the potential for significant impacts to biological resources associated with future hotel development allowed under the PMP Amendment to below a level of significance.

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Section 9.2.3
Aesthetics

The proposed PMP Amendment would allow the development of up to 500 hotel rooms in up to three hotels on East Harbor Island. One of these hotels, consisting of 175 rooms and ancillary facilities, is the Sunroad Harbor Island Hotel Project. No proposal has been received for the development of the remaining 325 rooms that could occur in up to two additional hotels. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future development allowed under the PMP Amendment, this analysis assumes that the reasonable worst case scenario that could occur with respect to aesthetics would be development of up to two additional low-rise (four-story) hotels with no more than a total of 325 rooms or a single additional mid-rise (10-story) hotel of 325 rooms, in addition to the proposed 175-room hotel evaluated in the Draft EIR, as both scenarios have the potential to affect aesthetics for the project area. When specific development proposals are received, they will be evaluated pursuant to CEQA Guidelines Section 15168 to determine whether additional environmental review would be needed.

9.2.3.1 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of impacts associated with aesthetics resulting from future development allowed under the proposed PMP Amendment. Impacts are considered significant if future hotel development would result in any of the following:

- have a substantial adverse effect on a scenic vista, including but not limited to the Vista Areas designated by the Port District in the PMP;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Considering the Port District has not adopted significance criteria for glare impacts, the following criterion, which is based on City of San Diego glare regulations (Municipal Code §142.0730), was used to determine if the hotel developments would create a substantial new source of glare:

- a maximum of 50% of the exterior of a building may be comprised of reflective material that has a light reflectivity factor greater than 30%.

9.2.3.2 Analysis of Impacts Associated with the PMP Amendment

9.2.3.2.1 Effect on a Scenic Vista

Impacts on PMP Harbor Island Scenic Vistas and Scenic Highways

East Harbor Island is faintly visible from the San Diego-Coronado Bay Bridge, which is a California State-designated Scenic Highway. Considering East Harbor Island is located approximately two miles north of the bridge, the future hotel development of up to two hotels, in addition to the proposed 175-room hotel, on East Harbor Island that could occur under the proposed PMP Amendment would not be considered a substantial portion of the total landscape. Therefore, the impact of the proposed PMP Amendment on views from the San Diego–Coronado Bay Bridge would be less than significant.

As presented in the Draft EIR, three key observation points (KOPs) were selected as representative views of the PMP Amendment from the west (KOP 1), east (KOP 2), and southwest (KOP 3). KOP 1 represents a view from public vantage points including Harbor Island Drive and the adjacent public promenade. KOP 2 is from the public promenade along Harbor Drive near the Maritime Museum. KOP 3 represents views of recreational boaters and harbor excursion patrons. These same KOPs were used to evaluate the potential for visual impacts of up to two additional four-story hotels or one additional 10-story hotel.

As described in the Draft EIR, the 175-room hotel would be a mid-rise hotel of four stories. The PMP Amendment would allow for the development of up to two additional hotels in the general location shown in Figure 9.1-5, *Area within the Port Master Plan Allowed for Hotel Development*. If only one additional hotel is developed in the location shown in Figure 9.1-7, *Location of Proposed 175-Room Hotel and Location for One Additional Hotel,* that hotel could be up to 10-stories in height and would contain no more than 325 rooms. If two additional hotels are developed in the locations shown in Figure 9.1-8, *Location of Proposed 175-Room Hotel and Possible Location for Up To Two Additional Hotels*, those hotels would be similar in bulk, scale, and height (approximately four-stories) as the proposed 175-room hotel, and the 325 rooms would be generally equally distributed between the hotels. The development of two additional four-story hotels or one additional 10-story hotel, when considered in conjuction with the proposed 175-room hotel, would not result in significant impacts to Harbor Island scenic vistas because the future hotels would be in scale with other hotel development on East Harbor Island and would not obstruct views of scenic vistas as described below.

There are six designated Precise Plan Vista Areas within Planning District 2, of which four are located on the Harbor Island peninsula (see Figure 9.1-2, *Existing Port Master Plan Planning District 2 Precise Plan*). These four are dispersed along the bayside promenade that spans the southern portion of Harbor Island Drive. One of these Vista Areas is located in the southern portion of the East Harbor Island Subarea, at the eastern terminus of the existing bayside promenade.

Views of open water form a principal component of Port District scenic vistas. Open water views available from the Vista Areas south and southwest of the East Harbor Island Subarea consist of San Diego Bay. Views of open water available from Vista Areas and other public vantages would be unaffected by future hotel development that would be allowed by the PMP Amendment.

Views to the east, west, and south from the Vista Area located south of the PMP Amendment site would be unaffected by any future hotel development allowed by the PMP Amendment. The view of open water represents a substantial component in determining the scenic quality of a vista area. Although the PMP Amendment area is visible within the panoramic views from this Vista Area, the PMP indicates that views identified by this Vista Area are orientated south, east, and west, across the water, and not toward Harbor Island itself. Construction of two additional four-story hotels or one additional 10-story hotel, in addition to the proposed 175-room hotel, within the East Harbor Island Subarea would not obstruct scenic views from this Vista Area. Therefore, future hotels allowed under the PMP Amendment would not result in a significant adverse impact to this Vista Area.

The other three Precise Plan Vista Areas on Harbor Island shown in Figure 9.1-2 are also focused across the open bay to the west, south, and east. Panoramic views from these vistas would include the PMP Amendment area as part of views to the east across the open bay towards downtown. Construction of two additional four-story hotels or one additional 10-story hotel, in addition to the proposed 175-room hotel, within the East Harbor Island Subarea would not obstruct scenic views from these Vista Areas, as the future hotels would lie to the north of the viewsheds and would become a part of the urban skyline where the SDIA dominates. Open views to the east, of the San Diego skyline, and to the south, of the open bay, would not be obstructed. Therefore, the PMP Amendment would not result in a significant adverse impact to these Vista Areas.

There are additional Vista Areas within the 0.5–1.0 mile radius of the PMP Amendment site that have views of the area along the Embarcadero (north), specifically in the immediate vicinity of the San Diego Maritime Museum. Views of the PMP Amendment area from Coronado are either public views at a distance of more than one mile or, if less than one mile, are private views or views from NAS North Island, which is inaccessible to the public. East Harbor Island is faintly visible from the San Diego-Coronado Bay Bridge, which is a

California State-designated Scenic Highway; however, considering that East Harbor Island is located approximately two miles northwest of the bridge, development of future hotels on East Harbor Island would not be considered a substantial portion of the total landscape. Therefore, the impact of any future hotels that could occur with the PMP Amendment on views from the San Diego–Coronado Bay Bridge would be less than significant.

With respect to views from the Harbor Island Drive promenade (KOP 1), construction of two additional four-story hotels or one additional 10-story hotel, in addition to the proposed 175-room hotel, within the East Harbor Island Subarea would result in new structures within the viewshed. However, the visual character and quality of the views would not be substantially altered by the construction of the new hotels. The views of the open water of San Diego Bay would remain unchanged in this viewshed. The background view of the San Diego downtown skyline would remain essentially unchanged. Future hotel development would create new points of interest in the center of this viewshed where none currently exists. The development pattern would result in hotels of relatively small footprints and low- to mid-rise heights, which would be in scale with other current development on Harbor Island. Low-rise height structures, such as two additional four-story hotels plus the proposed 175-room hotel, would not dominate the viewshed nor would they draw attention to themselves or away from the rest of the Vista Area view that continues south (right) for over 180°. If one mid-rise (10-story) hotel were to be constructed on East Harbor Island, in addition to the proposed 175-room hotel, the 10-story hotel would be of similar scale to the existing hotel structures on Harbor Island and would not result in a significant addition to the Vista Area. Future hotels developed under the PMP Amendment would not block substantial views of the downtown skyline nor would they block a view corridor to a scenic resource.

Relative to views from the promenade in the North Embarcadero area near the San Diego Maritime Museum (KOP 2), approximately one mile to the south of the PMP Amendment area, the potential for development of two additional four-story hotels or one additional 10-story hotel, in addition to the proposed 175-room hotel, would not substantially affect the expansive high value views of the open waters of San Diego Bay. The restaurant on the eastern end of Harbor Island would still be visible in the viewshed. Behind landscape features, upper floors of future hotels may be visible, and the view towards much of the south wing of the Sheraton's east tower may be blocked by future hotels that may develop under the proposed PMP Amendment. The upper floors of the Sheraton's east tower would remain visible. Future hotel developments would be contained within the silhouette of the Sheraton's east tower and would not obstruct or interrupt the distant outline of the Point Loma peninsula along the horizon. If two four-story hotels, in addition to the proposed 175-room hotel, were to be constructed on East Harbor Island, the mass and height of the future hotels would be of a smaller scale than other existing hotel structures on Harbor Island. If, in addition to the proposed 175-room hotel, a single 10-story hotel is constructed on East Harbor Island, that hotel would be a similar scale as other existing hotels on Harbor Island. From a one-mile distance, the scale of potential future hotel developments would be consistent with the surroundings. Therefore, the construction of two additional four-story hotels or one additional

10-story hotel, in addition to the proposed 175-room hotel, would not create a view-corridor obstruction or visual impacts to distant views from the North Embarcadero area.

A water-oriented vantage point (KOP 3) is located southwest of East Harbor Island Subarea 23 in the main ship channel of San Diego Bay. The views from this location are panoramic, with scenic 360° view potentials. Construction of two additional four-story hotels or one additional 10-story hotel, in addition to the proposed 175-room hotel, would not substantially affect this viewshed. The high-value views of the open waters of San Diego Bay would remain unchanged, and the strong horizontal line of the breakwater would be unaltered. Future hotels allowed under the PMP Amendment would introduce new structures to the viewshed. The mass of future buildings would block portions of the background, but would not extend above or interrupt the silhouette of the horizon. Hotel exteriors would have texture, a variety of colors, and shadows that would reduce the contrast and help future structures blend into the background. Landscaping would soften the appearance of future hotel developments and break up horizontal lines. There would likely be vertical articulation along the building rooflines.

Future hotel developments would not be out of scale with structures currently existing on West Harbor Island. The Hilton Hotel and the Sheraton Hotel's east and west towers, both of which are in the nine- to 10-story range, are located on West Harbor Island. The Sheraton's east tower, which would be taller than future hotels if they occur as low-rise (four-story) structures, is just out of the left edge of this view frame. If, in addition to the proposed 175-room hotel, one single mid-rise (10-story) hotel is constructed, its scale would be similar to other hotel structures on Harbor Island and, therefore, would not be out of scale with existing development. Future hotels could become a focal point of this view, which is currently scenic but rather featureless. However, future hotels would not obstruct any important view corridors nor would they be inconsistent with the surrounding development. In addition, there are no PMP Vista Areas in the vicinity of this vantage point. Therefore, the construction of two additional four-story hotels or one additional 10-story hotel, in addition to the proposed 175-room hotel, would not result in significant impacts to the water-oriented vantage point.

The design of future hotels, including architectural treatments, color palettes, and landscape plans would be reviewed as those individual developments come forward. The final exterior treatments and architectural details would add visual interest to future hotel design. The hotels also would include landscaping utilizing mature specimens that would lessen the apparent mass of the building(s). Project features would be incorporated into the design of future hotel(s) and would avoid or substantially reduce any potentially significant impact that might otherwise occur.

9.2.3.2.2 Damage Scenic Resources

The PMP Amendment area is located in an area that is almost completely developed with commercial development including hotels, marinas, restaurants, parking lots, scattered vegetation and mature trees; none of which represent a substantial scenic resource. The existing marina locker buildings, built in 1986, are not historic resources and have no scenic value. East Harbor Island is devoid of scenic and historic resources. No public art projects are located in this area. Because no scenic resources or historic buildings exist on East Harbor Island, the construction of two additional four-story hotels or one additional 10-story hotel, in addition to the proposed 175-room hotel would not significantly damage scenic resources. Therefore, no impacts to scenic resources would occur.

9.2.3.2.3 Degrade Visual Character or Quality

Changes to the existing visual character and quality of the PMP Amendment area would result from construction of two additional four-story hotels or one additional 10-story hotel, in addition to the proposed 175-room hotel. This change would consist of removing and replacing surface parking lots, associated structures, and marina locker buildings with hotels and associated facilities and landscaping. The change in visual character and the quality of the PMP Amendment area would not be adverse because future hotels would replace existing surface parking areas and other areas of low visual value. Existing surface parking lots and non-cohesive landscaping schemes would be replaced with buildings and landscaping that would be designed to establish a cohesive visual scheme. In addition, the open water views of the bay would be unaffected by development of the hotels. As a result, the future development allowed by the PMP Amendment would result in a less-than-significant impact on the visual character and quality of the PMP Amendment site.

The PMP Amendment would allow the development of two additional four-story hotels or one additional 10-story hotel, in addition to the proposed 175-room hotel, with associated facilities and landscaping that would be generally compatible with existing surrounding development on Harbor Island. The Hilton Hotel and the Sheraton Hotel's east and west towers, both of which are in the nine- to ten-story range, are located on West Harbor Island. Buildings and landscaping associated with future hotel devleopment under the PMP Amendment would be designed to create a cohesive visual scheme for East Harbor Island. Therefore, the impacts on the visual character and quality of the surrounding areas would be less than significant.

9.2.3.2.4 Create Light or Glare

Nearby light sources include SDIA, NAS North Island, downtown San Diego, rental car lots off of Harbor Drive, and development at Liberty Station (former

Naval Training Center). The most prominent source of nearby light is emitted from the rental car lots located in the industrial business park north of East Harbor Island, across the Harbor Island East Basin.

Light effects of future hotel development on East Harbor Island which could occur under the proposed PMP Amendment would change from existing conditions. Future hotels would add new lighting for security and aesthetic purposes. Consistent with the Outdoor Lighting Regulations of the City of San Diego Municipal Code Section 142.0740, the lighting facilities associated with the future hotel development would be shielded and directed into the development areas to minimize spill off-site and the amount of light visible from off-site areas. Although future hotels would include operational lighting that would create additional light sources, because lighting facilities would be designed with shielding to be consistent with City of San Diego Outdoor Lighting Regulations and to minimize off-site light spill, operational lighting would not create substantial new sources of light that would affect nighttime views of the area.

The glare effects of future hotel development allowed under the PMP Amendment would also change from existing conditions. Future hotels would use reflective materials consistent with other existing and proposed waterfront redevelopment around the bay and would require adherence to the City of San Diego's glare regulations (Section 142.0730 of the City Municipal Code). Future hotels would be designed to be harmonious with the design of the proposed 175-room hotel. Therefore, future hotels that could develop under the proposed PMP Amendment would not create substantial new sources of glare that would affect day views in the area. Impacts related to new sources of glare would be less than significant.

9.2.3.3 Significant Impacts

The construction of two additional four-story hotels with a total of 325 rooms or one additional 10-story hotel of 325 rooms, in addition to the proposed 175-room hotel, allowed by the proposed PMP Amendment would not result in significant impacts on Aesthetics. No mitigation would be required.

9.2.3.4 Mitigation Measures

Because the PMP Amendment would not result in any significant impacts to Aesthetics, no mitigation measures are required.

9.2.3.5 Significance of Impacts after Mitigation

Because the PMP Amendment would not result in any significant impacts to Aesthetics, no mitigation measures are required.

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Section 9.2.4
Hazards and Hazardous Materials

The proposed PMP Amendment would allow the development of up to 500 hotel rooms in up to three hotels on East Harbor Island. One of these hotels, consisting of 175 rooms and ancillary facilities, is the Sunroad Harbor Island Hotel Project. No proposal has been received for the development of the remaining 325 rooms in one or two additional hotels. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future development allowed under the proposed PMP Amendment, this analysis assumes that the reasonable worst case scenario that could occur with respect to hazards and hazardous materials would be development of up to two additional hotels with a total of 325 rooms. This worst care scenario would create the greatest potential for use, exposure, or release of hazardous materials, exposure to hazards due to locations proximate to airports, or potential to interfere with emergency plans to occur. When specific development proposals are received, they will be evaluated pursuant to CEQA Guidelines Section 15168 to determine whether additional environmental review would be needed.

A Hazardous Materials Technical Study (HMTS) was prepared by Ninyo & Moore (July 14, 2006). The HMTS is included as Appendix D-1 to the Draft EIR and covers the site of the proposed 175-room hotel and the entirety of the PMP Amendment area on East Harbor Island. The analysis herein describes hazardous materials sites and existing conditions for the PMP Amendment area as defined by the Ninyo & Moore report.

9.2.4.1 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of impacts associated with hazards and hazardous materials resulting from future development of up to two additional hotels with not more than 325 rooms. Impacts are considered significant if future hotel development allowed under the proposed PMP Amendment would result in:

- a significant hazard to the public or the environment through the routine transport, use, storage, or disposal of hazardous materials;

- a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
- be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- a safety hazard for people residing or working in the project area if it is located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport;
- a safety hazard for people residing or working in the project area if it is within the vicinity of a private airstrip;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

9.2.4.2 Analysis of Impacts Associated with the PMP Amendment

9.2.4.2.1 Routine Transport, Use, Storage, or Disposal of Hazardous Materials

Construction

The hotel uses allowed under the proposed PMP Amendment would not routinely emit hazardous materials into the water, ground, or air during the construction phases. The types of hazardous materials that could be used during construction include gasoline, oil, other vehicle-related fluids, grease, paints, solvents, and metals. However, these materials would be managed pursuant to federal, state, and local health and safety regulations, in combination with construction best management practices (BMPs) implemented from a Storm Water Pollution Prevention Plan (SWPPP), as well as construction crew training.

The construction phase of future hotel devleopment that could occur under the proposed PMP Amendment does not meet the criteria to be subject to preparation of a Spill Prevention, Control, and Countermeasure (SPCC) Plan. In order for a project to trigger the preparation of a SPCC Plan, the project would need to meet all three of the following criteria: (1) the facility must be a non-transportation-related facility, or, for construction, the construction operations involve storing, using, transferring, or otherwise handling oil; (2) the project must have an aggregate aboveground storage capacity greater than 1,320 gallons or completely buried storage capacity greater than 42,000 gallons; and (3) there must be a reasonable expectation of a discharge into or upon navigable waters of the United States or adjoining shorelines. The construction phase of future hotels would meet two of the three criteria: the construction operations would involve storing, using, transferring, or otherwise handling oil, and future hotels would be located adjacent to navigable waters of the United States. However, the construction phase of future hotel developments would not result in an aggregate aboveground storage capacity greater than 1,320 gallons or an underground storage capacity greater than 42,000 gallons. Therefore, construction of up to two additional hotels totaling no more than 325 rooms, in addition to the proposed 175-room hotel, would result in a less than significant impact on the public or the environment through the routine transport, use, storage, or disposal of hazardous materials.

Operations

The hotel uses allowed under the proposed PMP Amendment would not include any features that would routinely emit hazardous materials into the water, ground, or air during their operation. Use, storage, and disposal of any common and chemical hazardous materials including motor oil, solvents, household and industrial cleaning products, paint, swimming pool–related chemicals, some acids, and organic waste during normal hotel operations would be managed pursuant to all federal, state, and local regulations.

Future hotel projects would be subject to routine inspection by the County Department of Environmental Health's (DEH's) Hazardous Materials Division (HMD) and the City of San Diego Fire Department, assuring ongoing compliance and preventing dangerous conditions that could lead to hazardous upset conditions. Operation of the future hotels does not meet the criteria to be subject to preparation of a SPCC Plan. In order for a project to trigger the preparation of a SPCC Plan, the project would need to meet all three of the following criteria: (1) the facility must be a non-transportation-related facility, or, for construction, the construction operations involve storing, using, transferring, or otherwise handling oil; (2) the project must have an aggregate aboveground storage capacity greater than 1,320 gallons or completely buried storage capacity greater than 42,000 gallons; and (3) there must be a reasonable expectation of a discharge into or upon navigable waters of the United States or adjoining shorelines. The operation phase of future hotels would meet two of the three criteria: the construction operations would involve storing, using, transferring, or otherwise handling oil, and future hotels would be located adjacent to navigable waters of the United States. However, the operation phase of future hotel developments would not result in an aggregate aboveground storage capacity greater than 1,320 gallons or an underground storage capacity greater than 42,000 gallons. Therefore, operation of future hotels allowed by the proposed PMP Amendment would result in a less-than-significant impact on the public or the environment through the routine transport, use, storage, or disposal of hazardous materials.

9.2.4.2.2 Release of Hazardous Materials into the Environment

Construction

The types of hazardous materials that could be released during construction of the hotels include gasoline spills, oil spills, other vehicle-related fluids, paints, solvents, and metals. Compliance with federal, state, and local regulations, in combination with construction BMPs implemented from a SWPPP, as well as construction crew training, would ensure that all hazardous materials are used, stored, and disposed of properly and would reduce the likelihood and minimize the consequences of a release during construction activities to a level less than significant. Therefore, future hotel development of up to two hotels, in addition to the proposed 175-room hotel, would not result in significant impacts associated with use and storage of hazardous materials and would avoid the release of hazardous materials during construction.

The San Diego Air Pollution Control District (SDAPCD) requires the owner of an establishment set for demolition or renovation, or the owner or operator of any equipment used to demolish or renovate any structure, to submit an Asbestos Demolition or Renovation Operational Plan (Notice of Intention) at least 10 working days before any asbestos stripping or removal work begins (such as, site preparation that would break up, dislodge or similarly disturb asbestos containing material). A Notice of Intention is required for all demolitions, regardless of whether asbestos containing materials are present or not. Although construction of future hotels would not involve renovation or demolition of any structures that may have used asbestos-containing building materials, nor would future hotel construction remove lead-based paints from existing structures built prior to 1980, submittal of a Notice of Intention to the SDAPCD would be required prior to any construction activities and would ensure that hazardous materials are not released into the environment.

Future hotel projects that could occur under the proposed PMP Amendment would have to comply with federal, state, and local regulations for potentially hazardous material releases, and as such would not result in a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, impacts associated with construction of up to 325 hotel rooms in up to two hotels, in addition to the proposed 175-room hotel, allowed under the proposed PMP Amendment would be less than significant.

Operations

Future hotel developments allowed by the proposed PMP Amendment would not include any feature that would release hazardous materials into the environment during operation. Hazardous materials that may be used or stored on site include motor oil, solvents, household and industrial cleaning products, paint, swimming pool–related chemicals, some acids, and organic waste. These materials are considered part of normal hotel operation; and any release of these, or any other potentially hazardous substances would be subject to existing federal, state, and local health and safety regulations. Unauthorized releases would be subject to punishment in accordance with existing laws, which may include fines and/or imprisonment. Because future hotels that could occur under the proposed PMP Amendment would be operated in compliance with federal, state, and local regulations for potentially hazardous material releases, the proposed PMP Amendment would not result in a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, during the operation of future hotels allowed under the proposed PMP Amendment, impacts would be less than significant.

9.2.4.2.3 Proximity to Schools

East Harbor Island is not within 0.25 mile of a school. Therefore, there is no impact with respect to hazardous materials near a school.

9.2.4.2.4 Location on a Listed Hazardous Materials Site

As discussed in the Draft EIR, the site of the proposed 175-room hotel was listed on the RCRA Generator, DEH Permits, and UST/AST databases and is considered a hazardous materials site. The HMTS concluded that, based on the information reviewed at the local regulatory agencies, the hazardous materials/wastes currently and formerly stored at the site of the proposed 175-room hotel (i.e., 500-gallon UST, waste oil, solvents, etc.) do not have the potential to create a significant hazard to the public or the environment. It was noted, however, that the HTMS recommended a follow-up Phase II investigation to determine the history of the now removed UST and whether the area surrounding the UST still contained contaminants. The UST was located west of the marina building and was not located in the portion of the site for construction of the proposed 175-room hotel. The UST site is located within the area where up to two additional hotes could be constructed under the PMP Amendment.

The Phase II investigation, which is Appendix D-2 to the Draft EIR, results for soil and groundwater samples indicated that the former UST site did not contain toxic contaminants, such as petroleum hydrocarbons and volatile organic compounds. No other contaminants were detected in the samples of soil or groundwater. Therefore, based upon the results of the Phase II investigation, the proposed development of the 175-room hotel is not likely to pose a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. However, because it cannot be assumed that the number and location of samples collected during the Phase II investigation are representative of the entire area where future hotels allowed under the proposed PMP Amendment could occur, the potential exists that the locations where hotels could be constructed may be contaminated due to leaks from the removed UST. In addition, due to the presence of the marina and past use of the surrounding areas for industrial purposes, including aerospace and other industries, undocumented areas of contamination could exist. In the event undocumented areas of contamination are encountered during construction or ground-disturbing activities, a potentially significant impact from worker exposure to hazardous materials could occur.

9.2.4.2.5 Location Near a Public Airport

The East Harbor Island Subarea is located within the SDIA AIA; however, it is not within a RPZ, and adheres to the Airport Approach Overlay Zone Ordinance, as discussed in Section 4.1 ("Land Use, Water Use, and Coastal Access") of the Draft EIR and subsection 9.3.1, *Land Use, Water Use, and Coastal Access*, of this chapter. Due to their potential location within the SDIA AIA, future hotel developments allowed by the PMP Amendment are subject to FAA review pursuant to FAR Part 77 and a determination by the ALUC that the future hotel development is consistent with the ALUCP. Like the 175-room hotel, future hotels allowed under the PMP Amendment would be required to obtain an FAA "Determination of No Hazard to Air Navigation." The FAA will issue a "Determination of No Hazard to Air Navigation" when a proposed structure does not exceed any of the obstruction standards and would not be a hazard to air navigation. Future hotel development also would be required to obtain a determination by the ALUC that the proposed development is consistent with the SDIA ALUCP.

Compliance with the FAA and ALUCP requirements protects the public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses. Therefore, future hotel development's compliance with the FAA and ALUCP requirements will ensure that hazards-related impacts associated with being located near a public airport would be less than significant.

9.2.4.2.6 Location near a Private Airstrip

The East Harbor Island Subarea is not within the vicinity of a private airstrip. Therefore, there is no impact with respect to safety hazards associated with residing or working in the vicinity of a private airstrip.

9.2.4.2.7 Interference with Emergency Plans

Future development of up to two additional hotels under the proposed PMP Amendment would occur in previously disturbed areas where parking lots now exist and would adhere to local construction regulations. The proposed PMP Amendment would not impede emergency access to and from East Harbor Island; and would therefore not impair implementation of, or physically interfere with, an adopted emergency evacuation plan. Future hotel development would be reviewed by the City of San Diego Development Services Department's Fire Plan Review Section to ensure that development would provide for adequate fire protection and would not impede future emergency access. Site design for future hotels may require fire lanes, additional fire hydrants, and/or fire access plans, which would need to be reviewed and approved by the City of San Diego Development Service Department's Fire Plan Review Section to ensure that future hotel development would not impede emergency access for the site. Therefore, future hotel development allowed under the proposed PMP Amendment would not result in significant impacts associated with interference with an adopted emergency response plan or emergency evacuation plan.

9.2.4.2.8 Risk Involving Wildland Fires

The proposed PMP Amendment would not increase the potential for wildland fires or expose people or structures to a significant risk of loss, injury, or death involving wildland fires. According to the California Department of Forestry and Fire Protection's (CalFire) San Diego County Fire Hazards Severity Zone Map for Local Responsibility Areas, the PMP Amendment area is "unzoned" and is not considered to be located in a fire hazard zone (CalFire 2007). Furthermore, the PMP Amendment area is located on East Harbor Island, in an urbanized area surrounded by water. No risk of wildland fire exists on East Harbor Island. Therefore, the proposed PMP Amendment allowing the future construction of up to two hotels, in addition to the proposed 175-room hotel, would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. No impact would occur.

9.2.4.3 Significant Impacts

Based on the results and conclusions of the HMTS and Phase II Environmental Site Assessment, future development of up to two hotels, in addition to the proposed 175-room hotel, may result in significant impacts associated with hazards or hazardous materials as follows:

HZ-2: Construction crews could encounter undocumented areas of contamination and other construction-related hazards during construction of future hotels within the East Harbor Island Subarea.

9.2.4.4 Mitigation Measures

MM HZ-2a: Prior to the initiation of construction activities, the Project Applicant for each hotel shall prepare and submit to the Port District's Environmental and Land Use Management 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. 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-2b: Prior to the initiation of construction activities, the Project Applicant for each hotel shall prepare a Site Safety Plan to address the presence of possible hazardous materials within the construction area. 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 hotel development site to reduce potential health and safety hazards to workers and the public.

9.2.4.5 Significance of Impacts after Mitigation

The proposed PMP Amendment, which would allow development of the proposed 175-room hotel plus up to two additional hotels providing a total of 325 rooms for a combined total of no more than three hotels and 500 rooms, has the potential to result in significant impacts associated with hazards and hazardous materials. Implementation of mitigation measures MM HZ-2a and MM HZ-2b would reduce significant impacts due to hazards and hazardous materials associated with future hotel developments allowed under the proposed PMP Amendment to below a level of significance.

Section 9.2.5
Hydrology and Water Quality

The PMP Amendment would allow the development of up to 500 hotel rooms in up to three hotels on East Harbor Island. One of these hotels, consisting of 175 rooms and ancillary facilities, is the Sunroad Harbor Island Hotel Project. No proposal has been received for the development of the remaining 325 rooms in one or two additional hotels. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future development allowed under the PMP Amendment, this analysis assumes that the reasonable worst case scenario that could occur with respect to hydrology and water quality impacts would be development of up to two additional hotels with a total of 325 rooms, in addition to the proposed 175-room hotel evaluated in the Draft EIR. This development scenario has the potential to create the greatest potential impacts relative to hydrology and water quality during construction and operations of future hotels. When specific development proposals are received, they will be evaluated pursuant to CEQA Guidelines Section 15168 to determine whether additional environmental review would be needed.

This section addresses the proposed PMP Amendment's potential to result in impacts on hydrology and water quality on East Harbor Island and in the surrounding San Diego Bay waters. The water quality discussion is based on a physical and chemical water quality analysis of San Diego Bay conducted for the Port of San Diego by Tierra Data, Inc. entitled *Characterizing the Spatial and Temporal Variation in Turbidity and Physical Water Quality Characteristics in San Diego Bay: A Study to Determine a Cost-Efficient Strategy for Long-term Monitoring, October 2008*. A copy of the report is available for public review at the Port District office, located at 3165 Pacific Highway, San Diego, California, 92101. The findings of this report are summarized in Section 4.5 ("Hydrology and Water Quality") of the Draft EIR.

9.2.5.1 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of impacts associated with associated with hydrology and water quality resulting from future development of up to two additional hotels with not more than 325 rooms. Impacts are considered significant if future hotel development allowed under the proposed PMP Amendment would result in:

- violate any water quality standards or waste discharge requirements;
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- substantially alter the existing drainage pattern of the Project site or vicinity, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off Project site;
- create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- otherwise substantially degrade water quality;
- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, FIRM, or other flood hazard delineation map;
- place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- inundation by seiche, tsunami, or mudflow.

9.2.5.2 Analysis of Impacts Associated with the PMP Amendment

9.2.5.2.1 Violate any Water Quality Standards

Construction

Prior to construction of up to two future hotels, in addition to the proposed 175-room hotel, which would be allowed under the proposed PMP Amendment, the Project Applicant must prepare a Storm Water Pollution Prevention Plan (SWPPP), as mandated under the Municipal Permit, General Construction Stormwater Permit, Stormwater Management and Discharge Control Ordinance, and the Jurisdictional Urban Runoff Management Program (JURMP). The SWPPP must be reviewed and approved by the Port District prior to the commencement of construction. The SWPPP must identify short-term, project-specific best management practices (BMPs) that would minimize pollutants and/or sediments entering runoff during the construction stage of the future hotels. Considering that future hotels would be required, in accordance with existing Municipal Permit and Port District regulations, to design and implement SWPPPs that rely on standard BMPs identified in the JURMP prior to any construction activities, significant water quality impacts would not occur. Therefore, construction impacts on water quality would be less than significant.

In accordance with the Municipal Permit, the General Construction Stormwater Permit, and the Stormwater Management and Discharge Control Ordinance, prior to construction of future hotels that would be allowed by the proposed PMP Amendment, the appropriate BMPs would be identified and implemented pursuant to a project-specific SWPPP. Temporary or short-term BMPs identified in the JURMP that could be included in a project-specific SWPPP for future hotel projects include the following:

- Silt fence
- Fiber roll
- Street sweeping and vacuuming
- Storm drain inlet protection
- Stockpile management
- Solid waste management
- Stabilized construction entrance/exit
- Vehicle and equipment maintenance
- Erosion control mats and spray-on applications
- Desilting basin
- Gravel bag berm
- Sandbag barrier
- Material delivery and storage
- Spill prevention and control
- Concrete waste management
- Water conservation practices
- Paving and grading operations

Operations

During the operational phase of the future hotels, the hotels would be required to ensure that runoff does not adversely impact water quality in the bay in accordance with existing Port District regulations. Future hotels would be subject to the Port District planning and project approval process, which requires "Priority Projects" to develop project-specific Urban Stormwater Mitigation Plans (USMPs) that are consistent with SUSMP requirements. Future hotels would be considered "Priority Projects" under the Port District Standard USMP

(SUSMP), and as such the Project Applicant of each hotel will be required to prepare USMPs for review and approval by the Port District prior to development and implementation of the future hotels. The USMPs to be prepared by the Project Applicant must identify the BMPs to be implemented that minimize or avoid pollutants and/or sediment entering runoff. BMPs would be selected from those recommended in Appendix A of the Port District's SUSMP. The Port District SUSMP focuses on post-construction and long-term measures, and thus the identified BMPs would be used in the long-term operation of the future hotels. The reduction of pollutant levels may be achieved by employing a combination of methods, including pollution prevention, source control, and treatment control BMPs. Because future hotels would be required, in accordance with existing Municipal Permit and Port District regulations, to design and implement a USMP that relies on standard BMPs identified in the SUSMP prior to development of future hotels, significant water quality impacts would not occur. Therefore, operational impacts on water quality for the development of up to two hotels, in addition to the proposed 175-room hotel, would be less than significant.

In accordance with Port District regulations, prior to construction of any future hotels that would be allowed under the proposed PMP Amendment, the appropriate BMPs would be identified and implemented pursuant to a project-specific USMP. Permanent or long-term BMPs identified in the SUSMP that could be implemented through the project-specific USMP for future hotel projects could include the following:

- Compact car spaces, minimized stall dimensions, efficient parking lanes, and pervious materials in spillover parking areas to reduce overall imperviousness associated with parking lots
- Permeable materials for private sidewalks, driveways, parking lots, and interior roadway surfaces
- Dry wells
- Stabilized permanent channel crossings
- Cisterns
- Foundation plantings
- Rooftops that drain into adjacent landscaping prior to discharging to the storm drain
- Parking lots that drain into landscaped areas co-designed as biofiltration areas
- Roads, sidewalks, and impervious trails that drain into adjacent landscaping
- Natural drainage systems to the maximum extent practicable
- Oil/water separators
- Catch basin screens

- Canopy interception and water conservation maximized by preserving existing native trees and shrubs and planting additional native or drought tolerant trees and large shrubs
- Native or drought-tolerant vegetation on slopes
- Energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels
- Outdoor material and trash storage area designed to reduce or control rainfall runoff
- Biofilters
- Detention basins
- Infiltration basins
- Infiltration trenches
- Porous asphalt
- Porous modular concrete block
- Porous concrete
- Hydrodynamic Separation Systems
- Recycling program and containers
- Sprinkler systems
- Moisture sensors to limit overwatering

Future hotel developments would be required to apply both short-term (construction) and long-term (operational) BMPs by developing and implementing a Port-approved SWPPP and USMP; therefore, future development would comply with the Stormwater Management and Discharge Control Ordinance, meet the water quality goals of the Watershed Urban Runoff Management Program (WURMP), and meet the ultimate goal of the Urban Runoff Action Plan (URAP) to reduce the concentration of contamination being discharged into San Diego Bay. Therefore, development allowed under the PMP Amendment, which would allow construction of up to two hotels in addition to the proposed 175-room hotel, would not violate any water quality standards or waste discharge requirements identified in the URAP, and impacts would be less than significant.

9.2.5.2.2 Deplete Groundwater Supplies

Future hotels allowed under the PMP Amendment would not use groundwater resources or otherwise affect any groundwater resources that are used for water supply. Development of up to two hotels, in addition to the proposed 175-room hotel, would occur in areas where existing development and parking lots are located. Therefore, the PMP Amendment would not significantly increase the impermeable surface area on the peninsula and, as a result, would not interfere with the existing level of groundwater recharge. Future hotel development would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Therefore, impacts on groundwater supplies due to the development of two future hotels, in addition to the proposed 175-room hotel, would be less than significant.

9.2.5.2.3 Alter the Existing Drainage Patterns

The development of up to two future hotels on East Harbor Island, in addition to the proposed 175-room hotel, that could occur as a result of the proposed PMP Amendment would not substantially alter the hydrological patterns on East Harbor Island. The majority of East Harbor Island is currently covered in impervious surfaces (mostly paved parking lots), and stormwater flow occurs through sheet flow that is directed into stormwater inlets that then flow into the bay. Future hotel developments would result in a change in the layout of East Harbor Island's impervious surfaces by erecting structures and installing new surface parking areas and walkways, but this would not substantially alter stormwater flows on the peninsula. No waterways flow through East Harbor Island; the alteration of a stream or river would not occur. Therefore, the construction of up to two hotels, in addition to the proposed 175-room hotel, allowed under the PMP Amendment would not substantially alter the existing drainage pattern of the peninsula, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off of East Harbor Island. Impacts would be less than significant.

9.2.5.2.4 Create or Contribute Runoff

The development of up to two hotels, in addition to the proposed 175-room hotel, may require the handling and disposal of hazardous materials including oils, gasoline, paints, solvents, fertilizers, concrete and asphalt products, and other potentially toxic materials during construction and operational activities. Use of these materials could contribute to polluted runoff leaving East Harbor Island. However, as discussed above, future hotel development would be required to implement an USMP and SWPPP; therefore, the handling, storage, and disposal of hazardous materials would not increase runoff pollution into San Diego Bay. The required implementation of the stormwater plans would ensure that future hotel developments would not result in a significant water quality impact associated with polluted runoff. Therefore, impacts would be less than significant.

9.2.5.2.5 Substantially Degrade Water Quality

Construction and operation of up to two hotels, in addition to the proposed 175-room hotel, that could be developed under the PMP Amendment would include activities that could result in substantial water quality impacts on San Diego Bay. However, as discussed in Section 9.2.5.2.1, above, future developments would be required to apply appropriate pre- and post-construction BMPs through the implementation of an USMP and SWPPP. Thus, construction and operation of future hotel developments allowed under the PMP Amendment would not substantially degrade water quality in San Diego Bay, and impacts would be less than significant.

9.2.5.2.6 Place Housing within a 100-year Flood Hazard Area

East Harbor Island is mapped by FEMA as being outside of the 500-year floodplain, meaning that there is a very low potential for damaging floods to affect the development of up to two hotels, in addition to the proposed 175-room hotel, that could occur under the PMP Amendment. Small portions of the breakwater rip-rap surrounding the edges of the subarea are located within an identified 100-year flood hazard area in which flood elevations of six feet above mean sea level have been determined. East Harbor Island would not be affected by the 100-year flood zone, because the entire Harbor Island peninsula is elevated to approximately 10 feet above mean sea level. Because Harbor Island is elevated above the identified six-foot flood zone, the potential for a major flood to harm people or damage property is minimal. Therefore, the proposed PMP Amendment allowing the development of up to two hotels, in addition to the proposed 175-room hotel, on East Harbor Island would not result in the placement of housing within a 100-year flood hazard area; impacts would be less than significant.

9.2.5.2.7 Impede or Redirect Flood Flows

As discussed above, only portions of the breakwater rip-rap surrounding East Harbor Island are within a 100-year flood hazard zone. Due to the nature of this area as breakwater rip-rap, the portions of East Harbor Island located within the 100-year flood hazard zone would not be appropriate for development. No future hotel structures that would be allowed by the proposed PMP Amendment would be constructed in this area and, therefore, would not impede or redirect flows within the bounds of the 100-year floodplain. Impacts would be less than significant.

9.2.5.2.8 Expose People to a Significant Risk Involving Flooding

East Harbor Island is not located in an area that is prone to flooding events. East Harbor Island is mapped outside of the FEMA 500-year floodplain, so there is a very low chance for damaging floods to affect future development of up to two hotels, in addition to the proposed 175-room hotel, that would be allowed under the proposed PMP Amendment. Minor portions of the breakwater rip-rap surrounding the edges of the Harbor Island peninsula are located within the 100-year floodplain, but no future hotel structures would be located within the rip-rap area due to insuitability for development. In addition, East Harbor Island is not located in proximity to or protected by either a levee or a dam; thus, flooding as a result of the failure of a levee or dam would not occur. The proposed PMP Amendment would not expose people to loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam. Therefore, impacts would be less than significant.

9.2.5.2.9 Inundate by Seiche, Tsunami, or Mudflow

East Harbor Island is within a protected bay, and a tsunami occurring on the Pacific Ocean would not be expected to reach it because East Harbor Island is located on a section of the bay that is blocked off from the open water by the Point Loma peninsula to the west. Therefore, the potential for a tsunami to occur is low to moderate.

Located within a protected bay, however, makes East Harbor Island susceptible to seiche conditions. Seiches are standing waves occurring in enclosed or partially enclosed bodies of water and are caused by weather events (e.g., wind or atmospheric pressure changes) or by seismic activity. Seiches generally have very long wavelengths and are therefore often imperceptible to the human eye, although major events like earthquakes can cause hazardous wave cycles (University of California 2006).

As discussed in Section 9.2.9, *Geology and Soils*, the 2006 geotechnical reviews found that the potential for inundation at East Harbor Island due to seiches is low to moderate based on historic record and the location and alignment of San Diego Bay to potential seismic sources. As discussed in Section 9.2.9, *Geology and Soils*, although the potential for a very large tsunami or seiche occurring within the bay is high, due to the location of East Harbor Island and its protection from the open ocean by other land areas including Point Loma and Coronado, the potential for a tsunami to damage future hotel development that would be allowed under the PMP Amendment is low to moderate. The risk would be comparable to other low-lying sites located along the bay. In addition, due to the generally flat topography of East Harbor Island, mudflows are not likely to occur. Therefore, the development of up to two hotels, in addition to the proposed 175-room hotel, allowed under the PMP Amendment would not be subject to significant hazards from seiches, tsunamis, or mudflows; and impacts would be less than significant.

[NOTE: Please consider whether this is the most appropriate section in which to put the analysis of potential impacts due to sea level rise.]

9.2.5.3 Significant Impacts

The PMP Amendment allowing the development of up to two hotels, with a combined total of not more than 325 rooms, in addition to the proposed 175-room hotel, for a cumulative total of 500 rooms in no more than three hotels in East Harbor Island Subarea 23, would not result in significant impacts to hydrology and water quality. No mitigation measures would be required.

9.3.5.4 Mitigation Measures

Because the PMP Amendment would not result in significant impacts to hydrology and water quality, no mitigation measures would be required.

9.2.5.5 Significance of Impacts after Mitigation

Because the PMP Amendment would not result in significant impacts to hydrology and water quality, no mitigation measures would be required.

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Section 9.2.6
Transportation, Traffic, and Parking

The proposed PMP Amendment would allow the development of up to 500 hotel rooms in up to three hotels on East Harbor Island. One of these hotels, consisting of 175 rooms and ancillary facilities, is the Sunroad Harbor Island Hotel Project. No proposal has been received for the development of the remaining 325 rooms in one or two additional hotels. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future hotel development allowed under the PMP Amendment, the analysis of potential impacts on transportation, traffic, and parking in this section evaluates potential hotel development that could occur under the proposed PMP Amendment as two scenarios:

- Scenario A: The proposed 175-room hotel as 175 "business" hotel rooms and the remaining 325 rooms that could occur under the proposed PMP Amendment as "resort" hotel rooms;
- Scenario B: The total of the 500 rooms that could occur under the proposed PMP Amendment in two or three hotels as "business" hotel rooms.

When specific development proposals are received, they will be evaluated pursuant to CEQA Guidelines Section 15168 to determine whether additional environmental review would be needed.

This section summarizes the analysis and findings presented in the *Traffic Impact Study—Harbor Island Subarea 23 Port Master Plan Amendment* (Traffic Study) prepared by Linscott Law & Greenspan Engineers (LLG), dated April 9, 2013, which is included in the Draft EIR as Appendix E-1.

9.2.6.1 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of impacts associated with transportation, traffic, and parking resulting from future hotel development allowed under the PMP Amendment.

Impacts are considered significant if the future hotel development 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 increase in level of service (LOS) for the studied intersections and roadway segments. To quantify these impacts, the Port District uses the City of San Diego's *Significance Determination Thresholds, as shown on Table 9.2.6-1.*

Table 9.2.6-1. City of San Diego Traffic Impact Significance Thresholds

Level of Service with Project[b]	Allowable Increase Due to Project Impacts[a]					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E	0.010	1.0	0.02	1.0	2.0	2.0[c]
F	0.005	0.5	0.01	0.5	1.0	1.0[c]

1. 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.

2. 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

9.2.6.2 Analysis of Project Impacts

9.2.6.2.1 Substantial Traffic Increase

Methodology

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 and an existing overflow parking lot for rental cars. 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 up to three hotels with a combined total of no more than 500 rooms. For the purpose of this report, the potential future hotel rooms associated with up to an additional two hotels were analyzed under two different scenarios:

- Scenario A: 175 "Business" hotel rooms and 325 "Resort" hotel rooms
- Scenario B: 500 "Business" hotel rooms

According to the 9th Edition of ITE's *Trip Generation Manual,* "Business" hotels are "places of lodging aimed toward the business traveler. These hotels provide sleeping accommodations and other limited facilities such as a breakfast buffet bar and afternoon beverage bar (no lunch or dinner is served and no meeting facilities are provided)". Based on *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates,* 7 ADT per room is expected to be generated by a Business Hotel.

Alternately, ITE's *Trip Generation Manual* defines a "Resort" hotel as providing "sleeping accommodations, restaurants, cocktail lounges, retail shops and guest services." Based on *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates,* 8 ADT per room is expected to be generated by a Resort Hotel.

The full development allowed under the proposed *Port Master Plan Amendment* would entail the demolition of an existing parking lot previously used for SDIA employee parking and currently used as an overflow parking lot for rental cars. A trip generation credit for the removal of this existing land use was not taken in the trip generation calculations shown below. The traffic volumes in the Traffic Study prepared for the proposed PMP Amendment include trips that are expected to be removed with the construction of the proposed project and therefore, the analysis results presented are a conservative representation of the proposed project's impact to the study area.

Table 9.2.6.2, *Project Trip Generation: Scenario A*, tabulates the total net project traffic generation for Scenario A: 175 "Business" hotel rooms and 325 "Resort" hotel rooms. 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 3,825 ADT with 117 inbound / 111 outbound trips during the AM peak hour and 139 inbound / 153 outbound trips during the PM peak hour.

Table 9.2.6.3, *Project Trip Generation: Scenario B*, tabulates the total net project traffic generation for Scenario B: 500 "Business" hotel rooms. 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 3,500 ADT with 112 inbound / 168 outbound trips during the AM peak hour and 189 inbound / 126 outbound trips during the PM peak hour.

Table 9.2.6-2. Project Trip Generation: Scenario A

Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour				PM Peak Hour			
		Rate	Volume	% of ADT[d]	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
Proposed Project											
Hotel (Business)	175 rooms	7 /room[a]	1,225	8%	40:60	39	59	9%	60:40	66	44
Hotel (Resort)	325 rooms	8 /room[b]	2,600	5%	60:40	78	52	7%	40:60	73	109
Marina	600 berths	4 /berth[c]	2,400	3%	30:70	22	50	7%	60:40	101	67
Subtotal (proposed project):		—	**6,225**	—	—	**139**	**161**	—	—	**240**	**220**
Existing Marina (600 berths)		—	*-2,400*	—	—	*-22*	*-50*	—	—	*-101*	*-67*
Scenario A Net Project Trips:		—	**3,825**	—	—	**117**	**111**	—	—	**139**	**153**

1. Footnotes:

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

Table 9.2.6-3. Project Trip Generation: Scenario B

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 (Business)	500rooms	7 /room[a]	3,500	8%	40:60	112	168	9%	60:40	189	126
Marina	600berths	4 /berth[b]	2,400	3%	30:70	22	50	7%	60:40	101	67
Subtotal (proposed project):		—	**5,900**	—	—	**134**	**218**	—	—	**290**	**193**
Existing Marina (600 berths)		—	*-2,400*	—	—	*-22*	*-50*	—	—	*-101*	*-67*
Scenario B Net Project Trips:		—	**3,500**	—	—	**112**	**168**	—	—	**189**	**126**

Footnotes:

a. Rate is based on SANDAG's *(Not So)* Brief Guide of Vehicular Traffic Generation Rates, "*Business Hotel*."

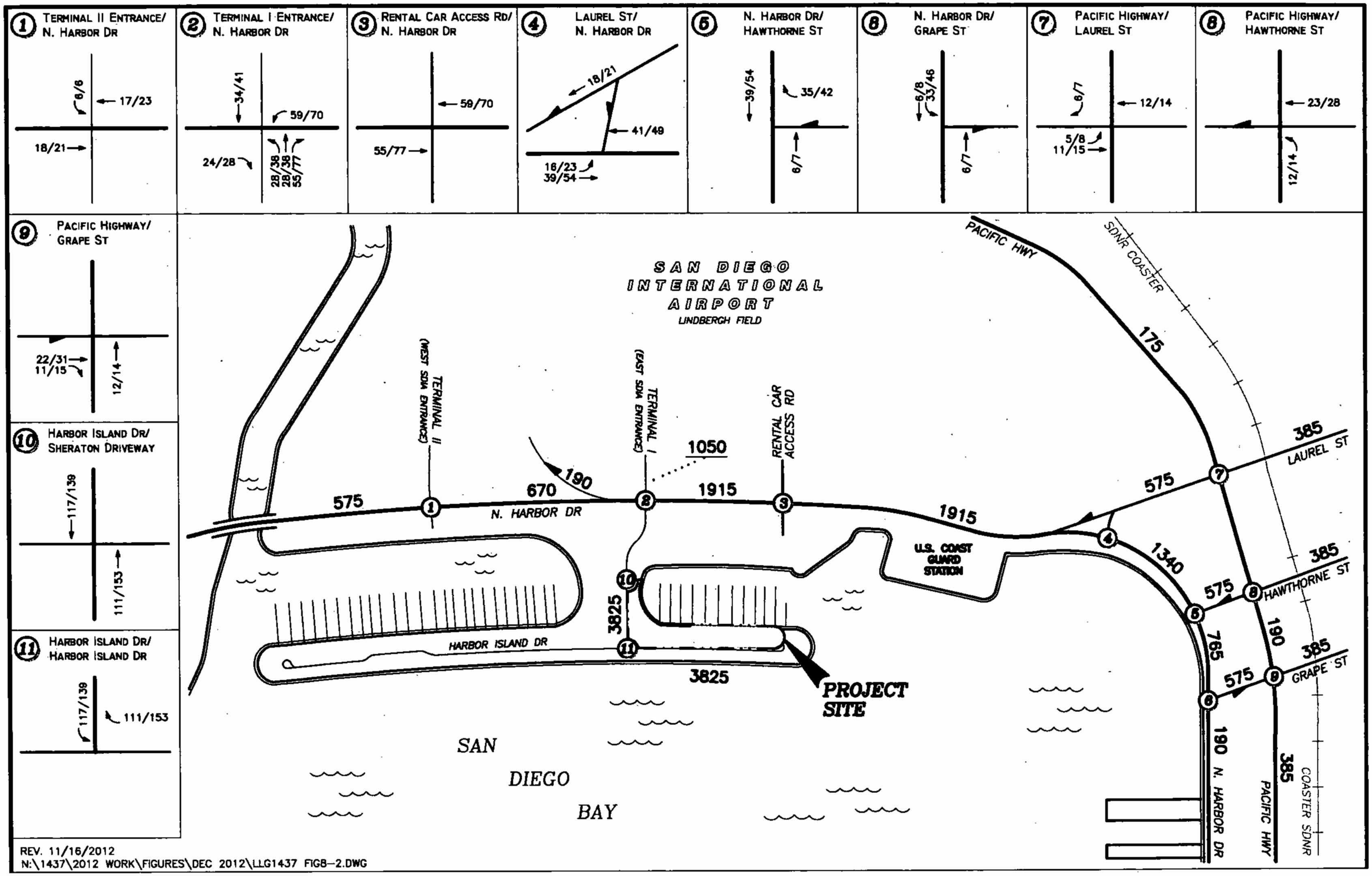
b. Rate is based on City of San Diego's Trip Generation Rate Summary Table and includes "ancillary uses".

c. ADT = Average Daily Traffic

Level of Service Impacts for Near-Term Scenario

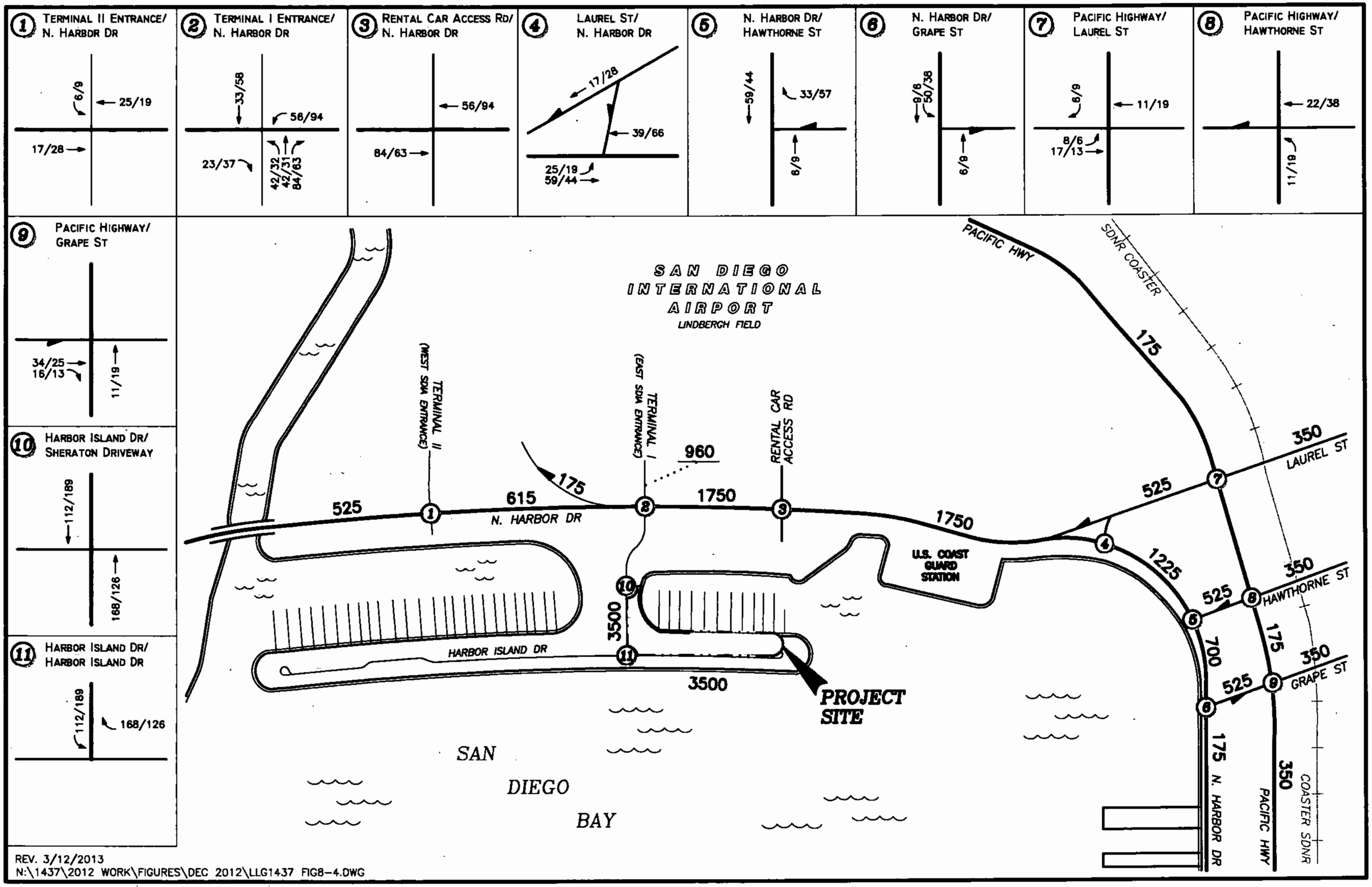
The Traffic Study analyzed impacts of the proposed PMPAmendment at Near-Term conditions and Long-Term cumulative conditions. Impacts of the Project at Near-Term (2012) conditions would be considered direct impacts. Impacts of the proposed PMP Amendment at Long-Term (2030) conditions would be considered a contribution to cumulative impacts (see Section 9.3, *Cumulative Impacts*). The Project Traffic Volumes for AM/PM Peak Hours and ADT are shown on Figure 9.2.6-1, *Scenario A: Project Traffic Volumes AM/PM Peak Hours and ADT*, and Figure 9.2.6-2, *Scenario B: Project Traffic Volumes AM/PM Peak Hours and ADT.* The Near Term Existing + Cumulative Projects + Project traffic volumes are shown on Figure 9.2.6-3, *Scenario A: Existing + Cumulative Projects + Project Traffic Volumes AM/PM Peak Hours and ADT*, and Figure 9.2.6-4, *Scenario B: Existing + Cumulative Projects + Project Traffic Volumes AM/PM Peak Hours and ADT.*

Interstate 5 and its associated on- and off-ramps are located within 2 miles of the PMP Amendment area. However, based on the trip distribution and trip generation associated with the proposed PMP Amendment, it was determined that future hotel development that could occur under the proposed PMP Amendment, allowing the construction of up to two hotels in addition to the proposed 175-room hotel, would result in too few trips at the I-5 on- and off-ramps to warrant including I-5 in the Near-Term analysis.

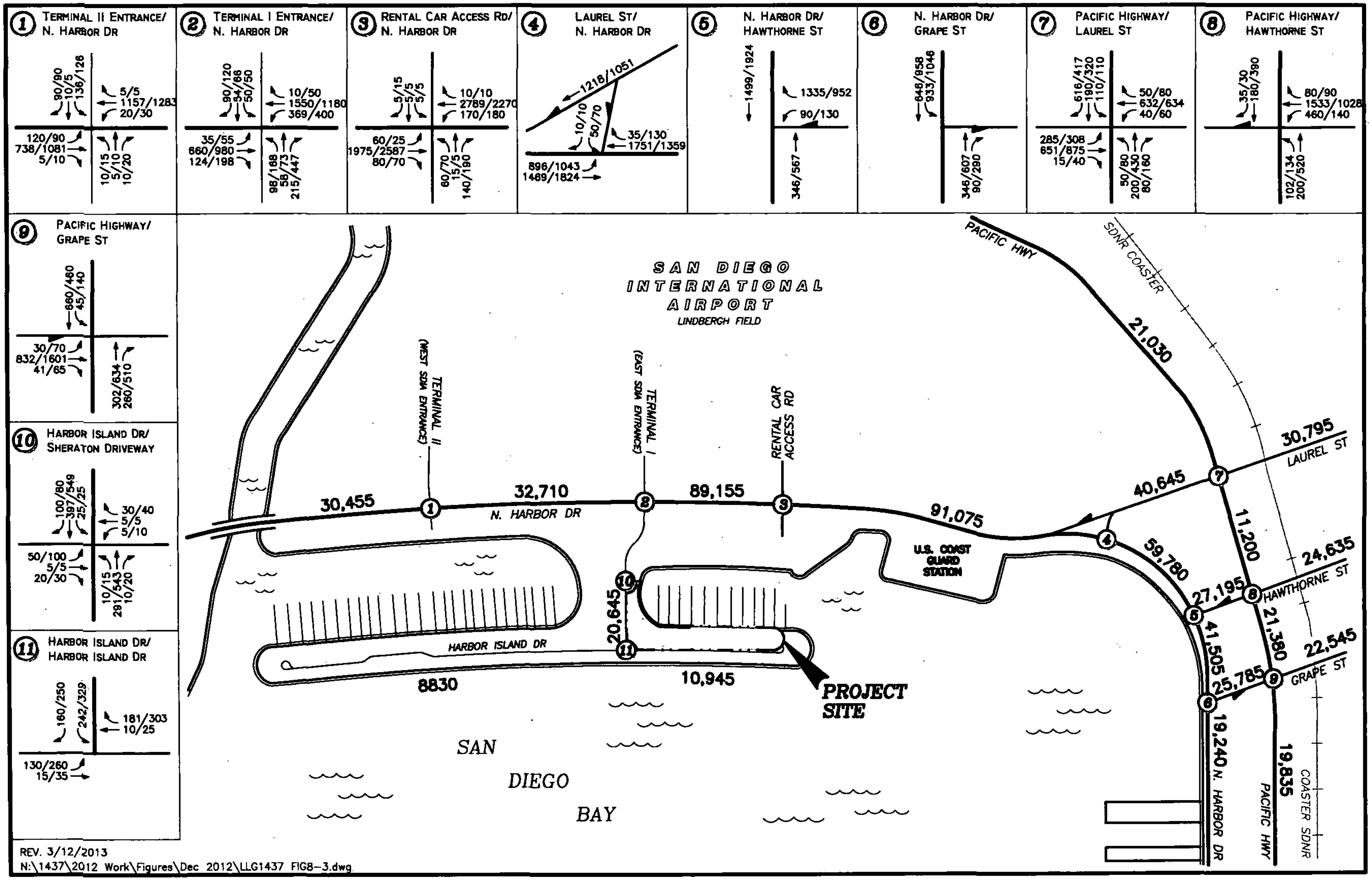


Scenario A: Project Traffic Volumes AM/PM Peak Hours and ADT
Figure 9.2.6-1

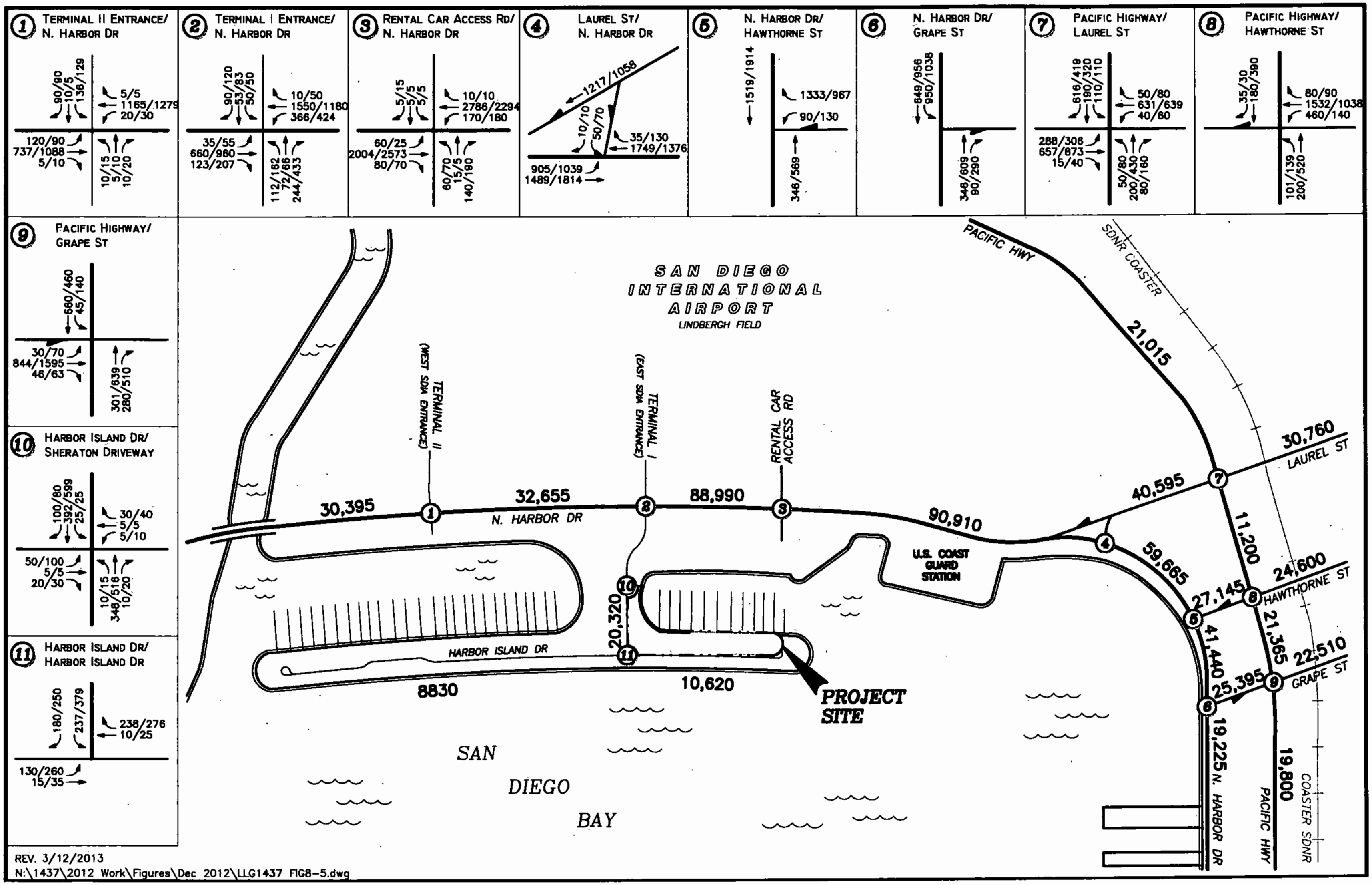
61728 PAGE 137



Scenario B: Project Traffic Volumes AM/PM Peak Hours and ADT
Figure 9.2.6-2



Scenario A: Existing + Cumulative Projects + Project Traffic Volumes AM/PM Peak Hours and ADT
Figure 9.2.6-3



Scenario B: Existing + Cumulative Projects + Project Traffic Volumes AM/PM Peak Hours and ADT
Figure 9.2.6-4

Near-Term Street Segment Operations

Scenario A – 175 "Business" Hotel Rooms and 325 "Resort" Hotel Rooms

Table 9.2.6-4, *Near-Term Street Segment Operations: Scenario A*, and Table 9.2.6-5, *Near-Term Street Segment Operations: Scenario B*, compare the estimated Near-Term operation of the studies roadway segments under the Existing, Existing + Cumulative Projects and the Existing + Cumulative Projects + Project conditions. As shown in these tables, all street segments are anticipated to operate under Near-Term conditions (with and without the proposed PMP Amendment) at acceptable LOS D or better with the exception of the following under both Scenario A and Scenario B:

- 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 F

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 or adjacent intersections[1]. In addition, field observations reveal that the "failing" street segments operate without major congestion. Therefore, no significant direct segment impacts are expected under Scenario A conditions in the Near-Term.

Near-Term Intersection Operations

Table 9.2.6-6, *Near-Term Intersection Operations: Scenario A*, and Table 9.2.6-7, *Near-Term Intersection Operations: Scenario B*, compare the estmated Near-Term operation of the studied intersections under Existing, Existting + Cumulative Project, and Existing + Cumulative Project + Project conditons. As shown in these tables, although minor changes in delay at the study intersections are calculated as compared to the Existing + Cumulative Projects scenario, the intersections in the study area network are calculated to continue to operate at an acceptable LOS D under both Scenario A and Scenario B.

[1] See Section 4.3 and Tables 9-3 of the Traffic Study (Appendix E-1 of the Draft EIR) for further explanation of the arterial segment analysis used to determine if the impacts are considered significant.

Table 9.2.6-4. Near-Term Street Segment Operations: Scenario A

Street Segment	Existing Capacity (LOS E)[a]	Existing			Existing + Cumulative Projects			Existing + Cumulative Projects + Scenario A 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	30,455	0.508	B	0.010	No
Terminal 2 (SDIA) to Harbor Island Dr.	60,000	29,750	0.496	B	32,040	0.534	B	32,710	0.545	B	0.011	No
Harbor Island Dr. to Rental Car Access Rd.	65,000	81,000	1.246	**F**	87,240	1.342	**F**	89,155	1.372	**F**	0.030	**No[g]**
Rental Car Access Road to Laurel St.	60,000	82,790	1.380	**F**	89,160	1.486	**F**	91,075	1.518	**F**	0.032	**No[g]**
Laurel Street to Hawthorn Street	60,000	54,260	0.904	D	58,440	0.974	**E**	59,780	0.996	**E**	0.022	**No[g]**
Hawthorn Street to Grape Street	65,000	37,830	0.582	C	40,740	0.627	C	41,505	0.639	C	0.012	No
South of Grape Street	55,000	17,690	0.322	A	19,050	0.346	A	19,240	0.350	A	0.004	No
Pacific Highway												
North of Laurel Street	50,000	18,150	0.363	A	20,840	0.417	B	21,030	0.421	B	0.004	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	21,380	0.428	B	0.004	No
South of Grape Street	50,000	16,940	0.339	A	19,450	0.389	A	19,835	0.397	A	0.008	No
Laurel Street												
N. Harbor Dr. to Pacific Highway	40,000	36,390	0.910	**E**	40,070	1.002	**F**	40,645	1.016	**F**	0.014	**No[g]**
East of Pacific Highway	30,000	27,620	0.921	**E**	30,410	1.014	**F**	30,795	1.027	**F**	0.013	**No[g]**
Hawthorn Street												
N. Harbor Dr. to Pacific Highway	25,000	25,770	1.031	**F**	26,620	1.065	**F**	27,195	1.088	**F**	0.023	**No[g]**
East of Pacific Highway	25,000	23,480	0.939	**E**	24,250	0.970	**E**	24,635	0.985	**E**	0.015	No
Grape Street												
N. Harbor Dr. to Pacific Highway	25,000	23,130	0.925	**E**	25,210	1.008	**F**	25,785	1.031	**F**	0.023	**No[g]**
East of Pacific Highway	25,000	20,330	0.813	**E**	22,160	0.886	**E**	22,545	0.902	**E**	0.016	No

Table 9.2.6-4 (continued)
Near-Term Street Segment Operations: Scenario A

Harbor Island Drive												
N. Harbor Dr. to Harbor Island Dr.	40,000	16,330	0.408	B	16,820	0.421	B	20,645	0.516	B	0.095	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	10,945	0.365	B	0.128	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.

Table 9.2.6-5. Near-Term Intersection Operations: Scenario A

Intersection	Control Type	Peak Hour	Existing		Existing + Cumulative Projects		Existing + Cumulative Projects + Scenario A 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	19.0	B	0.6	No
		PM	17.2	B	17.5	B	18.1	B	0.6	No
N. Harbor Dr./Harbor Island Dr./ Terminal 1 (East Airport Entrance)	Signal	AM	20.1	C	29.7	C	39.9	D	10.2	No
		PM	22.3	C	31.4	C	41.3	D	9.9	No
N. Harbor Drive/Rental Car Access Road	Signal	AM	23.8	C	30.4	C	34.3	C	3.9	No
		PM	20.0	C	25.9	C	30.0	C	4.1	No
N. Harbor Drive/Laurel Street	Signal	AM	23.0	C	27.1	C	31.0	C	3.9	No
		PM	39.2	D	45.3	D	53.3	D	8.0	No
N. Harbor Drive/Hawthorn Street	Signal	AM	25.2	C	35.2	D	40.8	D	5.6	No
		PM	30.0	C	41.3	D	43.9	D	2.6	No
N. Harbor Drive/Grape Street	Signal	AM	22.9	C	32.5	C	35.4	D	2.9	No
		PM	20.7	C	36.3	D	46.4	D	10.1	No
Pacific Highway/Laurel Street	Signal	AM	27.8	C	36.1	D	39.1	D	3.0	No
		PM	35.9	D	44.6	D	48.8	D	4.2	No
Pacific Highway/Hawthorn Street	Signal	AM	15.8	B	18.4	B	19.5	B	1.1	No
		PM	12.6	B	13.1	B	13.4	B	0.3	No
Pacific Highway/Grape Street	Signal	AM	10.3	B	11.4	B	11.8	B	0.4	No
		PM	19.0	B	21.8	C	25.0	C	3.2	No
Harbor Island Drive/Sheraton Driveway	Signal	AM	12.7	B	14.1	B	14.6	B	0.5	No
		PM	14.1	B	14.2	B	14.7	B	0.5	No
Harbor Island Drive/Harbor Island Drive	Signal	AM	7.4	A	7.6	A	9.4	A	1.8	No
		PM	7.6	A	8.2	A	8.7	A	0.5	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

Table 9.2.6-6. Near-Term Street Segment Operations: Scenario B

Street Segment	Existing Capacity (LOS E)[a]	Existing			Existing + Cumulative Projects			Existing + Cumulative Projects + Scenario A 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	30,455	0.508	B	0.010	No
Terminal 2 (SDIA) to Harbor Island Dr.	60,000	29,750	0.496	B	32,040	0.534	B	32,710	0.545	B	0.011	No
Harbor Island Dr. to Rental Car Access Rd.	65,000	81,000	1.246	**F**	87,240	1.342	**F**	89,155	1.372	**F**	0.030	**No[g]**
Rental Car Access Road to Laurel St.	60,000	82,790	1.380	**F**	89,160	1.486	**F**	91,075	1.518	**F**	0.032	**No[g]**
Laurel Street to Hawthorn Street	60,000	54,260	0.904	D	58,440	0.974	**E**	59,780	0.996	**E**	0.022	**No[g]**
Hawthorn Street to Grape Street	65,000	37,830	0.582	C	40,740	0.627	C	41,505	0.639	C	0.012	No
South of Grape Street	55,000	17,690	0.322	A	19,050	0.346	A	19,240	0.350	A	0.004	No
Pacific Highway												
North of Laurel Street	50,000	18,150	0.363	A	20,840	0.417	B	21,030	0.421	B	0.004	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	21,380	0.428	B	0.004	No
South of Grape Street	50,000	16,940	0.339	A	19,450	0.389	A	19,835	0.397	A	0.008	No
Laurel Street												
N. Harbor Dr. to Pacific Highway	40,000	36,390	0.910	**E**	40,070	1.002	**F**	40,645	1.016	**F**	0.014	**No[g]**
East of Pacific Highway	30,000	27,620	0.921	**E**	30,410	1.014	**F**	30,795	1.027	**F**	0.013	**No[g]**
Hawthorn Street												
N. Harbor Dr. to Pacific Highway	25,000	25,770	1.031	**F**	26,620	1.065	**F**	27,195	1.088	**F**	0.023	**No[g]**
East of Pacific Highway	25,000	23,480	0.939	**E**	24,250	0.970	**E**	24,635	0.985	**E**	0.015	No
Grape Street												
N. Harbor Dr. to Pacific Highway	25,000	23,130	0.925	**E**	25,210	1.008	**F**	25,785	1.031	**F**	0.023	**No[g]**
East of Pacific Highway	25,000	20,330	0.813	**E**	22,160	0.886	**E**	22,545	0.902	**E**	0.016	No

Table 9.2.6-6 (continued)
Near-Term Street Segment Operations: Scenario B

Harbor Island Drive												
N. Harbor Dr. to Harbor Island Dr.	40,000	16,330	0.408	B	16,820	0.421	B	20,645	0.516	B	0.095	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	10,945	0.365	B	0.128	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.

Table 9.2.6-7. Near-Term Intersection Operations: Scenario B

Intersection	Control Type	Peak Hour	Existing		Existing + Cumulative Projects		Existing + Cumulative Projects + Scenario B 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	19.0	B	0.6	No
		PM	17.2	B	17.5	B	18.2	B	0.7	No
N. Harbor Dr./Harbor Island Dr./ Terminal 1 (East Airport Entrance)	Signal	AM	20.1	C	29.7	C	41.9	D	12.2	No
		PM	22.3	C	31.4	C	44.2	D	12.8	No
N. Harbor Drive/Rental Car Access Road	Signal	AM	23.8	C	30.4	C	34.1	C	3.7	No
		PM	20.0	C	25.9	C	29.9	C	4.0	No
N. Harbor Drive/Laurel Street	Signal	AM	23.0	C	27.1	C	30.1	C	3.0	No
		PM	39.2	D	45.3	D	49.5	D	4.2	No
N. Harbor Drive/Hawthorn Street	Signal	AM	25.2	C	35.2	D	42.8	D	7.6	No
		PM	30.0	C	41.3	D	47.4	D	6.1	No
N. Harbor Drive/Grape Street	Signal	AM	22.9	C	32.5	C	39.3	D	6.8	No
		PM	20.7	C	36.3	D	44.8	D	8.5	No
Pacific Highway/Laurel Street	Signal	AM	27.8	C	36.1	D	39.8	D	3.7	No
		PM	35.9	D	44.6	D	48.5	D	3.9	No
Pacific Highway/Hawthorn Street	Signal	AM	15.8	B	18.4	B	19.4	B	1.0	No
		PM	12.6	B	13.1	B	13.7	B	0.6	No
Pacific Highway/Grape Street	Signal	AM	10.3	B	11.4	B	11.8	B	0.4	No
		PM	19.0	B	21.8	C	24.9	C	3.1	No
Harbor Island Drive/Sheraton Driveway	Signal	AM	12.7	B	14.1	B	14.6	B	0.5	No
		PM	14.1	B	14.2	B	14.7	B	0.5	No
Harbor Island Drive/Harbor Island Drive	Signal	AM	7.4	A	7.6	A	8.9	A	1.3	No
		PM	7.6	A	8.2	A	9.4	A	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

Congestion Management Program

The Congestion Management Program (CMP) is intended to link land use, transportation and air quality through level of service performance. 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. As the project trip generation (3,825 ADT and 3,500 ADT respectively) exceeds the CMP threshold of 2,400 ADT in both Scenario A and Scenario B, a CMP analysis is triggered.

The *SANDAG Congestion Management Program, November 2008* report contains a list of "CMP Arterials" that are to be analyzed if the project exceeds the above mentioned trip generation thresholds. A section of the Nimitz Boulevard / North Harbor Drive / Grape Hawthorn Streets / Pacific Highway / Harbor Drive CMP Arterial between I-8 and I-5 is contained within the project study area. The *City of San Diego Traffic Impact Study Manual* contains criteria which establishes that a project impact is considered significant if the peak hour travel speed along an arterial segment operating at LOS E (with project) decreases by more than one mile per hour, and an arterial segment operating at LOS F (with project) decreases by more than one-half mile per hour.

The study area CMP arterial segments were analyzed under Near-Term and Long-Term conditions for Scenario A and Scenario B. The analysis focuses on peak hour street segment operations using the peak hour volumes used in the intersection analyses. The results of the analysis are shown in Tables 9.2.6-8 thru 9.2.6-11.

No significant project impact is calculated for the identified CMP Arterials under all scenarios. The traffic generated by the project does cause reductions in arterial speeds on many segments, but not significantly so.

Table 9.2.6-8. Near-Term Project Area CMP Arterial Analysis: Scenario A

Arterial Segment	Period	Direction	Existing		Existing + Cumulative Projects		Existing + Cumulative Project + Scenario A Project		Speed Decrease	Sig[c]
			Speed[a]	LOS[b]	Speed	LOS	Speed	LOS		
N. Harbor Drive West of Terminal 2(SDIA)	AM	EB	11.1	D	11.1	D	11.1	D	0.0	No
		WB	16.7	C	16.7	C	16.7	C	0.0	No
	PM	EB	11.2	D	10.7	D	10.5	D	0.2	No
		WB	17.4	C	16.5	C	16.5	C	0.0	No
N. Harbor Drive Terminal 2 (SDIA) to Harbor Island Drive	AM	EB	17.4	C	17.0	C	17.0	C	0.0	No
		WB	10.6	D	10.5	D	10.2	D	0.3	No
	PM	EB	17.0	C	16.4	C	16.4	C	0.0	No
		WB	11.2	D	11.1	D	11.0	D	0.1	No
N. Harbor Drive Harbor Island Dr. to Rental Car Access Rd.	AM	EB	20.3	B	20.2	B	20.1	B	0.1	No
		WB	19.5	B	15.1	C	15.0	C	0.1	No
	PM	EB	17.7	C	15.6	C	14.5	C	1.1	No
		WB	18.7	C	17.9	C	17.7	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	15.8	C	14.1	C	13.3	C	0.8	No
	PM	EB	21.9	B	21.9	B	21.9	B	0.0	No
		WB	18.4	C	17.1	C	16.7	C	0.4	No
N. Harbor Drive Laurel St. to Hawthorn St.	AM	EB	23.1	B	22.8	B	22.8	B	0.0	No
		WB	18.6	C	18.1	C	18.1	C	0.0	No
	PM	EB	21.5	B	20.4	B	19.4	B	1.0	No
		WB	19.2	B	19.2	B	19.2	B	0.0	No
N. Harbor Drive Hawthorn St. to Grape Street	AM	EB	13.5	C	13.4	C	13.4	C	0.0	No
		WB	17.7	C	17.6	C	17.6	C	0.0	No
	PM	EB	13.4	C	13.4	C	13.4	C	0.0	No
		WB	17.1	C	17.1	C	17.1	C	0.0	No
Pacific Highway Hawthorn St. to Grape Street	AM	NB	**12.4**	**E**	**12.4**	**E**	**12.4**	**E**	**0.0**	No
		SB	**12.2**	**E**	**12.2**	**E**	**12.1**	**E**	**0.1**	No
	PM	NB	**12.3**	**E**	**12.2**	**E**	**12.2**	**E**	**0.0**	No
		SB	**12.9**	**E**	**12.8**	**E**	**12.8**	**E**	**0.0**	No
Pacific Highway South of Grape Street	AM	NB	19.7	C	18.2	C	18.1	C	0.1	No
		SB	23.1	C	22.4	C	22.3	C	0.1	No
	PM	NB	**13.7**	**E**	**13.4**	**E**	**12.8**	**E**	**0.6**	No
		SB	23.2	C	23.2	C	23.2	C	0.0	No
Hawthorn Street N. Harbor Drive to Pacific Highway	AM	WB	12.8	D	11.0	D	11.0	D	0.0	No
	PM	WB	**8.8**	**E**	**8.5**	**E**	**8.4**	**E**	**0.1**	No
Grape Street N. Harbor Drive to Pacific Highway	AM	EB	9.9	D	9.1	D	9.1	D	0.0	No
	PM	EB	**2.3**	**F**	**1.6**	**F**	**1.3**	**F**	**0.3**	No

Footnotes:

a. Speed in miles per hour.

b. Level of Service.

c. Sig = significant project impact based on significance criteria.

Table 9.2.6-9. Near-Term Project Area CMP Arterial Analysis: Scenario B

Arterial Segment	Period	Direction	Existing		Existing + Cumulative Projects		Existing + Cumulative Project + Scenario B Project		Speed Decrease	Sig[c]
			Speed[a]	LOS[b]	Speed	LOS	Speed	LOS		
N. Harbor Drive West of Terminal 2(SDIA)	AM	EB	11.1	D	11.1	D	11.1	D	0.0	No
		WB	16.7	C	16.7	C	16.7	C	0.1	No
	PM	EB	11.2	D	10.7	D	10.6	D	0.1	No
		WB	17.4	C	16.5	C	16.5	C	0.0	No
N. Harbor Drive Terminal 2 (SDIA) to Harbor Island Drive	AM	EB	17.4	C	17.0	C	17.0	C	0.0	No
		WB	10.6	D	10.5	D	10.5	D	0.0	No
	PM	EB	17.0	C	16.4	C	16.4	C	0.0	No
		WB	11.2	D	11.1	D	11.0	D	0.1	No
N. Harbor Drive Harbor Island Dr. to Rental Car Access Rd.	AM	EB	20.3	B	20.2	B	20.1	B	0.1	No
		WB	19.5	B	15.1	C	14.6	C	0.5	No
	PM	EB	17.7	C	15.6	C	14.7	C	0.9	No
		WB	18.7	C	17.9	C	17.7	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	15.8	C	14.1	C	13.3	C	0.8	No
	PM	EB	21.9	B	21.9	B	21.9	B	0.0	No
		WB	18.4	C	17.1	C	16.6	C	0.5	No
N. Harbor Drive Laurel St. to Hawthorn St.	AM	EB	23.1	B	22.8	B	22.8	B	0.0	No
		WB	18.6	C	18.1	C	18.1	B	0.0	No
	PM	EB	21.5	B	20.4	B	19.5	B	0.9	No
		WB	19.2	B	19.2	B	19.2	B	0.0	No
N. Harbor Drive Hawthorn St. to Grape Street	AM	EB	13.5	C	13.4	C	13.4	C	0.0	No
		WB	17.7	C	17.6	C	17.6	C	0.0	No
	PM	EB	13.4	C	13.4	C	13.4	C	0.0	No
		WB	17.1	C	17.1	C	17.1	C	0.0	No
Pacific Highway Hawthorn St. to Grape Street	AM	NB	**12.4**	**E**	**12.4**	**E**	**11.8**	**E**	**0.6**	No
		SB	**12.2**	**E**	**12.2**	**E**	**12.2**	**E**	**0.0**	No
	PM	NB	**12.3**	**E**	**12.2**	**E**	**12.1**	**E**	**0.1**	No
		SB	**12.9**	**E**	**12.8**	**E**	**12.7**	**E**	**0.1**	No
Pacific Highway South of Grape Street	AM	NB	19.7	C	18.2	C	17.4	D	0.8	No
		SB	23.1	C	22.4	C	22.4	C	0.0	No
	PM	NB	**13.7**	**E**	**13.4**	**E**	**12.8**	**E**	**0.6**	No
		SB	23.2	C	23.2	C	22.6	C	0.6	No
Hawthorn Street N. Harbor Drive to Pacific Highway	AM	WB	12.8	D	11.0	D	10.8	D	0.2	No
	PM	WB	**8.8**	E	**8.5**	E	**8.4**	E	**0.1**	No
Grape Street N. Harbor Drive to Pacific Highway	AM	EB	9.9	D	9.1	D	9.1	D	0.0	No
	PM	EB	**2.3**	**F**	**1.6**	**F**	**1.3**	**F**	**0.3**	No

Footnotes:

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

Table 9.2.6-10. Long-Term Project Area CMP Arterial Analysis: Scenario A

Arterial Segment	Period	Direction	Year 2030		Year 2030 + Scenario A Project		Speed Decrease	Sig[c]
			Speed[a]	LOS[b]	Speed	LOS		
N. Harbor Drive West of Terminal 2(SDIA)	AM	EB	11.3	D	11.0	D	0.3	No
		WB	14.6	C	14.5	C	0.1	No
	PM	EB	10.2	D	10.0	D	0.2	No
		WB	14.6	C	14.4	C	0.2	No
N. Harbor Drive Terminal 2 (SDIA) to Harbor Island Drive	AM	EB	17.0	C	17.0	C	0.0	No
		WB	**6.8**	**F**	**6.8**	**F**	**0.0**	No
	PM	EB	15.3	C	15.2	C	0.1	No
		WB	**7.8**	**E**	**7.7**	**E**	**0.1**	No
N. Harbor Drive Harbor Island Dr. to Rental Car Access Rd.	AM	EB	18.4	C	18.1	C	0.3	No
		WB	14.4	C	14.2	C	0.2	No
	PM	EB	**7.0**	**F**	**6.7**	**F**	**0.3**	No
		WB	11.7	D	10.9	D	0.8	No
N. Harbor Drive Rental Car Access Rd. to Laurel St.	AM	EB	21.9	B	21.9	B	0.0	No
		WB	14.2	C	14.0	C	0.2	No
	PM	EB	21.5	B	21.4	B	0.1	No
		WB	18.6	C	18.6	C	0.0	No
N. Harbor Drive Laurel St. to Hawthorn St.	AM	EB	22.7	B	22.7	B	0.0	No
		WB	**6.5**	**F**	**6.5**	**F**	**0.0**	No
	PM	EB	19.5	B	18.8	C	0.7	No
		WB	**8.9**	**E**	**8.5**	**E**	**0.4**	No
N. Harbor Drive Hawthorn St. to Grape Street	AM	EB	12.8	D	12.8	D	0.0	No
		WB	17.4	C	17.4	C	0.0	No
	PM	EB	11.0	D	10.9	D	0.1	No
		WB	16.8	C	16.8	C	0.0	No
Pacific Highway Hawthorn St. to Grape Street	AM	NB	**12.3**	**E**	**12.3**	**E**	**0.0**	No
		SB	**11.3**	**E**	**11.3**	**E**	**0.0**	No
	PM	NB	**12.7**	**E**	**12.7**	**E**	**0.0**	No
		SB	**12.3**	**E**	**12.3**	**E**	**0.0**	No
Pacific Highway South of Grape Street	AM	NB	14.5	D	14.4	D	0.1	No
		SB	21.7	C	21.7	C	0.0	No
	PM	NB	**3.7**	**F**	**3.6**	**F**	**0.1**	No
		SB	22.2	D	22.2	C	0.0	No
Hawthorn Street N. Harbor Drive to Pacific Highway	AM	WB	12.3	D	12.3	D	0.0	No
	PM	WB	**8.4**	**E**	**8.4**	**E**	**0.0**	No
Grape Street N. Harbor Drive to Pacific Highway	AM	EB	**7.6**	**E**	**7.4**	**E**	**0.1**	No
	PM	EB	**1.0**	**F**	**1.0**	**F**	**0.0**	No

Footnotes:

a. Speed in miles per hour.

b. Level of Service.

c. Sig = significant project impact based on significance criteria.

Table 9.2.6-11. Long-Term Project Area CMP Arterial Analysis: Scenario B

Arterial Segment	Period	Direction	Year 2030		Year 2030 + Scenario B Project		Speed Decrease	Sig[c]
			Speed[a]	LOS[b]	Speed	LOS		
N. Harbor Drive West of Terminal 2(SDIA)	AM	EB	11.3	D	11.0	D	0.3	No
		WB	14.6	C	14.5	C	0.1	No
	PM	EB	10.2	D	10.2	D	0.0	No
		WB	14.6	C	13.4	C	1.2	No
N. Harbor Drive Terminal 2 (SDIA) to Harbor Island Drive	AM	EB	17.0	C	17.0	C	0.0	No
		WB	**6.8**	**F**	**6.8**	**F**	**0.0**	No
	PM	EB	15.3	C	15.2	C	0.1	No
		WB	**7.8**	**E**	**7.7**	**E**	**0.1**	No
N. Harbor Drive Harbor Island Dr. to Rental Car Access Rd.	AM	EB	18.4	C	17.9	C	0.5	No
		WB	14.4	C	13.7	C	0.7	No
	PM	EB	**7.0**	**F**	**6.8**	**F**	**0.2**	No
		WB	11.7	D	10.7	D	1.0	No
N. Harbor Drive Rental Car Access Rd. to Laurel St.	AM	EB	21.9	B	21.9	B	0.0	No
		WB	14.2	C	14.0	C	0.2	No
	PM	EB	21.5	B	21.5	B	0.0	No
		WB	18.6	C	18.6	C	0.0	No
N. Harbor Drive Laurel St. to Hawthorn St.	AM	EB	22.7	B	22.7	B	0.0	No
		WB	**6.5**	**F**	**6.5**	**F**	**0.0**	No
	PM	EB	19.5	B	18.8	C	0.7	No
		WB	**8.9**	**E**	**8.5**	**E**	**0.4**	No
N. Harbor Drive Hawthorn St. to Grape Street	AM	EB	12.8	D	12.8	D	0.0	No
		WB	17.4	C	17.4	C	0.0	No
	PM	EB	11.0	D	11.0	D	0.0	No
		WB	16.8	C	16.8	C	0.0	No
Pacific Highway Hawthorn St. to Grape Street	AM	NB	**12.3**	**E**	**12.3**	**E**	**0.0**	No
		SB	**11.3**	**E**	**11.2**	**E**	**0.1**	No
	PM	NB	**12.7**	**E**	**12.7**	**E**	**0.0**	No
		SB	**12.3**	**E**	**12.3**	**E**	**0.0**	No
Pacific Highway South of Grape Street	AM	NB	14.5	D	14.4	D	0.1	No
		SB	21.7	C	21.5	C	0.2	No
	PM	NB	**3.7**	**F**	**3.6**	**F**	**0.1**	No
		SB	22.2	D	22.1	C	0.1	No
Hawthorn Street N. Harbor Drive to Pacific Highway	AM	WB	12.3	D	12.2	D	0.1	No
	PM	WB	**8.4**	**E**	**8.2**	**E**	**0.2**	No
Grape Street N. Harbor Drive to Pacific Highway	AM	EB	**7.6**	**E**	**7.4**	**E**	**0.2**	No
	PM	EB	**1.0**	**F**	**1.0**	**F**	**0.0**	No

Footnotes:

a. Speed in miles per hour.

b. Level of Service.

c. Sig = significant project impact based on significance criteria.

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. There are three phases of construction activity: grading, concrete pours, and building structures. Each construction phase has its own intensity and duration. A simple ADT calculation for each construction phase is outlined below based on the anticipated construction schedule provided by Sunroad Enterprises. A standard passenger car equivalence (PCE) was applied to large construction trucks. The following construction activity summary represents the construction of one hotel tower. Considering the construction of up to two hotels, totalling 325 rooms, and the proposed 175-room hotel, these activities may take place up to three times, depending on the number of hotels ultimately constructed. It is anticipated that the proposed 175-room hotel will be constructed ahead of the possible two future hotels, as no plans have been submitted for the additional up to two hotels at this time.

- **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**
  - 50 workers vehicles/day x 2 trips/worker vehicle = 100 ADT

  Total* = *100 ADT

The above shows that the maximum construction traffic of 100 ADT is considerably lower than the daily project trips of 3,825 ADT in Scenario A and 3,500 ADT in Scenario B, and would be temporary in nature (i.e., eight months). Therefore, the construction traffic is not expected to cause any significant direct traffic impacts.

In addition, Project Applicants will be required to complete traffic control plans, to the satisfaction of the City Engineer, prior to commencement of construction. The standard traffic control plan identifies the routes for heavy construction vehicles and the hours of construction activity. The traffic control plans 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, construction traffic associated with the development of up to two hotels, in addition to the proposed 175- room hotel, is not expected to cause any significant traffic impacts.

9.2.6.2.2 Change in Air Traffic Patterns

The PMP Amendment area is located within the SDIA Airport Influence Area (AIA). All projects within the AIA are subject to Federal Aviation Administration (FAA) review pursuant to FAR Part 77, and a determination by the Airport Land Use Commission (ALUC) that the development 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 175-room hotel project evaluated in the Draft EIR. The "Determination of No Hazard to Air Navigation" determined that the proposed 175-room hotel 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. Additionally, on July 9, 2009, the ALUC found that the proposed 175-room hotel is consistent with the SDIA ALUCP; and, therefore, development of that hotel would have no impact on air traffic patterns.

Development of up to two additional hotels at one or two locations in East Harbor Island would be required to go through the same process and would require a "Determination of No Hazards to Air Navigation," as well as a consistency determination, in order for development of future hotels to proceed. Once issued by the FAA, the "Determination of No Hazards to Air Navigation" indicates that the future hotel would not result in significant impacts to air traffic patterns. Therefore, development of up to two hotels, in addition to the proposed 175-room hotel which has already been issued a "Determination of No Hazards to Air Navigation", would not result in a significant change in air traffic patterns.

9.2.6.2.3 Substantial Increase in Hazards due to a Design Feature

The construction of up to two hotels totaling no more than 325 rooms, in addition to the proposed 175-room hotel, that could occur under the proposed PMP Amendment would require preparation of detailed design and engineering plans for each hotel, including a site plan. A Site Plan will be prepared when a site-specific project is proposed. At that time, a site plan assessment addressing potential hazards related to traffic circulation would be conducted by the City of San Diego Development Services Department for each of the up to two future hotels. That review would identify if there are any operational hazards and/or issues associated with proposed driveways, internal roadways, or parking areas. In order to avoid hazards due to a design feature, future plans would need to locate driveway access, internal circulation, and parking areas such that no hazards due to design features or incompatible land uses would result. Therefore, significant impacts associated with an increase in hazards due to a design feature of up to two hotels, in addition to the proposed 175-room hotel, are not anticipated.

9.2.6.2.4 Inadequate Parking

In addition to the proposed 175-room hotel, the proposed PMP Amendment would allow the construction of up to two additional hotels on East Harbor Island. Because no proposal has been received for development of the remaining 325 hotel rooms allowed under the PMP Amendment, the analysis of potential impacts on parking assumes that future hotel development would occur under one of two scenarios: either as one approximately ten-story, 325 room hotel; or as two approximately four-story hotels with the remaining 325 hotel rooms allocated equally between them. Like the proposed 175-room hotel analyzed in Chapter 3 and Chapter 4 of the EIR, parking for the additional hotels will be required to comply with Port District parking requirements in order to ensure that significant parking impacts do not occur.

As shown in Figure 9.1-5, the area in which future hotels could be located is presently used for surface parking. If all of the additional 325 rooms allowed under the PMP Amendment were developed in one approximately ten-story hotel, the future hotel would be located in the area where temporary parking of surplus rental cars occurs through a month-to-month lease with the Port District. (See Figure 9.1-7.)

As part of the adopted *San Diego International Airport Airport Master Plan* (May 2008), rental car parking will be consolidated into a new rental car facility located on airport property, north of the runways, in 2015. It is anticipated that construction of a future hotel at the location of the temporary rental car parking lot would not occur until 2017. Therefore, although the existing parking spaces would be eliminated by development of a future hotel, by the time future hotel development is anticipated to occur in this area, parking for surplus rental cars would have been moved to the SDIA's consolidated rental car facility. Because public parking is not provided or allowed in the existing surplus rental car parking lot, future hotel development in this area would not result in the loss of any public parking spaces.

As shown in Table 9.3-6, *Parking Analysis for Development of 175-room Hotel + 325-room Hotel*, the future development of 325 rooms and ancillary facilities in one approximately ten-story hotel would require 195 parking spaces under the current *Tidelands Parking Guidelines – San Diego Port District* (Tidelands Parking Guidelines). Future hotel development in this area would be required to provide adequate on-site parking in accordance with the Tidelands Parking Guidelines. The developable area consists of approximately 7.5 acres, which would accommodate the development of up to 325 rooms, ancillary facilities and the required parking. Accordingly, the development of up to 325 rooms and ancillary facilities in one approximately ten-story hotel on the surplus rental car parking lot would have a less than significant impact on parking.

Table 9.3-6. Parking Analysis for Development of 175-room Hotel + 325-room Hotel

Hotel	Parking spaces proposed (per site plan)	Parking Spaces per Tidelands Parking Guidelines	Parking surplus/deficit
175-room hotel (includes parking for marina)	457	Up to 381 spaces	76 spaces surplus
325-room hotel (located on site of temporary rental car parking)	Unknown	195 spaces	0 spaces surplus/deficit

If the additional 325 rooms allowed under the PMP Amendment were allocated equally between two approximately four-story hotels, it is anticipated that one hotel would be located in the area where the temporary parking of surplus rental cars presently occurs and the other hotel would be located in the area immediately to the east, which is presently used as a surface parking lot for the Sunroad Marina. (See Figure 9.1-8.) As discussed above, future development of a hotel on the surplus rental car parking lot would have a less than significant impact on parking because the existing use would be relocated to a new consolidated rental car facility on airport property before future hotel development is expected to occur. However, if future hotel development were to occur on the existing marina parking lot, then parking spaces which presently are used for marina parking and which are planned for shared use for the existing marina and the proposed 175-room hotel could be lost, depending on the size of the future hotel and its parking needs. Because public parking is not provided or allowed in the existing marina parking lot, future hotel development in this area would not result in the loss of any public parking spaces.

The existing marina parking lot provides 568 parking spaces for use by marina tenants and guests, with 291 spaces located in the area to be developed with the 175-room hotel and 277 spaces located to the west of the marina building. As discussed in Section 4.6.4.4 of the EIR, the proposed 175-room hotel would result in the elimination of approximately 111 parking spaces for construction of the 175-room hotel, leaving approximately 180 parking spaces in the eastern 175-room hotel portion of the parking lot and 277 parking spaces in the parking lot west of the marina building. Based on the shared parking analysis in Section 4.6.4.4 of the EIR, the proposed 175-room hotel and the existing marina would require 381 shared parking spaces, including the 180 spaces in the eastern 175-room hotel portion of the parking lot and 201 spaces in the parking lot west of the marina building.

The Tidelands Parking Guidelines were used to calculate the parking needs for two future hotels which would allocate the additional 325 rooms allowed under the proposed PMP Amendment equally between them. In addition to standard parking requirements, the Tidelands Parking Guidelines allow for reduction in parking based on a variety of factors, such as shared use parking, proximity to transit, access to an airport, and dedicated airport shuttle service. An increase in parking need could result if a project is located proximate to public waterfront amenities, displaces existing parking, or in areas where there is a parking shortfall. For purposes of the proposed PMP Amendment, the parking demand for two additional hotels of approximately 162 rooms each is based on Table 1 (Suggested Base Unadjusted Parking Demand Rates by District) of the Tidelands Parking Guidelines (see below).

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	8.6	•	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.*

Based on Table 1 of the Tidelands Parking Guidelines, the parking demand for the future hotels would be 0.6 spaces per room. Therefore, the additional two hotels would need to provide a total of 195 parking spaces, in addition to those required to serve the proposed 175-room hotel and the marina. Each hotel would need to provide the required number of parking spaces based on how many rooms are proposed for each hotel. Additional parking may be required depending on the types and sizes of ancillary uses proposed for the future hotel(s) and in accordance with Table 1 of the Tidelands Parking Guidelines.

Future development of two approximately four-story hotels in this area will be required to provide adequate on-site parking in accordance with Tidelands Parking Guidelines. The future development of approximately 162 rooms and ancillary facilities in an approximately four-story hotel would require 97 parking spaces under current Tidelands Parking Guidelines. As discussed above, the developable area on the existing surplus rental car parking lot is sufficient to accommodate the development of a four-story hotel with up to 163 rooms, ancillary facilities and required parking. Accordingly, the development of one approximately four-story hotel on the existing surplus rental car parking lot would not result in a significant impact on parking.

However, the development of a second approximately four-story, 162-room hotel on the existing parking lot west of the marina building may result in a significant impact on parking. The existing west marina parking area consists of approximately two acres and presently provides 277 parking spaces. The development of an approximately four-story hotel in the west marina parking area would result in the loss of all, or substantially all, of the existing 277 parking spaces, including the 201 spaces intended for shared parking for the proposed 175-room hotel and the existing marina. In addition, as shown in Table 9.3-7, *Parking Analysis for Development of 175-room Hotel + Two Smaller Hotels*, a future 162-room hotel with ancillary facilities similar to the proposed 175-room hotel would require 97 on-site parking spaces under current Port District parking guidelines. Because it would result in the loss of 201 shared parking spaces required for the 175-room hotel and the existing marina and would require an additional 97 parking spaces to serve 162 hotel rooms and ancillary facilities, future development of an approximately four-story hotel in the west marina parking area would result in a significant impact on parking.

Table 9.3-7. Development of 175-room Hotel + Two Smaller Hotels

Hotel	Parking spaces proposed (per site plan)	Parking Spaces per Tidelands Parking Guidelines	Parking surplus/deficit
175-room hotel (includes parking for marina)	457	Up to 381 spaces	76 spaces surplus
163-room hotel (located on site of temporary rental car parking)	Unknown	98 spaces	0 spaces surplus/deficit
162-room hotel (located on 277-space parking lot, west of marina building)	Unknown	97 spaces	Unknown (could be up to 298 spaces deficit)

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

Public Transportation

Future development of up to two hotels in East Harbor Island totaling not more than 325 rooms, in addition to the proposed 175-room hotel, would not remove or otherwise physically alter any existing public transportation facilities or services. The closest bus route to the PMP Amendment area is located north of East Harbor Island, on North Harbor Drive. Development of future hotels allowed under the proposed PMP Amendment would not impact bus stops or this bus route. As with the proposed 175-room hotel, future hotels will provide a shuttle service between the hotel and the airport. Therefore, implementation of the proposed PMP Amendment would not result in any direct impacts to public transportation facilities or services.

Rail Traffic

Traffic generated by future hotels in East Harbor Island that could occur under the proposed PMP Amendment would add to traffic on Laurel Street, Hawthorn Street, and Grape Street requiring that existing rail lines be crossed. 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 the proposed PMP Amendment. Therefore, the proposed PMP Amendment, allowing the construction of up to two hotels, in addition to the proposed 175-room hotel, would not result in a significant impact on rail traffic.

Railway operations in the vicinity of the PMP Amendment area primarily affect the intersections of Pacific Highway/Laurel Street, Pacific Highway/Hawthorn Street, and Pacific Highway/Grape Street where traffic from the development of up to two hotels, in addition to the proposed 175-room hotel, may contribute traffic. At these intersections, the trolley is grade separated and does not affect the intersection operations and would not create conflicts with vehicular traffic. Freight service utilizes these tracks once at mid-day and then late at night and would not affect the peak periods of operations for the intersections. The Coaster and Amtrak utilize the railway tracks during the peak periods; however, operations of both the Coaster and Amtrak are not frequent enough to warrant any special considerations in the traffic analysis. There may be one interruption by the Coaster or Amtrak every 7–10 minutes, which equates to approximately one out of every five cycles for the intersection, with about a 50 percent chance that the gates will be down when the east/west street is already stopped at a red light. The roadway system can accommodate these random interruptions without serious traffic implications, and no impacts associated with rail operations would result.

Pedestrian/Bicycle

The future hotel development of up to two additional hotels providing a combined total of 325 rooms provided by the PMP Amendment would be compatible with the surrounding uses and, even when combined with the proposed 175-room hotel, would not inhibit pedestrian and bicycle travel on Harbor Island. Primary pedestrian and bicycle access is provided along the bay side of East Harbor Island, along Harbor Drive and parallel to the bay. Additionally, the proposed 175-room hotel would include a 10-foot wide promenade along the east basin. The proposed PMP Amendment requires the continuation of the 10-foot promenade as a part of the development of all hotels that could occur within East Harbor Island. The 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. In this manner, the Port District would ensure that pedestrian accessibility is considered as part of the hotel development. Hotel development under the proposed PMP Amendment would not prohibit or hinder bicycle travel along Harbor Island Drive. Therefore, adverse impact to pedestrian or bicycle facilities and travel would not result from the proposed PMP Amendment.

9.2.6.2 Significance of Impacts

No significant direct impacts on transportation and traffic would result from the future hotel development allowed under the proposed PMP Amendment.

PARK-1: The future development of an approximately four-story hotel with up to 162 rooms and ancillary facilities in the area of the existing west marina parking lot could result in a significant impact on parking. Mitigation would be required to ensure that such future hotel development would include adequate parking for the new hotel, the proposed 175-room hotel, and the existing marina.

9.2.6.4 Mitigation Measures

In order to mitigate the potential significant impact on parking which may occur as the result of future hotel development in the area of the existing west marina parking lot, the following mitigation measure would be implemented.

MM PARK-1.

a. Prior to the approval of a Coastal Development Permit for future development of a hotel on the existing west marina parking lot, the design of the proposed hotel development shall provide adequate on-site parking in accordance with the Port District parking guidelines for the proposed hotel development and for the shared parking requirements of the existing marina and the proposed 175-room hotel; and

b. Prior to demolition or removal of any parking spaces in the existing west marina parking lot which are required for the shared parking of the existing marina and the proposed 175-room hotel, the Project Applicant shall submit to the Port District for its review and approval a Parking Management Plan, which shall provide adequate parking to satisfy the shared parking requirements for the existing marina and the proposed 175-room hotel during construction of the new hotel and replacement parking spaces.

9.2.6.5 Significance of Impacts after Mitigation

The implementation of mitigation measure MM PARK-1(a) and 1(b) would mitigate the potential significant parking impacts to below a level of significance.

Air Quality

The PMP Amendment would allow the development of up to 500 hotel rooms in up to three hotels on East Harbor Island. One of these hotels, consisting of 175 rooms and ancillary facilities, is the Sunroad Harbor Island Hotel Project. No proposal has been received for the development of the remaining 325 rooms in one or two additional hotels. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future hotel development allowed under the PMP Amendment, this analysis assumes that the reasonable worst case scenario that could occur with respect to air quality impacts would be development of a 325 room resort hotel, as that scenario would generate the greatest amount of traffic according to the Traffic Study prepared for the proposed PMP Amendment (Linscott, Law & Greenspan, April 9, 2013). When specific development proposals are received, they will be evaluated pursuant to CEQA Guidelines Section 15168 to determine whether additional environmental review would be needed.

This section evaluates the potential impacts of the proposed PMP Amendment on air quality and greenhouse gas emissions. The evaluation of air quality impacts is based on the *Air Quality Technical Report for the Harbor Island Subarea 23 Port Master Plan Amendment* (Air Quality Technical Report) prepared by Scientific Resources Associated in January 2013, which is included as Appendix F-1 to the EIR. The impact analysis relative to greenhouse gas emissions is based on the *Green House Gas Evaluation for the Harbor Island Subarea 23 Port Master Plan Amendment* (GHG Emissions Evaluation) prepared by Scientific Resources Associated in January 2013, which is included as Appendix J to the EIR.

9.2.7.1 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of impacts associated with air quality resulting from future implementation of the PMP Amendment. Impacts are considered significant if the future hotel development would result in any of the following:

- a conflict with or obstruct the implementation of the applicable air quality plan;

- a violation of any air quality standard or contribute substantially to an existing or projected air quality violation;
- a cumulatively considerable contribution to an existing or projected air quality violation;
- expose sensitive receptors to substantial pollutant concentrations;
- create objectionable odors affecting a substantial number of people.

For a detailed description of the air quality thresholds and impacts used for determining construction and operational impacts, please refer to the Air Quality Technical Report (Appendix F-1 to this chapter). The following is a summary of additional significance criteria used for the air quality analysis.

9.2.7.1.1 Supplemental Thresholds for Criteria Pollutant Impacts

In lieu of any set quantitative air quality significance thresholds, the San Diego Air Pollution Control District's (SDAPCD's) Regulation II, Rule 20.2, Table 20-2-1, "Air Quality Impact Analysis (AQIA) Trigger Levels" are used as a screening criterion for potential significance of air quality impacts. The SDAPCD emission thresholds are shown in Table 9.2.7-1, *SDAPCD Pollutant Significance Thresholds.*

An adverse impact on air quality would result if the emission levels generated from future hotel development of a 325-room resort hotel, in addition to the proposed 175-room hotel, allowed under the proposed PMP Amendment were to exceed any of the criteria presented in Table 9.2.7-1.

9.2.7.1.2 Local Micro-Scale CO Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below state and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm

Table 9.2.7-1. SDAPCD Pollutant Significance Thresholds

Air Contaminant	Emission Rate (lb/hr)	Emission Rate (lb/day)	Emission Rate (tons/yr)
Particulate Matter less than 10 microns (PM10)	---	100	15
Particulate Matter less than 2.5 microns (PM2.5) [1]	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds (Pb)	---	3.2	0.6
Volatile Organic Compounds (VOC)[2]	---	75	13.7

[1] EPA's "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards," published September 8, 2005. Also used by the SCAQMD.

[2] City of San Diego CEQA Significance Determination Threshold for VOC threshold based on South Coast Air Quality Management District (SCAQMD) levels and the Monterey Bay APCD, which has similar federal and state attainment status as San Diego.

Source: SDAPCD Regulation II, Rule 20.2.

As in most urban areas, high short-term concentrations of CO, known as "hotspots," can be a problem in San Diego County. Hotspots typically occur in areas of high motor vehicle use, such as in parking lots, at congested intersections, and along highways. Since CO buildup typically occurs at locations where traffic is congested, CO concentrations are often correlated with Level of Service (LOS) at intersections. LOS expresses the congestion level for an intersection and is designated by a letter from A to F, with LOS A representing the best operating conditions and LOS F the worst. Significant concentrations of CO sometimes occur (depending on temperature, wind speed, and other variables) at intersections where LOS is rated at D or worse.

Significance of CO emissions from vehicles was evaluated based on the following criteria: a significant impact would occur if (1) project-generated traffic degrades the LOS at intersections to level D or worse, (2) sensitive receptors are nearby, and/or (3) CO hotspot modeling indicates thresholds would be exceeded. The first criterion is based on whether the traffic associated with the proposed project would change the LOS of an intersection, and thereby have the potential to generate CO hotspots. If the LOS remained unaffected, it would be assumed that vehicle emissions would not contribute to CO hotspots.

9.2.7.1.3 Supplemental Criteria for Sensitive Receptors

The following criteria were used to determine whether the project would expose sensitive receptors to substantial pollutant concentrations:

- The project would place sensitive receptors near CO "hotspots" or create CO "hotspots" near sensitive receptors.
- The project would result in exposure to TACs resulting in a maximum incremental cancer risk greater than 1 in 1 million without application of Toxics-Best Available Control Technology, or a health hazard index greater than 1, and thus be deemed as having a potentially significant impact.
- Create objectionable odors affecting a substantial number of people. The project is not an agricultural, commercial, or an industrial activity, and consequently is not subject to SDAPCD standards.

9.2.7.1.4 Climate Change Significance Criteria

Neither the Port District nor any federal, state or regional agency provides specific emissions thresholds by which to evaluate the significance of impacts from GHG emissions. Pursuant to SB 97, OPR adopted amendments to the CEQA Guidelines concerning the analysis and mitigation of GHG emissions. Therefore, the following criteria, included in Appendix G of the CEQA Guidelines, will be used to determine the significance of potential impacts from GHG emissions. Impacts from GHG emissions would be significant if the proposed PMP Amendment, allowing the construction of up to two hotels totaling no more than 325 rooms, in addition to the proposed 175-room hotel, would:

- generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

9.2.7.2 Analysis of Project Impacts

9.2.7.2.1 Regional Air Quality Strategy and State Implementation Plan

Projects that propose development consistent with growth anticipated by the PMP are considered consistent with the RAQS and SIP. The current land use designation is Commercial Recreation in the Lindbergh Field/Harbor Island Precise Plan. Commercial Recreation developments are intended to serve tourism with a balance of commercial and public amenities. Commercial development includes hotels, restaurants, shopping, marinas, and sport fishing. The current approximately 600-slip marina generates approximately 2,400 ADT. Implementation of up to two hotels of no more than 325 rooms, when considered in conjunction with the proposed 175-room hotel, would not involve changes to the marina but would generate an additional 3,825 ADT, if an additional 325-room resort hotel were constructed; or an additional 3,500 ADT, if two additional business hotels were developed.

The Lindbergh Field/Harbor Island Precise Plan identifies East Harbor Island for development of a 500-room complex that would include a restaurant, cocktail lounge, meeting and office space, recreational facilities, and ancillary uses. The proposed PMP Amendment is consistent with the Precise Plan in its proposal to develop a 175-room hotel and up to two additional hotels of no more than 325 rooms, for a combined total of 500 hotel rooms as specified in the Precise Plan. Considering the proposed PMP Amendment would not involve a change to the type of land use or increase the number of vehicle trips anticipated by the Precise Plan, the proposed PMP Amendment would be consistent with the goals of the RAQS and SIP, which are documents based on existing approved land use plans. Therefore, impacts would be less than significant.

9.2.7.2.2 Violate Ambient Air Quality Standards

Construction

Emissions of pollutants such as fugitive dust and heavy equipment exhaust that are generated during construction are generally highest near the construction site. To address the proposed PMP Amendment the air quality analysis was based on a reasonably foreseeable scenario for hotel development. Specifically, the air quality analysis assumed that each hotel would be constructed in a separate phase. The three hotels were assumed to include the proposed 175-room hotel and one additional 175-room hotel and one 150-room hotel, for a total of 500 rooms. It was assumed that construction of each hotel would require the following subphases: demolition of existing structures/pavement, grading, paving/foundation construction, building construction, and architectural coatings application. The first hotel, which includes 175 rooms and is evaluated in the Draft EIR, would require demolition of the existing locker building and parking lot east of the existing marine building. The two additional hotels were assumed to require additional demolition of existing paved parking lots. If only one additional hotel were developed, then construction impacts would be less. For purposes of the Air Quality analysis, it is assumed that the first hotel would begin constructed in 2014, the second hotel in 2017, and the third hotel in 2020, with full buildout of the project by the year 2020.

Tables 9.3.7-2a through 9.3.7-2c provide the detailed emission estimates for each phase of hotel construction as calculated with the CalEEMod Model for each of the three hotels assumed to be constructed. As shown in Tables 9.3.7-2a through 9.3.7-2c, emissions of criteria pollutants during construction would be below the thresholds of significance for all project construction phases for all pollutants. Project criteria pollutant emissions during construction would be temporary. No significant impacts would result.

Future development of up to two additional hotels would be subject to the requirements of San Diego APCD Rule 55, which requires that no visible dust be present beyond the site boundaries. Standard dust control measures will be employed during construction. These standard dust control measures include the following:

- Watering active grading sites a minimum of three times daily
- Apply soil stabilizers to inactive construction sites
- Replace ground cover in disturbed areas as soon as possible
- Control dust during equipment loading/unloading (load moist material, ensure at least 12 inches of freeboard in haul trucks)
- Reduce speeds on unpaved roads to 15 mph or less
- Water unpaved roads a minimum of three times daily

These dust control measures will reduce the amount of fugitive dust generated during construction. In addition to dust control measures, architectural coatings applied to interior and exterior surfaces will be required to meet the ROG limitations of SDAPCD Rule 67.0, which limits the ROG content of most coatings to 150 grams/liter. Coatings will also be applied using high volume, low pressure spray equipment to reduce overspray to the extent possible.

Operations

Operational impacts associated with the proposed PMP Amendment would include impacts associated with vehicular traffic, as well as area sources such as energy use, landscaping, consumer products use, and architectural coatings use for maintenance purposes. Operational impacts associated with vehicular traffic and area sources including energy use, landscaping, and architectural coatings use for maintenance purposes were estimated using the CalEEMod Model.

The Traffic Report prepared for the proposed PMP Amendment calculated project trip generation rates based on the proposed development. The initial 175-room hotel would generate a total of 1,225 ADT. The two additional hotels, totaling 325 rooms, would generate a total of 2,600 ADT under a worst case scenario. The project would therefore result in a net increase of 3,825 ADT.

Operational emissions were modeled for maximum daily emissions for the first year of full occupancy of the first hotel, which was assumed as 2016. Full buildout of the PMP Amendment was anticipated to be complete by 2020. Table 9.3.7-3 presents the results of the emission calculations, in lbs/day, for the total development, along with a comparison with the significance criteria.

Based on the estimates of the emissions associated with operations of up to three hotels, the emissions of all criteria pollutants are below the significance thresholds. Impacts would be less than significant.

Table 9.2.7-2a. Estimated Maximum Daily Construction Emissions – PMP Amendment 175-Room Sunroad Harbor Island Hotel

Emission Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Demolition						
Fugitive Dust	-	-	-	-	2.26	0.00
Offroad Equipment	5.07	38.45	23.67	0.04	2.29	2.29
Onroad Vehicles	1.29	15.30	7.58	0.02	7.43	0.54
Worker Trips	0.08	0.10	0.84	0.00	0.18	0.01
Subtotal	**6.44**	**53.85**	**32.09**	**0.06**	**12.16**	**2.84**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Grading						
Fugitive Dust	-	-	-	-	2.40	1.29
Offroad Equipment	4.70	37.12	22.15	0.04	1.94	1.94
Onroad Vehicles	0.00	0.05	0.02	0.00	0.05	0.00
Worker Trips	0.06	0.07	0.65	0.00	0.14	0.01
Subtotal	**4.76**	**37.24**	**22.82**	**0.04**	**4.53**	**3.24**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Paving/Foundations						
Offroad Equipment	4.16	25.92	16.81	0.03	2.21	2.21
Vendor Trips	0.01	0.16	0.08	0.00	0.15	0.01
Worker Trips	0.10	0.11	0.97	0.00	0.20	0.01
Subtotal	**4.27**	**26.19**	**17.86**	**0.03**	**2.56**	**2.24**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Building Construction						
Offroad Equipment	5.20	28.63	19.52	0.04	1.88	1.88
Vendor Trips	0.64	7.30	4.63	0.01	0.63	0.23
Worker Trips	0.69	0.79	6.91	0.01	1.45	0.06
Subtotal	**6.53**	**36.72**	**31.06**	**0.06**	**3.96**	**2.17**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Architectural Coatings Application						
Architectural Coatings	40.73	-	-	-	-	-
Offroad Equipment	0.45	2.77	1.92	0.00	0.24	0.24
Worker Trips	0.13	0.14	1.24	0.00	0.28	0.01
Subtotal	**41.31**	**2.91**	**3.16**	**0.00**	**0.52**	**0.25**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Maximum Daily Emissions[a]	**47.30**	**53.84**	**32.09**	**0.06**	**12.16**	**3.24**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*

[a]Maximum daily ROG emissions occur during simultaneous building construction and architectural coatings application. Maximum daily emissions for other pollutants occur during demolition activities.

Table 9.2.7-2b. Estimated Maximum Daily Construction Emissions – PMP Amendment 175-Room Hotel

Emission Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Demolition						
Fugitive Dust	-	-	-	-	0.39	0.00
Offroad Equipment	4.13	30.94	21.38	0.04	1.68	1.68
Onroad Vehicles	0.17	2.05	1.03	0.00	2.20	0.07
Worker Trips	0.07	0.07	0.65	0.00	0.18	0.01
Subtotal	**4.37**	**33.06**	**23.06**	**0.04**	**4.45**	**1.76**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Grading						
Fugitive Dust	-	-	-	-	2.41	1.29
Offroad Equipment	3.93	29.69	19.99	0.04	1.46	1.46
Onroad Vehicles	0.00	0.04	0.02	0.00	0.05	0.00
Worker Trips	0.05	0.06	0.50	0.00	0.14	0.01
Subtotal	**3.98**	**29.79**	**20.51**	**0.04**	**4.06**	**2.76**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Paving/Foundations						
Offroad Equipment	3.40	21.37	16.43	0.03	1.72	1.72
Vendor Trips	0.01	0.12	0.06	0.00	0.14	0.00
Worker Trips	0.08	0.09	0.75	0.00	0.20	0.01
Subtotal	**3.49**	**21.58**	**17.24**	**0.03**	**2.06**	**1.73**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Building Construction						
Offroad Equipment	3.96	22.58	18.51	0.04	1.35	1.35
Vendor Trips	0.51	5.83	3.74	0.01	0.58	0.19
Worker Trips	0.57	0.61	5.38	0.01	1.45	0.06
Subtotal	**5.04**	**29.02**	**27.63**	**0.06**	**3.38**	**1.60**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Architectural Coatings Application						
Architectural Coatings	40.73	-	-	-	-	-
Offroad Equipment	0.37	2.37	1.88	0.00	0.20	0.20
Worker Trips	0.11	0.12	1.05	0.00	0.28	0.01
Subtotal	**41.21**	**2.49**	**2.93**	**0.00**	**0.48**	**0.21**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Maximum Daily Emissions[a]	**46.26**	**33.06**	**30.56**	**0.06**	**4.45**	**2.76**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*

[a]Maximum daily ROG emissions occur during simultaneous building construction and architectural coatings application. Maximum daily PM emissions occur during grading. Maximum daily emissions for other pollutants occur during demolition activities.

Table 9.2.7-2c. Estimated Maximum Daily Construction Emissions – PMP Amendment 150-Room Hotel

Emission Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Demolition						
Fugitive Dust	-	-	-	-	0.39	0.00
Offroad Equipment	3.58	26.50	20.18	0.04	1.33	1.33
Onroad Vehicles	0.15	1.80	0.91	0.00	2.20	0.06
Worker Trips	0.06	0.06	0.56	0.00	0.18	0.01
Subtotal	**3.79**	**28.36**	**21.65**	**0.04**	**4.10**	**1.40**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Grading						
Fugitive Dust	-	-	-	-	2.40	1.29
Offroad Equipment	3.47	25.24	18.86	0.04	1.19	1.19
Onroad Vehicles	0.00	0.03	0.02	0.00	0.05	0.00
Worker Trips	0.05	0.05	0.43	0.00	0.14	0.01
Subtotal	**3.52**	**25.32**	**19.31**	**0.04**	**3.78**	**2.49**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Paving/Foundations						
Offroad Equipment	2.96	18.60	16.23	0.03	1.43	1.43
Vendor Trips	0.01	0.11	0.05	0.00	0.14	0.00
Worker Trips	0.07	0.07	0.64	0.00	0.20	0.01
Subtotal	**3.04**	**18.78**	**16.92**	**0.03**	**1.77**	**1.44**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Building Construction						
Offroad Equipment	3.26	19.06	18.02	0.04	1.05	1.05
Vendor Trips	0.39	4.40	2.86	0.01	0.48	0.14
Worker Trips	0.43	0.44	3.89	0.01	1.23	0.05
Subtotal	**4.08**	**23.90**	**24.77**	**0.06**	**2.76**	**1.24**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Architectural Coatings Application						
Architectural Coatings	34.39	-	-	-	-	-
Offroad Equipment	0.30	2.00	1.85	0.00	0.15	0.15
Worker Trips	0.08	0.09	0.77	0.00	0.24	0.01
Subtotal	**34.77**	**2.09**	**2.62**	**0.00**	**0.39**	**0.16**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Maximum Daily Emissions[a]	**38.84**	**28.36**	**27.39**	**0.06**	**4.10**	**2.49**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*

[a]Maximum daily ROG emissions occur during simultaneous building construction and architectural coatings application. Maximum daily emissions for other pollutants occur during demolition activities.

Table 9.2.7-3. Operational Emissions

	ROG	NOx	CO	SO_x	PM_{10}	$PM_{2.5}$
175-Room Hotel						
Summer Day, Lbs/day						
Area Sources	6.16	0.00	0.00	0.00	0.00	0.00
Energy Use	0.46	4.15	3.49	0.02	0.32	0.32
Vehicular Emissions	5.10	10.01	46.69	0.07	2.45	0.48
TOTAL	**11.72**	**14.16**	**50.18**	**0.09**	**2.77**	**0.80**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Winter Day, Lbs/day						
Area Sources	6.16	0.00	0.00	0.00	0.00	0.00
Energy Use	0.46	4.15	3.49	0.02	0.32	0.32
Vehicular Emissions	5.42	10.51	47.27	0.07	2.45	0.48
TOTAL	**12.04**	**14.66**	**50.76**	**0.09**	**2.77**	**0.80**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
175-Room Hotel						
Summer Day, Lbs/day						
Area Sources	6.16	0.00	0.00	0.00	0.00	0.00
Energy Use	0.46	4.15	3.49	0.02	0.32	0.32
Vehicular Emissions	5.27	10.16	46.47	0.08	2.78	0.56
TOTAL	**11.89**	**14.31**	**49.96**	**0.10**	**3.10**	**0.88**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Winter Day, Lbs/day						
Area Sources	6.16	0.00	0.00	0.00	0.00	0.00
Energy Use	0.46	4.15	3.49	0.02	0.32	0.32
Vehicular Emissions	5.53	10.54	47.05	0.08	2.78	0.57
TOTAL	**12.15**	**14.69**	**50.54**	**0.10**	**3.10**	**0.89**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
150-Room Hotel						
Summer Day, Lbs/day						
Area Sources	5.28	0.00	0.00	0.00	0.00	0.00
Energy Use	0.39	3.56	2.99	0.02	0.27	0.27
Vehicular Emissions	4.13	7.75	35.00	0.07	2.37	0.47
TOTAL	**9.80**	**11.31**	**37.99**	**0.09**	**2.64**	**0.74**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Winter Day, Lbs/day						
Area Sources	5.28	0.00	0.00	0.00	0.00	0.00
Energy Use	0.39	3.56	2.99	0.02	0.27	0.27
Vehicular Emissions	4.28	8.10	35.43	0.07	2.37	0.47
TOTAL	**9.95**	**11.66**	**38.42**	**0.09**	**2.64**	**0.74**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Total Project						
Summer, Lbs/day	**33.41**	**39.78**	**138.13**	**0.28**	**8.51**	**2.42**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*Yes*	*No*	*No*	*No*
Winter, Lbs/day	**34.14**	**41.01**	**139.72**	**0.28**	**8.51**	**2.43**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*

9.4.7.2.3 Emissions Increase

Criteria Pollutants

The SDAB is considered a nonattainment area for the 8-hour NAAQS for O_3, and is considered a nonattainment area for the CAAQS for O_3, PM10, and PM2.5. An evaluation of construction and operational emissions of nonattainment pollutants relative to the proposed PMP Amendment, which would allow for the construction of up to two additional hotels in addition to the proposed 175- room hotel, is presented above in Section 9.2.7.2.2, *Violate Ambient Air Quality Standards*. That discussion shows that criteria pollutants would be below the significance thresholds during construction and operation of the future hotels that could occur under the proposed PMP Amdement. Therefore, impacts would be less than significant.

Localized CO Impacts at Nearby Intersections

Projects involving traffic impacts may result in the formation of locally high concentrations of CO, known as CO "hot spots." To determine if the PMP Amendment would cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO "hot spots" was conducted. Project-related traffic would have the potential to result in CO "hot spots" if project-related traffic resulted in degradation in the level of service at any intersection to LOS E or F. The Traffic Impact Study evaluated 11 intersections in the study area to assess whether or not there would be a decrease in the level of service at the intersections affected by the PMP Amendment. Based on the Traffic Impact Study, intersections under all Existing + Project scenarios would operate at LOS D or better, and would not be anticipated to experience a CO "hot spot."

Under Year 2030 conditions, traffic congestion increases such that several intersections in the project study area operate at LOS F both with and without the addition of the proposed PMP Amendment-related traffic. The Traffic Impact Study identified significant traffic impacts for the following intersections under long-term (2030) cumulative conditions:

- N. Harbor Drive/Harbor Island Drive/Terminal 1
- N. Harbor Drive/Rental Car Access Road
- N. Harbor Drive/Laurel Street
- Pacific Highway/Laurel Street
- Pacific Highway/Grape Street

Accordingly, to evaluate the potential for CO "hot spots" at these intersections, the procedures in the Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol were used. As recommended in the Protocol, CALINE4 modeling was conducted for the intersections identified above for the scenarios with and without the proposed PMP Amendment-related traffic. The results of this analysis are summarized in Section 9.3. *Cumulative Impacts*, of this chapter.

Greenhouse Gas Emissions and Climate Change

Impacts related to GHG emissions and climate change are the result of cumulative development. CAPCOA states that there are no direct or non-cumulative GHG impacts from a climate change perspective. According to a recent white paper by the Association of Environmental Professionals, "an individual project does not generate enough GHG emissions to significantly influence global climate change. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHG emissions" (AEP 2007). Therefore, there are no direct or non-cumulative GHG impacts from a climate change perspective (CAPCOA 2008). The cumulative analysis is contained in Section 9.3. *Cumulative Impacts*, of this chapter

Future development under the proposed PMP Amendment, which would allow development of two hotels in addition to the proposed 175-room hotel, would result in a net increase in project-related GHG emissions because future hotel development would create more motor vehicle trips, vehicle miles traveled, and energy consumption than what currently exists in the PMP Amendment area. Estimated emissions from future hotel development allowed under the proposed PMP Amendment and estimated existing (business as usual) GHG emissions are presented in Table 6, *Summary of Estimated Operational Greenhouse Gas Emissions – Business as Usual Scenario*. However, as discussed above, climate change impacts are cumulative in nature. Therefore, future hotel development that could occur under the proposed PMP Amendment would not result in a contribution to climate change at the project level. As a result, the direct impact of the proposed PMP Amendment GHG emissions on climate change is considered to be less than significant

9.3.7.4.4 Sensitive Receptors

The nearest sensitive receptor to the site is the Spanish Landing Park, located approximately 0.5 mile northwest of the PMP Amendment site, the park located on the south side of West Harbor Island, approximately one mile west of the PMP Amendment site, and residences along Laurel Street, Hawthorne Street, and Grape Street, approximately one mile to the east of the PMP Amendment site.

Construction

Construction activities are sporadic, transitory, and short-term in nature; and once construction activities have ceased, so too have emissions from construction activities. A hotel development such as what could occur under the proposed PMP Amendment would not attract a disproportionate amount of diesel trucks and would not be considered a source of toxic air contaminants (TAC) emissions. Based on the CalEEMod Model, heavy-duty diesel trucks would account for only 0.9 percent of the total trips associated with the project.

It is estimated that construction activities for each future hotel (up to two hotels, in addition to the proposed 175-room hotel) that could occur under the proposed

PMP Amendment would occur over approximately 18 months; however, most diesel emissions would occur during site grading and road construction for each hotel, which would take approximately three months. Because the duration of exposure to diesel exhaust during the temporary construction activity would be much shorter than the assumed 70-year exposure period used to estimate lifetime cancer risks, construction of future hotels is not anticipated to result in an elevated health risk to exposed persons due to the short-term nature of construction-related diesel exposure. Construction of each of up to two future hotels that could occur under the PMP Amendment, in addition to the proposed 175-room hotel, may create a nuisance for nearby visitors during hours of construction; but this impact is considered minimal. In addition, based on screening methodology provided by the SCAQMD, air pollution exposure to diesel emissions is reduced with distance. Therefore, the distance from the PMP Amendment area to the nearest sensitive receptor (approximately 0.5 mile) is assumed to be enough to greatly reduce pollution concentrations. Consequently, the human health impact of diesel risks associated with construction activities is considered to be less than significant. Impacts to sensitive receptors from TAC emissions that could be generated by construction of up to two hotels, in addition to the 175-room hotel, would therefore be less than significant.

Operations

As shown in Table 9.2.7-3, *Operational Emissions*, emissions from operations of up to two hotels, in addition to the proposed 175-room hotel, are relatively low and well below the SDAPCD's daily thresholds for all criteria pollutants. There are three carcinogenic TACs that constitute the majority of the known health risk from motor vehicle traffic, that is, diesel particualte matter (DPM) from trucks, and benzene and 1,3-butadiene from passenger vehicles. These TACs are a subset of the criteria reactive organic gas (ROG) and $PM_{2.5}$ emissions. However, as stated in Table 9.2.7-3, ROG and $PM_{2.5}$ emissions from vehicles due to future hotel development under the proposed PMP Amendment are below the SDAPCD's daily thresholds.

The ARB and SDAPCD recommend that health risk assessments be conducted for substantial sources of diesel particulates (e.g., truck stops and warehouse distribution facilities) and have provided guidance for analyzing mobile source diesel emissions. In addition, typical sources of acutely and chronically hazardous TACs include industrial manufacturing processes, automotive repair facilities, and dry cleaning facilities. Considering that future hotel development that could occur under the proposed PMP Amendment would not involve such uses, the proposed PMP Amendment would not warrant a health risk assessment. Potential air toxic impacts to surrounding land uses resulting from the development of up to two hotels, in addition to the proposed 175-room hotel, would therefore be less than significant.

In addition, as indicated in the CO hotspot analysis in Section 9.4.7.2.3 above, contributions to CO concentrations at local intersections from future development of up to two hotels, in addition to the proposed 175-room hotel, that could occur under the proposed PMP Amendment would be less than significant.

Therefore, sensitive receptors would not be subject to significant health risks from exposure to emissions associated with the proposed PMP Amendment.

9.3.7.4.5 Objectionable Odors

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and air districts. Any project with the potential to frequently expose the public to objectionable odors would be deemed as one having a significant impact. Odor impacts on residential areas and other sensitive receptors, such as hospitals, daycare centers, schools, etc., warrant the closest scrutiny; but consideration should also be given to other land uses where people may congregate, such as recreational facilities, work sites, and commercial areas.

The future construction of up to two hotels, in addition to the proposed 175-room hotel, that could occur under the proposed PMP Amendment would generate temporary, localized odors during construction, similar to any other construction projects. However, odor impacts would be temporary and limited to the area adjacent to the construction site. Further, operation of up to two future hotels, in addition to the proposed 175-room hotel, would create motor vehicle trips that would generate tailpipe emissions. However, odor impacts would be limited to the circulation routes and parking areas. Such brief exhaust odors are an adverse, but not significant, air quality impact. Therefore, impacts due to objectional odors associated with the proposed PMP Amendment would be less than significant.

9.3.7.5 Significant Impacts

No significant impacts on air quality would result from the construction or operation of up to two future hotels, in addition to the proposed 175-room hotel, allowed by the proposed PMP Amendment. Standard best management practices to reduce emissions will be employed during construction and operation of the future hotels.

9.3.7.6 Mitigation Measures

No significant impacts have been identified for air quality; therefore, no mitigation measures are required to reduce impacts.

Operational emissions would be below the significance thresholds for all pollutants. Air quality impacts are less than significant and no mitigation measures are required.

9.3.7.7 Significance of Impacts after Mitigation

No mitigation measures were required because no significant adverse air quality impacts were identified for construction or operation of up to two hotels, in addition to the proposed 175-room hotel, that could be developed under the proposed PMP Amendment.

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Section 9.2.8
Noise

The PMP Amendment would allow the development of up to 500 hotel rooms in up to three hotels on East Harbor Island. One of these hotels, consisting of 175 rooms and ancillary facilities, is the Sunroad Harbor Island Hotel Project. No proposal has been received for the development of the remaining 325 rooms in one or two additional hotels. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future development allowed under the PMP Amendment, this analysis assumes that the reasonable worst case scenario that could occur with respect to noise impacts would be development of up to two additional hotels with no more than a total of 325 rooms, in addition to the proposed 175-room hotel evaluated in the Draft EIR. When specific development proposals are received, they will be evaluated pursuant to CEQA Guidelines Section 15168 to determine whether additional environmental review would be needed.

The analysis of potential noise impacts resulting from implementing the PMP Amendment is based on the *Noise Analysis Report* prepared by dBF Associates, Inc. That report, dated June 7, 2013, is included as Appendix G-1 to the EIR.

9.2.8.1 Existing Noise Environment

Short-term (15-minute) sound level measurements were conducted near the project site, in the approximate locations as the noise measurements conducted for the proposed 175-room hotel evaluated in the Draft EIR, to quantify the existing onsite acoustical environment. A RION Model NL-31 American National Standards Institute (ANSI) Type 2 Integrating Sound Level Meter (SLM) was used as the data-collection device. The meter was mounted on a tripod roughly five feet above ground to simulate the average height of the ear. The measurements were performed on Tuesday, January 8, 2013. The sound level meter was calibrated before the measurement period. The measurement results are summarized in Table 9.2.8-1, *Existing Sound Level Measurements (dBA)*, and correspond to the locations depicted on Figure 9.2.8-1, *Noise Measurement Locations*. Noise includes vehicular noise levels on nearby roadways, as well as airplane noise from SDIA and the North Island Naval Air Station (NAS North Island).

Table 9.2.8-1. Existing Sound Level Measurements (dBA)

Site ID	Measurement Location	Noise Sources	Measurement Results (dBA)		
			L_{eq}	L_{max}	L_{min}
ST-1	In front of the gangplank leading to marina slips	Aircraft from SDIA and NAS North Island, vehicles, birds	60.0	73.3	49.9
ST-2	Westernmost slip on marina, next to boats	Aircraft from SDIA and NAS North Island, vehicles, water drains	52.4	62.9	45.2
ST-3	Easternmost slip on marina next to boats	Aircraft from SDIA and NAS North Island, vehicles, water drains	51.5	81.1	44.1
ST-4	Room 1027 of Sheraton, east side of building facing project site	Aircraft from SDIA and NAS North Island, fountain, vehicles	60.2	73.0	56.2
ST-5	East of project site, next to Reuben E. Lee dock	Aircraft from SDAI and NAS North Island, birds, boats, pedestrians	55.6	68.4	49.7
ST-6	East of project, next to Island Prime Restaurant	Aircraft from SDAI and NAS North Island, diners, vehicles, rooftop HVAC	57.6	72.7	52.4
ST-7	Southwest of project site, along Harbor Island Drive Park bayside promenade	Aircraft from SDAI and NAS North Island, vehicles, pedestrians	60.8	72.7	49.0

Noise Measurement Locations
Figure 9.2.8-1

9.2.8.2 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of impacts associated with noise resulting from the future hotel development allowed under the PMP Amendment.

Impacts are considered significant if development of future hotels would:

- expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- expose persons to or generate excessive groundborne vibration or groundborne noise levels;
- a substantial permanent increase in ambient noise levels in the project vicinity above existing without the project;
- a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- expose people residing or working in the project area within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, to excessive noise levels; or,
- expose people residing or working in the project area within the vicinity of a private airstrip to excessive noise levels.

Because the Port District does not maintain significance criteria for noise impacts, the City of San Diego's CEQA Significance Determination Thresholds (City of San Diego 2011) were used to further define and determine project impacts.

Impacts are considered significant if development of future hotels would:

- construction activities would cause noise levels at a sensitive receptor to exceed 75 dBA L_{eq}, averaged between the construction hours of 7 a.m. and 7 p.m.;
- operation activities would cause noise levels to exceed the exterior noise threshold of 65 dBA (CNEL), which applies to the residential, and recreational uses found in the vicinity of the PMP Amendment;
- the PMP Amendment incrementally increases noise levels by 3 dB or more if ambient noise levels already exceed 65 dBA, (CNEL); and/or
- internal noise levels exceed 45 dBA (CNEL) in the proposed hotels.

Because neither the Port District nor the City maintains significance thresholds for ground-borne vibration, this analysis used thresholds maintained by Caltrans and the Federal Transit Administration (FTA), measured in PPV. Caltrans has identified a PPV of between 0.0059 and 0.019 inch per second as the threshold of human perception, 0.079 inch per second as being "readily perceptible" to people, and 0.197 inches per second as the threshold at which there is a risk of architectural damage to normal dwellings. The FTA maintains a 0.12 inch-per-second threshold for potential damage to "extremely fragile historic buildings," which, although none occur within the PMP Amendment area, remains a useful reference in the absence of more applicable standards.

9.2.8.2 Analysis of Project Impacts

9.2.8.2.1 Exposure to or Generation of Excessive Noise Levels

Construction Noise

Construction noise associated with development of up to two hotels totaling no more than 325 rooms, in addition to the proposed 175-room hotel, would be related to the demolition and removal of a surface parking lot, as well as construction activities associated with actual hotel development. There would be a single phase of activity for the construction of each hotel, with all demolition and construction taking place west of the existing marina.

Construction noise common to similar development projects would occur throughout construction activities and would be audible in areas surrounding the construction sites. This noise increase may be a temporary nuisance for nearby visitors during hours of construction; and levels would fluctuate, depending on construction equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers.

Construction activities would require the use of noise-generating equipment, such as jackhammers, pneumatic impact equipment, saws, and tractors. Typical noise levels from various types of equipment that may be used during construction are listed in Table 9.2.8-1, *Maximum Noise Levels Generated by Typical Construction Equipment*, which shows typical noise levels at various distances from the construction source based on studies prepared by the EPA.

Table 9.2.8-1. Maximum Noise Levels Generated by Typical Construction Equipment

	Noise Level (dBA)[1]			
Noise Source	**50 Feet**	**100 Feet**	**200 Feet**	**400 Feet**
Jackhammer	82	76	70	64
Steamroller	83	77	71	55
Street Paver	80	74	68	62
Backhoe	83	77	71	55
Street Compressor	67	61	55	49
Front-end Loader	79	73	67	61
Street Cleaner	70	64	58	52
Idling Haul Truck	72	66	60	54
Cement Mixer	72	66	60	54

[1] Assumes a 6-dB drop-off rate for noise generated by a "point source" traveling over hard surfaces. Actual measured noise levels of the equipment listed in this table were taken at distances of 10 and 30 feet from the noise source.

Source: Noise Technical Report (Appendix G of EIR)

Table 9.2.8-2, *Noise Levels Generated by Construction Activities*, shows the actual noise levels that would likely be generated during hotel construction, taking into account the likelihood that more than one piece of construction equipment would be in operation at the same time. These estimates are based on 1971 EPA studies, and are considered conservative. As the table shows, the highest noise levels are expected to occur during the grading/excavation and finishing phases of construction.

Table 9.2.8-2. Noise Levels Generated by Construction Activities

	Noise Level (dBA)			
Construction Phase	**50 Feet**	**100 Feet**	**200 Feet**	**400 Feet**
Ground Clearing	84	78	72	66
Grading/Excavation	89	83	77	71
Foundations	78	72	66	60
Structural	85	79	73	67
Finishing	89	83	77	71

Source: EPA 1971

Construction noise would be audible to visitors in the vicinity of hotel construction sites, including marina guests in the slips and promenade users. The marina and promenade are within 100 feet of potential construction areas and would therefofe be exposed to noise levels exceeding 75-dBA (12 hours) during the majority of construciton. However, this noise increase is temporary and limited only to typical work (and, thus, construction) hours. Furthermore, the marina adjacent to the Project site is not considered to be a noise-sensitive land use.

Construction noise during all phases would be below 75 dBA Leq (12 hours) at a distance of 400 feet. The nearest noise-sensitive land uses are all further than 400 feet from the project site, and would therefore be exposed to noise levels below the City CEQA threshold of 75 dBA Leq (12 hours). Therefore, the noise impact from construction activities is considered to be less than significant.

Operational Noise

As discussed in Section 9.2.8.2.3 below, noise modeling analysis concluded that the operation of up to two hotels totaling not more than 325 rooms, in addition to the proposed 175-room hotel, when added to existing traffic volumes would not result in an increase in permanent ambient noise levels that would exceed the City's noise threshold. According to the City's noise thresholds, if noise levels exceed 65 dBA then a significant impact would occur if a project would incrementally increase noise levels by 3 decibels or more. As shown in Table 9.2.8-5, *Existing and Project Traffic and Noise Generation*, the incremental increase in noise levels would not exceed 3 decibels. Therefore, the operational noise impacts related to exposure of people to excessive noise levels that could result from up to two hotels, in addition to the proposed 175-room hotel, that could develop on East Harbor Island under the proposed PMP Amendment would be less than significant.

9.2.8.2.2 Excessive Vibration

Construction Vibration

Construction of the project would involve the use of equipment as described in Section 9.2.8.2.1. The proposed 175-room hotel would be constructed using Helical Earth Anchor Technology (HEAT) anchors in lieu of pile driving. HEAT anchor installation produces vibration levels similar to conventional heavy construction equipment. Vibration associated with standard (non-vibratory) construction equipment is generally considered to be not perceptible, and therefore negligible, at distances over 50 feet.

A method for the construction of up to two additional hotels within the PMP Amendment area has not been determined at this time, as no plans for constructing more than the proposed 175-room hotel have been submitted. Development of future hotels could be constructed using pile driving. Impact pile driving produces vibration levels of up to 1.518 in/sec PPV at 25 feet [FTA 2006]. Using the propagation methodology detailed in Section 12.2.1 of the FTA manual, the vibration levels would attenuate to below the various significance thresholds for specific building types at the distances listed in Table 9.2.8-3, *Distance to Pile Driving Vibration Levels.*

Table 9.2.8-3. Distances to Pile Driving Vibration Levels

Building Category	PPV	Distance
I. Reinforced-concrete, steel or timber (no plaster)	0.5 in/sec	80 feet
II. Engineered concrete and masonry (no plaster)	0.3 in/sec	130 feet
III. Non-engineered timber and masonry buildings	0.2 in/sec	195 feet
IV. Buildings extremely susceptible to vibration damage	0.12 in/sec	320 feet

Construction vibration during all phases would be below 0.12 in/sec VdB at a distance of 320 feet. The nearest vibration-sensitive land uses are all further than 320 feet from the project site and would therefore be exposed to vibration levels below the FTA threshold of 0.12 in/sec VdB at buildings extremely susceptible to vibration damage. Therefore, the vibration impact from construction activities is considered to be less than significant.

9.2.8.2.3 Permanent Increase in Noise Levels

Operational Noise

The predominant noise source for the operational phase of future hotels that could be developed under the proposed PMP Amendment, as with most development in urbanized areas, would be vehicular traffic noise generated by the patrons and employees of the proposed hotel. According to the project Traffic Study (Appendix G-1 to the EIR), development of up to two hotels, in addition to the proposed 175-room hotel, is anticipated to generate approximately 3,825 daily vehicle trips. This traffic would be distributed throughout the existing circulation system in the Project vicinity. Traffic noise generated by traffic from the future hotels that could develop under the proposed PMP Amendment would affect receivers adjacent to nearby roadways and onsite parking lots.

The Federal Highway Administration (FHWA) Traffic Noise Model (TNM) version 2.5 was used to estimate roadway traffic noise levels that would be associated with traffic from up to three hotels, including the proposed 175-room hotels and up to two additional hotels totaling not more than 325 rooms, that could be developed under the proposed PMP Amendment. The modeling effort considered the estimated average vehicle speed, peak-hour traffic volume, and vehicle mix. Agencies such as the City of San Diego and Housing and Urban Development (HUD) consider the peak hour sound level to be reasonably equivalent to the CNEL for vehicular traffic.

Based on the Traffic Study prepared for the proposed PMP Amendment (see Appendix E-1 to the EIR), existing and project-generated ADT volumes on project roadway segments are shown in Table 9.2.8-4, *Existing and Project Traffic and Noise Generation.* The project-generated traffic was estimated to generate negligible noise increases of approximately 0.1 dBA CNEL or less along North Harbor Drive, Pacific Highway, Laurel Street, Hawthorn Street, and Grape Street; therefore, these segments did not require detailed modeling. The existing noise level along Harbor Island Drive from North Harbor Drive to Harbor Island Drive, at a distance of 50 feet from the centerline, was estimated to increase by approximately 1 dBA CNEL, from approximately 67 dBA CNEL to approximately 68 dBA CNEL. The existing noise level along Harbor Island Drive east of Harbor Island Drive, at a distance of 50 feet from the centerline, was estimated to increase by approximately 2 dBA CNEL, from approximately 63 dBA CNEL to approximately 65 dBA CNEL. Therefore, the operational noise impacts related to exposure of people to excessive noise levels that could result from up to two hotels, in addition to the proposed 175-room hotel, that could develop on East Harbor Island under the proposed PMP would not be significant.

Onsite Interior Noise

The proposed PMP Amendment would allow the development of two hotels in addition to the proposed 175-room hotel, which are considered transient residential development and subject to an interior noise standard of 45 dBA CNEL. As shown in Table 9.2.8-5, *Existing and Project Traffic and Noise Generation*, the onsite modeling location that represents the approximate location where future hotels would be located as allowed in the proposed PMP Amendment (i.e., "East of Harbor Island Drive") is anticipated to receive an increase in exterior noise levels of 2 dBA due to traffic, which is the City's noise threshold. On-site interior noise levels under existing plus project conditions would not be significant.

The area where up to two hotels totaling not more than 325 rooms, in addition to the proposed 175-room hotel, could be located under the proposed PMP Amendment is located approximately 0.5 miles south of SDIA, but is not located within the airport's 60 dBA CNEL noise contour. Generally, land uses that are located within the 60 dBA CNEL noise contour are considered noise impacted. Although the PMP Amendment area is not within the airport noise contour, aircraft noise is clearly audible within East Harbor Island, and periodically subject to high levels of single-event noise from takeoffs and landings. The PMP Amendment area is located across the bay from NAS North Island and would thus be subject to audible aircraft noise from NAS North Island. During field noise measurements, maximum noise levels from aircraft ranged from 66 dBA to 82 dBA L_{max}. Exposure to high levels of single-event noise from aircraft could result in significant impacts on interior noise levels at the future hotels allowed under the PMP Amendment.

Table 9.2.8-4. Existing and Project Traffic and Noise Generation

Street Segment	Existing ADT*	Project ADT*	Project-Generated Traffic Noise Increase
North Harbor Drive			
West of Terminal 2 (SDIA)	27,730	585	0.1 dBA
Terminal 2 (SDIA) to Harbor Island Drive	29,750	670	0.1 dBA
Harbor Island Drive to Rental Car Access Road	81,000	1,915	0.1 dBA
Rental Car Access Road to Laurel Street	82,790	1,915	0.1 dBA
Laurel Street to Hawthorn Street	54,260	1,340	0.1 dBA
Hawthorn Street to Grape Street	37,830	765	0.1 dBA
South of Grape Street	17,690	190	0.1 dBA
Pacific Highway			
North of Laurel Street	18,150	190	0.1 dBA
Laurel Street to Hawthorn Street	9,760	0	0.0 dBA
Hawthorn Street to Grape Street	18,460	190	0.1 dBA
South of Grape Street	16,940	385	0.1 dBA
Laurel Street			
North Harbor Drive to Pacific Highway	36,390	575	0.1 dBA
East of Pacific Highway	27,620	385	0.1 dBA
Hawthorn Street			
North Harbor Drive to Pacific Highway	25,770	575	0.1 dBA
East of Pacific Highway	23,480	385	0.1 dBA
Grape Street			
North Harbor Drive to Pacific Highway	23,130	575	0.1 dBA
East of Pacific Highway	20,330	385	0.1 dBA
Harbor Island Drive			
North Harbor Drive to Harbor Island Drive	16,330	3,825	1 dBA
West of Harbor Island Drive	8,610	0	0.0 dBA
East of Harbor Island Drive	6,940	3,825	2 dBA

*Source: TIS [LLG 2013]; Noise Analysis Report (dBF Associates, 2013)

9.2.8.2.4 Temporary Increase in Noise Levels

No sensitive receptors are located in the PMP Amendment area. Furthermore, no sensitive receptors are located within 315 feet of potential construction areas (the distance within which construction noise could exceed the adopted 75dBA threshold). Therefore, the proposed PMP Amendment would not result in a substantial temporary increase in noise levels in the Project vicinity.

9.2.8.2.5 Public Airstrip Noise Levels

Although the PMP Amendment area is not within the airport noise contour, aircraft noise is clearly audible within East Harbor Island and is periodically subject to high levels of single-event noise from takeoffs and landings. The PMP Amendment area is also located across the bay from NAS North Island and would thus be subject to audible aircraft noise from NAS North Island. Future hotel development that could occur under the proposed PMP Amendment, including the construction of two future hotels totaling 325 rooms in addition to the proposed 175-room hotel, could be exposed to high levels of single-event noise from aircraft, resulting in significant impacts on interior noise levels at the hotels.

9.2.8.2.6 Private Airstrip Noise Levels

No private airstrips are located within the vicinity of the PMP Amendment area. Therefore, the Proposed Project would not be subject to noise from private airstrips.

9.3.8.3 Significant Impacts

NOI-2: Future hotels allowed under the proposed PMP Amendment would be constructed within an area that could result in interior noise levels exceeding the 45dBA CNEL threshold due to single-event aircraft noise. Exposure to high levels of single-event noise from aircraft could result in significant operational impacts on interior noise levels at the proposed hotel.

9.3.8.4 Mitigation Measures

MM NOI-2: Reduction of interior noise levels below 45-dBA (CNEL) interior noise requirement.

Future hotels 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:

5. Acoustically rated dual pane windows and sliding glass door assemblies
6. Heavy-weight drapes and thick carpets for sound absorption

The following minimal performance requirements 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

9.3.8.5 Significance of Impacts after Mitigation

Implementation of mitigation measure MM NOI-2 would reduce the significant noise impact to below a level of significance.

Section 9.2.9
Geology and Soils

The PMP Amendment would allow the development of up to 500 hotel rooms in up to three hotels on East Harbor Island. One of these hotels, consisting of 175 rooms and ancillary facilities, is the Sunroad Harbor Island Hotel Project. No proposal has been received for the development of the remaining 325 rooms in one or two additional hotels. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future development allowed under the PMP Amendment, this analysis assumes that the reasonable worst case scenario that could occur with respect to geology and soils impacts would be development of up to two additional hotels with no more than a total of 325 rooms, in addition to the proposed 175-room hotel evaluated in the Draft EIR. When specific development proposals are received, they will be evaluated pursuant to CEQA Guidelines Section 15168 to determine whether additional environmental review would be needed.

This section is based on information from the Geotechnical Investigation and Geologic Fault Investigation (Geotech Study), prepared by Geocon in March 2006, and the Geotechnical Evaluation and Third Party Review (Geotech Review), prepared by Ninyo & Moore in June 2006. The Geotech Study and Geotech Review are provided as Appendices H-1 and H-2, respectively, of the Draft EIR.

9.2.9.1 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of impacts associated with geology and soils resulting from future hotel development allowed under the PMP Amendment. Impacts are considered significant if future hotel development allowed under the proposed PMP Amendment would:

- expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving (1) rupture of a known earthquake fault; (2) strong seismic ground shaking; (3) seismic-related ground failure, including liquefaction; or (4) landslides;
- result in substantial soil erosion or the loss of topsoil;
- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;

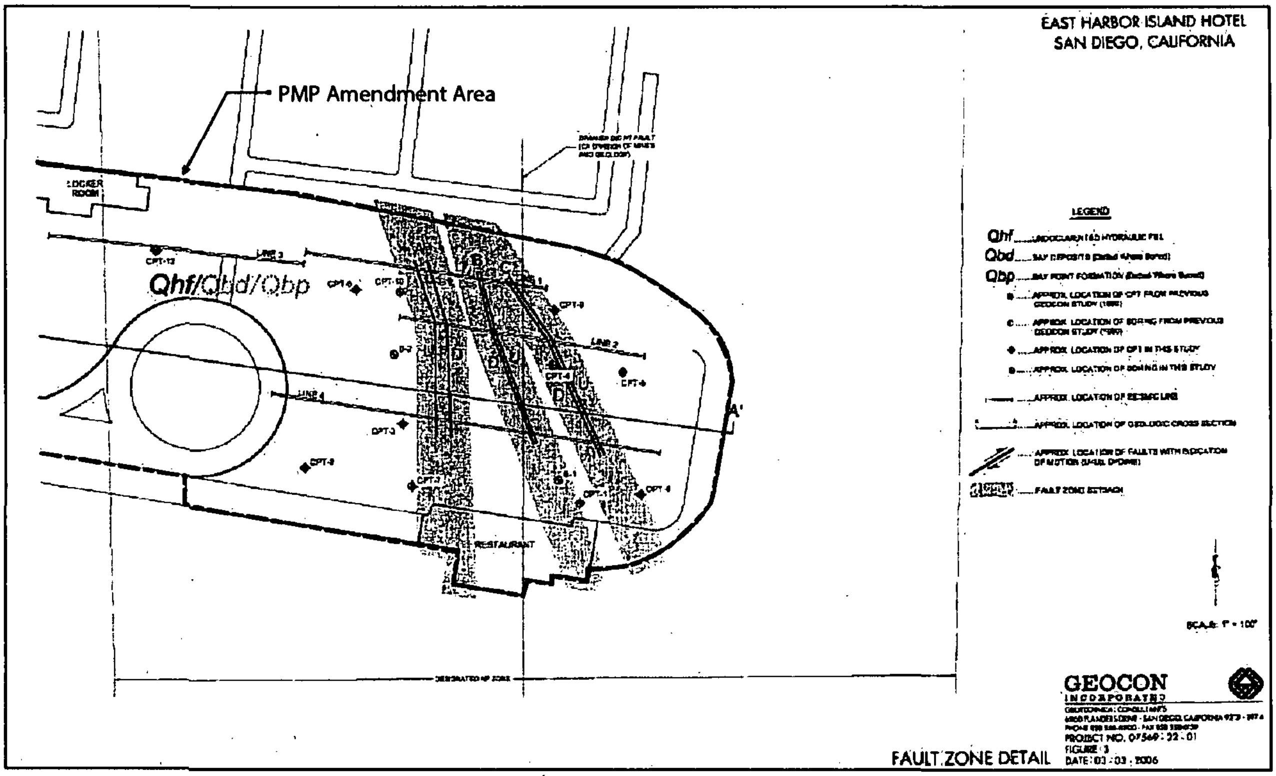
- be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

9.2.9.2 Analysis of Project Impacts

9.2.9.2.1 Loss, Injury, or Death due to Seismic Conditions

Faulting

The eastern portion of Harbor Island is underlain by three splays of the Spanish Bight Fault, a strand of the Rose Canyon Fault zone (see Figure 9.2.9-1, *Seismic Fault Location*). The Geotech Study recommends a structural setback of 25 feet, and the Geotech Review recommends a structural setback of 50 feet from the three identified fault splays. As described in Section 9.1, *Project Description,* the two locations on which the remaining 325 hotel rooms could be developed are located on the western portion of East Harbor Island, at a distance well in excess of the setbacks recommended in the Geotech Study and Geotech Review. The 175-room hotel lies between the two locations on which the remaining 325 hotel rooms could be developed and the splays of the Spanish Bight Fault. The location(s) where up to two additional hotels could be located are, therefore, setback from the three splays consistent with regulatory requirements and the recommendations of the Geotech Study and the Geotech Review. Future development of up to two hotels, in addition to the proposed 175-room hotel, that could occur under the proposed PMP Amendment would not result in significant impacts due to faulting. Future hotel development would include a site-specific geotechnical analysis as part of the project design at the time that development is proposed. Future hotel development would be required to comply with the recommendations of the site-specific study.



Source: Geocon (2006)

Seismic Fault Location
Figure 9.2.9-1

Tsunamis and Seiches

East Harbor Island is within a protected bay, and a tsunami occurring on the Pacific Ocean would not be expected to reach it because East Harbor Isalnd is located on a section of the bay that is blocked off from the open water by the Point Loma peninsula to the west. Therefore, the potential for a tsunami to occur is low to moderate.

Located within a protected bay, however, makes East Harbor Island susceptible to seiche conditions. Seiches are standing waves occurring in enclosed or partially enclosed bodies of water and are caused by weather events (e.g., wind or atmospheric pressure changes) or by seismic activity. Seiches generally have very long wavelengths and are therefore often imperceptible to the human eye, although major events like earthquakes can cause hazardous wave cycles.

The 2006 geotechnical reviews found that the potential for inundation at East Harbor Island due to seiches is low to moderate based on historic record and the location and alignment of San Diego Bay to potential seismic sources. Although the potential for a very large tsunami or seiche occurring within the bay is high, due to the location of East Harbor Island and its protection from the open ocean by other land areas including Point Loma and Coronado, the potential for a tsunami to damage future hotel development that would be allowed under the PMP Amendment is low to moderate. The risk would be comparable to other low-lying sites located along the bay. Therefore, construction of two additional hotels totaling no more than 325 rooms, in addition to the proposed 175-room hotel, within East Harbor Island, would not result in significant impacts associated with tsunamis and seiches.

Groundshaking

East Harbor Island would be subject to moderate to severe ground shaking in the event of an earthquake on the Spanish Bight Fault or any other fault in the southern California or northern Baja California regions. Severe ground shaking, which can damage structures, is a common condition throughout the region. To guard against substantial seismic-related structural damage, standard architectural and engineering regulations have been incorporated into applicable building codes.

The construction of up to two future hotels, in addition to the proposed 175-room hotel, allowed by the proposed PMP Amendment would be engineered and constructed in accordance with all relevant requirements of the California Building Code. Adherence to required regulations would assure construction of sound structures; therefore, impacts related to seismic ground shaking, lurching, or surface cracking for future hotel development allowed under the proposed PMP Amendment would be less than significant.

Liquefaction

The PMP Amendment area has a moderate to high potential for liquefaction and seismically induced settlement. As a manufactured land mass, East Harbor Island is likely underlain with depths of hydraulic fill. The hydraulic fill is underlain by bay deposits. When the ground shakes during a seismic event, such soils may settle, causing the surface to depress overtop of the unstable soil.

The proposed PMP Amendment would allow development of up to two hotels totalling 325 rooms, in addition to the proposed 175-room hotel, which would place structures on liquefiable soil. Without proper consideration of the liquefaction potential, foundations and structures could be damaged by ground settlement. This is considered a significant impact, and measures would be required to minimize liquefaction impacts to the extent possible.

Landslides

Due to the flat topography of East Harbor Island, the potential for substantial adverse effects due to landslides is extremely low. Therefore, impacts due to landslides on the development of up to two future hotels, in addition to the proposed 175-room hotel, allowed under the proposed PMP Amendment would be less than significant.

9.2.9.2.2 Soil Erosion

The development of up to two future hotels, in addition to the proposed 175-room hotel, allowed under the proposed PMP Amendment would be situated on sites that are currently developed with surface parking lots and marina-affiliated structures. No substantial quantities of soil would be eroded or lost as a result of future hotel developments. Therefore, the proposed PMP Amendment would result in a less-than-significant impact related to substantial erosion or loss of topsoil.

9.2.9.2.3 Soil Stability

The development of up to two future hotels, in addition to the proposed 175-room hotel, allowed under the proposed PMP Amendment would be situated on sites that are currently developed with surface parking lots and marina-affiliated structures. No soil stability issues have been identified for East Harbor Island. Therefore, the proposed PMP Amendment would result in a less-than-significant impact related to substantial erosion or loss of topsoil.

9.2.9.2.4 Expansive Soils

The majority of the soils on East Harbor Island are considered to have a very low to low expansion potential, as defined by the California Building Code Table 18-I-B. Therefore, impacts related to the development of up to two future hotels, in addition to the proposed 175-room hotel, allowed under the proposed PMP Amendment that could result in the location of people or property on expansive soils would not be significant.

9.2.9.3 Significant Impacts

GEO-2: The proposed PMP Amendment, which would allow development of the proposed 175-room hotel plus up to two additional hotels providing a total of 325 rooms, has the potential to result in significant impacts relative to geology and soils. Specifically, future hotel devleopment could be subject to liquefaction, and foundations and structures could be damaged by ground settlement.

9.2.9.4 Mitigation Measures

The following mitigation measures (summarized from the Geocon Study for the proposed 175-room hotel) shall be implemented to reduce impacts associated with geology to a less-than-significant level. For a complete description of the measures required by the Geocon Study, please refer to Appendix H-1 of this EIR.

MM GEO-2: 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 H-1) including the following site design criteria:

I. Except for stone columns and HEAT Anchor methods, dewatering shall be 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 Table 9.2.9-1.

Table 9.2.9-1. 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 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.

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 re-compacted.

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.

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.

9.2.9.5 Significance of Impacts after Mitigation

Implementation of mitigation measure MM GEO-2 would reduce significant impacts on geology and soils for future hotel development allowed under the PMP Amendment to below a level of significance.

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Section 9.2.10
Public Services and Utilities

The proposed PMP Amendment would allow the development of up to 500 hotel rooms in up to three hotels on East Harbor Island. One of these hotels, consisting of 175 rooms and ancillary facilities, is the Sunroad Harbor Island Hotel Project. No proposal has been received for the development of the remaining 325 rooms in one or two additional hotels. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future development allowed under the PMP Amendment, this analysis assumes that the reasonable worst case scenario that could occur with respect to impacts associated with public services and utilities would be development of up to two additional hotels with no more than a total of 325 rooms, in addition to the proposed 175-room hotel evaluated in the Draft EIR. When specific development proposals are received, they will be evaluated pursuant to CEQA Guidelines Section 15168 to determine whether additional environmental review would be needed.

This section evaluates the potential impacts of the proposed PMP Amendment on public services and utilities that serve the project area. This section is based on information provided by applicable public agencies during preparation of the Draft EIR, as well as during preparation of this chapter. Information on water and wastewater utilities are based on sewer and water studies prepared for the proposed 175-room hotel in 2009, as well as the *Harbor Island Hotel Water and Sewer Recommendations* study (dated June 5, 2013). Those sewer and water studies are included as Appendices I-1, I-2, and I-3, respectively, of this EIR.

9.2.10.1 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of impacts associated with public services and utilities resulting from future hotel development allowed under the PMP Amendment. Impacts are considered significant if future hotel developments would result in any of the following:

- result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- Fire protection
- Police protection
- Schools
- Parks

- exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- not have sufficient water supplies available to serve the project from existing entitlements and resources, or cause the need for new or expanded entitlements;
- result in the determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- be served by a landfill that does not have sufficient permitted capacity to accommodate the project's solid waste disposal needs;
- not be in compliance with federal, state, and local statues and regulations related to solid waste;
- increase the demand for energy so as to exceed the available supply, or cause the need for the construction of new or expanded facilities, the construction of which could cause significant environmental effects; or
- result in the wasteful, inefficient, or unnecessary use of energy.

The Port District does not currently have a threshold for quantifying impacts related to solid waste generation and disposal. Therefore, the following City threshold is used in the analysis for this document:

> Projects that include the construction, demolition, or renovation of 1,000,000 square feet or more of building space may generate approximately 1,500 tons of waste or more and are considered to have direct impacts on solid waste facilities.

9.2.10.2 Analysis of Project Impacts

9.2.10.2.1 Fire Protection

The proposed PMP Amendment would allow the development of up to two additional hotels totaling no more than 325 rooms, in addition to the proposed 175-room hotel. Future hotels would attract more people to East Harbor Island than under present conditions, and future hotel development would entail an increase in the intensity of use in the PMP Amendment area. This would place increased demand on the fire and emergency response services of the City's Fire Department and on the Harbor Police's fireboats.

A review of the proposed 175-room hotel project by the City Fire Department determined that the proposed 175-room hotel would present a considerable new facility that would require fire protection from the City Fire Department in an area where fire protection service facilities are currently inadequate, and 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 construction of up to two more hotels in addition to the proposed 175-room hotel would further add to the need for the City to construct an additional fire station. Construction of this station could cause additional impacts to the environment. Therefore, like the proposed 175-room hotel project, construction of up to two additional hotels on East Harbor Island would result in a significant impact on fire protection service by contributing to the need for the City to construct a new fire station.

The proposed PMP Amendment would not generate increased boat activity in the vicinity of the PMP Amendment area. Therefore, the proposed PMP Amendment would have a less-than-significant impact on Harbor Police fire protection services.

9.2.10.2.2 Police Protection

In review of the proposed 175-room hotel, the Port District's Harbor Police Department indicated that, if current staffing models are maintained, the 175-room hotel would receive adequate law enforcement service and would not necessitate new or physically altered facilities. Therefore, it was concluded that adequate service would be maintained by the Harbor Police and be sufficiently supported by the City San Diego Police Department (SDPD); and the proposed 175-room hotel would result in a less-than-significant impact on the Port District's Harbor Police Department law enforcement services.

The development of up to two additional hotels with a total of 325 rooms would also increase the demand of police protection from the City of San Diego Police Department and could necessitate a need for additional officers, in addition to the initial equipment. A letter was sent to the SDPD in May 2013 to notify the department of the proposed PMP Amendment and to solicit input on any potential adverse effects development of up to 500 hotel rooms in up to three hotels on East Harbor Island may have on police response times. A response letter was received from SDPD dated May 16, 2013, and is included in Appendix J-1 to this EIR. SDPD stated that the department is currently reaching its targeted staffing ratio of 1.45 officers per 1,000 residents. The proposed PMP Amendment would not result in population growth; therefore, it would not affect the department's staffing ratio.

The SDPD stated that there are no current plans for additional police sub-stations in the immediate project area. According to the SDPD, police response times will continue to increase with the build-out in the surrounding community and the increase of traffic generated by new growth. The SDPD recommends that Crime Prevention through Environmental Design (CPTED) measures be used to address general security concerns of future hotel development. Although the project site is not within the City's jurisdiction and not subject to a CPTED review, future hotel development would include many CPTED features that would maximize safety. Such features could include security cameras, a security office, appropriate signage to prohibit loitering, outdoor lighting with vandal-resistant lenses on light fixtures, etc. Incorporation of the security measures typical to hotel development would avoid any long-term impacts related to police services. Therefore, the proposed PMP Amendment would not result in an adverse physical impact by requiring new or physically altered police facility in order to maintain acceptable response times and service ratios.

9.2.10.2.3 Schools

The PMP Amendment does not include a permanent residential component and would therefore not result in an increased enrollment in local schools, nor the need for new schools. Thus, the PMP Amendment would have no impacts on schools.

9.2.10.2.4 Parks

There are two public parks in the vicinity of the PMP Amendment area: Spanish Landing Park and Harbor Island Park. The proposed PMP Amendment would allow the development of up to two additional hotels totaling no more than 325 rooms, in addition to the proposed 175-room hotel, on East Harbor Island. The new hotels would attract visitors and tourists. It is anticipated that hotel developments would provide on-site recreation in the form of a pool, spa, and/or fitness center or other similar amenities. Additionally, in accordance with the proposed PMP Amendment, all future hotel development would include construction of a public promenade along the Harbor Island East Basin frontage. The promenade would provide pedestrian access around East Harbor Island and would connect the hotel developments, marina, and restaurants to the rest of Harbor Island. Future hotels developed consistent with the proposed PMP Amendment would not result in significant impacts on parks.

9.2.10.2.5 Water

The proposed PMP Amendment would allow for the construction of up to two hotels totalling 325 rooms, in addition to the proposed 175-room hotel. As discussed in Section 4.10, *Public Services and Utilities*, the existing 10- and 8-inch water pipelines within East Harbor Island are not considered adequate to accommodate the increase in demand that would result from the proposed 175-room hotel. The proposed 175-room hotel would include the realignment of water lines. The realignment includes a 12-inch water line that would extend from the hotel to Harbor Island Drive. This water line would connect with existing facilities immediately south of the existing marina building and extend within Harbor Island Drive. In accordance with City requirements, a redundant loop connection would be included. The proposed 175-room hotel project would also include realigning existing off-site water lines serving the eastern end of Harbor Island to accommodate the proposed hotel. Therefore, the proposed PMP Amendment would result in less-than-significant impacts on water infrastructure services.

Based on the 2009 *Water Study for Harbor Island Hotel*, water demand for the 175-room hotel would generate 57,750 gallons of water per day (GPD). Based on the 2013 *Harbor Island Hotel Water and Sewer Recommednations* study, the addition of 325 hotel rooms would increase the demand to 158,813 GPD. The minimum pressure for the maximum days plus fire flow for the 175-room hotel is calculated at 113.2 pounds per square inch (psi). The minimum pressure for the addition of up to 325 hotel rooms would be 106.7 psi. The pressure loss of 6.5 psi due to the addition of 325 hotel rooms would not have a significant impact on the existing and proposed water system.

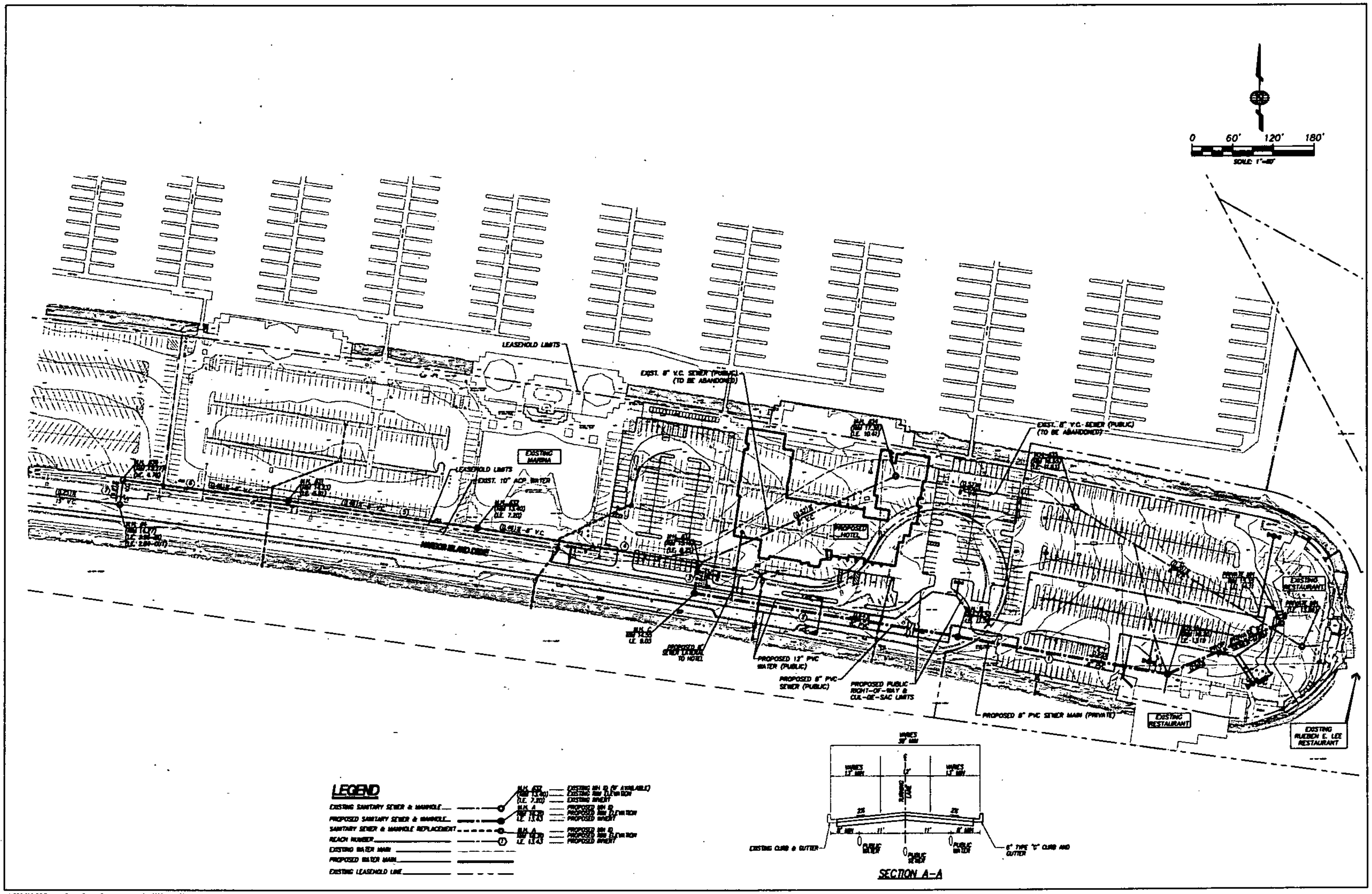
Senate Bills 221 and 610 require that a development the equivalent of 500 residential units or more or hotels or motels having more than 500 rooms obtain a Water Supply Assessment from the local water service provider. Senate Bill 221 applies to residential projects requiring a subdivision. Development that would be allowed under the proposed PMP Amendment is not a residential use; therefore, Senate Bill 221 does not apply to the proposed PMP Amendment. Furthermore, SB 610 applies to cities and counties and does not apply to the Port District. Therefore, the proposed PMP Amendment does not warrant preparation of a Water Supply Assessment, and it is considered that there is sufficient water supply available to serve proposed development that could occur under the PMP Amendment. The proposed PMP Amendment would result in less-than-significant impacts on water supply.

9.2.10.2.6 Sewer

With the addition of up to two hotels totalling no more than 325 additional hotel rooms, the total wastewater demand would be 306,000 GPD. The Point Loma Wastewater Plant that services the PMP Amendment area currently has a capacity to treat approximately 240 million GPD of wastewater, and averages treatment of approximately 175 million GPD. An additional 306 thousand GPD of wastewater from a total of not more than 500 hotel rooms that could occur under the proposed PMP Amendment would not exceed the capacity of the current system.

The City MWWD is responsible for providing treatment in accordance with Regional Water Quality Control Board (RWQCB) standards. Considering the project wastewater would be treated by the City in a City treatment plant that has adequate capacity, the project would not generate wastewater that would exceed wastewater treatment requirements of the applicable RWQCB, and the impact of future hotel development allowed under the Port Master Plan Amendment would be less than significant.

The proposed 175-room hotel, as well as future hotel(s) that could occur under the proposed PMP Amendment, would be connected to the City of San Diego wastewater treatment system. The sewer pipe that serves the PMP Amendment area varies in size with diameters of 8, 10, and 15 inches. The collector sewer main attaches directly to the North Metro Interceptor that directs flow to Pump Station 2. The proposed 175-room hotel project includes the realignment of sewer lines. The City reviewed the proposed 175-room hotel project and determined that with implementation of the proposed improvements to the sewer lines, the City sewer system would have adequate capacity to serve the proposed 175-room hotel. However, based on the 2013 *Harbor Island Hotel Water and Sewer Recommendations* study, the downstream sewer system does not have capacity to incorporate the added demand resulting from the additional 325 rooms that could occur under the proposed PMP Amendment and, therefore, future hotel development would have a significant impact on sewer service. In order to accommodate the additional 325 rooms, approximately 600 feet of the existing 8-inch sewer and four existing manholes would require replacement with a 10-inch sewer line and new sewer manholes. The location of these improvements is shown in Figure 9.2.10-1, *Harbor Island Sewer Study Map.* The sewer line/manhole replacements would occur beneath an existing parking lot and other areas where improvements occur and would not impact previously undisturbed areas. With the replacement of the sewer line and manholes, impacts to sewer service would be mitigated to below a level of significance.



Harbor Island Sewer Study Map
Figure 9.2.10-1

9.2.10.2.7 Stormwater

As discussed in Section 4.10, the proposed 175-room hotel project would construct stormwater drainage facilities. The proposed stormwater drains would be located mainly on the southern portion of the 175-room hotel site. Of these four storm drains, one involves removing an existing 18-inch drain and connecting a new 24-inch drain to an existing 24-inch drain, one involves removing a 24-inch drain and constructing a new 24-inch drain, one involves removing and modifying an existing 18-inch drain, and one involves constructing an entirely new drain southeast of the Project site. The drainage facilities would not have a significant impact on the environment, because these facilities would be constructed within the development area of the proposed 175-room hotel and concurrent with construction of structures and paving. Similarly, as future hotels are bought forward as would be allowed under the proposed PMP Amendment, those hotels would also provide for new storm drains, as necessary; and would also not have a significant impact because they would be constructed within the development area of the future hotel(s) concurrent with construction of structures and paving. Therefore, implementation of the proposed PMP Amendment would not result in a significant adverse impact on existing on- or off-site City storm drain systems, because collection of the stormwater generated by hotel development allowed under the proposed PMP Amendment would not require the City or the Project Applicant to construct new stormwater facilities either on- or off site that could cause significant environmental effects.

Stormwater cannot empty directly into the San Diego Bay; therefore, a stormwater detention system is necessary on the Project site. As discussed in Section 4.5, "Hydrology and Water Quality," and Section 9.2.5 of this chapter, hotel development allowed under the porposed PMP Amendment would be required to apply appropriate short-term (construction) and long-term (operational) BMPs by developing and implementing a Port District–approved SWPPP and USMP. The SWPPP and USMP would identify the stormwater detention mechanisms that would be implemented as part of the design of each hotel and that would be constructed within each development footprint.

9.2.10.2.8 Solid Waste

Solid waste collection in the vicinity of the PMP Amendment area is provided by City of San Diego franchised waste haulers. These waste haulers can dispose at any of the landfills in San Diego County. Hotel development that could occur under the proposed PMP Amendment would generate an increased amount of solid waste compared to the existing facilities due to the increased occupation and activity within the PMP Amendment area. It is anticipated that the increased amount of solid waste would result in impacts on the capacity of disposal facilities located in San Diego County.

The continued generation of solid waste within the County is placing recognized pressure on County landfills, and the need to identify alternative sites has recently become an issue of public interest. Therefore, to minimize impacts on County landfills, hotel development allowed under the proposed PMP Amendment would be operated in compliance with the City (and Port District) recycling programs consistent with City ordinances, reducing the solid waste generated by the Project. Future hotels would be less than 1,000,000 square feet. In addition, the demolition of the parking lot where future hotel(s) could occur would be less than 1,000,000 square feet. Therefore, construction and operation of future hotels that could occur under the proposed PMP Amendment would generate less than 1,500 tons of waste and, in accordance with City thresholds, would have a less-than-significant direct impact on solid waste facilities.

Although the proposed PMP Amendment would not have a significant impact on solid waste facilities, future hotels would be required to incorporate the following waste reduction measures, similar to what would occur with the proposed 175-room hotel as discussed in Chapter 3, "Project Description." These design features will be included as conditions of approval in the Coastal Development Permit for future hotel development and will assist future hotels in being consistent with City waste reduction ordinances.

- Reuse or recycle at least 75% of construction materials (including soil, asphalt, concrete, metal, and lumber).
- 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.

9.2.10.2.9 Electricity and Natural Gas

Implementation of the proposed PMP Amendment would increase the electrical and natural gas consumption within East Harbor Island, as new development in the form of up to three hotels with no more than 500 rooms could occur. Electricity and gas would be supplied to the PMP Amendment area through existing facilities located within Harbor Island Drive. It is anticipated that connections would be made with an existing 12 kilovolt (kV) power line and 2-inch high pressure gas lines located within Harbor Island Drive.

The California Independent System Operator requires that SDG&E have sufficient on-system resources and import capability to serve the full adverse peak summer demand forecast when the largest generator and a single transmission circuit are out of service. To address long-term energy needs, SDG&E has filed a resource plan with the California Public Utilities Commission (CPUC), which proposes a mix of conservation, demand response, generation, and transmission to provide reliable energy for the next 20 years. SDG&E assumes an annual average growth rate of 2% with respect to system peak load (Katsapis 2004), with the actual timing and quantity of resources to be procured based on near-term circumstances (McClenahan 2004).

SDG&E provided a "will serve" letter stating that the proposed 175-room hotel would be served by SDG&E for electric and gas service. SDG&E also concluded that the proposed 500 cubic feet per hour associated with the 175-room hotel 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). In addition, SDG&E indicated that the existing substation capacity can handle the new load increase associated with the proposed 175-room hotel (Jones 2009). Additional correspondence with SDG&E indicates that gas and electric facilities can be made available to future hotels located within the PMP Amendment area (SDG&E; June 12, 2013). Therefore, the proposed PMP Amendment would have a less-than-significant impact on electric and gas infrastructure, and the increase in demand associated with the devleopment of up to three hotels of not more than a total of 500 rooms would result in less-than-significant impacts on energy supply and would not require the construction of new or expanded facilities.

Future hotel development would incorporate various sustainability and energy conservation measures that result in a reducing consumption of water and energy. These include construction, energy conservation, water conservation, solid waste, and transportation measures that would reduce consumption of electricity, natural gas, and gasoline. Many of these design features would result in a substantial decrease in energy consumption. For example, it is anticipated that future hotel development would exceed California's Energy Efficiency Standards (Title 24) by 15%. In addition, future hotels would incorporate various measures that would reduce energy consumption, including the use of recycled and local building materials; installation of Energy Star appliances, lighting, and roofing; solar heating for pools and spas; low-flow urinals, toilets, faucets, and shower heads; drought-tolerant landscaping; and adequate recycling facilities. Further, future hotels would reduce motor vehicle trips and gasoline consumption by installing bicycle parking facilities and providing shuttle service to and from the airport. With implementation of these measures, the proposed PMP Amendment 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. As a result, the proposed PMP Amendment would not result in the wasteful, inefficient, or unnecessary use of energy.

9.2.10.3 Significant Impacts

PUB-2: Due to one of the responding fire stations being above its annual current workload capacity, the City of San Diego Fire Department indicated that a new fire station is necessary in the area. The increased demand for fire protection service associated with the proposed PMP Amendment, which would allow the construction of up to two additional hotels, may contribute to the need for the City to provide additional facilities and/or expanded services. Construction of a new fire station could cause additional impacts to the environment. Therefore, hotel development associated with the proposed PMP Amendment could result in a significant impact on fire protection service.

PUB-3: The downstream sewer system does not have capacity to incorporate the added demand resulting from the additional 325 rooms that could occur under the proposed PMP Amendment. Therefore, development of up to two additional hotels totalling not more than 325 rooms could result in a significant impact to the City's sewer system.

9.2.10.4 Mitigation Measures

MM PUB-2: Prior to the issuance of each certificate of occupancy for future hotels allowed by the PMP Amendment, the Project Applicant(s) shall pay its fair share of the cost of constructing a new fire station in the vicinity of Liberty Station in the amount determined by the City of San Diego. This fire station is within the Peninsula Public Facilities Financing Plan, Fiscal Year 2001 community boundary. The fair share contribution shall be paid to the City of San Diego and will be deposited into the Developer Contribution Fund No. 200636. In the event the City of San Diego has not determined the amount of the fair share of the cost of constructing a new fire station in the vicinity of Liberty Station at the time a future hotel 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.

MM PUB-3: Prior to the construction of the second hotel within the PMP Amendment area, the Project Applicant(s) shall replace the existing 8-inch sewer and four manholes as indicated in Figure 9.2.10-1, to the satisfaction of the City of San Diego Engineer.

9.2.10.5 Significance of Impacts after Mitigation

The City has identified the construction of the fire station in the vicinity of Liberty Station (former Naval Training Center) as a Tier-2, low priority project. This fire station would be the primary location from which emergency fire, rescue and medical resources would be provided to the Proposed Project. The fire station is identified as a proposed project in the Fire Station Master Plan (February 2009) and is within the Peninsula Facilities Financing Plan, Fiscal Year 2001 community boundary. Final location for the required facility shall be determined by the Fire Rescue Department, to ensure compliance with National Response time standards. Although implementation of mitigation measure MM PUB-2 could mitigate impacts of the proposed 175-room hotel and the development of up to two additional hotels on East Harbor Island on fire services to a less-than-significant level, the mitigation measure is within the jurisdiction of the City of San Diego and not the Port District. Accordingly, the Port District cannot assure that this mitigation measure would be implemented when needed. Therefore, the impact from the development of two hotels, in addition to the proposed 175-room hotel, on fire service is considered significant and unmitigated.

With implementation of MM PUB-3, which call for the replacement of the existing 8-inch sewer and four manholes, adequate sewer service would be provided to serve the future development of up to two hotels, in addition to the proposed 175-room hotel. Impacts associated with sewer service would be mitigated to below a level of significance.

Section 9.2.11
Recreation

The PMP Amendment would allow the development of up to 500 hotel rooms in up to three hotels on East Harbor Island. One of these hotels, consisting of 175 rooms and ancillary facilities, is the Sunroad Harbor Island Hotel Project. No proposal has been received for the development of the remaining 325 rooms in one or two additional hotels. Nonetheless, to ensure full disclosure and evaluation of the potential environmental effects of future development allowed under the PMP Amendment, this analysis assumes that the reasonable worst case scenario that could occur with respect to impacts associated with recreation would be development of 325 hotel rooms in either one or two hotels, in addition to the proposed 175-room hotel, for a combined total of 500 rooms. When specific development proposals are received, they will be evaluated pursuant to CEQA Guidelines Section 15168 to determine whether additional environmental review would be needed.

9.2.11.1 Impact Significance Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and are the basis for determining the significance of project impacts on recreation resulting from future hotel development allowed under the PMP Amendment. Impacts are considered significant if future hotel development allowed under the proposed PMP Amendment would:

- increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse effect on the physical environment.

9.2.11.2 Analysis of Project Impacts

9.2.11.2.1 Increase in the Use of Existing Parks or other Recreational Facilities

The PMP Amendment area includes the approximately 0.34-acre traffic circle located at the eastern terminus of Harbor Island Drive. The traffic circle area is designated as Open Space by the Precise Plan. Implementation of the proposed PMP Amendment would include reduction and realignment of the traffic circle to accommodate the proposed 175-room hotel and associated parking and a realignment of Harbor Island Drive. The open space within the traffic circle currently contains shrubs and trees and is unusable for public recreational opportunities.

Also located within the PMP Amendment area is an approximate 1.15 acres of Open Space in the southwest corner of the parking lot previously used for airport employee parking. The land use designation of this area would be changed from Open Space to Commercial Recreation as part of the proposed PMP Amendment. This open space currently contains shrubs and trees and is unusable for public recreational opportunities.

The removal of open space areas is compensated for by the provision of approximately 0.14 acre of public promenade proposed as part of the 175-room hotel on the basin (north) side of the hotel and the requirement that future hotel development of up to two additional hotels also provide for the public promenade. In total, the PMP Amendment would add 0.8 acre of public promenade to East Harbor Island. The promenade would provide enhanced public access (i.e., landscaping, benches, and signage) to what is currently located on site and would create an area that is usable to the public, rather than the unusable open space in the traffic circle and in the southwest corner of the existing parking lot. The promenade would consist of a 10-foot-wide hardscape path and would extend west from a promenade that will be developed as part of the Reuben E. Lee restaurant redevelopment. The expanded promenade would provide for enhanced public access to East Harbor Island that is not currently provided for in the existing Precise Plan. Internal circulation on the site of the proposed 175-room hotel as well as the sites for up to two additional hotels would allow access through hotel development sites to Harbor Island Drive. Landscape improvements, benches for seating, and signage identifying the areas as open to the public would be located adjacent to the promenade.

Although there would be a decrease in the amount of existing open space, the proposed 175-room hotel project and the future development of up to two hotels that would be allowed under the proposed PMP Amendment would provide sufficient recreational facilities for public use by extending and enhancing the promenade along the basin side of the proposed hotel.

Development of up to two hotels, in addition to the proposed 175-room hotel, allowed under the PMP Amendment would increase the number of visitors to

East Harbor Island. As stated above, the proposed PMP Amendment requires that a public promenade be constructed as part of future hotel development. Ancillary recreation facilities would be provided by each hotel development and, together with the public promenade, would provide adequate recreational opportunities for visitors to the hotel. Therefore, development of up to two hotels, in addition to the proposed 175-room hotel, would not result in an increased demand for existing recreational facilities that would result in substantial deterioration of or the need to physically alter those facilities. In addition, future hotels allowed under the PMP Amendment would enhance recreational opportunities and provide for additional coastal access as required by the Coastal Act by extending the promenade along the basin side of the proposed hotel. As a result, the proposed PMP Amendment would result in less than a significant impact on existing recreational facilities.

9.2.11.2.2 Construction of Recreational Facilities

The proposed PMP Amendment would provide enhanced recreational opportunities at the water's edge. All future hotel development allowed by the proposed PMP Amendment would include construction of a public promenade along the eastern portion of the East Harbor Island subarea and along Harbor Island East Basin frontage. As stated in the proposed PMP Amendment, when fully realized, 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. Located to provide views of the San Diego Bay, the downtown San Diego skyline, and the Harbor Island East Basin, the promenade will be sited to allow uninterrupted pedestrian flow. Benches and viewing decks along the promenade will be located in a manner that that will enhance viewing opportunities while not obstructing pedestrian flow. Public access and other path-finding signage, as well as signage identifying that the promenade is open to the public, will be incorporated into the design of the promenade to guide guests and visitors to and from public use areas, restaurants, and other facilities.

Construction of the promenade would occur in conjunction with future hotel development and in previously disturbed areas. Impacts on the physical environment associated with developing up to two hotels, including future extensions of the promenade, are addressed in other subsections of this chapter. Construction of the proposed 175-room hotel also includes the construction of a promenade along the basin side of that hotel. The Draft EIR evaluates the construction of the 175-room hotel, including the promenade associated with that hotel.

9.2.11.3 Significant Impacts

The future hotel development of up to two hotels allowed under the PMP Amendment, separately and when combined with the proposed 175-room hotel, would not result in significant impacts to recreation. As a result, no mitigation is required.

9.2.11.4 Mitigation Measures

Because the PMP Amendment, allowing the development of up to two hotels in addition to the proposed 175-room hotel, would not result in significant impacts to recreation. No mitigation measures are required.

9.2.11.5 Significance of Impacts after Mitigation

Because the PMP amendment would not result in significant impacts to recreation, no mitigation measures are required.

9.3 Cumulative Impact Analysis

9.3.1 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*."

9.3.2 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.

9.3.2.1 Cumulative Growth Projections

The cumulative traffic analysis and the related cumulative air quality, GHG, and noise analyses were conducted for the proposed PMP Amendment 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 PMP Amendment area and contribute future vehicle trips to the studied roadways and intersections. The Noise Analysis Report, Air Quality Technical Report, and GHG Evaluation performed for the PMP Amendment 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.

9.3.2.2 Cumulative Projects List

Other than traffic, air quality, GHG, 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 East Harbor Island. 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 9.3-1, *Cumulative Projects*. Locations for the cumulative projects is shown in Figure 9.3-1, *Cumulative Projects Map*.

A total of 37 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 East Harbor Island on the land side, but is expanded to include additional areas west and southeast of East Harbor Island containing clusters of projects that were deemed applicable to the cumulative analysis. It was determined that 1.5 miles was a reasonable scope because of the densely built-out nature of the area around the East Harbor Island, the unique geography and limitations of access to Harbor Island, the limited geographical area that would be cumulatively affected by the proposed PMP Amendment 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 the environmental issue areas. With the exception of cumulative noise impacts, NAS North Island was excluded from the cumulative projects scope because of its physical isolation from the PMP Amendment area and the limited accessibility of 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.

Table 9.3-1. 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 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 4,800 sf to accommodate business and social events. A proposed single story replacement dining restaurant, lounge and banquet facility of approximately 12,200 sf of enclosed space and approximately 10,400 sf of exterior space 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 around the perimeter of the site.	Anticipated to be operational by 2014.	No
2	Marina Cortez Dock Replacement	1880 Harbor Island Drive, west of PMP Amendment area	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.	Complete.	No

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
3	2701 North Harbor Drive Demolition	2701 North Harbor Drive, northeast of PMP Amendment area	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.	Complete.	No
4	Cleanup and Abatement Order	2701 North Harbor Drive, northeast of PMP Amendment area	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.	No

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
5 (a–j)	San Diego International Airport Master Plan	3225 North Harbor Drive, north of PMP Amendment area	The San Diego County Regional Airport Authority (SDCRAA) proposes implementation of the following components of the Airport Master Plan: (1) expand existing Terminal 2 West with 10 new jet gates; (2) construct new aircraft parking and replacement Remain-Over-Night (RON) aircraft parking apron; (3) construct new apron and aircraft taxi lane; (4) construct new second level road/curb and vehicle circulation serving Terminal 2; (5) relocate and reconfigure SAN Park Pacific Highway; (6) construct a new access road from Sassafras Street/Pacific Highway intersection; (7) construct new general aviation facilities including access, terminal/hangars, and apron; (8) demolish existing general aviation facilities; and (9) reconstruct Taxiway C, construct new apron hold areas, and new taxiway east of Taxiway D.	The SDCRAA certified the EIR and adopted the AMP in May 2008. Construction began in 2009 and is anticipated to be completed in 2013.	No
6	Holiday Inn Bayside Hotel Expansion	4875 North Harbor Drive, west of PMP Amendment area	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 began mid-2012 and will be complete in late 2013.	No

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
7	North Embarcadero Port Master Plan Amendment	Area bordered by Market Street on the south, Laurel Street to the north, the railroad right-of-way to the east, and the San Diego Bulkhead line (the bayward edge of land) to the west; southeast of PMP Amendment area	The project includes amending the Port Master Plan for the North Embarcadero area to incorporate planning designation and use changes to include the following components: adjust the Port Master Plan boundary to incorporate the Navy Pier; assign land use designation(s) and future projects to the Navy Pier including a park; remove reference and graphic providing a new curvilinear pier at Grape Street; incorporate the constraints of homeland security requirements on maritime facilities and public access; incorporate a new youth hostel as a permitted use; specify excursion facility locations; recognize the G Street Mole park as a memorial park; assign development parameters and standards to 1220 Pacific Highway; incorporate other Port Master Plan text, land use, and graphic modifications as needed. The NE-PMPA also includes the proposed Veterans Park on Navy Pier project. The Veterans Park project would convert the existing 386-space surface parking lot on Navy Pier to a public park, either at ground level or above a pier-level parking deck, with various visitor-serving amenities. The existing building at the base of Navy Pier would be demolished. The proposed Veterans Park project may include a parking level with approximately 517 parking spaces below a 6.45-acre public park.	Undergoing CEQA review. The Notice of Preparation was issued in October 2010, and reissued in October 2011 and March 2011. Implementation is expected to begin in 2013 and end in 2018.	Yes
8	B Street Mooring Dolphin	1140 North Harbor Drive; southeast of PMP	Construction of a mooring dolphin west of B Street Pier to extend the mooring limits of the north berth from 1,000 feet to 1,200 feet in order to allow newer and longer	Undergoing CEQA review.	Yes

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
		Amendment area	vessels to berth at the pier. Includes installation of a new pile-supported, 600 sf concrete mooring dolphin platform, 170-foot long catwalk supported by two concrete piles, two 150-ton mooring bollards, and navigation lights and fenders on the dolphin.		
9	Eichenlaub Marine	2608 Shelter Island Drive, west of PMP Amendment area	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.	Completed in 2010.	No
10	North Harbor Drive Realignment Project	North Harbor Drive corridor between Scott Street and Nimitz Boulevard, west of PMP Amendment area	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 2013 and end in 2015.	Yes

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
11	Public Safety Training Institute	Camp Nimitz Parcel (Naval Training Center), McCain Road, west of PMP Amendment area	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 PMP Amendment area	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	Liberty Station East Hotel	2220 Lee Court in Liberty Station, west of PMP Amendment area	Construction of three hotels totaling 650 rooms and a 3,810 square foot restaurant.	Development Permit in review.	Unknown
14	Building 902	Historic Decatur Road, Liberty Station, west of PMP Amendment area	100,000 ft^2 new office building.	Construction planned to begin 2009.	No
15	The Landing	Historic Decatur Road, Dewey Road, Sims Road, Truxtun Road, Liberty Station, west of PMP Amendment area	Retail use of seven existing historic buildings.	Shell Permits issued, pending ALUC determinations and/or tenant improvement permits.	Unknown

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
16	Shoreline Plaza	Historic Decatur Road, Sims Road, Liberty Station, west of PMP Amendment area	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 PMP Amendment area	Construction of approximately 32,000 ft^2 of office/retail.	Development Permit in review.	Unknown
18	Lane Field Project	Between Harbor Drive and Pacific Highway north of Broadway, southeast of PMP Amendment area	Two hotels (totaling 800 rooms), parking facilities, and retail uses on a 5.8-acre parcel formerly used as a parking lot. Construct public park/plaza in 150-foot setback from Harbor Drive on Lane Field.	Coastal Development Permit issued in February 2013 by Coastal Commission. Construction expected to begin in early 2013 and end in mid-2015.	Yes
19	Broadway Pier Cruise Ship Terminal	Western end of West Broadway (over Bay water), southeast of PMP Amendment area	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.	Complete.	No
20	Shorepower at B Street Cruise Ship Terminal	End of West B Street (over Bay water), southeast of PMP Amendment area	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.	Complete.	No

Project #	Name	Location	Description	Status	Possible Overlap with Proposed Project Construction?
21	NEVP Phase 1 Coastal Access Features Project	North Harbor Drive between B Street Pier and Broadway Pier; southeast of PMP Amendment area	Realignment of North Harbor Drive between Broadway Pier and B Street Pier to create an approximately 105-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.	Construction in process. Anticipated to be complete in 2014.	No
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 PMP Amendment area	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.	Complete.	No
23	Mega Yacht Moorings Project	Between Grape Street Piers and the Maritime Museum, southeast of PMP Amendment area	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	Point Loma Marina	America's Cup Harbor, west of PMP Amendment area	Construction of a one two-story building, extended plaza for the PLM's Phase Two project.	Construction anticipated to begin late 2013 and end 2015.	Yes

25	Residential Mixed Use Tower	880 West Broadway, Northeast Corner of Pacific Highway and Broadway	A 41-story tower comprising 232 residential condominium units, 16,000 square feet of ground-floor retail space, and 419 residential parking spaces.	Centre City Development Corporation granted design review approval on June 27, 2012.	No
26	Bayside Fire Station CCDP 2010-27 533-321-01, 02 City of San Diego	Southeast corner of Pacific Highway and Cedar	Three-bay City of San Diego Fire Station	Design approved. Construction pending funding.	Unknown
27	Navy Broadway Complex Manchester Financial Group	Broadway/ Harbor/Pacific Highway	• 1,265,000-square-foot office • 350,000-square-foot Navy office • 1,500 hotel rooms • 160,000-square-foot retail • 40,000-square-foot museum	Development Agreement, Master Plan, Phase I Buildings Consistency Determination approved in 2009.	No
28	Columbia Tower CCDP 2008-47 533-404-01/07 Chhatrala Group	South side of A Street between India and Columbia Streets	389-room hotel 12 condominiums	Pending completion of building plans (schematic level).	Unknown
29	Naval Base Point Loma (NBPL) Fuel Pier (18) Replacement and Dredging	Naval Station Point Loma and Alternative Bait Barge Locations within state lands	Construct temporary Space and Naval Warfare Systems Center (SSC) marine mammal facilities at Naval Main and Anti-Submarine Warfare Command (NMAWC) and then relocate the program to NMAWC; demolish existing NBPL Fuel Pier in phases so as to leave pier operational throughout project; construct 71,180-square-foot double-deck replacement pier and perform associated dredging; return SSC marine mammal program to original location.	Environmental review in progress. Construction estimated to start winter 2013.	No
30	B Street Pier Cruise Ship Terminal Maintenance Projects		Projects on B Street Pier required to address routine maintenance requirements and to improve safety, security, integrity, aesthetics, and comfort of this facility. • Roof replacement – includes demolition and disposal of roof system,	Approved by the District in early 2012. To be completed by June 2013.	No

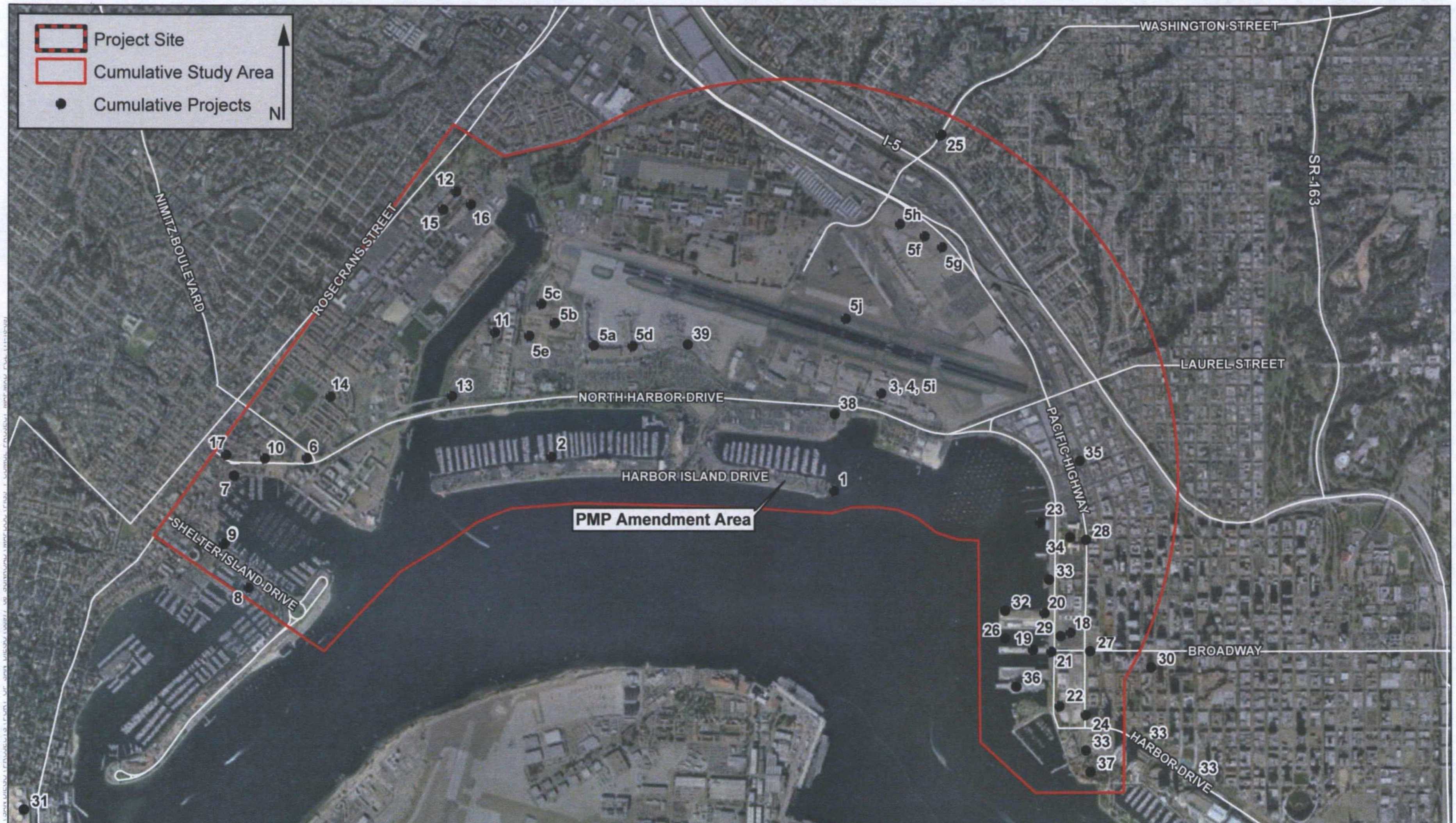
installation of new roof system, replacement and reinforcement of ceiling rafters, installation of new sheet metal gutters, and other work incidental to the roof replacement.

- Canopy improvements – includes demolition and disposal of existing canopies and support structures and installation of a new steel support frame with sheet metal roofing panels, gutters, and downspouts. This project includes a new canopy fire sprinkler and LED lighting system that will conform to current fire protection codes and energy efficiency standards.
- Roll-up and rolling grate doors installation – includes removal of 10 manually operated steel roll-up doors and replacement with 10 new power-operated sectional roll-up doors and security grills.
- Fire system upgrades – includes replacement of fire sprinkler heads, repair of fire mains, addition of automatic fire sprinkler protection, replacement of valves, provision of additional fire extinguishers, replacement of fire alarm system with voice evacuation fire alarm system, and other associated work.
- Clean and paint ceilings and hangers – includes interior cleaning, preparation, spot priming, and painting of certain ceilings, perimeter walls, and exposed portions of various building systems including beams, wood joists, electrical conduits, piping, drain lines, sprinkler piping and associated metal hangers, supports, stays, and other ancillary

			items. • Mobile gangway and platform painting – includes removal and treatment of corrosion areas and further cleaning, preparing, and repainting of the existing mobile gangway and access balcony.		
31	Big Bay Shuttle	Shuttle Stops along the Embarcadero in downtown San Diego	Bayfront shuttle program along the Embarcadero to connect visitor attractions such as the San Diego Convention Center, Seaport Village, and the USS Midway Museum. The shuttles run along portions of Harbor Drive and Pacific Highway from the Sheraton San Diego Hotel & Marina on Harbor Island to the Hilton San Diego Bayfront Hotel in the South Embarcadero.	The trial run began on Memorial Day and ended on Labor Day 2012; the District is in the process of implementing a permanent shuttle system anticipated to be operational in summer 2013.	No
32	County Waterfront Park	1600 Pacific Hwy, San Diego, CA	Conversion of the large-grade parking lots north and south of the historic County of San Diego Administration Center to a large community and regional open space amenity. The 11-acre park will include large civic greens, children's play area, intimate garden rooms, and an expansive interactive fountain.	EIR certified in May 2003. Construction began in September 2012 and is anticipated to be complete in spring 2014.	No
33	Fat City Hotel Project	Block bounded by Pacific Highway, Ivy, California and Hawthorn Streets, San Diego, CA	Construction of a six-story (60-foot-tall) building containing two hotels with a total of 364 hotel rooms and 182 parking spaces.	Project approved by City of San Diego Planning Commission on July 26, 2012. Construction anticipated to begin in 2013.	Yes
34	Bay Tour Operators Relocation	910 North Harbor Drive, San Diego, CA	Relocation of District tenants Flagship Cruises and Events and Hornblower Cruises and Events just south of Broadway Pier. Includes construction of new floats, docks, and gangways on the waterside. Landside improvements include new ticket kiosks and utility improvements including installation of shore power equipment.	Construction began in January 2012 and is anticipated to be completed by spring 2014.	No

35	Seaport Village Planning Project	849 West Harbor Drive, San Diego, CA	Remake of Seaport Village, which may include a small hotel, construction of an iconic building with retail uses, as well as new restaurants in the complex located at the foot of Kettner Boulevard.	The District adopted visioning goals for the Seaport Village redevelopment at its December 13, 2011, meeting. District staff is reviewing the developer's preliminary redevelopment plans.	Unknown
36	SAN Park Harbor Drive Reconfiguration	3015 North Harbor Drive, SAN Park Harbor Drive Airport Parking Lot, SDIA, San Diego, CA	Relocate employee parking lot from Harbor Island and free cell phone lot to existing SAN Park Harbor Drive parking lot (former Teledyne-Ryan site) to consolidate airport parking facilities; reconfigure and expand Harbor Drive parking lot from 763 spaces to 2,815 spaces to accommodate 1,587 public spaces, 1,088 employee spaces, and 140 free cell phone spaces; resurface and stripe parking lot; relocate two existing parking control kiosks; construct two new 82-square-foot parking control kiosks; and construct road and intersection improvements at North Harbor Drive and Rent-A-Car Road.	Coastal Commission approved the coastal development permit on June 14, 2012. Construction began in 2012 and is expected to be completed in 2013.	No
37	San Diego International Airport Master Plan – Northside Improvements	3225 North Harbor Drive, San Diego, CA	Includes the following: construction of a 6,500-space consolidated rental car (CONRAC) facility, a 2,170-space public surface parking lot, and 225,000 square feet of air cargo facilities on the north side of San Diego International Airport.	The SDCRAA certified the Supplemental EIR on September 1, 2011. Construction began in 2012 and is anticipated to be completed in 2017.	Yes

Sources: Port District 2009b, 2013



Source: ESRI Imagery, 2007

Cumulative Projects Map
Figure 9.3-1

9.3.3 Cumulative Impact Analysis

The proposed PMP Amendment would allow the development of up to two hotels, with a combined total of not more than 325 rooms, in addition to the proposed 175-room hotel, for a cumulative total of 500 rooms in no more than three hotels on two locations in East Harbor Island. The discussion below evaluates the potential for the proposed PMP Amendment to contribute to an adverse cumulative impact related to the environmental issue areas addressed in Section 9.2, *Environmental Analysis*. For each environmental issue area, an introductory statement is made regarding what would amount to a significant cumulative impact with regards to the specific environmental issue area being evaluated. 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 future hotel development's contribution to any cumulative impact would be cumulatively considerable.

9.3.3.1 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 9.3-1, *Cumulative Projects*, 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 proposed PMP Amendment, which would allow development of up to two hotels totaling 325 rooms, in addition to the proposed 175-room hotels, would contribute.

All of the projects listed in Table 9.3-1 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 PMP Amendment 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 PMP Amendment, allowing the development of up to two hotels totaling 325 rooms, in addition to the proposed 175-room hotels, would contribute.

Several of the projects listed in Table 9.3-1 would improve physical and visual coastal access by constructing new or enhanced promenades and/or open space along the bay. Future hotel development that could occur under the proposed PMP Amendment would also create new public access along the basin side of the hotels. Several of the listed projects would develop new structures fronting on the bay; but these projects, similar to the future hotel development that could occur under the proposed PMP Amendment, 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 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 PMP Amendment, including the future development of up to two additional hotels with up to 325 rooms and the proposed 175-room hotel, would not contribute to a significant adverse cumulative impact on coastal access.

9.3.3.2 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 9.3-1 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 PMP Amendment, which would allow development of up to two hotels totaling 325 rooms, in addition to the proposed 175-room hotel, 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 future development of up to two additional hotels providing a combined total of 325 rooms allowed by the proposed PMP Amendment and the proposed 175-room hotel could contribute.

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 9.3-1.) are not located adjacent to areas containing eelgrass according to the 2008 Survey. Impacts to eelgrass are not anticipated with construction of up to two additional hotels providing a combined total of 325 rooms allowed by the proposed PMP Amendment and the proposed 175-room hotel. Future hotel development allowed by the proposed PMP Amendment would not result in a significant impact on eelgrass, nor would any projects in the cumulative study area result in eelgrass shading. Future development of up to two additional hotels, in addition with the proposed 175-room hotel, that could occur on East Harbor Island under the PMP Amendment would occur in the westernmost portion of East Harbor Island and would not occur in areas where eelgrass is identified (see Figure 9.2.2-1, *Eelgrass Survey Area*) and impacts on eelgrass beds would not occur. Other projects in the cumulative projects study area also would not result in eelgrass shading. Therefore, the future hotels that could occur under the proposed PMP Amendment would not contribute to a significant adverse cumulative impact on eelgrass.

Section 9.2.2 identified a significant impact associated with the potential disturbance of nesting birds. This impact is related to construction activity and disturbance that would occur within the PMP Amendment area; 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 construction of future hotels on East Harbor Island, making it likely that 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-2, as stated in Section 9.2.2.6, which restricts construction during the 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. Other projects included in the cumulative impacts analysis would also be subject to a similar mitigation measure, in accordance with the federal Migratory Bird Treaty Act. No additional mitigation is needed to address the contribution to this potential cumulative impact resulting from the proposed PMP Amendment that would allow the development of up to two hotels totaling 325 rooms, in addition to the proposed 175-room hotel.

9.3.3.3 Aesthetics

A significant adverse cumulative aesthetics impact would occur where the development of the cumulative projects would degrade 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 9.3-1 would represent a cumulative enhancement of visual quality, to which the potential future development of up to two additional hotels providing a combined total of 325 rooms allowed by the PMP Amendment and the proposed 175-room hotel, would contribute.

Some of the cumulative projects would develop structures on Harbor Island, and that development may be cumulatively visible from some distant vantage points, including from recreational boaters in the bay waters near the PMP Amendment area. 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 PMP Amendment, 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 development of up to two additional hotels providing a combined total of 325 rooms at one or two locations in East Harbor Island Subarea 23 and the proposed 175-room hotel allowed by the PMP Amendment would contribute. None of the cumulative projects listed in Table 9.3-1 would combine with the proposed PMP Amendment, which would allow development of up to two hotels totaling 325 rooms, in addition to the proposed 175-room hotel, to block views. Therefore, there is no associated cumulative impact.

9.3.3.4 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 9.3-1 propose features that would regularly emit hazardous materials into the water, ground, or air as part of their function. Similar to the proposed PMP Amendment, 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, state, and federal regulations as would oversee future hotel development allowed under the proposed PMP Amendment, and inspections would be 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 so as 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 6), entails remediation of an acknowledged hazardous materials issue near the PMP Amendment area. But this cumulative project site is separated from the PMP Amendment area by Harbor Drive and the Harbor Island East Basin and would have no effect on the proposed PMP Amendment area.

Therefore, there is no significant cumulative impact related to hazardous materials releases to which the proposed PMP Amendment, which would allow development of up to two hotels totaling 325 rooms, in addition to the proposed 175-room hotel, 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 development of up to two additional hotels providing a combined total of 325 rooms allowed by the PMP Amendment and the proposed 175-room hotel, 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 PMP Amendment area. 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 PMP Amendment, all of the cumulative projects would be subject to review by the City of San Diego Fire Department to ensure that adequate emergency access is maintained. Therefore, there is no cumulative impact to which development of up to two hotels, with a combined total of not more than 325 rooms at one or two locations, in addition to the proposed 175-room hotel, within Subarea 23 of the PMP would contribute.

9.3.3.5 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 9.2.5, *Hydrology and Water Quality*, future hotel development allowed under the proposed PMP Amendment, which would allow development of up to two hotels totaling 325 rooms, in addition to the proposed 175-room hotel, would not result in impacts with respect to flooding or surface water flows. Therefore, the proposed PMP Amendment'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 9.3-1 are located in the Pueblo watershed, the same watershed as the PMP Amendment area; 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 9.2.5, *Hydrology and Water Quality*, the water quality impacts associated with the development of up to two hotels, with a combined total of not more than 325 rooms in one or two locations, in addition to the proposed 175-room hotel, would be less than significant. All of the cumulative projects listed in Table 9.3-1 have the potential to similarly contribute polluted runoff to the bay, thereby furthering its impairment. However, like the future hotels that could occur under the proposed PMP Amendment, 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 9.3-1, combined with the development of up to two hotels with not more than 325 rooms in one or two locations, in addition to the proposed 175-room hotel, is not anticipated to be a significant adverse impact on water quality. Therefore, the proposed PMP Amendment would not make a cumulatively considerable contribution to a significant cumulative impact on water quality.

9.3.3.6 Transportation, Traffic, and Parking

Cumulative traffic impacts result when multiple projects contribute trips to the same circulation system. As part of the Traffic Study prepared for the proposed PMP Amendment by LLG (Appendix E-1), an analysis of cumulative impacts to traffic and circulation was conducted. The results of the cumulative traffic analysis is presented below.

Significance Criteria

As explained in Section 9.2.6 of this chapter, the Port District uses the City of San Diego impact thresholds related to LOS factors. These thresholds are shown in Table 9.2.6-1, *City of San Diego Traffic Impact Significance Thresholds*.

Cumulative Construction Traffic Impacts

As shown in Table 9.3-1, some cumulative projects may be constructed in the same general time frame as the hotel development allowed under the proposed PMP Amendment. However, those project are located a distance from the PMP Amendment area. Construction traffic from those projects would not likely utilize the same roadways as would be used for construction of future hotels on East Harbor Island.As discussed in Section 9.2.6 of this chapter, future hotel development that could occur under the proposed PMP amendment is estimated to generate 100 ADT of construction traffic during the most traffic-intensive phase. Considering that, as discussed in Section 9.6.2, no near-term significant impacts were identified in association with future hotel development that could occur under the proposed PMP Amendment, including the development of up to two hotels with no more than 325 rooms and the proposed 175-room hotel, the cumulative construction traffic would also not result in adverse impacts on intersections and roadway segments.

In addition, all projects listed in Table 9.3-1 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 PMP Amendment, which would allow development of up to two hotels totaling no more then 325 rooms, in addition to the proposed 175-room hotel, would not contribute to significant cumulative construction traffic.

Level of Service Impacts for Long-Term Scenario

The source for the Year 2030 traffic volumes is the Series 11 Forecast Model from SANDAG. Figure 9.3-2, *Year 2030 Without Project Traffic Volumes – AM/PM Peak Hours and ADT*, illustrates the Year 2030 without Project Traffic Volumes. Figure 9.3-3, *Scenario A: Year 2030 With Project Traffic Volumes – AM/PM Peak Hours and ADT*, illustrates the Year 2030 with Scenario A Project Traffic Volumes; and Figure 9.3-4, *Scenario B: Year 2030 With Project Traffic Volumes – AM/PM Peak Hours and ADT,* illustrates the Year 2030 with Scenario B Project Traffic Volumes. As noted in Section 9.2.6, to ensure full disclosure and evaluation of the potential environmental effects of future hotel development allowed under the PMP Amendment, the analysis of potential impacts on transportation, traffic, and parking in this section evaluates potential hotel development that could occur under the proposed PMP Amendment as two scenarios:

- Scenario A: The proposed 175-room hotel as 175 "business" hotel rooms and the remaining 325 rooms that could occur under the proposed PMP Amendment as "resort" hotel rooms;

- Scenario B: The total of the 500 rooms that could occur under the proposed PMP Amendment in two or three hotels as "business" hotel rooms.

Interstate 5 and its associated on- and off-ramps are located within two miles of the PMP Amendment area. However, based on the trip distribution and trip generation associated with the Project, it was determined that future hotel development that could occur under the proposed PMP Amendment, allowing the construction of up to two hotels in addition to the proposed 175-room hotel, would result in too few trips at the I-5 on- and off-ramps to warrant including I-5 in the Near-Term analysis.

Long-Term (Cumulative) Street Segment Operations

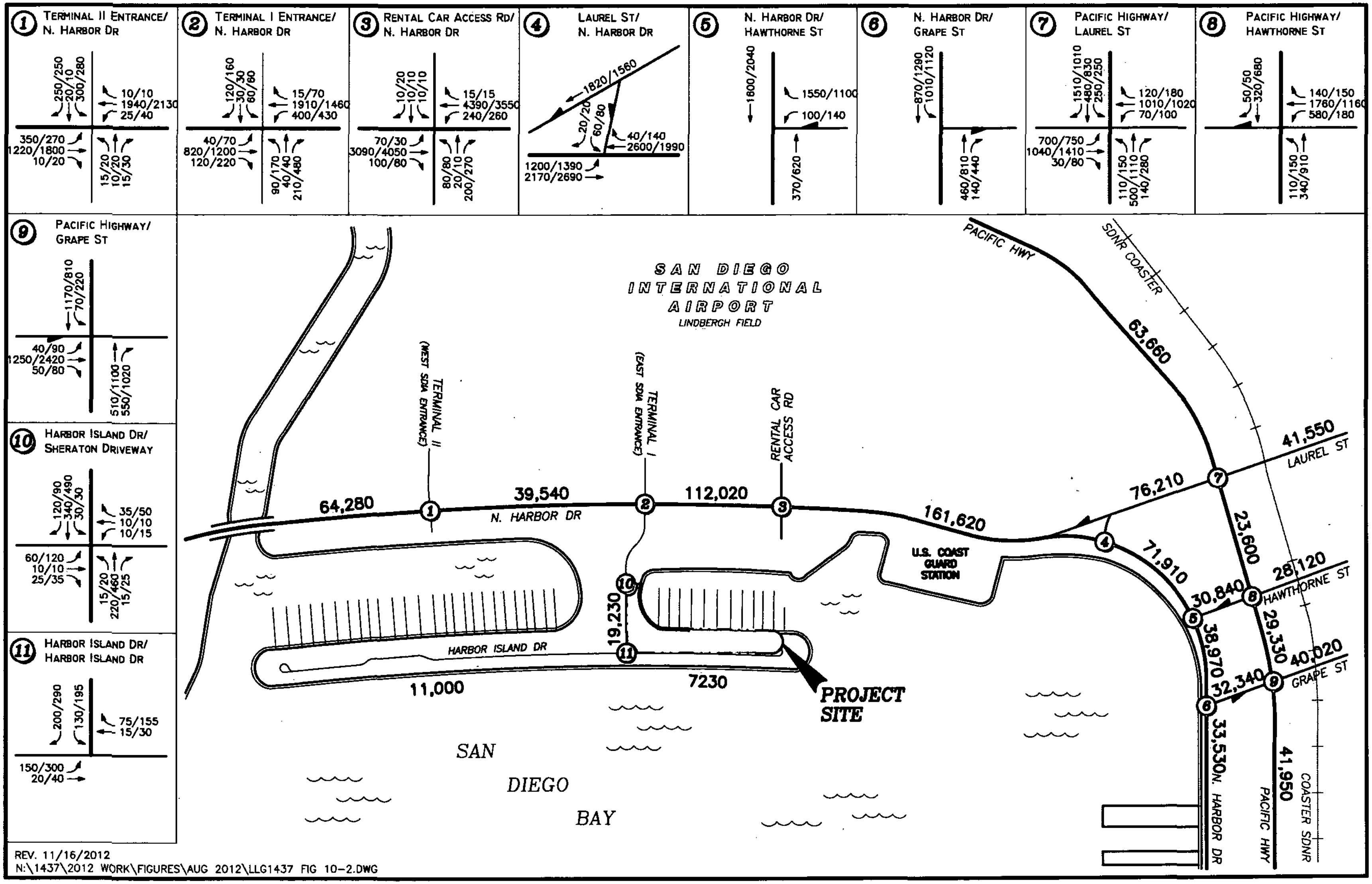
When the Long-Term Year 2030 traffic volumes is added to the hotel development that could occur under the proposed PMP Amendment, including the construction of up to 325 rooms in up to two hotels in addition to the proposed 175-room hotel, significant impacts would result on the following five segments in the Long-Term (Year 2030) under Scenario A and Scenario B, as shown in Table 9.3-2, *Long-Term (Year 2030) Street Segment Operations: Scenario A*, and Table 9.3-3, *Long-Term (Year 2030) Street Segment Operations: Scenario B*:

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

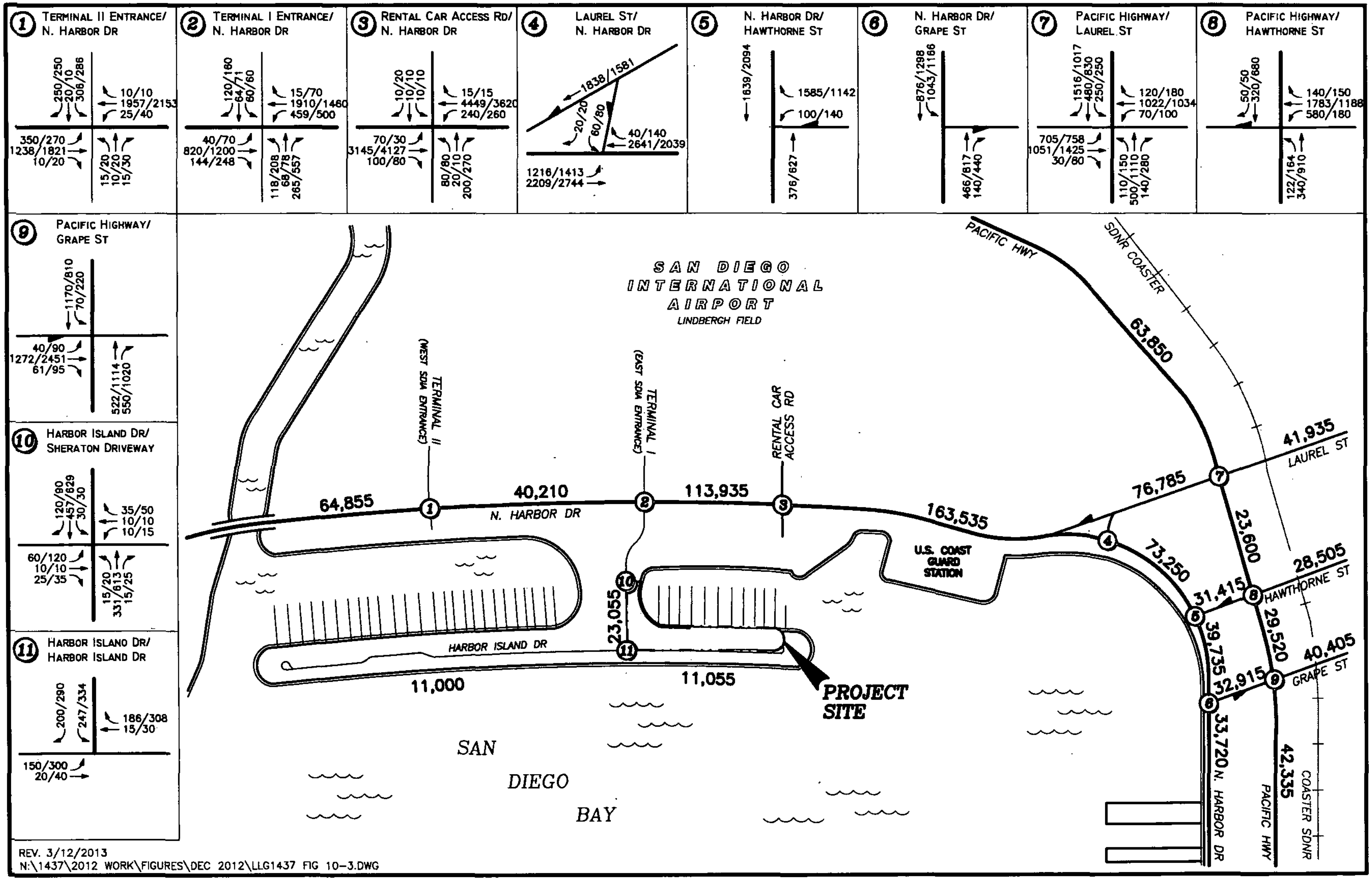
Long-Term (Cumulative) Intersection Operations

When the Long-Term Year 2030 traffic volumes is added to the hotel development that could occur under the proposed PMP Amendment, including the construction of up to 325 rooms in up to two hotels in addition to the proposed 175-room hotel, significant impacts would result at the following five intersections in the Long-Term (2030), as shown in under Scenario A and Scenario B, as shown in Table 9.3-4, *Long-Term (Year 2030 Intersection Operations: Scenario A*, and Table 9.3-5, *Long-Term (Year 2030) Intersection Operations: Scenario B*:

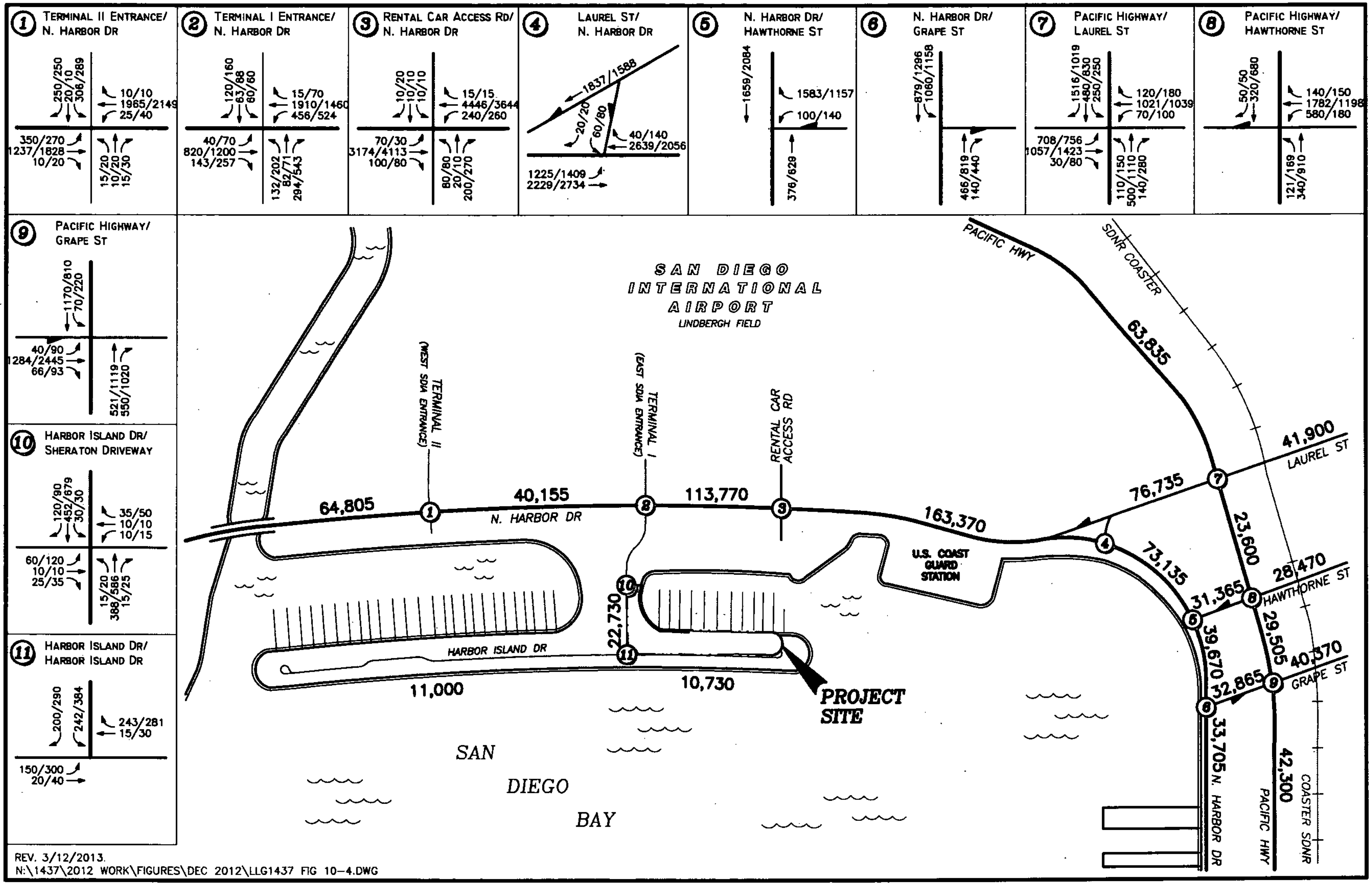
- N. Harbor Dr./Harbor Island Dr./Terminal 1—LOS E in the AM & LOS F in the PM peak hours
- N. Harbor Dr./Rental Car Access Road—LOS F in the AM and PM peak hours
- N. Harbor Dr./Laurel Street—LOS F in the AM and PM peak hours
- Pacific Highway/Laurel Street—LOS F in the AM and PM peak hours
- Pacific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



Year 2030 Without Project Traffic Volumes – AM/PM Peak Hours and ADT
Figure 9.3-2



Scenario A: Year 2030 Without Project Traffic Volumes – AM/PM Peak Hours and ADT
Figure 9.3-3



Scenario B: Year 2030 Without Project Traffic Volumes – AM/PM Peak Hours and ADT
Figure 9.3-4

Table 9.3-2
Long-Term (Year 2030) Street Segment Operations: Scenario A

Street Segment	Buildout Capacity (LOS E)[a]	Year 2030			Year 2030 + Scenario A Project				Sig?[f]
		ADT[b]	V/C[c]	LOS	ADT	V/C	LOS		
N. Harbor Drive									
Nimitz Blvd. to Terminal 2 (SDIA)	60,000	64,280	1.071	F	64,855	1.081	F	0.010	No
Terminal 2 (SDIA) to Harbor Island Dr.	60,000	39,540	0.659	C	40,210	0.670	C	0.011	No
Harbor Island Dr. to Rental Car Access Rd.	70,000	112,020	1.600	F	113,935	1.628	F	0.028	**Yes**
Rental Car Access Road to Laurel Street	70,000	161,620	2.309	F	163,535	2.336	F	0.027	**Yes**
Laurel Street to Hawthorn Street	60,000	71,910	1.199	F	73,250	1.221	F	0.022	**Yes**
Hawthorn Street to Grape Street	65,000	38,970	0.600	C	39,735	0.611	C	0.011	No
South of Grape Street	55,000	33,530	0.610	C	33,720	0.613	C	0.003	No
Pacific Highway									
North of Laurel Street	50,000	63,660	1.273	F	63,850	1.277	F	0.004	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	29,520	0.590	C	0.003	No
South of Grape Street	50,000	41,950	0.839	D	42,335	0.847	D	0.008	No
Laurel Street									
N. Harbor Dr. to Pacific Highway	40,000	76,210	1.905	F	76,785	1.920	F	0.015	**Yes**
East of Pacific Highway	30,000	41,550	1.385	F	41,935	1.398	F	0.013	**Yes**
Hawthorn Street									
N. Harbor Dr. to Pacific Highway	40,000	30,840	0.771	D	31,415	0.785	D	0.014	No
East of Pacific Highway	40,000	28,120	0.703	C	28,505	0.713	C	0.010	No
Grape Street									
N. Harbor Dr. to Pacific Highway	40,000	32,340	0.809	D	32,915	0.823	D	0.014	No
East of Pacific Highway	40,000	40,020	1.005	F	40,405	1.010	F	0.005	No
Harbor Island Drive									
N. Harbor Dr. to Harbor Island Dr.	40,000	19,230	0.481	B	23,055	0.576	C	0.095	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	11,055	0.369	B	0.128	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".

Table 9.3-3
Long-Term (Year 2030) Street Segment Operations: Scenario B

Street Segment	Buildout Capacity (LOS E)[a]	Year 2030			Year 2030 + Scenario B 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**	64,805	1.080	**F**	0.009	No
Terminal 2 (SDIA) to Harbor Island Dr.	60,000	39,540	0.659	C	40,155	0.669	C	0.010	No
Harbor Island Dr. to Rental Car Access Rd.	70,000	112,020	1.600	**F**	113,770	1.625	**F**	0.025	**Yes**
Rental Car Access Road to Laurel Street	70,000	161,620	2.309	**F**	163,370	2.334	**F**	0.025	**Yes**
Laurel Street to Hawthorn Street	60,000	71,910	1.199	**F**	73,135	1.219	**F**	0.020	**Yes**
Hawthorn Street to Grape Street	65,000	38,970	0.600	C	39,670	0.610	C	0.010	No
South of Grape Street	55,000	33,530	0.610	C	33,705	0.613	C	0.003	No
Pacific Highway									
North of Laurel Street	50,000	63,660	1.273	**F**	63,835	1.277	**F**	0.004	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	29,505	0.590	C	0.003	No
South of Grape Street	50,000	41,950	0.839	D	42,300	0.846	D	0.007	No
Laurel Street									
N. Harbor Dr. to Pacific Highway	40,000	76,210	1.905	**F**	76,735	1.918	**F**	0.013	**Yes**
East of Pacific Highway	30,000	41,550	1.385	**F**	41,900	1.397	**F**	0.012	**Yes**
Hawthorn Street									
N. Harbor Dr. to Pacific Highway	40,000	30,840	0.771	D	31,365	0.784	D	0.013	No
East of Pacific Highway	40,000	28,120	0.703	C	28,470	0.712	C	0.009	No
Grape Street									
N. Harbor Dr. to Pacific Highway	40,000	32,340	0.809	D	32,865	0.821	D	0.012	No
East of Pacific Highway	40,000	40,020	1.005	**F**	40,370	1.009	**F**	0.004	No
Harbor Island Drive									
N. Harbor Dr. to Harbor Island Dr.	40,000	19,230	0.481	B	22,730	0.568	C	0.087	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	10,730	0.358	B	0.117	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".

Table 9.3-4
Long-Term (Year 2030) Intersection Operations: Scenario A

Intersection	Peak Hour	Year 2030		Year 2030 + Scenario A Project			Sig?[d]
		Delay[a]	LOS[b]	Delay	LOS	Δ[c]	
N. Harbor Drive / Terminal 2 (West Airport Entrance)	AM	45.9	D	47.3	D	1.4	No
	PM	41.5	D	42.7	D	1.2	No
N. Harbor Dr. / Harbor Island Dr. / Terminal 1 (East Airport Entrance)	AM	51.2	D	77.7	**E**	26.5	**Yes**
	PM	86.6	**F**	106.7	**F**	20.1	**Yes**
N. Harbor Drive / Rental Car Access Road	AM	169.8	**F**	186.5	**F**	16.7	**Yes**
	PM	159.0	**F**	170.8	**F**	11.8	**Yes**
N. Harbor Drive / Laurel Street	AM	98.1	**F**	100.5	**F**	2.4	**Yes**
	PM	124.1	**F**	133.9	**F**	9.8	**Yes**
N. Harbor Drive / Hawthorn Street	AM	28.8	C	32.0	C	3.2	No
	PM	48.9	D	50.7	D	1.8	No
N. Harbor Drive / Grape Street	AM	6.1	A	6.5	A	0.4	No
	PM	13.9	B	18.8	B	4.9	No
Pacific Highway / Laurel Street	AM	159.0	**F**	160.9	**F**	1.9	**Yes**
	PM	183.8	**F**	185.8	**F**	2.0	**Yes**
Pacific Highway / Hawthorn Street	AM	21.1	C	22.3	C	1.2	No
	PM	20.6	C	22.3	C	1.7	No
Pacific Highway / Grape Street	AM	16.0	B	16.2	B	0.2	No
	PM	113.3	**F**	118.2	**F**	4.9	**Yes**
Harbor Island Drive / Sheraton Driveway	AM	14.5	B	14.8	B	0.3	No
	PM	14.5	B	15.2	B	0.7	No
Harbor Island Drive / Harbor Island Drive	AM	8.6	A	9.7	A	1.1	No
	PM	10.6	B	12.9	B	2.3	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

Table 9.3-5
Long-Term (Year 2030) Intersection Operations: Scenario B

Intersection	Peak Hour	Year 2030		Year 2030 + Scenario B Project			Sig?[d]
		Delay[a]	LOS[b]	Delay	LOS	Δ[c]	
N. Harbor Drive / Terminal 2 (West Airport Entrance)	AM	45.9	D	47.7	D	1.8	No
	PM	41.5	D	42.7	D	1.2	No
N. Harbor Dr. / Harbor Island Dr. / Terminal 1 (East Airport Entrance)	AM	51.2	D	77.7	**E**	**26.5**	**Yes**
	PM	86.6	**F**	116.9	**F**	**30.3**	**Yes**
N. Harbor Drive / Rental Car Access Road	AM	169.8	**F**	186.1	**F**	**16.3**	**Yes**
	PM	159.0	**F**	171.5	**F**	**12.5**	**Yes**
N. Harbor Drive / Laurel Street	AM	98.1	**F**	101.7	**F**	**3.6**	**Yes**
	PM	124.1	**F**	133.0	**F**	**8.9**	**Yes**
N. Harbor Drive / Hawthorn Street	AM	28.8	C	42.1	B	13.3	No
	PM	48.9	D	53.4	D	4.5	No
N. Harbor Drive / Grape Street	AM	6.1	A	6.8	A	0.2	No
	PM	13.9	B	17.2	B	3.3	No
Pacific Highway / Laurel Street	AM	159.0	**F**	161.1	**F**	**2.1**	**Yes**
	PM	183.8	**F**	186.0	**F**	**2.2**	**Yes**
Pacific Highway / Hawthorn Street	AM	21.1	C	22.3	C	1.2	No
	PM	20.6	C	23.1	C	2.5	No
Pacific Highway / Grape Street	AM	16.0	B	16.2	B	0.2	No
	PM	113.3	**F**	117.8	**F**	**4.5**	**Yes**
Harbor Island Drive / Sheraton Driveway	AM	14.5	B	14.8	B	0.3	No
	PM	14.5	B	15.2	B	0.7	No
Harbor Island Drive / Harbor Island Drive	AM	8.6	A	9.2	A	0.6	No
	PM	10.6	B	15.1	B	4.5	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

Parking Impacts

Implementation of the cumulative projects listed in Table 9.3-1 and shown in Figure 9.3-1 could result in loss of public parking. However, the hotel development allowed under the proposed PMP Amendment will not result in the loss of any public parking spaces and will be required to provide adequate on-site parking in accordance with existing parking regulations. Parking for up to two future hotels, in addition to the proposed 175-room hotel, that could occur within East Harbor Island under the proposed PMP Amendment will require adherence to Port District parking requirements in order to ensure that significant parking impacts do not occur. Therefore, the hotel development allowed under the proposed PMP Amendment would not make a cumulatively considerable contribution to any cumulative impacts associated with parking.

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 PMP Amendment area or that could combine with the future hotel developments allowed under the proposed PMP Amendment to create a significant cumulative impact.

9.3.3.7 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. Scientific Resources Associated prepared an Air Quality Technical Report for the PMP Amendment (2013), which includes a discussion of cumulative air quality impacts analysis. The air quality technical report is included as Appendix F-1 to the 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 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

Table 9.3.7-4, *CO "Hot Spots" Evaluation – Year 2030 Predicted CO Concentrations (ppm)*, presents a summary of the predicted CO concentrations (impact plus background) for the intersections evaluated. As shown in Table 9.3.7-4, the predicted CO concentrations would be substantially below the 1-hour and 8-hour NAAQS and CAAQS for CO. Therefore, no exceedances of the CO standard are predicted, and the project would not cause or contribute to a violation of this air quality standard.

Table 9.3-6. CO "Hot Spots" Evaluation – Year 2030 Predicted CO Concentrations (ppm)

Maximum 1-hour Concentration Plus Background, ppm CAAQS = 20 ppm; NAAQS = 35 ppm; Background 4.4 ppm		
Intersection		
	am	*pm*
N. Harbor Drive and Harbor Island Drive/Terminal 1	4.8	4.9
N. Harbor Drive and Rental Car Access	5.2	5.2
N. Harbor Drive and Laurel Street	5.2	5.2
Pacific Highway and Laurel Street	5.1	5.2
Pacific Highway and Grape Street	4.8	5.0
Maximum 8-hour Concentration Plus Background, ppm CAAQS = 20 ppm; NAAQS = 35 ppm; Background 3.01 ppm		
N. Harbor Drive and Harbor Island Drive/Terminal I	3.36	
N. Harbor Drive and Rental Car Access	3.57	
N. Harbor Drive and Laurel Street	3.57	
Pacific Highway and Laurel Street	3.57	
Pacific Highway and Grape Street	3.43	

Other cumulative projects within proximity of the PMP Amendment area could occur simultaneously with construction of up to two future hotels and/or the proposed 175-room hotel. However, every project, with the exception of the Reuben E. Lee Restaurant Replacement project, identified in the cumulative project list (Table 9.3-1) is over 2,500 feet away from areas within the East Harbor Island Subarea where additional hotels could be constructed. Based on screening methodology provided by the SCAQMD, projects at such a distance, in combination with development of up to two hotels, in addition to the proposed 175-room hotel, would likely not contribute to a significant cumulative PM_{10} impact (see Air Quality Technical Report, Appendix F-1 to this EIR). Therefore, there is no significant impact for PM_{10} and $PM_{2.5}$, and impacts are not cumulatively considerable.

Construction and operation of up to two future hotels, in addition to the proposed 175-room hotel, would result in ROG and NO_x emissions; however, as discussed in Section 9.2.7, 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 9.2.7, the proposed PMP Amendment 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, including up to two hotels in addition to the proposed 175-room hotel which would be allowed under the proposed PMP Amendment, 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 9.3-1 would all likely contribute to this widespread cumulative impact.

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.

According to the California Natural Resources Agency[1], "due to the global nature of GHG emissions and their potential effects, GHG emissions will typically be addressed in a cumulative impacts analysis." According to Appendix G of the CEQA Guidelines, the following criteria may be considered to establish the significance of GHG emissions:

Would the project:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As discussed in Section 15064.4 of the CEQA Guidelines, the determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency, consistent with the provisions in Section 15064. Section 15064.4 further provides that a lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or
(2) Rely on a qualitative analysis or performance based standards.

Section 15064.4 also advises a lead agency to consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

The City of San Diego, in their memorandum entitled "Addressing Greenhouse Gas Emissions from Projects Subject to CEQA" (City of San Diego 2010) utilizes a screening threshold of 900 metric tons of CO_2e to evaluate whether a project requires further analysis. Projects with emissions above the 900 metric ton threshold are required to evaluate whether emissions can be reduced below "business as usual" levels. The City of San Diego has also proposed interim

[1] California Natural Resources Agency, Initial Statement of Reasons for Regulatory Action, Proposed Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gases Pursuant to SB 97. July 2009.

CEQA thresholds based on the ARB's Scoping Plan and has set a reduction of 28.3 percent below business as usual as the threshold necessary to achieve the AB 32 reduction mandate.

The proposed PMP Amendment has been analyzed based on a reduction from business as usual of 28.3 percent to evaluate significance of global climate change impacts. The City is in the process of reviewing their GHG significance thresholds, but to date, no new standards have been proposed.

Construction Greenhouse Gas Emissions

Construction GHG emissions include emissions from heavy construction equipment, truck traffic, and worker trips. To address GHG emissions from the construction for up to 500 hotel rooms in up to three hotels, including the proposed 175-room hotel, it was assumed that each hotel would be constructed in a separate phase and that the construction of each hotel would require the following subphases: demolition of existing structures/pavement, grading, paving/foundation construction, building construction, and architectural coatings application. The proposed 175-room hotel would require demolition of the existing locker building and parking lot east of the existing marine building. The two additional hotels would require demolition of existing paved areas. The assumed construction schedule for each individual hotel project was provided in the Traffic Study (Linscott, Law & Greenspan 2013), with the proposed 175-room hotel assumed to be constructed in 2013, a second hotel would be constructed in 2014, and the third hotel in 2018, with full build-out of the project by the year 2020.

Table 9.3-7, *Construction GHG Emissions*, presents a summary of construction GHG emissions that would result from construction of up to three hotels that could occur as allowed under the proposed PMP Amendment.

Table 9.3-7. Construction GHG Emissions (metric tons/year)

Construction Phase	CO_2e Emissions, metric tons
175-Room Hotel	485
175-Room Hotel	596
150-Room Hotel	566
TOTAL	**1,647**

In accordance with guidance from the City of San Diego, the SCAQMD, and the County of San Diego, construction GHG emissions are amortized over a 30-year period to account for their contribution to emissions over the lifetime of the project. Amortized construction emissions would, therefore, be 55 metric tons per year and would not exceed the 900 metric ton screening value

Operational Greenhouse Gas Emissions

The results of the inventory for operational emissions for business as usual of up to three hotels, including the proposed 175-room hotel, that could be developed under the proposed PMP Amendment are presented in 9.3-8, *Summary of Estimated Operation Greenhouse Gas Emissions – Business as Usual Scenario.* These include GHG emissions associated with buildings (natural gas, purchased electricity), water consumption (energy embodied in potable water), solid waste management (including transport and landfill gas generation), and vehicles.

Table 9.3-8. Summary of Estimated Operational Greenhouse Gas Emissions Business as Usual Scenario

Emission Source	Annual Emissions (Metric tons/year)			
	CO_2	CH_4	N_2O	CO_2e
Operational Emissions				
Electricity Use	2,893	0.1206	0.0324	2,905
Natural Gas Use	1,633	0.1816	0.0031	1,638
Water Use	59	0.0025	0.0007	59
Solid Waste Management	85	-	-	85
Vehicle Emissions	2,964	0.0357	0.3401	3,070
Amortized Construction Emissions	55	-	-	55
Total	**7,689**	**0.3404**	**0.3763**	**7,812**
Global Warming Potential Factor	**1**	**21**	**310**	
CO_2 Equivalent Emissions	**7,689**	**7**	**116**	**7,812**
TOTAL CO_2 Equivalent Emissions	**7,812**			

As shown in Table 9.3-8, emissions associated with hotel development that could occur under the proposed PMP Amendment are above the 900 metric ton screening threshold. The project was therefore evaluated to assess the GHG emission reductions that would be achieved through state and federal programs and/or through project design features.

Energy conservation and sustainability features would be incorporated into the design and construction of the proposed 175-room hotel, as well as the design and construction of up to two additional hotels totaling not more than 325 rooms. These features will provide energy and water efficiency equivalent to 15% in excess of the standards required by California's Energy Efficiency Standard for Residential and Nonresidential Buildings (Title 24, Part 6 of the California Code of Regulations) as of 2008. The design features described below will be incorporated as conditions of approval of the 175-room hotel and the additional hotel development allowed under the proposed PMP Amendment:

Construction

- Reuse or recycle at least 75% of construction materials (including soil, asphalt, concrete, metal, and lumber.
- 10% of building materials and products that will be used are locally or regionally (within 500 miles) extracted and manufactured, when available.
- 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 0.3 solar heat gain coefficient.
- Install R-value optimized wall and roof insulation.
- Use better-than-code energy efficient lighting throughout the 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 CO2 sensors for meeting rooms.
- Use 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 (LEDs) for 50% of all the 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 of 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 5 minutes.
- Install bicycle parking facilities.
- Hotels will provide a shuttle service to and from the airport. It is estimated that the shuttle will reduce the total number of trips by 7.5%.

As shown in Table 9.3-8, vehicular emissions are the greatest contributor to GHG emissions. Because the applicant does not have direct control over the types of vehicles or emission/fuel standards, the effect of California programs to reduce GHG emissions from vehicles was evaluated.

The percent reductions in GHG emissions anticipated through implementation of the Federal corporate average fuel economy (café)standards, low carbon fuel standards (LCFS), and Pavley fuel efficiency standard (analogous to the Federal CAFE standard), as well as the effect of light/heavy vehicle efficiency/hybridization programs can be estimated. It is estimated that emissions from vehicles would be reduced by 20 percent through implementation of the Federal CAFE standard/Pavley standard and 10 percent through implementation of the LCFS. Emissions from vehicles would therefore be reduced by as much as 30 percent from state and federal programs by the year 2020.

In addition to the energy efficiency and mobile source emissions reductions discussed above, reductions attributable to California's Renewable Portfolio Standards (RPS) (SB 1078; 2002) were included in the emission calculations for electricity use. SB 1078 initially set a target of 20% of energy to be sold from renewable sources by the year 2017. The schedule for implementation of the RPS was accelerated in 2006 with the Governor's signing of SB 107, which accelerated the 20% RPS goal from 2017 to 2010. On November 17, 2008, the Governor signed Executive Order S-14-08, which requires all retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020. The Governor signed Executive Order S-21-09 on September 15, 2009, which directs ARB to implement a regulation consistent with the 2020 33% renewable energy target by July 31, 2010. As of September 23, 2010, the ARB has adopted the regulation that implements the 33% renewable energy standard.

It is estimated that implementation of the 20% RPS goal by 2010 would reduce GHG emissions by a further 14% from 2006 levels; the inventory estimated that San Diego Gas and Electric was providing 6% of its electricity from renewable resource in 2006. To account for the implementation of the 20% RPS, a 14% reduction in GHG emissions was assumed. Implementation of Executive Order S-21-09 (i.e., the 33% RPS) will result in additional GHG reductions of 27% below 2006 levels.

Based on information regarding Title 24 standards as of 2008, it is anticipated that for the San Diego climate zone, estimated electricity savings for nonresidential buildings are 8.596% and natural gas savings are 8.633%. These reductions were considered in calculating emissions with GHG reduction measures. As discussed above, the project will achieve an energy efficiency that is 15% above Title 24 standards as of 2008. Based on CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA 2010), for San Diego's climate zone each percent improvement over Title 24 standards as of 2008 would result in an equivalent reduction in GHG emissions of 0.40% for electricity use and 0.82% for natural gas use for hotel uses.

Table 9.3-9, *Summary of Estimated Operation Greenhouse Gas Emissions with GHG Emission Reductions*, presents the estimated GHG emissions for the project, with implementation of the GHG reduction measures summarized above.

Table 9.3-9. Summary of Estimated Operational Greenhouse Gas Emissions with GHG Emission Reductions

Emission Source	Annual Emissions (Metric tons/year)			
	CO_2	CH_4	N_2O	CO_2e
Operational Emissions				
Electricity Use	1,814	0.0757	0.0203	1,822
Natural Gas Use	1,335	0.1484	0.0025	1,339
Water Use	33	0.0014	0.0004	33
Solid Waste Management	85	-	-	85
Vehicle Emissions	1,850	0.0231	0.2448	1,926
Amortized Construction Emissions	55	-	-	55
Total	**5,172**	**0.2486**	**0.2680**	**5,260**
Global Warming Potential Factor	**1**	**21**	**310**	
CO_2 Equivalent Emissions	**5,172**	**5**	**83**	**5,260**
TOTAL CO_2 Equivalent Emissions	**5,260**			
Business as Usual CO_2 Equivalent Emissions	**7,812**			
Percent Reduction from Business as Usual	**32.7%**			

As shown in 9.3-9, with implementation of project design features and taking into account state and federal programs to reduce GHG emissions, emissions from the Proposed Project would be reduced by 32.7% over business as usual levels and would be a reduction over the 28.3 percent below business as usual threshold necessary to achieve the AB 32 reduction mandate. Because the project would reduce emissions over business as usual levels, and because the project would employ design features that are consistent with the Port's programs and the ARB's Scoping Plan, impacts would be less than significant.

The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment and would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Therefore, no significant impacts associated with Global Climate Change would result from the proposed PMP Amendment project.

Sea Level Rise

Although State CEQA Guidelines section 15126.2 requires an EIR to analyze the effects a project might cause by bringing development and people into the area affected, a recent judicial decision holds that a lead agency is not required to analyze the impacts of sea level rise on a proposed project because CEQA requires an EIR to study the impacts of a project on the environment, not the impacts of the environment on the project. (See *Ballona Wetland Foundation v. City of Los Angeles* (2011) 201 Cal. App. 4th 455.) Nonetheless, this section considers the potential impacts of sea level rise as it relates to global climate change because the hotel development allowed under the PMP Amendment will need approval from the California Coastal Commission (in the form of certification of the PMP Amendment), which is a state agency subject to Executive Order S-13-08. Executive Order S-13-08 directs state agencies to plan for sea level rise and climate change impacts.

The following threshold regarding impacts associated with sea level rise provides that a project would have a significant environmental impact if it would:

- Expose property and persons to the physical effects of climate change, including but not limited to flooding or inundation impacts resulting from climate change.

Due to the proposed PMP Amendment's location adjacent to San Diego Bay and the need for an approval from the Coastal Commission, a *Wave Uprush Study* has been conducted by TerraCosta Consulting Group, Inc. (June 2013) that addresses the potential for rising sea levels in combination with wave actions to affect hotel development on East Harbor Island. (The *Wave Uprush Study* is included as Appendix K to this EIR.)

Past and possible future changes in mean sea level (MSL) are of interest in design and planning for all coastal cities, as well as for any engineering activities on the coast. Global mean sea level rose at least 300 feet, and perhaps as much as 400 feet, during the past 18,000 years. Sea level, both globally and along California, rose approximately 0.7 foot over the past century, and evidence suggests that perhaps the rate of global mean sea level rise has accelerated since the mid-1800s, or even earlier, and that it has now reached a rate of about one foot per century over the past decade.

The *Wave Uprush Study* evaluates the maximum height of runup on East Harbor Island based on the U.S. Army Corps of Engineers 2006 Coastal Engineering Manual (CEM). Given the highest recorded sea levels to date within the bay of approximately 5.8 feet National Geodetic Vertical Datum (NGVD), or approximately 8.7 feet (MLLW), approximately 1.8 feet of mean sea level rise (MSLR) could occur prior to waves overtopping the Harbor Island revetment adjacent to the site. Overtopping of the revetment would only occur during relatively infrequent "King Tides" (or unusually high tides), when peak high tides coincide with high winds or boat wakes. Considering that King Tides only occur several days a year and with relatively short duration, overtopping events under these conditions would be infrequent, short duration occurrences, when peak high tides coincide with high winds or boat wakes.

The East Harbor Island shoreline includes a protective rock revetment consisting of 1/4-ton rock along the north side. A similar protective revetment and Harbor Island Drive occur on the bayward side of Harbor Island.

Existing elevations for the top of the existing rock revetment on the marina side of East Harbor Island generally range from 15 feet to 18 feet mean lower low water (MLLW). The crown of the revetment on the bayward side of East Harbor Island is between 14 and 15 feet MLLW. Grades across the marina parking lot where the proposed 175-room hotel would be located generally range from 13 feet MLLW at the western end of the lot to approximately 18 feet MLLW at the northeast corner of the lot. With regard to the location where up to two future hotels could be constructed, top of revetment elevations generally range between 14 and 15 feet MLLW, with the existing parking lot used for temporary storage of rental cars at elevations generally ranging between 10.5 and 15.5 feet MLLW. The *Wave Uprush Study* assumes building pad grades of 14 feet MLLW, and finished floor elevations and promenade walkway elevations of 15 feet MLLW for the proposed hotel developments.

Maximum wave uprush values of four to five feet are anticipated up the face of the Harbor Island rock revetment whenever there are maximum 50-knot sustained winds out of the southwest. A stillwater level of approximately 9.5 feet MLLW, corresponding to an MSLR of 0.8 feet, would be necessary for wave uprush to overtop the localized lower revetment crown elevations near +14 feet MLLW along the Harbor Island rock revetment, resulting in localized flooding within the parking lot elevations below +14 feet. At an assumed hotel finish floor elevation of +15 feet MLLW, the infrequent overtopping and associated flooding would not affect a hotel's finished floor elevation unless there is an MSLR of 1.8 feet.

By the year 2050, the median MSLR projection may result in approximately 1.2 inches of overtopping along the lowest bayward side of Harbor Island where locally the top of the revetment is as low as +14 feet MLLW, when there is a coincidence of high winds or boat wakes and peak high (King) tides. The hotel structures having a finish floor elevation of +15 feet MLLW would not experience any overtopping from the median MSLR projection by the year 2050. Therefore, sea level rise would not be expected to adversely affect future hotel development in the planning area and impacts associated with sea level rise would be less than significant.

Most sea level rise projections suggest that by the year 2100 overtopping could be more prevalent. However, some experts, such as TerraCosta Consulting Group, believe it is appropriate to wait several decades to reassess what future adaptive strategies, if any, may be appropriate as more information on sea level rise becomes available. If future assessments over the course of the next several decades confirm significant sea level rise, a range of adaptive strategies will be designed and evaluated based on the information gathered through those future assessments. Notwithstanding the wide range of MSLR projections beyond 2050 available at this time, experts indicate that adaptive strategies for accommodating the potential for sea level rise and the potential for more frequent wave overtopping and wave-induced impact forces will be available, such as the use of perimeter floodwalls or other flood barriers around either the outer margins of Harbor Island or the proposed developments to accommodate increases in MSLR. Because the timing of full build-out of the future hotel development allowed under the PMP Amendment is not known and to ensure that adaptive strategies are taken into consideration when future hotel development is proposed, the potential impacts of sea level rise by the year 2100 are assumed to be significant.

9.3.3.8 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 and NAS North Island. 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.

This section summarizes the cumulative noise analysis provided in the Noise Analysis Report prepared by dBF Associates, Inc. (2013) and included as Appendix G-1 to this EIR. Neither the proposed PMP Amendment, which would allow development of up to two hotels or totaling not more than 325 rooms in additional to the proposed 175-room hotel, nor any of the cumulative projects would result in significant increases in air traffic, and as such, this issue is not discussed below.

The future (year 2014) SDIA noise level at the PMP Amendment area is projected to be less than 60 dBA CNEL. Because noise levels below 65 dBA CNEL are not illustrated, precise noise levels at the project site are subject to interpretation. The projected noise levels are generally consistent with the existing noise levels in the project area; therefore, the existing (year 2011) SDIA noise level of approximately 58 – 59 dBA CNEL was assumed to remain constant in the future. The future (year 2020) NAS North Island noise level is projected to range from approximately 55 dBA CNEL near the eastern area of the project site to approximately 59 dBA CNEL near the western area of the project site.

Section 9.2.8, *Noise*, of this chapter evaluates noise impacts associated with vehicular noise levels based on an updated Traffic Impact Study prepared by LLG. The Traffic Impact Study assumed a certain amount of increased trips on project area roadways based on SANDAG's Series 11 Forecast Model to assess 2030 traffic conditions. 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.

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 cumulative traffic. These locations included hotels, residences, and recreational areas and subject to the City's transient residential, residential, or recreational noise standards, respective of the land use—all of which are 65 dBA. Table 9.3-10, *Cumulative Traffic Noise Modeling*, compares the estimated 2030 noise levels at the modeling locations without traffic generated by hotel development that could under the proposed PMP Amendment to the estimated 2030 levels with the addition of traffic noise that could occur under the proposed PMP Amendment. 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 contribution would be cumulatively considerable where it causes an increase of three dBA or greater at those areas exceeding 65 dBA.

Table 9.3-10 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, contribution from hotel development that could occur under the proposed PMP Amendment is estimated at zero dBA. Because hotel development that could occur under the proposed PMP Amendment would not increase noise at these locations by three or more dBA, the contribution to these significant cumulative impacts is not cumulatively considerable. Therefore, no mitigation is necessary.

As shown in Table 9.3-10, the hotel development that could occur under the proposed PMP Amendment 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, contribution from hotel development that could occur under the proposed PMP Amendment to cumulative noise is not significant, and no mitigation is necessary.

Table 9.3-10. 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	50	51	1	No	No
M-3: Harbor Island Drive Park, East Harbor Island	Recreation / 65	61	63	2	No	No
M-4: Boat / Marina area, East Harbor Island	Recreation / 65	44	45	1	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	56	58	2	No	No

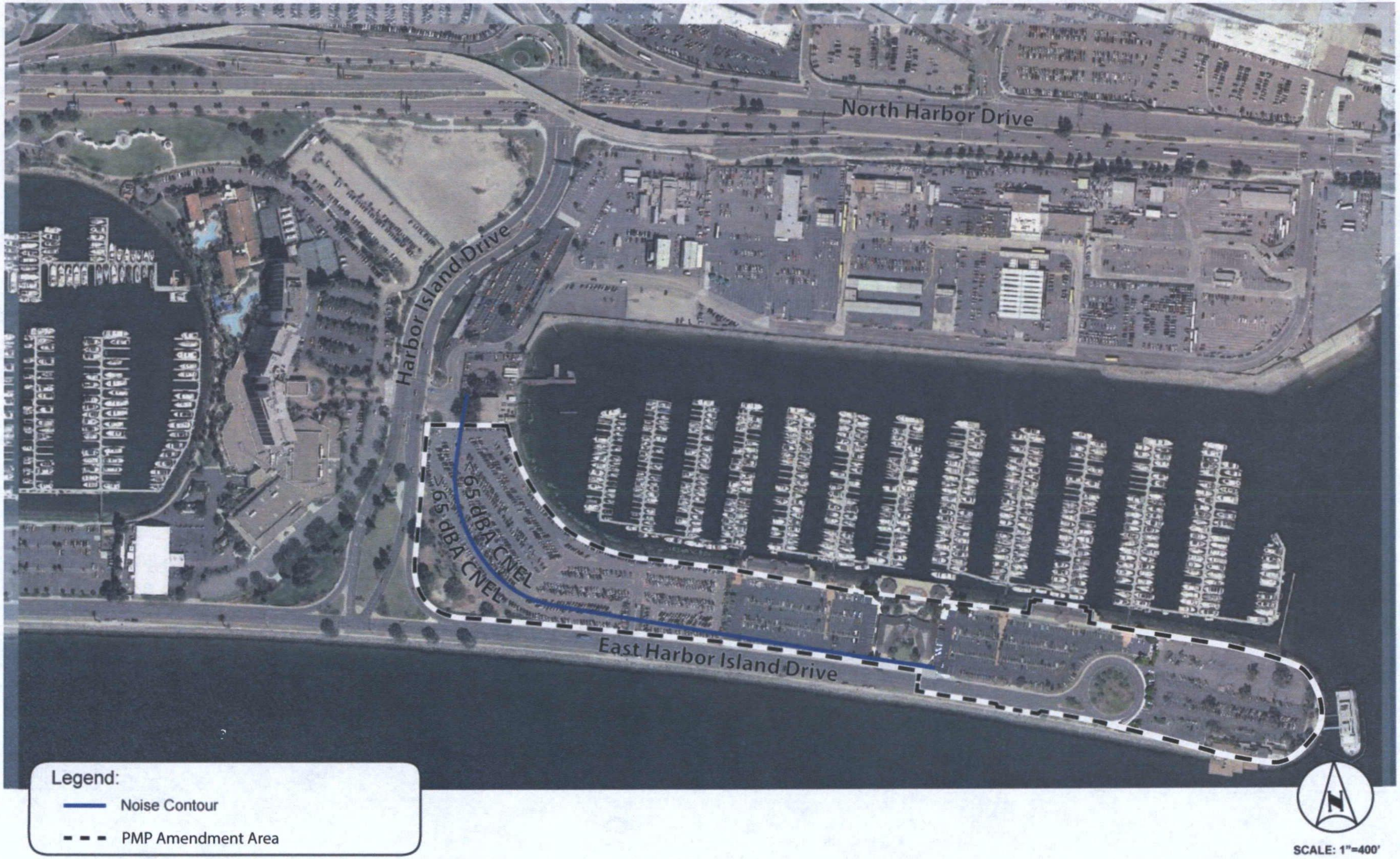
Note: Figure 4.8-3 in Section 4.8, "Noise," identifies the noise receptor sites.

Source: Noise Technical Reports (Appendix G and Appendix G-1 of this EIR)

Cumulative future airport (SDIA and NAS North Island) noise levels would be up to approximately 62 dBA CNEL near the western area of the project site. When cumulative future airport noise levels are combined with future roadway traffic noise levels, future exterior cumulative transportation noise levels range from approximately 60 dBA CNEL near the northern areas of the project site to approximately 69 dBA CNEL near the western areas of the project site.

With the addition of airport noise to the traffic noise, the cumulative future transportation noise level would be 65 dBA CNEL or less at distances beyond 170 feet from the centerline of Harbor Island Drive from North Harbor Drive to Harbor Island Drive. The combined transportation noise level would be 65 dBA CNEL or less at distances beyond 95 feet from the centerline of East Harbor Island Drive near Harbor Island Drive, ranging to beyond 50 feet from the centerline of East Harbor Island Drive near the east end of East Harbor Island Drive. This 65-dBA CNEL noise contour is shown on Figure 9.3-5, *Future Exterior Cumulative Transportation Noise Levels*.

Noise-sensitive land uses sited beyond the 65-dBA CNEL noise contour would be exposed to exterior noise levels considered "normally acceptable" by the City of San Diego Noise Element of the General Plan. If all exterior noise-sensitive elements of the project are positioned in areas exposed to 65 dBA CNEL or below, no exterior noise impact would occur. However, because building facades on the project site would be exposed to noise levels exceeding 60 dBA CNEL, the potential for a significant interior noise impact would exist. Therefore, mitigation would be required to reduce cumulative noise impacts for hotels located within the PMP Amendment area to below a level of significance.



Future Exterior Cumulative Transportation Noise Levels
Figure 9.3-5

9.3.3.9 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 PMP Amendment 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 PMP Amendment is subject. This cumulative project would observe similar fault setbacks as those identified for the hotels associated with the PMP Amendment 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 PMP Amendment, and the nature of geologic impacts, no significant adverse cumulative geology and soils impacts are anticipated.

9.3.3.10 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 new or expanded public service facilities must be constructed. 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 9.2.10, *Public Services and Utilities*, the hotel development associated with the PMP Amendment would have no impact on schools; therefore, this impact is not discussed below. For a cumulative discussion regarding parks, see Section 9.2.11, *Recreation*, below.

In regard to fire protection, as discussed in the Draft EIR, the City Fire Department determined that the proposed 175-room hotel 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 considered a significant cumulative impact resulting from past projects and future implementation of the cumulative projects listed in Table 9.3-1 will further contribute to this impact. The proposed PMP Amendment, including the proposed 175-room hotel and up to two additional hotels totaling no more than 325 hotel rooms in one or two additional locations on East Harbor Island for a cumulative total of no more than three hotels and no more than 500 rooms, would make a cumulatively considerable contribution to this significant cumulative impact.

Most of the cumulative projects listed in Table 9.3-1 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 PMP Amendment, including the development of up to two future hotels in addition to the proposed 175-room hotel, 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. A letter was sent to the SDPD in May 2013 to notify the department of the proposed PMP Amendment and to solicit input on any potential adverse effects development of up to 500 hotel rooms in up to three hotels on East Harbor Island may have on police response times. A response letter was received from SDPD dated May 16, 2013, and is included in Appendix J-1 to this EIR. SDPD confirmed that the department is currently reaching its targeted staffing ratio of 1.45 officers per 1,000 residents. The proposed PMP Amendment would not result in population growth and would not affect the department's staffing ratio. Construction of a new police facility is not needed in order to maintain acceptable response times and service ratios. Thus, the proposed PMP Amendment would not result in an adverse physical impact by requiring a new or physically altered 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. The development of up to two future hotels, in addition to the proposed 175-room hotel, would require the replacement of an existing sewer line and four manholes to serve future hotel developments. The construction associated with these realignment activities would result in less-than-significant impacts. In addition, the future hotels would be required to pay water service and sewer connection/usage fees, which will help fund future infrastructure upgrades, ensuring that project's contribution to future cumulative demand on utilities infrastructure. Therefore, the proposed PMP Amendment, allowing the development of up to two future hotels in addition to the proposed

175-room hotel, 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 PMP Amendment area are limited to the PMP Amendment area itself and immediately surrounding areas on East Harbor Island; none of the cumulative projects would affect these facilities. Therefore, there is no cumulative impact on stormwater facilities associated with the proposed PMP Amendment.

Future hotel developments that could occur as a result of the PMP Amendment would result in increased solid waste collection and processing demand. Future hotel developments would incorporate waste reduction measures in order to comply with applicable waste reduction ordinances. The hotel development that could occur under the proposed PMP Amendment and the cumulative projects listed in Table 9.3-1 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 hotel development that could occur under the proposed PMP Amendment would contribute to a significant cumulative solid waste impact.

It is anticipated that electrical and gas connections for future development of up to two future hotels and the proposed 175-room hotel would be made with an existing 12-kV power line and 2-inch high pressure gas lines located within Harbor Island Drive. In its correspondence regarding the proposed PMP Amendment, SDG&E indicated that gas and electric services can be made available to serve development within the PMP Amendment area (SDG&E; June, 12, 2013). Therefore, future hotel development that could occur under the proposed PMP Amendment would not contribute to an adverse physical impact by requiring that new gas or electric utilities be constructed by SDG&E.

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. Future hotel development that could occur under the proposed PMP Amendment would be required to 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 potential future hotel developments allowed by the PMP Amendment would not result in a significant cumulative impact on energy supply.

9.3.3.11 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 9.3-1, 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 development of up to two future hotels, in addition to the proposed 175-room hotel, which would be allowed under the proposed PMP Amendment would contribute. There is a cumulative benefit on recreation, and future hotels that would occur under the proposed PMP Amendment would contribute to this by constructing a public promenade along the basin-side of East Harbor Island.

9.3.4 Significant Cumulative Impacts

The PMP Amendment would contribute to significant cumulative impacts with respect to transportation, traffic, and parking; noise; and public services and utilities, with respect to fire protection and solid waste disposal services. The significant impacts are summarized below.

9.3.4.1 Transportation, Traffic, and Parking

TR-C7: 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-C8: 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-C9: 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 AM and PM peak hours.

TR-C10: Project traffic would contribute to the degradation of operations at the Pacific Highway/Laurel Street intersection in excess of City of San Diego thresholds during the AM and PM peak hours.

TR-C11: Project traffic would contribute to the degradation of operations at the Pacific Highway/Grape Street intersection in excess of City of San Diego thresholds during the PM peak hours.

TR-C12: Project traffic would contribute to the degradation of operations on the 'North Harbor Drive, Harbor Island Drive to Rental Car Access Road' street segment in excess of City of San Diego thresholds.

TR-C13: Project traffic would contribute to the degradation of operations on the 'North Harbor Drive, Rental Car Access Road to Laurel Street' street segment in excess of City of San Diego thresholds.

TR-C14: Project traffic would contribute to the degradation of operations on the 'North Harbor Drive, Laurel Street to Hawthorn' street segment in excess of City of San Diego thresholds.

TR-C15: Project traffic would contribute to the degradation of operations on the 'Laurel Street, North Harbor Drive to Pacific Highway' street segment in excess of City of San Diego thresholds.

TR-C16: Project traffic would contribute to the degradation of operations on the 'Laurel Street, Pacific Highway to Kettner Boulevard' street segment in excess of City of San Diego thresholds.

9.3.4.2 Noise

NOI-C1: If exterior useable areas, such as pools, pool decks, patios, balconies, and outdoor eating areas, are located in areas where greater than 65-dBA CNEL noise levels would occur, then a significant exterior noise impact would result.

NOI-C2: Because building facades on the project site would be exposed to noise levels exceeding 60 dBA CNEL, the potential for an interior noise impact would exist.

9.3.4.3 Public Services and Utilities

Fire Protection

PUB-C3: The proposed PMP Amendment 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 would contribute to the need for the City to construct an additional fire station.

Solid Waste

PUB-C4: Hotel development that could occur under the proposed PMP Amendment would involve commercial construction of more than 40,000 square feet; therefore, it would contribute to a significant cumulative impact on solid waste facilities.

9.3.4.3 Sea Level Rise

SLR-C1: Sea level rise projected to occur by the year 2100 is assumed to have the potential to result in a significant impact on future hotel development allowed under the proposed PMP Amendment. Mitigation would be required to ensure that, when such future hotel development is proposed, it will take into account the updated information regarding future sea level rise available at that time and its design will include the adaptive strategies, if any, necessary to accommodate potential sea level rise.

9.3.5 Mitigation Measures

9.3.5.1 Transportation, Traffic, and Parking

Future hotel development that would occur under the proposed PMP Amendment, including up to two hotels totaling 325 rooms in addition to the proposed 175-room hotel, may have significant cumulative impacts at five study intersections and five street segments under both Scenario A and Scenario B in the Long-Term (2030) conditions. The affected streets and intersections are within the exclusive jurisdiction of the City of San Diego and the mitigation measures recommended below are subject to the direction and control of the City of San Diego. Table 9.3-11, *"Year 2030" Fair-Share Contribution Calculations: Scenario A*, shows the project's fair share contribution at the impacted intersections or street segments under Scenario A conditions. Table 9.3-12, *"Year 2030" Fair-Share Contribution Calculations: Scenario B*, shows the project's fair share contribution at the impacted intersections or street segments under Scenario B conditions.

Intersection Mitigation

MM TR-C7: N. Harbor Dr./Harbor Island Drive/Terminal 1 (East Airport Entrance).

- Contribute a fair share as outlined in Tables 9.3-11 and 9.3-12 of 19.9% 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.

MM TR-C8: N. Harbor Drive/Rental Car Access Road.

- Contribute a fair share as outlined in Tables 9.3-11 and 9.3-12 of 3.6% 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.

Table 9.3-11. "Year 2030" Fair-Share Contribution Calculations: Scenario A

Impacted Locations	Year 2030 Scenario A Project Traffic	Year 2030 + Scenario A Project Traffic	Existing Traffic	% Fair Share [c]
Intersections [a]				
N. Harbor Dr. / Harbor Island Dr. / Terminal 1 (East Airport Entrance)	520	8,765	6,153	19.9%
N. Harbor Dr. / Rental Car Access Road	261	16,881	9,709	3.6%
N. Harbor Dr. / Laurel Street	222	12,622	7,811	4.6%
Segments [b]				
N. Harbor Dr.: Harbor Island Dr. to Rental Car Access Rd.	1,915	113,935	81,000	5.8%
N. Harbor Dr.: Rental Car Access Rd. to Laurel St.	1,915	163,535	82,790	2.4%
N. Harbor Dr.: Laurel St. to Hawthorn St.	1,340	73,250	54,260	7.1%
Laurel St.: N. Harbor Dr. to Pacific Highway	575	76,785	36,390	1.4%
Laurel St.: East of Pacific Highway	385	41,935	27,620	2.7%

Footnotes:

a. Intersection fair share contributions are calculated using combined AM and PM peak hour volumes.
b. Segment fair share contributions are calculated using ADT volumes.
c. Fair share percentages calculated as

$$\frac{\text{Project Traffic}}{(\text{Year 2030 + Project Traffic}) - (\text{Existing Traffic})}$$

Table 9.3-12. "Year 2030" Fair-Share Contribution Calculations: Scenario B

Impacted Locations	Year 2030 Scenario B Project Traffic	Year 2030 + Scenario B Project Traffic	Existing Traffic	% Fair Share [c]
Intersections [a]				
N. Harbor Dr. / Harbor Island Dr. / Terminal 1 (East Airport Entrance)	595	8,840	6,153	22.1%
N. Harbor Dr. / Rental Car Access Road	297	16,917	9,709	4.1%
N. Harbor Dr. / Laurel Street	252	12,652	7,811	5.2%
Segments [b]				
N. Harbor Dr.: Harbor Island Dr. to Rental Car Access Rd.	1,750	113,770	81,000	5.3%
N. Harbor Dr.: Rental Car Access Rd. to Laurel St.	1,750	163,370	82,790	2.2%
N. Harbor Dr.: Laurel St. to Hawthorn St.	1,225	73,135	54,260	6.5%
Laurel St.: N. Harbor Dr. to Pacific Highway	525	76,735	36,390	1.3%
Laurel St.: East of Pacific Highway	350	41,900	27,620	2.5%

Footnotes:

a. Intersection fair share contributions are calculated using combined AM and PM peak hour volumes.

b. Segment fair share contributions are calculated using ADT volumes.

c. Fair share percentages calculated as

$$\frac{\text{Project Traffic}}{(\text{Year 2030 + Project Traffic}) - (\text{Existing Traffic})}$$

MM TR-C9: N. Harbor Drive/Laurel Street: The following measures would likely mitigate the significant impact.

– Contribute a fair share of 4.6% as outlined in Tables 9.3-11 and 9.3-12 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.

MM TR-C10: Pacific Highway / Laurel Street.
Dual southbound right-turn and eastbound left-turn lanes are needed to accommodate the anticipated traffic volumes, but do not appear feasible due to right-of-way constraints on at least three of the corners of the intersection.

MM TR-C11: Pacific Highway / Grape Street.
A northbound right-turn lane is needed to accommodate the anticipated traffic volumes, but may not be feasible due to right-of-way constraints.

Street Segment Mitigation

MM TR-C12: N. Harbor Drive between Harbor Island Drive and Rental Car Access Road.

Contributing a fair share of 5.8% as outlined in Tables 9.3-11 and 9.3-12 towards the addition of one westbound lane along the street segment would mitigate the significant impact.

MM TR-C13: N. Harbor Drive between Rental Car Access Road and Laurel Street.

Contributing a fair share as outlined in Tables 9.3-11 and 9.3-12 of 2.4% towards the addition of one westbound lane along the street segment would mitigate the significant impact.

MM TR-C14: N. Harbor Drive, Laurel Street to Hawthorn Street.

Contributing a fair share of 7.1% as outlined in Tables 9.3-11 and 9.3-12 towards the addition of one southbound lane along the street segment would mitigate the significant impact.

MM TR-C15: Laurel Street, N. Harbor Drive to Pacific Highway.

Contributing a fair share of 1.4% as outlined in Tables 9.3-11 and 9.3-12 towards the addition of one eastbound lane along the street segment would likely mitigate the significant impact.

MM TR-C16: Laurel Street, Pacific Highway to Kettner Boulevard.

Contributing a fair share of 2.7% as outlined in Tables 9.3-11 and 9.3-12 towards the addition of one eastbound lane along the street segment would mitigate the significant impact.

9.3.5.2 Noise

MM NOI-C1: Reduction of interior noise levels below 45-dBA (CNEL) interior noise requirement.

Because future cumulative sound levels would exceed 60 dBA CNEL at the hotel building façades, an interior noise analysis evaluating proposed exterior wall construction, windows, and doors shall be completed after building plans are finalized to ensure that noise levels within habitable rooms will be 45 dBA CNEL or less, as required by California Code of Regulations, Title 24: Noise Insulation Standard and the City's CEQA significance determination thresholds. This analysis shall be submitted to the City's Building Inspection Department prior to obtaining a building permit. The project applicant shall implement the noise reduction measures recommended in the interior noise analysis which may include but are not limited to sound-rated windows, a closed-windows option, and mechanical ventilation meeting applicable California Building Code (CBC) requirements.

MM NOI-C2: Reduction of exterior noise impacts.

The plans and specifications for future hotel development shall provide that all exterior noise-sensitive elements of future hotels shall be positioned in areas exposed to 65 dBA CNEL or below. If exterior use areas are subject to noise levels greater than 65 dBA CNEL, the design of the project shall incorporate measures such as noise barriers to reduce exterior noise levels to below 65 dBA CNEL. Noise barriers such as walls are commonly used to reduce outdoor noise levels from transportation sources. The effectiveness of a barrier depends on the distance from the source to the barrier, the distance from the receiver to the barrier, and the relative height of the barrier above the line-of-sight between the source and receiver. Noise barriers incorporated into project design shall block this line-of-sight, be constructed of solid material (such as concrete masonry), and be long enough to prevent sound from flanking around the ends, and shall have a minimum density of 3.5 pounds/square foot and have no gaps or cracks through or below the barrier. Where preservation of views is desired, transparent materials such as glass or Plexiglas can be used.

9.3.5.3 Public Services and Utilities

Fire Protection

Significant cumulative impact PUB-C3, the PMP Amendment'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 9.2.10, "Public Services and Utilities"). The PMP Amendment would place demand on a fire station that is above its workload capacity – conditions that are likely to worsen further with the addition of cumulative development. Implementation of Mitigation Measure PUB-2 could mitigate the PMP Amendment's contribution to this cumulative impact to a less-than-significant level.

Solid Waste

MM PUB-C2: Prior to the issuance of any demolition, grading, or construction permits for hotels within the PMP Amendment area, the Project Applicant(s) 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
- 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

9.3.5.4 Sea Level Rise

In order to mitigate the potential significant impacts of projected sea level rise by the year 2100 on future hotel development allowed under the proposed PMP Amendment, the following mitigation measure would be implemented:

MM SLR-C1: Prior to the approval of a Coastal Development Permit for future hotel development that could occur under the proposed PMP Amendment, the project applicant shall retain a qualified engineer who shall prepare for the Port District's review and approval an up-to-date, site specific analysis of the potential impacts of sea level rise by the year 2100 on the proposed hotel development. The report shall determine whether adaptive strategies for accommodating the potential for sea level rise and the potential for more frequent wave overtopping and wave-induced impact forces are necessary and, if so, shall recommend appropriate adaptive strategies such as the use of perimeter floodwalls or other flood barriers around either the outer margins of Harbor Island or the proposed development to be incorporated into the design of the proposed development.

9.3.6 Significance of Impacts after Mitigation

9.3.6.1 Transportation, Traffic, and Parking

Implementation of the mitigation measures MM TR-C7 – MM TR-C16 would mitigate the traffic impacts of the hotel development allowed under the proposed PMP Amendment. However, the intersections and street segments to be improved are within the exclusive jurisdiction of the City of San Diego. The design, timing and implementation of the recommended mitigation measures, as well as the determination of their feasibility, are subject to the control and direction of the City of San Diego and are outside the jurisdiction of the Port District. Therefore, the Port District cannot assure that these measures would be implemented when needed, and the cumulative traffic impacts would remain significant and unmitigated until the mitigation is implemented.

9.3.6.2 Noise

Implementation of mitigation measures MM NOI-C1 and MM NOI-C2 would reduce significant impacts to noise to below a level of significance.

9.3.6.3 Public Services and Utilities

Fire Protection

Implementation of Mitigation Measure MM PUB-2 could mitigate impacts on fire services associated with future hotel development that could occur under the proposed PMP Amendment to a less-than-significant level. However, this mitigation measure entails establishment by the City of San Diego 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, and is outside of the jurisdiction of the Port District. Because the Port District cannot assure that this mitigation measure would be implemented when needed, the cumulative impact is considered significant and unmitigated until the mitigation is implemented.

Solid Waste

Implementation of Mitigation Measure MM PUB-C2 would mitigate the cumulative impact on solid waste facilities associated with future hotel development that could occur under the proposed PMP Amendment to below a level of significance.

9.3.6.4 Sea Level Rise

The implementation of mitigation measure MM SLR-C1 would mitigate the potential significant impacts of sea level rise by the year 2100 to below a level of significance.

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

Revisions to the Draft Environmental Impact Report

Technical Appendices

61728

276

Appendix B

Port Master Plan Amendment

61728

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

July 2013

*Note: Text to be **deleted** shown ~~stricken~~ and text to be **added** shown underlined.*
Text that is highlighted denotes a change since the Board of Port Commissioner's (Board) June 2011 adoption of the PMPA. Subsequently, in August 2012, the Board rescinded the adoption of the PMPA.

61728

278

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
Chula Vista Bayfront Master Plan	2010-79	09 Aug 2012
San Diego Marriott Improvements	2011-179	15 Nov 2012
East Harbor Island Subarea	2013-XX	XX XX 2013

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~~**	**374.2**	**COMMERCIAL**	**383.0**		**~~756.5~~**	**757.2**	**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~~	304.8	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~~**	**279.9**	**PUBLIC RECREATION**	**681.0**		**~~961.5~~**	**960.9**	**18%**	
Open Space	~~19.0~~	17.6	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	~~219.8~~	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%**	

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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.

All hotel developments on Harbor Island shall provide or participate in shuttle service to and from the airport. All development shall provide information regarding other transit opportunities.

A parking management plan will be prepared for each hotel development on Harbor Island as the hotels are developed or redeveloped.

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 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 for Commercial Recreation uses. ~~The last project, a~~Future development in this subarea includes up to three hotels with a combined total of no more than ~~high quality hotel of approximately~~ 500 rooms.~~,~~ The hotels would be located on the marina parcel or west of the marina parcel (former airport employee parking lot); no hotels would be sited on the restaurant parcel on the easternmost end of the island. 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 and ancillary uses such as swimming pools, spas, ~~commercial~~ retail shops, restaurants, cocktail lounges, meeting and conference space, and 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. 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 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.

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 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.

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 T0TAL
COMMERCIAL	~~90.6~~	91.3	**COMMERCIAL**	105.8	~~196.4~~	197.1	20%
Airport Related Commercial	38.0						
Commercial Recreation	~~52.6~~	53.3	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~~	25.6	**PUBLIC RECREATION**	45.0	~~71.2~~	70.6	7%
Open Space	~~7.5~~	6.1	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, 2013

Revised: 06-20-13

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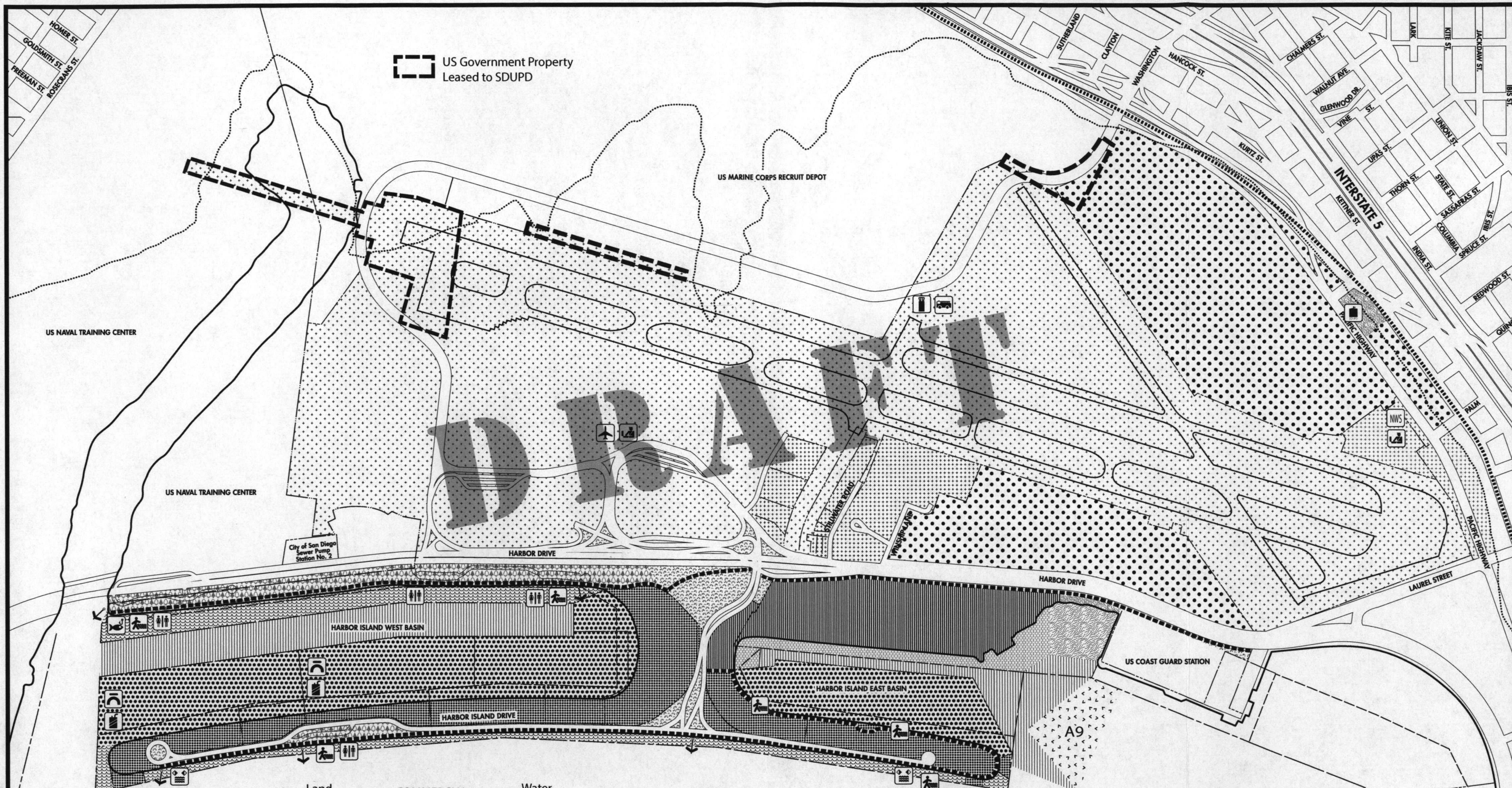

COMMERCIAL Land	COMMERCIAL Water
Commercial Recreation	Recreation Boat Berthing
Airport Related Commercial	Fueling Dock
	Sanitary Pump Station

MEAN HIGH TIDE LINE
SDUPD LIMITS
US PIERHEAD LINE
US BULKHEAD LINE
PIERHEAD/BULKHEAD LINE
LEASE LINE
COASTAL ZONE BOUNDARY

INDUSTRIAL	
International Airport	
Aviation Related Industrial	
Industrial Business Park	Specialized Berthing

PUBLIC RECREATION Land	PUBLIC RECREATION Water
Park/Plaza	Open Bay
Promenade	Public Fishing Pier
Open Space	
Public Access	
Vista Area	

PUBLIC FACILITIES Land	PUBLIC FACILITIES Water
Harbor Services	Boat Navigation Corridor
Comfort Station	Boat Anchorage
Air Traffic Control Tower	Nautical Mile Markers
Fire Station	Harbor Services
U.S. Customs	
National Weather Service	
International Airport Terminal	
Port Administration Office	

scale approx. 0 200' 400'
Land Use Planning

Planning District 2
LINDBERG FIELD/HARBOR ISLAND

PRECISE PLAN

FIGURE 9

DATE: June - 2013
DRWN / CHK: T.O. - A.B.

FILE TITLE: PPdist2_pmpa_DRAFT_HI hotel plan

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.	HOTEL(S)~~ COMPLEX.~~ on southwesternmost area of Subarea 23: up to two hotels ~~500~~ with a combined total of no more than 325 rooms, including restaurant, cocktail lounge, meeting and conference space; parking; landscap~~e~~ing; public promenade	23	T	Y	~~1993-94~~2017-20
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
11.	HOTEL: up to 175 rooms adjacent to marina, including limited meeting space; surface parking; landscaping; public promenade; realignment of traffic circle and roadway	23	T	Y	2014-16

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

Appendix E-1

Traffic Impact Study – Harbor Island Subarea 23 Port Master Plan Amendment (June 2013)

LINSCOTT
LAW &
GREENSPAN
engineers

TRAFFIC IMPACT STUDY

HARBOR ISLAND SUBAREA 23 PORT MASTER PLAN AMENDMENT

San Diego, California
July 8, 2013

LLG Ref. 3-04-1437-3

Prepared by:
Amelia Giacalone
Transportation Planner II

Under the Supervision of:
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EXECUTIVE SUMMARY

Linscott, Law & Greenspan, Engineers (LLG) has prepared this *Traffic Impact Analysis* to determine the potential traffic impacts to the local circulation system for the *Harbor Island Subarea 23 Port Master Plan Amendment* 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 and surface parking lots.

The *Harbor Island Subarea 23 Port Master Plan Amendment* proposes reconfiguring East Harbor Island Drive and the traffic circle at its eastern terminus. The amendment provides for the existing allowed 500 hotel rooms (currently designated for the San Diego International Airport (SDIA) employee parking lot) to occur as up to three smaller hotels (including the proposed 175-room hotel), which together total no more than 500 rooms. Surface parking for the hotels will be provided based on Port parking requirements..

For the purpose of this report, the proposed 500 hotel rooms were analyzed under two different scenarios:

- Scenario A: 175 "business" hotel rooms and 325 "resort" hotel rooms
- Scenario B: 500 "business" hotel rooms

Both Scenario A and B significantly impact the same intersections and street segments in the long-term. Analyzing the proposed 500 hotel rooms under both of these scenarios provides the most complete analysis available at this stage of project planning. The analysis concludes that the fair share calculations associated with the project's significant impacts differs between the two scenarios.

The project, when fully implemented, will include the following physical changes to the project site:

- 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 hotels and surface parking;
- Enhanced public access along the Harbor Island East Basin; and
- Demolition of the SDIA employee parking lot.

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 direct impacts. In the Long-Term (Year 2030), the project is calculated to have significant cumulative impacts at the following five intersections and five street segments:

Intersections

- N. Harbor Dr./Harbor Island Dr./Terminal 1
- N. Harbor Dr./Rental Car Access Road
- N. Harbor Dr./Laurel Street
- Pacific Highway / Laurel Street
- Pacific Highway / Grape Street

Street Segments

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

In addition, the future development of an approximately four-story hotel with up to 162 rooms and ancillary facilities in the area of the existing west marina parking lot could result in a significant impact on parking. Mitigation would be required to ensure that such future hotel development would include adequate parking for the new hotel, the proposed 175-room hotel, and the existing marina.

Potential mitigation measures for the *Harbor Island Subarea 23 Port Master Plan Amendment* are reported in Section *14.2* of this report.

TABLE OF CONTENTS

APPENDICES

APPENDIX

A. Street Segment and Intersection Count Sheets

B. Intersection Level of Service Criteria and Calculation Sheets

C. City of San Diego Roadway Classification Table

D. Arterial Analysis Calculation Sheets

E. Cumulative Projects—Growth Factor Calculation Sheets

F. CMP Analysis Calculation Sheets

G. Tidelands Parking Guidelines Parking Demand Rates Table

LIST OF FIGURES

LIST OF TABLES

SECTION—TABLE # **PAGE**

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TRAFFIC IMPACT STUDY

HARBOR ISLAND SUBAREA 23 PORT MASTER PLAN AMENDMENT

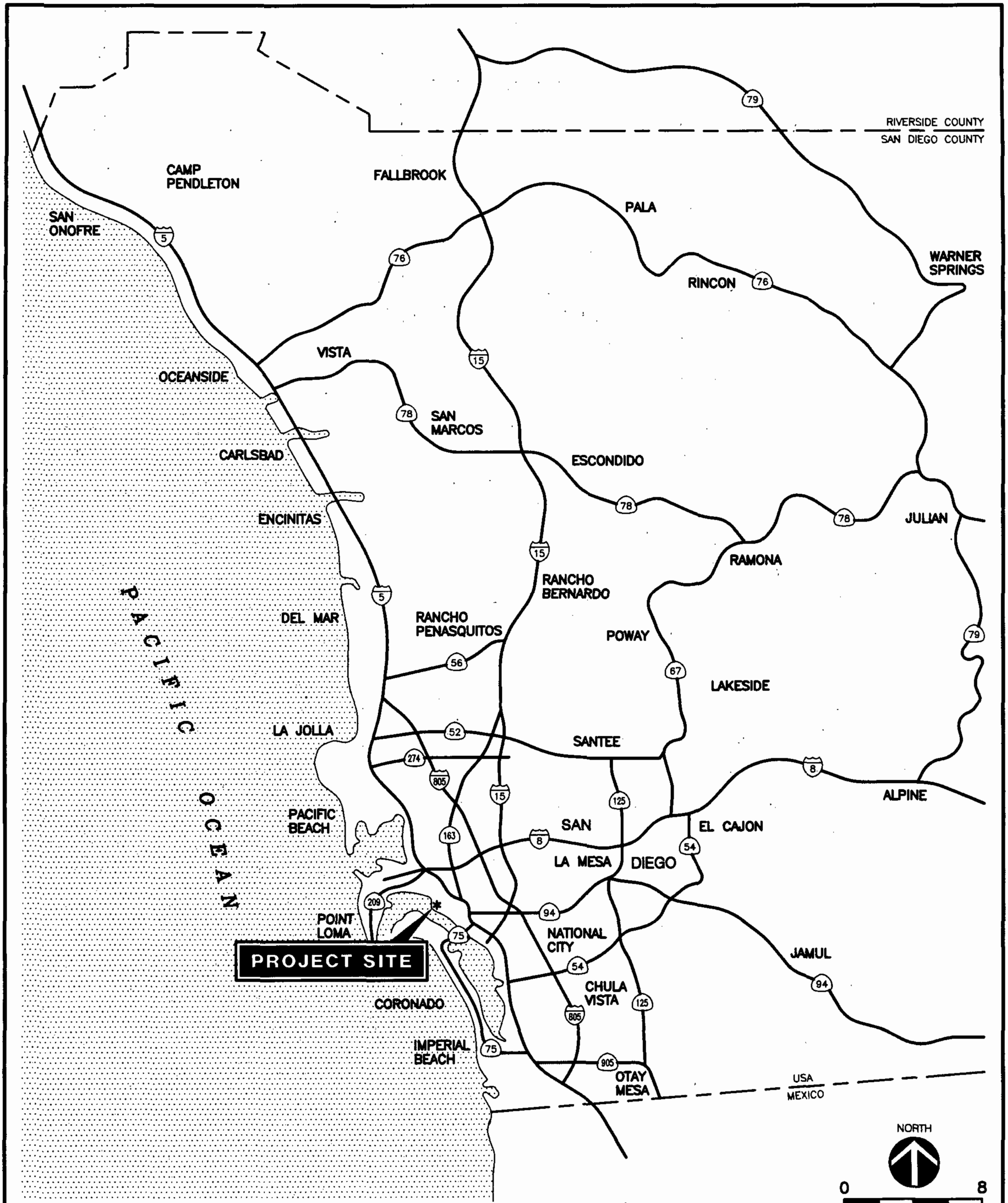
San Diego, California
July 8, 2013

1.0 INTRODUCTION

This Traffic Impact Analysis has been prepared to determine the potential traffic impacts to the local circulation system for the *Harbor Island Subarea 23 Port Master Plan Amendment* project in the City of San Diego. The project site is located on the east side of Harbor Island, as shown in ***Figure 1–1*** (Vicinity Map), and ***Figure 1–2*** (Project Area Map). 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 study area network, as shown on ***Figure 3–1,*** under both Near-Term and Long-Term conditions.

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
- Congestion Management Program (CMP) Compliance
- Construction Traffic Analysis
- Parking Assessment
- Significance of Impacts/Potential Mitigation Measures

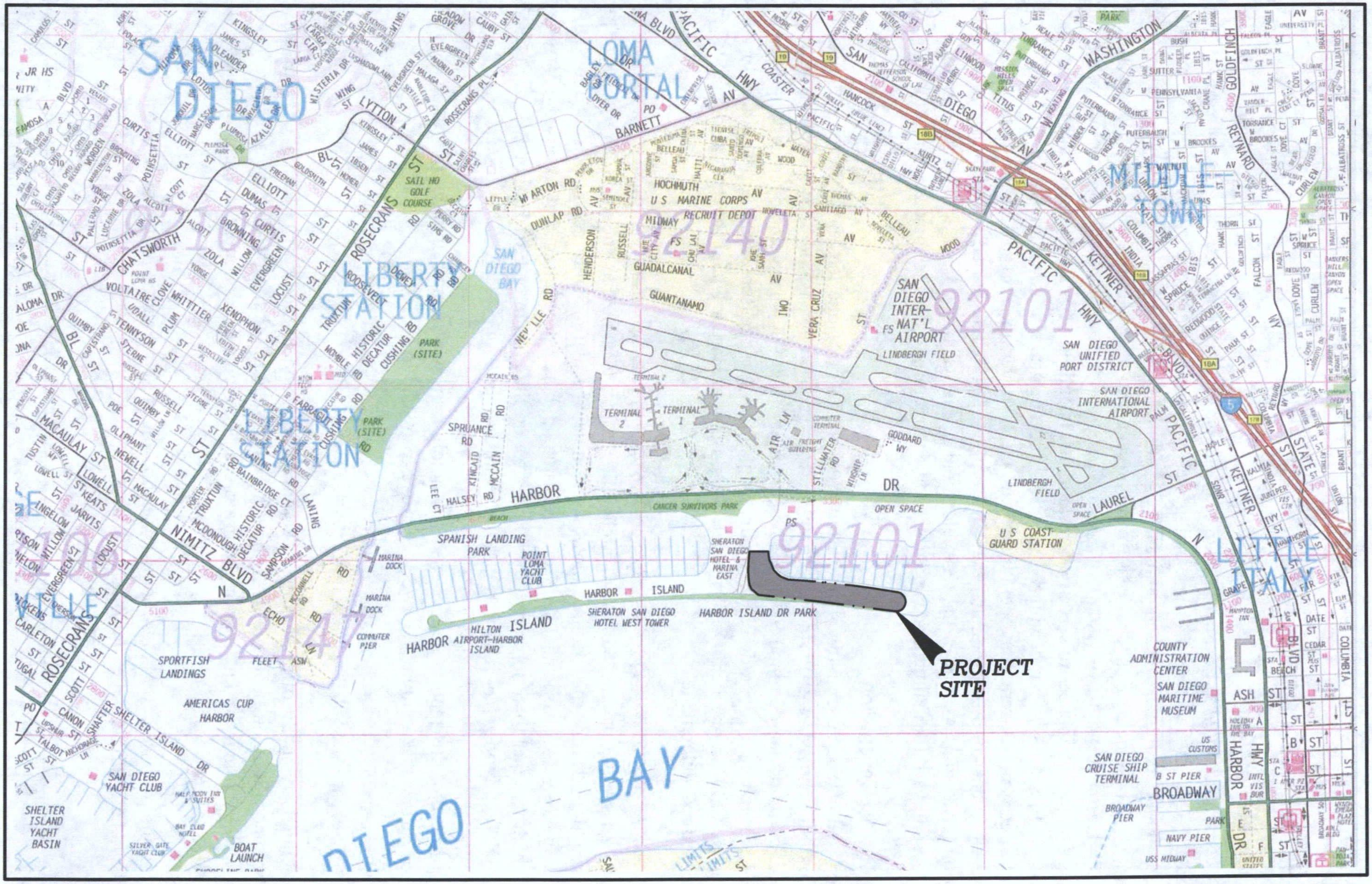


Source: LLG Engineers, 2012
N:\1437\2012 Work\Figures\Aug 2012\LLG1437 FIG1-1.dwg

LINSCOTT LAW & GREENSPAN engineers

Figure 1-1

Vicinity Map



Source: Thomas Guide, 2011
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engineers

Figure 1-2

Project Area Map

2.0 PROJECT DESCRIPTION

2.1 Project Location

The *Harbor Island Subarea 23 Port Master Plan Amendment* encompasses the east side of Harbor Island in the City of San Diego. The existing site is currently developed with a 600 slip marina including support buildings, lockers and surface parking as well as a SDIA employee parking lot containing 900 parking spaces. Just east of the project site, at the terminus of East Harbor Island Drive, is a leasehold with two restaurants; *Island Prime* and the *Reuben E. Lee*, and a parking lot providing 568 parking spaces to serve both restaurants. Island Prime is a fully functioning restaurant. The Reuben E. Lee is a barge with a super-structure constructed as a faux steam wheeler. The Reuben E. Lee is not currently an operating restaurant, however, the Port of San Diego has approved the redevelopment of the restaurant, the City of San Diego has issued a building permit, and demolition has begun. As part of the redevelopment of the Reuben E. Lee, it has been temporarily moved to a shipyard for maintenance and is scheduled to return to the site sometime in 2013.

2.2 Project Description

The proposed amendment involves the partial redevelopment of one leasehold, which is currently leased by Sunroad Marina Partners, LP, located at 955 Harbor Island Drive and an adjacent leasehold, currently leased to the SDIA for its current use as a 900-space employee parking lot. The proposed redevelopment would only affect the land side of these leaseholds. A traffic circle, located at the east end of Harbor Island Drive, as well as a portion of Harbor Island Drive, is also included in the proposed redevelopment.

The *Harbor Island Subarea 23 Port Master Plan Amendment* proposes reconfiguring a portion of East Harbor Island Drive and the traffic circle at its eastern terminus, as shown in ***Figure 2–1***. The amendment provides for the existing allowed 500 hotel rooms (currently designated for the SDIA employee parking lot) to occur as up to three smaller hotels (including the proposed 175-room hotel), which together total no more than 500 rooms, on the portion of East Harbor Island. Surface parking will be provided based on Port parking requirements.

For the purpose of this report, the proposed 500 hotel rooms were analyzed under the following two scenarios. Further discussion of the two scenarios is provided in *Section 8*.

- Scenario A: 175 "business" hotel rooms and 325 "resort" hotel rooms
- Scenario B: 500 "business hotel rooms

Business hotels typically offer sleeping accommodations and limited services such as a breakfast buffet bar and afternoon beverage bar. There are no restaurant or meeting facilities. Resort hotels provide a wider range of facilities including restaurants, cocktail lounges, meeting rooms, retail shops and guest services.

Analyzing the proposed 500 hotel rooms under both of these scenarios provides the most complete analysis available at this stage of project planning.

The project, when fully implemented, will include the following physical changes to the project site:

- 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 hotels and surface parking;
- Enhanced public access along the Harbor Island East Basin; and
- Demolition of the SDIA employee parking lot.

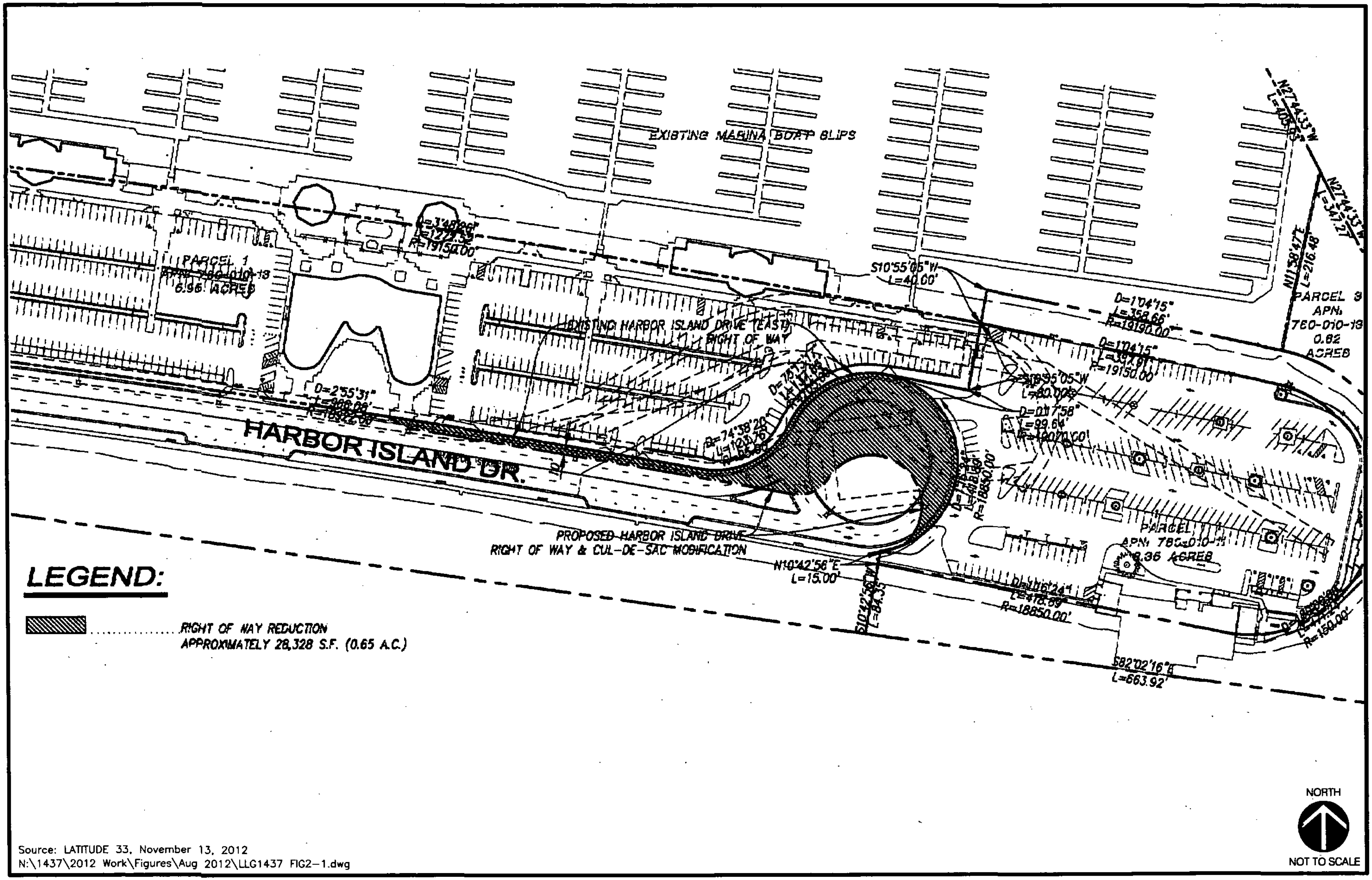

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Figure 2-1

Proposed Harbor Island Drive Reconfiguration

3.0 EXISTING CONDITIONS AND GEOGRAPHIC LIMITS OF THE CUMULATIVE STUDY AREA

Figure 3–1 shows an existing conditions diagram and the geographic limits of the cumulative study area, including signalized intersections and lane configurations.

3.1 Study Area 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 study area network. The scope of intersection and roadway segment analyses included in the study area network for this report has been defined in consultation with the City of San Diego. The City defines the study area network as the sphere of traffic influence where the project adds measurable peak hour trips. The City of San Diego defines measurable peak hour trips as the project's addition of 50 or more peak hour trips in any direction to any intersection or street segment.

North Harbor Drive is classified as a Six-Lane Primary Arterial. Currently, North Harbor Drive is a six-lane divided roadway in the study 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 study 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 study 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 study 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 study 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 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.

A validation assessment was conducted in July 2012 to determine if the 2008 ground counts would be valid to use in the 2012 analysis. ADT counts were conducted on Harbor Island Drive between N. Harbor Drive and the Sheraton Driveway and east of Harbor Island Drive and on N. Harbor Drive east of Rent a Car Access. ***Table 3–2*** compares the 2008 ground counts to the 2012 validation counts at these three locations. An increase in ADT on Harbor Island Drive between N. Harbor Drive and the Sheraton Driveway was observed. However, this is a non-critical segment which will operate at acceptable levels of service using either 2008 or 2012 counts. Overall, the validation counts show that traffic volumes have decreased in the area by approximately 1%. It is therefore somewhat conservative to use the 2008 ground counts in this analysis as opposed to new 2012 counts.

Figure 3–2 shows the Existing Traffic Volumes. ***Appendix A*** contains the 2008 manual count sheets and the 2012 validation count sheets.

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:

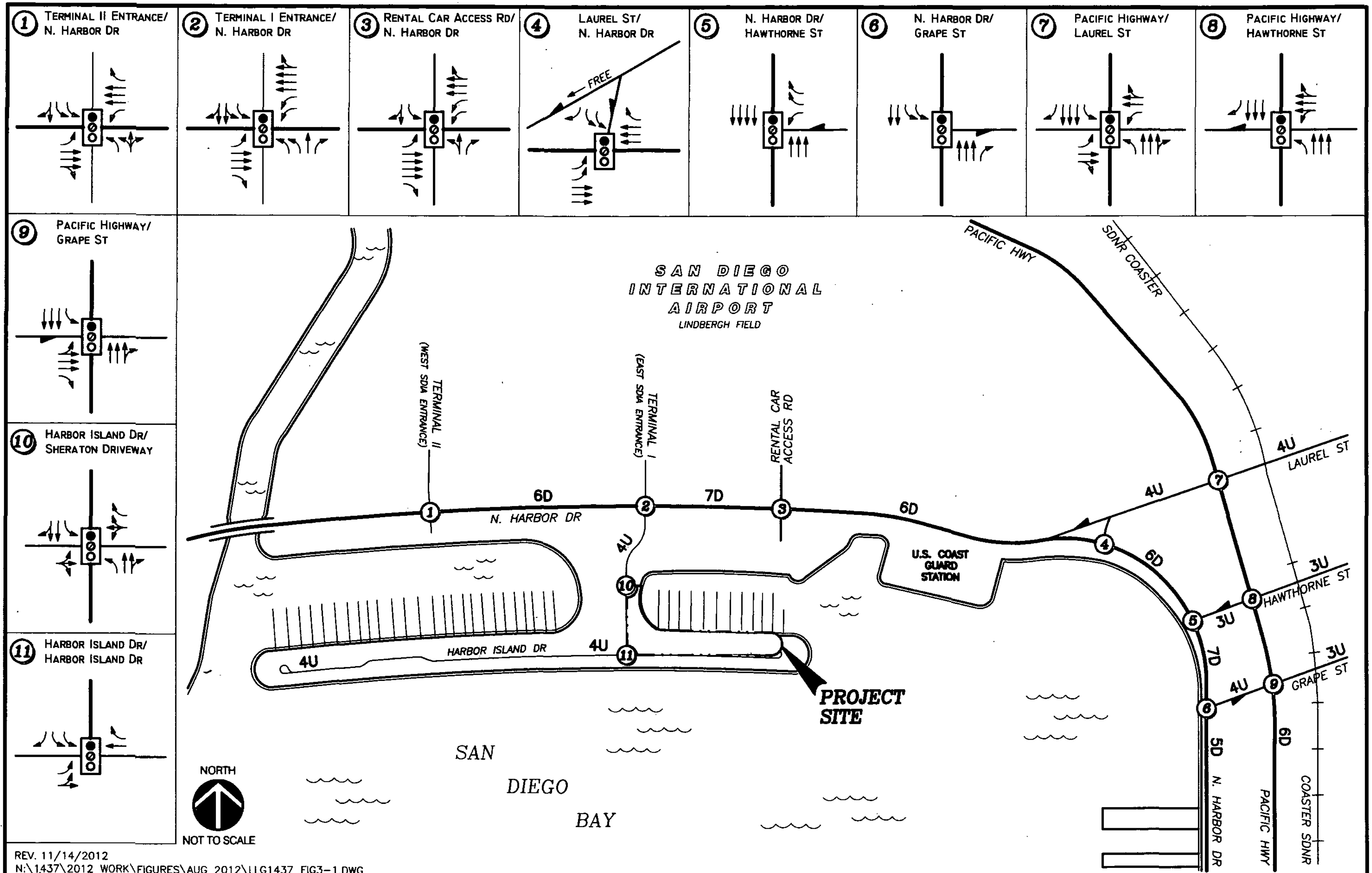
a. Average Daily Traffic Volumes.

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.

TABLE 3-2
ADT COMPARISON

Segment	Year 2008 Count	Year 2012 Count	Volume Change (2012-2008)
Harbor Island Drive N. Harbor Drive to Sheraton Driveway	16,330	23,412	5.18%
Harbor Island Drive East of Harbor Island Drive	6,940	5,275	(2.4%)
N. Harbor Drive East of Rent a Car Access	82,790	77,731	(6.1%)
		Average Volume Change	**(1.1%)**



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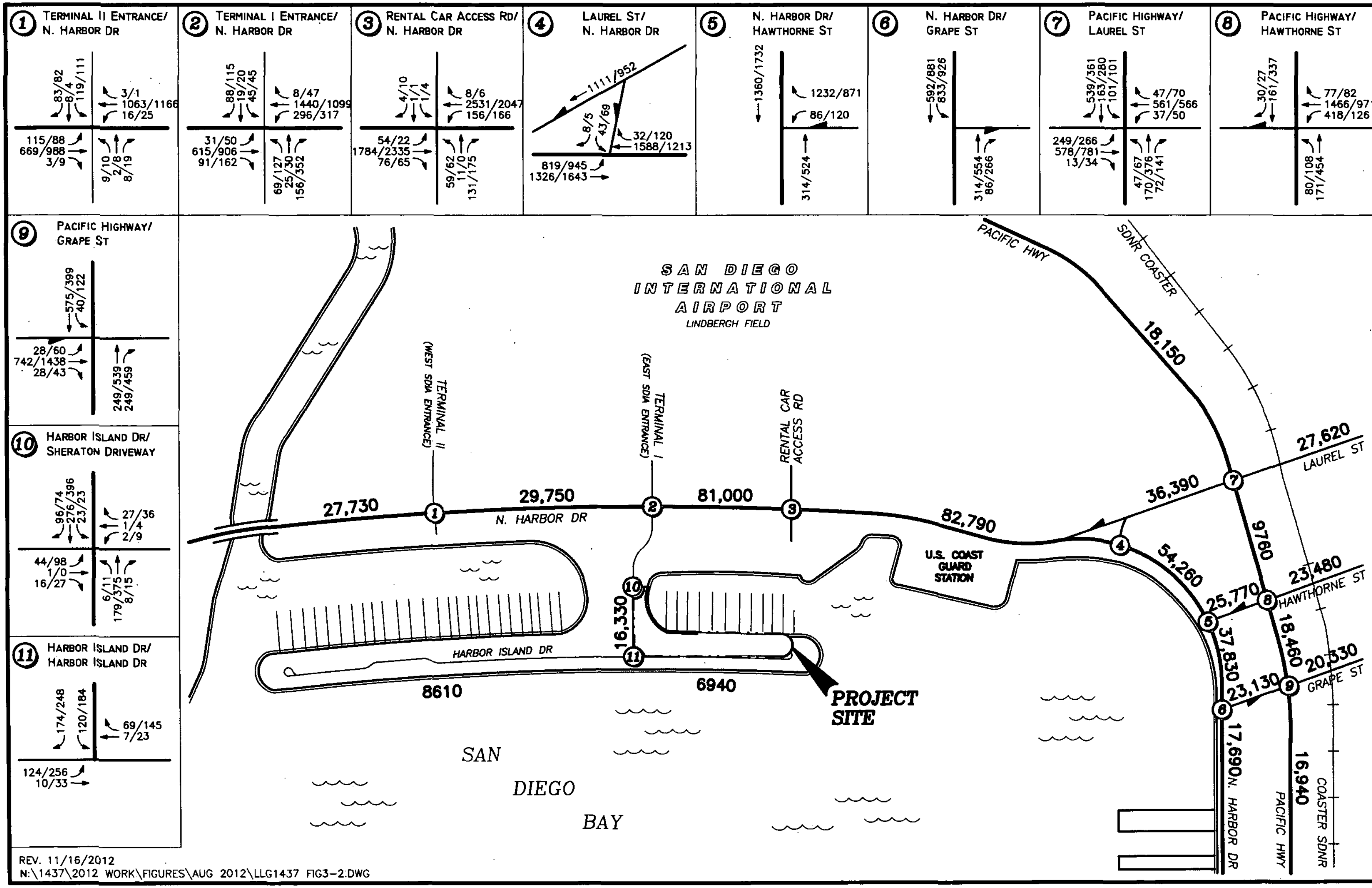
- Traffic Signal
- BL – Bike Lane
- BS – Bus Stop
- NP – No Parking
- TWLTL – Two-Way Left-Turn Lane
- 2U – Two lane undivided roadway
- 4D – Four lane divided roadway

Figure 3-1

Existing Conditions & Geographic Limits of the Cumulative Study Area Diagram

HARBOR ISLAND SUBAREA 23 PORT MASTER PLAN AMENDMENT



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NORTH

NOT TO SCALE

Figure 3-2

Existing Traffic Volumes AM/PM Peak Hours & ADT

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.***

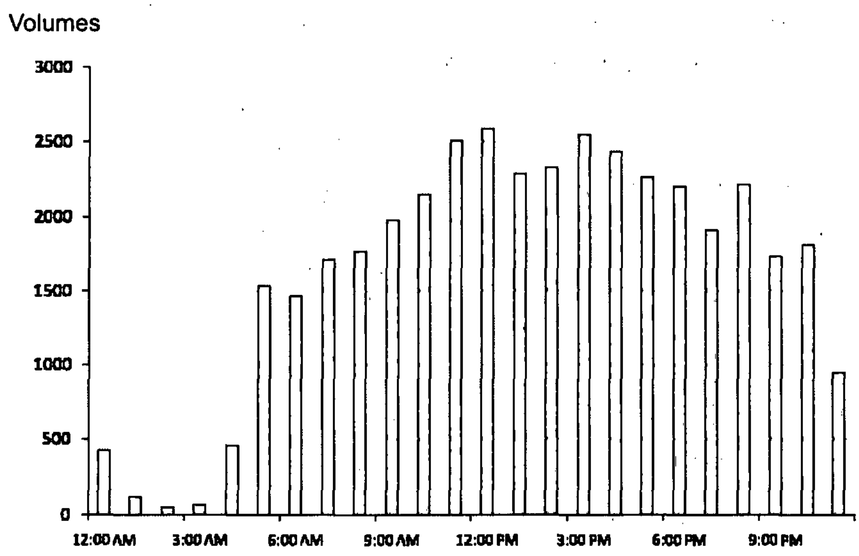
4.2 Street Segments

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.***

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. The basic analysis is based on a standard LOS lookup table that defines the roadway capacity based on the roadway classification, as defined in *Section 4.2* of this report. The basic analysis does not account for the number and spacing of intersections and is basically a one size fits all analysis. Problems with the basic analysis include: 1) City roadway classification widths and capacities change over time, and 2) the number of intersections and their spacing greatly affect the flow of traffic.

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 if the street segment is built to its ultimate classification. Arterial analysis takes into account the effects of adjacent intersection volumes, posted speed limits, distance between intersections and friction from driveways. If the detailed analysis documents acceptable LOS, then no mitigation is required. If the detailed analysis documents unacceptable LOS, then the calculated impact is considered not mitigated.

In the Near-Term scenario, street segments along Harbor Drive, Laurel Street and Hawthorn Street were calculated to have an unacceptable LOS based on the basic (street segment) analysis. These roadways are all built to their ultimate classification. When these roadways were constructed, the design standards and capacities were different than current standards. Therefore, the analyses of these older roadways using current capacities do not reflect the intended LOS when the roadway was built. Furthermore, the basic analysis does not account for the exact number of intersections along a roadway.

The detailed (arterial) analysis includes LOS calculations for intersections along the segment and an arterial analysis for travel speeds (in each direction) along the segment. A roadway with many traffic signals will take longer to travel than a roadway with fewer signals due to the probability of having to stop at each signal. The analysis of each intersection defines the delay that will be encountered during travel. The arterial analysis will define the average speed and time required to travel along a segment during peak hours. Both of these analyses include details that are not included in the basic segment analysis. This detailed analysis provides a higher level of analysis for segments than the basic analysis with the one size fits all approach.

Portions of N. Harbor Drive, Laurel Street and Hawthorn Street were found to operate at unacceptable LOS using the basic analysis with the LOS lookup tables, but were found to have acceptable LOS for the intersections and arterial analyses. Therefore, no mitigation is required because the two detailed analyses (intersection and arterial) documented acceptable LOS. The more detailed analyses prevailed. The results of the intersection and arterial analyses can be found in *Section 9*.

Arterial analysis worksheets for street segments along Harbor Drive, Laurel Street and Hawthorn Street are included in ***Appendix D***.

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 would need to be identified to return the impact within the City thresholds, or the impact would be considered significant and unmitigated.

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

Level of Service with Project[b]	Allowable Increase Due to Project Impacts[a]					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E	0.010	1.0	0.02	1.0	2.0	1.0[c]
F	0.005	0.5	0.01	0.5	1.0	

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

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 study area network 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 study area network 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

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

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

1. 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

7.0 CUMULATIVE PROJECTS

To account for the extensive development occurring near the study area network in downtown San Diego, LLG derived a growth factor, based on Year 2030 volumes obtained from the San Diego Association of Governments (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.

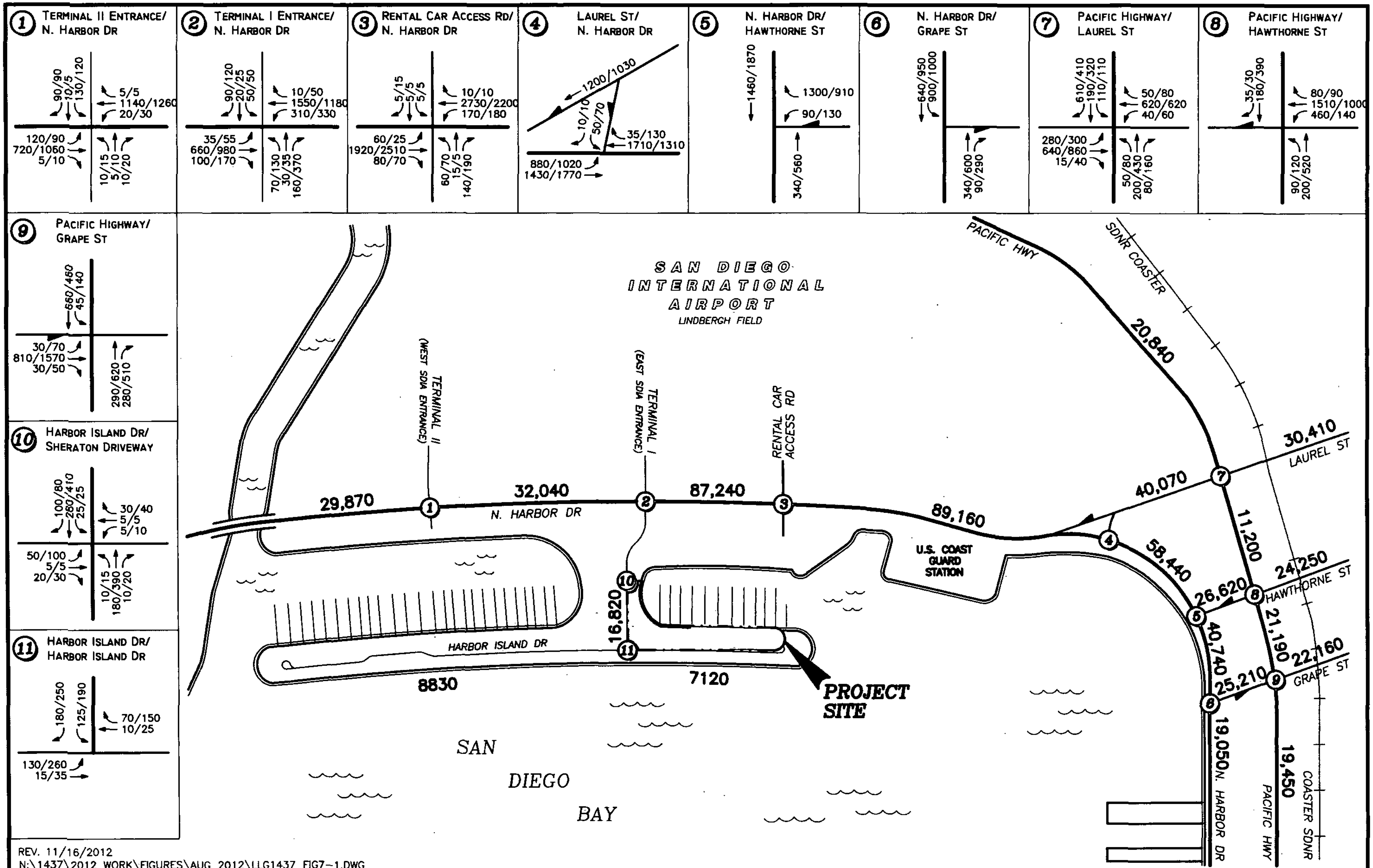


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Figure 7-1

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

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 up to three hotels with a combined total of no more than 500 rooms. For the purpose of this report the hotel rooms were analyzed under two different scenarios:

- Scenario A: 175 "Business" hotel rooms and 325 "Resort" hotel rooms
- Scenario B: 500 "Business" hotel rooms

According to the 9th Edition of ITE's *Trip Generation Manual*, "Business" hotels are "places of lodging aimed toward the business traveler. These hotels provide sleeping accommodations and other limited facilities such as a breakfast buffet bar and afternoon beverage bar (no lunch or dinner is served and no meeting facilities are provided)". Based on *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates,* 7 ADT per room is expected to be generated by a Business Hotel.

Alternately, ITE's *Trip Generation Manual* defines a "Resort" hotel as providing "sleeping accommodations, restaurants, cocktail lounges, retail shops and guest services." Based on *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates,* 8 ADT per room is expected to be generated by a Resort Hotel.

The full development of the proposed *Port Master Plan Amendment* would entail the demolition of the existing SDIA employee parking lot as discussed in *Section 2.2* of this report. A trip generation credit for the removal of this existing land use was not taken in the trip generation calculations shown below. The existing employee parking lot generates approximately 4,600 ADT with 86 inbound / 46 outbound trips during the AM peak hour and 60 inbound / 85 outbound trips during the PM peak hour. Trip generation credit for extinguishment of the existing parking lot use is not taken in this study, but may be taken in future, project-specific traffic studies for development of Subarea 23 as allowed in the Harbor Island Subarea 23 Port Master Plan Amendment. The traffic volumes in this report include trips that are expected to be removed with the construction of the proposed project and therefore, the analysis results presented are a conservative representation of the proposed project's impact to the study area.

Table 8–1 tabulates the total net project traffic generation for Scenario A: 175 "Business" hotel rooms and 325 "Resort" hotel rooms. 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 3,825 ADT with 117 inbound / 111 outbound trips during the AM peak hour and 139 inbound / 153 outbound trips during the PM peak hour.

Table 8–2 tabulates the total net project traffic generation for Scenario B: 500 "Business" hotel rooms. 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 3,500 ADT with 112 inbound / 168 outbound trips during the AM peak hour and 189 inbound / 126 outbound trips during the PM peak hour.

TABLE 8–1
PROJECT TRIP GENERATION: SCENARIO A

Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour				PM Peak Hour			
		Rate	Volume	% of ADT[d]	In:Out Split	Volume In	Volume Out	% of ADT	In:Out Split	Volume In	Volume Out
Proposed Project											
Hotel (Business)	175 rooms	7 /room[a]	1,225	8%	40:60	39	59	9%	60:40	66	44
Hotel (Resort)	325 rooms	8 /room[b]	2,600	5%	60:40	78	52	7%	40:60	73	109
Marina	600 berths	4 /berth[c]	2,400	3%	30:70	22	50	7%	60:40	101	67
Subtotal (proposed project):		—	**6,225**	—	—	**139**	**161**	—	—	**240**	**220**
Existing Marina (600 berths)		—	*-2,400*	—	—	*-22*	*-50*	—	—	*-101*	*-67*
Scenario A Net Project Trips:		—	**3,825**	—	—	**117**	**111**	—	—	**139**	**153**

Footnotes:

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

TABLE 8–2
PROJECT TRIP GENERATION: SCENARIO B

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 (Business)	500rooms	7 /room[a]	3,500	8%	40:60	112	168	9%	60:40	189	126
Marina	600berths	4 /berth[b]	2,400	3%	30:70	22	50	7%	60:40	101	67
Subtotal (proposed project):		—	**5,900**	—	—	**134**	**218**	—	—	**290**	**193**
Existing Marina (600 berths)		—	*-2,400*	—	—	*-22*	*-50*	—	—	*-101*	*-67*
Scenario B Net Project Trips:		—	**3,500**	—	—	**112**	**168**	—	—	**189**	**126**

Footnotes:

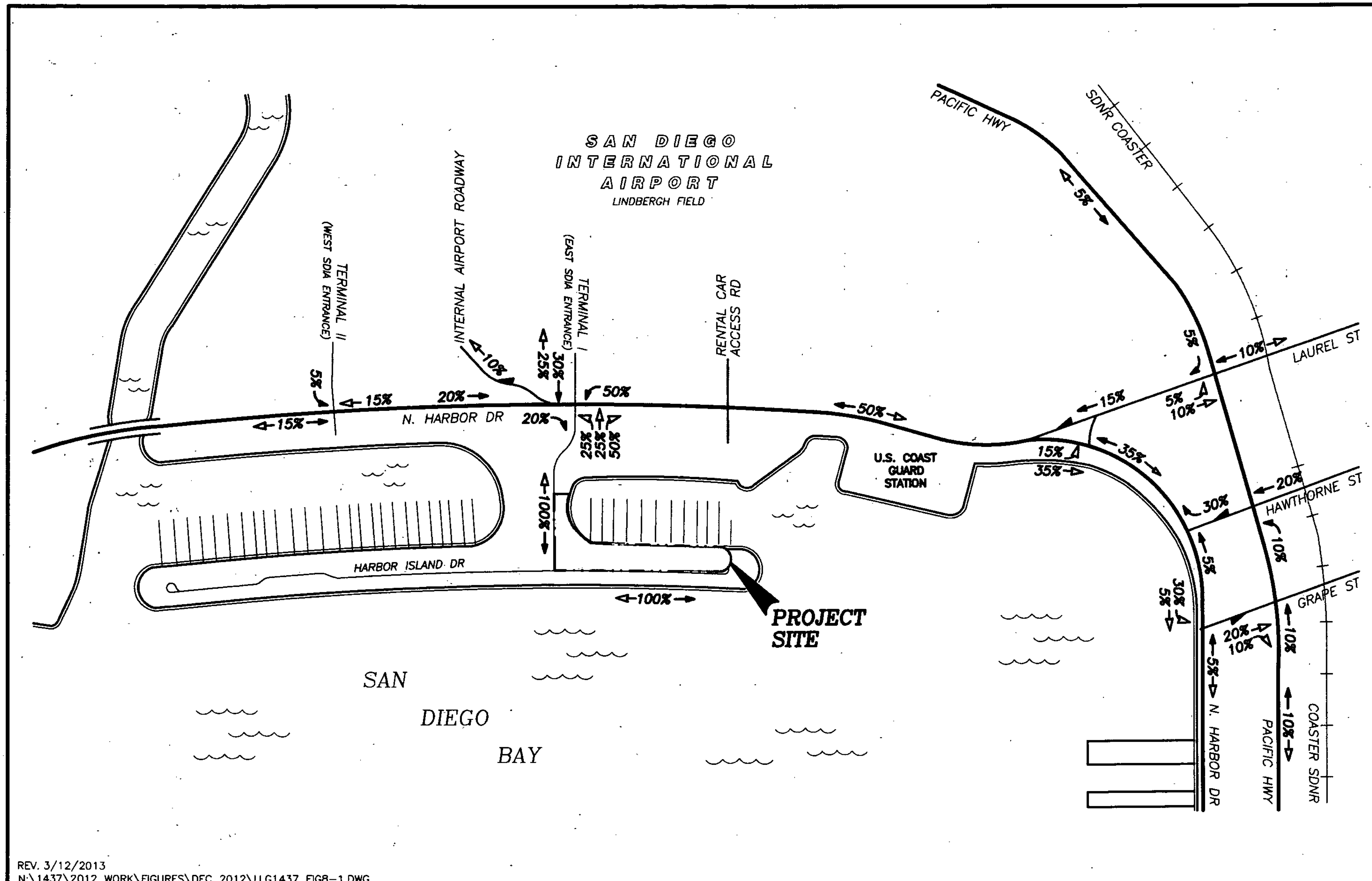
a. Rate is based on SANDAG's (*Not So*) Brief Guide of Vehicular Traffic Generation Rates, "*Business Hotel.*"
b. Rate is based on City of San Diego's Trip Generation Rate Summary Table and includes "ancillary uses".
c. ADT = Average Daily Traffic

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. It should be noted that the project distribution was assumed to be the same for both the Scenario A and Scenario B analyses since both scenarios contain a hotel as the dominant land use. There is no differential distribution data available between a business and resort hotel, therefore their distributions were assumed to be the same.

Project trip distribution for the *Harbor Island Subarea 23 Port Master Plan Amendment* 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. While the SANDAG Series 12 model was available during the time of this analysis, it was determined that using Series 11 would be a more conservative approach, as the Series 12 forecast volumes have been shown to be generally lower in the study area network than in Series 11. This is due to a number of factors such as mode split changes in the region and reduced airport trips due to the rental car facility that will be built along Pacific Highway and the relocation of cargo planes to Brown Field. Therefore, the Series 11 volumes serve as a "worst-case" scenario in relationship to the Series 12 volumes.

Figure 8–1 depicts the estimated project traffic distribution in the site environs for Scenario A and Scenario B. ***Figure 8–2*** shows the project traffic volumes and ***Figure 8–3*** shows the resultant Existing + Cumulative Projects + Project traffic volumes under Scenario A conditions (175 "Business" hotel rooms and 325 "Resort" hotel rooms). ***Figure 8–4*** shows the project traffic volumes and ***Figure 8–5*** shows the resultant Existing + Cumulative Projects + Project traffic volumes under Scenario B conditions (500 "Business" hotel rooms).



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XX% — Regional Trip Distribution
XX% — Outbound Distribution
XX% — Inbound Distribution

Figure 8-1

Regional Traffic Distribution: Scenarios A & B

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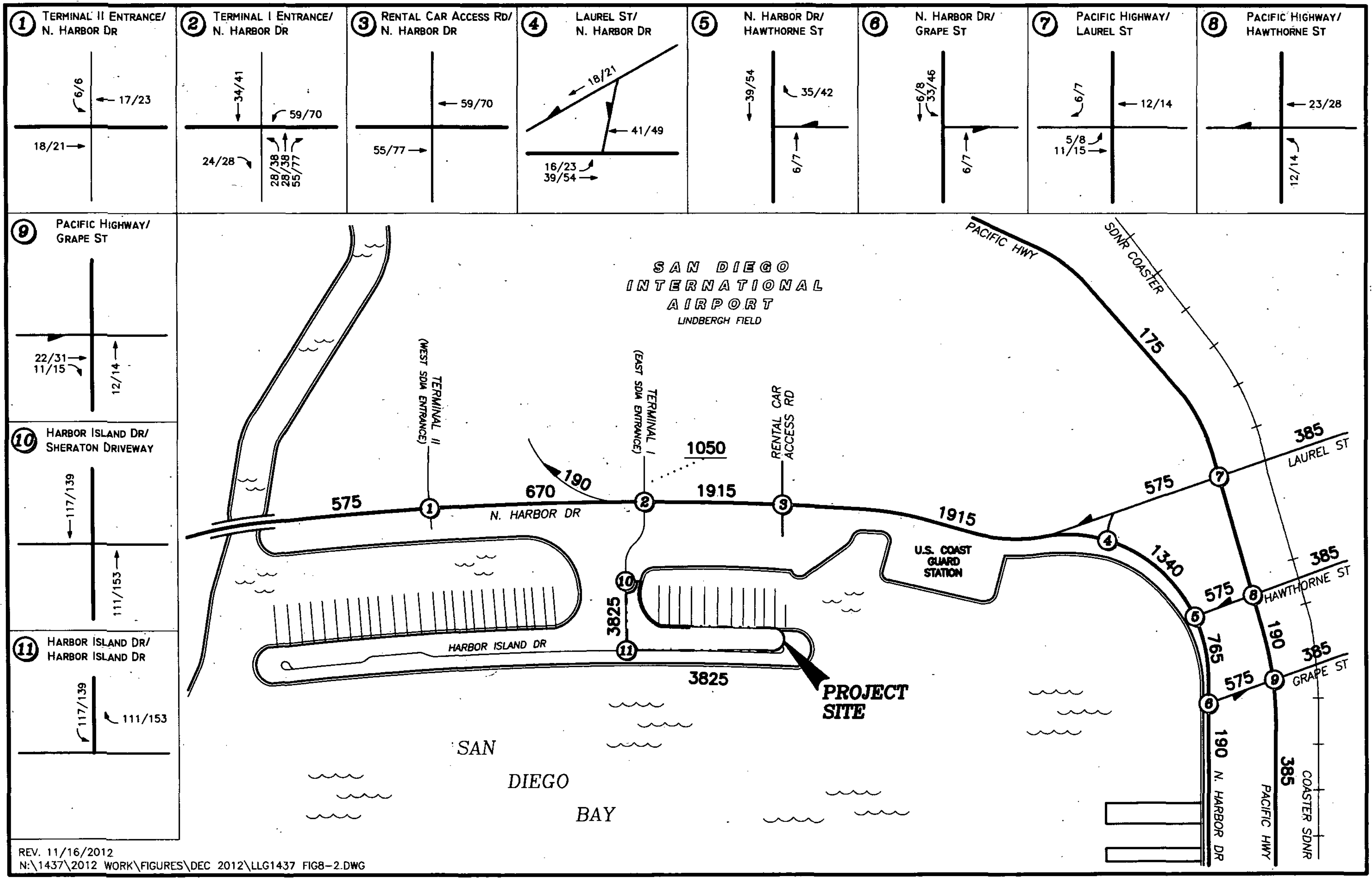

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Figure 8-2

Scenario A: Project Traffic Volumes AM/PM Peak Hours & ADT

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61728 PAGE 324

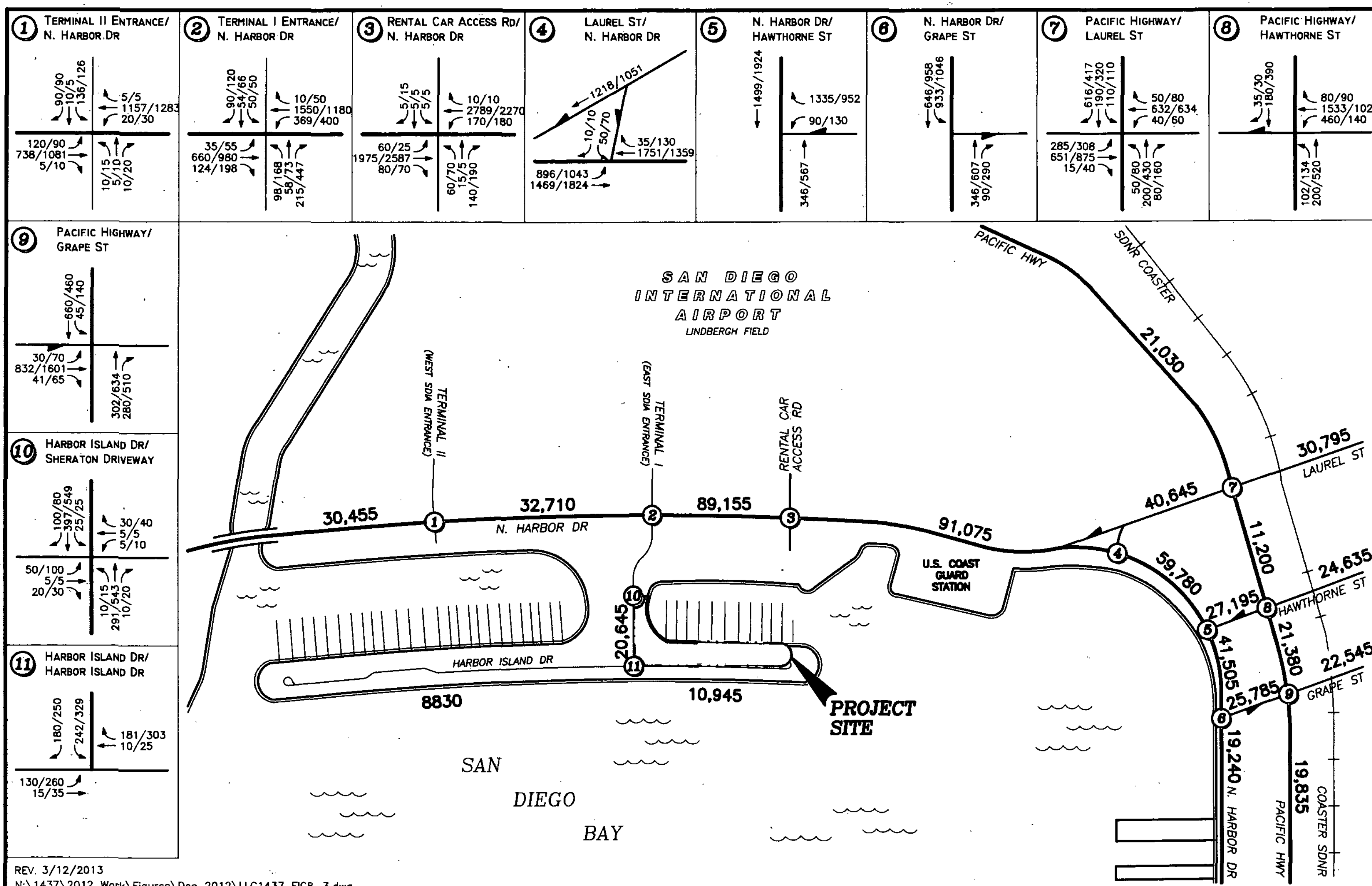

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Figure 8-3

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

HARBOR ISLAND SUBAREA 23 PORT MASTER PLAN AMENDMENT

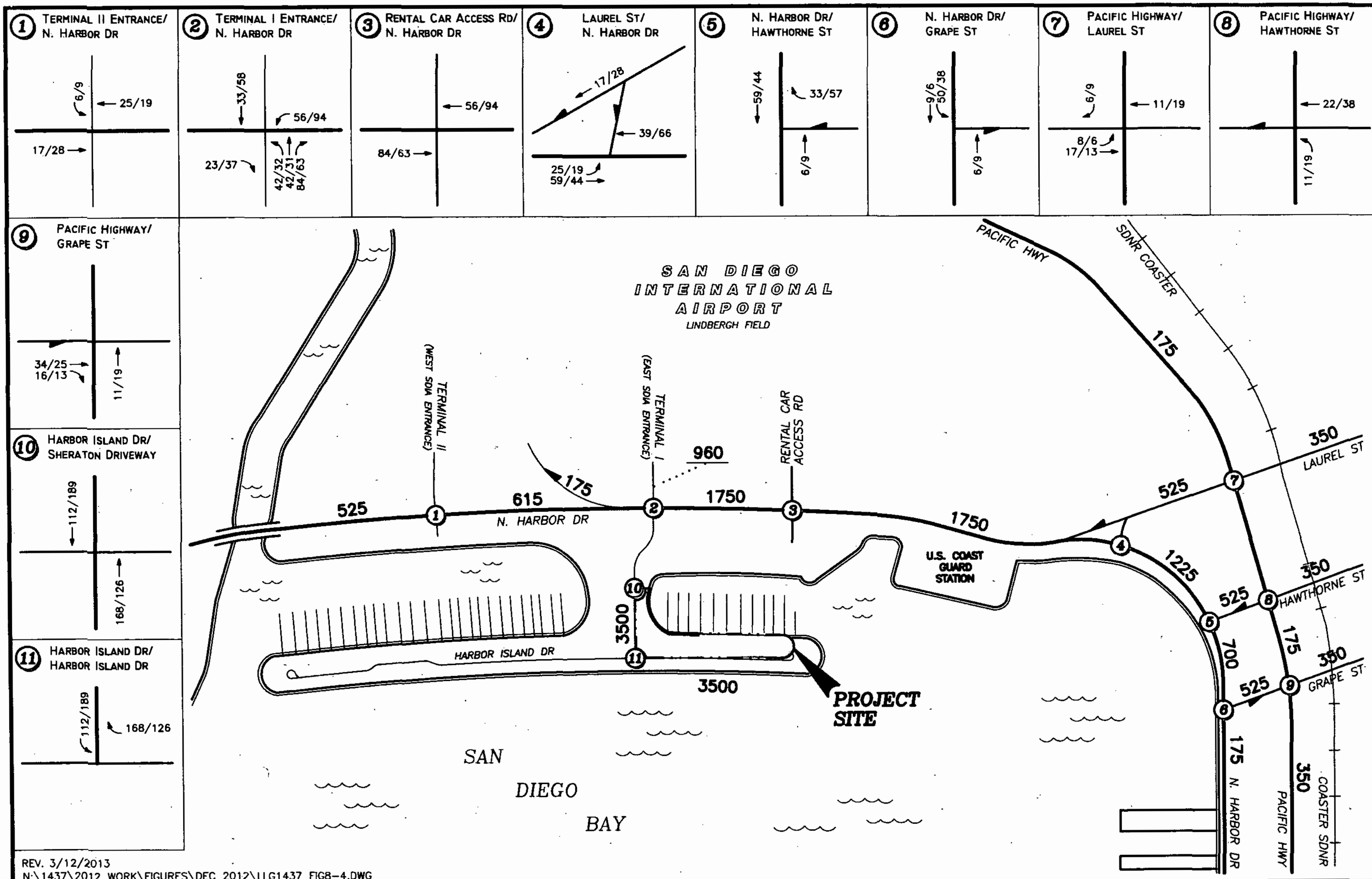

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Figure 8-4

Scenario B: Project Traffic Volumes AM/PM Peak Hours & ADT

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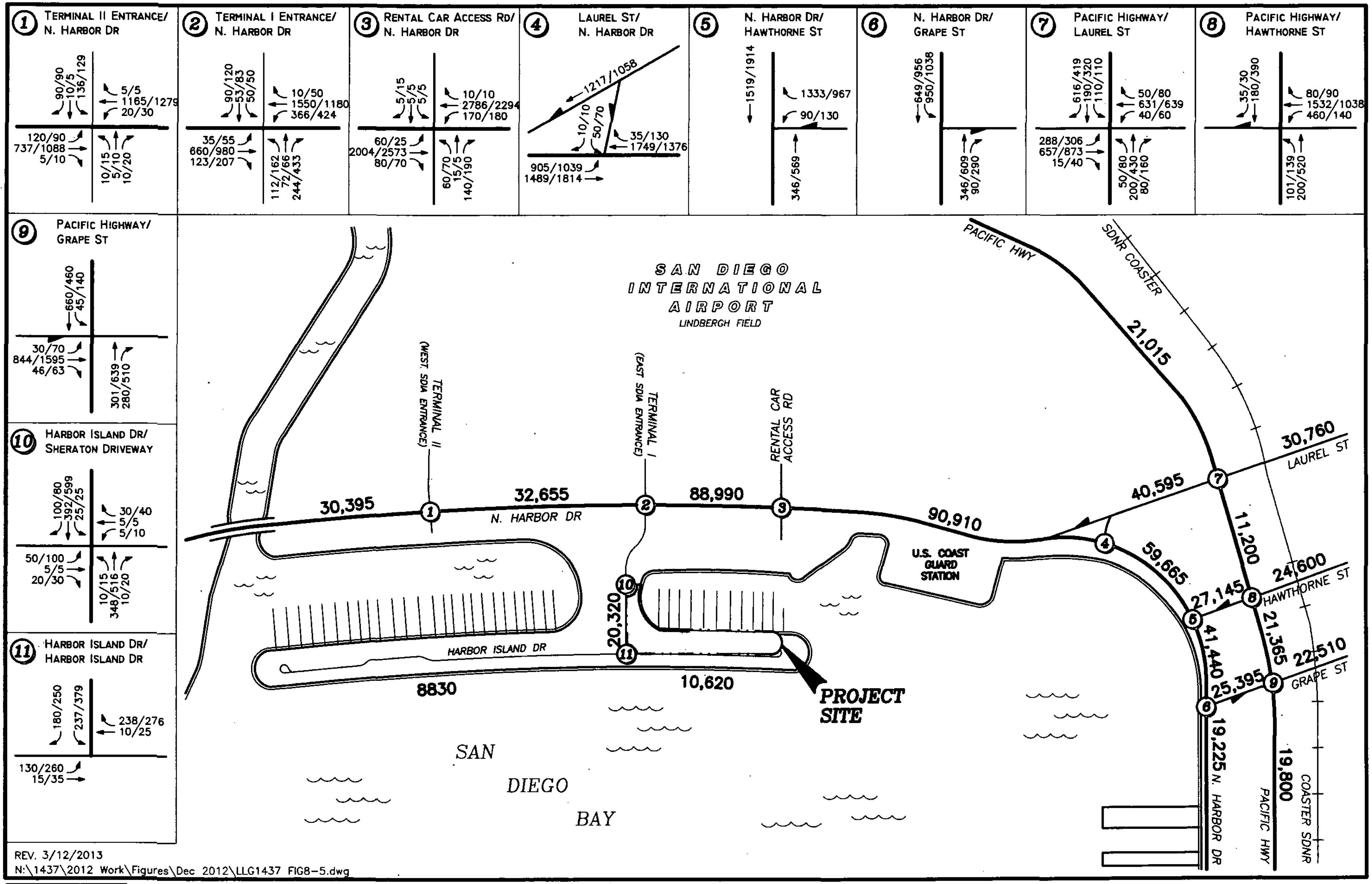

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Figure 8-5

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

9.0 NEAR-TERM ANALYSIS

The following is a discussion of the results of the intersection, segment, and arterial analyses under Near-Term conditions for Scenario A (175 "Business" hotel rooms and 325 "Resort" hotel rooms) and Scenario B (500 "Business" hotel rooms). ***Tables 9–1, 9–2,*** and ***9–3*** summarize the Near-Term Intersection Operations, Street Segment Operations, and Arterial Operations, respectively, for Scenario A. ***Tables 9–4, 9–5,*** and ***9–6*** summarize the Near-Term Intersection Operations, Street Segment Operations, and Arterial Operations, respectively, for Scenario B.

9.1 Existing + Cumulative Projects

9.1.1 *Intersection Analysis*

With the addition of cumulative projects traffic volumes, *Tables 9–1* and *9–4* show that the intersections in the study area network continue to operate at acceptable LOS D or better. It should be noted that there is no difference between Scenario A and Scenario B for the existing + cumulative projects intersection analysis, as these analyses do not include either version of the project.

9.1.2 *Segment Operations*

Similarly, with the addition of cumulative projects traffic volumes, *Tables 9–2* and *9-5* show that the street segments in the study area network are calculated to continue operating at acceptable LOS D or better with the exception of the following under both Scenario A and Scenario B:

- 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 Scenario A (175 "Business" Hotel Rooms and 325 "Resort" Hotel Rooms): Existing + Cumulative Projects + Project

9.2.1 *Intersection Analysis*

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

The project under Scenario A conditions is calculated to have no significant direct impacts to the study intersections in the Near-Term.

9.2.2 *Segment Operations*

With the addition of Scenario A 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 study area network 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 Pacific Highway—LOS F
- Laurel Street, Pacific Highway 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

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 9.2.3) or adjacent intersections (Section 9.2.1). In addition, field observations reveal that the "failing" street segments operate without major congestion. ***Therefore, no significant direct segment impacts are expected under Scenario A conditions in the Near-Term.***

9.2.3 *Arterial Levels of Service*

Arterial analysis was performed for the following street segments under Scenario A conditions in the Near-Term. The results of the analysis are shown in *Table 9–3*.

- N. Harbor Drive: Harbor Island Drive to Rental Car Access Road
- N. Harbor Drive: Rental Car Access Road to Laurel Street
- N. Harbor Drive: Laurel Street to Hawthorn Street
- Laurel Street: N. Harbor Drive to Pacific Highway
- Laurel Street: East of Pacific Highway
- Hawthorn Street: N. Harbor Drive to Pacific Highway
- Grape Street: N. Harbor Drive to Pacific Highway

As shown in *Table 9–3*, ***no significant direct arterial impacts were calculated under Scenario A in the Near-Term.***

Arterial analysis worksheets for the Existing + Cumulative Projects + Scenario A Project conditions are included in *Appendix D.*

9.3 Scenario B (500 "Business" Hotel Rooms): Existing + Cumulative Projects + Project

9.3.1 *Intersection Analysis*

With the addition of the Scenario B project traffic volumes, minor changes in delay at the study intersections are calculated as compared to the Existing + Cumulative Projects scenario. *Table 9–4* shows that the intersections in the study area network are calculated to continue to operate at an acceptable LOS of D or better.

The project under Scenario B conditions is calculated to have no significant direct impacts to the study intersections in the Near-Term.

9.3.2 *Segment Operations*

With the addition of Scenario B project traffic volumes, the changes in volume-to-capacity values are minimal as compared to the Existing + Cumulative Projects scenario. *Table 9–5* shows that the street segments in the study area network 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 Pacific Highway—LOS F
- Laurel Street, Pacific Highway 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

It should be noted that the street segments that are operating unacceptably under Scenario B conditions are also operating unacceptably under Scenario A conditions.

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 9.3.3) or adjacent intersections (Section 9.3.1). In addition, field observations reveal that the "failing" street segments operate without major congestion. ***Therefore, no significant direct segment impacts are expected under Scenario B conditions in the Near-Term.***

9.3.3 *Arterial Levels of Service*

Arterial analysis was performed for the following street segments under Scenario B conditions in the Near-Term. The results of the analysis are shown in *Table 9–6.*

- N. Harbor Drive: Harbor Island Drive to Rental Car Access Road
- N. Harbor Drive: Rental Car Access Road to Laurel Street
- Laurel Street: N. Harbor Drive to Pacific Highway
- Laurel Street: East of Pacific Highway
- Hawthorn Street: N. Harbor Drive to Pacific Highway

As shown in *Table 9–3*, ***no significant direct arterial impacts were calculated under Scenario B in the Near-Term.***

Arterial analysis worksheets for the Existing + Cumulative Projects + Scenario B Project conditions are included in *Appendix D.*

TABLE 9–1
NEAR-TERM INTERSECTION OPERATIONS: SCENARIO A

Intersection	Control Type	Peak Hour	Existing		Existing + Cumulative Projects		Existing + Cumulative Projects + Scenario A Project			Sig?[d]
			Delay[a]	LOS[b]	Delay	LOS	Delay	LOS	Δ[c]	
N. Harbor Dr./Terminal 2 (West Airport Entrance)	Signal	AM PM	17.7 17.2	B B	18.4 17.5	B B	19.0 18.1	B B	0.6 0.6	No No
N. Harbor Dr./Harbor Island Dr./ Terminal 1 (East Airport Entrance)	Signal	AM PM	20.1 22.3	C C	29.7 31.4	C C	39.9 41.3	D D	10.2 9.9	No No
N. Harbor Drive/Rental Car Access Road	Signal	AM PM	23.8 20.0	C C	30.4 25.9	C C	34.3 30.0	C C	3.9 4.1	No No
N. Harbor Drive/Laurel Street	Signal	AM PM	23.0 39.2	C D	27.1 45.3	C D	31.0 53.3	C D	3.9 8.0	No No
N. Harbor Drive/Hawthorn Street	Signal	AM PM	25.2 30.0	C C	35.2 41.3	D D	40.8 43.9	D D	5.6 2.6	No No
N. Harbor Drive/Grape Street	Signal	AM PM	22.9 20.7	C C	32.5 36.3	C D	35.4 46.4	D D	2.9 10.1	No No
Pacific Highway/Laurel Street	Signal	AM PM	27.8 35.9	C D	36.1 44.6	D D	39.1 48.8	D D	3.0 4.2	No No
Pacific Highway/Hawthorn Street	Signal	AM PM	15.8 12.6	B B	18.4 13.1	B B	19.5 13.4	B B	1.1 0.3	No No
Pacific Highway/Grape Street	Signal	AM PM	10.3 19.0	B B	11.4 21.8	B C	11.8 25.0	B C	0.4 3.2	No No
Harbor Island Drive/Sheraton Driveway	Signal	AM PM	12.7 14.1	B B	14.1 14.2	B B	14.6 14.7	B B	0.5 0.5	No No
Harbor Island Drive/Harbor Island Drive	Signal	AM PM	7.4 7.6	A A	7.6 8.2	A A	9.4 8.7	A A	1.8 0.5	No 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

TABLE 9–2
NEAR-TERM STREET SEGMENT OPERATIONS: SCENARIO A

Street Segment	Existing Capacity (LOS E)[a]	Existing			Existing + Cumulative Projects			Existing + Cumulative Projects + Scenario A 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	30,455	0.508	B	0.010	No
Terminal 2 (SDIA) to Harbor Island Dr.	60,000	29,750	0.496	B	32,040	0.534	B	32,710	0.545	B	0.011	No
Harbor Island Dr. to Rental Car Access Rd.	65,000	81,000	1.246	**F**	87,240	1.342	**F**	89,155	1.372	**F**	0.030	**No[g]**
Rental Car Access Road to Laurel St.	60,000	82,790	1.380	**F**	89,160	1.486	**F**	91,075	1.518	**F**	0.032	**No[g]**
Laurel Street to Hawthorn Street	60,000	54,260	0.904	D	58,440	0.974	**E**	59,780	0.996	**E**	0.022	**No[g]**
Hawthorn Street to Grape Street	65,000	37,830	0.582	C	40,740	0.627	C	41,505	0.639	C	0.012	No
South of Grape Street	55,000	17,690	0.322	A	19,050	0.346	A	19,240	0.350	A	0.004	No
Pacific Highway												
North of Laurel Street	50,000	18,150	0.363	A	20,840	0.417	B	21,030	0.421	B	0.004	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	21,380	0.428	B	0.004	No
South of Grape Street	50,000	16,940	0.339	A	19,450	0.389	A	19,835	0.397	A	0.008	No
Laurel Street												
N. Harbor Dr. to Pacific Highway	40,000	36,390	0.910	**E**	40,070	1.002	**F**	40,645	1.016	**F**	0.014	**No[g]**
East of Pacific Highway	30,000	27,620	0.921	**E**	30,410	1.014	**F**	30,795	1.027	**F**	0.013	**No[g]**
Hawthorn Street												
N. Harbor Dr. to Pacific Highway	25,000	25,770	1.031	**F**	26,620	1.065	**F**	27,195	1.088	**F**	0.023	**No[g]**
East of Pacific Highway	25,000	23,480	0.939	**E**	24,250	0.970	**E**	24,635	0.985	**E**	0.015	No
Grape Street												
N. Harbor Dr. to Pacific Highway	25,000	23,130	0.925	**E**	25,210	1.008	**F**	25,785	1.031	**F**	0.023	**No[g]**
East of Pacific Highway	25,000	20,330	0.813	**E**	22,160	0.886	**E**	22,545	0.902	**E**	0.016	No

TABLE 9–2
NEAR-TERM STREET SEGMENT OPERATIONS: SCENARIO A

Street Segment	Existing Capacity (LOS E)[a]	Existing			Existing + Cumulative Projects			Existing + Cumulative Projects + Scenario A Project				Sig?[f]
		ADT[b]	V/C[c]	LOS[d]	ADT	V/C	LOS	ADT	V/C	LOS	Δ[e]	
Harbor Island Drive												
N. Harbor Dr. to Harbor Island Dr.	40,000	16,330	0.408	B	16,820	0.421	B	20,645	0.516	B	0.095	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	10,945	0.365	B	0.128	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.

TABLE 9–3
NEAR-TERM ARTERIAL OPERATIONS: SCENARIO A

Arterial Segment	Period	Direction	Existing		Existing + Cumulative Projects		Existing + Cumulative Project + Scenario A 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	20.3	B	20.2	B	20.1	B	0.1	No
		WB	19.5	B	15.1	C	15.0	C	0.1	No
	PM	EB	17.7	C	15.6	C	14.5	C	1.1	No
		WB	18.7	C	17.9	C	17.7	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	15.8	C	14.1	C	13.3	C	0.8	No
	PM	EB	21.9	B	21.9	B	21.9	B	0.0	No
		WB	18.4	C	17.1	C	16.7	C	0.4	No
N. Harbor Drive Laurel St. to Hawthorn St.	AM	EB	23.1	B	22.8	B	22.8	B	0.0	No
		WB	18.6	C	18.1	C	18.1	C	0.0	No
	PM	EB	21.5	B	20.4	B	19.4	B	1.0	No
		WB	19.2	B	19.2	B	19.2	B	0.0	No
Laurel Street N. Harbor Drive to Pacific Highway	AM	EB	27.7	C	26.3	C	26.0	C	0.3	No
		WB	19.1	D	18.3	D	18.2	D	0.1	No
	PM	EB	26.8	C	26.0	C	25.9	C	0.1	No
		WB	22.4	C	21.6	D	21.3	D	0.3	No
Laurel Street East of Pacific Highway	AM	EB	15.8	**E**	15.4	**E**	15.2	**E**	0.2	No
		WB	12.0	**F**	11.4	**F**	11.3	**F**	0.1	No
	PM	EB	14.1	**E**	12.9	**F**	12.5	**F**	0.4	No
		WB	12.3	**F**	11.6	**F**	11.4	**F**	0.2	No
Hawthorn Street N. Harbor Drive to Pacific Highway	AM	WB	12.8	D	11.0	D	11.0	D	0.0	No
	PM	WB	8.8	**E**	8.5	**E**	8.4	**E**	0.1	No
Grape Street N. Harbor Drive to Pacific Highway	AM	EB	9.9	D	9.1	D	9.1	D	0.0	No
	PM	EB	2.3	**F**	1.6	**F**	1.3	**F**	0.3	No

Footnotes:

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

TABLE 9–4
NEAR-TERM INTERSECTION OPERATIONS: SCENARIO B

Intersection	Control Type	Peak Hour	Existing		Existing + Cumulative Projects		Existing + Cumulative Projects + Scenario B Project			Sig?[d]
			Delay[a]	LOS[b]	Delay	LOS	Delay	LOS	Δ[c]	
N. Harbor Dr./Terminal 2 (West Airport Entrance)	Signal	AM PM	17.7 17.2	B B	18.4 17.5	B B	19.0 18.2	B B	0.6 0.7	No No
N. Harbor Dr./Harbor Island Dr./ Terminal 1 (East Airport Entrance)	Signal	AM PM	20.1 22.3	C C	29.7 31.4	C C	41.9 44.2	D D	12.2 12.8	No No
N. Harbor Drive/Rental Car Access Road	Signal	AM PM	23.8 20.0	C C	30.4 25.9	C C	34.1 29.9	C C	3.7 4.0	No No
N. Harbor Drive/Laurel Street	Signal	AM PM	23.0 39.2	C D	27.1 45.3	C D	30.1 49.5	C D	3.0 4.2	No No
N. Harbor Drive/Hawthorn Street	Signal	AM PM	25.2 30.0	C C	35.2 41.3	D D	42.8 47.4	D D	7.6 6.1	No No
N. Harbor Drive/Grape Street	Signal	AM PM	22.9 20.7	C C	32.5 36.3	C D	39.3 44.8	D D	6.8 8.5	No No
Pacific Highway/Laurel Street	Signal	AM PM	27.8 35.9	C D	36.1 44.6	D D	39.8 48.5	D D	3.7 3.9	No No
Pacific Highway/Hawthorn Street	Signal	AM PM	15.8 12.6	B B	18.4 13.1	B B	19.4 13.7	B B	1.0 0.6	No No
Pacific Highway/Grape Street	Signal	AM PM	10.3 19.0	B B	11.4 21.8	B C	11.8 24.9	B C	0.4 3.1	No No
Harbor Island Drive/Sheraton Driveway	Signal	AM PM	12.7 14.1	B B	14.1 14.2	B B	14.6 14.7	B B	0.5 0.5	No No
Harbor Island Drive/Harbor Island Drive	Signal	AM PM	7.4 7.6	A A	7.6 8.2	A A	8.9 9.4	A A	1.3 1.2	No 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

TABLE 9–5
NEAR-TERM STREET SEGMENT OPERATIONS: SCENARIO B

Street Segment	Existing Capacity (LOS E)[a]	Existing			Existing + Cumulative Projects			Existing + Cumulative Projects + Scenario B 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	30,395	0.507	B	0.009	No
Terminal 2 (SDIA) to Harbor Island Dr.	60,000	29,750	0.496	B	32,040	0.534	B	32,665	0.544	B	0.010	No
Harbor Island Dr. to Rental Car Access Rd.	65,000	81,000	1.246	**F**	87,240	1.342	**F**	88,990	1.369	**F**	0.027	**No**[g]
Rental Car Access Road to Laurel St.	60,000	82,790	1.380	**F**	89,160	1.486	**F**	90,910	1.515	**F**	0.029	**No**[g]
Laurel Street to Hawthorn Street	60,000	54,260	0.904	D	58,440	0.974	**E**	59,665	0.994	**E**	0.020	No
Hawthorn Street to Grape Street	65,000	37,830	0.582	C	40,740	0.627	C	41,440	0.638	C	0.011	No
South of Grape Street	55,000	17,690	0.322	A	19,050	0.346	A	19,225	0.350	A	0.004	No
Pacific Highway												
North of Laurel Street	50,000	18,150	0.363	A	20,840	0.417	B	21,015	0.420	B	0.003	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	21,365	0.427	B	0.003	No
South of Grape Street	50,000	16,940	0.339	A	19,450	0.389	A	19,800	0.396	A	0.007	No
Laurel Street												
N. Harbor Dr. to Pacific Highway	40,000	36,390	0.910	**E**	40,070	1.002	**F**	40,595	1.015	**F**	0.013	**No**[g]
East of Pacific Highway	30,000	27,620	0.921	**E**	30,410	1.014	**F**	30,760	1.025	**F**	0.011	**No**[g]
Hawthorn Street												
N. Harbor Dr. to Pacific Highway	25,000	25,770	1.031	**F**	26,620	1.065	**F**	27,145	1.086	**F**	0.021	**No**[g]
East of Pacific Highway	25,000	23,480	0.939	**E**	24,250	0.970	**E**	24,600	0.984	**E**	0.014	No
Grape Street												
N. Harbor Dr. to Pacific Highway	25,000	23,130	0.925	**E**	25,210	1.008	**F**	25,395	1.016	**F**	0.008	No
East of Pacific Highway	25,000	20,330	0.813	**E**	22,160	0.886	**E**	22,510	0.900	**E**	0.014	No

TABLE 9–5
NEAR-TERM STREET SEGMENT OPERATIONS: SCENARIO B

Street Segment	Existing Capacity (LOS E)[a]	Existing			Existing + Cumulative Projects			Existing + Cumulative Projects + Scenario B Project				Sig?[f]
		ADT[b]	V/C[c]	LOS[d]	ADT	V/C	LOS	ADT	V/C	LOS	Δ[e]	
Harbor Island Drive												
N. Harbor Dr. to Harbor Island Dr.	40,000	16,330	0.408	B	16,820	0.421	B	20,320	0.508	B	0.087	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	10,620	0.354	B	0.117	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.

TABLE 9–6
NEAR-TERM ARTERIAL OPERATIONS: SCENARIO B

Arterial Segment	Period	Direction	Existing		Existing + Cumulative Projects		Existing + Cumulative Project + Scenario B 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	20.3	B	20.2	B	20.1	B	0.1	No
		WB	19.5	B	15.1	C	14.6	C	0.5	No
	PM	EB	17.7	C	15.6	C	14.7	C	0.9	No
		WB	18.7	C	17.9	C	17.7	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	15.8	C	14.1	C	13.3	C	0.8	No
	PM	EB	21.9	B	21.9	B	21.9	B	0.0	No
		WB	18.4	C	17.1	C	16.6	C	0.5	No
Laurel Street N. Harbor Drive to Pacific Highway	AM	EB	27.7	C	26.3	C	26.0	C	0.3	No
		WB	19.1	D	18.3	D	18.2	D	0.1	No
	PM	EB	26.8	C	26.0	C	25.2	C	0.8	No
		WB	22.4	C	21.6	D	21.2	D	0.4	No
Laurel Street East of Pacific Highway	AM	EB	15.8	**E**	15.4	**E**	15.2	**E**	0.2	No
		WB	12.0	**F**	11.4	**F**	11.3	**F**	0.1	No
	PM	EB	14.1	**E**	12.9	**F**	12.5	**F**	0.4	No
		WB	12.3	**F**	11.6	**F**	11.3	**F**	0.3	No
Hawthorn Street N. Harbor Drive to Pacific Highway	AM	WB	12.8	D	11.0	D	10.8	D	0.2	No
	PM	WB	8.8	**E**	8.5	**E**	8.4	**E**	0.1	No

Footnotes:

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

10.0 LONG-TERM ANALYSIS

The following is a discussion of the Year 2030 without and with project operations for Scenario A (175 "Business" hotel rooms and 325 "Resort" hotel rooms) and Scenario B (500 "Business" hotel rooms). 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. It should be noted that the roadway improvements associated with the Year 2030 North Embarcadero Visionary Plan were assumed in this analysis. Previous iterations of this study included differing Year 2030 conditions assumptions, such as 3-lanes along Hawthorn Street as opposed to the 4-lanes assumed in this study, which resulted in additional significant impacts in some cases. However, the future roadway conditions assumed in this report reflect the most current information available and supersede any assumptions used in previous traffic studies prepared by LLG for the Harbor Island Hotel project. ***Figure 10–1*** shows the Year 2030 conditions.

Figure 10–2 illustrates the Year 2030 without Project Traffic Volumes. ***Figure 10–3*** illustrates the Year 2030 with Scenario A Project Traffic Volumes and ***Figure 10–4*** illustrates the Year 2030 with Scenario B Project Traffic Volumes.

10.1 Year 2030 without Project

10.1.1 *Intersection Analysis*

Tables 10–1 and 10–3 summarize 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
- Pacific Highway/Laurel Street—LOS F in the AM and PM peak hours
- Pacific Highway/Grape Street—LOS F in the PM peak hour

10.1.2 *Segment Operations*

Tables 10–2 and 10–4 summarize 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

- Grape Street, Pacific Highway to Kettner Boulevard—LOS F

10.2 Year 2030 with Project: Scenario A

10.2.1 *Intersection Analysis*

With the addition of the Scenario A project traffic volumes, intersection operations are similar to Year 2030. *Table 10–1* shows that the following intersections in the study area network 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
- Pacific Highway/Laurel Street—LOS F in the AM and PM peak hours
- Pacific Highway/Grape Street—LOS F in the PM peak hour

Under Scenario A conditions, the project is calculated to have significant impacts at the five intersections listed above.

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

10.2.2 *Segment Operations*

With the addition of Scenario A project traffic volumes, *Table 10–2* shows that the following street segments in the study area network are calculated to operate 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 Pacific Highway—LOS F
- Laurel Street, Pacific Highway to Kettner Boulevard—LOS F
- Grape Street, Pacific Highway to Kettner Boulevard—LOS F

Under Scenario A conditions, the project is calculated to have significant impacts on the following five 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
- N. Harbor Drive, Laurel Street to Hawthorn Street
- Laurel Street, N. Harbor Drive to Pacific Highway
- Laurel Street, Pacific Highway to Kettner Boulevard

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

10.3 Year 2030 with Project: Scenario B

10.3.1 *Intersection Analysis*

With the addition of the Scenario B project traffic volumes, intersection operations are similar to Year 2030. *Table 10–3* shows that the following intersections in the study area network 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
- Pacific Highway/Laurel Street—LOS F in the AM and PM peak hours
- Pacific Highway/Grape Street—LOS F in the PM peak hour

Under Scenario B conditions, the project is calculated to have significant impacts at the five intersections listed above. These same intersections are significantly impacted under Scenario A conditions as well.

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

10.3.2 *Segment Operations*

With the addition of Scenario B project traffic volumes, *Table 10–4* shows that the following street segments in the study area network are calculated to operate 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 Pacific Highway—LOS F
- Laurel Street, Pacific Highway to Kettner Boulevard—LOS F
- Grape Street, Pacific Highway to Kettner Boulevard—LOS F

Under Scenario B conditions, the project is calculated to have significant impacts on the following segments in the Long-Term (Year 2030). The same segments are significantly impacted under Scenario A conditions as well.

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

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

TABLE 10–1
LONG-TERM (YEAR 2030) INTERSECTION OPERATIONS: SCENARIO A

Intersection	Peak Hour	Year 2030		Year 2030 + Scenario A Project			Sig?[d]
		Delay[a]	LOS[b]	Delay	LOS	Δ[c]	
N. Harbor Drive / Terminal 2 (West Airport Entrance)	AM PM	45.9 41.5	D D	47.3 42.7	D D	1.4 1.2	No No
N. Harbor Dr. / Harbor Island Dr. / Terminal 1 (East Airport Entrance)	AM PM	51.2 86.6	D **F**	77.7 106.7	**E** **F**	26.5 20.1	**Yes** **Yes**
N. Harbor Drive / Rental Car Access Road	AM PM	169.8 159.0	**F** **F**	186.5 170.8	**F** **F**	16.7 11.8	**Yes** **Yes**
N. Harbor Drive / Laurel Street	AM PM	98.1 124.1	**F** **F**	100.5 133.9	**F** **F**	2.4 9.8	**Yes** **Yes**
N. Harbor Drive / Hawthorn Street	AM PM	28.8 48.9	C D	32.0 50.7	C D	3.2 1.8	No No
N. Harbor Drive / Grape Street	AM PM	6.1 13.9	A B	6.5 18.8	A B	0.4 4.9	No No
Pacific Highway / Laurel Street	AM PM	159.0 183.8	**F** **F**	160.9 185.8	**F** **F**	1.9 2.0	**Yes** **Yes**
Pacific Highway / Hawthorn Street	AM PM	21.1 20.6	C C	22.3 22.3	C C	1.2 1.7	No No
Pacific Highway / Grape Street	AM PM	16.0 113.3	B **F**	16.2 118.2	B **F**	0.2 4.9	No **Yes**
Harbor Island Drive / Sheraton Driveway	AM PM	14.5 14.5	B B	14.8 15.2	B B	0.3 0.7	No No
Harbor Island Drive / Harbor Island Drive	AM PM	8.6 10.6	A B	9.7 12.9	A B	1.1 2.3	No 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

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

Street Segment	Buildout Capacity (LOS E)[a]	Year 2030			Year 2030 + Scenario A 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**	64,855	1.081	**F**	0.010	No
Terminal 2 (SDIA) to Harbor Island Dr.	60,000	39,540	0.659	C	40,210	0.670	C	0.011	No
Harbor Island Dr. to Rental Car Access Rd.	70,000	112,020	1.600	**F**	113,935	1.628	**F**	0.028	**Yes**
Rental Car Access Road to Laurel Street	70,000	161,620	2.309	**F**	163,535	2.336	**F**	0.027	**Yes**
Laurel Street to Hawthorn Street	60,000	71,910	1.199	**F**	73,250	1.221	**F**	0.022	**Yes**
Hawthorn Street to Grape Street	65,000	38,970	0.600	C	39,735	0.611	C	0.011	No
South of Grape Street	55,000	33,530	0.610	C	33,720	0.613	C	0.003	No
Pacific Highway									
North of Laurel Street	50,000	63,660	1.273	**F**	63,850	1.277	**F**	0.004	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	29,520	0.590	C	0.003	No
South of Grape Street	50,000	41,950	0.839	D	42,335	0.847	D	0.008	No
Laurel Street									
N. Harbor Dr. to Pacific Highway	40,000	76,210	1.905	**F**	76,785	1.920	**F**	0.015	**Yes**
East of Pacific Highway	30,000	41,550	1.385	**F**	41,935	1.398	**F**	0.013	**Yes**
Hawthorn Street									
N. Harbor Dr. to Pacific Highway	40,000	30,840	0.771	D	31,415	0.785	D	0.014	No
East of Pacific Highway	40,000	28,120	0.703	C	28,505	0.713	C	0.010	No
Grape Street									
N. Harbor Dr. to Pacific Highway	40,000	32,340	0.809	D	32,915	0.823	D	0.014	No
East of Pacific Highway	40,000	40,020	1.005	**F**	40,405	1.010	**F**	0.005	No
Harbor Island Drive									
N. Harbor Dr. to Harbor Island Dr.	40,000	19,230	0.481	B	23,055	0.576	C	0.095	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	11,055	0.369	B	0.128	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".

TABLE 10–3
LONG-TERM (YEAR 2030) INTERSECTION OPERATIONS: SCENARIO B

Intersection	Peak Hour	Year 2030		Year 2030 + Scenario B Project			Sig?[d]
		Delay[a]	LOS[b]	Delay	LOS	Δ[c]	
N. Harbor Drive / Terminal 2 (West Airport Entrance)	AM PM	45.9 41.5	D D	47.7 42.7	D D	1.8 1.2	No No
N. Harbor Dr. / Harbor Island Dr. / Terminal 1 (East Airport Entrance)	AM PM	51.2 86.6	D **F**	77.7 116.9	**E** **F**	**26.5** **30.3**	**Yes** **Yes**
N. Harbor Drive / Rental Car Access Road	AM PM	169.8 159.0	**F** **F**	186.1 171.5	**F** **F**	**16.3** **12.5**	**Yes** **Yes**
N. Harbor Drive / Laurel Street	AM PM	98.1 124.1	**F** **F**	101.7 133.0	**F** **F**	**3.6** **8.9**	**Yes** **Yes**
N. Harbor Drive / Hawthorn Street	AM PM	28.8 48.9	C D	42.1 53.4	B D	13.3 4.5	No No
N. Harbor Drive / Grape Street	AM PM	6.1 13.9	A B	6.8 17.2	A B	0.2 3.3	No No
Pacific Highway / Laurel Street	AM PM	159.0 183.8	**F** **F**	161.1 186.0	**F** **F**	**2.1** **2.2**	**Yes** **Yes**
Pacific Highway / Hawthorn Street	AM PM	21.1 20.6	C C	22.3 23.1	C C	1.2 2.5	No No
Pacific Highway / Grape Street	AM PM	16.0 113.3	B **F**	16.2 117.8	B **F**	0.2 **4.5**	No **Yes**
Harbor Island Drive / Sheraton Driveway	AM PM	14.5 14.5	B B	14.8 15.2	B B	0.3 0.7	No No
Harbor Island Drive / Harbor Island Drive	AM PM	8.6 10.6	A B	9.2 15.1	A B	0.6 4.5	No 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

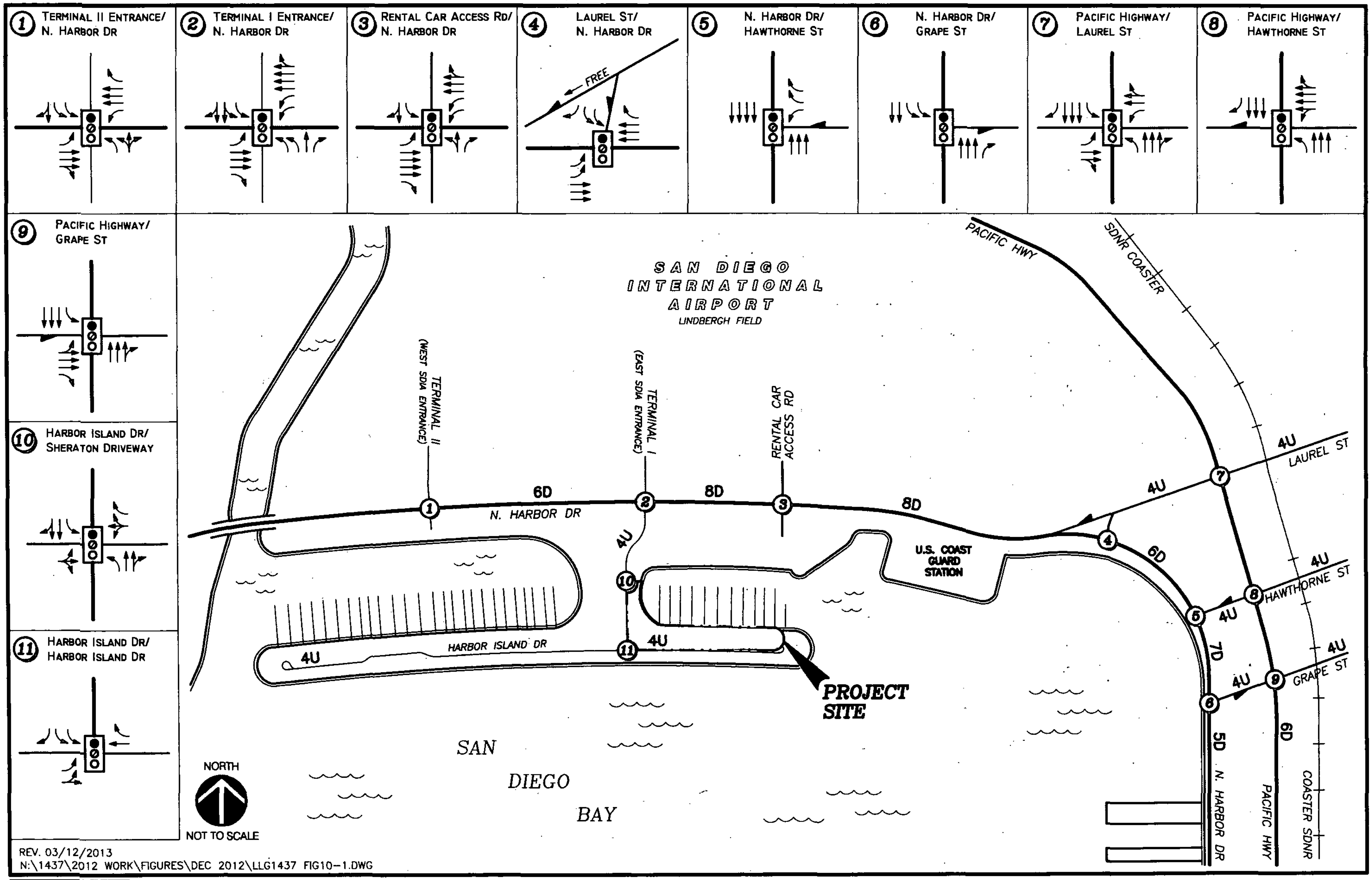
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

TABLE 10–4
LONG-TERM (YEAR 2030) STREET SEGMENT OPERATIONS: SCENARIO B

Street Segment	Buildout Capacity (LOS E)[a]	Year 2030			Year 2030 + Scenario B 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**	64,805	1.080	**F**	0.009	No
Terminal 2 (SDIA) to Harbor Island Dr.	60,000	39,540	0.659	C	40,155	0.669	C	0.010	No
Harbor Island Dr. to Rental Car Access Rd.	70,000	112,020	1.600	**F**	113,770	1.625	**F**	0.025	**Yes**
Rental Car Access Road to Laurel Street	70,000	161,620	2.309	**F**	163,370	2.334	**F**	0.025	**Yes**
Laurel Street to Hawthorn Street	60,000	71,910	1.199	**F**	73,135	1.219	**F**	0.020	**Yes**
Hawthorn Street to Grape Street	65,000	38,970	0.600	C	39,670	0.610	C	0.010	No
South of Grape Street	55,000	33,530	0.610	C	33,705	0.613	C	0.003	No
Pacific Highway									
North of Laurel Street	50,000	63,660	1.273	**F**	63,835	1.277	**F**	0.004	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	29,505	0.590	C	0.003	No
South of Grape Street	50,000	41,950	0.839	D	42,300	0.846	D	0.007	No
Laurel Street									
N. Harbor Dr. to Pacific Highway	40,000	76,210	1.905	**F**	76,735	1.918	**F**	0.013	**Yes**
East of Pacific Highway	30,000	41,550	1.385	**F**	41,900	1.397	**F**	0.012	**Yes**
Hawthorn Street									
N. Harbor Dr. to Pacific Highway	40,000	30,840	0.771	D	31,365	0.784	D	0.013	No
East of Pacific Highway	40,000	28,120	0.703	C	28,470	0.712	C	0.009	No
Grape Street									
N. Harbor Dr. to Pacific Highway	40,000	32,340	0.809	D	32,865	0.821	D	0.012	No
East of Pacific Highway	40,000	40,020	1.005	**F**	40,370	1.009	**F**	0.004	No
Harbor Island Drive									
N. Harbor Dr. to Harbor Island Dr.	40,000	19,230	0.481	B	22,730	0.568	C	0.087	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	10,730	0.358	B	0.117	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".



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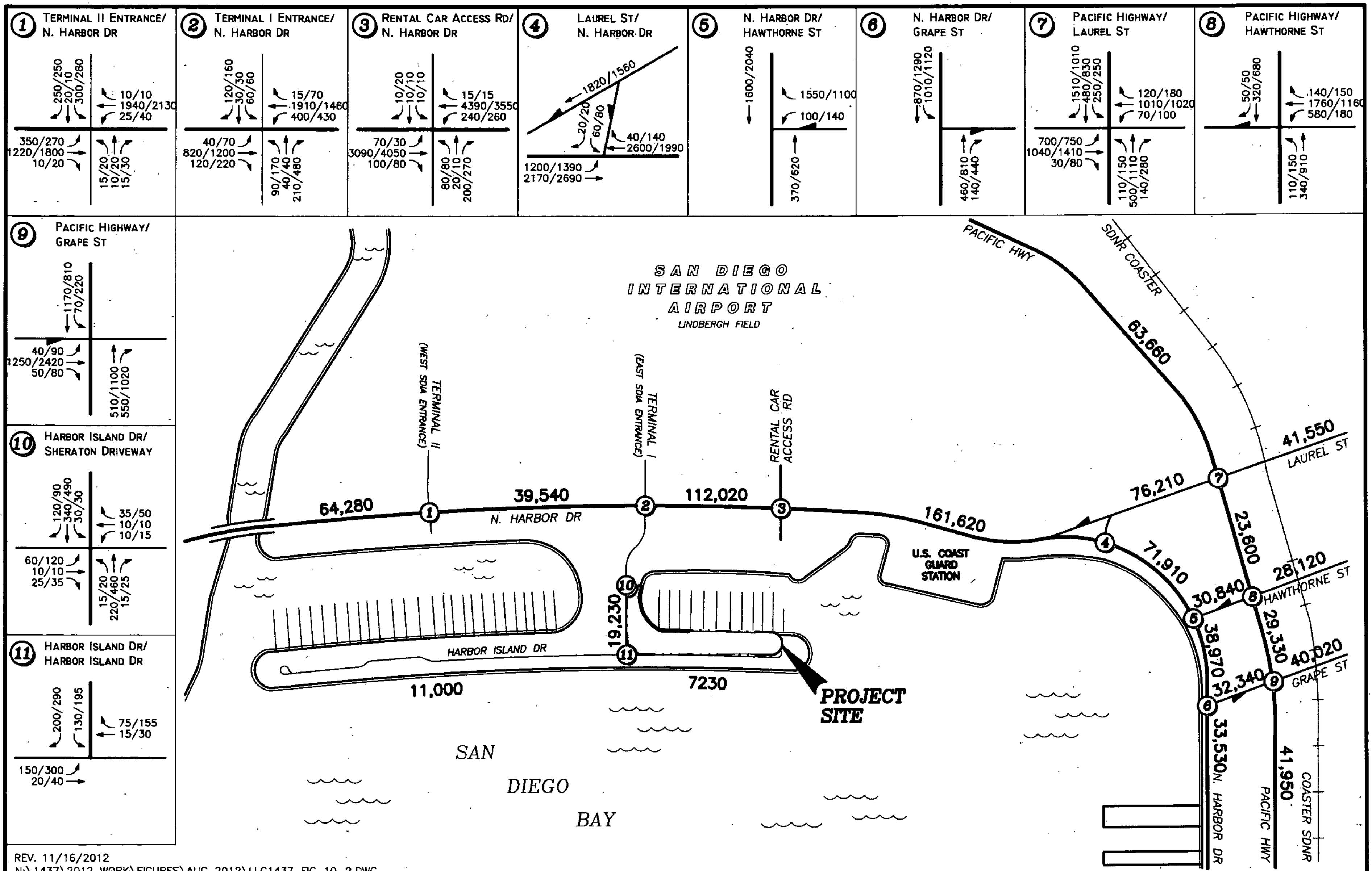
LEGEND

- Traffic Signal
- BL – Bike Lane
- BS – Bus Stop
- NP – No Parking
- 4U – Four lane undivided roadway
- 5D – Five lane divided roadway

Figure 10-1

Year 2030 Conditions Diagram



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NORTH
NOT TO SCALE

Figure 10-2

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

HARBOR ISLAND SUBAREA 23 PORT MASTER PLAN AMENDMENT

61728 PAGE 347

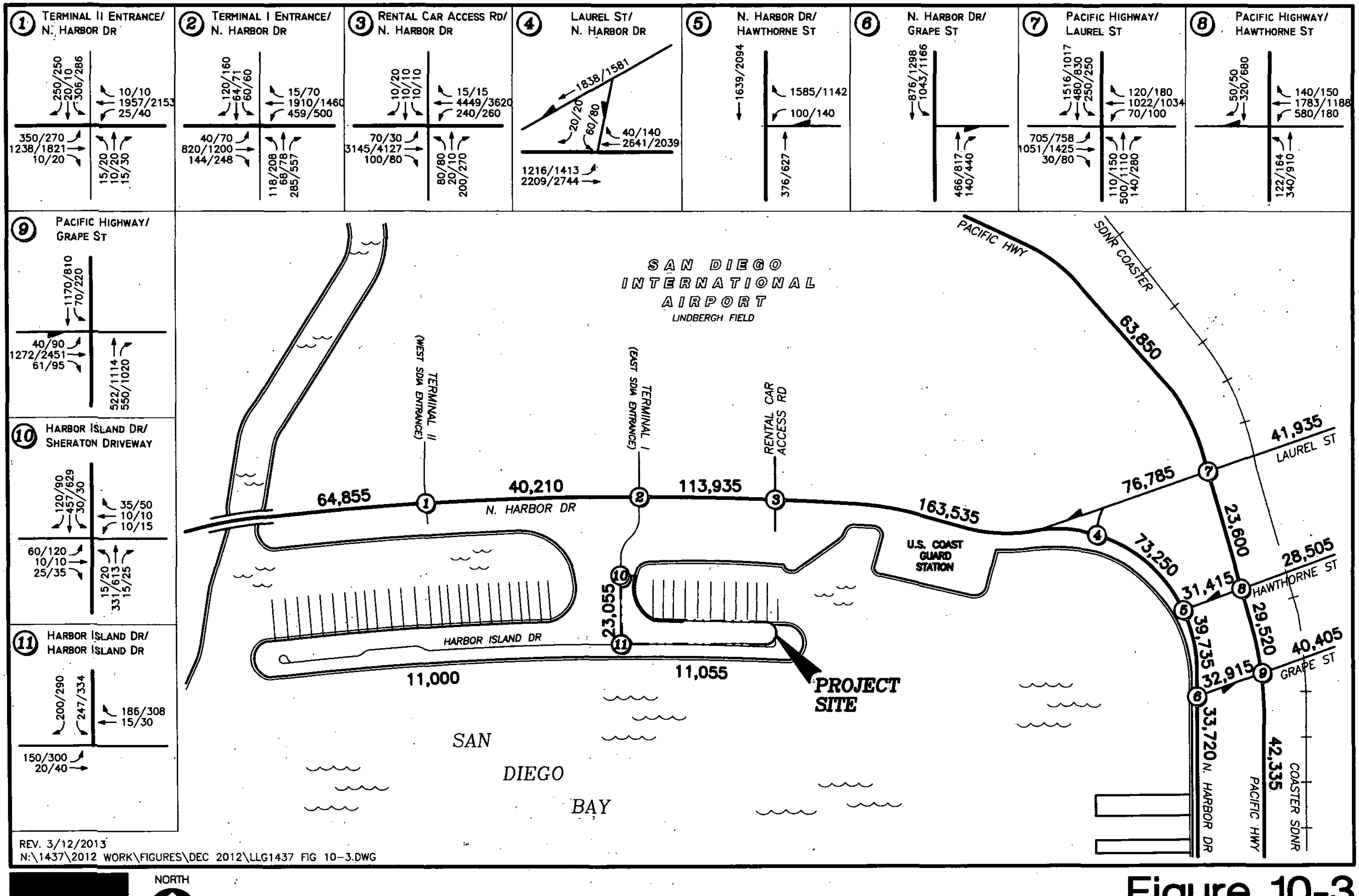

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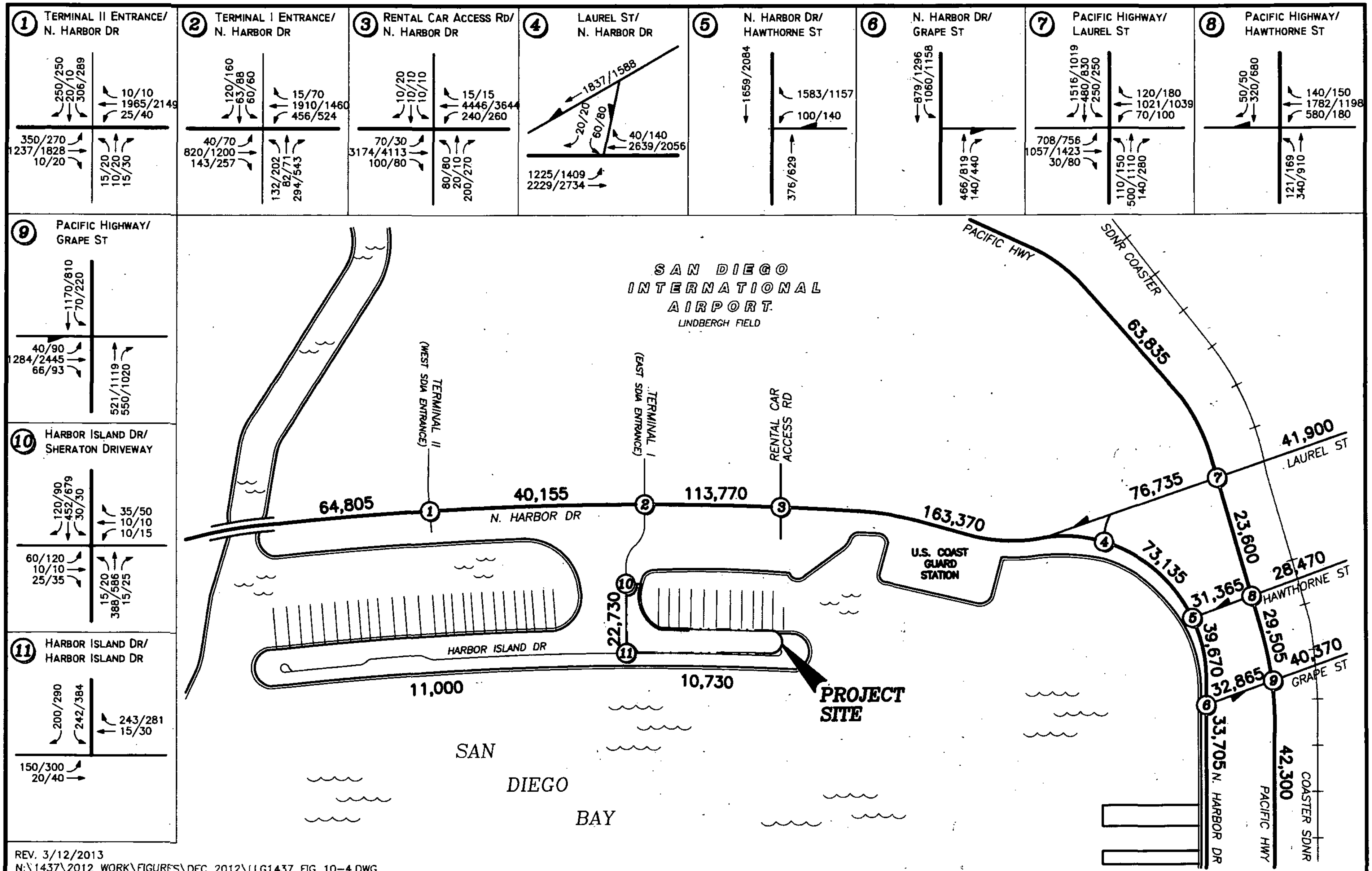
Figure 10-3

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

HARBOR ISLAND SUBAREA 23 PORT MASTER PLAN AMENDMENT

61728 PAGE 348



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NORTH
NOT TO SCALE

Figure 10-4

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

HARBOR ISLAND SUBAREA 23 PORT MASTER PLAN AMENDMENT

11.0 CONGESTION MANAGEMENT PROGRAM COMPLIANCE

The Congestion Management Program (CMP), adopted on November 22, 1991, is intended to link land use, transportation and air quality through level of service performance. 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. As the project trip generation (3,825 ADT and 3,500 ADT respectively) exceeds the CMP threshold of 2,400 ADT in both Scenario A and Scenario B, a CMP analysis is triggered.

In 2010, the City of San Diego (along with most agencies in San Diego County) elected to opt out of the State CMP process. However, per the California Environmental Quality Act (CEQA), reviewing traffic impacts to the regional transportation network remains a requirement. Opting out simply relieves the City from the preparation of deficiency plans on deficient CMP arterials.

The *SANDAG Congestion Management Program, November 2008* report contains a list of "CMP Arterials" that are to be analyzed if the project exceeds the above mentioned trip generation thresholds. A section of the Nimitz Boulevard / North Harbor Drive / Grape Hawthorn Streets / Pacific Highway / Harbor Drive CMP Arterial between I-8 and I-5 is contained within the project study area. The *City of San Diego Traffic Impact Study Manual* contains criteria which establishes that a project impact is considered significant if the peak hour travel speed along an arterial segment operating at LOS E (with project) decreases by more than one mile per hour, and an arterial segment operating at LOS F (with project) decreases by more than one-half mile per hour.

The study area CMP arterial segments were analyzed under Near-Term and Long-Term conditions for Scenario A and Scenario B. The analysis focuses on peak hour street segment operations using the peak hour volumes used in the intersection analyses. The results of the analysis are shown in ***Tables 11–1*** thru ***11–4***. The capacity analysis worksheets are contained in the ***Appendix F***.

No significant project impact is calculated for the identified CMP Arterials under all scenarios. The traffic generated by the project does cause reductions in arterial speeds on many segments, but not significantly so.

TABLE 11–1
NEAR-TERM PROJECT AREA CMP ARTERIAL ANALYSIS: SCENARIO A

Arterial Segment	Period	Direction	Existing		Existing + Cumulative Projects		Existing + Cumulative Project + Scenario A Project		Speed Decrease	Sig[c]
			Speed[a]	LOS[b]	Speed	LOS	Speed	LOS		
N. Harbor Drive West of Terminal 2(SDIA)	AM	EB	11.1	D	11.1	D	11.1	D	0.0	No
		WB	16.7	C	16.7	C	16.7	C	0.0	No
	PM	EB	11.2	D	10.7	D	10.5	D	0.2	No
		WB	17.4	C	16.5	C	16.5	C	0.0	No
N. Harbor Drive Terminal 2 (SDIA) to Harbor Island Drive	AM	EB	17.4	C	17.0	C	17.0	C	0.0	No
		WB	10.6	D	10.5	D	10.2	D	0.3	No
	PM	EB	17.0	C	16.4	C	16.4	C	0.0	No
		WB	11.2	D	11.1	D	11.0	D	0.1	No
N. Harbor Drive Harbor Island Dr. to Rental Car Access Rd.	AM	EB	20.3	B	20.2	B	20.1	B	0.1	No
		WB	19.5	B	15.1	C	15.0	C	0.1	No
	PM	EB	17.7	C	15.6	C	14.5	C	1.1	No
		WB	18.7	C	17.9	C	17.7	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	15.8	C	14.1	C	13.3	C	0.8	No
	PM	EB	21.9	B	21.9	B	21.9	B	0.0	No
		WB	18.4	C	17.1	C	16.7	C	0.4	No
N. Harbor Drive Laurel St. to Hawthorn St.	AM	EB	23.1	B	22.8	B	22.8	B	0.0	No
		WB	18.6	C	18.1	C	18.1	C	0.0	No
	PM	EB	21.5	B	20.4	B	19.4	B	1.0	No
		WB	19.2	B	19.2	B	19.2	B	0.0	No
N. Harbor Drive Hawthorn St. to Grape Street	AM	EB	13.5	C	13.4	C	13.4	C	0.0	No
		WB	17.7	C	17.6	C	17.6	C	0.0	No
	PM	EB	13.4	C	13.4	C	13.4	C	0.0	No
		WB	17.1	C	17.1	C	17.1	C	0.0	No
Pacific Highway Hawthorn St. to Grape Street	AM	NB	**12.4**	**E**	**12.4**	**E**	**12.4**	**E**	**0.0**	No
		SB	**12.2**	**E**	**12.2**	**E**	**12.1**	**E**	**0.1**	No
	PM	NB	**12.3**	**E**	**12.2**	**E**	**12.2**	**E**	**0.0**	No
		SB	**12.9**	**E**	**12.8**	**E**	**12.8**	**E**	**0.0**	No
Pacific Highway South of Grape Street	AM	NB	19.7	C	18.2	C	18.1	C	0.1	No
		SB	23.1	C	22.4	C	22.3	C	0.1	No
	PM	NB	**13.7**	**E**	**13.4**	**E**	**12.8**	**E**	**0.6**	No
		SB	23.2	C	23.2	C	23.2	C	0.0	No
Hawthorn Street N. Harbor Drive to Pacific Highway	AM	WB	12.8	D	11.0	D	11.0	D	0.0	No
	PM	WB	**8.8**	**E**	**8.5**	**E**	**8.4**	**E**	**0.1**	No
Grape Street N. Harbor Drive to Pacific Highway	AM	EB	9.9	D	9.1	D	9.1	D	0.0	No
	PM	EB	**2.3**	**F**	**1.6**	**F**	**1.3**	**F**	**0.3**	No

Footnotes:

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

TABLE 11–2
NEAR-TERM PROJECT AREA CMP ARTERIAL ANALYSIS: SCENARIO B

Arterial Segment	Period	Direction	Existing		Existing + Cumulative Projects		Existing + Cumulative Project + Scenario B Project		Speed Decrease	Sig[c]
			Speed[a]	LOS[b]	Speed	LOS	Speed	LOS		
N. Harbor Drive West of Terminal 2(SDIA)	AM	EB	11.1	D	11.1	D	11.1	D	0.0	No
		WB	16.7	C	16.7	C	16.7	C	0.1	No
	PM	EB	11.2	D	10.7	D	10.6	D	0.1	No
		WB	17.4	C	16.5	C	16.5	C	0.0	No
N. Harbor Drive Terminal 2 (SDIA) to Harbor Island Drive	AM	EB	17.4	C	17.0	C	17.0	C	0.0	No
		WB	10.6	D	10.5	D	10.5	D	0.0	No
	PM	EB	17.0	C	16.4	C	16.4	C	0.0	No
		WB	11.2	D	11.1	D	11.0	D	0.1	No
N. Harbor Drive Harbor Island Dr. to Rental Car Access Rd.	AM	EB	20.3	B	20.2	B	20.1	B	0.1	No
		WB	19.5	B	15.1	C	14.6	C	0.5	No
	PM	EB	17.7	C	15.6	C	14.7	C	0.9	No
		WB	18.7	C	17.9	C	17.7	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	15.8	C	14.1	C	13.3	C	0.8	No
	PM	EB	21.9	B	21.9	B	21.9	B	0.0	No
		WB	18.4	C	17.1	C	16.6	C	0.5	No
N. Harbor Drive Laurel St. to Hawthorn St.	AM	EB	23.1	B	22.8	B	22.8	B	0.0	No
		WB	18.6	C	18.1	C	18.1	B	0.0	No
	PM	EB	21.5	B	20.4	B	19.5	B	0.9	No
		WB	19.2	B	19.2	B	19.2	B	0.0	No
N. Harbor Drive Hawthorn St. to Grape Street	AM	EB	13.5	C	13.4	C	13.4	C	0.0	No
		WB	17.7	C	17.6	C	17.6	C	0.0	No
	PM	EB	13.4	C	13.4	C	13.4	C	0.0	No
		WB	17.1	C	17.1	C	17.1	C	0.0	No
Pacific Highway Hawthorn St. to Grape Street	AM	NB	**12.4**	**E**	**12.4**	**E**	**11.8**	**E**	**0.6**	No
		SB	**12.2**	**E**	**12.2**	**E**	**12.2**	**E**	**0.0**	No
	PM	NB	**12.3**	**E**	**12.2**	**E**	**12.1**	**E**	**0.1**	No
		SB	**12.9**	**E**	**12.8**	**E**	**12.7**	**E**	**0.1**	No
Pacific Highway South of Grape Street	AM	NB	19.7	C	18.2	C	17.4	D	0.8	No
		SB	23.1	C	22.4	C	22.4	C	0.0	No
	PM	NB	**13.7**	**E**	**13.4**	**E**	**12.8**	**E**	**0.6**	No
		SB	23.2	C	23.2	C	22.6	C	0.6	No
Hawthorn Street N. Harbor Drive to Pacific Highway	AM	WB	12.8	D	11.0	D	10.8	D	0.2	No
	PM	WB	**8.8**	**E**	**8.5**	**E**	**8.4**	**E**	**0.1**	No
Grape Street N. Harbor Drive to Pacific Highway	AM	EB	9.9	D	9.1	D	9.1	D	0.0	No
	PM	EB	**2.3**	**F**	**1.6**	**F**	**1.3**	**F**	**0.3**	No

Footnotes:

a. Speed in miles per hour.

b. Level of Service.

c. Sig = significant project impact based on significance criteria.

TABLE 11-3
LONG-TERM PROJECT AREA CMP ARTERIAL ANALYSIS: SCENARIO A

Arterial Segment	Period	Direction	Year 2030		Year 2030 + Scenario A Project		Speed Decrease	Sig[c]
			Speed[a]	LOS[b]	Speed	LOS		
N. Harbor Drive West of Terminal 2(SDIA)	AM	EB	11.3	D	11.0	D	0.3	No
		WB	14.6	C	14.5	C	0.1	No
	PM	EB	10.2	D	10.0	D	0.2	No
		WB	14.6	C	14.4	C	0.2	No
N. Harbor Drive Terminal 2 (SDIA) to Harbor Island Drive	AM	EB	17.0	C	17.0	C	0.0	No
		WB	**6.8**	**F**	**6.8**	**F**	**0.0**	No
	PM	EB	15.3	C	15.2	C	0.1	No
		WB	**7.8**	**E**	**7.7**	**E**	**0.1**	No
N. Harbor Drive Harbor Island Dr. to Rental Car Access Rd.	AM	EB	18.4	C	18.1	C	0.3	No
		WB	14.4	C	14.2	C	0.2	No
	PM	EB	**7.0**	**F**	**6.7**	**F**	**0.3**	No
		WB	11.7	D	10.9	D	0.8	No
N. Harbor Drive Rental Car Access Rd. to Laurel St.	AM	EB	21.9	B	21.9	B	0.0	No
		WB	14.2	C	14.0	C	0.2	No
	PM	EB	21.5	B	21.4	B	0.1	No
		WB	18.6	C	18.6	C	0.0	No
N. Harbor Drive Laurel St. to Hawthorn St.	AM	EB	22.7	B	22.7	B	0.0	No
		WB	**6.5**	**F**	**6.5**	**F**	**0.0**	No
	PM	EB	19.5	B	18.8	C	0.7	No
		WB	**8.9**	**E**	**8.5**	**E**	**0.4**	No
N. Harbor Drive Hawthorn St. to Grape Street	AM	EB	12.8	D	12.8	D	0.0	No
		WB	17.4	C	17.4	C	0.0	No
	PM	EB	11.0	D	10.9	D	0.1	No
		WB	16.8	C	16.8	C	0.0	No
Pacific Highway Hawthorn St. to Grape Street	AM	NB	**12.3**	**E**	**12.3**	**E**	**0.0**	No
		SB	**11.3**	**E**	**11.3**	**E**	**0.0**	No
	PM	NB	**12.7**	**E**	**12.7**	**E**	**0.0**	No
		SB	**12.3**	**E**	**12.3**	**E**	**0.0**	No
Pacific Highway South of Grape Street	AM	NB	14.5	D	14.4	D	0.1	No
		SB	21.7	C	21.7	C	0.0	No
	PM	NB	**3.7**	**F**	**3.6**	**F**	**0.1**	No
		SB	22.2	D	22.2	C	0.0	No
Hawthorn Street N. Harbor Drive to Pacific Highway	AM	WB	12.3	D	12.3	D	0.0	No
	PM	WB	**8.4**	**E**	**8.4**	**E**	**0.0**	No
Grape Street N. Harbor Drive to Pacific Highway	AM	EB	**7.6**	**E**	**7.4**	**E**	**0.1**	No
	PM	EB	**1.0**	**F**	**1.0**	**F**	**0.0**	No

Footnotes:

a. Speed in miles per hour.

b. Level of Service.

c. Sig = significant project impact based on significance criteria.

TABLE 11-4
LONG-TERM PROJECT AREA CMP ARTERIAL ANALYSIS: SCENARIO B

Arterial Segment	Period	Direction	Year 2030		Year 2030 + Scenario B Project		Speed Decrease	Sig[c]
			Speed[a]	LOS[b]	Speed	LOS		
N. Harbor Drive West of Terminal 2(SDIA)	AM	EB	11.3	D	11.0	D	0.3	No
		WB	14.6	C	14.5	C	0.1	No
	PM	EB	10.2	D	10.2	D	0.0	No
		WB	14.6	C	13.4	C	1.2	No
N. Harbor Drive Terminal 2 (SDIA) to Harbor Island Drive	AM	EB	17.0	C	17.0	C	0.0	No
		WB	**6.8**	**F**	**6.8**	**F**	**0.0**	No
	PM	EB	15.3	C	15.2	C	0.1	No
		WB	**7.8**	**E**	**7.7**	**E**	**0.1**	No
N. Harbor Drive Harbor Island Dr. to Rental Car Access Rd.	AM	EB	18.4	C	17.9	C	0.5	No
		WB	14.4	C	13.7	C	0.7	No
	PM	EB	**7.0**	**F**	**6.8**	**F**	**0.2**	No
		WB	11.7	D	10.7	D	1.0	No
N. Harbor Drive Rental Car Access Rd. to Laurel St.	AM	EB	21.9	B	21.9	B	0.0	No
		WB	14.2	C	14.0	C	0.2	No
	PM	EB	21.5	B	21.5	B	0.0	No
		WB	18.6	C	18.6	C	0.0	No
N. Harbor Drive Laurel St. to Hawthorn St.	AM	EB	22.7	B	22.7	B	0.0	No
		WB	**6.5**	**F**	**6.5**	**F**	**0.0**	No
	PM	EB	19.5	B	18.8	C	0.7	No
		WB	**8.9**	**E**	**8.5**	**E**	**0.4**	No
N. Harbor Drive Hawthorn St. to Grape Street	AM	EB	12.8	D	12.8	D	0.0	No
		WB	17.4	C	17.4	C	0.0	No
	PM	EB	11.0	D	11.0	D	0.0	No
		WB	16.8	C	16.8	C	0.0	No
Pacific Highway Hawthorn St. to Grape Street	AM	NB	**12.3**	**E**	**12.3**	**E**	**0.0**	No
		SB	**11.3**	**E**	**11.2**	**E**	**0.1**	No
	PM	NB	**12.7**	**E**	**12.7**	**E**	**0.0**	No
		SB	**12.3**	**E**	**12.3**	**E**	**0.0**	No
Pacific Highway South of Grape Street	AM	NB	14.5	D	14.4	D	0.1	No
		SB	21.7	C	21.5	C	0.2	No
	PM	NB	**3.7**	**F**	**3.6**	**F**	**0.1**	No
		SB	22.2	D	22.1	C	0.1	No
Hawthorn Street N. Harbor Drive to Pacific Highway	AM	WB	12.3	D	12.2	D	0.1	No
	PM	WB	**8.4**	**E**	**8.2**	**E**	**0.2**	No
Grape Street N. Harbor Drive to Pacific Highway	AM	EB	**7.6**	**E**	**7.4**	**E**	**0.2**	No
	PM	EB	**1.0**	**F**	**1.0**	**F**	**0.0**	No

Footnotes:

a. Speed in miles per hour.

b. Level of Service.

c. Sig = significant project impact based on significance criteria.

12.0 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 three phases of construction activity: grading, concrete pours, and building structures. Each construction phase has its own intensity and duration. A simple ADT calculation for each construction phase is outlined below based on the anticipated construction schedule provided by Sunroad Enterprises. A standard passenger car equivalence (PCE) was applied to large construction trucks. The following construction activity summary represents the construction of one hotel tower. These activities may take place up to three times, depending on the number of hotels ultimately constructed.

- **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**
  - 50 workers vehicles/day x 2 trips/worker vehicle = 100 ADT
  - ***Total*** = ***100 ADT***

The above shows that the maximum construction traffic of 100 ADT is considerably lower than the daily project trips of 3,825 ADT in Scenario A and 3,500 ADT in Scenario B, and would be temporary in nature (i.e., 8 months). Therefore, the construction traffic is not expected to cause any significant direct traffic impacts.

It should be noted that there is the possibility of concurrent construction activity attributable to the construction of cumulative projects in the project vicinity such as the Ruben E. Lee Restaurant Replacement Project and the San Diego International Airport Master Plan. However, it is unlikely that any cumulative project construction traffic in conjunction with the Harbor Island Hotel construction traffic will trigger any significant impacts, as the project construction traffic (100 ADT) is considerably less than the traffic generated by the land development of the *Harbor Island Subarea 23 Port Master Plan Amendment* (3,825 ADT / 3,500 ADT) and will be temporary in nature.

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.

13.0 PARKING ASSESSMENT

In addition to the proposed 175-room hotel, the proposed Port Master Plan (PMP) Amendment would allow the construction of up to two additional hotels on East Harbor Island. Because no proposal has been received for development of the remaining 325 hotel rooms allowed under the PMP Amendment, the analysis of potential impacts on parking assumes that future hotel development would occur under one of two scenarios: either as one approximately ten-story, 325 room hotel; or as two approximately four-story hotels with the remaining 325 hotel rooms allocated equally between them. The hotels will all be required to comply with Port District parking requirements in order to ensure that significant parking impacts do not occur.

13.1 175-room Hotel + 325-room Hotel

The area in which future hotels could be located is presently used for surface parking. If all of the additional 325 rooms allowed under the PMP Amendment were developed in one approximately ten-story hotel, the future hotel would be located in the area where temporary parking of surplus rental cars occurs through a month-to-month lease with the Port District.

As part of the adopted *San Diego International Airport Airport Master Plan* (May 2008), rental car parking will be consolidated into a new rental car facility located on airport property, north of the runways, in 2015. It is anticipated that construction of a future hotel at the location of the temporary rental car parking lot would not occur until 2017. Therefore, although the existing parking spaces would be eliminated by the development of a future hotel, by the time future hotel development is anticipated to occur in this area, parking for surplus rental cars would have been moved to the San Diego International Airport's (SDIA) consolidated rental car facility. Because public parking is not provided or allowed in the existing surplus rental car parking lot, future hotel development in this area would not result in the loss of any public parking spaces.

As shown in ***Table 13–1***, the future development of 325 rooms and ancillary facilities in one approximately ten-story hotel would require 195 parking spaces under the current *Tidelands Parking Guidelines – San Diego Port District* (Tidelands Parking Guidelines). Future hotel development in this area would be required to provide adequate on-site parking in accordance with the Tidelands Parking Guidelines. The developable area consists of approximately 7.5 acres, which would accommodate the development of up to 325 rooms, ancillary facilities and the required parking. Therefore, the development of up to 325 rooms and ancillary facilities in one approximately ten-story hotel on the surplus rental car parking lot is not expected to have a significant impact on parking.

TABLE 13–1
PARKING REQUIREMENTS FOR THE DEVELOPMENT OF A 175-ROOM HOTEL + A 325-ROOM HOTEL

Hotel	Parking spaces proposed (per site plan)	Parking Spaces per Tidelands Parking Guidelines	Parking surplus/deficit
175-room hotel (includes parking for marina)	457	Up to 381 spaces[a]	76 spaces surplus
325-room hotel (located on site of temporary rental car parking)	Unknown	195 spaces	0 spaces surplus/deficit

Footnotes:
a. Based on a Shared Parking Analysis, published under separate cover.

13.2 175-room Hotel + Two Smaller Hotels

If the additional 325 rooms allowed under the PMP Amendment were allocated equally between two approximately four-story hotels, it is anticipated that one hotel would be located in the area where the temporary parking of surplus rental cars presently occurs and the other hotel would be located in the area immediately to the east, which is presently used as a surface parking lot for the Sunroad Marina. As discussed above, the future development of a hotel on the surplus rental car parking lot is not expected to have a significant impact on parking because the existing use would be relocated to a new consolidated rental car facility on airport property before future hotel development is expected to occur. However, if future hotel development were to occur on the existing marina parking lot, then parking spaces which presently are used for marina parking and which are planned for shared use for the existing marina and the proposed 175-room hotel could be lost, depending on the size of the future hotel and its parking needs. Because public parking is not provided or allowed in the existing marina parking lot, future hotel development in this area would not result in the loss of any public parking spaces.

The existing marina parking lot provides 568 parking spaces for use by marina tenants and guests, with 291 spaces located in the area to be developed with the 175-room hotel and 277 spaces located to the west of the marina building. The proposed 175-room hotel would result in the elimination of approximately 111 parking spaces for construction of the 175-room hotel, leaving approximately 180 parking spaces in the eastern 175-room hotel portion of the parking lot and 277 parking spaces in the parking lot west of the marina building. The proposed 175-room hotel and the existing marina would require 381 shared parking spaces, including the 180 spaces in the eastern 175-room hotel portion of the parking lot and 201 spaces in the parking lot west of the marina building.

The Tidelands Parking Guidelines were used to calculate the parking needs for two future hotels which would allocate the additional 325 rooms allowed under the proposed PMP Amendment equally between them. In addition to standard parking requirements, the Tidelands Parking Guidelines allow for reduction in parking based on a variety of factors, such as shared use parking, proximity to transit, access to an airport, and dedicated airport shuttle service. An increase in parking need could result if a project is located proximate to public waterfront amenities, displaces existing parking, or in areas where there is a parking shortfall. For purposes of the proposed PMP Amendment, the parking demand for two additional hotels of approximately 162 rooms each is based on the *Suggested Base Unadjusted Parking Demand Rates by District Table* of the Tidelands Parking Guidelines, included in ***Appendix G***.

Based on the Tidelands Parking Guidelines, the parking demand for the future hotels would be 0.6 spaces per room. Therefore, the additional two hotels would need to provide a total of 195 parking spaces, in addition to those required to serve the proposed 175-room hotel and the marina. Each hotel would need to provide the required number of parking spaces based on how many rooms are proposed for each hotel. Additional parking may be required depending on the types and sizes of ancillary uses proposed for the future hotel(s) and in accordance with the Tidelands Parking Guidelines.

Future development of two approximately four-story hotels in this area will be required to provide adequate on-site parking in accordance with Tidelands Parking Guidelines. The future development of approximately 162 rooms and ancillary facilities in an approximately four-story hotel would require 97 parking spaces under current Tidelands Parking Guidelines. As discussed above, the developable area on the existing surplus rental car parking lot is sufficient to accommodate the development of a four-story hotel with up to 163 rooms, ancillary facilities and required parking. Therefore, the development of one approximately four-story hotel on the existing surplus rental car parking lot would not result in a significant impact on parking.

However, the development of a second approximately four-story, 162-room hotel on the existing parking lot west of the marina building may result in a significant impact on parking. The existing west marina parking area consists of approximately two acres and presently provides 277 parking spaces. The development of an approximately four-story hotel in the west marina parking area would result in the loss of all, or substantially all, of the existing 277 parking spaces, including the 201 spaces intended for shared parking for the proposed 175-room hotel and the existing marina. In addition, as shown in ***Table 13–2***, *Parking Analysis for Development of 175-room Hotel + Two Smaller Hotels*, a future 162-room hotel with ancillary facilities similar to the proposed 175-room hotel would require 97 on-site parking spaces under current Port District parking guidelines. Because it would result in the loss of 201 shared parking spaces required for the 175-room hotel and the existing marina and would require an additional 97 parking spaces to serve 162 hotel rooms and ancillary facilities, future development of an approximately four-story hotel in the west marina parking area would result in a significant impact on parking.

TABLE 13-2
PARKING REQUIREMENTS FOR THE DEVELOPMENT OF A 175-ROOM HOTEL + TWO SMALLER HOTELS

Hotel	Parking spaces proposed (per site plan)	Parking Spaces per Tidelands Parking Guidelines	Parking surplus/deficit
175-room hotel (includes parking for marina)	457	Up to 381 spaces[a]	76 spaces surplus
163-room hotel (located on site of temporary rental car parking)	Unknown	98 spaces	0 spaces surplus/deficit
162-room hotel (located on 277-space parking lot, west of marina building)	Unknown	97 spaces	Unknown (could be up to 298 spaces deficit)

Footnotes:

a. Based on a Shared Parking Analysis, published under separate cover.

14.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

14.1 Significance of Impacts

14.1.1 *Intersection Impacts*

In the Near-Term, the project under both Scenario A and Scenario B conditions is calculated to have no significant direct impacts at the study intersections.

In the Long-Term (Year 2030), the project under both Scenario A and Scenario B conditions is calculated to have significant cumulative 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—AM and PM peak hours
- Pacific Highway/Laurel Street—AM and PM peak hours
- Pacific Highway / Grape Street—PM peak hour

14.1.2 *Street Segment Impacts*

In the Near-Term, the project under Scenario A and Scenario B conditions is calculated to have no significant direct impacts at the study street segments.

In the Long-Term, the project under Scenario A and Scenario B conditions is calculated to have significant cumulative 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
- N. Harbor Drive, Laurel Street to Hawthorn Street—LOS F
- Laurel Street, N. Harbor Drive to Pacific Highway—LOS F
- Laurel Street, Pacific Highway to Kettner Boulevard—LOS F

14.1.3 *Parking Impacts*

The future development of an approximately four-story hotel with up to 162 rooms and ancillary facilities in the area of the existing west marina parking lot could result in a significant impact on parking. Mitigation would be required to ensure that such future hotel development would include adequate parking for the new hotel, the proposed 175-room hotel, and the existing marina.

14.2 Mitigation Measures

The project under Scenario A and Scenario B conditions is calculated to have significant cumulative impacts at five study intersections and five street segments. The following summarizes potential mitigation measures for the significant impacts. It should be noted that these are suggested mitigation measures, and further project level analysis would be required to determine the feasibility and effectiveness of such measures. ***Table 14–1*** shows the project's fair share contribution at the impacted intersections or street segments under Scenario A conditions. ***Table 14–2*** shows the project's fair share contribution at the impacted intersections or street segments under Scenario B conditions.

14.2.1 *Intersection Mitigation*

- ***N. Harbor Dr./Harbor Island Dr./Terminal 1 (East Airport Entrance):*** The following measures are proposed to mitigate the significant impact:
  - Contribute a fair share as outlined in *Tables 14–1* and *14–2* 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 following measures are proposed to mitigate the significant impact:
  - Contribute a fair share as outlined in *Tables 14–1* and *14–2* 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 following measures are proposed to mitigate the significant impact:
  - Contribute a fair share as outlined in *Tables 14–1* and *14–2* 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 / Laurel Street:*** Dual southbound right-turn and eastbound left-turn lanes are needed to accommodate the anticipated traffic volumes, but are not feasible due to right-of-way constraints on at least three of the corners of the intersection.

- ***Pacific Highway / Grape Street:*** A northbound right-turn lane is needed to accommodate the anticipated traffic volumes, but may not be feasible due to right-of-way constraints.

14.2.2 *Street Segment Mitigation*

- ***N. Harbor Drive between Harbor Island Drive and Rental Car Access Road:*** Contributing a fair share as outlined in *Tables 14–1* and *14–2* towards the addition of one westbound lane along the street segment would mitigate the significant impact.

- ***N. Harbor Drive between Rental Car Access Road and Laurel Street:*** Contributing a fair share as outlined in *Tables 14–1* and *14–2* towards the addition of one westbound lane along the street segment would mitigate the significant impact.
- ***N. Harbor Drive, Laurel Street to Hawthorn Street***: Contributing a fair share as outlined in *Tables 14–1* and *14–2* towards the addition of one southbound lane along the street segment would mitigate the significant impact.
- ***Laurel Street, N. Harbor Drive to Pacific Highway***: Contributing a fair share as outlined in *Tables 14–1* and *14–2* towards the addition of one eastbound lane along the street segment would likely mitigate the significant impact.
- ***Laurel Street, Pacific Highway to Kettner Boulevard***: Contributing a fair share as outlined in *Tables 14–1* and *14–2* towards the addition of one eastbound lane along the street segment would mitigate the significant impact.

TABLE 14–1
"YEAR 2030" FAIR-SHARE CONTRIBUTION CALCULATIONS: SCENARIO A

Impacted Locations	Year 2030 Scenario A Project Traffic	Year 2030 + Scenario A Project Traffic	Existing Traffic	% Fair Share [c]
Intersections [a]				
N. Harbor Dr. / Harbor Island Dr. / Terminal 1 (East Airport Entrance)	520	8,765	6,153	19.9%
N. Harbor Dr. / Rental Car Access Road	261	16,881	9,709	3.6%
N. Harbor Dr. / Laurel Street	222	12,622	7,811	4.6%
Segments [b]				
N. Harbor Dr.: Harbor Island Dr. to Rental Car Access Rd.	1,915	113,935	81,000	5.8%
N. Harbor Dr.: Rental Car Access Rd. to Laurel St.	1,915	163,535	82,790	2.4%
N. Harbor Dr.: Laurel St. to Hawthorn St.	1,340	73,250	54,260	7.1%
Laurel St.: N. Harbor Dr. to Pacific Highway	575	76,785	36,390	1.4%
Laurel St.: East of Pacific Highway	385	41,935	27,620	2.7%

Footnotes:
a. Intersection fair share contributions are calculated using combined AM and PM peak hour volumes.
b. Segment fair share contributions are calculated using ADT volumes.
c. Fair share percentages calculated as

$$\frac{\text{Project Traffic}}{(\text{Year 2030 + Project Traffic}) - (\text{Existing Traffic})}$$

TABLE 14–2
"YEAR 2030" FAIR-SHARE CONTRIBUTION CALCULATIONS: SCENARIO B

Impacted Locations	Year 2030 Scenario B Project Traffic	Year 2030 + Scenario B Project Traffic	Existing Traffic	% Fair Share [c]
Intersections [a]				
N. Harbor Dr. / Harbor Island Dr. / Terminal 1 (East Airport Entrance)	595	8,840	6,153	22.1%
N. Harbor Dr. / Rental Car Access Road	297	16,917	9,709	4.1%
N. Harbor Dr. / Laurel Street	252	12,652	7,811	5.2%
Segments [b]				
N. Harbor Dr.: Harbor Island Dr. to Rental Car Access Rd.	1,750	113,770	81,000	5.3%
N. Harbor Dr.: Rental Car Access Rd. to Laurel St.	1,750	163,370	82,790	2.2%
N. Harbor Dr.: Laurel St. to Hawthorn St.	1,225	73,135	54,260	6.5%
Laurel St.: N. Harbor Dr. to Pacific Highway	525	76,735	36,390	1.3%
Laurel St.: East of Pacific Highway	350	41,900	27,620	2.5%

Footnotes:
a. Intersection fair share contributions are calculated using combined AM and PM peak hour volumes.
b. Segment fair share contributions are calculated using ADT volumes.
c. Fair share percentages calculated as

$$\frac{\text{Project Traffic}}{(\text{Year 2030 + Project Traffic}) - (\text{Existing Traffic})}$$

14.2.3 *Parking Mitigation*

In order to mitigate the potential significant impact on parking which may occur as the result of future hotel development in the area of the existing west marina parking lot, the following mitigation measure would be implemented:

a. Prior to the approval of a Coastal Development Permit for future development of a hotel on the existing west marina parking lot, the design of the proposed hotel development shall provide adequate on-site parking in accordance with the Port District parking guidelines for the proposed hotel development and for the shared parking requirements of the existing marina and the proposed 175-room hotel; and

b. Prior to demolition or removal of any parking spaces in the existing west marina parking lot which are required for the shared parking of the existing marina and the proposed 175-room hotel, the Project Applicant shall submit to the Port District for its review and approval a Parking Management Plan, which shall provide adequate parking to satisfy the shared parking requirements for the existing marina and the proposed 175-room hotel during construction of the new hotel and replacement parking spaces.

15.0 CONCLUSIONS

This *Traffic Impact Analysis* has been prepared to determine the potential traffic impacts on the local circulation system for the *Harbor Island Subarea 23 Port Master Plan Amendment* in the City of San Diego.

The *Harbor Island Subarea 23 Port Master Plan Amendment* proposes reconfiguring East Harbor Island Drive and the traffic circle at its eastern terminus. The amendment provides for the existing allowed 500 hotel rooms (currently designated for the San Diego International Airport (SDIA) employee parking lot) to occur as up to three smaller hotels (including the proposed 175-room hotel), which together total no more than 500 rooms. Surface parking will be provided based on Port parking requirements.

For the purpose of this report, the proposed 500 hotel rooms were analyzed under two different scenarios:

- Scenario A: 175 "business" hotel rooms and 325 "resort" hotel rooms
- Scenario B: 500 "business" hotel rooms

Analyzing the proposed 500 hotel rooms under both of these scenarios provides the most complete analysis available at this stage of project planning.

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 for Scenario A is approximately 3,825 ADT with 117 inbound / 111 outbound trips during the AM peak hour and 139 inbound / 153 outbound trips during the PM peak hour. The total net project trip calculation for Scenario B is approximately 3,500 ADT with 112 inbound / 168 outbound trips during the AM peak hour and 189 inbound / 126 outbound trips during the PM peak hour.

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 under Scenario A and B conditions is calculated to have no significant direct impacts. In the Long-Term (Year 2030), the project under both Scenario A and B conditions is calculated to have significant cumulative impacts at the following five intersections and five street segments. While the significant impacts and mitigation measures are the same for both scenarios, the fair share calculations differ, as shown in *Tables 14–1* and *14–2*.

Intersections

- N. Harbor Dr./Harbor Island Dr./Terminal 1
- N. Harbor Dr./Rental Car Access Road
- N. Harbor Dr./Laurel Street
- Pacific Highway / Laurel Street
- Pacific Highway / Grape Street

Street Segments

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

In addition, the future development of an approximately four-story hotel with up to 162 rooms and ancillary facilities in the area of the existing west marina parking lot could result in a significant impact on parking. Mitigation would be required to ensure that such future hotel development would include adequate parking for the new hotel, the proposed 175-room hotel, and the existing marina.

Potential mitigation measures for these significant cumulative impacts are reported in Section *14.2* of this report.

LINSCOTT
LAW &
GREENSPAN
engineers

TECHNICAL APPENDICES

HARBOR ISLAND SUBAREA 23 PORT MASTER PLAN AMENDMENT

San Diego, California
July 8, 2013

LLG Ref. 3-04-1437-3

Prepared by:
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APPENDIX A

STREET SEGMENT AND INTERSECTION COUNT SHEETS

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=0.98

*** 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

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

371

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=0.98 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

372

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	501	416	403	169	58

PM Peak 1645 - 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=0.96

* **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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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%)

substitute

*** Monday, August 18, 2008=26530 (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	
-	-	-	-	-	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

TDSSW, Inc.
Event Counts

EventCount-17 -- English (ENU)

Datasets:

Site: [17404] IN. 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 (1836), AM PHF=0.92 PM Peak 1615 - 1715 (2162), 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

375

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=0.98 PM Peak 1230 - 1330 (2881), 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

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	603	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

377

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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=0.86 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

379

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=0.80

* 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NB Avg. 8430

SB Avg. 29400

total: 37830

380

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=0.96 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	360	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

383

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*	*1509*	*1374*	*1386*	*1501*	*1628*	*1519*	*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	300	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=0.86 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

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	400	376	292	202	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

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 (700), AM PHF=0.89 PM Peak 1245 - 1345 (708), 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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 - 1446 (624), 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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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	88	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 Avg. 3340

WB Avg. 3600

total: 6940

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 (363), 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=0.76 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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

389

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.

* **Tuesday, August 19, 2008=17571, 15 minute drops**

PM PK Hr.

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 (1003), 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

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

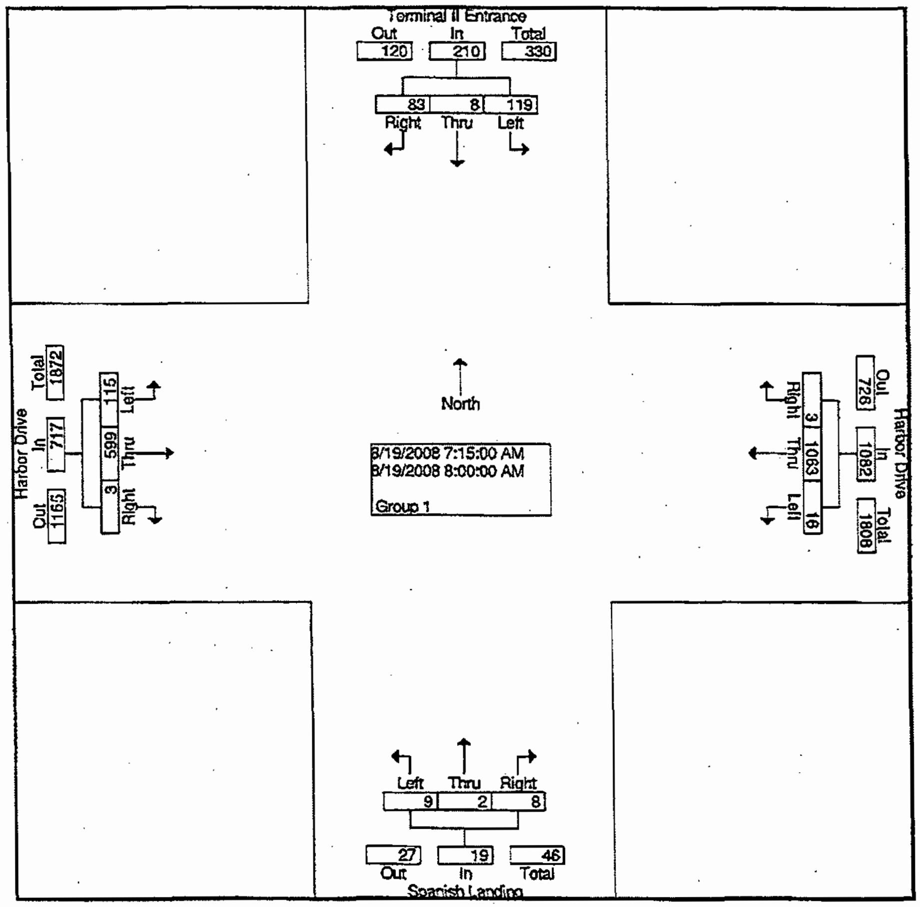
	Terminal II Entrance Southbound					Harbor Drive Westbound					Spanish Landing Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	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	

Weather: Clear & Dry
Counted By: S. Tillman
Board No.: D1-2172
Loc: Terminal II Entrance & Harbor Dr.

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

File Name : 08174010
Site Code : 00174010
Start Date : 8/19/2008
Page No : 2



61728 PAGE 392

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 : 1

Groups Printed- Group 1

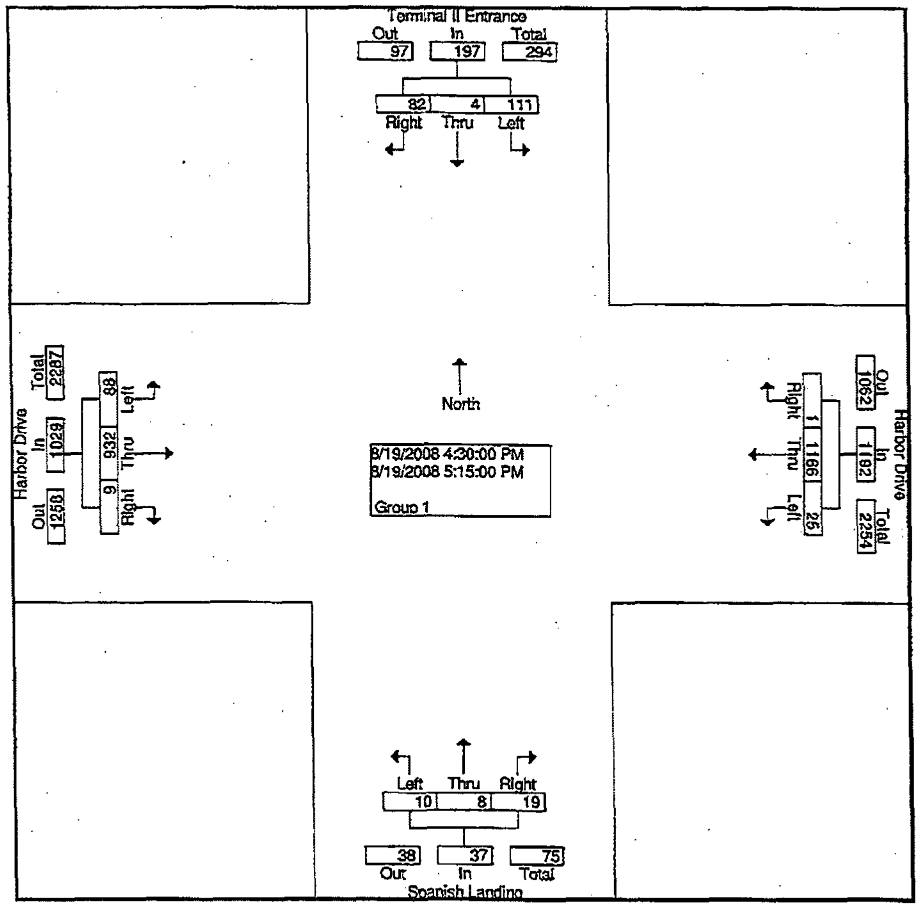
	Terminal II Entrance Southbound					Harbor Drive Westbound					Spanish Landing Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	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	

Weather: Clear & Dry
Counted By: S. Tillman
Board No.: D1-2172
Loc: Terminal II Entrance & Harbor Dr.

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

File Name : 08174011
Site Code : 00174011
Start Date : 8/19/2008
Page No : 2



61728 PAGE 394

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	

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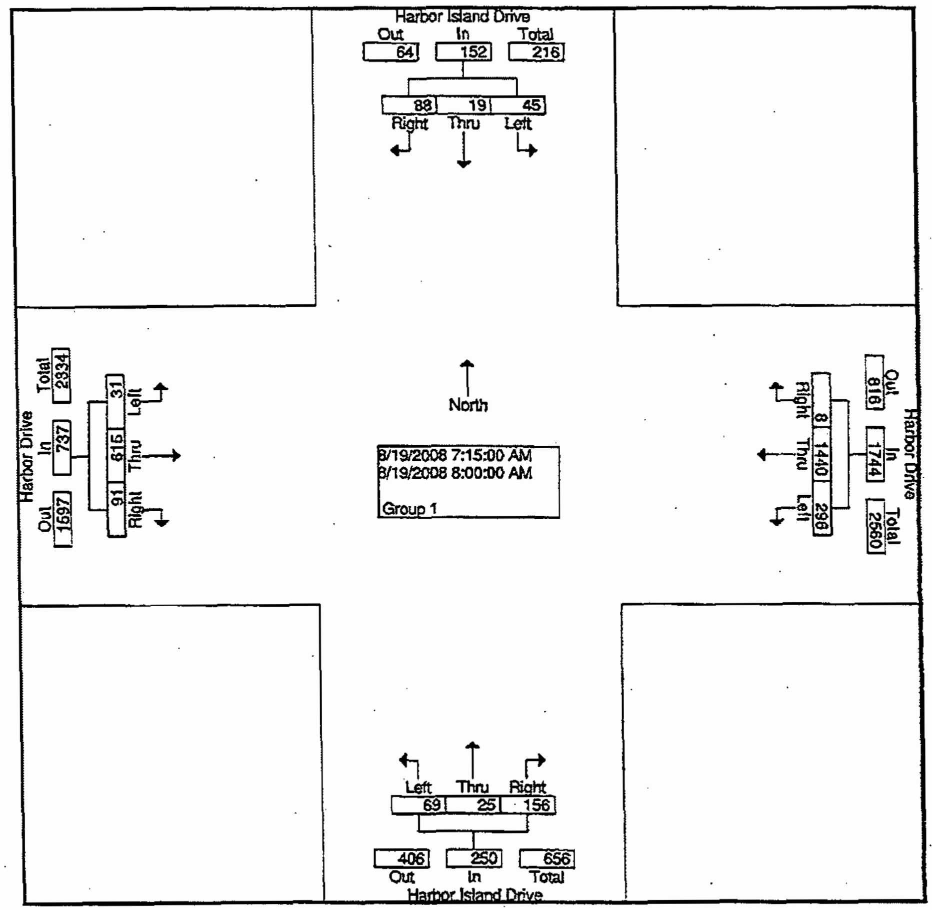
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

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



61728 PAGE 396

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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	

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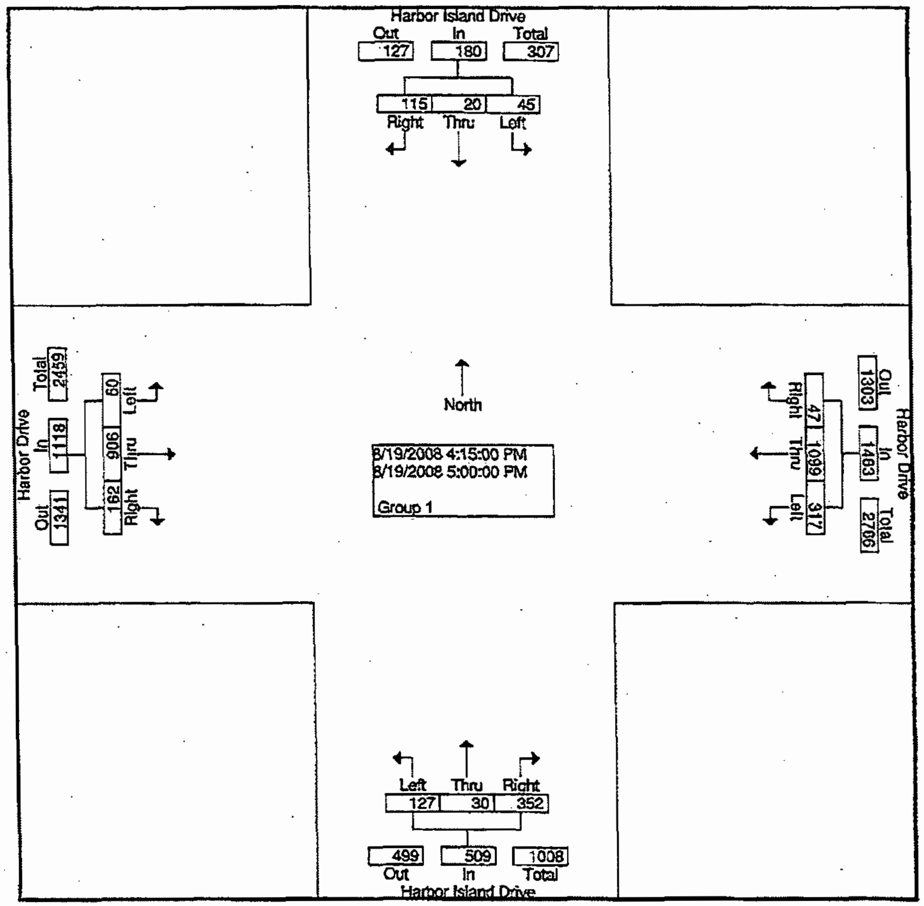
Weather: Clear & Dry
Counted By: D. Wellman & G. Scalice
Board No.: D1-1426 & D1-1427
Loc: Harbor Island Dr. & Harbor Dr.

File Name : 08174021
Site Code : 00174021
Start Date : 8/19/2008
Page No : 2



61728 PAGE 398

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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	

61728 PAGE 399

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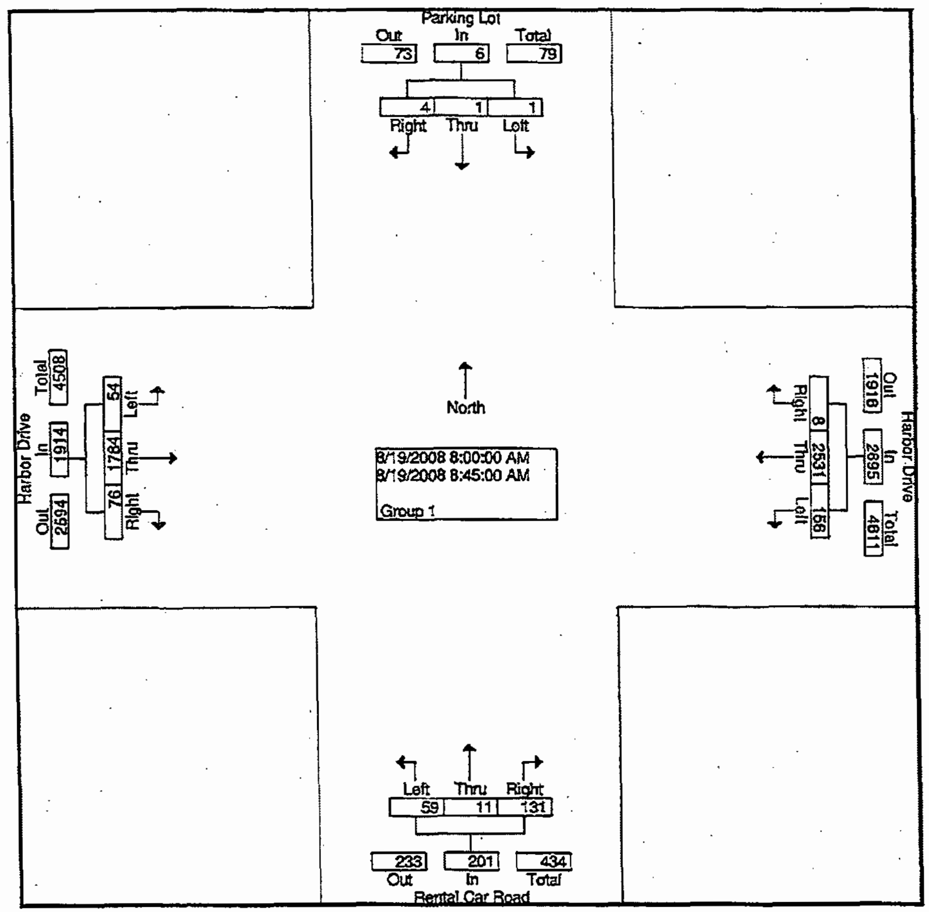
Weather: Clear & Dry
Counted By: B. Reid & J. Shelton
Board No.: D1-2173 & D1-1430
Loc: Rental Car Road & Harbor Dr.

File Name : 08174030
Site Code : 00174030
Start Date : 8/19/2008
Page No : 2



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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	

61728 PAGE 401

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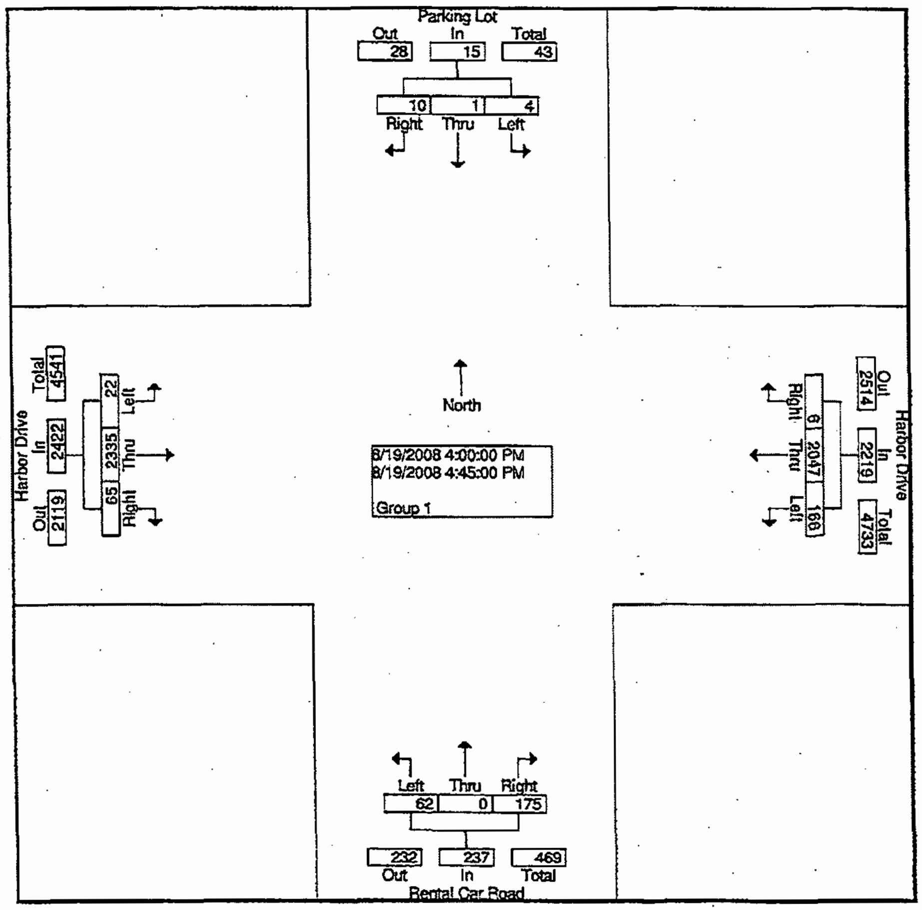
Weather: Clear & Dry
Counted By: B. Reid & J. Shelton
Board No.: D1-2173 & D1-1430
Loc: Rental Car Road & Harbor Dr.

File Name : 08174031
Site Code : 00174031
Start Date : 8/19/2008
Page No : 2



61728 PAGE 402

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	

Weather: Clear & Dry
Counted By: C. Niggel
Board No.: D1-1424
Loc: Laurel Street & Harbor Dr.

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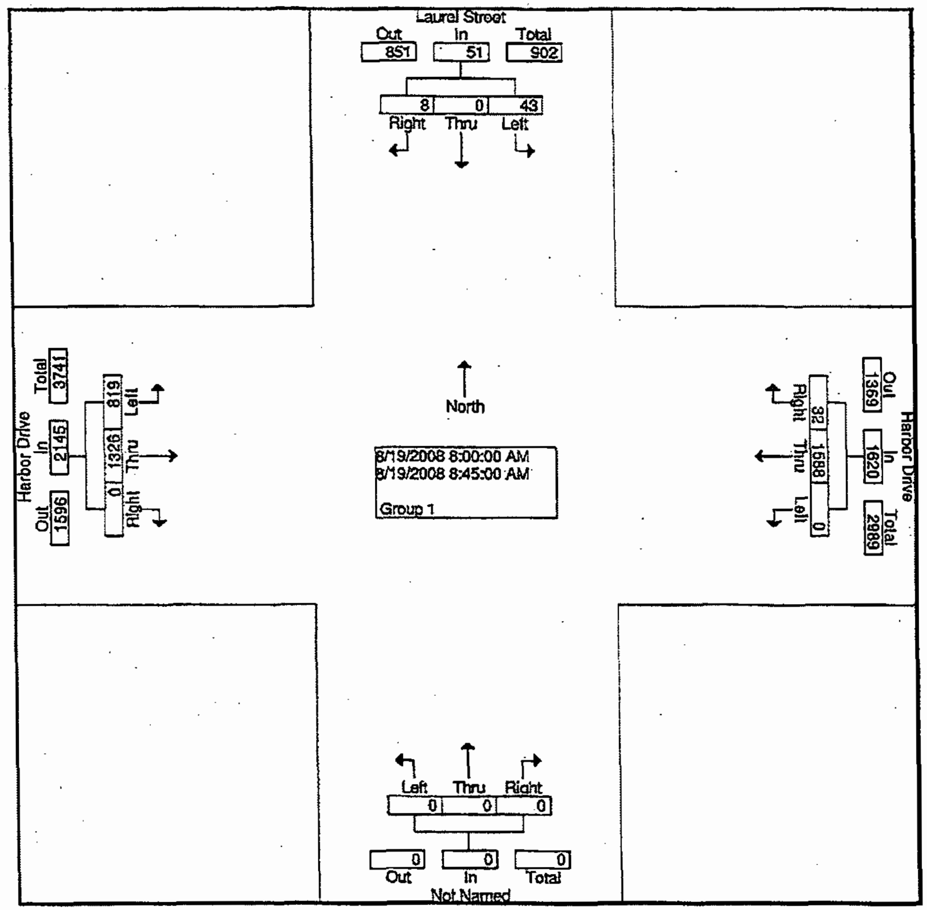
File Name : 08174040
Site Code : 00174040
Start Date : 8/19/2008
Page No : 2



Weather: Clear & Dry
Counted By: C. Niggel
Board No.: D1-1424
Loc: Laurel Street & Harbor Dr.

TDSSW, Inc.
P.O. Box 1544
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(619) 390-8495 Fax (866) 768-1818

File Name : 08174041
Site Code : 00174041
Start Date : 8/19/2008
Page No : 1

Groups Printed- Group 1

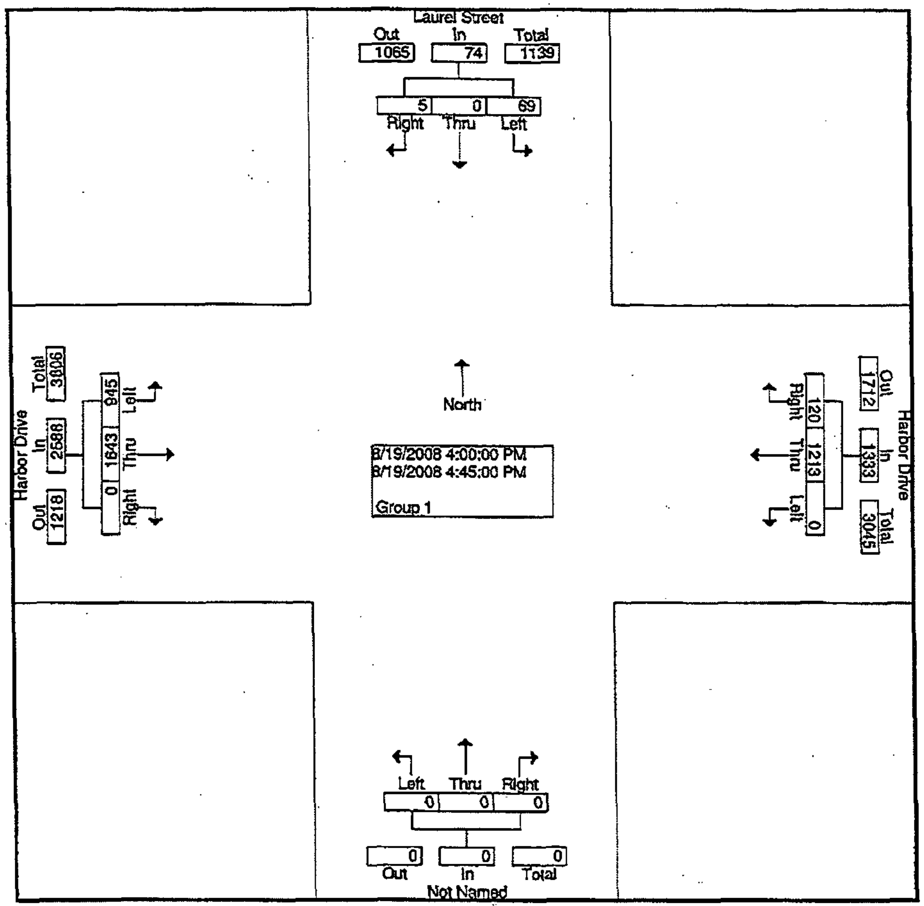
	Laurel Street Southbound					Harbor Drive Westbound					Northbound					Harbor Drive Eastbound							
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
16:00	18	0	2	4	20	0	300	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	

Weather: Clear & Dry
Counted By: C. Niggel
Board No.: D1-1424
Loc: Laurel Street & Harbor Dr.

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

File Name : 08174041
Site Code : 00174041
Start Date : 8/19/2008
Page No : 2



61728 PAGE 406

TDSSW, Inc.
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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					

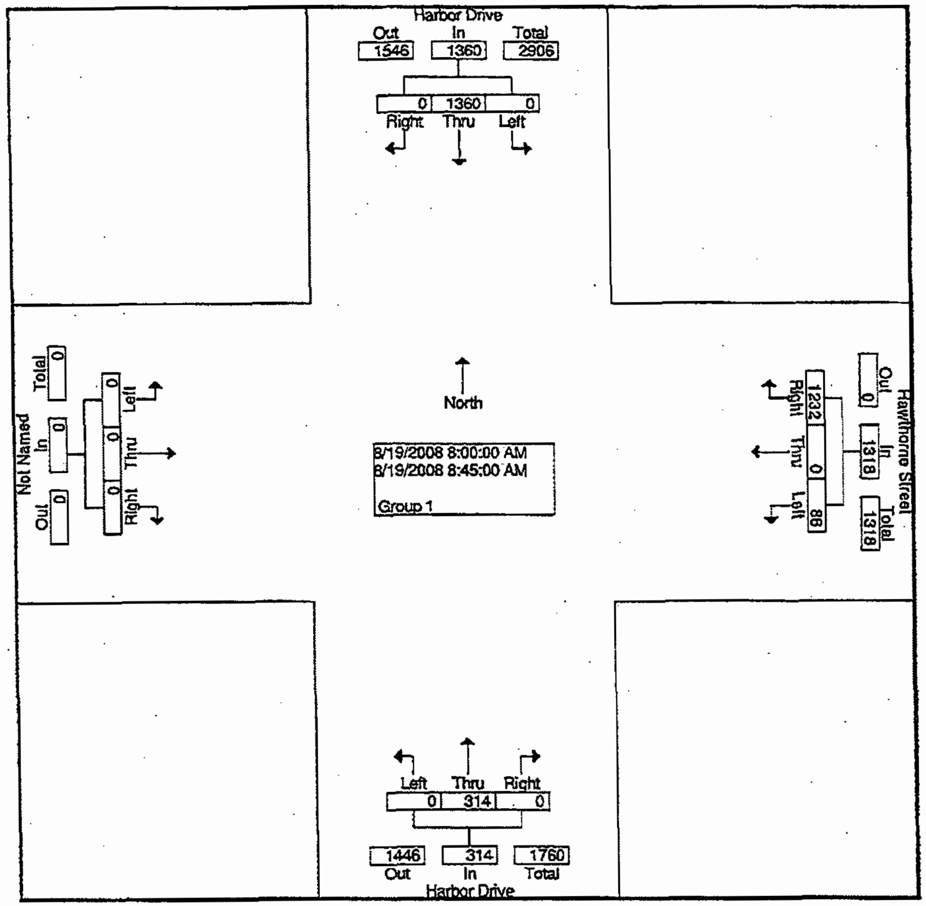
PAGE 61728

407

Weather: Clear & Dry
Counted By: L. McCoy
Board No.: D1-2279
Loc: Hawthorn St. & Harbor Dr.

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

File Name : 08174050
Site Code : 00174050
Start Date : 8/19/2008
Page No : 2



61728 PAGE 408

Weather: Clear & Dry
Counted By: L. McCoy
Board No.: D1-2279
Loc: Hawthorn St. & Harbor Dr.

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

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	

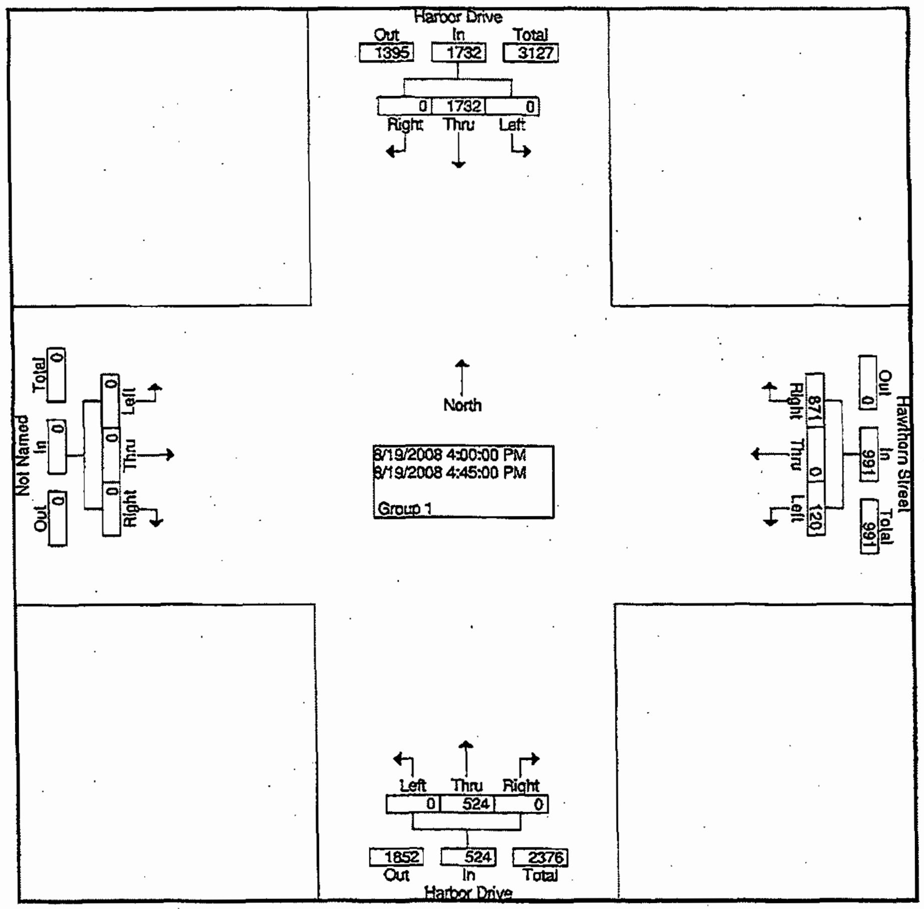
	Harbor Drive Southbound				Hawthorn Street Westbound				Harbor Drive Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	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					

61728 PAGE 409

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 : 08174051
Site Code : 00174051
Start Date : 8/19/2008
Page No : 2



61728 PAGE 410

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(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	

61728 PAGE 411

TDSSW, Inc.
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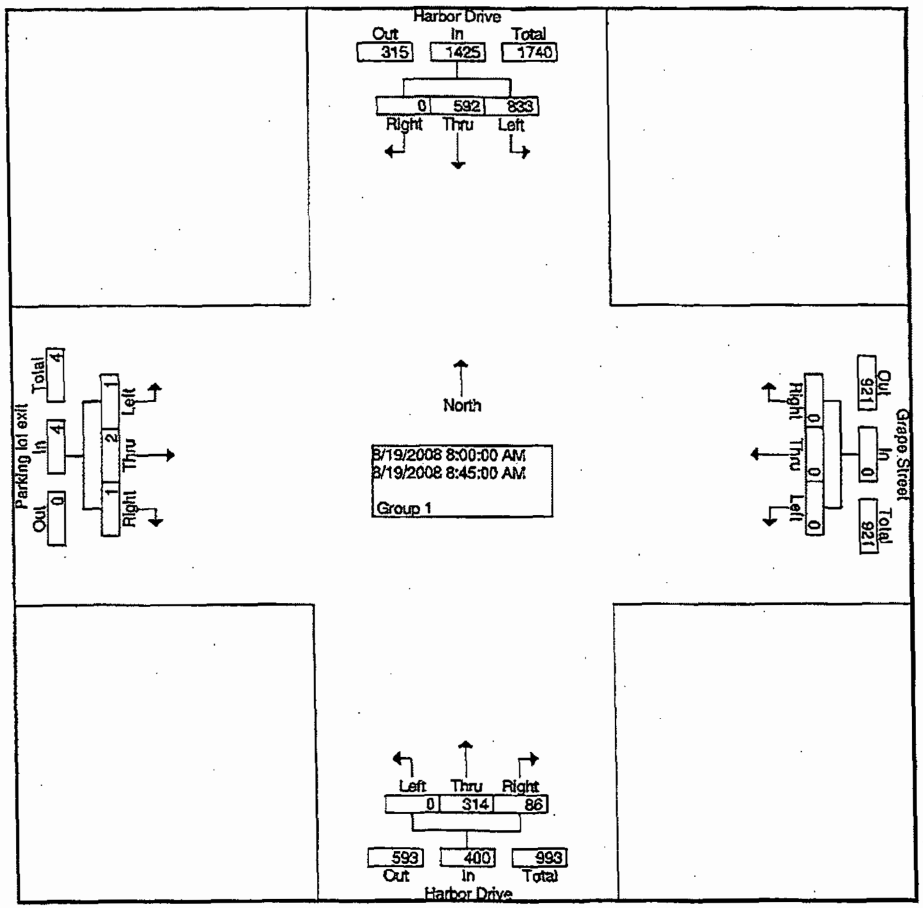
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

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 : 2



61728 PAGE 412

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(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	

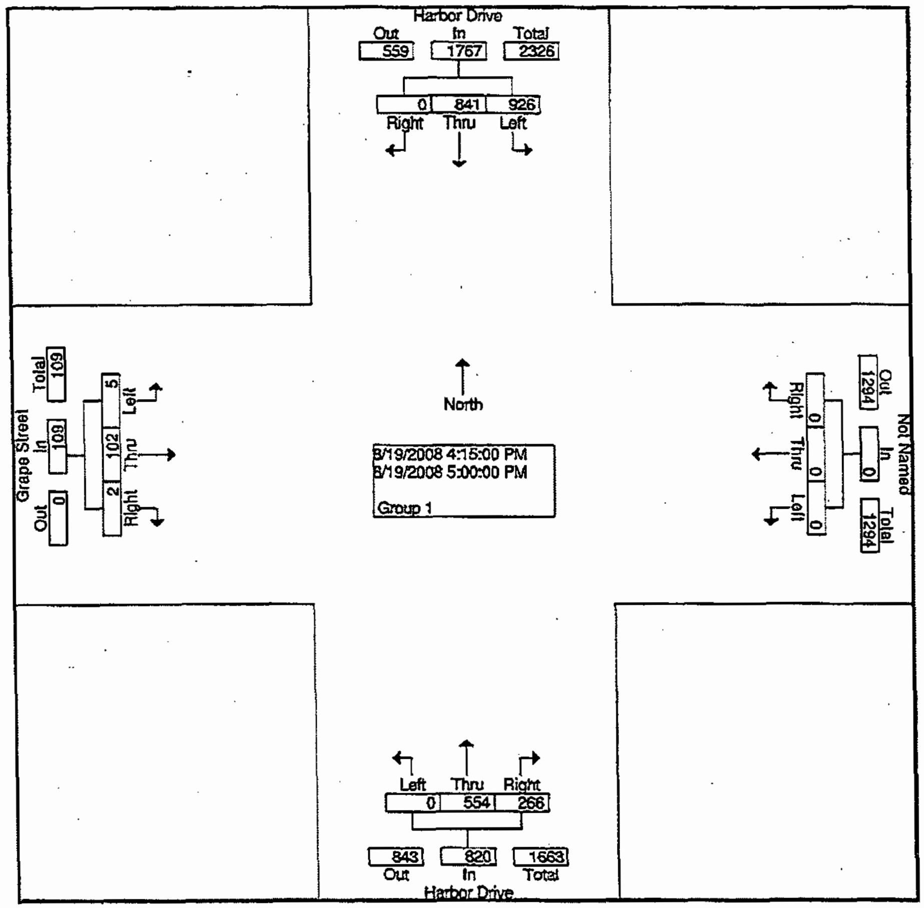
	Harbor Drive Southbound				Westbound				Harbor Drive Northbound				Grape Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 16:00 to 17:45 - Peak 1 of 1																	
Intersection	16:15																
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	

61728 PAGE 413

Weather: Clear & Dry
Counted By: J. Hanna
Board No.: D1-2278
Loc: Grape St. & Harbor Dr.

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

File Name : 08174061
Site Code : 00174061
Start Date : 8/19/2008
Page No : 2



61728 PAGE

414

TDSSW, Inc.
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	

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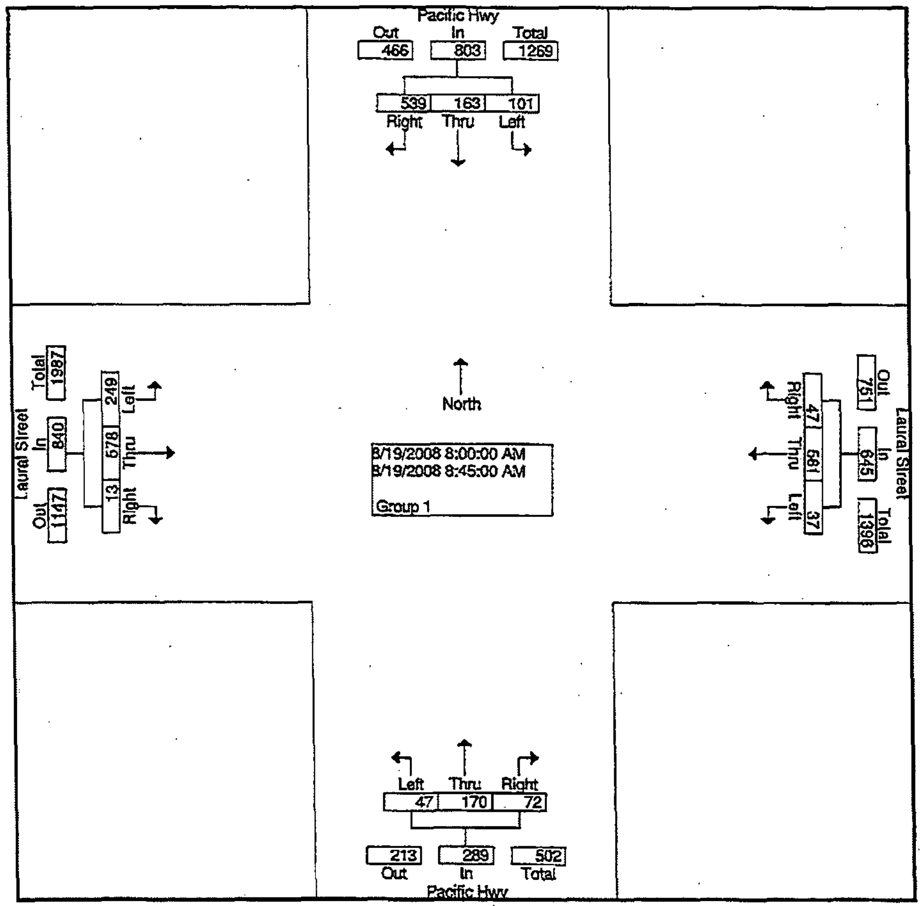
(619) 390-8495 Fax (866) 768-1818

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 : 2



61728 PAGE 416

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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	

61728 PAGE

417

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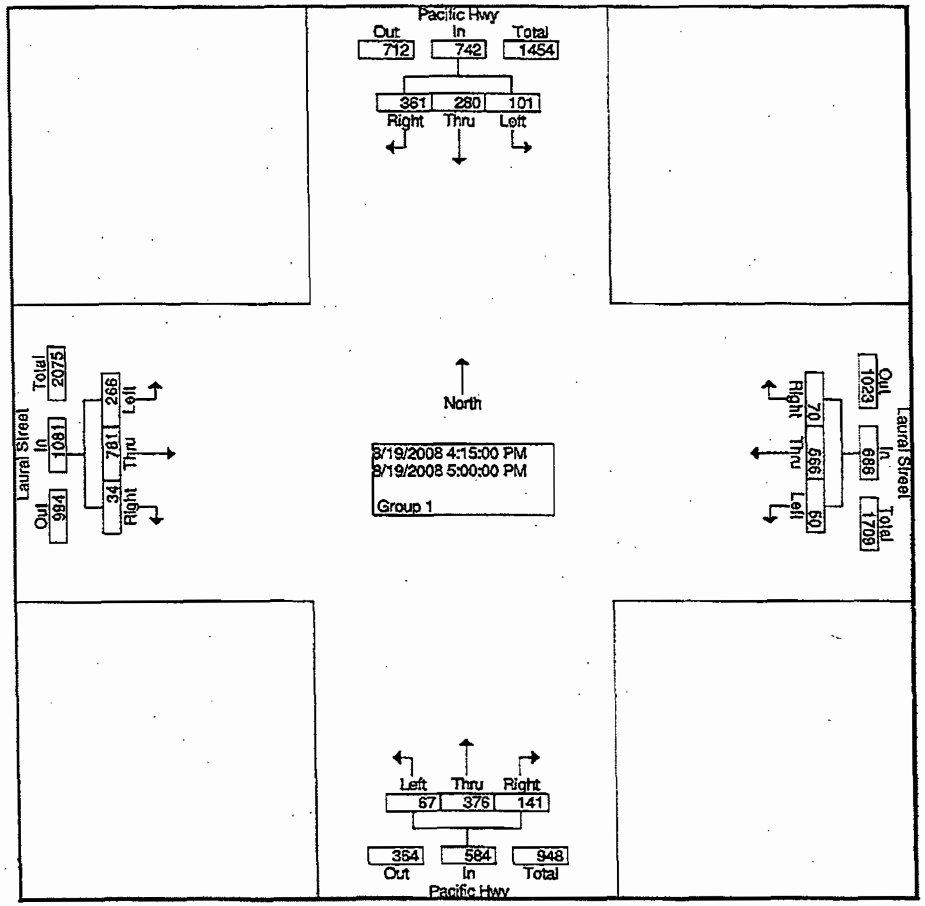
Weather: Clear & Dry
Counted By: B. Vockeroth
Board No.: D1-1432
Loc: Laurel St & Pacific Hwy

File Name : 08174071
Site Code : 00174071
Start Date : 8/19/2008
Page No : 2



61728 PAGE 418

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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
Page No : 1

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					

PAGE 61728

419

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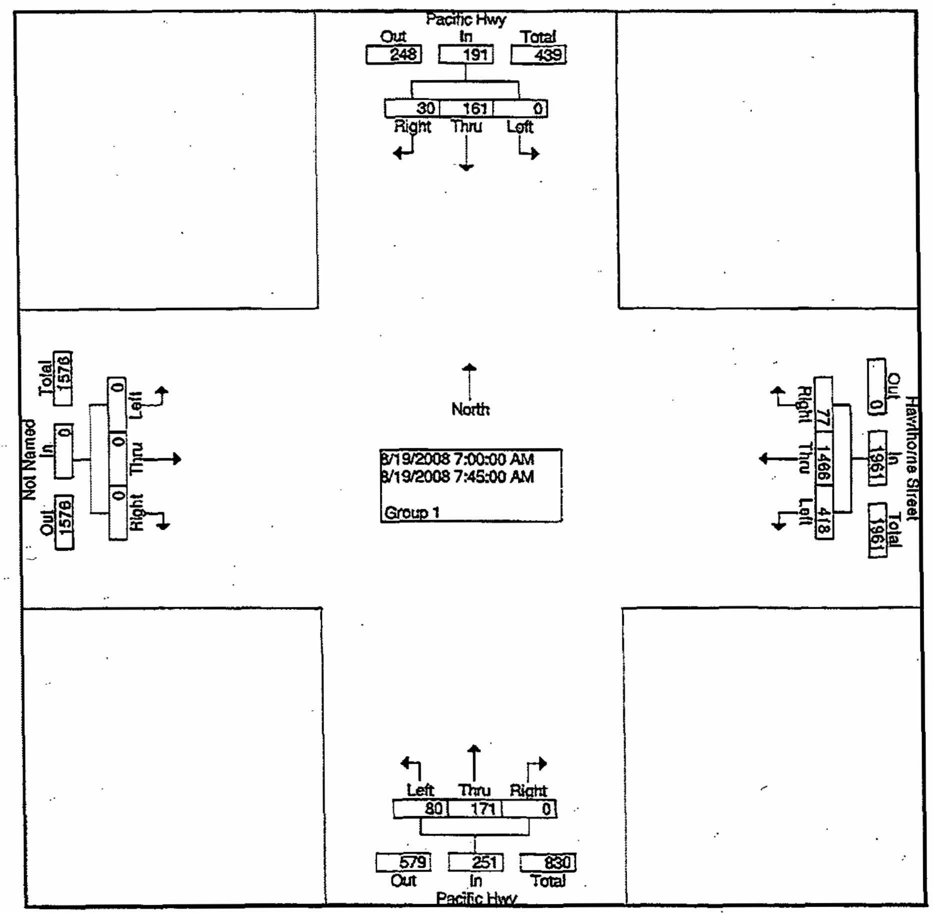
Weather: Clear & Dry
Counted By: J. Fort
Board No.: D1-1431
Loc: Hawthorn St & Pacific Hwy

File Name : 08174080
Site Code : 00174080
Start Date : 8/19/2008
Page No : 2



61728 PAGE 420

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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 : 08174081
Site Code : 00174081
Start Date : 8/19/2008
Page No : 1

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					

61728 PAGE 421

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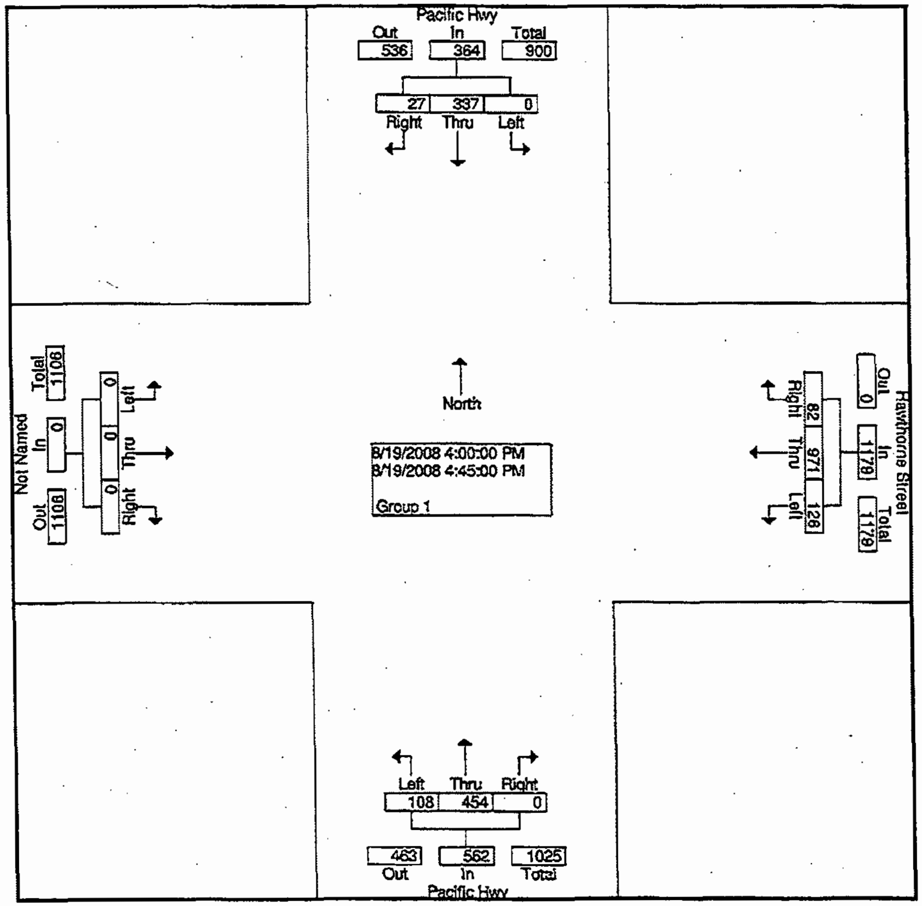
Weather: Clear & Dry
Counted By: J. Fort
Board No.: D1-1431
Loc: Hawthorn St & Pacific Hwy

File Name : 08174081
Site Code : 00174081
Start Date : 8/19/2008
Page No : 2



61728 PAGE

422

TDSSW, Inc.
P.O. Box 1544
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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 : 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	

61728 PAGE 423

Weather: Clear & Dry
Counted By: B. Tymick
Board No.: D1-1429
Loc: Grape St & Pacific Hwy

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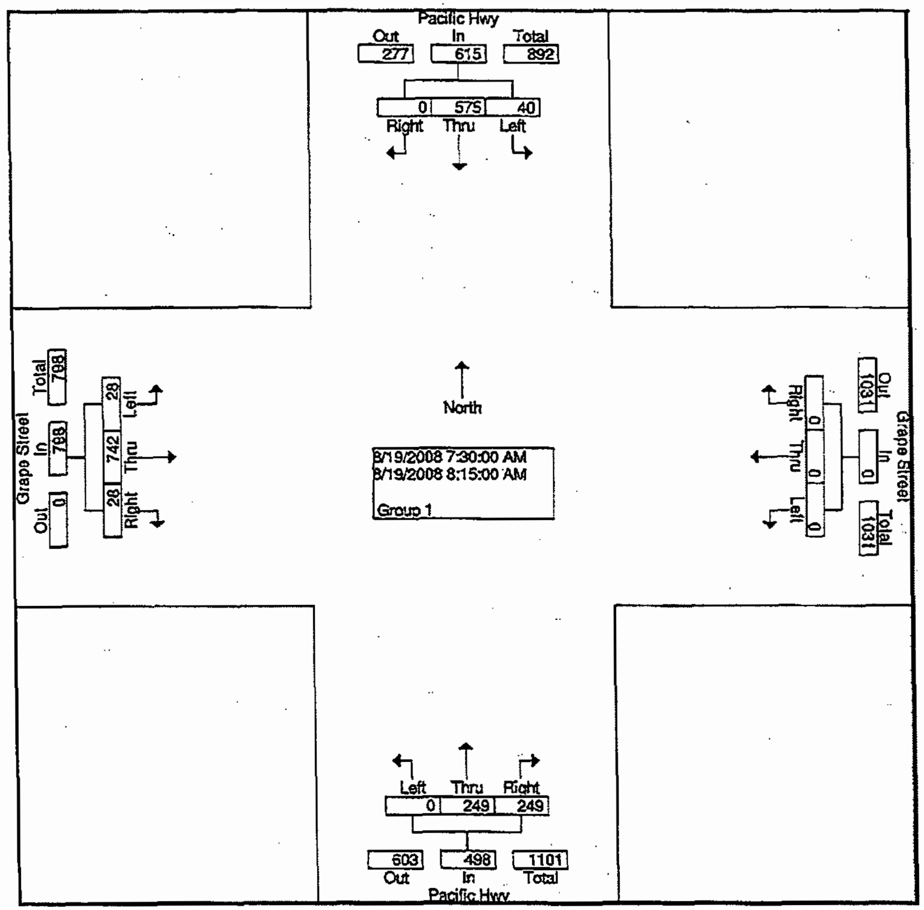
(619) 390-8495 Fax (866) 768-1818

File Name : 08174090
Site Code : 00174090
Start Date : 8/19/2008
Page No : 2



61728 PAGE 424

TDSSW, Inc.
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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	

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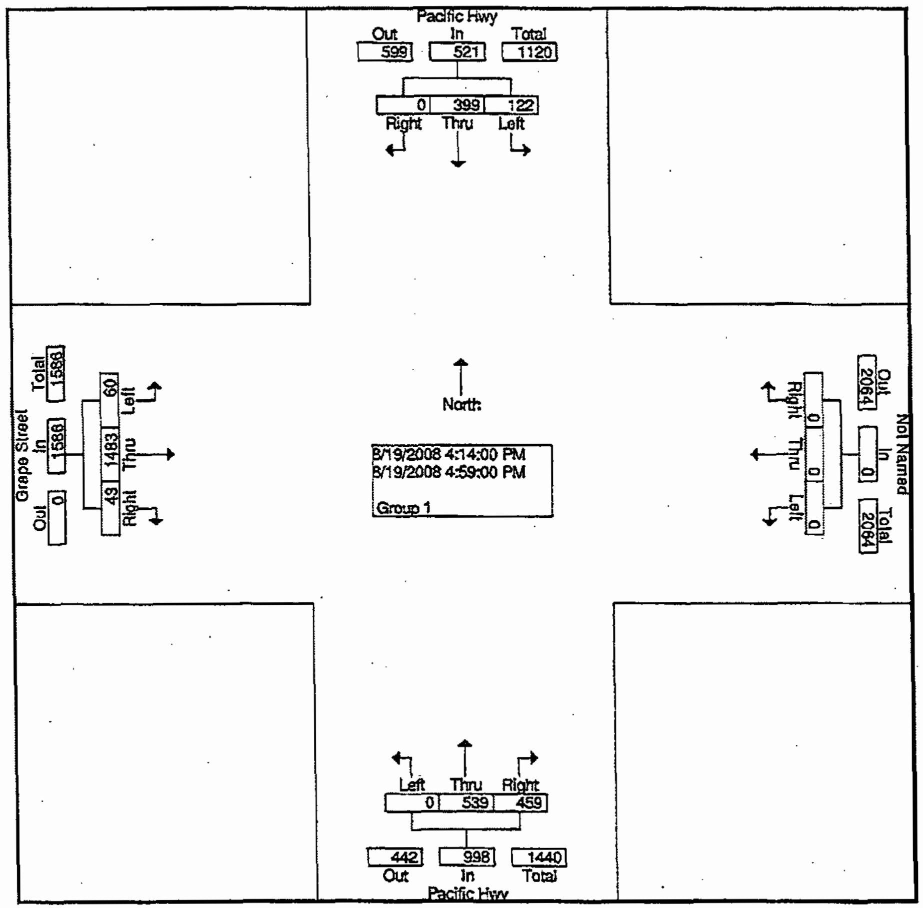
Weather: Clear & Dry
Counted By: B. Tymick
Board No.: D1-1429
Loc: Grape St & Pacific Hwy

File Name : 08174091
Site Code : 00174091
Start Date : 8/19/2008
Page No : 2



61728 PAGE 426

TDSSW, Inc.
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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 : 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	

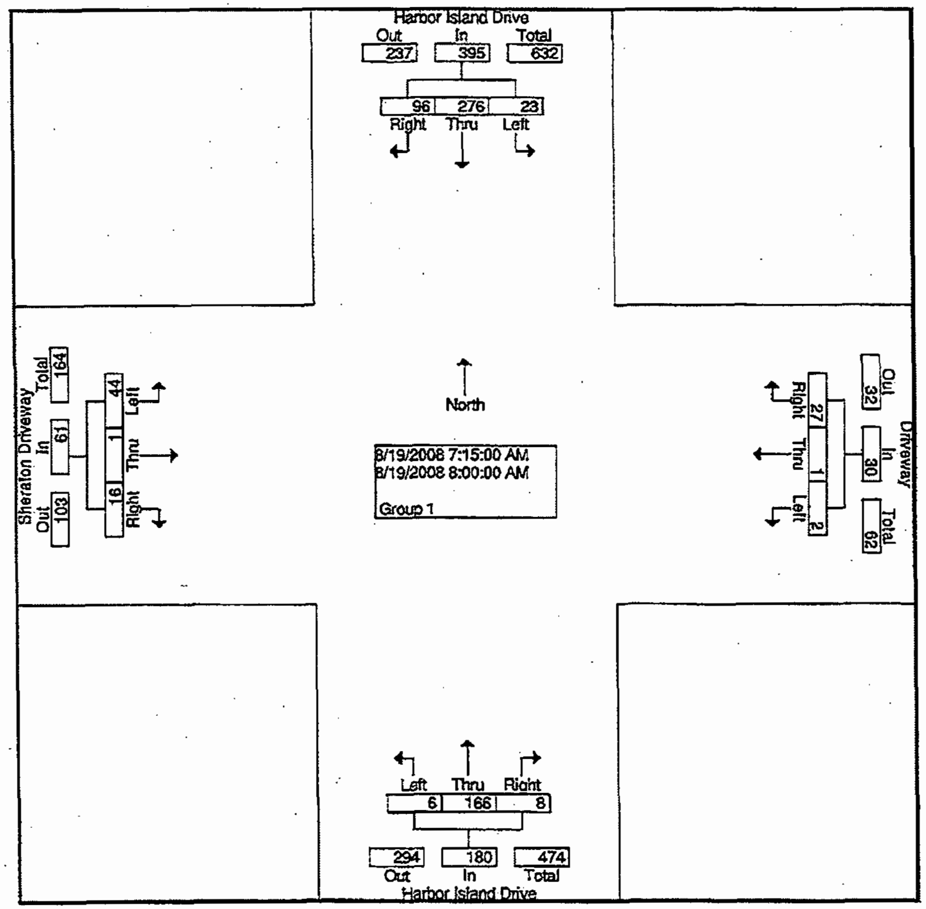
	Harbor Island Drive Southbound				Driveway Westbound				Harbor Island Drive Northbound				Sheraton Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 to 08:45 - Peak 1 of 1																	
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	

61728 PAGE 427

TDSSW, Inc.
P.O. Box 1544
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 : 08174100
Site Code : 00174100
Start Date : 8/19/2008
Page No : 2



428

TDSSW, Inc.
P.O. Box 1544
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	

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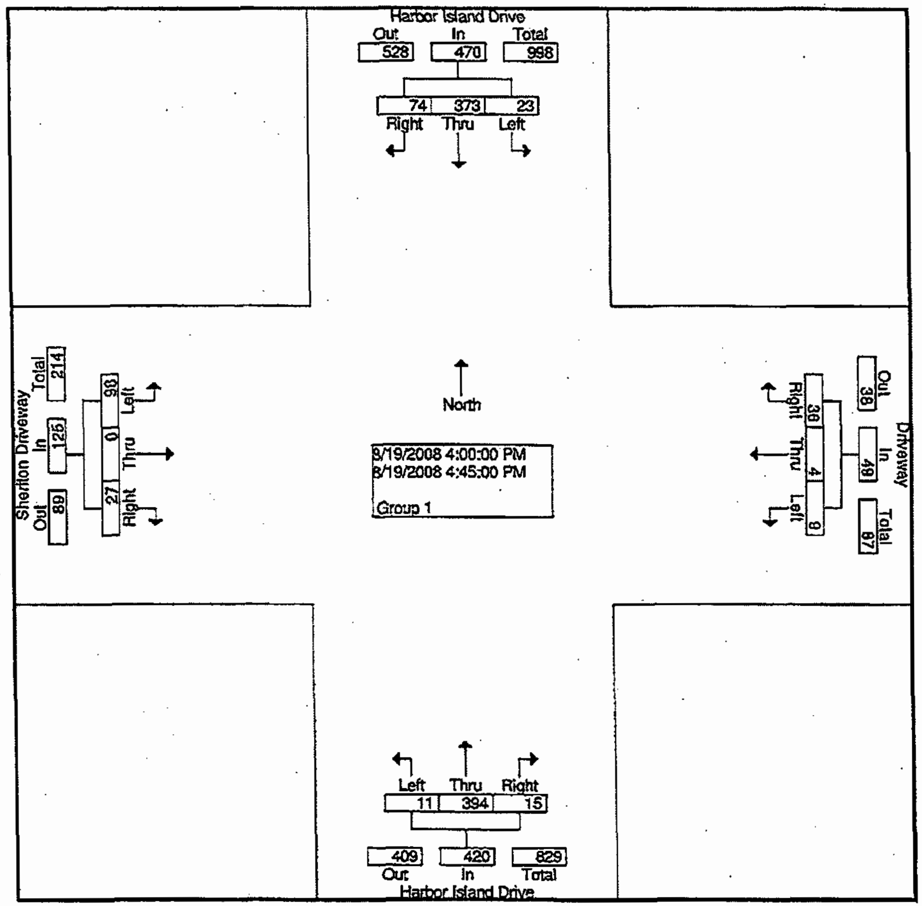
Weather: Clear & Dry
Counted By: M. Parish
Board No.: D1-1306
Loc: Harbor Island Dr & Sheraton Drwy

File Name : 08174101
Site Code : 00174101
Start Date : 8/19/2008
Page No : 2



61728 PAGE 430

TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

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	

61728 PAGE 431

TDSSW, Inc.
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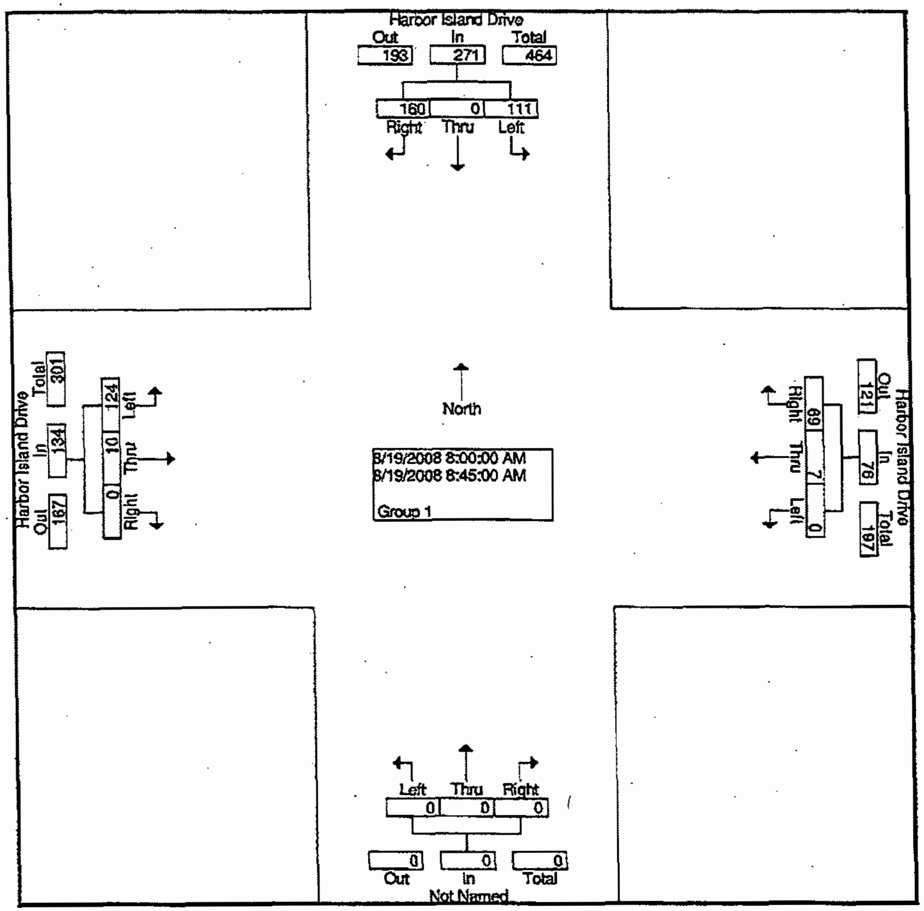
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

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



TDSSW, Inc.
P.O. Box 1544
Lakeside, CA 92040
(619) 390-8495 Fax (866) 768-1818

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	

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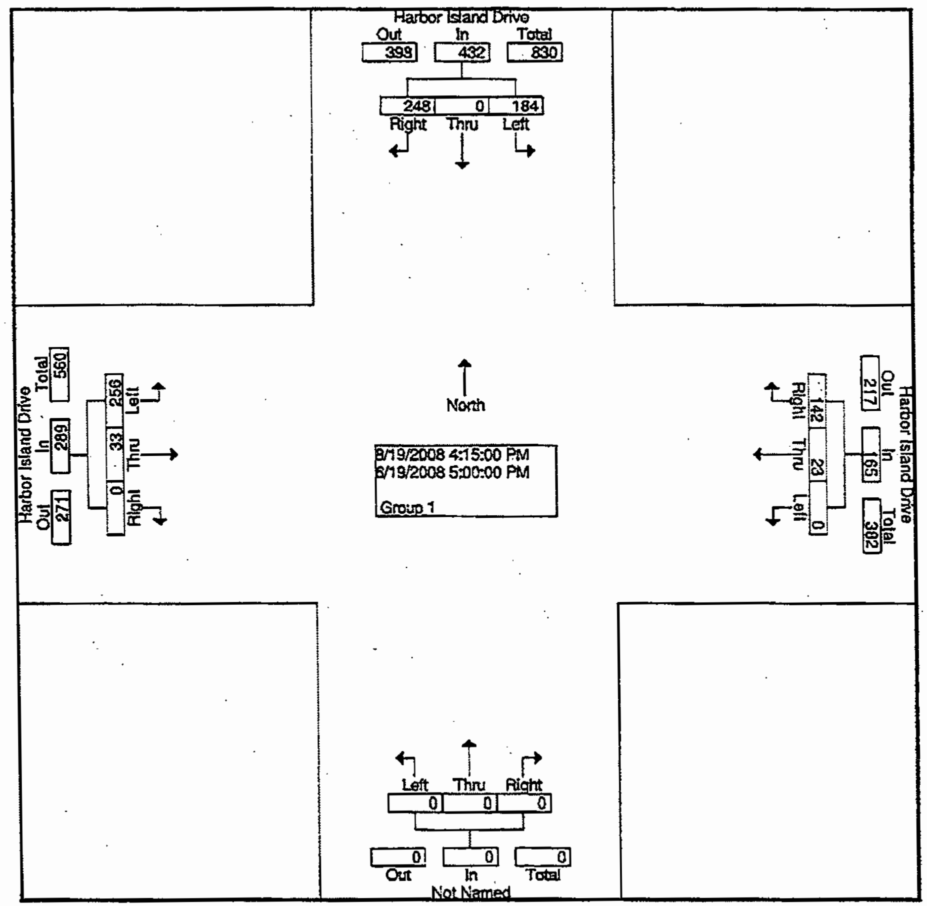
Weather : Clear & Dry
Counted By: C. Hust
Board No.: D1-1428
Loc: Harbor Island Dr & Harbor Island Dr

File Name : 08174111
Site Code : 00174111
Start Date : 8/19/2008
Page No : 2



61728 PAGE 434

Prepared by: Field Data Services of Arizona (520) 316-6745

Volumes for: Wednesday, July 11, 2012 City: San Diego Project #: 12-1155-001

Location: Harbor Island Dr btwn Harbor Dr & Sheraton Driveway

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	36		25					12:00	192		209				
00:15	28		21					12:15	180		195				
00:30	30		16					12:30	174		176				
00:45	24	118	13	75			193	12:45	222	768	222	802			1570
01:00	16		17					13:00	218		196				
01:15	13		6					13:15	305		186				
01:30	8		11					13:30	251		185				
01:45	11	48	7	41			89	13:45	206	980	225	792			1772
02:00	7		10					14:00	238		205				
02:15	8		9					14:15	193		195				
02:30	6		16					14:30	239		180				
02:45	4	25	12	47			72	14:45	185	855	196	776			1631
03:00	9		19					15:00	176		200				
03:15	7		24					15:15	208		177				
03:30	9		50					15:30	197		148				
03:45	10	35	79	172			207	15:45	167	748	212	737			1485
04:00	8		95					16:00	188		156				
04:15	10		71					16:15	164		184				
04:30	13		69					16:30	169		170				
04:45	17	48	50	285			333	16:45	152	673	204	714			1387
05:00	18		50					17:00	189		142				
05:15	21		51					17:15	195		172				
05:30	27		66					17:30	125		196				
05:45	27	93	62	229			322	17:45	177	686	203	713			1399
06:00	31		37					18:00	161		204				
06:15	27		56					18:15	182		223				
06:30	49		45					18:30	175		191				
06:45	41	148	64	202			350	18:45	190	708	178	796			1504
07:00	49		67					19:00	174		203				
07:15	61		82					19:15	198		165				
07:30	64		82					19:30	179		162				
07:45	66	240	95	326			566	19:45	176	727	180	710			1437
08:00	97		113					20:00	193		137				
08:15	82		109					20:15	219		130				
08:30	91		104					20:30	196		166				
08:45	106	376	104	430			806	20:45	175	783	144	577			1360
09:00	103		116					21:00	172		143				
09:15	111		121					21:15	194		142				
09:30	113		134					21:30	154		133				
09:45	138	465	130	501			966	21:45	176	696	123	541			1237
10:00	151		136					22:00	195		127				
10:15	175		166					22:15	179		141				
10:30	172		143					22:30	160		116				
10:45	179	677	198	643			1320	22:45	143	677	94	478			1155
11:00	179		174					23:00	151		134				
11:15	189		215					23:15	125		85				
11:30	186		187					23:30	79		44				
11:45	190	744	229	805			1549	23:45	46	401	38	301			702
Total Vol.		3017		3756			**6773**			8702		7937			**16639**

Daily Totals

NB	SB	EB	WB	Combined
11719	11693			**23412**

	AM NB	AM SB	AM Combined	PM NB	PM SB	PM Combined
Split %	44.5%	55.5%	**28.9%**	52.3%	47.7%	**71.1%**
Peak Hour	11:15	11:15	**11:15**	13:15	17:30	**13:15**
Volume	757	840	**1597**	1000	826	**1801**
P.H.F.	0.99	0.92	**0.95**	0.82	0.93	**0.92**

435

61728 PAGE

Prepared by: Field Data Services of Arizona (520) 316-6745

Volumes for: Wednesday, July 11, 2012 City: San Diego Project #: 12-1155-002

Location: Harbor Island Dr east of Harbor Island Dr

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			7		8			12:00			45		32		
00:15			6		6			12:15			51		24		
00:30			8		7			12:30			66		34		
00:45			5	26	1	22	48	12:45			65	227	37	127	354
01:00			4		1			13:00			56		62		
01:15			5		3			13:15			46		50		
01:30			3		1			13:30			44		39		
01:45			2	14	0	5	19	13:45			57	203	24	175	378
02:00			7		1			14:00			56		53		
02:15			7		3			14:15			61		32		
02:30			14		3			14:30			41		45		
02:45			5	33	0	7	40	14:45			52	210	39	169	379
03:00			14		2			15:00			44		38		
03:15			17		5			15:15			41		36		
03:30			43		1			15:30			32		41		
03:45			72	146	1	9	155	15:45			55	172	26	141	313
04:00			96		0			16:00			41		40		
04:15			63		1			16:15			34		37		
04:30			57		4			16:30			51		36		
04:45			41	257	2	7	264	16:45			39	165	36	149	314
05:00			33		4			17:00			39		48		
05:15			34		4			17:15			45		21		
05:30			40		6			17:30			36		22		
05:45			21	128	2	16	144	17:45			52	172	31	122	294
06:00			16		4			18:00			49		28		
06:15			23		6			18:15			49		27		
06:30			27		7			18:30			44		30		
06:45			22	88	10	27	115	18:45			35	177	32	117	294
07:00			20		5			19:00			31		26		
07:15			26		13			19:15			40		39		
07:30			24		6			19:30			34		38		
07:45			27	97	8	32	129	19:45			32	137	49	152	289
08:00			26		11			20:00			38		32		
08:15			30		16			20:15			35		36		
08:30			34		12			20:30			33		45		
08:45			37	127	13	52	179	20:45			30	136	53	166	302
09:00			36		14			21:00			31		47		
09:15			28		15			21:15			36		32		
09:30			36		10			21:30			33		59		
09:45			35	135	15	54	189	21:45			19	119	31	169	288
10:00			32		18			22:00			17		25		
10:15			31		13			22:15			19		23		
10:30			27		16			22:30			7		24		
10:45			33	123	18	65	188	22:45			22	65	31	103	168
11:00			42		22			23:00			14		31		
11:15			51		29			23:15			14		26		
11:30			60		27			23:30			8		17		
11:45			54	207	18	96	303	23:45			10	46	9	83	129
Total Vol.				1381		392	**1773**					1829		1673	**3502**

Daily Totals

NB	SB	EB	WB	Combined
		3210	2065	**5275**

	AM			PM		
Split %	77.9%	22.1%	**33.6%**	52.2%	47.8%	**66.4%**
Peak Hour	03:45	11:45	**11:45**	12:15	20:45	**12:30**
Volume	288	108	**324**	238	191	**416**
P.H.F.	0.75	0.79	**0.81**	0.90	0.81	**0.88**

APPENDIX B

INTERSECTION LEVEL OF SERVICE CRITERIA AND CALCULATION SHEETS

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.

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

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

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

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

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

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	3.6	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

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

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

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

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

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

449

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

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

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

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

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

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

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

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

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

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

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

460

61728 PAGE

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

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

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

463

61728 PAGE

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			

464

61728 PAGE

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

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			

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

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

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

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

1: N. Harbor Dr & Terminal 2 Entrance
Existing + Cumulative PM

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

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

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

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

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

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

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

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

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

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

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

Scenario A

HCM Signalized Intersection Capacity Analysis
1: N. Harbor Dr & Terminal 2 Entrance

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰	↑↑↑	↱	↰	✣		↰↰	↱	
Volume (vph)	120	738	5	20	1157	5	10	5	10	136	10	90
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	0.91		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	1480	1723	4951	1480	1637	1538		3343	1534	
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	1480	1723	4951	1480	1637	1538		3343	1534	
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	820	6	22	1286	6	11	6	11	151	11	100
RTOR Reduction (vph)	0	0	3	0	0	4	0	10	0	0	85	0
Lane Group Flow (vph)	133	820	3	22	1286	2	10	8	0	151	26	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)	11.8	42.0	42.0	2.3	32.5	32.5	8.1	8.1		10.5	10.5	
Effective Green, g (s)	13.8	44.0	44.0	4.3	34.5	34.5	10.1	10.1		12.5	12.5	
Actuated g/C Ratio	0.17	0.53	0.53	0.05	0.42	0.42	0.12	0.12		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)	287	2628	786	89	2060	616	199	187		504	231	
v/s Ratio Prot	c0.08	0.17		0.01	c0.26		c0.01	0.01		c0.05	0.02	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.46	0.31	0.00	0.25	0.62	0.00	0.05	0.04		0.30	0.11	
Uniform Delay, d1	31.2	10.9	9.1	37.7	19.1	14.2	32.2	32.1		31.3	30.4	
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	1.2	0.1	0.0	1.5	0.6	0.0	0.1	0.1		0.3	0.2	
Delay (s)	32.4	11.0	9.1	39.2	19.7	14.2	32.3	32.2		31.6	30.6	
Level of Service	C	B	A	D	B	B	C	C		C	C	
Approach Delay (s)		14.0			20.0			32.2			31.2	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	82.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: N. Harbor Dr & Harbor Island Drive

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰↰	↑↑↑↱		↰↰	↑	↱	↰	↰↑↱	
Volume (vph)	35	660	124	369	1550	10	98	58	215	50	54	90
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	0.99	
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	0.91	
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	2797	
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	2797	
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	207	615	2583	17	163	72	269	83	68	112
RTOR Reduction (vph)	0	0	175	0	1	0	0	0	0	0	95	0
Lane Group Flow (vph)	58	1100	32	615	2599	0	163	72	269	75	93	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	21.4	10.7	20.2	33.2		10.7	10.7	82.7	10.4	10.4	
Effective Green, g (s)	10.4	23.4	12.7	22.2	35.2		12.7	12.7	82.7	12.4	12.4	
Actuated g/C Ratio	0.13	0.28	0.15	0.27	0.43		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)	205	1325	224	849	2509		486	264	1437	222	419	
v/s Ratio Prot	0.04	0.23	0.02	c0.19	c0.44		c0.05	0.04		c0.05	0.03	
v/s Ratio Perm									0.19			
v/c Ratio	0.28	0.83	0.14	0.72	1.04		0.34	0.27	0.19	0.34	0.22	
Uniform Delay, d1	32.8	27.8	30.3	27.5	23.8		31.2	30.9	0.0	31.5	30.9	
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	4.6	0.3	3.1	28.1		0.4	0.6	0.3	0.9	0.3	
Delay (s)	33.5	32.4	30.6	30.6	51.9		31.6	31.5	0.3	32.4	31.2	
Level of Service	C	C	C	C	D		C	C	A	C	C	
Approach Delay (s)		32.1			47.8			14.9			31.5	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM Average Control Delay	39.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	82.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

483

HCM Signalized Intersection Capacity Analysis
3: N. Harbor Dr & Rental Car Access Rd

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1975	80	170	2789	10	60	15	140	5	5	5
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	0.93	
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	
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	2147	87	185	3032	11	65	16	152	5	5	5
RTOR Reduction (vph)	0	0	38	0	0	0	0	0	132	0	4	0
Lane Group Flow (vph)	65	2147	49	185	3043	0	0	81	20	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	51.1	51.1	8.8	56.8			10.8	10.8	8.1	8.1	
Effective Green, g (s)	5.1	53.1	53.1	10.8	58.8			12.8	12.8	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	3353	807	365	2945			226	194	176	169	
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	0.64	0.06	0.51	1.03			0.36	0.10	0.03	0.03	
Uniform Delay, d1	46.2	16.1	10.9	41.5	20.0			39.3	37.9	39.9	39.9	
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	25.9			1.0	0.2	0.1	0.1	
Delay (s)	72.4	16.5	11.0	42.6	45.9			40.2	38.2	40.0	40.0	
Level of Service	E	B	B	D	D			D	D	D	D	
Approach Delay (s)		17.9			45.7			38.9			40.0	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	98.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Scenario A

HCM Signalized Intersection Capacity Analysis
4: N. Harbor Dr & Laurel St

12/6/2012

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	896	1469	1751	35	50	10
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	3344	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3344	1382
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	996	1632	1946	39	56	11
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	996	1632	1946	39	56	10
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)	23.2	75.4	47.2	94.4	9.0	94.4
Effective Green, g (s)	25.2	77.4	49.2	94.4	11.0	94.4
Actuated g/C Ratio	0.27	0.82	0.52	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)	892	4059	2580	1519	390	1382
v/s Ratio Prot	c0.30	0.33	c0.39		c0.02	
v/s Ratio Perm				0.03		0.01
v/c Ratio	1.12	0.40	0.75	0.03	0.14	0.01
Uniform Delay, d1	34.6	2.3	17.8	0.0	37.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	67.5	0.1	1.3	0.0	0.2	0.0
Delay (s)	102.1	2.3	19.1	0.0	37.6	0.0
Level of Service	F	A	B	A	D	A
Approach Delay (s)		40.2	18.7		32.0	
Approach LOS		D	B		C	

Intersection Summary			
HCM Average Control Delay	31.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

484

HCM Signalized Intersection Capacity Analysis
5: Hawthorn St & N. Harbor Dr

12/6/2012

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations	↰	↱↱	↰↰↰			↱↱↱↱
Volume (vph)	90	1335	346	0	0	1499
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
Peak-hour factor, PHF	0.70	0.70	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	1907	384	0	0	1666
RTOR Reduction (vph)	0	322	0	0	0	1082
Lane Group Flow (vph)	129	1585	384	0	0	584
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				custom
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	26.3	26.3	16.5			16.5
Effective Green, g (s)	28.3	28.3	18.5			18.5
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)	924	1426	1702			1337
v/s Ratio Prot	0.07		0.08			
v/s Ratio Perm		c0.60				c0.15
v/c Ratio	0.14	1.11	0.23			0.44
Uniform Delay, d1	6.1	12.2	12.1			13.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	60.7	0.1			0.2
Delay (s)	6.2	73.0	12.2			13.4
Level of Service	A	E	B			B
Approach Delay (s)	68.7		12.2		13.4	
Approach LOS	E		B		B	

Intersection Summary			
HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Scenario A

HCM Signalized Intersection Capacity Analysis
6: Grape St & N. Harbor Dr

12/6/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰	↓↓
Volume (vph)	0	0	346	90	933	646
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
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.94	0.92
Adj. Flow (vph)	0	0	376	98	993	702
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	376	98	993	702
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		c0.30	c0.20
v/s Ratio Perm				0.06		
v/c Ratio			0.16	0.14	1.12	0.20
Uniform Delay, d1			3.5	3.4	8.6	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.0	0.1	67.2	0.0
Delay (s)			3.5	3.5	75.7	0.0
Level of Service			A	A	E	A
Approach Delay (s)	0.0		3.5			44.4
Approach LOS	A		A			D

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	23.3	Sum of lost time (s)	3.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

485

HCM Signalized Intersection Capacity Analysis
7: Laurel St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	285	651	15	40	632	50	50	200	80	110	190	616
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	3403		1723	4711		1723	4312	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1723	4932		1723	3403		1723	4711		1723	4312	
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)	300	685	16	42	665	53	53	211	84	116	200	648
RTOR Reduction (vph)	0	3	0	0	8	0	0	62	0	0	191	0
Lane Group Flow (vph)	300	698	0	42	710	0	53	233	0	116	657	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)	6.2	22.7		2.7	19.2		2.1	15.1		4.1	17.1	
Effective Green, g (s)	8.2	24.7		4.7	21.2		4.1	17.1		6.1	19.1	
Actuated g/C Ratio	0.13	0.38		0.07	0.33		0.06	0.26		0.09	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)	219	1886		125	1117		109	1247		163	1275	
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	1.37	0.37		0.34	0.64		0.49	0.19		0.71	0.97dr	
Uniform Delay, d1	28.2	14.4		28.5	18.4		29.2	18.4		28.4	18.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	192.7	0.1		1.6	1.2		3.4	0.1		13.7	0.4	
Delay (s)	220.9	14.5		30.1	19.6		32.6	18.4		42.1	19.3	
Level of Service	F	B		C	B		C	B		D	B	
Approach Delay (s)		76.3			20.2			20.6			22.0	
Approach LOS		E			C			C			C	

Intersection Summary			
HCM Average Control Delay	39.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.4%	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

Scenario A

HCM Signalized Intersection Capacity Analysis
8: Hawthorn St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	460	1533	80	102	200	0	0	180	35
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	
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	1703	89	113	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	2298	0	113	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		6.0	20.5			9.5	
Effective Green, g (s)					29.7		8.0	22.5			11.5	
Actuated g/C Ratio					0.51		0.14	0.39			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)					2478		237	1914			951	
v/s Ratio Prot							c0.07	0.04			c0.04	
v/s Ratio Perm					0.47							
v/c Ratio					51.10dl		0.48	0.12			0.22	
Uniform Delay, d1					13.2		23.2	11.5			19.6	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					6.7		1.5	0.0			0.1	
Delay (s)					20.0		24.7	11.5			19.7	
Level of Service					B		C	B			B	
Approach Delay (s)		0.0			20.0			15.9			19.7	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	65.7%	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

486

HCM Signalized Intersection Capacity Analysis
9: Grape St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↑	↱					↑↑↑↱		↰	↑↑↑	
Volume (vph)	30	832	41	0	0	0	0	302	280	45	660	0
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					4551		1723	4951	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		4942	1511					4551		1723	4951	
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	924	46	0	0	0	0	336	311	50	733	0
RTOR Reduction (vph)	0	0	26	0	0	0	0	149	0	0	0	0
Lane Group Flow (vph)	0	957	20	0	0	0	0	498	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)		21.0	21.0					12.9		4.0	21.9	
Effective Green, g (s)		23.0	23.0					14.9		6.0	23.9	
Actuated g/C Ratio		0.43	0.43					0.28		0.11	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)		2149	657					1282		195	2237	
v/s Ratio Prot								c0.11		0.03	c0.15	
v/s Ratio Perm		0.19	0.01									
v/c Ratio		0.45	0.03					0.39		0.26	0.33	
Uniform Delay, d1		10.5	8.6					15.3		21.4	9.3	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		0.1	0.0					0.2		0.7	0.1	
Delay (s)		10.6	8.6					15.5		22.1	9.4	
Level of Service		B	A					B		C	A	
Approach Delay (s)		10.5			0.0			15.5			10.2	
Approach LOS		B			A			B			B	

Intersection Summary

HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	52.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Scenario A

HCM Signalized Intersection Capacity Analysis
10: Sheraton Dwy & Harbor Island Drive

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥	↱	↰	↑↱		↰	↑↱	
Volume (vph)	50	5	20	5	5	30	10	291	10	25	397	100
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			0.93	0.85	1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1679			1561	1434	1723	3425		1723	3318	
Flt Permitted		0.82			0.94	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1429			1497	1434	1723	3425		1723	3318	
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	342	12	29	467	118
RTOR Reduction (vph)	0	4	0	0	7	13	0	3	0	0	26	0
Lane Group Flow (vph)	0	103	0	0	19	10	12	351	0	29	559	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	1.1	19.2		1.3	19.4	
Effective Green, g (s)		26.3			26.3	26.3	3.1	21.2		3.3	21.4	
Actuated g/C Ratio		0.44			0.44	0.44	0.05	0.35		0.06	0.36	
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)		628			658	631	89	1214		95	1187	
v/s Ratio Prot							0.01	c0.10		0.02	c0.17	
v/s Ratio Perm		c0.07			0.01	0.01						
v/c Ratio		0.16			0.03	0.02	0.13	0.29		0.31	0.47	
Uniform Delay, d1		10.1			9.5	9.4	27.1	13.9		27.1	14.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.0	0.0	0.7	0.1		1.8	0.3	
Delay (s)		10.2			9.5	9.5	27.8	14.0		29.0	15.1	
Level of Service		B			A	A	C	B		C	B	
Approach Delay (s)		10.2			9.5			14.5			15.8	
Approach LOS		B			A			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)	59.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
11: Harbor Island Dr (west) & Harbor Island Drive

12/6/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	130	15	10	181	242	180
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	1658	1814	1519	3343	1503
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1637	1658	1814	1519	3343	1503
Peak-hour factor, PHF	0.56	0.56	0.56	0.95	0.56	0.95
Adj. Flow (vph)	232	27	18	191	432	189
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	130	129	18	191	432	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)	16.7	16.7	7.1	62.0	23.2	62.0
Effective Green, g (s)	18.7	18.7	9.1	62.0	25.2	62.0
Actuated g/C Ratio	0.30	0.30	0.15	1.00	0.41	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)	494	500	266	1519	1359	1503
v/s Ratio Prot	c0.08	0.08	0.01		c0.13	
v/s Ratio Perm				0.13		c0.13
v/c Ratio	0.26	0.26	0.07	0.13	0.32	0.13
Uniform Delay, d1	16.4	16.4	22.8	0.0	12.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.1	0.2	0.1	0.2
Delay (s)	16.7	16.7	22.9	0.2	12.7	0.2
Level of Service	B	B	C	A	B	A
Approach Delay (s)		16.7	2.1		8.9	
Approach LOS		B	A		A	

Intersection Summary

HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	62.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Scenario A

HCM Signalized Intersection Capacity Analysis
17: Laurel St & Kettner

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	617	64	63	320	0	0	0	0	310	416	524
Ideal Flow (vphpl)	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Total Lost time (s)		5.0		5.0	5.0						5.0	5.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.99		1.00	1.00						0.96	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		3398		1723	3446						4436	1326
Flt Permitted		1.00		0.30	1.00						0.98	1.00
Satd. Flow (perm)		3398		544	3446						4436	1326
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	686	71	70	356	0	0	0	0	344	462	582
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	117	192
Lane Group Flow (vph)	0	741	0	70	356	0	0	0	0	0	951	128
Turn Type				Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases				8						6		6
Actuated Green, G (s)		20.0		20.0	20.0						20.0	20.0
Effective Green, g (s)		20.0		20.0	20.0						20.0	20.0
Actuated g/C Ratio		0.40		0.40	0.40						0.40	0.40
Clearance Time (s)		5.0		5.0	5.0						5.0	5.0
Lane Grp Cap (vph)		1359		218	1378						1774	530
v/s Ratio Prot		c0.22			0.10							
v/s Ratio Perm				0.13							0.21	0.10
v/c Ratio		0.55		0.32	0.26						0.54	0.24
Uniform Delay, d1		11.5		10.3	10.0						11.5	10.0
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		1.6		3.9	0.5						1.2	1.1
Delay (s)		13.1		14.2	10.5						12.6	11.0
Level of Service		B		B	B						B	B
Approach Delay (s)		13.1			11.1			0.0			12.3	
Approach LOS		B			B			A			B	

Intersection Summary

HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: N. Harbor Dr & Terminal 2 Entrance

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	1081	10	30	1283	5	15	10	20	126	5	90
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	0.99		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	0.91		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	1521	1770	5085	1521	1681	1574		3433	1563	
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	1521	1770	5085	1521	1681	1574		3433	1563	
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	1201	11	33	1426	6	17	11	22	140	6	100
RTOR Reduction (vph)	0	0	6	0	0	3	0	19	0	0	85	0
Lane Group Flow (vph)	100	1201	5	33	1426	3	15	16	0	140	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)	8.2	37.8	37.8	3.7	33.3	33.3	8.4	8.4		10.4	10.4	
Effective Green, g (s)	10.2	39.8	39.8	5.7	35.3	35.3	10.4	10.4		12.4	12.4	
Actuated g/C Ratio	0.13	0.50	0.50	0.07	0.44	0.44	0.13	0.13		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)	225	2520	754	126	2235	669	218	204		530	241	
v/s Ratio Prot	c0.06	0.24		0.02	c0.28		0.01	c0.01		c0.04	0.01	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.44	0.48	0.01	0.26	0.64	0.00	0.07	0.08		0.26	0.09	
Uniform Delay, d1	32.4	13.4	10.2	35.3	17.5	12.6	30.7	30.7		29.9	29.1	
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	1.4	0.1	0.0	1.1	0.6	0.0	0.1	0.2		0.3	0.2	
Delay (s)	33.8	13.5	10.3	36.4	18.1	12.6	30.8	30.9		30.2	29.3	
Level of Service	C	B	B	D	B	B	C	C		C	C	
Approach Delay (s)		15.0			18.5			30.9			29.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	80.3	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			

Scenario A

HCM Signalized Intersection Capacity Analysis
2: N. Harbor Dr & Harbor Island Drive

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	980	198	400	1180	50	168	73	447	50	66	120
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	0.91	
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	6190		3343	1814	1519	1568	2939	
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	6190		3343	1814	1519	1568	2939	
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	330	667	1967	83	280	86	526	83	78	141
RTOR Reduction (vph)	0	0	195	0	4	0	0	0	0	0	122	0
Lane Group Flow (vph)	92	1633	135	667	2046	0	280	86	526	75	105	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)	8.6	27.5	15.4	23.0	41.9		15.4	15.4	96.7	10.8	10.8	
Effective Green, g (s)	10.6	29.5	17.4	25.0	43.9		17.4	17.4	96.7	12.8	12.8	
Actuated g/C Ratio	0.11	0.31	0.18	0.26	0.45		0.18	0.18	1.00	0.13	0.13	
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)	189	1510	277	864	2810		602	326	1519	208	389	
v/s Ratio Prot	0.05	c0.33	c0.09	c0.20	0.33		0.08	0.05		0.05	0.04	
v/s Ratio Perm									c0.35			
v/c Ratio	0.49	1.08	0.49	0.77	0.73		0.47	0.26	0.35	0.36	0.27	
Uniform Delay, d1	40.5	33.6	35.6	33.2	21.5		35.5	34.1	0.0	38.2	37.7	
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	2.0	48.6	1.3	4.3	1.0		0.6	0.4	0.6	1.1	0.4	
Delay (s)	42.5	82.2	37.0	37.5	22.5		36.1	34.6	0.6	39.3	38.1	
Level of Service	D	F	D	D	C		D	C	A	D	D	
Approach Delay (s)		73.2			26.2			15.0			38.4	
Approach LOS		E			C			B			D	

Intersection Summary			
HCM Average Control Delay	41.3	HCM Level of Service	D
HCM Volume to Capacity retio	0.74		
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

489

HCM Signalized Intersection Capacity Analysis
3: N. Harbor Dr & Rental Car Access Rd

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	2587	70	180	2270	10	70	5	190	5	5	15
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	
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	2874	78	200	2522	11	78	6	211	6	6	17
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	181	0	15	0
Lane Group Flow (vph)	28	2874	54	200	2533	0	0	84	30	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	10.6	47.6			10.5	10.5	8.1	8.1	
Effective Green, g (s)	5.0	42.0	42.0	12.6	49.6			12.5	12.5	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	2938	708	472	2751			243	211	195	179	
v/s Ratio Prot	0.02	c0.46		c0.06	c0.51			c0.05		0.00	c0.01	
v/s Ratio Perm			0.04						0.02			
v/c Ratio	0.29	0.98	0.08	0.42	0.92			0.35	0.14	0.03	0.04	
Uniform Delay, d1	40.4	23.2	13.0	35.0	18.0			34.7	33.6	35.2	35.2	
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	11.9	0.0	0.6	5.7			0.9	0.3	0.1	0.1	
Delay (s)	42.0	35.0	13.0	35.6	23.7			35.5	33.9	35.3	35.4	
Level of Service	D	D	B	D	C			D	C	D	D	
Approach Delay (s)		34.5			24.6			34.4			35.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	89.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Scenario A

HCM Signalized Intersection Capacity Analysis
4: N. Harbor Dr & Laurel St

12/6/2012

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1043	1824	1359	130	70	10
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	3436	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3436	1419
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1159	2027	1510	144	78	11
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	1159	2027	1510	144	78	10
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)	15.4	51.6	31.2	70.5	8.9	70.5
Effective Green, g (s)	17.4	53.6	33.2	70.5	10.9	70.5
Actuated g/C Ratio	0.25	0.76	0.47	1.00	0.15	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)	847	3866	2395	1560	531	1419
v/s Ratio Prot	c0.34	0.40	c0.30		c0.02	
v/s Ratio Perm				0.09		0.01
v/c Ratio	1.37	0.52	0.63	0.09	0.15	0.01
Uniform Delay, d1	26.6	3.4	14.0	0.0	25.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	173.3	0.1	0.5	0.1	0.1	0.0
Delay (s)	199.9	3.5	14.6	0.1	25.9	0.0
Level of Service	F	A	B	A	C	A
Approach Delay (s)		74.9	13.3		23.0	
Approach LOS		E	B		C	

Intersection Summary			
HCM Average Control Delay	53.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
5: Hawthorn St & N. Harbor Dr

12/6/2012

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Volume (vph)	130	952	567	0	0	1924
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	2721	4990			3894
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1770	2721	4990			3894
Peak-hour factor, PHF	0.60	0.60	0.85	0.85	0.85	0.84
Adj. Flow (vph)	217	1587	667	0	0	2290
RTOR Reduction (vph)	0	144	0	0	0	785
Lane Group Flow (vph)	217	1443	667	0	0	1505
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				custom
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	35.0	35.0	34.0			34.0
Effective Green, g (s)	37.0	37.0	36.0			36.0
Actuated g/C Ratio	0.47	0.47	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)	829	1274	2274			1774
v/s Ratio Prot	0.12		0.13			
v/s Ratio Perm		c0.53				c0.39
v/c Ratio	0.26	1.13	0.29			0.85
Uniform Delay, d1	12.7	21.0	13.5			19.1
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.2	70.0	0.1			4.0
Delay (s)	12.9	91.0	13.6			23.1
Level of Service	B	F	B			C
Approach Delay (s)	81.6		13.6		23.1	
Approach LOS	F		B		C	

Intersection Summary			
HCM Average Control Delay	43.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	79.0	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			

Scenario A

HCM Signalized Intersection Capacity Analysis
6: Grape St & N. Harbor Dr

12/6/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	607	290	1046	958
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
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.86	0.85
Adj. Flow (vph)	0	0	714	341	1216	1127
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	714	341	1216	1127
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			14.6	14.6	7.1	31.7
Effective Green, g (s)			16.6	16.6	9.1	31.7
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)			2663	815	985	3539
v/s Ratio Prot			0.14		c0.35	0.32
v/s Ratio Perm				c0.22		
v/c Ratio			0.27	0.42	1.23	0.32
Uniform Delay, d1			4.2	4.6	11.3	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.1	0.3	114.4	0.1
Delay (s)			4.2	5.0	125.7	0.1
Level of Service			A	A	F	A
Approach Delay (s)	0.0		4.5			65.3
Approach LOS	A		A			E

Intersection Summary			
HCM Average Control Delay	46.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	31.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

491

HCM Signalized Intersection Capacity Analysis
7: Laurel St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑↱	
Volume (vph)	308	875	40	60	634	80	80	430	160	110	320	417
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	5047		1770	3470		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	5047		1770	3470		1770	4846		1770	4594	
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)	342	951	44	67	689	89	89	467	178	122	348	463
RTOR Reduction (vph)	0	6	0	0	14	0	0	108	0	0	184	0
Lane Group Flow (vph)	342	989	0	67	764	0	89	537	0	122	627	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)	5.2	22.4		2.7	19.9		3.0	13.5		3.7	14.2	
Effective Green, g (s)	7.2	24.4		4.7	21.9		5.0	15.5		5.7	16.2	
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)	205	1977		134	1220		142	1206		162	1195	
v/s Ratio Prot	c0.19	0.20		0.04	c0.22		0.05	0.11		c0.07	c0.14	
v/s Ratio Perm												
v/c Ratio	1.67	0.50		0.50	0.63		0.63	0.45		0.75	0.52	
Uniform Delay, d1	27.5	14.3		27.7	16.8		27.7	19.8		27.6	19.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	321.3	0.2		2.9	1.0		8.4	0.3		17.8	0.4	
Delay (s)	348.8	14.5		30.6	17.8		36.1	20.0		45.4	20.2	
Level of Service	F	B		C	B		D	C		D	C	
Approach Delay (s)		100.0			18.8			22.0			23.5	
Approach LOS		F			B			C			C	

Intersection Summary			
HCM Average Control Delay	48.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Scenario A

HCM Signalized Intersection Capacity Analysis
8: Hawthorn St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Volume (vph)	0	0	0	140	1028	90	134	520	0	0	390	30
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)					4991		1770	5085			5024	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4991		1770	5085			5024	
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	1142	100	149	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	1387	0	149	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)					23.4		5.9	22.4			11.5	
Effective Green, g (s)					25.4		7.9	24.4			13.5	
Actuated g/C Ratio					0.46		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)					2272		251	2224			1215	
v/s Ratio Prot							c0.08	0.11			c0.09	
v/s Ratio Perm					0.28							
v/c Ratio					7.80dl		0.59	0.26			0.37	
Uniform Delay, d1					11.5		22.4	10.0			17.6	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					0.5		3.7	0.1			0.2	
Delay (s)					12.0		26.2	10.0			17.8	
Level of Service					B		C	B			B	
Approach Delay (s)		0.0			12.0			13.3			17.8	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	55.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.3%	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

492

HCM Signalized Intersection Capacity Analysis
9: Grape St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑	↱					↑↑↱		↰	↑↑↑	
Volume (vph)	70	1601	65	0	0	0	0	634	510	140	460	0
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	1548					4698		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5072	1548					4698		1770	5085	
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	1779	72	0	0	0	0	704	567	156	511	0
RTOR Reduction (vph)	0	0	44	0	0	0	0	55	0	0	0	0
Lane Group Flow (vph)	0	1857	28	0	0	0	0	1216	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)		25.0	25.0					19.8		9.3	34.1	
Effective Green, g (s)		27.0	27.0					21.8		11.3	36.1	
Actuated g/C Ratio		0.39	0.39					0.32		0.16	0.52	
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)		1982	605					1482		289	2657	
v/s Ratio Prot								c0.26		c0.09	0.10	
v/s Ratio Perm		0.37	0.02									
v/c Ratio		0.94	0.05					1.01dr		0.54	0.19	
Uniform Delay, d1		20.2	13.1					21.8		26.5	8.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		9.1	0.0					3.8		1.9	0.0	
Delay (s)		29.3	13.1					25.6		28.5	8.8	
Level of Service		C	B					C		C	A	
Approach Delay (s)		28.7			0.0			25.6			13.4	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.3%	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

Scenario A

HCM Signalized Intersection Capacity Analysis
10: Sheraton Dwy & Harbor Island Drive

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥	↱	↰	↑↱		↰	↑↱	
Volume (vph)	100	5	30	10	5	40	15	543	20	25	549	80
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			0.99	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			0.93	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1723			1597	1472	1770	3516		1770	3456	
Flt Permitted		0.79			0.92	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1416			1501	1472	1770	3516		1770	3456	
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	603	22	28	610	89
RTOR Reduction (vph)	0	8	0	0	9	17	0	3	0	0	13	0
Lane Group Flow (vph)	0	142	0	0	23	12	17	622	0	28	686	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)		23.3			23.3	23.3	1.2	21.7		2.5	23.0	
Effective Green, g (s)		25.3			25.3	25.3	3.2	23.7		4.5	25.0	
Actuated g/C Ratio		0.40			0.40	0.40	0.05	0.38		0.07	0.40	
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)		573			608	596	91	1333		127	1382	
v/s Ratio Prot							0.01	0.18		c0.02	c0.20	
v/s Ratio Perm		c0.10			0.02	0.01						
v/c Ratio		0.25			0.04	0.02	0.19	0.47		0.22	0.50	
Uniform Delay, d1		12.3			11.2	11.2	28.4	14.6		27.3	14.0	
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	1.0	0.3		0.9	0.3	
Delay (s)		12.5			11.3	11.2	29.4	14.9		28.2	14.3	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		12.5			11.2			15.3			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	0.34		
Actuated Cycle Length (s)	62.5	Sum of lost time (s)	6.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
11: Harbor Island Dr (west) & Harbor Island Drive

12/6/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↰↑	↑	↱	↰↰	↱
Volume (vph)	260	35	25	303	329	250
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
Peak-hour factor, PHF	0.60	0.60	0.60	0.95	0.60	0.95
Adj. Flow (vph)	433	58	42	319	548	263
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	242	249	42	319	548	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)	13.9	13.9	5.0	48.1	14.2	48.1
Effective Green, g (s)	15.9	15.9	7.0	48.1	16.2	48.1
Actuated g/C Ratio	0.33	0.33	0.15	1.00	0.34	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)	556	563	271	1560	1156	1544
v/s Ratio Prot	0.14	c0.15	0.02		c0.16	
v/s Ratio Perm				c0.20		0.17
v/c Ratio	0.44	0.44	0.15	0.20	0.47	0.17
Uniform Delay, d1	12.6	12.6	18.0	0.0	12.6	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	0.3	0.3	0.2
Delay (s)	13.1	13.2	18.2	0.3	12.9	0.2
Level of Service	B	B	B	A	B	A
Approach Delay (s)		13.2	2.4		8.8	
Approach LOS		B	A		A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	6.0
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Scenario A

HCM Signalized Intersection Capacity Analysis
15: Laurel St & Kettner

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↰	↑↑						↰↑↑↱	↱
Volume (vph)	0	908	87	47	314	0	0	0	0	277	350	474
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0						5.0	5.0
Lane Util. Factor		0.95		1.00	0.95						0.86	0.86
Frt		0.99		1.00	1.00						0.96	0.85
Flt Protected		1.00		0.95	1.00						0.98	1.00
Satd. Flow (prot)		3493		1770	3539						4546	1362
Flt Permitted		1.00		0.20	1.00						0.98	1.00
Satd. Flow (perm)		3493		373	3539						4546	1362
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	1009	97	52	349	0	0	0	0	308	389	527
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	125	171
Lane Group Flow (vph)	0	1092	0	52	349	0	0	0	0	0	814	114
Turn Type				Perm						Perm		Perm
Protected Phases		4			8						6	
Permitted Phases				8						6		6
Actuated Green, G (s)		20.0		20.0	20.0						20.0	20.0
Effective Green, g (s)		20.0		20.0	20.0						20.0	20.0
Actuated g/C Ratio		0.40		0.40	0.40						0.40	0.40
Clearance Time (s)		5.0		5.0	5.0						5.0	5.0
Lane Grp Cap (vph)		1397		149	1416						1818	545
v/s Ratio Prot		c0.31			0.10							
v/s Ratio Perm				0.14							0.18	0.08
v/c Ratio		0.78		0.35	0.25						0.45	0.21
Uniform Delay, d1		13.1		10.5	10.0						11.0	9.8
Progression Factor		1.00		1.00	1.00						1.00	1.00
Incremental Delay, d2		4.4		6.3	0.4						0.8	0.9
Delay (s)		17.5		16.8	10.4						11.8	10.7
Level of Service		B		B	B						B	B
Approach Delay (s)		17.5			11.2			0.0			11.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
1: N. Harbor Dr & Terminal 2 Entrance

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	737	5	20	1165	5	10	5	10	136	10	90
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	0.91		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	1479	1723	4951	1479	1637	1538		3343	1534	
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	1479	1723	4951	1479	1637	1538		3343	1534	
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	819	6	22	1294	6	11	6	11	151	11	100
RTOR Reduction (vph)	0	0	3	0	0	3	0	10	0	0	85	0
Lane Group Flow (vph)	133	819	3	22	1294	3	10	8	0	151	26	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)	11.8	42.1	42.1	2.3	32.6	32.6	8.1	8.1		10.5	10.5	
Effective Green, g (s)	13.8	44.1	44.1	4.3	34.6	34.6	10.1	10.1		12.5	12.5	
Actuated g/C Ratio	0.17	0.53	0.53	0.05	0.42	0.42	0.12	0.12		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)	286	2631	786	89	2064	617	199	187		503	231	
v/s Ratio Prot	c0.08	0.17		0.01	c0.26		c0.01	0.01		c0.05	0.02	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.47	0.31	0.00	0.25	0.63	0.00	0.05	0.04		0.30	0.11	
Uniform Delay, d1	31.3	10.9	9.1	37.8	19.1	14.1	32.2	32.2		31.4	30.5	
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	1.2	0.1	0.0	1.5	0.6	0.0	0.1	0.1		0.3	0.2	
Delay (s)	32.5	11.0	9.1	39.3	19.7	14.1	32.3	32.3		31.7	30.7	
Level of Service	C	B	A	D	B	B	C	C		C	C	
Approach Delay (s)		14.0			20.0			32.3			31.3	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	83.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Scenario B

61728 PAGE

495

HCM Signalized Intersection Capacity Analysis
2: N. Harbor Dr & Harbor Island Drive

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	660	123	366	1550	10	112	72	244	50	53	90
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	0.99	
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	0.91	
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	2793	
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	2793	
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	205	610	2583	17	187	90	305	83	66	112
RTOR Reduction (vph)	0	0	172	0	1	0	0	0	0	0	95	0
Lane Group Flow (vph)	58	1100	33	610	2599	0	187	90	305	75	91	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	21.4	11.5	20.2	33.2		11.5	11.5	83.6	10.5	10.5	
Effective Green, g (s)	10.4	23.4	13.5	22.2	35.2		13.5	13.5	83.6	12.5	12.5	
Actuated g/C Ratio	0.12	0.28	0.16	0.27	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)	203	1311	235	840	2482		511	277	1437	222	418	
v/s Ratio Prot	0.04	0.23	0.02	c0.19	c0.44		c0.06	0.05		c0.05	0.03	
v/s Ratio Perm									0.21			
v/c Ratio	0.29	0.84	0.14	0.73	1.05		0.37	0.32	0.21	0.34	0.22	
Uniform Delay, d1	33.2	28.3	30.1	27.9	24.2		31.2	31.0	0.0	31.8	31.2	
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	0.8	4.9	0.3	3.1	32.0		0.4	0.7	0.3	0.9	0.3	
Delay (s)	34.0	33.2	30.4	31.1	56.2		31.7	31.7	0.3	32.8	31.5	
Level of Service	C	C	C	C	E		C	C	A	C	C	
Approach Delay (s)		32.8			51.4			15.3			31.9	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM Average Control Delay	41.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
3: N. Harbor Dr & Rental Car Access Rd

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑↑	↱	↰↰	↑↑↑↱			↰↑	↱	↰	↑↱	
Volume (vph)	60	2004	80	170	2786	10	60	15	140	5	5	5
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	0.93	
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	
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	2178	87	185	3028	11	65	16	152	5	5	5
RTOR Reduction (vph)	0	0	37	0	0	0	0	0	132	0	4	0
Lane Group Flow (vph)	65	2178	50	185	3039	0	0	81	20	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	51.1	51.1	8.8	56.8			10.8	10.8	8.1	8.1	
Effective Green, g (s)	5.1	53.1	53.1	10.8	58.8			12.8	12.8	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	3353	807	365	2945			226	194	176	169	
v/s Ratio Prot	c0.04	0.35		0.06	c0.61			c0.05		0.00	c0.00	
v/s Ratio Perm			0.03						0.01			
v/c Ratio	0.73	0.65	0.06	0.51	1.03			0.36	0.10	0.03	0.03	
Uniform Delay, d1	46.2	16.2	10.9	41.5	20.0			39.3	37.9	39.9	39.9	
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	25.5			1.0	0.2	0.1	0.1	
Delay (s)	72.4	16.7	11.0	42.6	45.5			40.2	38.2	40.0	40.0	
Level of Service	E	B	B	D	D			D	D	D	D	
Approach Delay (s)		18.0			45.3			38.9			40.0	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	98.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Scenario B

HCM Signalized Intersection Capacity Analysis
4: N. Harbor Dr & Laurel St

7/16/2012

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations	↰↰	↑↑↑	↑↑↑	↱	↰↰	↱
Volume (vph)	905	1489	1749	35	50	10
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	3344	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3344	1382
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1006	1654	1943	39	56	11
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	1006	1654	1943	39	56	10
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)	23.2	75.1	46.9	93.1	8.0	93.1
Effective Green, g (s)	25.2	77.1	48.9	93.1	10.0	93.1
Actuated g/C Ratio	0.27	0.83	0.53	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)	905	4100	2600	1519	359	1382
v/s Ratio Prot	c0.30	0.33	c0.39		c0.02	
v/s Ratio Perm				0.03		0.01
v/c Ratio	1.11	0.40	0.75	0.03	0.16	0.01
Uniform Delay, d1	33.9	2.1	17.3	0.0	37.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	65.4	0.1	1.2	0.0	0.2	0.0
Delay (s)	99.4	2.1	18.5	0.0	37.9	0.0
Level of Service	F	A	B	A	D	A
Approach Delay (s)		38.9	18.1		32.3	
Approach LOS		D	B		C	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Volume (vph)	90	1333	346	0	0	1519
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	2659	4859			3816
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1723	2659	4859			3816
Peak-hour factor, PHF	0.70	0.70	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	1904	384	0	0	1688
RTOR Reduction (vph)	0	326	0	0	0	1081
Lane Group Flow (vph)	129	1578	384	0	0	607
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				custom
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	26.4	26.4	17.3			17.3
Effective Green, g (s)	28.4	28.4	19.3			19.3
Actuated g/C Ratio	0.53	0.53	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)	911	1406	1746			1371
v/s Ratio Prot	0.07		0.08			
v/s Ratio Perm		c0.59				c0.16
v/c Ratio	0.14	1.12	0.22			0.44
Uniform Delay, d1	6.4	12.7	12.0			13.1
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	64.9	0.1			0.2
Delay (s)	6.5	77.5	12.0			13.3
Level of Service	A	E	B			B
Approach Delay (s)	73.0		12.0		13.3	
Approach LOS	E		B		B	

Intersection Summary			
HCM Average Control Delay	42.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	346	90	950	649
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
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.94	0.92
Adj. Flow (vph)	0	0	376	98	1011	705
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	376	98	1011	705
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	3448
v/s Ratio Prot			0.08		c0.30	c0.20
v/s Ratio Perm				0.06		
v/c Ratio			0.16	0.14	1.14	0.20
Uniform Delay, d1			3.5	3.4	8.6	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.0	0.1	75.0	0.0
Delay (s)			3.5	3.5	83.5	0.0
Level of Service			A	A	F	A
Approach Delay (s)	0.0		3.5			49.2
Approach LOS	A		A			D

Intersection Summary			
HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	23.3	Sum of lost time (s)	3.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

497

HCM Signalized Intersection Capacity Analysis
7: Laurel St & Pacific Hwy

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑↱	
Volume (vph)	288	657	15	40	631	50	50	200	80	110	190	616
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	4312	
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	4312	
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)	303	692	16	42	664	53	53	211	84	116	200	648
RTOR Reduction (vph)	0	3	0	0	6	0	0	62	0	0	192	0
Lane Group Flow (vph)	303	705	0	42	709	0	53	233	0	116	656	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)	6.2	22.7		2.7	19.2		2.1	15.1		4.1	17.1	
Effective Green, g (s)	8.2	24.7		4.7	21.2		4.1	17.1		6.1	19.1	
Actuated g/C Ratio	0.13	0.38		0.07	0.33		0.06	0.26		0.09	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)	219	1886		125	1116		109	1247		163	1275	
v/s Ratio Prot	c0.18	0.14		0.02	c0.21		0.03	0.05		c0.07	c0.15	
v/s Ratio Perm												
v/c Ratio	1.38	0.37		0.34	0.64		0.49	0.19		0.71	0.97dr	
Uniform Delay, d1	28.2	14.4		28.5	18.4		29.2	18.4		28.4	18.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	198.4	0.1		1.6	1.2		3.4	0.1		13.7	0.4	
Delay (s)	226.6	14.5		30.1	19.6		32.6	18.4		42.1	19.3	
Level of Service	F	B		C	B		C	B		D	B	
Approach Delay (s)		78.1			20.2			20.6			22.0	
Approach LOS		E			C			C			C	

Intersection Summary

HCM Average Control Delay	39.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	64.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.5%	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

Scenario B

HCM Signalized Intersection Capacity Analysis
8: Hawthorn St & Pacific Hwy

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↱		↰	↑↑↑			↑↑↱	
Volume (vph)	0	0	0	460	1532	80	101	200	0	0	180	35
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	
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	1702	89	112	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	2297	0	112	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		6.0	20.5			9.5	
Effective Green, g (s)					29.7		8.0	22.5			11.5	
Actuated g/C Ratio					0.51		0.14	0.39			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)					2478		237	1914			951	
v/s Ratio Prot							c0.07	0.04			c0.04	
v/s Ratio Perm					0.47							
v/c Ratio					51.10dl		0.47	0.12			0.22	
Uniform Delay, d1					13.2		23.2	11.5			19.6	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					6.7		1.5	0.0			0.1	
Delay (s)					19.9		24.6	11.5			19.7	
Level of Service					B		C	B			B	
Approach Delay (s)		0.0			19.9			15.9			19.7	
Approach LOS		A			B			B			B	

Intersection Summary

HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	65.6%	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

498

HCM Signalized Intersection Capacity Analysis
9: Grape St & Pacific Hwy

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	844	46	0	0	0	0	301	280	45	660	0
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					4550		1723	4951	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		4942	1511					4550		1723	4951	
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	938	51	0	0	0	0	334	311	50	733	0
RTOR Reduction (vph)	0	0	29	0	0	0	0	149	0	0	0	0
Lane Group Flow (vph)	0	971	22	0	0	0	0	496	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)		21.1	21.1					12.9		4.0	21.9	
Effective Green, g (s)		23.1	23.1					14.9		6.0	23.9	
Actuated g/C Ratio		0.44	0.44					0.28		0.11	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)		2154	659					1279		195	2233	
v/s Ratio Prot								c0.11		0.03	c0.15	
v/s Ratio Perm		0.20	0.01									
v/c Ratio		0.45	0.03					0.39		0.26	0.33	
Uniform Delay, d1		10.5	8.6					15.4		21.5	9.4	
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	8.8					15.6		22.2	9.5	
Level of Service		B	A					B		C	A	
Approach Delay (s)		10.5			0.0			15.6			10.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Scenario B

HCM Signalized Intersection Capacity Analysis
10: Sheraton Dwy & Harbor Island Drive

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	5	20	5	5	30	10	348	10	25	392	100
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			0.93	0.85	1.00	1.00		1.00	0.97	
Flt Protected		0.97			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1679			1561	1434	1723	3428		1723	3317	
Flt Permitted		0.82			0.94	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1429			1497	1434	1723	3428		1723	3317	
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	409	12	29	461	118
RTOR Reduction (vph)	0	4	0	0	7	13	0	2	0	0	26	0
Lane Group Flow (vph)	0	103	0	0	19	10	12	419	0	29	553	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	1.1	19.1		1.3	19.3	
Effective Green, g (s)		26.3			26.3	26.3	3.1	21.1		3.3	21.3	
Actuated g/C Ratio		0.44			0.44	0.44	0.05	0.35		0.06	0.36	
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)		630			659	632	89	1212		95	1183	
v/s Ratio Prot							0.01	c0.12		0.02	c0.17	
v/s Ratio Perm		c0.07			0.01	0.01						
v/c Ratio		0.16			0.03	0.02	0.13	0.35		0.31	0.47	
Uniform Delay, d1		10.1			9.5	9.4	27.0	14.2		27.1	14.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1			0.0	0.0	0.7	0.2		1.8	0.3	
Delay (s)		10.2			9.5	9.4	27.7	14.4		28.9	15.1	
Level of Service		B			A	A	C	B		C	B	
Approach Delay (s)		10.2			9.5			14.8			15.8	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	59.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
11: Harbor Island Dr (west) & Harbor Island Drive

7/16/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	130	15	10	238	237	180
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	1658	1814	1519	3343	1503
Flt Permitted	0.95	0.96	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1637	1658	1814	1519	3343	1503
Peak-hour factor, PHF	0.56	0.56	0.56	0.95	0.56	0.95
Adj. Flow (vph)	232	27	18	251	423	189
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	130	129	18	251	423	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)	16.7	16.7	7.1	61.9	23.1	61.9
Effective Green, g (s)	18.7	18.7	9.1	61.9	25.1	61.9
Actuated g/C Ratio	0.30	0.30	0.15	1.00	0.41	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)	495	501	267	1519	1356	1503
v/s Ratio Prot	c0.08	0.08	0.01		c0.13	
v/s Ratio Perm				c0.17		0.13
v/c Ratio	0.26	0.26	0.07	0.17	0.31	0.13
Uniform Delay, d1	16.4	16.3	22.7	0.0	12.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.1	0.2	0.1	0.2
Delay (s)	16.7	16.6	22.9	0.2	12.7	0.2
Level of Service	B	B	C	A	B	A
Approach Delay (s)		16.6	1.7		8.8	
Approach LOS		B	A		A	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	61.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

HCM Signalized Intersection Capacity Analysis
1: N. Harbor Dr & Terminal 2 Entrance

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	1088	10	30	1279	5	15	10	20	129	5	90
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	0.99		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	0.91		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	1521	1770	5085	1521	1681	1574		3433	1563	
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	1521	1770	5085	1521	1681	1574		3433	1563	
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	1209	11	33	1421	6	17	11	22	143	6	100
RTOR Reduction (vph)	0	0	6	0	0	3	0	19	0	0	85	0
Lane Group Flow (vph)	100	1209	5	33	1421	3	15	16	0	143	22	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)	8.2	37.5	37.5	3.7	33.0	33.0	8.4	8.4		10.4	10.4	
Effective Green, g (s)	10.2	39.5	39.5	5.7	35.0	35.0	10.4	10.4		12.4	12.4	
Actuated g/C Ratio	0.13	0.49	0.49	0.07	0.44	0.44	0.13	0.13		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)	226	2511	751	126	2225	665	219	205		532	242	
v/s Ratio Prot	c0.06	0.24		0.02	c0.28		0.01	c0.01		c0.04	0.01	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.44	0.48	0.01	0.26	0.64	0.00	0.07	0.08		0.27	0.09	
Uniform Delay, d1	32.3	13.4	10.3	35.2	17.6	12.7	30.5	30.6		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	1.4	0.1	0.0	1.1	0.6	0.0	0.1	0.2		0.3	0.2	
Delay (s)	33.7	13.6	10.3	36.3	18.2	12.7	30.7	30.7		30.1	29.1	
Level of Service	C	B	B	D	B	B	C	C		C	C	
Approach Delay (s)		15.1			18.6			30.7			29.7	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

500

HCM Signalized Intersection Capacity Analysis
2: N. Harbor Dr & Harbor Island Drive

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	980	207	424	1180	50	162	66	433	50	83	120
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	0.91	
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	6190		3343	1814	1519	1568	2968	
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	6190		3343	1814	1519	1568	2968	
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	345	707	1967	83	270	78	509	83	98	141
RTOR Reduction (vph)	0	0	202	0	4	0	0	0	0	0	123	0
Lane Group Flow (vph)	92	1633	143	707	2046	0	270	78	509	75	124	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)	8.7	27.5	16.2	23.9	42.7		16.2	16.2	98.5	10.9	10.9	
Effective Green, g (s)	10.7	29.5	18.2	25.9	44.7		18.2	18.2	98.5	12.9	12.9	
Actuated g/C Ratio	0.11	0.30	0.18	0.26	0.45		0.18	0.18	1.00	0.13	0.13	
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)	187	1483	285	879	2809		618	335	1519	205	389	
v/s Ratio Prot	0.05	c0.33	c0.09	c0.21	0.33		0.08	0.04		0.05	0.04	
v/s Ratio Perm									c0.34			
v/c Ratio	0.49	1.10	0.50	0.80	0.73		0.44	0.23	0.34	0.37	0.32	
Uniform Delay, d1	41.3	34.5	38.1	33.9	21.9		35.6	34.2	0.0	39.1	38.8	
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	2.0	56.2	1.4	5.4	1.0		0.5	0.4	0.6	1.1	0.5	
Delay (s)	43.4	90.7	37.5	39.3	22.9		36.1	34.6	0.6	40.2	39.3	
Level of Service	D	F	D	D	C		D	C	A	D	D	
Approach Delay (s)		79.7			27.1			14.9			39.5	
Approach LOS		E			C			B			D	

Intersection Summary

HCM Average Control Delay	44.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

HCM Signalized Intersection Capacity Analysis
3: N. Harbor Dr & Rental Car Access Rd

7/16/2012

Figure 9-2 Year 2030 With Project Traffic Volumes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	2573	70	180	2294	10	70	5	190	5	5	15
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	
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	2859	78	200	2549	11	78	6	211	6	6	17
RTOR Reduction (vph)	0	0	24	0	0	0	0	0	181	0	15	0
Lane Group Flow (vph)	28	2859	54	200	2560	0	0	84	30	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	10.6	47.6			10.5	10.5	8.1	8.1	
Effective Green, g (s)	5.0	42.0	42.0	12.6	49.6			12.5	12.5	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	2938	708	472	2751			243	211	195	179	
v/s Ratio Prot	0.02	0.46		c0.06	c0.52			c0.05		0.00	c0.01	
v/s Ratio Perm			0.04						0.02			
v/c Ratio	0.29	0.97	0.08	0.42	0.93			0.35	0.14	0.03	0.04	
Uniform Delay, d1	40.4	23.0	13.0	35.0	18.2			34.7	33.6	35.2	35.2	
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	11.0	0.0	0.6	6.4			0.9	0.3	0.1	0.1	
Delay (s)	42.0	34.1	13.0	35.6	24.7			35.5	33.9	35.3	35.4	
Level of Service	D	C	B	D	C			D	C	D	D	
Approach Delay (s)		33.6			25.4			34.4			35.3	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	29.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	89.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Figure 9-1 Year 2030 Without Project Traffic Volumes

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1039	1814	1376	130	70	10
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	3436	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3436	1419
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1154	2016	1529	144	78	11
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	1154	2016	1529	144	78	10
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	51.8	31.3	69.6	7.8	69.6
Effective Green, g (s)	17.5	53.8	33.3	69.6	9.8	69.6
Actuated g/C Ratio	0.25	0.77	0.48	1.00	0.14	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)	863	3931	2433	1560	484	1419
v/s Ratio Prot	c0.34	0.40	c0.30		c0.02	
v/s Ratio Perm				0.09		0.01
v/c Ratio	1.34	0.51	0.63	0.09	0.16	0.01
Uniform Delay, d1	26.0	3.0	13.5	0.0	26.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	159.6	0.1	0.5	0.1	0.2	0.0
Delay (s)	185.7	3.1	14.1	0.1	26.4	0.0
Level of Service	F	A	B	A	C	A
Approach Delay (s)		69.5	12.9		23.5	
Approach LOS		E	B		C	

Intersection Summary			
HCM Average Control Delay	49.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Scenario B

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Volume (vph)	130	967	569	0	0	1914
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	2721	4990			3893
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1770	2721	4990			3893
Peak-hour factor, PHF	0.60	0.60	0.85	0.85	0.85	0.84
Adj. Flow (vph)	217	1612	669	0	0	2279
RTOR Reduction (vph)	0	144	0	0	0	781
Lane Group Flow (vph)	217	1468	669	0	0	1498
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				custom
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	35.0	35.0	34.4			34.4
Effective Green, g (s)	37.0	37.0	36.4			36.4
Actuated g/C Ratio	0.47	0.47	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)	825	1268	2288			1785
v/s Ratio Prot	0.12		0.13			
v/s Ratio Perm		c0.54				c0.38
v/c Ratio	0.26	1.16	0.29			0.84
Uniform Delay, d1	12.9	21.2	13.4			18.9
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.2	80.1	0.1			3.6
Delay (s)	13.1	101.3	13.5			22.6
Level of Service	B	F	B			C
Approach Delay (s)	90.9		13.5		22.6	
Approach LOS	F		B		C	

Intersection Summary			
HCM Average Control Delay	47.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	79.4	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			

HCM Signalized Intersection Capacity Analysis
6: Grape St & N. Harbor Dr 7/16/2012

Figure 7-6 Existing + Project Traffic Volumes

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	609	290	1038	956
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
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.86	0.85
Adj. Flow (vph)	0	0	716	341	1207	1125
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	716	341	1207	1125
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			14.6	14.6	7.1	31.7
Effective Green, g (s)			16.6	16.6	9.1	31.7
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)			2663	815	985	3539
v/s Ratio Prot			0.14		c0.35	0.32
v/s Ratio Perm				c0.22		
v/c Ratio			0.27	0.42	1.23	0.32
Uniform Delay, d1			4.2	4.6	11.3	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.1	0.3	110.5	0.1
Delay (s)			4.2	5.0	121.8	0.1
Level of Service			A	A	F	A
Approach Delay (s)	0.0		4.5			63.1
Approach LOS	A		A			E

Intersection Summary			
HCM Average Control Delay	44.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	31.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

HCM Signalized Intersection Capacity Analysis
7: Laurel St & Pacific Hwy 7/16/2012

Figure 7-5 Total Project Traffic Volumes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	306	873	40	60	639	80	80	430	160	110	320	419
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	0.98		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	0.86		1.00	0.81	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5047		1770	3471		1770	4846		1770	4592	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	5047		1770	3471		1770	4846		1770	4592	
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)	340	949	44	67	695	89	89	467	178	122	348	466
RTOR Reduction (vph)	0	6	0	0	14	0	0	108	0	0	183	0
Lane Group Flow (vph)	340	987	0	67	770	0	89	537	0	122	631	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)	5.2	22.4		2.7	19.9		3.0	13.6		3.7	14.3	
Effective Green, g (s)	7.2	24.4		4.7	21.9		5.0	15.6		5.7	16.3	
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)	204	1974		133	1218		142	1212		162	1200	
v/s Ratio Prot	c0.19	0.20		0.04	c0.22		0.05	0.11		c0.07	c0.14	
v/s Ratio Perm												
v/c Ratio	1.67	0.50		0.50	0.63		0.63	0.44		0.75	0.53	
Uniform Delay, d1	27.6	14.4		27.7	16.9		27.8	19.7		27.7	19.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	320.6	0.2		3.0	1.1		8.4	0.3		17.8	0.4	
Delay (s)	348.2	14.6		30.7	18.0		36.2	20.0		45.5	20.2	
Level of Service	F	B		C	B		D	B		D	C	
Approach Delay (s)		99.7			19.0			22.0			23.5	
Approach LOS		F			B			C			C	

Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	62.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: Hawthorn St & Pacific Hwy 7/16/2012

Figure 7-4 Retail Component – Project Traffic Volumes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	140	1038	90	139	520	0	0	390	30
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)					4991		1770	5085			5024	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4991		1770	5085			5024	
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	1153	100	154	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	1398	0	154	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)					24.6		6.1	22.7			11.6	
Effective Green, g (s)					26.6		8.1	24.7			13.6	
Actuated g/C Ratio					0.46		0.14	0.43			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)					2317		250	2192			1192	
v/s Ratio Prot							c0.09	0.11			c0.09	
v/s Ratio Perm					0.28							
v/c Ratio					7.80dl		0.62	0.26			0.38	
Uniform Delay, d1					11.4		23.1	10.5			18.3	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					0.4		4.5	0.1			0.2	
Delay (s)					11.9		27.6	10.5			18.5	
Level of Service					B		C	B			B	
Approach Delay (s)		0.0			11.9			14.1			18.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.2%	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

Scenario B

HCM Signalized Intersection Capacity Analysis
9: Grape St & Pacific Hwy 7/16/2012

Figure 7-3 Residential Component – Project Traffic Volumes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1595	63	0	0	0	0	639	510	140	460	0
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	1548					4700		1770	5085	
Flt Permitted		1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)		5072	1548					4700		1770	5085	
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	1772	70	0	0	0	0	710	567	156	511	0
RTOR Reduction (vph)	0	0	43	0	0	0	0	55	0	0	0	0
Lane Group Flow (vph)	0	1850	27	0	0	0	0	1222	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)		25.0	25.0					19.8		9.3	34.1	
Effective Green, g (s)		27.0	27.0					21.8		11.3	36.1	
Actuated g/C Ratio		0.39	0.39					0.32		0.16	0.52	
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)		1982	605					1483		289	2657	
v/s Ratio Prot								c0.26		c0.09	0.10	
v/s Ratio Perm		0.36	0.02									
v/c Ratio		0.93	0.05					1.01dr		0.54	0.19	
Uniform Delay, d1		20.2	13.1					21.9		26.5	8.8	
Progression Factor		1.00	1.00					1.00		1.00	1.00	
Incremental Delay, d2		8.7	0.0					3.9		1.9	0.0	
Delay (s)		28.9	13.1					25.7		28.5	8.8	
Level of Service		C	B					C		C	A	
Approach Delay (s)		28.4			0.0			25.7			13.4	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	74.2%	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

504

HCM Signalized Intersection Capacity Analysis
10: Sheraton Dwy & Harbor Island Drive 7/16/2012

Figure 7-2 Retail Component – Regional Distribution

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	5	30	10	5	40	15	516	20	25	599	80
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			0.99	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			0.93	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1723			1597	1472	1770	3515		1770	3462	
Flt Permitted		0.79			0.92	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1415			1501	1472	1770	3515		1770	3462	
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	573	22	28	666	89
RTOR Reduction (vph)	0	8	0	0	9	17	0	3	0	0	11	0
Lane Group Flow (vph)	0	142	0	0	23	12	17	592	0	28	744	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)		23.3			23.3	23.3	1.2	22.1		2.5	23.4	
Effective Green, g (s)		25.3			25.3	25.3	3.2	24.1		4.5	25.4	
Actuated g/C Ratio		0.40			0.40	0.40	0.05	0.38		0.07	0.40	
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)		569			604	592	90	1347		127	1398	
v/s Ratio Prot							0.01	0.17		c0.02	c0.21	
v/s Ratio Perm		c0.10			0.02	0.01						
v/c Ratio		0.25			0.04	0.02	0.19	0.44		0.22	0.53	
Uniform Delay, d1		12.5			11.4	11.3	28.6	14.4		27.5	14.2	
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	0.2		0.9	0.4	
Delay (s)		12.7			11.4	11.3	29.6	14.6		28.4	14.6	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		12.7			11.4			15.0			15.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

HCM Signalized Intersection Capacity Analysis
11: Harbor Island Dr (west) & Harbor Island Drive 7/16/2012

Figure 7-1 Residential Component – Regional Distribution

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	260	35	25	276	379	250
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
Peak-hour factor, PHF	0.60	0.60	0.60	0.95	0.60	0.95
Adj. Flow (vph)	433	58	42	291	632	263
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	242	249	42	291	632	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)	13.9	13.9	5.1	50.1	16.1	50.1
Effective Green, g (s)	15.9	15.9	7.1	50.1	18.1	50.1
Actuated g/C Ratio	0.32	0.32	0.14	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	541	264	1560	1240	1544
v/s Ratio Prot	0.14	c0.15	0.02		c0.18	
v/s Ratio Perm				c0.19		0.17
v/c Ratio	0.45	0.46	0.16	0.19	0.51	0.17
Uniform Delay, d1	13.6	13.7	18.9	0.0	12.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.6	0.3	0.3	0.3	0.2
Delay (s)	14.3	14.3	19.2	0.3	12.9	0.2
Level of Service	B	B	B	A	B	A
Approach Delay (s)		14.3	2.6		9.1	
Approach LOS		B	A		A	

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	50.1	Sum of lost time (s)	6.0
Intersection Capacity Utilization	33.9%	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)	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

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

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

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

HCM Signalized Intersection Capacity Analysis
5: Hawthorn St & N. Harbor Dr

7/18/2012

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Volume (vph)	100	1550	370	0	0	1600
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	0.76	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	3439	4859			3804
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1723	3439	4859			3804
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	149	0	0	0	1288
Lane Group Flow (vph)	154	2236	411	0	0	490
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				custom
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	2180	1339			1048
v/s Ratio Prot	0.09		0.08			
v/s Ratio Perm		c0.65				c0.13
v/c Ratio	0.14	1.03	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	26.1	0.1			0.3
Delay (s)	4.9	38.2	19.2			20.3
Level of Service	A	D	B			C
Approach Delay (s)	36.2		19.2		20.3	
Approach LOS	D		B		C	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	460	140	1010	870
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	0.94	1.00
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	4859	1814
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			4951	1517	4859	1814
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)			10.3	10.3	5.2	25.5
Effective Green, g (s)			12.3	12.3	7.2	25.5
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)			2388	732	1372	1814
v/s Ratio Prot			0.10		c0.23	c0.53
v/s Ratio Perm				0.10		
v/c Ratio			0.21	0.21	0.82	0.53
Uniform Delay, d1			3.8	3.8	8.5	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.0	0.1	3.9	0.3
Delay (s)			3.9	4.0	12.4	0.3
Level of Service			A	A	B	A
Approach Delay (s)	0.0		3.9			6.8
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	6.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	25.5	Sum of lost time (s)	3.0
Intersection Capacity Utilization	59.9%	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)	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	1776	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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	580	1760	140	110	340	0	0	320	50
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					0.86		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)					6096		1723	4951			4837	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6096		1723	4951			4837	
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	11	0	0	0	0	0	36	0
Lane Group Flow (vph)	0	0	0	0	2745	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)					24.6		6.0	21.8			10.8	
Effective Green, g (s)					26.6		8.0	23.8			12.8	
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)					2875		244	2089			1098	
v/s Ratio Prot							c0.07	0.08			c0.08	
v/s Ratio Perm					0.45							
v/c Ratio					32.20dl		0.50	0.18			0.34	
Uniform Delay, d1					14.3		22.4	10.2			18.3	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					8.6		1.6	0.0			0.2	
Delay (s)					22.9		24.0	10.2			18.5	
Level of Service					C		C	B			B	
Approach Delay (s)		0.0			22.9			13.6			18.5	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.2%	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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↱						↑↑↱		↰	↑↑↑	
Volume (vph)	40	1250	50	0	0	0	0	510	550	70	1170	0
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		0.86						0.91		1.00	0.91	
Frpb, ped/bikes		1.00						0.99		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		1.00	1.00	
Frt		0.99						0.92		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6188						4515		1723	4951	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		6188						4515		1723	4951	
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	7	0	0	0	0	0	101	0	0	0	0
Lane Group Flow (vph)	0	1482	0	0	0	0	0	1077	0	78	1300	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot									Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases												
Actuated Green, G (s)		24.3						19.1		6.6	30.7	
Effective Green, g (s)		26.3						21.1		8.6	32.7	
Actuated g/C Ratio		0.40						0.32		0.13	0.50	
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)		2504						1466		228	2491	
v/s Ratio Prot								c0.24		0.05	c0.26	
v/s Ratio Perm		0.24										
v/c Ratio		4.67dl						1.00dr		0.34	0.52	
Uniform Delay, d1		15.1						19.5		25.6	10.9	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		0.4						1.9		0.9	0.2	
Delay (s)		15.5						21.4		26.5	11.1	
Level of Service		B						C		C	B	
Approach Delay (s)		15.5			0.0			21.4			12.0	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.2%	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

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

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

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

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	368	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

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

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

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Volume (vph)	140	1100	620	0	0	2040
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	0.76	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	3530	4990			3903
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1770	3530	4990			3903
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	237	0	0	0	563
Lane Group Flow (vph)	233	1596	729	0	0	1837
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				custom
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	1362	2638			2063
v/s Ratio Prot	0.13		0.15			
v/s Ratio Perm		c0.45				c0.47
v/c Ratio	0.34	1.17	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	85.4	0.1			5.3
Delay (s)	15.5	106.9	9.2			20.0
Level of Service	B	F	A			B
Approach Delay (s)	96.6		9.2		20.0	
Approach LOS	F		A		B	

Intersection Summary			
HCM Average Control Delay	48.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰↰	↑
Volume (vph)	0	0	810	440	1120	1290
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	0.94	1.00
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	1552	4990	1863
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			5085	1552	4990	1863
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)			31.5	31.5	12.9	54.4
Effective Green, g (s)			33.5	33.5	14.9	54.4
Actuated g/C Ratio			0.62	0.62	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)			3131	956	1367	1863
v/s Ratio Prot			0.19		0.26	c0.81
v/s Ratio Perm				0.33		
v/c Ratio			0.30	0.54	0.96	0.81
Uniform Delay, d1			4.9	6.0	19.5	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.1	0.6	16.4	2.9
Delay (s)			5.0	6.7	35.9	2.9
Level of Service			A	A	D	A
Approach Delay (s)	0.0		5.6			18.2
Approach LOS	A		A			B

Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	0.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
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	0.98	
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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↑↱		↰	↑↑↑			↑↑↱	
Volume (vph)	0	0	0	180	1160	150	150	910	0	0	680	50
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					0.86		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)					6253		1770	5085			5026	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6253		1770	5085			5026	
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	26	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	0	2102	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	32.8			19.8	
Effective Green, g (s)					23.1		10.0	34.8			21.8	
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)					2260		277	2769			1715	
v/s Ratio Prot							c0.12	0.26			c0.20	
v/s Ratio Perm					0.34							
v/c Ratio					6.42dl		0.77	0.47			0.60	
Uniform Delay, d1					19.6		25.9	8.9			17.4	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					7.6		12.5	0.1			0.6	
Delay (s)					27.2		38.4	9.0			18.0	
Level of Service					C		D	A			B	
Approach Delay (s)		0.0			27.2			13.2			18.0	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	63.9	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

HCM Signalized Intersection Capacity Analysis
9: Grape St & Pacific Hwy

7/18/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↑↱						↑↑↑↱		↰	↑↑↑	
Volume (vph)	90	2420	80	0	0	0	0	1100	1020	220	810	0
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		0.86						0.91		1.00	0.91	
Frpb, ped/bikes		1.00						0.99		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		1.00	1.00	
Frt		1.00						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6360						4668		1770	5085	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		6360						4668		1770	5085	
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	6	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	2872	0	0	0	0	0	2354	0	244	900	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot									Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases												
Actuated Green, G (s)		25.0						26.0		4.0	35.0	
Effective Green, g (s)		27.0						28.0		6.0	37.0	
Actuated g/C Ratio		0.39						0.40		0.09	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)		2453						1867		152	2688	
v/s Ratio Prot								c0.50		c0.14	0.18	
v/s Ratio Perm		0.45										
v/c Ratio		10.00dl						1.77dr		1.61	0.33	
Uniform Delay, d1		21.5						21.0		32.0	9.5	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		81.6						121.8		300.8	0.1	
Delay (s)		103.1						142.8		332.8	9.5	
Level of Service		F						F		F	A	
Approach Delay (s)		103.1			0.0			142.8			78.5	
Approach LOS		F			A			F			E	

Intersection Summary

HCM Average Control Delay	113.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	104.6%	ICU Level of Service	G
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

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

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

HCM Signalized Intersection Capacity Analysis

1: N. Harbor Dr & Terminal 2 Entrance

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰	↑↑↑	↱	↰	✥		↰↰	↱	
Volume (vph)	350	1238	10	25	1957	10	15	10	15	306	20	250
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	0.99		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	0.92		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	1551		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	1551		3343	1523	
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	1346	11	27	2127	11	16	11	16	333	22	272
RTOR Reduction (vph)	0	0	5	0	0	4	0	14	0	0	226	0
Lane Group Flow (vph)	385	1346	6	27	2127	7	14	15	0	333	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		15.4	15.4	
Effective Green, g (s)	18.1	57.6	57.6	4.9	44.4	44.4	10.6	10.6		17.4	17.4	
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)	304	2782	827	82	2145	638	169	160		567	259	
v/s Ratio Prot	c0.22	0.27		0.02	c0.43		0.01	c0.01		c0.10	0.04	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	1.27	0.48	0.01	0.33	0.99	0.01	0.08	0.09		0.59	0.26	
Uniform Delay, d1	42.2	13.5	9.9	47.2	28.9	16.5	41.6	41.6		39.2	37.0	
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	143.4	0.1	0.0	2.4	17.4	0.0	0.2	0.2		1.6	0.5	
Delay (s)	185.6	13.6	9.9	49.6	46.3	16.6	41.8	41.8		40.8	37.5	
Level of Service	F	B	A	D	D	B	D	D		D	D	
Approach Delay (s)		51.6			46.2			41.8			39.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	47.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	102.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Scenario A

61728 PAGE 528

HCM Signalized Intersection Capacity Analysis

2: N. Harbor Dr & Harbor Island Drive

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰↰	↑↑↑↱		↰↰	↑	↱	↰	↰↑↱	
Volume (vph)	40	820	144	459	1910	15	118	68	265	60	64	120
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	0.99	
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	0.91	
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	2941	
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	2941	
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	180	765	2388	19	148	85	331	75	80	150
RTOR Reduction (vph)	0	0	150	0	1	0	0	0	0	0	126	0
Lane Group Flow (vph)	67	1025	30	765	2406	0	148	85	331	67	112	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)	8.2	26.2	10.3	8.3	26.3		10.3	10.3	74.7	9.9	9.9	
Effective Green, g (s)	10.2	28.2	12.3	10.3	28.3		12.3	12.3	74.7	11.9	11.9	
Actuated g/C Ratio	0.14	0.38	0.16	0.14	0.38		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)	235	1869	254	461	2360		550	299	1519	250	469	
v/s Ratio Prot	0.04	0.21	0.02	c0.23	c0.39		0.04	c0.05		0.04	0.04	
v/s Ratio Perm									c0.22			
v/c Ratio	0.29	0.55	0.12	1.66	1.02		0.27	0.28	0.22	0.27	0.24	
Uniform Delay, d1	29.0	18.3	26.6	32.2	23.2		27.3	27.3	0.0	27.6	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	0.7	0.3	0.2	306.3	23.6		0.3	0.5	0.3	0.6	0.3	
Delay (s)	29.6	18.6	26.8	338.5	46.8		27.5	27.9	0.3	28.2	27.7	
Level of Service	C	B	C	F	D		C	C	A	C	C	
Approach Delay (s)		20.3			117.2			11.6			27.8	
Approach LOS		C			F			B			C	

Intersection Summary			
HCM Average Control Delay	77.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	74.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
3: N. Harbor Dr & Rental Car Access Rd

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	3145	100	240	4449	15	80	20	200	10	10	10
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	0.93	
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	
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	3311	105	253	4683	16	84	21	211	11	11	11
RTOR Reduction (vph)	0	0	29	0	0	0	0	0	182	0	10	0
Lane Group Flow (vph)	74	3311	76	253	4699	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)	5.0	54.5	54.5	6.1	55.6			11.8	11.8	8.4	8.4	
Effective Green, g (s)	7.0	56.5	56.5	8.1	57.6			13.8	13.8	10.4	10.4	
Actuated g/C Ratio	0.07	0.56	0.56	0.08	0.57			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)	120	3497	841	269	2827			239	205	178	171	
v/s Ratio Prot	0.04	0.53		c0.08	c0.95			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.02			
v/c Ratio	0.62	0.95	0.09	0.94	1.66			0.44	0.14	0.06	0.07	
Uniform Delay, d1	45.6	20.7	10.3	46.1	21.6			39.9	38.3	40.8	40.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.1	6.5	0.0	39.0	299.5			1.3	0.3	0.1	0.2	
Delay (s)	54.7	27.3	10.3	85.1	321.1			41.2	38.6	40.9	41.0	
Level of Service	D	C	B	F	F			D	D	D	D	
Approach Delay (s)		27.3			309.0			39.5			41.0	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	186.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	116.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Scenario A

HCM Signalized Intersection Capacity Analysis
4: N. Harbor Dr & Laurel St

12/6/2012

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1216	2209	2641	40	60	20
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	3338	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3338	1382
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1351	2454	2934	44	67	22
RTOR Reduction (vph)	0	0	0	0	2	0
Lane Group Flow (vph)	1351	2454	2934	44	67	20
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	102.6	9.4	102.6
Effective Green, g (s)	23.1	85.2	59.1	102.6	11.4	102.6
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	4111	2852	1519	371	1382
v/s Ratio Prot	c0.40	0.50	c0.59		c0.02	
v/s Ratio Perm				0.03		0.01
v/c Ratio	1.79	0.60	1.03	0.03	0.18	0.01
Uniform Delay, d1	39.8	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	362.7	0.2	24.7	0.0	0.2	0.0
Delay (s)	402.4	3.2	46.5	0.0	41.6	0.0
Level of Service	F	A	D	A	D	A
Approach Delay (s)		144.9	45.8		32.3	
Approach LOS		F	D		C	

Intersection Summary			
HCM Average Control Delay	100.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	102.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	105.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
5: Hawthorn St & N. Harbor Dr

12/6/2012

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Volume (vph)	100	1585	376	0	0	1639
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	0.76	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	3439	4859			3805
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1723	3439	4859			3805
Peak-hour factor, PHF	0.65	0.65	0.94	0.94	0.94	0.94
Adj. Flow (vph)	154	2438	400	0	0	1744
RTOR Reduction (vph)	0	172	0	0	0	1260
Lane Group Flow (vph)	154	2266	400	0	0	484
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				custom
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	39.1	39.1	16.1			16.1
Effective Green, g (s)	41.1	41.1	18.1			18.1
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)	1086	2168	1349			1056
v/s Ratio Prot	0.09		0.08			
v/s Ratio Perm		c0.66				c0.13
v/c Ratio	0.14	1.05	0.30			0.46
Uniform Delay, d1	4.9	12.1	18.5			19.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	32.5	0.1			0.3
Delay (s)	5.0	44.5	18.7			19.8
Level of Service	A	D	B			B
Approach Delay (s)	42.2		18.7		19.8	
Approach LOS	D		B		B	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	6.0
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Scenario A

HCM Signalized Intersection Capacity Analysis
6: Grape St & N. Harbor Dr

12/6/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	466	140	1043	876
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	0.94	1.00
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	4859	1814
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			4951	1517	4859	1814
Peak-hour factor, PHF	0.90	0.90	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	512	154	1146	963
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	512	154	1146	963
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			10.3	10.3	5.2	25.5
Effective Green, g (s)			12.3	12.3	7.2	25.5
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)			2388	732	1372	1814
v/s Ratio Prot			0.10		c0.24	c0.53
v/s Ratio Perm				0.10		
v/c Ratio			0.21	0.21	0.84	0.53
Uniform Delay, d1			3.8	3.8	8.6	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.0	0.1	4.6	0.3
Delay (s)			3.9	3.9	13.2	0.3
Level of Service			A	A	B	A
Approach Delay (s)	0.0		3.9			7.3
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	25.5	Sum of lost time (s)	3.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
7: Laurel St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑↱	
Volume (vph)	705	1051	30	70	1022	120	110	500	140	250	480	1516
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	
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)	742	1106	32	74	1076	126	116	526	147	263	505	1596
RTOR Reduction (vph)	0	2	0	0	7	0	0	42	0	0	331	0
Lane Group Flow (vph)	742	1136	0	74	1195	0	116	631	0	263	1770	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	52.7		8.3	30.0		5.0	22.0		18.0	35.0	
Effective Green, g (s)	33.0	54.7		10.3	32.0		7.0	24.0		20.0	37.0	
Actuated g/C Ratio	0.27	0.45		0.09	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	2227		147	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		0.50	1.34		1.16	0.67		0.92	2.01dr	
Uniform Delay, d1	44.0	23.6		52.9	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	270.5	0.2		2.7	158.9		139.4	1.8		33.5	162.6	
Delay (s)	314.5	23.8		55.6	203.4		196.4	46.6		83.3	204.6	
Level of Service	F	C		E	F		F	D		F	F	
Approach Delay (s)		138.5			194.9			68.7			191.1	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	160.9	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	138.2%	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

Scenario A

HCM Signalized Intersection Capacity Analysis
8: Hawthorn St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↑↱		↰	↑↑↑			↑↑↱	
Volume (vph)	0	0	0	580	1783	140	122	340	0	0	320	50
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					0.86		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)					6088		1723	4951			4834	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6088		1723	4951			4834	
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	1981	156	136	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	0	2770	0	136	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)					24.6		6.2	21.8			10.8	
Effective Green, g (s)					26.6		8.0	23.8			12.8	
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)					2871		244	2089			1097	
v/s Ratio Prot							c0.08	0.08			c0.08	
v/s Ratio Perm					0.46							
v/c Ratio					32.20dl		0.56	0.18			0.34	
Uniform Delay, d1					14.4		22.6	10.2			18.3	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					9.9		2.7	0.0			0.2	
Delay (s)					24.4		25.3	10.2			18.5	
Level of Service					C		C	B			B	
Approach Delay (s)		0.0			24.4			14.2			18.5	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.3%	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

HCM Signalized Intersection Capacity Analysis
9: Grape St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↑↱						↑↑↑↱		↰	↑↑↑	
Volume (vph)	40	1272	61	0	0	0	0	522	550	70	1170	0
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		0.86						0.91		1.00	0.91	
Frpb, ped/bikes		1.00						0.99		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		1.00	1.00	
Frt		0.99						0.92		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6181						4520		1723	4951	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		6181						4520		1723	4951	
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	1413	68	0	0	0	0	580	611	78	1300	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	101	0	0	0	0
Lane Group Flow (vph)	0	1516	0	0	0	0	0	1090	0	78	1300	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot									Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases												
Actuated Green, G (s)		24.4						19.2		6.6	30.8	
Effective Green, g (s)		26.4						21.2		8.6	32.8	
Actuated g/C Ratio		0.40						0.33		0.13	0.50	
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)		2503						1470		227	2491	
v/s Ratio Prot								c0.24		0.05	c0.26	
v/s Ratio Perm		0.25										
v/c Ratio		4.53dl						1.00dr		0.34	0.52	
Uniform Delay, d1		15.3						19.6		25.7	10.9	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		0.4						2.1		0.9	0.2	
Delay (s)		15.7						21.6		26.6	11.1	
Level of Service		B						C		C	B	
Approach Delay (s)		15.7			0.0			21.6			12.0	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.3%	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

Scenario A

HCM Signalized Intersection Capacity Analysis
10: Sheraton Dwy & Harbor Island Drive

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥	↱	↰	↑↑↱		↰	↑↑↱	
Volume (vph)	60	10	25	10	10	35	15	331	15	30	457	120
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			0.96	0.85	1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1683			1611	1433	1723	3418		1723	3314	
Flt Permitted		0.81			0.91	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1411			1491	1433	1723	3418		1723	3314	
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	389	18	35	538	141
RTOR Reduction (vph)	0	8	0	0	5	19	0	4	0	0	27	0
Lane Group Flow (vph)	0	125	0	0	31	13	18	403	0	35	652	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	1.2	21.1		2.6	22.5	
Effective Green, g (s)		26.1			26.1	26.1	3.2	23.1		4.6	24.5	
Actuated g/C Ratio		0.42			0.42	0.42	0.05	0.37		0.07	0.39	
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)		586			620	596	88	1257		126	1293	
v/s Ratio Prot							0.01	0.12		c0.02	c0.20	
v/s Ratio Perm		c0.09			0.02	0.01						
v/c Ratio		0.21			0.05	0.02	0.20	0.32		0.28	0.50	
Uniform Delay, d1		11.8			10.9	10.8	28.6	14.2		27.5	14.5	
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	0.3	
Delay (s)		11.9			11.0	10.8	29.7	14.4		28.7	14.9	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		11.9			10.9			15.0			15.5	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	6.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	150	20	15	186	247	200
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
Peak-hour factor, PHF	0.55	0.55	0.55	0.95	0.55	0.95
Adj. Flow (vph)	273	36	27	196	449	211
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	153	156	27	196	449	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)	15.5	15.5	8.0	58.0	19.5	58.0
Effective Green, g (s)	17.5	17.5	10.0	58.0	21.5	58.0
Actuated g/C Ratio	0.30	0.30	0.17	1.00	0.37	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)	494	501	313	1519	1239	1503
v/s Ratio Prot	0.09	c0.09	0.01		c0.13	
v/s Ratio Perm				0.13		c0.14
v/c Ratio	0.31	0.31	0.09	0.13	0.36	0.14
Uniform Delay, d1	15.6	15.6	20.2	0.0	13.3	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	0.2	0.2	0.2
Delay (s)	16.0	16.0	20.3	0.2	13.4	0.2
Level of Service	B	B	C	A	B	A
Approach Delay (s)		16.0	2.6		9.2	
Approach LOS		B	A		A	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	58.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	29.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Scenario A

HCM Signalized Intersection Capacity Analysis
1: N. Harbor Dr & Terminal 2 Entrance

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	1821	20	40	2153	10	20	20	30	286	10	250
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	1589		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	1589		3433	1554	
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	1979	22	44	2340	11	22	22	33	318	11	278
RTOR Reduction (vph)	0	0	8	0	0	4	0	29	0	0	230	0
Lane Group Flow (vph)	300	1979	14	44	2340	7	20	28	0	318	59	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	8.9	8.9		14.7	14.7	
Effective Green, g (s)	11.1	53.3	53.3	4.3	46.5	46.5	10.9	10.9		16.7	16.7	
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)	202	2788	830	78	2433	724	189	178		590	267	
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	1.49	0.71	0.02	0.56	0.96	0.01	0.11	0.16		0.54	0.22	
Uniform Delay, d1	43.1	16.2	10.0	45.5	24.5	13.3	38.8	39.0		36.7	34.6	
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	242.8	0.8	0.0	9.0	10.7	0.0	0.2	0.4		1.0	0.4	
Delay (s)	285.9	17.1	10.0	54.6	35.2	13.3	39.0	39.4		37.7	35.1	
Level of Service	F	B	B	D	D	B	D	D		D	D	
Approach Delay (s)		52.1			35.5			39.3			36.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Scenario A

HCM Signalized Intersection Capacity Analysis
2: N. Harbor Dr & Harbor Island Drive

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1200	248	500	1460	70	208	78	557	60	71	160
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	0.90	
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	2911	
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	2911	
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	413	833	2433	117	347	130	928	100	118	267
RTOR Reduction (vph)	0	0	186	0	4	0	0	0	0	0	228	0
Lane Group Flow (vph)	117	2000	227	833	2546	0	347	130	928	90	167	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)	11.7	24.3	18.1	20.2	32.8		18.1	18.1	94.3	11.7	11.7	
Effective Green, g (s)	13.7	26.3	20.1	22.2	34.8		20.1	20.1	94.3	13.7	13.7	
Actuated g/C Ratio	0.15	0.28	0.21	0.24	0.37		0.21	0.21	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)	250	1381	329	787	2282		713	387	1519	228	423	
v/s Ratio Prot	0.07	c0.40	0.15	c0.25	0.41		0.10	0.07		0.06	0.06	
v/s Ratio Perm									c0.61			
v/c Ratio	0.47	1.45	0.69	1.06	1.12		0.49	0.34	0.61	0.39	0.39	
Uniform Delay, d1	37.0	34.0	34.2	36.0	29.8		32.6	31.4	0.0	36.5	36.5	
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	1.4	205.8	5.9	48.7	58.7		0.5	0.5	1.8	1.1	0.6	
Delay (s)	38.3	239.8	40.1	84.7	88.5		33.1	32.0	1.8	37.7	37.1	
Level of Service	D	F	D	F	F		C	C	A	D	D	
Approach Delay (s)		197.9			87.5			12.3			37.2	
Approach LOS		F			F			B			D	

Intersection Summary			
HCM Average Control Delay	106.7	HCM Level of Service	F
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	6.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: N. Harbor Dr & Rental Car Access Rd

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	4127	80	260	3620	15	80	10	270	10	10	20
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	
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	4586	89	289	4022	17	89	11	300	11	11	22
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	251	0	20	0
Lane Group Flow (vph)	33	4586	71	289	4039	0	0	100	49	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			11.7	11.7	8.5	8.5	
Effective Green, g (s)	4.3	55.6	55.6	11.1	62.4			13.7	13.7	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	3371	810	361	3000			231	200	176	164	
v/s Ratio Prot	0.02	0.74		c0.09	c0.82			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.03			
v/c Ratio	0.46	1.36	0.09	0.80	1.35			0.43	0.24	0.06	0.08	
Uniform Delay, d1	48.2	23.7	11.4	44.8	20.3			41.0	40.0	41.8	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	164.2	0.0	12.0	158.1			1.3	0.6	0.1	0.2	
Delay (s)	52.7	187.8	11.5	56.8	178.3			42.3	40.6	41.9	42.0	
Level of Service	D	F	B	E	F			D	D	D	D	
Approach Delay (s)		183.6			170.2			41.0			42.0	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM Average Control Delay	170.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	102.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Scenario A

HCM Signalized Intersection Capacity Analysis
4: N. Harbor Dr & Laurel St

12/6/2012

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1413	2744	2039	140	80	20
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	3432	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3432	1419
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1570	3049	2266	156	89	22
RTOR Reduction (vph)	0	0	0	0	2	0
Lane Group Flow (vph)	1570	3049	2266	156	89	20
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)	19.2	81.2	57.0	100.9	9.7	100.9
Effective Green, g (s)	21.2	83.2	59.0	100.9	11.7	100.9
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)	721	4193	2973	1560	398	1419
v/s Ratio Prot	c0.46	0.60	c0.45		c0.03	
v/s Ratio Perm				0.10		0.01
v/c Ratio	2.18	0.73	0.76	0.10	0.22	0.01
Uniform Delay, d1	39.9	3.9	15.7	0.0	40.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	534.5	0.6	1.2	0.1	0.3	0.0
Delay (s)	574.3	4.5	16.9	0.1	40.8	0.0
Level of Service	F	A	B	A	D	A
Approach Delay (s)		198.2	15.8		33.4	
Approach LOS		F	B		C	

Intersection Summary			
HCM Average Control Delay	133.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations						
Volume (vph)	140	1142	627	0	0	2094
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	0.76	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	3530	4990			3903
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1770	3530	4990			3903
Peak-hour factor, PHF	0.60	0.60	0.85	0.85	0.85	0.85
Adj. Flow (vph)	233	1903	738	0	0	2464
RTOR Reduction (vph)	0	197	0	0	0	634
Lane Group Flow (vph)	233	1706	738	0	0	1831
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				custom
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	27.0	27.0	33.0			33.0
Effective Green, g (s)	29.0	29.0	35.0			35.0
Actuated g/C Ratio	0.41	0.41	0.50			0.50
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)	733	1462	2495			1952
v/s Ratio Prot	0.13		0.15			
v/s Ratio Perm		c0.48				c0.47
v/c Ratio	0.32	1.17	0.30			0.94
Uniform Delay, d1	13.8	20.5	10.3			16.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.3	82.8	0.1			9.3
Delay (s)	14.1	103.3	10.3			25.7
Level of Service	B	F	B			C
Approach Delay (s)	93.6		10.3		25.7	
Approach LOS	F		B		C	

Intersection Summary

HCM Average Control Delay	50.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Scenario A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	871	440	1166	1298
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	0.94	1.00
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	1551	4990	1863
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			5085	1551	4990	1863
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	1025	518	1372	1527
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	1025	518	1372	1527
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			32.4	32.4	12.8	55.2
Effective Green, g (s)			34.4	34.4	14.8	55.2
Actuated g/C Ratio			0.62	0.62	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)			3169	967	1338	1863
v/s Ratio Prot			0.20		c0.27	c0.82
v/s Ratio Perm				0.33		
v/c Ratio			0.32	0.54	1.03	0.82
Uniform Delay, d1			4.9	5.9	20.2	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.1	0.6	31.3	2.9
Delay (s)			5.0	6.5	51.5	2.9
Level of Service			A	A	D	A
Approach Delay (s)	0.0		5.5			25.9
Approach LOS	A		A			C

Intersection Summary

HCM Average Control Delay	18.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	3.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
7: Laurel St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑↱	
Volume (vph)	758	1425	80	100	1034	180	150	1110	280	250	830	1017
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	5037		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	5037		1770	3445		1770	4902		1770	4589	
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)	842	1583	89	111	1149	200	167	1233	311	278	922	1130
RTOR Reduction (vph)	0	5	0	0	11	0	0	37	0	0	184	0
Lane Group Flow (vph)	842	1667	0	111	1338	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	2229		161	976		118	1307		177	1377	
v/s Ratio Prot	c0.48	0.33		0.06	c0.39		0.09	0.31		c0.16	c0.41	
v/s Ratio Perm												
v/c Ratio	1.90	0.75		0.69	1.37		1.42	1.15		1.57	1.74dr	
Uniform Delay, d1	45.0	27.9		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	413.7	1.4		11.6	173.3		229.2	78.1		282.2	165.3	
Delay (s)	458.7	29.3		64.5	216.3		285.2	122.1		336.2	207.3	
Level of Service	F	C		E	F		F	F		F	F	
Approach Delay (s)		173.1			204.7			138.0			222.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM Average Control Delay	185.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	137.6%	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

Scenario A

HCM Signalized Intersection Capacity Analysis
8: Hawthorn St & Pacific Hwy

12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Volume (vph)	0	0	0	180	1188	150	164	910	0	0	680	50
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					0.86		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)					6244		1770	5085			5021	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6244		1770	5085			5021	
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	1697	214	234	1300	0	0	971	74
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	0	2143	0	234	1300	0	0	1037	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	30.2			19.2	
Effective Green, g (s)					22.1		8.0	32.2			21.2	
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)					2288		235	2715			1765	
v/s Ratio Prot							c0.13	0.26			c0.21	
v/s Ratio Perm					0.34							
v/c Ratio					6.59dl		1.00	0.48			0.59	
Uniform Delay, d1					18.4		26.1	8.8			16.0	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					8.1		57.2	0.1			0.5	
Delay (s)					26.5		83.3	8.9			16.5	
Level of Service					C		F	A			B	
Approach Delay (s)		0.0			26.5			20.3			16.5	
Approach LOS		A			C			C			B	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
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

HCM Signalized Intersection Capacity Analysis
9: Grape St & Pacific Hwy
12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↑↑↱						↑↑↑↱		↰	↑↑↑	
Volume (vph)	90	2451	95	0	0	0	0	1114	1020	220	810	0
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		0.86						0.91		1.00	0.91	
Frpb, ped/bikes		1.00						0.99		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		1.00	1.00	
Frt		0.99						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6355						4671		1770	5085	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		6355						4671		1770	5085	
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	2723	106	0	0	0	0	1238	1133	242	920	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	2922	0	0	0	0	0	2370	0	242	920	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot									Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases												
Actuated Green, G (s)		25.0						26.0		4.0	35.0	
Effective Green, g (s)		27.0						28.0		6.0	37.0	
Actuated g/C Ratio		0.39						0.40		0.09	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)		2451						1868		152	2688	
v/s Ratio Prot								c0.51		c0.14	0.18	
v/s Ratio Perm		0.46										
v/c Ratio		8.83dl						1.77dr		1.59	0.34	
Uniform Delay, d1		21.5						21.0		32.0	9.5	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		90.7						125.3		295.2	0.1	
Delay (s)		112.2						146.3		327.2	9.6	
Level of Service		F						F		F	A	
Approach Delay (s)		112.2			0.0			146.3			75.7	
Approach LOS		F			A			F			E	

Intersection Summary

HCM Average Control Delay	118.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
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

Scenario A

HCM Signalized Intersection Capacity Analysis
10: Sheraton Dwy & Harbor Island Drive
12/6/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥	↱	↰	↑↱		↰	↑↱	
Volume (vph)	120	10	35	15	10	50	20	613	25	30	629	90
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			0.99	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			0.95	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1727			1624	1472	1770	3513		1770	3457	
Flt Permitted		0.78			0.90	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1393			1485	1472	1770	3513		1770	3457	
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	681	28	33	699	100
RTOR Reduction (vph)	0	8	0	0	10	24	0	3	0	0	12	0
Lane Group Flow (vph)	0	175	0	0	34	16	22	706	0	33	787	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)		23.4			23.4	23.4	1.2	22.4		2.5	23.7	
Effective Green, g (s)		25.4			25.4	25.4	3.2	24.4		4.5	25.7	
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)		559			596	591	89	1354		126	1404	
v/s Ratio Prot							0.01	0.20		c0.02	c0.23	
v/s Ratio Perm		c0.13			0.02	0.01						
v/c Ratio		0.31			0.06	0.03	0.25	0.52		0.26	0.56	
Uniform Delay, d1		13.0			11.6	11.5	28.9	15.0		27.8	14.5	
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	0.4		1.1	0.5	
Delay (s)		13.3			11.7	11.5	30.3	15.3		28.9	15.0	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		13.3			11.6			15.8			15.5	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	63.3	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

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	300	40	30	308	334	290
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
Peak-hour factor, PHF	0.45	0.45	0.45	0.92	0.45	0.92
Adj. Flow (vph)	667	89	67	335	742	315
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	374	382	67	335	742	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	6.0	62.7	20.3	62.7
Effective Green, g (s)	23.4	23.4	8.0	62.7	22.3	62.7
Actuated g/C Ratio	0.37	0.37	0.13	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)	611	619	231	1519	1189	1503
v/s Ratio Prot	0.23	c0.23	0.04		c0.22	
v/s Ratio Perm				c0.22		0.21
v/c Ratio	0.61	0.62	0.29	0.22	0.62	0.21
Uniform Delay, d1	16.0	16.0	24.8	0.0	16.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	1.8	0.7	0.3	1.0	0.3
Delay (s)	17.8	17.8	25.5	0.3	17.8	0.3
Level of Service	B	B	C	A	B	A
Approach Delay (s)		17.8	4.5		12.6	
Approach LOS		B	A		B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	6.0
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Scenario A

HCM Signalized Intersection Capacity Analysis
1: N. Harbor Dr & Terminal 2 Entrance 7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰	↑↑↑	↱	↰	✥		↰↰	↱	
Volume (vph)	350	1237	10	25	1965	10	15	10	15	306	20	250
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	0.99		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	0.92		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	1551		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	1551		3343	1523	
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	1345	11	27	2136	11	16	11	16	333	22	272
RTOR Reduction (vph)	0	0	5	0	0	4	0	14	0	0	226	0
Lane Group Flow (vph)	385	1345	6	27	2136	7	14	15	0	333	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		15.4	15.4	
Effective Green, g (s)	18.1	57.6	57.6	4.9	44.4	44.4	10.6	10.6		17.4	17.4	
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)	304	2782	827	82	2145	638	169	160		567	259	
v/s Ratio Prot	c0.22	0.27		0.02	c0.43		0.01	c0.01		c0.10	0.04	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	1.27	0.48	0.01	0.33	1.00	0.01	0.08	0.09		0.59	0.26	
Uniform Delay, d1	42.2	13.5	9.9	47.2	29.0	16.5	41.6	41.6		39.2	37.0	
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	143.4	0.1	0.0	2.4	18.3	0.0	0.2	0.2		1.6	0.5	
Delay (s)	185.6	13.6	9.9	49.6	47.3	16.6	41.8	41.8		40.8	37.5	
Level of Service	F	B	A	D	D	B	D	D		D	D	
Approach Delay (s)		51.6			47.1			41.8			39.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	47.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	102.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Scenario B

HCM Signalized Intersection Capacity Analysis
2: N. Harbor Dr & Harbor Island Drive 7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑	↱	↰↰	↑↑↑↑↱		↰↰	↑	↱	↰	↰↑↱	
Volume (vph)	40	820	143	456	1910	15	132	82	294	60	63	120
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	0.99	
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	0.91	
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	2939	
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	2939	
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	179	760	2388	19	165	102	368	75	79	150
RTOR Reduction (vph)	0	0	149	0	1	0	0	0	0	0	126	0
Lane Group Flow (vph)	67	1025	30	760	2406	0	165	102	368	67	111	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)	8.2	26.2	10.8	8.3	26.3		10.8	10.8	75.2	9.9	9.9	
Effective Green, g (s)	10.2	28.2	12.8	10.3	28.3		12.8	12.8	75.2	11.9	11.9	
Actuated g/C Ratio	0.14	0.37	0.17	0.14	0.38		0.17	0.17	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)	234	1857	262	458	2345		569	309	1519	248	465	
v/s Ratio Prot	0.04	0.21	0.02	c0.23	c0.39		0.05	c0.06		0.04	0.04	
v/s Ratio Perm									c0.24			
v/c Ratio	0.29	0.55	0.12	1.66	1.03		0.29	0.33	0.24	0.27	0.24	
Uniform Delay, d1	29.2	18.5	26.4	32.5	23.5		27.2	27.4	0.0	27.8	27.7	
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	0.7	0.4	0.2	306.3	25.6		0.3	0.6	0.4	0.6	0.3	
Delay (s)	29.9	18.9	26.6	338.8	49.1		27.5	28.1	0.4	28.4	28.0	
Level of Service	C	B	C	F	D		C	C	A	C	C	
Approach Delay (s)		20.5			118.6			11.9			28.1	
Approach LOS		C			F			B			C	

Intersection Summary			
HCM Average Control Delay	77.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	6.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
3: N. Harbor Dr & Rental Car Access Rd

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	3174	100	240	4446	15	80	20	200	10	10	10
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	0.93	
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	
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	3341	105	253	4680	16	84	21	211	11	11	11
RTOR Reduction (vph)	0	0	29	0	0	0	0	0	182	0	10	0
Lane Group Flow (vph)	74	3341	76	253	4696	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)	5.0	54.5	54.5	6.1	55.6			11.8	11.8	8.4	8.4	
Effective Green, g (s)	7.0	56.5	56.5	8.1	57.6			13.8	13.8	10.4	10.4	
Actuated g/C Ratio	0.07	0.56	0.56	0.08	0.57			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)	120	3497	841	269	2827			239	205	178	171	
v/s Ratio Prot	0.04	0.54		c0.08	c0.95			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.02			
v/c Ratio	0.62	0.96	0.09	0.94	1.66			0.44	0.14	0.06	0.07	
Uniform Delay, d1	45.6	21.0	10.3	46.1	21.6			39.9	38.3	40.8	40.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.1	7.4	0.0	39.0	299.0			1.3	0.3	0.1	0.2	
Delay (s)	54.7	28.4	10.3	85.1	320.6			41.2	38.6	40.9	41.0	
Level of Service	D	C	B	F	F			D	D	D	D	
Approach Delay (s)		28.4			308.6			39.5			41.0	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	186.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	100.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	116.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

HCM Signalized Intersection Capacity Analysis
4: N. Harbor Dr & Laurel St

7/16/2012

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Volume (vph)	1225	2229	2639	40	60	20
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	3338	1382
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3343	4951	4951	1519	3338	1382
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1361	2477	2932	44	67	22
RTOR Reduction (vph)	0	0	0	0	2	0
Lane Group Flow (vph)	1361	2477	2932	44	67	20
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	102.6	9.4	102.6
Effective Green, g (s)	23.1	85.2	59.1	102.6	11.4	102.6
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	4111	2852	1519	371	1382
v/s Ratio Prot	c0.41	0.50	c0.59		c0.02	
v/s Ratio Perm				0.03		0.01
v/c Ratio	1.81	0.60	1.03	0.03	0.18	0.01
Uniform Delay, d1	39.8	3.0	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	368.6	0.3	24.5	0.0	0.2	0.0
Delay (s)	408.4	3.2	46.3	0.0	41.6	0.0
Level of Service	F	A	D	A	D	A
Approach Delay (s)		146.9	45.6		32.3	
Approach LOS		F	D		C	

Intersection Summary			
HCM Average Control Delay	101.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	102.6	Sum of lost time (s)	9.0
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

541

HCM Signalized Intersection Capacity Analysis
5: Hawthorn St & N. Harbor Dr

7/18/2012

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations	↰	↱↱↱	↰↰↰			↱↱↱↱
Volume (vph)	100	1583	629	0	0	1659
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	0.76	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	3439	4859			3804
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1723	3439	4859			3804
Peak-hour factor, PHF	0.65	0.65	0.94	0.94	0.94	0.94
Adj. Flow (vph)	154	2435	669	0	0	1765
RTOR Reduction (vph)	0	56	0	0	0	1267
Lane Group Flow (vph)	154	2379	669	0	0	498
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				custom
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	39.1	39.1	16.5			16.5
Effective Green, g (s)	41.1	41.1	18.5			18.5
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)	1080	2155	1370			1073
v/s Ratio Prot	0.09		c0.14			
v/s Ratio Perm		c0.69				0.13
v/c Ratio	0.14	1.10	0.49			0.46
Uniform Delay, d1	5.0	12.2	19.6			19.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.1	54.4	0.3			0.3
Delay (s)	5.1	66.6	19.9			19.8
Level of Service	A	E	B			B
Approach Delay (s)	63.0		19.9		19.8	
Approach LOS	E		B		B	

Intersection Summary			
HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	6.0
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

HCM Signalized Intersection Capacity Analysis
6: Grape St & N. Harbor Dr

7/18/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰↰	↑
Volume (vph)	0	0	466	140	1060	879
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	0.94	1.00
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	4859	1814
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			4951	1517	4859	1814
Peak-hour factor, PHF	0.90	0.90	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	512	154	1165	966
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	512	154	1165	966
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			10.3	10.3	5.2	25.5
Effective Green, g (s)			12.3	12.3	7.2	25.5
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)			2388	732	1372	1814
v/s Ratio Prot			0.10		c0.24	c0.53
v/s Ratio Perm				0.10		
v/c Ratio			0.21	0.21	0.85	0.53
Uniform Delay, d1			3.8	3.8	8.6	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.0	0.1	5.1	0.3
Delay (s)			3.9	3.9	13.7	0.3
Level of Service			A	A	B	A
Approach Delay (s)	0.0		3.9			7.7
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	25.5	Sum of lost time (s)	3.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Laurel St & Pacific Hwy

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑↱	
Volume (vph)	708	1057	30	70	1021	120	110	500	140	250	480	1516
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	4927		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	4927		1723	3381		1723	4758		1723	4288	
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)	745	1113	32	74	1075	126	116	526	147	263	505	1596
RTOR Reduction (vph)	0	2	0	0	7	0	0	42	0	0	331	0
Lane Group Flow (vph)	745	1143	0	74	1194	0	116	631	0	263	1770	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	52.7		8.3	30.0		5.0	22.0		18.0	35.0	
Effective Green, g (s)	33.0	54.7		10.3	32.0		7.0	24.0		20.0	37.0	
Actuated g/C Ratio	0.27	0.45		0.09	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	2227		147	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	1.59	0.51		0.50	1.34		1.16	0.67		0.92	2.01dr	
Uniform Delay, d1	44.0	23.7		52.9	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	273.3	0.2		2.7	158.5		139.4	1.8		33.5	162.6	
Delay (s)	317.3	23.9		55.6	203.0		196.4	46.6		83.3	204.6	
Level of Service	F	C		E	F		F	D		F	F	
Approach Delay (s)		139.5			194.4			68.7			191.1	
Approach LOS		F			F			E			F	

Intersection Summary

HCM Average Control Delay	161.1	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	138.4%	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

Scenario B

HCM Signalized Intersection Capacity Analysis
8: Hawthorn St & Pacific Hwy

7/18/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑↑↱		↰	↑↑↑			↑↑↱	
Volume (vph)	0	0	0	580	1782	140	121	340	0	0	320	50
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					0.86		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)					6088		1723	4951			4834	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6088		1723	4951			4834	
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	1980	156	134	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	0	2769	0	134	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)					24.6		6.2	21.8			10.6	
Effective Green, g (s)					26.6		8.0	23.8			12.6	
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)					2871		244	2089			1097	
v/s Ratio Prot							c0.08	0.08			c0.08	
v/s Ratio Perm					0.45							
v/c Ratio					32.20dl		0.55	0.18			0.34	
Uniform Delay, d1					14.4		22.5	10.2			18.3	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					9.9		2.5	0.0			0.2	
Delay (s)					24.3		25.0	10.2			18.5	
Level of Service					C		C	B			B	
Approach Delay (s)		0.0			24.3			14.1			18.5	
Approach LOS		A			C			B			B	

Intersection Summary

HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.2%	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

HCM Signalized Intersection Capacity Analysis
9: Grape St & Pacific Hwy

7/18/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	1284	66	0	0	0	0	521	550	70	1170	0
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		0.86						0.91		1.00	0.91	
Frpb, ped/bikes		1.00						0.99		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		1.00	1.00	
Frt		0.99						0.92		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6178						4519		1723	4951	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		6178						4519		1723	4951	
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	1427	73	0	0	0	0	579	611	78	1300	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	101	0	0	0	0
Lane Group Flow (vph)	0	1534	0	0	0	0	0	1089	0	78	1300	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot									Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases												
Actuated Green, G (s)		24.4						19.2		6.6	30.8	
Effective Green, g (s)		26.4						21.2		8.6	32.8	
Actuated g/C Ratio		0.40						0.33		0.13	0.50	
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)		2502						1468		227	2491	
v/s Ratio Prot								c0.24		0.05	c0.26	
v/s Ratio Perm		0.25										
v/c Ratio		4.56dl						1.00dr		0.34	0.52	
Uniform Delay, d1		15.4						19.6		25.7	10.9	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		0.5						2.1		0.9	0.2	
Delay (s)		15.8						21.6		26.6	11.1	
Level of Service		B						C		C	B	
Approach Delay (s)		15.8			0.0			21.6			12.0	
Approach LOS		B			A			C			B	

Intersection Summary

HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.2%	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

Scenario B

HCM Signalized Intersection Capacity Analysis
10: Sheraton Dwy & Harbor Island Drive

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	10	25	10	10	35	15	388	15	30	452	120
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			0.96	0.85	1.00	0.99		1.00	0.97	
Flt Protected		0.97			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1683			1611	1433	1723	3422		1723	3313	
Flt Permitted		0.81			0.91	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1411			1491	1433	1723	3422		1723	3313	
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	456	18	35	532	141
RTOR Reduction (vph)	0	8	0	0	5	19	0	3	0	0	27	0
Lane Group Flow (vph)	0	125	0	0	31	13	18	471	0	35	646	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	1.2	21.3		2.5	22.6	
Effective Green, g (s)		26.1			26.1	26.1	3.2	23.3		4.5	24.6	
Actuated g/C Ratio		0.41			0.41	0.41	0.05	0.37		0.07	0.39	
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)		585			619	595	88	1268		123	1296	
v/s Ratio Prot							0.01	0.14		c0.02	c0.20	
v/s Ratio Perm		c0.09			0.02	0.01						
v/c Ratio		0.21			0.05	0.02	0.20	0.37		0.28	0.50	
Uniform Delay, d1		11.8			11.0	10.9	28.6	14.5		27.7	14.5	
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	0.2		1.3	0.3	
Delay (s)		12.0			11.0	10.9	29.8	14.6		28.9	14.8	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		12.0			11.0			15.2			15.5	
Approach LOS		B			B			B			B	

Intersection Summary

HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
11: Harbor Island Dr (west) & Harbor Island Drive 7/16/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	150	20	15	243	242	200
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
Peak-hour factor, PHF	0.55	0.55	0.55	0.95	0.55	0.95
Adj. Flow (vph)	273	36	27	256	440	211
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	153	156	27	256	440	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)	15.5	15.5	8.0	57.9	19.4	57.9
Effective Green, g (s)	17.5	17.5	10.0	57.9	21.4	57.9
Actuated g/C Ratio	0.30	0.30	0.17	1.00	0.37	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)	495	501	313	1519	1236	1503
v/s Ratio Prot	0.09	c0.09	0.01		c0.13	
v/s Ratio Perm				c0.17		0.14
v/c Ratio	0.31	0.31	0.09	0.17	0.36	0.14
Uniform Delay, d1	15.5	15.6	20.1	0.0	13.2	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	0.2	0.2	0.2
Delay (s)	15.9	15.9	20.2	0.2	13.4	0.2
Level of Service	B	B	C	A	B	A
Approach Delay (s)		15.9	2.1		9.1	
Approach LOS		B	A		A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	57.9	Sum of lost time (s)	6.0
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

HCM Signalized Intersection Capacity Analysis
1: N. Harbor Dr & Terminal 2 Entrance 7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	1828	20	40	2149	10	20	20	30	289	10	250
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	1589		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	1589		3433	1554	
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	1987	22	44	2336	11	22	22	33	321	11	278
RTOR Reduction (vph)	0	0	8	0	0	4	0	29	0	0	230	0
Lane Group Flow (vph)	300	1987	14	44	2336	7	20	28	0	321	59	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	8.9	8.9		14.8	14.8	
Effective Green, g (s)	11.1	53.3	53.3	4.3	46.5	46.5	10.9	10.9		16.8	16.8	
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)	202	2786	829	78	2430	724	188	178		593	268	
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	1.49	0.71	0.02	0.56	0.96	0.01	0.11	0.16		0.54	0.22	
Uniform Delay, d1	43.1	16.3	10.0	45.6	24.5	13.3	38.8	39.0		36.7	34.6	
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	242.8	0.9	0.0	9.0	10.7	0.0	0.3	0.4		1.0	0.4	
Delay (s)	285.9	17.2	10.1	54.6	35.2	13.3	39.1	39.5		37.7	35.0	
Level of Service	F	B	B	D	D	B	D	D		D	D	
Approach Delay (s)		52.1			35.5			39.4			36.5	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	97.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: N. Harbor Dr & Harbor Island Drive

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1200	257	524	1460	70	202	71	543	60	88	160
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	0.91	
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	2937	
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	2937	
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	428	873	2433	117	337	118	905	100	147	267
RTOR Reduction (vph)	0	0	191	0	4	0	0	0	0	0	228	0
Lane Group Flow (vph)	117	2000	237	873	2546	0	337	118	905	90	196	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)	11.8	24.2	19.6	20.2	32.6		19.6	19.6	95.9	11.9	11.9	
Effective Green, g (s)	13.8	26.2	21.6	22.2	34.6		21.6	21.6	95.9	13.9	13.9	
Actuated g/C Ratio	0.14	0.27	0.23	0.23	0.36		0.23	0.23	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)	248	1353	347	774	2231		753	409	1519	227	426	
v/s Ratio Prot	0.07	c0.40	c0.15	c0.26	0.41		0.10	0.07		0.06	0.07	
v/s Ratio Perm									c0.60			
v/c Ratio	0.47	1.48	0.68	1.13	1.14		0.45	0.29	0.60	0.40	0.46	
Uniform Delay, d1	37.7	34.9	34.0	36.9	30.7		32.0	30.8	0.0	37.2	37.6	
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	1.4	219.2	5.5	73.6	69.4		0.4	0.4	1.7	1.1	0.8	
Delay (s)	39.1	254.1	39.5	110.4	100.1		32.4	31.2	1.7	38.3	38.3	
Level of Service	D	F	D	F	F		C	C	A	D	D	
Approach Delay (s)		208.1			102.7			11.9			38.3	
Approach LOS		F			F			B			D	

Intersection Summary			
HCM Average Control Delay	116.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

HCM Signalized Intersection Capacity Analysis
3: N. Harbor Dr & Rental Car Access Rd

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	4113	80	260	3644	15	80	10	270	10	10	20
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	
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	4570	89	289	4049	17	89	11	300	11	11	22
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	251	0	20	0
Lane Group Flow (vph)	33	4570	71	289	4066	0	0	100	49	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			11.7	11.7	8.5	8.5	
Effective Green, g (s)	4.3	55.6	55.6	11.1	62.4			13.7	13.7	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	3371	810	361	3000			231	200	176	164	
v/s Ratio Prot	0.02	0.73		c0.09	c0.82			c0.06		0.01	c0.01	
v/s Ratio Perm			0.05						0.03			
v/c Ratio	0.46	1.36	0.09	0.80	1.36			0.43	0.24	0.06	0.08	
Uniform Delay, d1	48.2	23.7	11.4	44.8	20.3			41.0	40.0	41.8	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	162.1	0.0	12.0	162.1			1.3	0.6	0.1	0.2	
Delay (s)	52.7	185.7	11.5	56.8	182.3			42.3	40.6	41.9	42.0	
Level of Service	D	F	B	E	F			D	D	D	D	
Approach Delay (s)		181.5			174.0			41.0			42.0	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM Average Control Delay	171.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	102.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: N. Harbor Dr & Laurel St

7/16/2012

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations	↰↰	↑↑↑	↑↑↑	↱	↰↰	↱
Volume (vph)	1409	2734	2056	140	80	20
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	3432	1419
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	5085	5085	1560	3432	1419
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1566	3038	2284	156	89	22
RTOR Reduction (vph)	0	0	0	0	2	0
Lane Group Flow (vph)	1566	3038	2284	156	89	20
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)	19.2	81.3	57.1	101.0	9.7	101.0
Effective Green, g (s)	21.2	83.3	59.1	101.0	11.7	101.0
Actuated g/C Ratio	0.21	0.82	0.59	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)	721	4194	2975	1560	398	1419
v/s Ratio Prot	c0.46	0.60	c0.45		c0.03	
v/s Ratio Perm				0.10		0.01
v/c Ratio	2.17	0.72	0.77	0.10	0.22	0.01
Uniform Delay, d1	39.9	3.9	15.8	0.0	40.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	532.0	0.6	1.2	0.1	0.3	0.0
Delay (s)	571.9	4.5	17.0	0.1	40.8	0.0
Level of Service	F	A	B	A	D	A
Approach Delay (s)		197.5	15.9		33.5	
Approach LOS		F	B		C	

Intersection Summary			
HCM Average Control Delay	133.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

HCM Signalized Intersection Capacity Analysis
5: Hawthorn St & N. Harbor Dr

7/18/2012

Movement	WBL	WBR	NBL	NBR	SEL	SER
Lane Configurations	↰	↱↱↱	↰↰↰			↱↱↱↱
Volume (vph)	140	1157	629	0	0	2084
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	0.76	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	3530	4990			3903
Flt Permitted	0.95	1.00	0.95			1.00
Satd. Flow (perm)	1770	3530	4990			3903
Peak-hour factor, PHF	0.60	0.60	0.85	0.85	0.85	0.85
Adj. Flow (vph)	233	1928	740	0	0	2452
RTOR Reduction (vph)	0	196	0	0	0	634
Lane Group Flow (vph)	233	1732	740	0	0	1819
Confl. Peds. (#/hr)	10	10	10	10	10	10
Turn Type		Perm				custom
Protected Phases	8		2			
Permitted Phases		8				6
Actuated Green, G (s)	27.0	27.0	33.0			33.0
Effective Green, g (s)	29.0	29.0	35.0			35.0
Actuated g/C Ratio	0.41	0.41	0.50			0.50
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)	733	1462	2495			1952
v/s Ratio Prot	0.13		0.15			
v/s Ratio Perm		c0.49				c0.47
v/c Ratio	0.32	1.18	0.30			0.93
Uniform Delay, d1	13.8	20.5	10.3			16.4
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.3	90.3	0.1			8.7
Delay (s)	14.1	110.8	10.3			25.1
Level of Service	B	F	B			C
Approach Delay (s)	100.4		10.3		25.1	
Approach LOS	F		B		C	

Intersection Summary			
HCM Average Control Delay	53.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: Grape St & N. Harbor Dr.

7/18/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑	↱	↰↰↰	↑
Volume (vph)	0	0	819	440	1158	1296
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	0.94	1.00
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	1552	4990	1863
Flt Permitted			1.00	1.00	0.95	1.00
Satd. Flow (perm)			5085	1552	4990	1863
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	964	518	1362	1525
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	964	518	1362	1525
Confl. Peds. (#/hr)	10	10		10	10	
Turn Type				Perm	Prot	
Protected Phases			2		1	6
Permitted Phases				2		
Actuated Green, G (s)			32.0	32.0	12.9	54.9
Effective Green, g (s)			34.0	34.0	14.9	54.9
Actuated g/C Ratio			0.62	0.62	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)			3149	961	1354	1863
v/s Ratio Prot			0.19		c0.27	c0.82
v/s Ratio Perm				0.33		
v/c Ratio			0.31	0.54	1.01	0.82
Uniform Delay, d1			4.9	6.0	20.0	0.0
Progression Factor			1.00	1.00	1.00	1.00
Incremental Delay, d2			0.1	0.6	25.9	2.9
Delay (s)			5.0	6.6	45.9	2.9
Level of Service			A	A	D	A
Approach Delay (s)	0.0		5.5			23.2
Approach LOS	A		A			C

Intersection Summary

HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	54.9	Sum of lost time (s)	3.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Scenario B

HCM Signalized Intersection Capacity Analysis
7: Laurel St & Pacific Hwy

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↱		↰	↑↱		↰	↑↑↱		↰	↑↑↱	
Volume (vph)	756	1423	80	100	1039	180	150	1110	280	250	830	1019
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	5037		1770	3446		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	5037		1770	3446		1770	4902		1770	4589	
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)	840	1581	89	111	1154	200	167	1233	311	278	922	1132
RTOR Reduction (vph)	0	5	0	0	11	0	0	37	0	0	185	0
Lane Group Flow (vph)	840	1665	0	111	1343	0	167	1507	0	278	1869	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	2229		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	1.90	0.75		0.69	1.38		1.42	1.15		1.57	1.74dr	
Uniform Delay, d1	45.0	27.9		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	411.7	1.4		11.6	175.5		229.2	78.1		282.2	165.7	
Delay (s)	456.7	29.3		64.5	218.5		285.2	122.1		336.2	207.7	
Level of Service	F	C		E	F		F	F		F	F	
Approach Delay (s)		172.3			206.8			138.0			223.0	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	186.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	137.7%	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

HCM Signalized Intersection Capacity Analysis
8: Hawthorn St & Pacific Hwy
7/18/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					◂↑↑↑▸		↰	↑↑↑			↑↑↑▸	
Volume (vph)	0	0	0	180	1198	150	169	910	0	0	680	50
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					0.86		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)					6245		1770	5085			5021	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					6245		1770	5085			5021	
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	1711	214	241	1300	0	0	971	74
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	0	0	0	2158	0	241	1300	0	0	1038	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	30.2			19.2	
Effective Green, g (s)					22.1		8.0	32.2			21.2	
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)					2289		235	2715			1765	
v/s Ratio Prot							c0.14	0.26			c0.21	
v/s Ratio Perm					0.35							
v/c Ratio					6.76dl		1.03	0.48			0.59	
Uniform Delay, d1					18.5		26.1	8.8			16.0	
Progression Factor					1.00		1.00	1.00			1.00	
Incremental Delay, d2					8.7		65.5	0.1			0.5	
Delay (s)					27.2		91.6	8.9			16.5	
Level of Service					C		F	A			B	
Approach Delay (s)		0.0			27.2			21.9			16.5	
Approach LOS		A			C			C			B	

Intersection Summary

HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	116.3%	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

Scenario B

HCM Signalized Intersection Capacity Analysis
9: Grape St & Pacific Hwy
7/18/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		◂↑↑↑▸						↑↑↑▸		↰	↑↑↑	
Volume (vph)	90	2445	93	0	0	0	0	1119	1020	220	810	0
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		0.86						0.91		1.00	0.91	
Frpb, ped/bikes		1.00						0.99		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		1.00	1.00	
Frt		0.99						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6356						4671		1770	5085	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		6356						4671		1770	5085	
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	2717	103	0	0	0	0	1243	1133	242	920	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	2913	0	0	0	0	0	2375	0	242	920	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Turn Type	Prot									Prot		
Protected Phases	7	4						2		1	6	
Permitted Phases												
Actuated Green, G (s)		25.0						26.0		4.0	35.0	
Effective Green, g (s)		27.0						28.0		6.0	37.0	
Actuated g/C Ratio		0.39						0.40		0.09	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)		2452						1868		152	2688	
v/s Ratio Prot								c0.51		c0.14	0.18	
v/s Ratio Perm		0.46										
v/c Ratio		8.58dl						1.77dr		1.59	0.34	
Uniform Delay, d1		21.5						21.0		32.0	9.5	
Progression Factor		1.00						1.00		1.00	1.00	
Incremental Delay, d2		88.9						126.4		295.2	0.1	
Delay (s)		110.4						147.4		327.2	9.6	
Level of Service		F						F		F	A	
Approach Delay (s)		110.4			0.0			147.4			75.7	
Approach LOS		F			A			F			E	

Intersection Summary

HCM Average Control Delay	117.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
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

HCM Signalized Intersection Capacity Analysis
10: Sheraton Dwy & Harbor Island Drive

7/16/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	10	35	15	10	50	20	586	25	30	679	90
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			0.99	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		0.97			0.95	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1726			1624	1472	1770	3512		1770	3463	
Flt Permitted		0.78			0.90	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1392			1485	1472	1770	3512		1770	3463	
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	651	28	33	754	100
RTOR Reduction (vph)	0	8	0	0	10	24	0	4	0	0	11	0
Lane Group Flow (vph)	0	175	0	0	34	16	22	675	0	33	843	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)		23.3			23.3	23.3	1.2	23.0		2.5	24.3	
Effective Green, g (s)		25.3			25.3	25.3	3.2	25.0		4.5	26.3	
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)		552			589	584	89	1376		125	1428	
v/s Ratio Prot							0.01	0.19		c0.02	c0.24	
v/s Ratio Perm		c0.13			0.02	0.01						
v/c Ratio		0.32			0.06	0.03	0.25	0.49		0.26	0.59	
Uniform Delay, d1		13.3			11.9	11.7	29.1	14.6		28.1	14.6	
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	0.3		1.1	0.7	
Delay (s)		13.6			11.9	11.8	30.6	14.9		29.2	15.2	
Level of Service		B			B	B	C	B		C	B	
Approach Delay (s)		13.6			11.9			15.4			15.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	63.8	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

Scenario B

HCM Signalized Intersection Capacity Analysis
11: Harbor Island Dr (west) & Harbor Island Drive

7/16/2012

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	300	40	30	281	384	290
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
Peak-hour factor, PHF	0.45	0.45	0.45	0.92	0.45	0.92
Adj. Flow (vph)	667	89	67	305	853	315
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	374	382	67	305	853	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)	21.1	21.1	7.8	67.4	23.5	67.4
Effective Green, g (s)	23.1	23.1	9.8	67.4	25.5	67.4
Actuated g/C Ratio	0.34	0.34	0.15	1.00	0.38	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)	561	569	264	1519	1265	1503
v/s Ratio Prot	0.23	c0.23	0.04		c0.26	
v/s Ratio Perm				0.20		c0.21
v/c Ratio	0.67	0.67	0.25	0.20	0.67	0.21
Uniform Delay, d1	18.9	18.9	25.6	0.0	17.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	3.1	0.5	0.3	1.4	0.3
Delay (s)	21.9	22.0	26.1	0.3	18.9	0.3
Level of Service	C	C	C	A	B	A
Approach Delay (s)		21.9	4.9		13.9	
Approach LOS		C	A		B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	6.0
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX C

CITY OF SAN DIEGO ROADWAY CLASSIFICATION TABLE

TABLE 2 (MODIFIED)
CITY OF SAN DIEGO ROADWAY CLASSIFICATIONS, LEVELS OF SERVICE (LOS) AND AVERAGE DAILY TRAFFIC (ADT)

			LEVEL OF SERVICE				
STREET CLASSIFICATION	LANES	CROSS SECTIONS	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.

APPENDIX D

ARTERIAL ANALYSIS CALCULATIONS SHEETS

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	12.9	32.8	0.09	9.9	D
Total	IV		19.9	12.9	32.8	0.09	9.9	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	180.3	194.7	0.05	1.0	F
N. Harbor Dr	IV	25	17.8	5.0	22.8	0.08	12.8	D
Total	IV		32.2	185.3	217.5	0.14	2.2	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	12.9	49.1	0.38	27.7	C
Kettner	II	40	12.1	11.9	24.0	0.11	15.8	E
Total	II		48.3	24.8	73.1	0.48	23.8	C

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	12.1	19.5	31.6	0.11	12.0	F
N. Harbor Dr	II	40	36.2	35.0	71.2	0.38	19.1	D
Total	II		48.3	54.5	102.8	0.48	16.9	E

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	52.3	12.3	64.6	0.34	19.0	B
Harbor Island Drive	IV	25	26.5	26.7	53.2	0.15	9.9	D
	IV	25	77.3	17.9	95.2	0.54	20.3	B
Laurel St	IV	25	58.0	3.0	61.0	0.38	22.4	B
N. Harbor Dr	IV	25	69.0	1.2	70.2	0.45	23.1	B
Grape St	IV	25	18.0	0.1	18.1	0.07	13.5	C
Total	IV		301.1	61.2	362.3	1.92	19.1	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
Grape St	IV	25	25.6	3.4	29.0	0.14	17.7	C
Hawthorn St	IV	25	18.0	20.0	38.0	0.07	6.4	F
Laurel St	IV	25	69.0	18.2	87.2	0.45	18.6	C
Rental Car Access Rd	IV	25	58.0	28.2	86.2	0.38	15.8	C
Harbor Island Drive	IV	25	77.3	22.1	99.4	0.54	19.5	B
Terminal 2 Entrance	IV	25	26.5	23.4	49.9	0.15	10.6	D
Total	IV		274.4	115.3	389.7	1.72	15.9	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	123.1	143.0	0.09	2.3	F
Total	IV		19.9	123.1	143.0	0.09	2.3	F

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	24.0	52.3	0.16	10.8	D
N. Harbor Dr	IV	25	17.8	15.4	33.2	0.08	8.8	E
Total	IV		46.1	39.4	85.5	0.24	10.0	D

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	14.4	50.6	0.38	26.8	C
Kettner	II	40	12.3	15.2	27.5	0.11	14.1	E
Total	II		48.5	29.6	78.1	0.48	22.3	C

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	5.6	10.1	15.7	0.05	11.2	F
Pacific Hwy	II	40	12.3	19.2	31.5	0.11	12.3	F
N. Harbor Dr	II	40	36.2	24.5	60.7	0.38	22.4	C
Total	II		54.1	53.8	107.9	0.53	17.8	D

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	52.3	13.5	65.8	0.34	18.7	C
Harbor Island Drive	IV	25	26.5	34.1	60.6	0.15	8.7	E
	IV	25	79.7	26.4	106.1	0.52	17.7	C
Laurel St	IV	25	60.5	4.5	65.0	0.40	21.9	B
N. Harbor Dr	IV	25	69.0	6.5	75.5	0.45	21.5	B
Grape St	IV	25	18.0	0.2	18.2	0.07	13.4	C
Total	IV		306.0	85.2	391.2	1.92	17.7	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
Grape St	IV	25	25.6	4.4	30.0	0.14	17.1	C
Hawthorn St	IV	25	18.0	9.6	27.6	0.07	8.9	E
Laurel St	IV	25	69.0	15.4	84.4	0.45	19.2	B
Rental Car Access Rd	IV	25	60.5	16.8	77.3	0.40	18.4	C
Harbor Island Drive	IV	25	79.7	20.8	100.5	0.52	18.7	C
Terminal 2 Entrance	IV	25	26.5	20.9	47.4	0.15	11.2	D
Total	IV		279.3	87.9	367.2	1.72	16.9	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	15.8	35.7	0.09	9.1	D
Total	IV		19.9	15.8	35.7	0.09	9.1	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	215.3	229.7	0.05	0.8	F
N. Harbor Dr	IV	25	17.8	8.7	26.5	0.08	11.0	D
Total	IV		32.2	224.0	256.2	0.14	1.9	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	15.4	51.6	0.38	26.3	C
Kettner	II	40	12.4	12.8	25.2	0.11	15.4	E
Total	II		48.6	28.2	76.8	0.48	22.7	C

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	12.1	10.6	22.7	0.11	16.7	E
Pacific Hwy	II	40	12.4	21.6	34.0	0.11	11.4	F
N. Harbor Dr	II	40	36.2	37.9	74.1	0.38	18.3	D
Total	II		60.7	70.1	130.8	0.59	16.2	E

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	52.3	12.3	64.6	0.34	19.0	B
Harbor Island Drive	IV	25	26.5	33.5	60.0	0.15	8.8	E
	IV	25	77.3	18.6	95.9	0.54	20.2	B
Laurel St	IV	25	58.0	3.0	61.0	0.38	22.4	B
N. Harbor Dr	IV	25	69.0	2.1	71.1	0.45	22.8	B
Grape St	IV	25	18.0	0.1	18.1	0.07	13.5	C
Total	IV		301.1	69.6	370.7	1.92	18.7	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
Grape St	IV	25	25.6	3.4	29.0	0.14	17.7	C
Hawthorn St	IV	25	18.0	11.0	29.0	0.07	8.4	E
Laurel St	IV	25	69.0	20.6	89.6	0.45	18.1	C
Rental Car Access Rd	IV	25	58.0	38.7	96.7	0.38	14.1	C
Harbor Island Drive	IV	25	77.3	50.7	128.0	0.54	15.1	C
Terminal 2 Entrance	IV	25	26.5	23.7	50.2	0.15	10.5	D
Total	IV		274.4	148.1	422.5	1.72	14.7	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	189.4	209.3	0.09	1.6	F
Total	IV		19.9	189.4	209.3	0.09	1.6	F

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	28.7	57.0	0.16	9.9	D
N. Harbor Dr	IV	25	17.8	16.4	34.2	0.08	8.5	E
Total	IV		46.1	45.1	91.2	0.24	9.4	D

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	16.1	52.3	0.38	26.0	C
Kettner	II	40	12.3	17.5	29.8	0.11	12.9	F
Total	II		48.5	33.6	82.1	0.48	21.2	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	9.6	10.5	20.1	0.08	14.9	E
Pacific Hwy	II	40	12.3	20.9	33.2	0.11	11.6	F
N. Harbor Dr	II	40	36.2	26.7	62.9	0.38	21.6	D
Total	II		58.1	58.1	116.2	0.57	17.6	D

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	52.3	15.2	67.5	0.34	18.2	C
Harbor Island Drive	IV	25	26.5	62.3	88.8	0.15	6.0	F
	IV	25	79.7	40.5	120.2	0.52	15.6	C
Laurel St	IV	25	60.5	4.5	65.0	0.40	21.9	B
N. Harbor Dr	IV	25	69.0	10.5	79.5	0.45	20.4	B
Grape St	IV	25	18.0	0.2	18.2	0.07	13.4	C
Total	IV		306.0	133.2	439.2	1.92	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
Grape St	IV	25	25.6	4.3	29.9	0.14	17.1	C
Hawthorn St	IV	25	18.0	10.6	28.6	0.07	8.6	E
Laurel St	IV	25	69.0	15.8	84.8	0.45	19.2	B
Rental Car Access Rd	IV	25	60.5	22.9	83.4	0.40	17.1	C
Harbor Island Drive	IV	25	79.7	25.1	104.8	0.52	17.9	C
Terminal 2 Entrance	IV	25	26.5	21.3	47.8	0.15	11.1	D
Total	IV		279.3	100.0	379.3	1.72	16.4	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	15.9	35.8	0.09	9.1	D
Total	IV		19.9	15.9	35.8	0.09	9.1	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	222.9	237.3	0.05	0.8	F
N. Harbor Dr	IV	25	17.8	8.7	26.5	0.08	11.0	D
Total	IV		32.2	231.6	263.8	0.14	1.8	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	16.1	52.3	0.38	26.0	C
Kettner	II	40	20.1	21.2	41.3	0.17	15.2	E
Total	II		56.3	37.3	93.6	0.55	21.2	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	11.2	17.1	28.3	0.10	12.4	F
Pacific Hwy	II	40	20.1	35.5	55.6	0.17	11.3	F
N. Harbor Dr	II	40	36.2	38.3	74.5	0.38	18.2	D
Total	II		67.5	90.9	158.4	0.65	14.8	E

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	52.3	12.4	64.7	0.34	19.0	B
Harbor Island Drive	IV	25	26.5	38.3	64.8	0.15	8.2	E
	IV	25	77.3	18.9	96.2	0.54	20.1	B
Laurel St	IV	25	58.0	3.0	61.0	0.38	22.4	B
N. Harbor Dr	IV	25	69.0	2.1	71.1	0.45	22.8	B
Grape St	IV	25	18.0	0.1	18.1	0.07	13.5	C
Total	IV		301.1	74.8	375.9	1.92	18.4	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
Grape St	IV	25	25.6	3.4	29.0	0.14	17.7	C
Hawthorn St	IV	25	18.0	11.9	29.9	0.07	8.2	E
Laurel St	IV	25	69.0	20.6	89.6	0.45	18.1	C
Rental Car Access Rd	IV	25	58.0	44.6	102.6	0.38	13.3	C
Harbor Island Drive	IV	25	77.3	51.7	129.0	0.54	15.0	C
Terminal 2 Entrance	IV	25	26.5	23.9	50.4	0.15	10.5	D
Total	IV		274.4	156.1	430.5	1.72	14.4	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	230.2	250.1	0.09	1.3	F
Total	IV		19.9	230.2	250.1	0.09	1.3	F

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	31.0	59.3	0.16	9.5	D
N. Harbor Dr	IV	25	17.8	17.1	34.9	0.08	8.4	E
Total	IV		46.1	48.1	94.2	0.24	9.1	D

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	17.7	53.9	0.38	25.2	C
Kettner	II	40	15.0	22.5	37.5	0.13	12.5	F
Total	II		51.2	40.2	91.4	0.51	20.0	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	15.8	10.6	26.4	0.14	18.8	D
Pacific Hwy	II	40	15.0	26.2	41.2	0.13	11.4	F
N. Harbor Dr	II	40	36.2	27.6	63.8	0.38	21.3	D
Total	II		67.0	64.4	131.4	0.65	17.7	D

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	52.3	15.2	67.5	0.34	18.2	C
Harbor Island Drive	IV	25	26.5	94.6	121.1	0.15	4.4	F
	IV	25	79.7	49.5	129.2	0.52	14.5	C
Laurel St	IV	25	60.5	4.5	65.0	0.40	21.9	B
N. Harbor Dr	IV	25	69.0	14.9	83.9	0.45	19.4	B
Grape St	IV	25	18.0	0.2	18.2	0.07	13.4	C
Total	IV		306.0	178.9	484.9	1.92	14.3	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
Grape St	IV	25	25.6	4.3	29.9	0.14	17.1	C
Hawthorn St	IV	25	18.0	13.8	31.8	0.07	7.7	E
Laurel St	IV	25	69.0	15.7	84.7	0.45	19.2	B
Rental Car Access Rd	IV	25	60.5	24.6	85.1	0.40	16.7	C
Harbor Island Drive	IV	25	79.7	26.1	105.8	0.52	17.7	C
Terminal 2 Entrance	IV	25	26.5	21.4	47.9	0.15	11.0	D
Total	IV		279.3	105.9	385.2	1.72	16.1	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	16.1	36.0	0.09	9.0	D
Total	IV		19.9	16.1	36.0	0.09	9.0	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	222.6	237.0	0.05	0.8	F
N. Harbor Dr	IV	25	17.8	9.2	27.0	0.08	10.8	D
Total	IV		32.2	231.8	264.0	0.14	1.8	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	16.1	52.3	0.38	26.0	C
Kettner	II	40	20.1	21.2	41.3	0.17	15.2	E
Total	II		56.3	37.3	93.6	0.55	21.2	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	11.2	17.1	28.3	0.10	12.4	F
Pacific Hwy	II	40	20.1	35.6	55.7	0.17	11.3	F
N. Harbor Dr	II	40	36.2	38.3	74.5	0.38	18.2	D
Total	II		67.5	91.0	158.5	0.65	14.8	E

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	52.3	12.4	64.7	0.34	19.0	B
Harbor Island Drive	IV	25	26.5	39.3	65.8	0.15	8.0	E
	IV	25	77.3	19.1	96.4	0.54	20.1	B
Laurel St	IV	25	58.0	3.0	61.0	0.38	22.4	B
N. Harbor Dr	IV	25	69.0	2.2	71.2	0.45	22.8	B
Grape St	IV	25	18.0	0.1	18.1	0.07	13.5	C
Total	IV		301.1	76.1	377.2	1.92	18.4	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
Grape St	IV	25	25.6	3.4	29.0	0.14	17.7	C
Hawthorn St	IV	25	18.0	11.7	29.7	0.07	8.2	E
Laurel St	IV	25	69.0	20.6	89.6	0.45	18.1	C
Rental Car Access Rd	IV	25	58.0	44.2	102.2	0.38	13.3	C
Harbor Island Drive	IV	25	77.3	55.4	132.7	0.54	14.6	C
Terminal 2 Entrance	IV	25	26.5	23.9	50.4	0.15	10.5	D
Total	IV		274.4	159.2	433.6	1.72	14.3	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	228.0	247.9	0.09	1.3	F
Total	IV		19.9	228.0	247.9	0.09	1.3	F

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	29.6	57.9	0.16	9.8	D
N. Harbor Dr	IV	25	17.8	17.1	34.9	0.08	8.4	E
Total	IV		46.1	46.7	92.8	0.24	9.2	D

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	17.7	53.9	0.38	25.2	C
Kettner	II	40	15.0	22.5	37.5	0.13	12.5	F
Total	II		51.2	40.2	91.4	0.51	20.0	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	15.8	10.6	26.4	0.14	18.8	D
Pacific Hwy	II	40	15.0	26.4	41.4	0.13	11.3	F
N. Harbor Dr	II	40	36.2	28.0	64.2	0.38	21.2	D
Total	II		67.0	65.0	132.0	0.65	17.6	D

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	52.3	15.3	67.6	0.34	18.2	C
Harbor Island Drive	IV	25	26.5	100.4	126.9	0.15	4.2	F
	IV	25	79.7	47.9	127.6	0.52	14.7	C
Laurel St	IV	25	60.5	4.4	64.9	0.40	21.9	B
N. Harbor Dr	IV	25	69.0	14.5	83.5	0.45	19.5	B
Grape St	IV	25	18.0	0.2	18.2	0.07	13.4	C
Total	IV		306.0	182.7	488.7	1.92	14.2	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
Grape St	IV	25	25.6	4.3	29.9	0.14	17.1	C
Hawthorn St	IV	25	18.0	13.8	31.8	0.07	7.7	E
Laurel St	IV	25	69.0	15.7	84.7	0.45	19.2	B
Rental Car Access Rd	IV	25	60.5	25.2	85.7	0.40	16.6	C
Harbor Island Drive	IV	25	79.7	26.1	105.8	0.52	17.7	C
Terminal 2 Entrance	IV	25	26.5	21.4	47.9	0.15	11.0	D
Total	IV		279.3	106.5	385.8	1.72	16.1	C

APPENDIX E

CUMULATIVE PROJECTS – GROWTH FACTOR CALCULATION SHEETS

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%	

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	**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	**2.6%**	

APPENDIX F

CMP ANALYSIS CALCULATION SHEETS

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	12.9	32.8	0.09	9.9	D
Total	IV		19.9	12.9	32.8	0.09	9.9	D

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.6	11.0	35.6	0.14	13.8	C
N. Harbor Dr	IV	25	26.0	30.5	56.5	0.14	9.2	D
Total	IV		50.6	41.5	92.1	0.28	11.0	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	11.3	16.4	0.02	4.2	F
Sheraton Dwy	IV	25	26.0	9.8	35.8	0.14	14.5	C
Harbor Island Dr (we	IV	25	24.6	10.2	34.8	0.14	14.1	C
Total	IV		55.7	31.3	87.0	0.30	12.4	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	180.3	194.7	0.05	1.0	F
N. Harbor Dr	IV	25	17.8	5.0	22.8	0.08	12.8	D
Total	IV		32.2	185.3	217.5	0.14	2.2	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	12.9	49.1	0.38	27.7	C
Kettner	II	40	12.1	11.9	24.0	0.11	15.8	E
Total	II		48.3	24.8	73.1	0.48	23.8	C

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	12.1	19.5	31.6	0.11	12.0	F
N. Harbor Dr	II	40	36.2	35.0	71.2	0.38	19.1	D
Total	II		48.3	54.5	102.8	0.48	16.9	E

8/14/2013

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
McCain Rd	IV	25	24.8	11.6	36.4	0.11	11.1	D
Terminal 2 Entrance	IV	25	35.1	12.3	47.4	0.23	17.4	C
Harbor Island Drive	IV	25	26.5	26.7	53.2	0.15	9.9	D
	IV	25	77.3	17.9	95.2	0.54	20.3	B
Laurel St	IV	25	58.0	3.0	61.0	0.38	22.4	B
N. Harbor Dr	IV	25	69.0	1.2	70.2	0.45	23.1	B
Grape St	IV	25	18.0	0.1	18.1	0.07	13.5	C
Total	IV		308.7	72.8	381.5	1.92	18.2	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
Grape St	IV	25	25.6	3.4	29.0	0.14	17.7	C
Hawthorn St	IV	25	18.0	20.0	38.0	0.07	6.4	F
Laurel St	IV	25	69.0	18.2	87.2	0.45	18.6	C
Rental Car Access Rd	IV	25	58.0	28.2	86.2	0.38	15.8	C
Harbor Island Drive	IV	25	77.3	22.1	99.4	0.54	19.5	B
Terminal 2 Entrance	IV	25	26.5	23.4	49.9	0.15	10.6	D
McCain Rd	IV	25	35.1	14.2	49.3	0.23	16.7	C
Total	IV		309.5	129.5	439.0	1.95	16.0	C

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	4.4	7.8	0.02	10.7	E
Grape St	III	35	22.1	9.4	31.5	0.17	19.7	C
Hawthorn St	III	35	9.7	9.8	19.5	0.07	12.4	E
Laurel St	III	35	33.7	12.9	46.6	0.28	21.7	C
Total	III		68.9	36.5	105.4	0.54	18.6	C

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	11.3	37.9	0.22	21.1	C
Hawthorn St	III	35	33.7	14.9	48.6	0.28	20.8	C
Grape St	III	35	9.7	10.1	19.8	0.07	12.2	E
Cedar Street	III	35	22.1	4.8	26.9	0.17	23.1	C
Total	III		92.1	41.1	133.2	0.74	20.1	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	129.2	149.1	0.09	2.2	F
Total	IV		19.9	129.2	149.1	0.09	2.2	F

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.4	12.5	36.9	0.14	13.2	C
N. Harbor Dr	IV	25	26.1	32.4	58.5	0.15	8.9	E
Total	IV		50.5	44.9	95.4	0.28	10.6	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	11.3	16.4	0.02	4.2	F
Sheraton Dwy	IV	25	26.1	12.4	38.5	0.15	13.6	C
Harbor Island Dr (we	IV	25	24.4	12.7	37.1	0.14	13.2	C
Total	IV		55.6	36.4	92.0	0.30	11.7	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	24.0	52.3	0.16	10.8	D
N. Harbor Dr	IV	25	17.8	15.4	33.2	0.08	8.8	E
Total	IV		46.1	39.4	85.5	0.24	10.0	D

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	14.4	50.6	0.38	26.8	C
Kettner	II	40	12.3	15.2	27.5	0.11	14.1	E
Total	II		48.5	29.6	78.1	0.48	22.3	C

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	5.6	10.1	15.7	0.05	11.2	F
Pacific Hwy	II	40	12.3	19.2	31.5	0.11	12.3	F
N. Harbor Dr	II	40	36.2	24.5	60.7	0.38	22.4	C
Total	II		54.1	53.8	107.9	0.53	17.8	D

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
McCain Rd	IV	25	24.8	11.3	36.1	0.11	11.2	D
Terminal 2 Entrance	IV	25	35.1	13.5	48.6	0.23	17.0	C
Harbor Island Drive	IV	25	26.5	34.1	60.6	0.15	8.7	E
	IV	25	79.7	26.4	106.1	0.52	17.7	C
Laurel St	IV	25	60.5	4.5	65.0	0.40	21.9	B
N. Harbor Dr	IV	25	69.0	6.5	75.5	0.45	21.5	B
Grape St	IV	25	18.0	0.2	18.2	0.07	13.4	C
Total	IV		313.6	96.5	410.1	1.92	16.9	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
Grape St	IV	25	25.6	4.4	30.0	0.14	17.1	C
Hawthorn St	IV	25	18.0	9.6	27.6	0.07	8.9	E
Laurel St	IV	25	69.0	15.4	84.4	0.45	19.2	B
Rental Car Access Rd	IV	25	60.5	16.8	77.3	0.40	18.4	C
Harbor Island Drive	IV	25	79.7	20.8	100.5	0.52	18.7	C
Terminal 2 Entrance	IV	25	26.5	20.9	47.4	0.15	11.2	D
McCain Rd	IV	25	35.1	12.4	47.5	0.23	17.4	C
Total	IV		314.4	100.3	414.7	1.95	17.0	C

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	5.2	8.6	0.02	9.7	F
Grape St	III	35	22.1	23.2	45.3	0.17	13.7	E
Hawthorn St	III	35	9.7	9.9	19.6	0.07	12.3	E
Laurel St	III	35	33.7	14.6	48.3	0.28	20.9	C
Total	III		68.9	52.9	121.8	0.54	16.1	D

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	12.6	39.2	0.22	20.4	C
Hawthorn St	III	35	33.7	17.7	51.4	0.28	19.7	C
Grape St	III	35	9.7	9.1	18.8	0.07	12.9	E
Cedar Street	III	35	22.1	4.7	26.8	0.17	23.2	C
Total	III		92.1	44.1	136.2	0.74	19.6	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	15.8	35.7	0.09	9.1	D
Total	IV		19.9	15.8	35.7	0.09	9.1	D

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.6	12.2	36.8	0.14	13.4	C
N. Harbor Dr	IV	25	26.0	31.6	57.6	0.14	9.0	D
Total	IV		50.6	43.8	94.4	0.28	10.7	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	11.4	16.5	0.02	4.2	F
Sheraton Dwy	IV	25	26.0	11.3	37.3	0.14	13.9	C
Harbor Island Dr (we	IV	25	24.6	10.3	34.9	0.14	14.1	C
Total	IV		55.7	33.0	88.7	0.30	12.2	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	248.3	262.7	0.05	0.7	F
N. Harbor Dr	IV	25	17.8	6.8	24.6	0.08	11.9	D
Total	IV		32.2	255.1	287.3	0.14	1.7	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	15.4	51.6	0.38	26.3	C
Kettner	II	40	12.4	12.8	25.2	0.11	15.4	E
Total	II		48.6	28.2	76.8	0.48	22.7	C

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	12.4	21.6	34.0	0.11	11.4	F
N. Harbor Dr	II	40	36.2	36.9	73.1	0.38	18.6	D
Total	II		48.6	58.5	107.1	0.48	16.3	E

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
McCain Rd	IV	25	24.8	11.7	36.5	0.11	11.1	D
Terminal 2 Entrance	IV	25	35.1	13.3	48.4	0.23	17.0	C
Harbor Island Drive	IV	25	26.5	30.8	57.3	0.15	9.2	D
	IV	25	77.3	18.6	95.9	0.54	20.2	B
Laurel St	IV	25	58.0	3.1	61.1	0.38	22.3	B
N. Harbor Dr	IV	25	69.0	1.0	70.0	0.45	23.2	B
Grape St	IV	25	18.0	0.2	18.2	0.07	13.4	C
Total	IV		308.7	78.7	387.4	1.92	17.9	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
Grape St	IV	25	25.6	3.5	29.1	0.14	17.6	C
Hawthorn St	IV	25	18.0	10.8	28.8	0.07	8.5	E
Laurel St	IV	25	69.0	18.5	87.5	0.45	18.6	C
Rental Car Access Rd	IV	25	58.0	38.7	96.7	0.38	14.1	C
Harbor Island Drive	IV	25	77.3	38.9	116.2	0.54	16.6	C
Terminal 2 Entrance	IV	25	26.5	24.0	50.5	0.15	10.5	D
McCain Rd	IV	25	35.1	14.2	49.3	0.23	16.7	C
Total	IV		309.5	148.6	458.1	1.95	15.4	C

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	5.3	8.7	0.02	9.6	F
Grape St	III	35	22.1	12.0	34.1	0.17	18.2	C
Hawthorn St	III	35	9.7	9.5	19.2	0.07	12.6	E
Laurel St	III	35	33.7	13.1	46.8	0.28	21.6	C
Total	III		68.9	39.9	108.8	0.54	18.0	D

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	12.9	39.5	0.22	20.2	C
Hawthorn St	III	35	33.7	15.5	49.2	0.28	20.5	C
Grape St	III	35	9.7	10.2	19.9	0.07	12.2	E
Cedar Street	III	35	22.1	5.6	27.7	0.17	22.4	C
Total	III		92.1	44.2	136.3	0.74	19.6	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	189.4	209.3	0.09	1.6	F
Total	IV		19.9	189.4	209.3	0.09	1.6	F

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.4	15.3	39.7	0.14	12.3	D
N. Harbor Dr	IV	25	26.1	34.9	61.0	0.15	8.6	E
Total	IV		50.5	50.2	100.7	0.28	10.0	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	12.6	17.7	0.02	3.9	F
Sheraton Dwy	IV	25	26.1	13.0	39.1	0.15	13.4	C
Harbor Island Dr (we	IV	25	24.4	12.7	37.1	0.14	13.2	C
Total	IV		55.6	38.3	93.9	0.30	11.5	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	28.7	57.0	0.16	9.9	D
N. Harbor Dr	IV	25	17.8	16.4	34.2	0.08	8.5	E
Total	IV		46.1	45.1	91.2	0.24	9.4	D

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	16.1	52.3	0.38	26.0	C
Kettner	II	40	12.3	17.5	29.8	0.11	12.9	F
Total	II		48.5	33.6	82.1	0.48	21.2	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	9.6	10.5	20.1	0.08	14.9	E
Pacific Hwy	II	40	12.3	20.9	33.2	0.11	11.6	F
N. Harbor Dr	II	40	36.2	26.7	62.9	0.38	21.6	D
Total	II		58.1	58.1	116.2	0.57	17.6	D

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
McCain Rd	IV	25	24.8	13.1	37.9	0.11	10.7	D
	IV	25	35.1	15.2	50.3	0.23	16.4	C
Harbor Island Drive	IV	25	26.5	62.3	88.8	0.15	6.0	F
	IV	25	79.7	40.5	120.2	0.52	15.6	C
Laurel St	IV	25	60.5	4.5	65.0	0.40	21.9	B
N. Harbor Dr	IV	25	69.0	10.5	79.5	0.45	20.4	B
Grape St	IV	25	18.0	0.2	18.2	0.07	13.4	C
Total	IV		313.6	146.3	459.9	1.92	15.1	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
Grape St	IV	25	25.6	4.3	29.9	0.14	17.1	C
Hawthorn St	IV	25	18.0	10.6	28.6	0.07	8.6	E
Laurel St	IV	25	69.0	15.8	84.8	0.45	19.2	B
Rental Car Access Rd	IV	25	60.5	22.9	83.4	0.40	17.1	C
Harbor Island Drive	IV	25	79.7	25.1	104.8	0.52	17.9	C
Terminal 2 Entrance	IV	25	26.5	21.3	47.8	0.15	11.1	D
McCain Rd	IV	25	35.1	14.9	50.0	0.23	16.5	C
Total	IV		314.4	114.9	429.3	1.95	16.4	C

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	5.2	8.6	0.02	9.7	F
Grape St	III	35	22.1	24.1	46.2	0.17	13.4	E
Hawthorn St	III	35	9.7	10.1	19.8	0.07	12.2	E
Laurel St	III	35	33.7	15.7	49.4	0.28	20.5	C
Total	III		68.9	55.1	124.0	0.54	15.8	D

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	14.2	40.8	0.22	19.6	C
Hawthorn St	III	35	33.7	18.1	51.8	0.28	19.5	C
Grape St	III	35	9.7	9.2	18.9	0.07	12.8	E
Cedar Street	III	35	22.1	4.7	26.8	0.17	23.2	C
Total	III		92.1	46.2	138.3	0.74	19.3	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	16.2	36.1	0.09	9.0	D
Total	IV		19.9	16.2	36.1	0.09	9.0	D

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.6	13.7	38.3	0.14	12.8	D
N. Harbor Dr	IV	25	26.0	34.3	60.3	0.14	8.6	E
Total	IV		50.6	48.0	98.6	0.28	10.3	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	15.9	21.0	0.02	3.3	F
Sheraton Dwy	IV	25	26.0	11.6	37.6	0.14	13.8	C
Harbor Island Dr (we	IV	25	24.6	12.0	36.6	0.14	13.4	C
Total	IV		55.7	39.5	95.2	0.30	11.4	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	256.3	270.7	0.05	0.7	F
N. Harbor Dr	IV	25	17.8	7.1	24.9	0.08	11.7	D
Total	IV		32.2	263.4	295.6	0.14	1.6	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	15.5	51.7	0.38	26.3	C
Kettner	II	40	20.1	13.0	33.1	0.17	19.0	D
Total	II		56.3	28.5	84.8	0.55	23.4	C

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	20.1	21.8	41.9	0.17	15.0	E
N. Harbor Dr	II	40	36.2	37.4	73.6	0.38	18.5	D
Total	II		56.3	59.2	115.5	0.55	17.2	D

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
McCain Rd	IV	25	24.8	11.7	36.5	0.11	11.1	D
Terminal 2 Entrance	IV	25	35.1	13.5	48.6	0.23	17.0	C
Harbor Island Drive	IV	25	26.5	35.6	62.1	0.15	8.5	E
	IV	25	77.3	18.9	96.2	0.54	20.1	B
Laurel St	IV	25	58.0	3.1	61.1	0.38	22.3	B
N. Harbor Dr	IV	25	69.0	2.8	71.8	0.45	22.6	B
Grape St	IV	25	18.0	0.1	18.1	0.07	13.5	C
Total	IV		308.7	85.7	394.4	1.92	17.6	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
Grape St	IV	25	25.6	3.4	29.0	0.14	17.7	C
Hawthorn St	IV	25	18.0	14.4	32.4	0.07	7.6	E
Laurel St	IV	25	69.0	18.5	87.5	0.45	18.6	C
Rental Car Access Rd	IV	25	58.0	44.6	102.6	0.38	13.3	C
Harbor Island Drive	IV	25	77.3	36.1	113.4	0.54	17.1	C
Terminal 2 Entrance	IV	25	26.5	25.4	51.9	0.15	10.2	D
McCain Rd	IV	25	35.1	14.3	49.4	0.23	16.7	C
Total	IV		309.5	156.7	466.2	1.95	15.1	C

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	4.9	8.3	0.02	10.0	E
Grape St	III	35	22.1	12.3	34.4	0.17	18.1	C
Hawthorn St	III	35	9.7	9.5	19.2	0.07	12.6	E
Laurel St	III	35	33.7	13.1	46.8	0.28	21.6	C
Total	III		68.9	39.8	108.7	0.54	18.0	C

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	13.0	39.6	0.22	20.2	C
Hawthorn St	III	35	33.7	15.5	49.2	0.28	20.5	C
Grape St	III	35	9.7	10.3	20.0	0.07	12.1	E
Cedar Street	III	35	22.1	5.8	27.9	0.17	22.3	C
Total	III		92.1	44.6	136.7	0.74	19.5	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	230.2	250.1	0.09	1.3	F
Total	IV		19.9	230.2	250.1	0.09	1.3	F

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.4	15.5	39.9	0.14	12.3	D
N. Harbor Dr	IV	25	26.1	36.5	62.6	0.15	8.4	E
Total	IV		50.5	52.0	102.5	0.28	9.9	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	18.6	23.7	0.02	2.9	F
Sheraton Dwy	IV	25	26.1	13.5	39.6	0.15	13.2	C
Harbor Island Dr (we	IV	25	24.4	16.3	40.7	0.14	12.0	D
Total	IV		55.6	48.4	104.0	0.30	10.4	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	31.0	59.3	0.16	9.5	D
N. Harbor Dr	IV	25	17.8	17.1	34.9	0.08	8.4	E
Total	IV		46.1	48.1	94.2	0.24	9.1	D

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	17.7	53.9	0.38	25.2	C
Kettner	II	40	15.0	22.5	37.5	0.13	12.5	F
Total	II		51.2	40.2	91.4	0.51	20.0	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	15.8	10.6	26.4	0.14	18.8	D
Pacific Hwy	II	40	15.0	26.2	41.2	0.13	11.4	F
N. Harbor Dr	II	40	36.2	27.6	63.8	0.38	21.3	D
Total	II		67.0	64.4	131.4	0.65	17.7	D

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
McCain Rd	IV	25	24.8	13.7	38.5	0.11	10.5	D
	IV	25	35.1	15.2	50.3	0.23	16.4	C
Harbor Island Drive	IV	25	26.5	95.4	121.9	0.15	4.3	F
	IV	25	79.7	49.5	129.2	0.52	14.5	C
Laurel St	IV	25	60.5	4.5	65.0	0.40	21.9	B
N. Harbor Dr	IV	25	69.0	14.9	83.9	0.45	19.4	B
Grape St	IV	25	18.0	0.2	18.2	0.07	13.4	C
Total	IV		313.6	193.4	507.0	1.92	13.7	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
Grape St	IV	25	25.6	4.3	29.9	0.14	17.1	C
Hawthorn St	IV	25	18.0	13.8	31.8	0.07	7.7	E
Laurel St	IV	25	69.0	15.7	84.7	0.45	19.2	B
Rental Car Access Rd	IV	25	60.5	24.6	85.1	0.40	16.7	C
Harbor Island Drive	IV	25	79.7	26.2	105.9	0.52	17.7	C
Terminal 2 Entrance	IV	25	26.5	21.4	47.9	0.15	11.0	D
McCain Rd	IV	25	35.1	15.0	50.1	0.23	16.5	C
Total	IV		314.4	121.0	435.4	1.95	16.2	C

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	8.8	12.2	0.02	6.8	F
Grape St	III	35	22.1	26.3	48.4	0.17	12.8	E
Hawthorn St	III	35	9.7	10.1	19.8	0.07	12.2	E
Laurel St	III	35	33.7	15.8	49.5	0.28	20.4	C
Total	III		68.9	61.0	129.9	0.54	15.1	D

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	14.8	41.4	0.22	19.3	C
Hawthorn St	III	35	33.7	18.1	51.8	0.28	19.5	C
Grape St	III	35	9.7	9.2	18.9	0.07	12.8	E
Cedar Street	III	35	22.1	4.7	26.8	0.17	23.2	C
Total	III		92.1	46.8	138.9	0.74	19.2	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	15.5	35.4	0.09	9.2	D
Total	IV		19.9	15.5	35.4	0.09	9.2	D

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.6	13.9	38.5	0.14	12.8	D
N. Harbor Dr	IV	25	26.0	34.4	60.4	0.14	8.6	E
Total	IV		50.6	48.3	98.9	0.28	10.2	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	15.7	20.8	0.02	3.3	F
Sheraton Dwy	IV	25	26.0	13.9	39.9	0.14	13.0	C
Harbor Island Dr (we	IV	25	24.6	19.1	43.7	0.14	11.2	D
Total	IV		55.7	48.7	104.4	0.30	10.4	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	222.6	237.0	0.05	0.8	F
N. Harbor Dr	IV	25	17.8	9.2	27.0	0.08	10.8	D
Total	IV		32.2	231.8	264.0	0.14	1.8	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	16.1	52.3	0.38	26.0	C
Kettner	II	40	20.1	21.2	41.3	0.17	15.2	E
Total	II		56.3	37.3	93.6	0.55	21.2	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	11.2	17.1	28.3	0.10	12.4	F
Pacific Hwy	II	40	20.1	35.6	55.7	0.17	11.3	F
N. Harbor Dr	II	40	36.2	38.3	74.5	0.38	18.2	D
Total	II		67.5	91.0	158.5	0.65	14.8	E

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
McCain Rd	IV	25	24.8	11.7	36.5	0.11	11.1	D
	IV	25	35.1	13.5	48.6	0.23	17.0	C
Harbor Island Drive	IV	25	26.5	39.3	65.8	0.15	8.0	E
	IV	25	77.3	19.1	96.4	0.54	20.1	B
Laurel St	IV	25	58.0	3.0	61.0	0.38	22.4	B
N. Harbor Dr	IV	25	69.0	2.2	71.2	0.45	22.8	B
Grape St	IV	25	18.0	0.1	18.1	0.07	13.5	C
Total	IV		308.7	88.9	397.6	1.92	17.4	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
Grape St	IV	25	25.6	3.4	29.0	0.14	17.7	C
Hawthorn St	IV	25	18.0	11.7	29.7	0.07	8.2	E
Laurel St	IV	25	69.0	20.6	89.6	0.45	18.1	C
Rental Car Access Rd	IV	25	58.0	44.2	102.2	0.38	13.3	C
Harbor Island Drive	IV	25	77.3	55.4	132.7	0.54	14.6	C
Terminal 2 Entrance	IV	25	26.5	23.9	50.4	0.15	10.5	D
McCain Rd	IV	25	35.1	14.4	49.5	0.23	16.7	C
Total	IV		309.5	173.6	483.1	1.95	14.6	C

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	4.9	8.3	0.02	10.0	E
Grape St	III	35	22.1	13.5	35.6	0.17	17.4	D
Hawthorn St	III	35	9.7	10.8	20.5	0.07	11.8	E
Laurel St	III	35	33.7	38.1	71.8	0.28	14.1	D
Total	III		68.9	67.3	136.2	0.54	14.4	D

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	19.3	45.9	0.22	17.4	D
Hawthorn St	III	35	33.7	16.8	50.5	0.28	20.0	C
Grape St	III	35	9.7	10.2	19.9	0.07	12.2	E
Cedar Street	III	35	22.1	5.4	27.5	0.17	22.6	C
Total	III		92.1	51.7	143.8	0.74	18.6	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	228.0	247.9	0.09	1.3	F
Total	IV		19.9	228.0	247.9	0.09	1.3	F

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.4	15.2	39.6	0.14	12.3	D
N. Harbor Dr	IV	25	26.1	36.2	62.3	0.15	8.4	E
Total	IV		50.5	51.4	101.9	0.28	9.9	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	20.5	25.6	0.02	2.7	F
Sheraton Dwy	IV	25	26.1	13.9	40.0	0.15	13.1	C
Harbor Island Dr (we	IV	25	24.4	16.4	40.8	0.14	12.0	D
Total	IV		55.6	50.8	106.4	0.30	10.2	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	30.6	58.9	0.16	9.6	D
N. Harbor Dr	IV	25	17.8	17.1	34.9	0.08	8.4	E
Total	IV		46.1	47.7	93.8	0.24	9.1	D

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	17.7	53.9	0.38	25.2	C
Kettner	II	40	15.0	22.5	37.5	0.13	12.5	F
Total	II		51.2	40.2	91.4	0.51	20.0	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Kettner	II	40	15.8	10.6	26.4	0.14	18.8	D
Pacific Hwy	II	40	15.0	26.4	41.4	0.13	11.3	F
N. Harbor Dr	II	40	36.2	28.0	64.2	0.38	21.2	D
Total	II		67.0	65.0	132.0	0.65	17.6	D

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
McCain Rd	IV	25	24.8	13.3	38.1	0.11	10.6	D
	IV	25	35.1	15.3	50.4	0.23	16.4	C
Harbor Island Drive	IV	25	26.5	100.4	126.9	0.15	4.2	F
	IV	25	79.7	47.9	127.6	0.52	14.7	C
Laurel St	IV	25	60.5	4.4	64.9	0.40	21.9	B
N. Harbor Dr	IV	25	69.0	14.5	83.5	0.45	19.5	B
Grape St	IV	25	18.0	0.2	18.2	0.07	13.4	C
Total	IV		313.6	196.0	509.6	1.92	13.6	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
Grape St	IV	25	25.6	4.3	29.9	0.14	17.1	C
Hawthorn St	IV	25	18.0	13.8	31.8	0.07	7.7	E
Laurel St	IV	25	69.0	15.7	84.7	0.45	19.2	B
Rental Car Access Rd	IV	25	60.5	25.2	85.7	0.40	16.6	C
Harbor Island Drive	IV	25	79.7	26.1	105.8	0.52	17.7	C
Terminal 2 Entrance	IV	25	26.5	21.4	47.9	0.15	11.0	D
McCain Rd	IV	25	35.1	14.9	50.0	0.23	16.5	C
Total	IV		314.4	121.4	435.8	1.95	16.1	C

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	4.9	8.3	0.02	10.0	E
Grape St	III	35	22.1	26.5	48.6	0.17	12.8	E
Hawthorn St	III	35	9.7	10.3	20.0	0.07	12.1	E
Laurel St	III	35	33.7	15.8	49.5	0.28	20.4	C
Total	III		68.9	57.5	126.4	0.54	15.5	D

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	14.9	41.5	0.22	19.2	C
Hawthorn St	III	35	33.7	18.6	52.3	0.28	19.3	C
Grape St	III	35	9.7	9.3	19.0	0.07	12.7	E
Cedar Street	III	35	22.1	5.4	27.5	0.17	22.6	C
Total	III		92.1	48.2	140.3	0.74	19.0	C

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	23.0	42.9	0.09	7.6	E
Total	IV		19.9	23.0	42.9	0.09	7.6	E

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.6	14.7	39.3	0.14	12.5	D
N. Harbor Dr	IV	25	26.0	29.9	55.9	0.14	9.3	D
Total	IV		50.6	44.6	95.2	0.28	10.6	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	10.7	15.8	0.02	4.4	F
Sheraton Dwy	IV	25	26.0	12.7	38.7	0.14	13.4	C
Harbor Island Dr (we	IV	25	24.6	12.4	37.0	0.14	13.3	C
Total	IV		55.7	35.8	91.5	0.30	11.8	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	169.9	184.3	0.05	1.1	F
N. Harbor Dr	IV	25	17.8	6.0	23.8	0.08	12.3	D
Total	IV		32.2	175.9	208.1	0.14	2.3	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	23.1	59.3	0.38	22.9	C
Total	II		36.2	23.1	59.3	0.38	22.9	C

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	6.2	182.8	189.0	0.05	1.0	F
N. Harbor Dr	II	40	36.2	38.4	74.6	0.38	18.2	D
Total	II		42.4	221.2	263.6	0.43	5.9	F

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
McCain Rd	IV	25	24.8	11.1	35.9	0.11	11.3	D
	IV	25	35.1	13.4	48.5	0.23	17.0	C
Harbor Island Drive	IV	25	26.5	21.3	47.8	0.15	11.1	D
	IV	25	77.3	27.8	105.1	0.54	18.4	C
Laurel St	IV	25	58.0	4.2	62.2	0.38	21.9	B
N. Harbor Dr	IV	25	69.0	2.5	71.5	0.45	22.7	B
Grape St	IV	25	18.0	1.1	19.1	0.07	12.8	D
Total	IV		308.7	81.4	390.1	1.92	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
Grape St	IV	25	25.6	3.8	29.4	0.14	17.4	C
Hawthorn St	IV	25	18.0	19.4	37.4	0.07	6.5	F
Laurel St	IV	25	69.0	45.6	114.6	0.45	14.2	C
Rental Car Access Rd	IV	25	58.0	314.4	372.4	0.38	3.7	F
Harbor Island Drive	IV	25	77.3	57.4	134.7	0.54	14.4	C
Terminal 2 Entrance	IV	25	26.5	50.9	77.4	0.15	6.8	F
McCain Rd	IV	25	35.1	21.6	56.7	0.23	14.6	C
Total	IV		309.5	513.1	822.6	1.95	8.5	E

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	6.2	9.6	0.02	8.7	F
Grape St	III	35	22.1	20.7	42.8	0.17	14.5	D
Hawthorn St	III	35	9.7	9.9	19.6	0.07	12.3	E
Laurel St	III	35	33.7	43.4	77.1	0.28	13.1	E
Total	III		68.9	80.2	149.1	0.54	13.1	E

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	157.9	184.5	0.22	4.3	F
Hawthorn St	III	35	33.7	16.9	50.6	0.28	20.0	C
Grape St	III	35	9.7	11.8	21.5	0.07	11.3	E
Cedar Street	III	35	22.1	6.5	28.6	0.17	21.7	C
Total	III		92.1	193.1	285.2	0.74	9.4	F

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	308.7	328.6	0.09	1.0	F
Total	IV		19.9	308.7	328.6	0.09	1.0	F

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.4	15.4	39.8	0.14	12.3	D
N. Harbor Dr	IV	25	26.1	32.4	58.5	0.15	8.9	E
Total	IV		50.5	47.8	98.3	0.28	10.3	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	11.4	16.5	0.02	4.2	F
Sheraton Dwy	IV	25	26.1	13.4	39.5	0.15	13.2	C
Harbor Island Dr (we	IV	25	24.4	19.0	43.4	0.14	11.3	D
Total	IV		55.6	43.8	99.4	0.30	10.9	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	162.1	190.4	0.16	3.0	F
N. Harbor Dr	IV	25	17.8	17.0	34.8	0.08	8.4	E
Total	IV		46.1	179.1	225.2	0.24	3.8	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	33.2	69.4	0.38	19.6	D
Total	II		36.2	33.2	69.4	0.38	19.6	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	9.0	216.8	225.8	0.08	1.3	F
N. Harbor Dr	II	40	36.2	40.9	77.1	0.38	17.6	D
Total	II		45.2	257.7	302.9	0.46	5.4	F

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	23.8	43.7	0.09	7.4	E
Total	IV		19.9	23.8	43.7	0.09	7.4	E

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.6	14.8	39.4	0.14	12.5	D
N. Harbor Dr	IV	25	26.0	32.1	58.1	0.14	9.0	E
Total	IV		50.6	46.9	97.5	0.28	10.4	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	14.3	19.4	0.02	3.5	F
Sheraton Dwy	IV	25	26.0	13.7	39.7	0.14	13.1	C
Harbor Island Dr (we	IV	25	24.6	18.8	43.4	0.14	11.3	D
Total	IV		55.7	46.8	102.5	0.30	10.5	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	174.8	189.2	0.05	1.0	F
N. Harbor Dr	IV	25	17.8	6.0	23.8	0.08	12.3	D
Total	IV		32.2	180.8	213.0	0.14	2.3	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	24.8	61.0	0.38	22.3	C
Total	II		36.2	24.8	61.0	0.38	22.3	C

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	6.2	206.7	212.9	0.05	0.9	F
N. Harbor Dr	II	40	36.2	40.5	76.7	0.38	17.7	D
Total	II		42.4	247.2	289.6	0.43	5.4	F

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
McCain Rd	IV	25	24.8	14.8	39.6	0.11	10.2	D
	IV	25	35.1	18.7	53.8	0.23	15.3	C
Harbor Island Drive	IV	25	26.5	224.4	250.9	0.15	2.1	F
	IV	25	79.7	188.4	268.1	0.52	7.0	F
Laurel St	IV	25	60.5	5.7	66.2	0.40	21.5	B
N. Harbor Dr	IV	25	69.0	14.4	83.4	0.45	19.5	B
Grape St	IV	25	18.0	4.2	22.2	0.07	11.0	D
Total	IV		313.6	470.6	784.2	1.92	8.8	E

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
Grape St	IV	25	25.6	4.8	30.4	0.14	16.8	C
Hawthorn St	IV	25	18.0	9.5	27.5	0.07	8.9	E
Laurel St	IV	25	69.0	18.2	87.2	0.45	18.6	C
Rental Car Access Rd	IV	25	60.5	156.7	217.2	0.40	6.6	F
Harbor Island Drive	IV	25	79.7	80.7	160.4	0.52	11.7	D
Terminal 2 Entrance	IV	25	26.5	41.1	67.6	0.15	7.8	E
McCain Rd	IV	25	35.1	21.6	56.7	0.23	14.6	C
Total	IV		314.4	332.6	647.0	1.95	10.9	D

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	12.4	15.8	0.02	5.3	F
Grape St	III	35	22.1	144.5	166.6	0.17	3.7	F
Hawthorn St	III	35	9.7	9.4	19.1	0.07	12.7	E
Laurel St	III	35	33.7	114.9	148.6	0.28	6.8	F
Total	III		68.9	281.2	350.1	0.54	5.6	F

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	175.5	202.1	0.22	4.0	F
Hawthorn St	III	35	33.7	18.6	52.3	0.28	19.3	C
Grape St	III	35	9.7	9.9	19.6	0.07	12.3	E
Cedar Street	III	35	22.1	5.9	28.0	0.17	22.2	C
Total	III		92.1	209.9	302.0	0.74	8.8	F

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
McCain Rd	IV	25	24.8	12.1	36.9	0.11	11.0	D
	IV	25	35.1	13.4	48.5	0.23	17.0	C
Harbor Island Drive	IV	25	26.5	21.1	47.6	0.15	11.1	D
	IV	25	77.3	29.5	106.8	0.54	18.1	C
Laurel St	IV	25	58.0	4.2	62.2	0.38	21.9	B
N. Harbor Dr	IV	25	69.0	2.3	71.3	0.45	22.8	B
Grape St	IV	25	18.0	1.1	19.1	0.07	12.8	D
Total	IV		308.7	83.7	392.4	1.92	17.7	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
Grape St	IV	25	25.6	3.8	29.4	0.14	17.4	C
Hawthorn St	IV	25	18.0	18.9	36.9	0.07	6.6	F
Laurel St	IV	25	69.0	47.2	116.2	0.45	14.0	C
Rental Car Access Rd	IV	25	58.0	324.1	382.1	0.38	3.6	F
Harbor Island Drive	IV	25	77.3	58.5	135.8	0.54	14.2	C
Terminal 2 Entrance	IV	25	26.5	51.0	77.5	0.15	6.8	F
McCain Rd	IV	25	35.1	21.8	56.9	0.23	14.5	C
Total	IV		309.5	525.3	834.8	1.95	8.4	E

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	6.2	9.6	0.02	8.7	F
Grape St	III	35	22.1	21.0	43.1	0.17	14.4	D
Hawthorn St	III	35	9.7	9.9	19.6	0.07	12.3	E
Laurel St	III	35	33.7	44.8	78.5	0.28	12.9	E
Total	III		68.9	81.9	150.8	0.54	13.0	E

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	155.5	182.1	0.22	4.4	F
Hawthorn St	III	35	33.7	16.9	50.6	0.28	20.0	C
Grape St	III	35	9.7	11.8	21.5	0.07	11.3	E
Cedar Street	III	35	22.1	6.5	28.6	0.17	21.7	C
Total	III		92.1	190.7	282.8	0.74	9.4	F

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	321.4	341.3	0.09	1.0	F
Total	IV		19.9	321.4	341.3	0.09	1.0	F

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.4	15.9	40.3	0.14	12.1	D
N. Harbor Dr	IV	25	26.1	34.3	60.4	0.15	8.7	E
Total	IV		50.5	50.2	100.7	0.28	10.0	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	17.0	22.1	0.02	3.1	F
Sheraton Dwy	IV	25	26.1	14.1	40.2	0.15	13.0	C
Harbor Island Dr (we	IV	25	24.4	19.1	43.5	0.14	11.2	D
Total	IV		55.6	50.2	105.8	0.30	10.2	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	165.4	193.7	0.16	2.9	F
N. Harbor Dr	IV	25	17.8	16.7	34.5	0.08	8.5	E
Total	IV		46.1	182.1	228.2	0.24	3.8	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	30.3	66.5	0.38	20.4	D
Total	II		36.2	30.3	66.5	0.38	20.4	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	9.0	205.4	214.4	0.08	1.3	F
N. Harbor Dr	II	40	36.2	41.6	77.8	0.38	17.5	D
Total	II		45.2	247.0	292.2	0.46	5.6	F

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
McCain Rd	IV	25	24.8	15.8	40.6	0.11	10.0	D
	IV	25	35.1	19.0	54.1	0.23	15.2	C
Harbor Island Drive	IV	25	26.5	239.1	265.6	0.15	2.0	F
	IV	25	79.7	199.9	279.6	0.52	6.7	F
Laurel St	IV	25	60.5	5.9	66.4	0.40	21.4	B
N. Harbor Dr	IV	25	69.0	17.2	86.2	0.45	18.8	C
Grape St	IV	25	18.0	4.4	22.4	0.07	10.9	D
Total	IV		313.6	501.3	814.9	1.92	8.5	E

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
Grape St	IV	25	25.6	4.8	30.4	0.14	16.8	C
Hawthorn St	IV	25	18.0	10.7	28.7	0.07	8.5	E
Laurel St	IV	25	69.0	18.3	87.3	0.45	18.6	C
Rental Car Access Rd	IV	25	60.5	168.0	228.5	0.40	6.2	F
Harbor Island Drive	IV	25	79.7	93.0	172.7	0.52	10.9	D
Terminal 2 Entrance	IV	25	26.5	42.5	69.0	0.15	7.7	E
McCain Rd	IV	25	35.1	22.3	57.4	0.23	14.4	C
Total	IV		314.4	359.6	674.0	1.95	10.4	D

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	12.4	15.8	0.02	5.3	F
Grape St	III	35	22.1	148.3	170.4	0.17	3.6	F
Hawthorn St	III	35	9.7	9.4	19.1	0.07	12.7	E
Laurel St	III	35	33.7	114.9	148.6	0.28	6.8	F
Total	III		68.9	285.0	353.9	0.54	5.5	F

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	177.7	204.3	0.22	3.9	F
Hawthorn St	III	35	33.7	17.2	50.9	0.28	19.9	C
Grape St	III	35	9.7	9.9	19.6	0.07	12.3	E
Cedar Street	III	35	22.1	5.9	28.0	0.17	22.2	C
Total	III		92.1	210.7	302.8	0.74	8.8	F

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	24.3	44.2	0.09	7.4	E
Total	IV		19.9	24.3	44.2	0.09	7.4	E

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.6	15.2	39.8	0.14	12.4	D
N. Harbor Dr	IV	25	26.0	32.7	58.7	0.14	8.9	E
Total	IV		50.6	47.9	98.5	0.28	10.3	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	14.3	19.4	0.02	3.5	F
Sheraton Dwy	IV	25	26.0	13.6	39.6	0.14	13.1	C
Harbor Island Dr (we	IV	25	24.6	18.7	43.3	0.14	11.4	D
Total	IV		55.7	46.6	102.3	0.30	10.6	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	14.4	174.6	189.0	0.05	1.0	F
N. Harbor Dr	IV	25	17.8	6.2	24.0	0.08	12.2	D
Total	IV		32.2	180.8	213.0	0.14	2.3	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	24.8	61.0	0.38	22.3	C
Total	II		36.2	24.8	61.0	0.38	22.3	C

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	6.2	206.2	212.4	0.05	0.9	F
N. Harbor Dr	II	40	36.2	40.5	76.7	0.38	17.7	D
Total	II		42.4	246.7	289.1	0.43	5.4	F

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
McCain Rd	IV	25	24.8	12.1	36.9	0.11	11.0	D
	IV	25	35.1	13.4	48.5	0.23	17.0	C
Harbor Island Drive	IV	25	26.5	21.4	47.9	0.15	11.0	D
	IV	25	77.3	30.5	107.8	0.54	17.9	C
Laurel St	IV	25	58.0	4.2	62.2	0.38	21.9	B
N. Harbor Dr	IV	25	69.0	2.4	71.4	0.45	22.7	B
Grape St	IV	25	18.0	1.1	19.1	0.07	12.8	D
Total	IV		308.7	85.1	393.8	1.92	17.6	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
Grape St	IV	25	25.6	3.8	29.4	0.14	17.4	C
Hawthorn St	IV	25	18.0	18.7	36.7	0.07	6.7	F
Laurel St	IV	25	69.0	47.0	116.0	0.45	14.0	C
Rental Car Access Rd	IV	25	58.0	323.6	381.6	0.38	3.6	F
Harbor Island Drive	IV	25	77.3	63.5	140.8	0.54	13.7	C
Terminal 2 Entrance	IV	25	26.5	51.8	78.3	0.15	6.8	F
McCain Rd	IV	25	35.1	21.8	56.9	0.23	14.5	C
Total	IV		309.5	530.2	839.7	1.95	8.4	E

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	12.4	15.8	0.02	5.3	F
Grape St	III	35	22.1	21.0	43.1	0.17	14.4	D
Hawthorn St	III	35	9.7	9.9	19.6	0.07	12.3	E
Laurel St	III	35	33.7	44.8	78.5	0.28	12.9	E
Total	III		68.9	88.1	157.0	0.54	12.5	E

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	155.5	182.1	0.22	4.4	F
Hawthorn St	III	35	33.7	16.9	50.6	0.28	20.0	C
Grape St	III	35	9.7	11.9	21.6	0.07	11.2	E
Cedar Street	III	35	22.1	6.8	28.9	0.17	21.5	C
Total	III		92.1	191.1	283.2	0.74	9.4	F

Arterial Level of Service: EB Grape St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	19.9	319.2	339.1	0.09	1.0	F
Total	IV		19.9	319.2	339.1	0.09	1.0	F

Arterial Level of Service: NB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheraton Dwy	IV	25	24.4	15.5	39.9	0.14	12.3	D
N. Harbor Dr	IV	25	26.1	33.8	59.9	0.15	8.7	E
Total	IV		50.5	49.3	99.8	0.28	10.1	D

Arterial Level of Service: SB Harbor Island Drive

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
N. Harbor Dr	IV	25	5.1	19.1	24.2	0.02	2.8	F
Sheraton Dwy	IV	25	26.1	14.5	40.6	0.15	12.9	D
Harbor Island Dr (we	IV	25	24.4	20.6	45.0	0.14	10.9	D
Total	IV		55.6	54.2	109.8	0.30	9.8	D

Arterial Level of Service: WB Hawthorn St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	IV	25	28.3	169.5	197.8	0.16	2.9	F
N. Harbor Dr	IV	25	17.8	17.7	35.5	0.08	8.2	E
Total	IV		46.1	187.2	233.3	0.24	3.7	F

Arterial Level of Service: EB Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	36.2	30.3	66.5	0.38	20.4	D
Total	II		36.2	30.3	66.5	0.38	20.4	D

Arterial Level of Service: SW Laurel St

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Pacific Hwy	II	40	9.0	207.5	216.5	0.08	1.3	F
N. Harbor Dr	II	40	36.2	41.6	77.8	0.38	17.5	D
Total	II		45.2	249.1	294.3	0.46	5.6	F

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
McCain Rd	IV	25	24.8	14.8	39.6	0.11	10.2	D
	IV	25	35.1	19.0	54.1	0.23	15.2	C
Harbor Island Drive	IV	25	26.5	242.0	268.5	0.15	2.0	F
	IV	25	79.7	197.8	277.5	0.52	6.8	F
Laurel St	IV	25	60.5	5.8	66.3	0.40	21.5	B
N. Harbor Dr	IV	25	69.0	17.5	86.5	0.45	18.8	C
Grape St	IV	25	18.0	4.3	22.3	0.07	11.0	D
Total	IV		313.6	501.2	814.8	1.92	8.5	E

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
Grape St	IV	25	25.6	4.7	30.3	0.14	16.9	C
Hawthorn St	IV	25	18.0	10.7	28.7	0.07	8.5	E
Laurel St	IV	25	69.0	18.5	87.5	0.45	18.6	C
Rental Car Access Rd	IV	25	60.5	172.0	232.5	0.40	6.1	F
Harbor Island Drive	IV	25	79.7	95.6	175.3	0.52	10.7	D
Terminal 2 Entrance	IV	25	26.5	42.4	68.9	0.15	7.7	E
McCain Rd	IV	25	35.1	26.3	61.4	0.23	13.4	C
Total	IV		314.4	370.2	684.6	1.95	10.3	D

Arterial Level of Service: NB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Cedar Street	III	35	3.4	9.5	12.9	0.02	6.4	F
Grape St	III	35	22.1	149.5	171.6	0.17	3.6	F
Hawthorn St	III	35	9.7	9.4	19.1	0.07	12.7	E
Laurel St	III	35	33.7	114.9	148.6	0.28	6.8	F
Total	III		68.9	283.3	352.2	0.54	5.6	F

Arterial Level of Service: SB Pacific Hwy

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Laurel St	III	35	26.6	177.9	204.5	0.22	3.9	F
Hawthorn St	III	35	33.7	17.2	50.9	0.28	19.9	C
Grape St	III	35	9.7	9.9	19.6	0.07	12.3	E
Cedar Street	III	35	22.1	6.0	28.1	0.17	22.1	C
Total	III		92.1	211.0	303.1	0.74	8.8	F

APPENDIX G

TIDELANDS PARKING GUIDELINES
PARKING DEMAND RATES 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.

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Appendix F-1

Air Quality Technical Report for the Harbor Island Subarea 23 Port Master Plan Amendment (January 2013)

61728 605

Air Quality Technical Report

for the

Harbor Island Subarea 23
Port Master Plan Amendment
San Diego, California

Submitted To:

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January 3, 2013

Table of Contents

Glossary of Terms and Acronyms

APCD	Air Pollution Control District
AQIA	Air Quality Impact Assessment
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BACM	Best Available Control Measure
BACT	Best Available Control Technology
BMPs	Best Management Practices
CAA	Clean Air Act (Federal)
CAAQS	California Ambient Air Quality Standard
CALINE4	California Line Source Dispersion Model (Version 4)
Caltrans	California Department of Transportation
CCAA	California Clean Air Act
CO	Carbon Monoxide
EPA	United States Environmental Protection Agency
H_2S	Hydrogen Sulfide
HARP	HotSpots Analysis and Reporting Program
HI	Hazard Index
ISCST	Industrial Source Complex Short Term Model
mg/m^3	Milligrams per Cubic Meter
$\mu g/m^3$	Micrograms per Cubic Meter
NAAQS	National Ambient Air Quality Standard
NOx	Oxides of Nitrogen
NO_2	Nitrogen Dioxide
O_3	Ozone
$PM_{2.5}$	Fine Particulate Matter (particulate matter with an aerodynamic diameter of 2.5 microns or less
PM_{10}	Respirable Particulate Matter (particulate matter with an aerodynamic diameter of 10 microns or less
ppm	Parts per million
PSD	Prevention of Significant Deterioration
RAQS	San Diego County Regional Air Quality Strategy
ROCs	Reactive Organic Compounds
ROG	Reactive Organic Gases
SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
SCAB	South Coast Air Basin
SDAB	San Diego Air Basin
SDAPCD	San Diego County Air Pollution Control District
SIP	State Implementation Plan
SOx	Oxides of Sulfur
SO_2	Sulfur Dioxide
TACs	Toxic Air Contaminants

T-BACT	Toxics Best Available Control Technology
VOCs	Volatile Organic Compounds

1.0 Introduction

This report presents an assessment of potential air quality impacts associated with the Harbor Island Subarea 23 Port Master Plan Amendment 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 and surface parking lots.

The Harbor Island Subarea 23 Port Master Plan Amendment provides for the existing allowed 500 hotel rooms (currently designated for the SDIA employee parking lot) to occur as up to three smaller hotels (including the proposed 175-room hotel), which together total no more than 500 rooms. The proposed amendment involves the partial redevelopment of one leasehold, which is currently leased by Sunroad Marina Partners, LP, located at 955 Harbor Island Drive and an adjacent leasehold, currently leased to the San Diego International Airport (SDIA) for its current use as a 900-space employee parking lot. The proposed redevelopment would only affect the land side of these leaseholds. A traffic circle, located at the east end of Harbor Island Drive, as well as a portion of Harbor Island Drive, is also included in the proposed redevelopment.

This Air Quality Technical Report includes an evaluation of existing conditions in the project vicinity, an assessment of potential impacts associated with project construction, and an evaluation of project operational impacts.

2.0 Existing Conditions

The Harbor Island Subarea 23 Port Master Plan Amendment encompasses the east side of Harbor Island in the City of San Diego. The existing site is currently developed with a 600 slip marina including support buildings, lockers and surface parking as well as a SDIA employee parking lot containing 900 parking spaces. Just east of the project site, at the terminus of East Harbor Island Drive, is a leasehold with two restaurants; Island Prime and the Reuben E. Lee, and a parking lot providing 568 parking spaces to serve both restaurants. Island Prime is a fully functioning restaurant. The Reuben E. Lee is a barge with a super-structure constructed as a faux steam wheeler. The Reuben E. Lee is not currently an operating restaurant, however, the Port of San

Diego has approved the redevelopment of the restaurant, the City of San Diego has issued a building permit, and demolition has begun. As part of the redevelopment of the Reuben E. Lee, it has been temporarily moved to a shipyard for maintenance and is scheduled to return to the site sometime in 2013.

The following section provides information about the existing air quality regulatory framework, climate, air pollutants and sources, and sensitive receptors in the project area.

2.1 Regulatory Framework

2.1.1 Federal Regulations

Air quality is defined by ambient air concentrations of specific pollutants identified by the United States Environmental Protection Agency (EPA) to be of concern with respect to health and welfare of the general public. The EPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the EPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the EPA established both primary and secondary standards for seven pollutants (called "criteria" pollutants). The seven pollutants regulated under the NAAQS are as follows: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), respirable particulate matter (or particulate matter with an aerodynamic diameter of 10 microns or less, PM_{10}), fine particulate matter (or particulate matter with an aerodynamic diameter of 2.5 microns or less, $PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. Areas that do not meet the NAAQS for a particular pollutant are considered to be "non-attainment areas" for that pollutant.

In September 1997, the EPA promulgated 8-hour O_3 and 24-hour and annual $PM_{2.5}$ national standards. As a result, this action has initiated a new planning process to monitor and evaluate emission control measures for these pollutants. The San Diego Air Basin (SDAB) has been designated a marginal non-attainment area for the 8-hour NAAQS for O_3.

The following specific descriptions of health effects for each of the criteria air pollutants associated with project construction and operations are based on EPA (EPA 2007) and the California Air Resources Board (ARB) (ARB 2005).

Ozone. O_3 is considered a photochemical oxidant, which is a chemical that is formed when reactive organic gases (ROG) and oxides of nitrogen (NOx), both by-products of combustion, react in the presence of ultraviolet light. O_3 is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to O_3.

Carbon Monoxide. CO is a product of combustion, and the main source of CO in the SDAB is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease, and can also affect mental alertness and vision.

Nitrogen Dioxide. NO_2 is also a by-product of fuel combustion, and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM_{10}, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or $PM_{2.5}$, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in this size range has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, combustion, tire and brake wear, construction operations and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs.

Sulfur dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Pb in the atmosphere occurs as particulate matter. Pb has historically been emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Pb has the potential to cause gastrointestinal, central nervous system, kidney and blood diseases upon prolonged exposure. Pb is also classified as a probable human carcinogen.

2.1.2 State Regulations

California Clean Air Act. The California Clean Air Act was signed into law on September 30, 1988, and became effective on January 1, 1989. The Act requires that local air districts implement regulations to reduce emissions from mobile sources through the adoption and enforcement of transportation control measures. The California Clean Air Act required the SDAB to achieve a five percent annual reduction in ozone precursor emissions from 1987 until the standards are attained. If this reduction cannot be achieved, all feasible control measures must be implemented. Furthermore, the California Clean Air Act required local air districts to implement a Best Available Control Technology rule and to require emission offsets for non-attainment pollutants.

The ARB is the state regulatory agency with authority to enforce regulations to both achieve and maintain air quality in the state. The ARB is responsible for the development, adoption, and enforcement of the state's motor vehicle emissions program, as well as the adoption of the

California Ambient Air Quality Standards (CAAQS). The ARB also reviews operations and programs of the local air districts, and requires each air district with jurisdiction over a non-attainment area to develop its own strategy for achieving the NAAQS and CAAQS. The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. The ARB has established the more stringent CAAQS for the six criteria pollutants through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. The SDAB is currently classified as a non-attainment area under the CAAQS for O_3, PM_{10}, and $PM_{2.5}$. It should be noted that the ARB does not differentiate between attainment of the 1-hour and 8-hour CAAQS for O_3; therefore, if an air basin records exceedances of either standard the area is considered a non-attainment area for the CAAQS for O_3. The SDAB has recorded exceedances of both the 1-hour and 8-hour CAAQS for O_3. The following specific descriptions of health effects for the additional California criteria air pollutants are based on the ARB (ARB 2001).

Sulfates. Sulfates are the fully oxidized ionic form of sulfur. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO_2) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The ARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide. H_2S is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H_2S at levels above the standard would result in exposure to a very disagreeable odor.

In 1984, an ARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance.

Vinyl Chloride. Vinyl chloride, a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants and hazardous waste sites, due to microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer, in humans.

Visibility Reducing Particles. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The CAAQS is intended to limit the frequency and severity of visibility impairment due to regional haze. A separate standard for visibility-reducing particles that is applicable only in the Lake Tahoe Air Basin is based on reduction in scenic quality.

Table 1 presents a summary of the ambient air quality standards adopted by the federal and California Clean Air Acts.

Table 1 Ambient Air Quality Standards							
POLLUTANT	AVERAGE TIME	CALIFORNIA STANDARDS		NATIONAL STANDARDS			
		Concentration	Method	Primary	Secondary	Method	
Ozone (O_3)	1 hour	0.09 ppm (176 μg/m^3)	Ultraviolet Photometry	--	--	Ethylene Chemiluminescence	
	8 hour	0.070 ppm (137 μg/m^3)		0.075 ppm (147 μg/m^3)	0.075 ppm (147 μg/m^3)		
Carbon Monoxide (CO)	8 hours	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Spectroscopy (NDIR)	9 ppm (10 mg/m^3)	--	Non-Dispersive Infrared Spectroscopy (NDIR)	
	1 hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)			
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm (56 μg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 μg/m^3)	--	Gas Phase Chemiluminescence	
	1 hour	0.18 ppm (338 μg/m^3)		0.100 ppm (188 μg/m^3)	--		
Sulfur Dioxide (SO_2)	24 hours	0.04 ppm (105 μg/m^3)	Ultraviolet Fluorescence	--	--	Pararosaniline	
	3 hours	--		--	0.5 ppm (1300 μg/m^3)		
	1 hour	0.25 ppm (655 μg/m^3)		0.075 ppm (196 μg/m^3)	--		
Respirable Particulate Matter (PM_{10})	24 hours	50 μg/m^3	Gravimetric or Beta Attenuation	150 μg/m^3	150 μg/m^3	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	20 μg/m^3		--	--		
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 μg/m^3	Gravimetric or Beta Attenuation	12 μg/m^3	--	Inertial Separation and Gravimetric Analysis	
	24 hours	--		35 μg/m^3	--		
Sulfates	24 hours	25 μg/m^3	Ion Chromatography	--	--	--	
Lead	30-day Average	1.5 μg/m^3	Atomic Absorption	--	--	Atomic Absorption	
	Calendar Quarter	--		1.5 μg/m^3	1.5 μg/m^3		
	3-Month Rolling Average	--		0.15 μg/m^3	0.15 μg/m^3		
Hydrogen Sulfide	1 hour	0.03 ppm (42 μg/m^3)	Ultraviolet Fluorescence	--	--	--	
Vinyl Chloride	24 hours	0.010 ppm (26 μg/m^3)	Gas Chromatography	--	--	--	

ppm= parts per million; μg/m^3 = micrograms per cubic meter ; mg/m^3= milligrams per cubic meter
Source: California Air Resources Board, www.arb.ca.gov, 2013, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

Toxic Air Contaminants. In 1983, the California Legislature enacted a program to identify the health effects of Toxic Air Contaminants (TACs) and to reduce exposure to these contaminants to protect the public health (AB 1807: Health and Safety Code sections 39650-39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The State of California has identified diesel particulate matter as a TAC. Diesel particulate matter is emitted from on- and off-road vehicles that utilize diesel as fuel. Following identification of diesel particulate matter as a TAC in 1998, the ARB has worked on developing strategies and regulations aimed at reducing the emissions and associated risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the *Risk Reduction Plan to Reduce Particulate Matter from Diesel-Fueled Engines and Vehicles* (State of California 2000). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter by 75 percent by 2010 and by 85 percent by 2020. The *Risk Reduction Plan* contains the following three components:

- New regulatory standards for all new on-road, off-road and stationary diesel-fueled engines and vehicles to reduce diesel particulate matter emissions by about 90 percent overall from current levels;
- New retrofit requirements for existing on-road, off-road and stationary diesel-fueled engines and vehicles where determined to be technically feasible and cost-effective; and
- New Phase 2 diesel fuel regulations to reduce the sulfur content levels of diesel fuel to no more than 15 ppm to provide the quality of diesel fuel needed by the advanced diesel particulate matter emission controls.

As an ongoing process, the ARB reviews air contaminants and identifies those that are classified as TACs. The ARB also continues to establish new programs and regulations for the control of TACs, including diesel particulate matter, as appropriate.

The local air pollution control district (APCD) has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. The San Diego APCD is the local agency responsible for the administration and enforcement of air quality regulations in San Diego County.

The APCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The San Diego County Regional Air Quality Strategy (RAQS) was initially adopted in 1991, and is updated on a triennial basis. The RAQS was updated in 1995, 1998, 2001, 2004 and most recently in 2009 (APCD 2009). The RAQS outlines APCD's plans and control measures designed to attain the state air quality standards for O_3. The RAQS does not address the state air quality standards for PM_{10} or $PM_{2.5}$. The APCD has also developed the air basin's input to the State Implementation Plan (SIP), which is required under the Federal Clean Air Act for areas that are out of attainment of air quality standards. The SIP includes the APCD's plans and control measures for attaining the O_3 NAAQS. The SIP is also updated on a triennial basis. The latest SIP update was submitted by the ARB to the EPA in 1998, and the APCD is in the process of updating its SIP to reflect the new 8-hour O_3 NAAQS. To that end, the APCD has developed its *Eight-Hour Ozone Attainment Plan for San Diego County* (hereinafter referred to as the Attainment Plan) (APCD 2007). The Attainment Plan forms the basis for the SIP update, as it contains documentation on emission inventories and trends, the APCD's emission control strategy, and an attainment demonstration that shows that the SDAB will meet the NAAQS for O_3. Emission inventories, projections, and trends in the Attainment Plan are based on the latest O_3 SIP planning emission projections compiled and maintained by ARB. Supporting data were developed jointly by stakeholder agencies, including ARB, the APCD, the South Coast Air Quality Management District (SCAQMD), the Southern California Association of Governments (SCAG), and SANDAG. Each agency plays a role in collecting and reviewing data as necessary to generate comprehensive emission inventories. The supporting data include socio-economic projections, industrial and travel activity levels, emission factors, and emission speciation profiles. These projections are based on data submitted by stakeholder agencies including projections in municipal General Plans.

The ARB compiles annual statewide emission inventories in its emission-related information database, the California Emission Inventory Development and Reporting System (CEIDARS). Emission projections for past and future years were generated using the California Emission Forecasting System (CEFS), developed by ARB to project emission trends and track progress towards meeting emission reduction goals and mandates. CEFS utilizes the most current growth and emissions control data available and agreed upon by the stakeholder agencies to provide comprehensive projections of anthropogenic (human activity-related) emissions for any year from 1975 through 2030. Local air districts are responsible for compiling emissions data for all point sources and many stationary area-wide sources. For mobile sources, CEFS integrates emission estimates from ARB's EMFAC and OFFROAD models. SCAG and SANDAG incorporate data regarding highway and transit projects into their Travel Demand Models for estimating and projecting vehicle miles traveled (VMT) and speed. The ARB's on-road emissions inventory in EMFAC relies on these VMT and speed estimates. To complete the inventory, estimates of biogenic (naturally occurring) emissions are developed by ARB using the Biogenic Emissions Inventory Geographic Information System (BEIGIS) model.

Because the ARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County as part of the development of General Plans, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the RAQS and the Attainment Plan. In the event that a project would propose development which is less dense than anticipated within the general plan, the project would likewise be consistent with the RAQS and the Attainment Plan. If a project proposes development that is greater than that anticipated in the general plan and SANDAG's growth projections, the project might be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality.

2.1.3 Local Regulations

In San Diego County, the San Diego APCD is the regulatory agency that is responsible for maintaining air quality, including implementation and enforcement of state and federal regulations. The project site is located in the City of San Diego, within the jurisdiction of the Port of San Diego.

2.2 Climate and Meteorology

The project site is located in the SDAB. The climate of the SDAB is dominated by a semi-permanent high pressure cell located over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. The high pressure cell also creates two types of temperature inversions that may act to degrade local air quality.

Subsidence inversions occur during the warmer months as descending air associated with the Pacific high pressure cell comes into contact with cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. The other type of inversion, a radiation inversion, develops on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses also can trap pollutants. As the pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce ozone, commonly known as smog.

Figure 1 provides a graphic representation of the prevailing winds in the project vicinity, as measured at Lindbergh Field, which is the closest meteorological monitoring station to the site.

2.3 Background Air Quality

The APCD operates a network of ambient air monitoring stations throughout San Diego County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest ambient monitoring station to the project site is the downtown San Diego monitoring station, which measures O_3, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$. Ambient concentrations of pollutants over the last five years are presented in Table 2.

The downtown monitoring station did not measure any exceedances of the 8-hour NAAQS during the period from 2007 through 2011. The station measured one exceedance of the 8-hour CAAQS in 2007 and one exceedance in 2008; however, no further exceedances have been measured. The monitoring station measured 8 exceedances of the 24-hour NAAQS for $PM_{2.5}$ in 2007, 3 exceedances in 2008, and 3 exceedances in 2009. No exceedances of the 24-hour NAAQS for $PM_{2.5}$ were measured in 2010 or 2011. Exceedances of the 24-hour CAAQS for PM10 were also measured during the period from 2007 through 2009; however, the high value in 2007 is likely attributable to the southern California wildfire events occurring in that year. The data from the monitoring station indicates that air quality is in attainment of all other air quality standards.

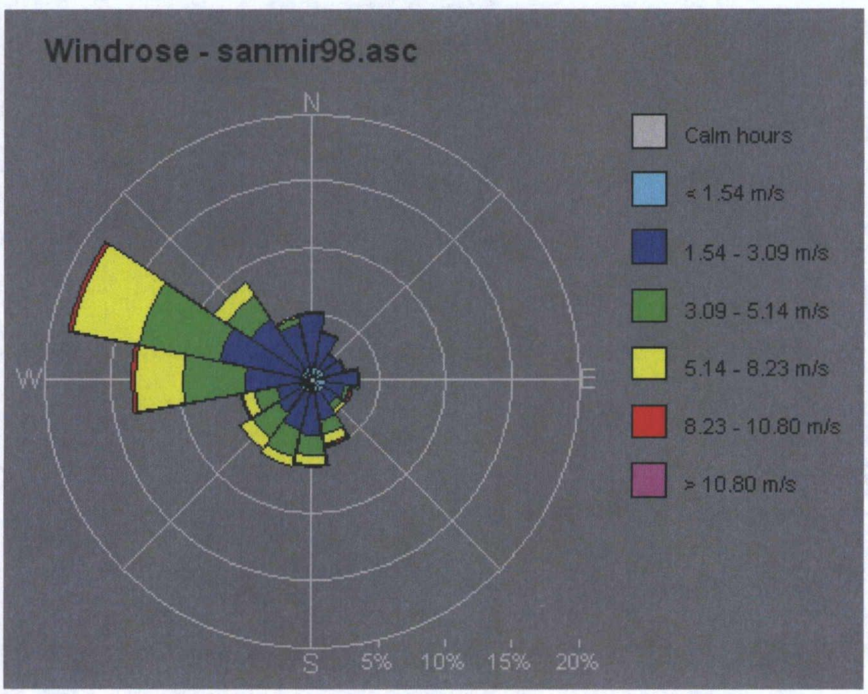

Figure 1. Wind Rose – Lindbergh Field

Table 2 Ambient Background Concentrations					
Air Quality Indicator	**2007**	**2008**	**2009**	**2010**	**2011**
Ozone (O_3)					
Peak 1-hour value (ppm)	0.087	0.087	0.085	0.078	0.082
Days above state standard (0.09 ppm)	0	0	0	0	0
Peak 8-hour value (ppm)	0.072	0.073	0.063	0.066	0.061
Fourth high 8-hour value (ppm)	0.061	0.064	0.060	0.058	0.060
Days above federal standard (0.075 ppm)[1,2]	0	0	0	0	0
Days above state standard (0.070 ppm)	1	1	0	0	0
Particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$)					
Peak 24-hour value ($\mu g/m^3$)	69.6	42.0	52.1	29.7	34.7
Days above federal standard (35 $\mu g/m^3$) [3]	8	3	3	0	0
Annual Average value ($\mu g/m^3$)	12.7	13.7	11.7	10.4	10.8
Particulate matter less than or equal to 10 microns in diameter (PM_{10})					
Peak 24-hour value (federal) ($\mu g/m^3$) [4]	110	58	59	40	48
Peak 24-hour value (state) ($\mu g/m^3$) [4]	111	59	60	40	49
Days above federal standard (150 $\mu g/m^3$)	0	0	0	0	0
Days above state standard (50 $\mu g/m^3$)	4	4	3	0	0
Annual Average value (federal) ($\mu g/m^3$) [4]	30.5	28.6	28.8	22.8	23.3
Annual Average value (state) ($\mu g/m^3$) [4]	31.2	29.3	29.4	23.4	24.0
Carbon Monoxide (CO)					
Peak 1-hour value (ppm)	4.4	3.5	4.0	2.8	2.8
Days above federal and state standard (9 ppm)	0	0	0	0	0
Peak 8-hour value (ppm)	3.01	2.60	2.77	2.17	2.44
Days above federal standard (35 ppm)	0	0	0	0	0
Days above state standard (20 ppm)	0	0	0	0	0
Nitrogen Dioxide (NO_2)					
Peak 1-hour value (ppm)	0.098	0.091	0.078	0.077	0.067
Days above federal standard (0.100 ppm)	0	0	0	0	0
Days above state standard (0.18 ppm)	0	0	0	0	0
Annual Average value (ppm)	0.018	0.019	0.017	0.015	0.014
Sulfur Dioxide (SO_2)					
Peak 1-hour value (ppm)	0.012	0.011	0.007	0.005	0.004
Days above federal standard (0.075 ppm) [5]	0	0	0	0	0
Peak 24-hour value (ppm)	0.006	0.007	0.006	0.002	0.003
Days above state standard (0.04 ppm)	0	0	0	0	0
Annual Average value (ppm)	0.002	0.003	0.001	0.000	0.000

Notes:

(1) The federal 8-hour O_3 standard was revised downward in 2008 to 0.075 ppm.

(2) The federal 8-hour O_3 standard was previously defined as 0.08 ppm (1 significant digit). Measurements were rounded up or down to determine compliance with the standard; therefore a measurement of 0.084 ppm is rounded to 0.08 ppm. The 8-hour O_3 ambient air quality standards are met at an ambient air quality monitoring site when the average of the annual fourth-highest daily maximum 8-hour average O_3 concentration is less than or equal to the standard.

(3) The federal $PM_{2.5}$ standard was revised downward in 2007 to 35 $\mu g/m^3$. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

(4) State and federal statistics may differ for the following reasons: (1) State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and federal statistics may therefore be based on different samplers. (2) State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

(5) The federal 1-hour SO_2 standard was adopted in 2010.

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; NA = data not available

Source: ARB 2012, http://www.arb.ca.gov/adam/topfour/topfourdisplay.php; Five-Year Summary, http://www.sdapcd.org/info/reports/5-year-summary.pdf.

2.4 Existing Conditions

The existing site is currently developed with a 600 slip marina including support buildings, lockers and surface parking as well as a SDIA employee parking lot containing 900 parking spaces. Just east of the project site, at the terminus of East Harbor Island Drive, is a leasehold with two restaurants; Island Prime and the Reuben E. Lee, and a parking lot providing 568 parking spaces to serve both restaurants. Island Prime is a fully functioning restaurant. The proposed amendment involves the partial redevelopment of one leasehold, which is currently leased by Sunroad Marina Partners, LP, located at 955 Harbor Island Drive and an adjacent leasehold, currently leased to the San Diego International Airport (SDIA) for its current use as a 900-space employee parking lot. The proposed redevelopment would only affect the land side of these leaseholds. A traffic circle, located at the east end of Harbor Island Drive, as well as a portion of Harbor Island Drive, is also included in the proposed redevelopment

3.0 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would have a significant environmental impact if the project would result in:

- A conflict with or obstruct the implementation of the applicable air quality plan;
- A violation of any air quality standard or contribute substantially to an existing or projected air quality violation;
- A cumulatively considerable contribution to an existing or projected air quality violation;
- Exposing sensitive receptors to substantial pollutant concentrations;
- Creating objectionable odors affecting a substantial number of people;

The San Diego APCD has adopted emission thresholds for an Air Quality Impact Assessment in the San Diego APCD's Rule 20.2. These thresholds serve as screening levels to evaluate whether a project's emissions could cause or contribute to a violation of an air quality standard. The APCD has not adopted thresholds for VOCs or PM2.5 within Rule 20.2. Accordingly, thresholds adopted by the South Coast Air Quality Management District (SCAQMD 2011) were used for these pollutants. If project emissions exceed the thresholds, the project would have a significant impact on air quality. The thresholds are shown in Table 3.

Table 3
Significance Criteria for Air Quality Impacts

Pollutant	Emission Rate		
	Lbs/Hr	Lbs/Day	Tons/Year
Carbon Monoxide (CO)	100	550	100
Oxides of Nitrogen (NOx)	25	250	40
Respirable Particulate Matter (PM_{10})	--	100	15
Oxides of Sulfur (SOx)	25	250	40
Lead and Lead Compounds	--	3.2	0.6
Fine Particulate Matter ($PM_{2.5}$)	--	55	10
Volatile Organic Compounds (VOCs)	--	75	13.7

Projects involving traffic impacts may result in the formation of locally high concentrations of CO, known as CO "hot spots." In the event that the project could result in an exceedance of an ambient air quality standard, it would have a significant impact on air quality. To evaluate traffic impacts, the project would have a significant impact if it would result in a CO "hot spot" that exceeds the 1-hour CAAQS of 20.0 ppm or the 8-hour CAAQS of 9.0 ppm.

Based on guidance from Caltrans, since CO "hot spots" typically occur at locations where traffic is congested, CO concentrations are often correlated with level of service (LOS) at intersections. LOS expresses the congestion level for an intersection and is designated by a letter from A to F, with LOS A representing the best operating conditions and LOS F the worst. Significant concentrations of CO sometimes occur (depending on temperature, wind speed, and other variables) at intersections where LOS is rated at E or worse. Significance of CO emissions from vehicles was evaluated based on the following criteria: a significant impact would occur if (1) project-generated traffic degrades the LOS at intersections to level E or worse, (2) sensitive receptors are nearby, and/or (3) CO hotspot modeling indicates thresholds would be exceeded.

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as toxic air contaminants (TACs) or Hazardous Air Pollutants (HAPs). If a project has the potential to result in emissions of any

TAC or HAP which may expose sensitive receptors to substantial pollutant concentrations, the project would be deemed to have a potentially significant impact. With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (Preschool-12th Grade), hospitals, resident care facilities, or day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality.

With regard to odor impacts, a project that proposes a use which would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of offsite receptors.

The impacts associated with construction and operation of the project were evaluated for significance based on these significance criteria.

4.0 Impacts

The Harbor Island Subarea 23 Port Master Plan Amendment would result in both construction and operational impacts. Construction impacts include emissions associated with the construction of the hotels and associated infrastructure. Operational impacts include emissions associated with the project, including traffic, at full buildout.

4.1 Consistency with the RAQS and SIP

The Proposed Project would have a significant impact if it conflicts with or obstructs implementation of the applicable air quality plans (the RAQS and SIP).

As discussed in Section 2.1, the SIP is the document that sets forth the state's strategies for attaining and maintaining the NAAQS. The APCD is responsible for developing the San Diego portion of the SIP, and has developed an attainment plan for attaining the 8-hour NAAQS for O_3. The RAQS sets forth the plans and programs designed to meet the state air quality standards. Through the RAQS and SIP planning processes, the APCD adopts rules, regulations, and programs designed to achieve attainment of the ambient air quality standards and maintain air quality in the SDAB.

Conformance with the RAQS and SIP determines whether a Project will conflict with or obstruct implementation of the applicable air quality plans. Because the CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and the County of San Diego as part of the development of General Plans, and by the Port as part of the Port Master Plan, projects that propose development that is consistent with the growth anticipated by the general plans/master plan would be consistent with the RAQS and SIP. In the event that a project would propose development which is less dense than anticipated within the general plan or master plan, the project would likewise be consistent with the RAQS and SIP. If a project proposes development that is greater than that anticipated in the general plan or master plan and SANDAG's growth projections, the project might be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality.

The RAQS and SIP address air emissions and impacts from industrial sources, area-wide sources, and mobile sources. The programs also consider transportation control measures and indirect source review. Industrial sources are typically stationary air pollution sources that are subject to APCD rules and regulations, and over which the APCD has regulatory authority. Area-wide sources include sources such as consumer products use, small utility engines, hot water heaters, and furnaces. Both the ARB and the APCD have authority to regulate these sources and have developed plans and programs to reduce emissions from certain types of area-wide sources. Mobile sources are principally emissions from motor vehicles. The ARB establishes emission standards for motor vehicles and establishes regulations for other mobile source activities including off-road vehicles.

Both the RAQS and SIP address emissions of ozone precursors (ROG and NOx), as the SDAB is classified as a basic non-attainment area for the NAAQS and a non-attainment area for the CAAQS. The RAQS and SIP do not address particulate matter. The California CAA requires an air quality strategy to achieve a 5% average annual ozone precursor emission reduction when implemented or, if that is not achievable, an expeditious schedule for adopting every feasible emission control measure under air district purview (California Health and Safety Code (H&SC) Section 40914). The current RAQS represents an expeditious schedule for adopting feasible control measures, since neither San Diego nor any air district in the State has demonstrated sustained 5% average annual ozone precursor reductions.

Most of the control measures adopted in the RAQS apply to industrial sources and specific source categories. SDAPCD Rule 55 would apply to construction of the project, and requires control of fugitive dust during construction. Should the properties include stationary sources such as boilers or emergency generators, these sources would be subject to SDAPCD rules and would be required to obtain a permit to operate.

The Lindbergh Field/Harbor Island Precise Plan identifies East Harbor Island for development of a 500-room complex that would include a restaurant, cocktail lounge, meeting and office space, recreational facilities, and ancillary uses. The Project is consistent with this Plan. The Proposed Project would not involve a change to the type of land use or number of vehicle trips anticipated by the Precise Plan it would be consistent with the goals of the RAQS and SIP, which are documents based on existing approved land use plans. Furthermore, the Harbor Island Subarea 23 Port Master Plan Amendment meets the criteria of the RAQS, SIP, and SANDAG's Transportation Control Measures as it provides a hotel and restaurant use and employment in an area that includes retail uses and the airport. The project therefore provides a mix of uses.

Accordingly the proposed Project is consistent with the applicable air quality plans, and would not result in a significant impact.

4.2 Violation of an Air Quality Standard

The Proposed Project would have a significant impact if it violates any air quality standard or contributes substantially to an existing or projected air quality violation.

To address this significance threshold, an evaluation of emissions associated with both the construction and operational phases of the Project was conducted.

4.2.1 Construction Impacts

Emissions of pollutants such as fugitive dust and heavy equipment exhaust that are generated during construction are generally highest near the construction site. Emissions from the construction of the project were estimated using the CalEEMod Model (ENVIRON 2011).

To address construction for 500 hotel rooms, assumed to comprise three separate hotels, it was assumed that each hotel would be constructed in a separate phase. The three hotels were assumed to include two 175-room hotels, and one 150-room hotel, for a total of 500 rooms. It was assumed that construction of each hotel would require the following subphases: demolition of existing structures/pavement, grading, paving/foundation construction, building construction, and architectural coatings application. The first hotel, which was assumed to include 175 rooms, would require demolition of the existing locker building and parking lot east of the existing marine building. The two additional hotels were assumed to require additional demolition of existing paved areas.

The assumed construction schedule for each individual hotel project was provided in the *Traffic Impact Study – Harbor Island Subarea 23 Port Master Plan Amendment* (Linscott, Law & Greenspan 2012). The first hotel was assumed to be constructed in 2013; the second hotel in 2014, and the third hotel in 2018, with full buildout of the project by the year 2020.

The CalEEMod Model provides default assumptions regarding horsepower rating, load factors for heavy equipment, and hours of operation per day. Default assumptions within the CalEEMod Model and assumptions for similar projects were used to represent operation of heavy construction equipment. Construction calculations within the CalEEMod Model utilize the number and type of construction equipment to calculate emissions from heavy construction equipment. Fugitive PM_{10} and $PM_{2.5}$ emissions estimates take into account compliance with Rule 55 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries. Emissions associated with offsite transport of fill material that would be excavated were calculated based on truck trips assumed in the *Traffic Impact Study – Harbor Island Subarea 23 Port Master Plan Amendment* (Linscott, Law & Greenspan 2012).

In addition to calculating emissions from heavy construction equipment, the CalEEMod Model contains calculation modules to estimate emissions of fugitive dust, based on the amount of earthmoving or surface disturbance required; emissions from heavy-duty truck trips or vendor trips during construction activities; emissions from construction worker vehicles during daily commutes; emissions of ROG from paving using asphalt; and emissions of ROG during application of architectural coatings. As part of the project design features, it was assumed that standard dust control measures (watering three times daily; using soil stabilizers on unpaved roads) and architectural coatings that comply with SDAPCD Rule 67.0 (assumed to meet a VOC content of 100 g/l for interior painting and 150 g/l for exterior painting) would be used during construction.

Tables 4a through 4c provide the detailed emission estimates for each phase of hotel construction as calculated with the CalEEMod Model for each of the three hotels assumed to be constructed. Appendix A provides CalEEMod Model outputs showing the construction calculations. As shown in Tables 4a through 4c, emissions of criteria pollutants during construction would be below the thresholds of significance for all project construction phases for all pollutants. Project criteria pollutant emissions during construction would be temporary.

Table 4a
Estimated Maximum Daily Construction Emissions
Harbor Island Subarea 23 Port Master Plan Amendment
175-Room Hotel

Emission Source	**ROG**	**NOx**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Demolition						
Fugitive Dust	-	-	-	-	2.26	0.00
Offroad Equipment	5.07	38.45	23.67	0.04	2.29	2.29
Onroad Vehicles	1.29	15.30	7.58	0.02	7.43	0.54
Worker Trips	0.08	0.10	0.84	0.00	0.18	0.01
Subtotal	**6.44**	**53.85**	**32.09**	**0.06**	**12.16**	**2.84**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Grading						
Fugitive Dust	-	-	-	-	2.40	1.29
Offroad Equipment	4.70	37.12	22.15	0.04	1.94	1.94
Onroad Vehicles	0.00	0.05	0.02	0.00	0.05	0.00
Worker Trips	0.06	0.07	0.65	0.00	0.14	0.01
Subtotal	**4.76**	**37.24**	**22.82**	**0.04**	**4.53**	**3.24**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Paving/Foundations						
Offroad Equipment	4.16	25.92	16.81	0.03	2.21	2.21
Vendor Trips	0.01	0.16	0.08	0.00	0.15	0.01
Worker Trips	0.10	0.11	0.97	0.00	0.20	0.01
Subtotal	**4.27**	**26.19**	**17.86**	**0.03**	**2.56**	**2.24**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Building Construction						
Offroad Equipment	5.20	28.63	19.52	0.04	1.88	1.88
Vendor Trips	0.64	7.30	4.63	0.01	0.63	0.23
Worker Trips	0.69	0.79	6.91	0.01	1.45	0.06
Subtotal	**6.53**	**36.72**	**31.06**	**0.06**	**3.96**	**2.17**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Architectural Coatings Application						
Architectural Coatings	40.73	-	-	-	-	-
Offroad Equipment	0.45	2.77	1.92	0.00	0.24	0.24
Worker Trips	0.13	0.14	1.24	0.00	0.28	0.01
Subtotal	**41.31**	**2.91**	**3.16**	**0.00**	**0.52**	**0.25**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Maximum Daily Emissions[a]	**47.30**	**53.84**	**32.09**	**0.06**	**12.16**	**3.24**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*

[a]Maximum daily ROG emissions occur during simultaneous building construction and architectural coatings application. Maximum daily emissions for other pollutants occur during demolition activities.

Table 4b Estimated Maximum Daily Construction Emissions Harbor Island Subarea 23 Port Master Plan Amendment 175-Room Hotel						
Emission Source	**ROG**	**NOx**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
			Demolition			
Fugitive Dust	-	-	-	-	0.39	0.00
Offroad Equipment	4.13	30.94	21.38	0.04	1.68	1.68
Onroad Vehicles	0.17	2.05	1.03	0.00	2.20	0.07
Worker Trips	0.07	0.07	0.65	0.00	0.18	0.01
Subtotal	**4.37**	**33.06**	**23.06**	**0.04**	**4.45**	**1.76**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
			Grading			
Fugitive Dust	-	-	-	-	2.41	1.29
Offroad Equipment	3.93	29.69	19.99	0.04	1.46	1.46
Onroad Vehicles	0.00	0.04	0.02	0.00	0.05	0.00
Worker Trips	0.05	0.06	0.50	0.00	0.14	0.01
Subtotal	**3.98**	**29.79**	**20.51**	**0.04**	**4.06**	**2.76**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
			Paving/Foundations			
Offroad Equipment	3.40	21.37	16.43	0.03	1.72	1.72
Vendor Trips	0.01	0.12	0.06	0.00	0.14	0.00
Worker Trips	0.08	0.09	0.75	0.00	0.20	0.01
Subtotal	**3.49**	**21.58**	**17.24**	**0.03**	**2.06**	**1.73**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
			Building Construction			
Offroad Equipment	3.96	22.58	18.51	0.04	1.35	1.35
Vendor Trips	0.51	5.83	3.74	0.01	0.58	0.19
Worker Trips	0.57	0.61	5.38	0.01	1.45	0.06
Subtotal	**5.04**	**29.02**	**27.63**	**0.06**	**3.38**	**1.60**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
			Architectural Coatings Application			
Architectural Coatings	40.73	-	-	-	-	-
Offroad Equipment	0.37	2.37	1.88	0.00	0.20	0.20
Worker Trips	0.11	0.12	1.05	0.00	0.28	0.01
Subtotal	**41.21**	**2.49**	**2.93**	**0.00**	**0.48**	**0.21**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Maximum Daily Emissions[a]	**46.26**	**33.06**	**30.56**	**0.06**	**4.45**	**2.76**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*

[a]Maximum daily ROG emissions occur during simultaneous building construction and architectural coatings application. Maximum daily $PM_{2.5}$ emissions occur during grading. Maximum daily emissions for other pollutants occur during demolition activities.

Table 4c
Estimated Maximum Daily Construction Emissions
Harbor Island Subarea 23 Port Master Plan Amendment
150-Room Hotel

Emission Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
			Demolition			
Fugitive Dust	-	-	-	-	0.39	0.00
Offroad Equipment	3.58	26.50	20.18	0.04	1.33	1.33
Onroad Vehicles	0.15	1.80	0.91	0.00	2.20	0.06
Worker Trips	0.06	0.06	0.56	0.00	0.18	0.01
Subtotal	**3.79**	**28.36**	**21.65**	**0.04**	**4.10**	**1.40**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
			Grading			
Fugitive Dust	-	-	-	-	2.40	1.29
Offroad Equipment	3.47	25.24	18.86	0.04	1.19	1.19
Onroad Vehicles	0.00	0.03	0.02	0.00	0.05	0.00
Worker Trips	0.05	0.05	0.43	0.00	0.14	0.01
Subtotal	**3.52**	**25.32**	**19.31**	**0.04**	**3.78**	**2.49**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
			Paving/Foundations			
Offroad Equipment	2.96	18.60	16.23	0.03	1.43	1.43
Vendor Trips	0.01	0.11	0.05	0.00	0.14	0.00
Worker Trips	0.07	0.07	0.64	0.00	0.20	0.01
Subtotal	**3.04**	**18.78**	**16.92**	**0.03**	**1.77**	**1.44**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
			Building Construction			
Offroad Equipment	3.26	19.06	18.02	0.04	1.05	1.05
Vendor Trips	0.39	4.40	2.86	0.01	0.48	0.14
Worker Trips	0.43	0.44	3.89	0.01	1.23	0.05
Subtotal	**4.08**	**23.90**	**24.77**	**0.06**	**2.76**	**1.24**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
			Architectural Coatings Application			
Architectural Coatings	34.39	-	-	-	-	-
Offroad Equipment	0.30	2.00	1.85	0.00	0.15	0.15
Worker Trips	0.08	0.09	0.77	0.00	0.24	0.01
Subtotal	**34.77**	**2.09**	**2.62**	**0.00**	**0.39**	**0.16**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Maximum Daily Emissions[a]	**38.84**	**28.36**	**27.39**	**0.06**	**4.10**	**2.49**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*

[a]Maximum daily ROG emissions occur during simultaneous building construction and architectural coatings application. Maximum daily emissions for other pollutants occur during demolition activities.

4.2.2 Operational Impacts

Operational impacts associated with the Harbor Island Subarea 23 Port Master Plan Amendment would include impacts associated with vehicular traffic, as well as area sources such as energy use, landscaping, consumer products use, and architectural coatings use for maintenance purposes.

The *Traffic Impact Study – Harbor Island Subarea 23 Port Master Plan Amendment* (Linscott, Law & Greenspan 2012) calculated project trip generation rates based on the proposed development. According to the Study, the existing marine generates 2,400 average daily trips (ADT). The initial 175-room hotel would be categorized as a business hotel, and would generate 7 trips per room for a total of 1,225 ADT. The two additional hotels, totaling 325 rooms, would be categorized as resort hotels and would generate 8 trips per room for a total of 2,600. The project would therefore result in a net increase of 3,825 ADT. The trip generation rates were accounted for within the CalEEMod Model runs for vehicular emissions.

Operational impacts associated with vehicular traffic and area sources including energy use, landscaping, and architectural coatings use for maintenance purposes were estimated using the CalEEMod Model. The CalEEMod Model calculates vehicle emissions based on emission factors from the EMFAC2007 model. It was assumed that the first year of full occupancy would be 2014. Based on the results of the EMFAC2007 model for subsequent years, emissions would decrease on an annual basis from 2015 onward due to phase-out of higher polluting vehicles and implementation of more stringent emission standards that are taken into account in the EMFAC2007 model. Full buildout of the project was anticipated to be complete by 2020. Table 5 presents the results of the emission calculations, in lbs/day, for the total development, along with a comparison with the significance criteria.

Table 5 Operational Emissions						
	ROG	NOx	CO	SO_x	PM_{10}	$PM_{2.5}$
175-Room Hotel						
Summer Day, Lbs/day						
Area Sources	6.16	0.00	0.00	0.00	0.00	0.00
Energy Use	0.46	4.15	3.49	0.02	0.32	0.32
Vehicular Emissions	5.10	10.01	46.69	0.07	2.45	0.48
TOTAL	**11.72**	**14.16**	**50.18**	**0.09**	**2.77**	**0.80**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Winter Day, Lbs/day						
Area Sources	6.16	0.00	0.00	0.00	0.00	0.00
Energy Use	0.46	4.15	3.49	0.02	0.32	0.32
Vehicular Emissions	5.42	10.51	47.27	0.07	2.45	0.48
TOTAL	**12.04**	**14.66**	**50.76**	**0.09**	**2.77**	**0.80**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
175-Room Hotel						
Summer Day, Lbs/day						
Area Sources	6.16	0.00	0.00	0.00	0.00	0.00
Energy Use	0.46	4.15	3.49	0.02	0.32	0.32
Vehicular Emissions	5.27	10.16	46.47	0.08	2.78	0.56
TOTAL	**11.89**	**14.31**	**49.96**	**0.10**	**3.10**	**0.88**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Winter Day, Lbs/day						
Area Sources	6.16	0.00	0.00	0.00	0.00	0.00
Energy Use	0.46	4.15	3.49	0.02	0.32	0.32
Vehicular Emissions	5.53	10.54	47.05	0.08	2.78	0.57
TOTAL	**12.15**	**14.69**	**50.54**	**0.10**	**3.10**	**0.89**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
150-Room Hotel						
Summer Day, Lbs/day						
Area Sources	5.28	0.00	0.00	0.00	0.00	0.00
Energy Use	0.39	3.56	2.99	0.02	0.27	0.27
Vehicular Emissions	4.13	7.75	35.00	0.07	2.37	0.47
TOTAL	**9.80**	**11.31**	**37.99**	**0.09**	**2.64**	**0.74**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Winter Day, Lbs/day						
Area Sources	5.28	0.00	0.00	0.00	0.00	0.00
Energy Use	0.39	3.56	2.99	0.02	0.27	0.27
Vehicular Emissions	4.28	8.10	35.43	0.07	2.37	0.47
TOTAL	**9.95**	**11.66**	**38.42**	**0.09**	**2.64**	**0.74**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Total Project						
Summer, Lbs/day	**33.41**	**39.78**	**138.13**	**0.28**	**8.51**	**2.42**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*Yes*	*No*	*No*	*No*
Winter, Lbs/day	**34.14**	**41.01**	**139.72**	**0.28**	**8.51**	**2.43**
Significance Criteria	137	250	550	250	100	55
Significant?	*No*	*No*	*No*	*No*	*No*	*No*

Based on the estimates of the emissions associated with Project operations, the emissions of all criteria pollutants are below the significance thresholds. Impacts would be less than significant.

Projects involving traffic impacts may result in the formation of locally high concentrations of CO, known as CO "hot spots." To verify that the project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO "hot spots" was conducted. Project-related traffic would have the potential to result in CO "hot spots" if project-related traffic resulted in a degradation in the level of service at any intersection to LOS E or F. The Traffic Impact Study evaluated 11 intersections in the study area to assess whether or not there would be a decrease in the level of service at the intersections affected by the Project. The analysis included the following scenarios: Existing, Existing plus Cumulative Projects, Existing plus Cumulative Projects plus Project, Year 2030 without Project, and Year 2030 with Project. Based on the Traffic Impact Study, intersections under all Existing scenarios would operate at LOS D or better, and would not be anticipated to experience a CO "hot spot".

Under Year 2030 conditions, traffic congestion increases such that several intersections in the project study area operate at LOS F both with and without the addition of project traffic. The Traffic Impact Study identified significant traffic impacts for the following intersections:

- N. Harbor Drive/Harbor Island Drive/Terminal 1
- N. Harbor Drive/Rental Car Access Road
- N. Harbor Drive/Laurel Street
- Pacific Highway/Laurel Street
- Pacific Highway/Grape Street

Accordingly, to evaluate the potential for CO "hot spots" at the intersections for which the Traffic Impact Study predicted significant impacts, the procedures in the Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol (Caltrans 1998) were used. As recommended in the Protocol, CALINE4 modeling was conducted for the intersections identified above for the scenarios with and without Project traffic. Modeling was conducted based on the guidance in Appendix B of the Protocol to calculate maximum predicted 1-hour CO concentrations. Predicted 1-hour CO concentrations were then scaled to evaluate maximum predicted 8-hour CO concentrations using the recommended scaling factor of 0.7 for urban locations.

Inputs to the CALINE4 model were obtained from the Traffic Impact Analysis. As recommended in the Protocol, receptors were located at locations that were approximately 3 meters from the mixing zone, and at a height of 1.8 meters. Average approach and departure speeds were assumed to be 1 mph to account for congestion at the intersection and provide a worst case estimate of emissions. Emission factors for those speeds were estimated from the EMFAC2011 for 2030.

In accordance with the Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol, it is also necessary to estimate future background CO concentrations in the project vicinity to determine the potential impact plus background and evaluate the potential for CO "hot spots" due to the project. As a conservative estimate of background CO concentrations, the existing maximum 1-hour background concentration of CO that was measured at the San Diego monitoring station for the period 2007 to 2011 of 4.4 ppm was used to represent future maximum background 1-hour CO concentrations. The existing maximum 8-hour background concentration of CO that was measured at the San Diego monitoring station during the period from 2007 to 2011 of 3.01 ppm was also used to provide a conservative estimate of the maximum 8-hour background concentrations in the project vicinity. CO concentrations in the future may be lower as inspection and maintenance programs and more stringent emission controls are placed on vehicles.

The CALINE4 model outputs are provided in Appendix A of this report. Table 6 presents a summary of the predicted CO concentrations (impact plus background) for the intersections evaluated. As shown in Table 6, the predicted CO concentrations would be substantially below the 1-hour and 8-hour NAAQS and CAAQS for CO shown in Table 1 of this report. Therefore, no exceedances of the CO standard are predicted, and the project would not cause or contribute to a violation of this air quality standard.

Table 6 CO "Hot Spots" Evaluation Harbor Island Subarea 23 Port Master Plan Amendment Year 2030Predicted CO Concentrations, ppm		
Maximum 1-hour Concentration Plus Background, ppm CAAQS = 20 ppm; NAAQS = 35 ppm; Background 4.4 ppm		
Intersection		
	am	*pm*
N. Harbor Drive and Harbor Island Drive/Terminal 1	4.8	4.9
N. Harbor Drive and Rental Car Access	5.2	5.2
N. Harbor Drive and Laurel Street	5.2	5.2
Pacific Highway and Laurel Street	5.1	5.2
Pacific Highway and Grape Street	4.8	5.0
Maximum 8-hour Concentration Plus Background, ppm CAAQS = 20 ppm; NAAQS = 35 ppm; Background 3.01 ppm		
N. Harbor Drive and Harbor Island Drive/Terminal 1	3.36	
N. Harbor Drive and Rental Car Access	3.57	
N. Harbor Drive and Laurel Street	3.57	
Pacific Highway and Laurel Street	3.57	
Pacific Highway and Grape Street	3.43	

4.3 Cumulatively Considerable Net Increase of Non-attainment Pollutants

The Proposed Project would have a significant impact if it results in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors.

As discussed in Section 2.0, the SDAB is considered a non-attainment area for the 8-hour NAAQS for O_3, and is considered a non-attainment area for the CAAQS for O_3, PM_{10}, and $PM_{2.5}$. An evaluation of emissions of non-attainment pollutants was conducted in Section 4.2, and it was determined that emissions of all non-attainment pollutants would be below the significance thresholds for both construction and operations.

The nearest cumulative project is the Reuben E. Lee Restaurant Replacement, located at the east end of Harbor Island, approximately 500 feet east of the Project site. The Reuben E. Lee is a barge with a super-structure constructed as a faux steam wheeler. The Reuben E. Lee is not currently an operating restaurant, however, the Port of San Diego has approved the redevelopment of the restaurant, the City of San Diego has issued a building permit, and demolition has begun. As part of the redevelopment of the Reuben E. Lee, it has been temporarily moved to a shipyard for maintenance and is scheduled to return to the site sometime in 2013. While some construction activities 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 or a large amount of heavy construction equipment and earthmoving. Therefore, the cumulative emissions would not be expected to exceed the significance thresholds and the cumulative contribution would be less than significant. Other cumulative projects are located farther from the Harbor Island Subarea 23 site, and would not be expected to contribute to a cumulatively considerable impact.

Cumulative projects were considered in the Traffic Impact Study. The analysis in Section 4.2 demonstrated that no CO "hot spots" would result from cumulative traffic. Because emissions are below the significance thresholds for nonattainment pollutants, they would not result in a cumulatively considerable impact.

4.4 Exposure of Sensitive Receptors to Substantial Pollutant Concentrations

The Proposed Project would have a significant impact if it exposes sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, parks, or day-care centers) to substantial pollutant concentrations.

The threshold concerns whether the project could expose sensitive receptors to substantial pollutant concentrations of TACs. If a project has the potential to result in emissions of any TAC which result in a cancer risk of greater than 10 in 1 million or substantial non-cancer risk, the project would be deemed to have a potentially significant impact.

Air quality regulators typically define sensitive receptors as schools (Preschool-12th Grade), hospitals, resident care facilities, or day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Residential land uses may also be considered sensitive receptors. The nearest sensitive receptors to the site are the residents located to the east of the project site, approximately 0.25 miles from the project.

Emissions of TACs are attributable to temporary emissions from construction emissions, and minor emissions associated with diesel truck traffic used for deliveries at the site. Truck traffic may result in emissions of diesel particulate matter, which is characterized by the State of California as a toxic air contaminant (TAC). Certain types of projects are recommended to be evaluated for impacts associated with TACs. In accordance with the SCAQMD's "Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis" (SCAQMD 2003), projects that should be evaluated for diesel particulate emissions include truck stops, distribution centers, warehouses, and transit centers which diesel vehicles would utilize and which would be sources of diesel particulate matter from heavy-duty diesel trucks. A hotel development such as the Harbor Island Subarea 23 Port Master Plan Amendment Project would not attract a disproportionate amount of diesel trucks and would not be considered a source of TAC emissions. Based on the CalEEMod Model, heavy-duty diesel trucks would account for only 0.9 percent of the total trips associated with the project. Impacts to sensitive receptors from TAC emissions would therefore be less than significant.

4.5 Objectionable Odors

The Proposed Project would have a significant impact if it creates objectionable odors affecting a substantial number of people.

Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. These compounds would be emitted in various amounts and at various locations during construction. Sensitive receptors located in the vicinity of the construction site include the residences to the east of the site. Odors are highest near the source and would quickly dissipate offsite; any odors associated with construction would be temporary.

The Project is a hotel development and would not include land uses that would be sources of nuisance odors. Thus the potential for odor impacts associated with the project is less than significant.

5.0 Mitigation Measures

As discussed in Section 4.0, no significant impacts have been identified for air quality; therefore, no mitigation measures are required to reduce impacts. Standard best management practices to reduce emissions will be employed during construction and operation of the project.

The Project is subject to the requirements of San Diego APCD Rule 55, which requires that no visible dust be present beyond the site boundaries. Standard dust control measures will be employed during construction. These standard dust control measures include the following:

- Watering active grading sites a minimum of three times daily
- Apply soil stabilizers to inactive construction sites
- Replace ground cover in disturbed areas as soon as possible
- Control dust during equipment loading/unloading (load moist material, ensure at least 12 inches of freeboard in haul trucks
- Reduce speeds on unpaved roads to 15 mph or less
- Water unpaved roads a minimum of three times daily

These dust control measures will reduce the amount of fugitive dust generated during construction. In addition to dust control measures, architectural coatings applied to interior and exterior surfaces will be required to meet the ROG limitations of SDAPCD Rule 67.0, which limits the ROG content of most coatings to 150 grams/liter. Coatings will also be applied using high volume, low pressure spray equipment to reduce overspray to the extent possible.

Operational emissions would be below the significance thresholds for all pollutants. Air quality impacts are less than significant and no mitigation measures are required.

6.0 Summary and Conclusions

In summary, the proposed project would result in emissions of air pollutants for both the construction phase and operational phase of the project. The air quality impact analysis evaluated the potential for adverse impacts to the ambient air quality due to construction and operational emissions. Construction emissions would include emissions associated with fugitive dust, heavy construction equipment and construction worker commuting to and from the site. The project would employ dust control measures such as watering to control emissions during construction and use of low-ROG paints. Emissions are less than the significance thresholds for all pollutants during construction.

Operational emissions would include emissions associated with office and retail operations, including area sources, energy use, and vehicle traffic. As discussed in Section 4.0, the impacts would be below the significance thresholds for all pollutants except CO. Impacts from project-related traffic were evaluated to assess whether impacts would exceed the ambient air quality standards for CO, and it was demonstrated that emissions of CO would not result in a significant air quality impact.

Emissions of TACs or odors would not result in a significant impact to the project, and project emissions of TACs and odors would be less than significant.

7.0 References

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Appendix A

CALINE4 Model Output

CalEEMod Model Output

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CALINE4 Model Outputs

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Harbor Drive and Harbor Island am
              RUN: Hour 1                (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide

   I.  SITE VARIABLES

         U=     .5 M/S              Z0= 100. CM            ALT=      0. (M)
       BRG= WORST CASE              VD=    .0 CM/S
      CLAS=      7 (G)              VS=    .0 CM/S
      MIXH= 1000. M                AMB=    .0 PPM
     SIGTH=    10. DEGREES        TEMP= 19.6 DEGREE (C)

   II.  LINK VARIABLES
```

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. HDEBLA	565	1306	715	1306	AG	40	1.6	.0	10.0
B. HDEBTA	565	1300	715	1300	AG	820	1.6	.0	10.0
C. HDEBRA	565	1295	715	1295	AG	144	1.6	.0	10.0
D. HDEBD	715	1300	865	1300	AG	1145	1.6	.0	10.0
E. HDWBLA	865	1306	715	1306	AG	459	1.6	.0	10.0
F. HDWBTA	865	1312	715	1312	AG	1910	1.6	.0	10.0
G. HDWBRA	865	1317	715	1317	AG	15	1.6	.0	10.0
H. HDWBD	715	1312	565	1312	AG	2148	1.6	.0	10.0
I. HINBLA	715	1306	709	1228	AG	118	1.6	.0	10.0
J. HINBLA	709	1228	689	1190	AG	118	1.6	.0	10.0
K. HINBTA	722	1306	716	1228	AG	68	1.6	.0	10.0
L. HINBTA	716	1228	689	1190	AG	68	1.6	.0	10.0
M. HINBRA	729	1307	722	1228	AG	265	1.6	.0	10.0
N. HINBRA	722	1228	696	1190	AG	265	1.6	.0	10.0
O. T1NBD	722	1306	726	1358	AG	123	1.6	.0	10.0
P. T1SBLA	701	1361	715	1306	AG	60	1.6	.0	10.0
Q. T1SBTA	701	1361	710	1306	AG	54	1.6	.0	10.0
R. T1SBRA	701	1361	705	1306	AG	120	1.6	.0	10.0
S. HISBD	710	1306	702	1228	AG	657	1.6	.0	10.0
T. HISBD	702	1228	665	1190	AG	657	1.6	.0	10.0

□

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   2

     JOB: Harbor Drive and Harbor Island am
     RUN: Hour 1            (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
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III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	697	1285	1.8
2. Recpt 2	677	1285	1.8
3. Recpt 3	657	1285	1.8
4. Recpt 4	695	1265	1.8
5. Recpt 5	693	1245	1.8
6. Recpt 6	695	1323	1.8
7. Recpt 7	675	1323	1.8
8. Recpt 8	655	1323	1.8
9. Recpt 9	693	1343	1.8
10. Recpt 10	734	1290	1.8
11. Recpt 11	754	1290	1.8
12. Recpt 12	774	1290	1.8
13. Recpt 13	732	1270	1.8
14. Recpt 14	730	1250	1.8
15. Recpt 15	730	1327	1.8
16. Recpt 16	750	1327	1.8
17. Recpt 17	770	1327	1.8
18. Recpt 18	732	1347	1.8

□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Harbor Drive and Harbor Island am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	71.	.4	.0	.0	.0	.1	.0	.1	.0	.0
2. Recpt 2	75.	.4	.0	.0	.0	.1	.0	.1	.0	.0
3. Recpt 3	77.	.3	.0	.0	.0	.0	.0	.1	.0	.0
4. Recpt 4	65.	.3	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	55.	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	107.	.4	.0	.0	.0	.0	.0	.2	.0	.0
7. Recpt 7	104.	.4	.0	.0	.0	.0	.0	.1	.0	.1
8. Recpt 8	103.	.4	.0	.0	.0	.0	.0	.0	.0	.2
9. Recpt 9	113.	.2	.0	.0	.0	.0	.0	.1	.0	.0
10. Recpt 10	287.	.4	.0	.0	.0	.0	.0	.0	.0	.2
11. Recpt 11	287.	.4	.0	.0	.0	.1	.0	.0	.0	.1
12. Recpt 12	285.	.4	.0	.0	.0	.1	.0	.0	.0	.1
13. Recpt 13	293.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	340.	.2	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	200.	.4	.0	.0	.0	.0	.0	.1	.0	.0
16. Recpt 16	211.	.3	.0	.0	.0	.0	.0	.1	.0	.0
17. Recpt 17	243.	.3	.0	.0	.0	.0	.0	.2	.0	.0
18. Recpt 18	197.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Harbor Drive and Harbor Island am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
							CONC/LINK (PPM)						
1. Recept 1	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recept 2	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recept 3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recept 4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recept 5	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recept 6	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recept 7	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recept 8	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recept 9	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recept 10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recept 11	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recept 12	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recept 13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recept 14	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. Recept 15	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. Recept 16	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recept 17	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. Recept 18	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Harbor Drive and Harbor Island pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT=	0. (M)
BRG= WORST CASE	VD= .0 CM/S		
CLAS= 7 (G)	VS= .0 CM/S		
MIXH= 1000. M	AMB= .0 PPM		
SIGTH= 10. DEGREES	TEMP= 19.6 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. HDEBLA	*	565	1306	715	1306	*	AG	70	1.6	.0	10.0
B. HDEBTA	*	565	1300	715	1300	*	AG	1200	1.6	.0	10.0
C. HDEBRA	*	565	1295	715	1295	*	AG	248	1.6	.0	10.0
D. HDEBD	*	715	1300	865	1300	*	AG	1017	1.6	.0	10.0
E. HDWBLA	*	865	1306	715	1306	*	AG	500	1.6	.0	10.0
F. HDWBTA	*	865	1312	715	1312	*	AG	1480	1.6	.0	10.0
G. HDWBRA	*	865	1317	715	1317	*	AG	70	1.6	.0	10.0
H. HDWBD	*	715	1312	565	1312	*	AG	1848	1.6	.0	10.0
I. HINBLA	*	715	1306	709	1228	*	AG	208	1.6	.0	10.0
J. HINBLA	*	709	1228	689	1190	*	AG	208	1.6	.0	10.0
K. HINBTA	*	722	1306	716	1228	*	AG	78	1.6	.0	10.0
L. HINBTA	*	716	1228	689	1190	*	AG	78	1.6	.0	10.0
M. HINBRA	*	729	1307	722	1228	*	AG	557	1.6	.0	10.0
N. HINBRA	*	722	1228	696	1190	*	AG	557	1.6	.0	10.0
O. T1NBD	*	722	1306	726	1358	*	AG	218	1.6	.0	10.0
P. T1SBLA	*	701	1361	715	1306	*	AG	60	1.6	.0	10.0
Q. T1SBTA	*	701	1361	710	1306	*	AG	71	1.6	.0	10.0
R. T1SBRA	*	701	1361	705	1306	*	AG	160	1.6	.0	10.0
S. HISBD	*	710	1306	702	1228	*	AG	819	1.6	.0	10.0
T. HISBD	*	702	1228	665	1190	*	AG	819	1.6	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Harbor Drive and Harbor Island pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	697	1285	1.8
2. Recpt 2	*	677	1285	1.8
3. Recpt 3	*	657	1285	1.8
4. Recpt 4	*	695	1265	1.8
5. Recpt 5	*	693	1245	1.8
6. Recpt 6	*	695	1323	1.8
7. Recpt 7	*	675	1323	1.8
8. Recpt 8	*	655	1323	1.8
9. Recpt 9	*	693	1343	1.8
10. Recpt 10	*	734	1290	1.8
11. Recpt 11	*	754	1290	1.8
12. Recpt 12	*	774	1290	1.8
13. Recpt 13	*	732	1270	1.8
14. Recpt 14	*	730	1250	1.8
15. Recpt 15	*	730	1327	1.8
16. Recpt 16	*	750	1327	1.8
17. Recpt 17	*	770	1327	1.8
18. Recpt 18	*	732	1347	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Harbor Drive and Harbor Island pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
			CONC/LINK (PPM)							
1. Recept 1	71.	.4	.0	.0	.0	.1	.0	.1	.0	.0
2. Recept 2	74.	.4	.0	.0	.0	.0	.0	.1	.0	.0
3. Recept 3	76.	.4	.0	.0	.0	.0	.0	.0	.0	.0
4. Recept 4	65.	.3	.0	.0	.0	.0	.0	.0	.0	.0
5. Recept 5	55.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. Recept 6	104.	.4	.0	.0	.0	.0	.0	.2	.0	.0
7. Recept 7	104.	.4	.0	.0	.0	.0	.0	.1	.0	.1
8. Recept 8	103.	.4	.0	.0	.0	.0	.0	.0	.0	.2
9. Recept 9	164.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. Recept 10	283.	.5	.0	.2	.0	.0	.0	.0	.0	.1
11. Recept 11	282.	.4	.0	.1	.0	.0	.0	.0	.0	.1
12. Recept 12	282.	.4	.0	.0	.0	.1	.0	.0	.0	.1
13. Recept 13	293.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. Recept 14	339.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. Recept 15	200.	.4	.0	.0	.0	.0	.0	.1	.0	.0
16. Recept 16	211.	.3	.0	.0	.0	.0	.0	.1	.0	.0
17. Recept 17	254.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. Recept 18	197.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Harbor Drive and Harbor Island pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

CONC/LINK (PPM)

RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Harbor Drive and Laurel Street am
     RUN: Hour 1            (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
     U=     .5 M/S            Z0= 100. CM          ALT=     0. (M)
   BRG= WORST CASE            VD=    .0 CM/S
  CLAS=      7 (G)            VS=    .0 CM/S
  MIXH= 1000. M              AMB=    .0 PPM
 SIGTH=    10. DEGREES      TEMP= 19.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. HDEBLA	*	363	1136	515	1137	*	AG	1216	1.6	.0	10.0
B. HDEBTA	*	363	1129	515	1129	*	AG	2209	1.6	.0	10.0
C. HDEBD	*	515	1129	656	1100	*	AG	2269	1.6	.0	10.0
D. HDWBTA	*	656	1106	515	1143	*	AG	2641	1.6	.0	10.0
E. HDWBRA	*	656	1107	515	1144	*	AG	40	1.6	.0	10.0
F. HDWBD	*	515	1143	363	1142	*	AG	2661	1.6	.0	10.0
G. LSBLA	*	534	1219	515	1137	*	AG	60	1.6	.0	10.0
H. LSBRA	*	537	1219	518	1137	*	AG	20	1.6	.0	10.0
I. LNBD	*	512	1137	531	1219	*	AG	1256	1.6	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Harbor Drive and Laurel Street am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	505	1155	1.8
2. Recpt 2	*	485	1155	1.8
3. Recpt 3	*	465	1155	1.8
4. Recpt 4	*	510	1175	1.8
5. Recpt 5	*	515	1195	1.8
6. Recpt 6	*	513	1118	1.8
7. Recpt 7	*	493	1118	1.8
8. Recpt 8	*	473	1118	1.8
9. Recpt 9	*	453	1118	1.8
10. Recpt 10	*	533	1115	1.8
11. Recpt 11	*	553	1112	1.8
12. Recpt 12	*	530	1150	1.8
13. Recpt 13	*	550	1145	1.8
14. Recpt 14	*	570	1140	1.8
15. Recpt 15	*	535	1170	1.8
16. Recpt 16	*	540	1190	1.8

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   3

     JOB: Harbor Drive and Laurel Street am
     RUN: Hour 1            (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
			CONC/LINK (PPM)							
1. Recpt 1	117.	.6	.0	.0	.1	.3	.0	.0	.0	.0
2. Recpt 2	112.	.6	.0	.0	.2	.2	.0	.1	.0	.0
3. Recpt 3	110.	.6	.0	.0	.2	.1	.0	.2	.0	.0
4. Recpt 4	127.	.4	.0	.0	.0	.1	.0	.0	.0	.0
5. Recpt 5	172.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	288.	.5	.1	.3	.0	.0	.0	.2	.0	.0
7. Recpt 7	290.	.5	.1	.3	.0	.0	.0	.2	.0	.0
8. Recpt 8	290.	.5	.1	.3	.0	.0	.0	.2	.0	.0
9. Recpt 9	61.	.5	.0	.2	.0	.0	.0	.1	.0	.0
10. Recpt 10	289.	.5	.1	.2	.0	.0	.0	.2	.0	.0
11. Recpt 11	302.	.5	.0	.0	.3	.0	.0	.1	.0	.0
12. Recpt 12	257.	.8	.1	.2	.0	.0	.0	.4	.0	.0
13. Recpt 13	263.	.8	.1	.2	.0	.2	.0	.2	.0	.0
14. Recpt 14	267.	.7	.1	.1	.0	.2	.0	.1	.0	.0
15. Recpt 15	247.	.4	.0	.1	.0	.0	.0	.2	.0	.0
16. Recpt 16	240.	.4	.0	.0	.0	.0	.0	.1	.0	.0

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   4

     JOB: Harbor Drive and Laurel Street am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

                *
                * (PPM)
 RECEPTOR       *   I
 ------------*-----
 1. Recpt 1   *    .1
 2. Recpt 2   *    .0
 3. Recpt 3   *    .0
 4. Recpt 4   *    .1
 5. Recpt 5   *    .2
 6. Recpt 6   *    .0
 7. Recpt 7   *    .0
 8. Recpt 8   *    .0
 9. Recpt 9   *    .0
10. Recpt 10  *    .0
11. Recpt 11  *    .0
12. Recpt 12  *    .0
13. Recpt 13  *    .0
14. Recpt 14  *    .0
15. Recpt 15  *    .0
16. Recpt 16  *    .1
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Harbor Drive and Laurel Street pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
     U=     .5 M/S             Z0= 100. CM          ALT=      0. (M)
   BRG= WORST CASE             VD=    .0 CM/S
  CLAS=      7 (G)             VS=    .0 CM/S
  MIXH= 1000. M               AMB=    .0 PPM
 SIGTH=    10. DEGREES       TEMP= 19.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. HDEBLA	363	1136	515	1137	AG	1413	1.6	.0	10.0
B. HDEBTA	363	1129	515	1129	AG	2744	1.6	.0	10.0
C. HDEBD	515	1129	656	1100	AG	2824	1.6	.0	10.0
D. HDWBTA	656	1106	515	1143	AG	2039	1.6	.0	10.0
E. HDWBRA	656	1107	515	1144	AG	140	1.6	.0	10.0
F. HDWBD	515	1143	363	1142	AG	2059	1.6	.0	10.0
G. LSBLA	534	1219	515	1137	AG	80	1.6	.0	10.0
H. LSBRA	537	1219	518	1137	AG	20	1.6	.0	10.0
I. LNBD	512	1137	531	1219	AG	1553	1.6	.0	10.0

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   2

     JOB: Harbor Drive and Laurel Street pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

III. RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. Recpt 1	505	1155	1.8
2. Recpt 2	485	1155	1.8
3. Recpt 3	465	1155	1.8
4. Recpt 4	510	1175	1.8
5. Recpt 5	515	1195	1.8
6. Recpt 6	513	1118	1.8
7. Recpt 7	493	1118	1.8
8. Recpt 8	473	1118	1.8
9. Recpt 9	453	1118	1.8
10. Recpt 10	533	1115	1.8
11. Recpt 11	553	1112	1.8
12. Recpt 12	530	1150	1.8
13. Recpt 13	550	1145	1.8
14. Recpt 14	570	1140	1.8
15. Recpt 15	535	1170	1.8
16. Recpt 16	540	1190	1.8

(Coordinates in M)

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Harbor Drive and Laurel Street pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
			CONC/LINK (PPM)							
1. Recpt 1	117.	.6	.0	.0	.2	.3	.0	.0	.0	.0
2. Recpt 2	113.	.6	.0	.0	.2	.2	.0	.1	.0	.0
3. Recpt 3	110.	.6	.0	.0	.2	.1	.0	.2	.0	.0
4. Recpt 4	127.	.4	.0	.0	.1	.1	.0	.0	.0	.0
5. Recpt 5	172.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	6.	.6	.0	.1	.0	.0	.0	.0	.0	.0
7. Recpt 7	31.	.6	.0	.2	.0	.0	.0	.0	.0	.0
8. Recpt 8	290.	.6	.1	.3	.0	.0	.0	.1	.0	.0
9. Recpt 9	62.	.6	.1	.3	.0	.0	.0	.1	.0	.0
10. Recpt 10	289.	.5	.1	.2	.0	.0	.0	.1	.0	.0
11. Recpt 11	302.	.6	.0	.0	.3	.0	.0	.0	.0	.0
12. Recpt 12	257.	.8	.2	.2	.0	.0	.0	.3	.0	.0
13. Recpt 13	263.	.8	.2	.2	.0	.2	.0	.2	.0	.0
14. Recpt 14	267.	.7	.1	.2	.0	.2	.0	.1	.0	.0
15. Recpt 15	247.	.5	.0	.1	.0	.0	.0	.1	.0	.0
16. Recpt 16	239.	.4	.0	.0	.0	.0	.0	.0	.0	.0

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   4

     JOB: Harbor Drive and Laurel Street pm
     RUN: Hour 1                (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV.  MODEL RESULTS (WORST CASE WIND ANGLE)      (CONT.)

              *
              * (PPM)
 RECEPTOR     *   I
-------------*-----
 1. Recpt 1   *   .1
 2. Recpt 2   *   .0
 3. Recpt 3   *   .0
 4. Recpt 4   *   .1
 5. Recpt 5   *   .2
 6. Recpt 6   *   .2
 7. Recpt 7   *   .1
 8. Recpt 8   *   .0
 9. Recpt 9   *   .0
10. Recpt 10  *   .0
11. Recpt 11  *   .0
12. Recpt 12  *   .1
13. Recpt 13  *   .0
14. Recpt 14  *   .0
15. Recpt 15  *   .1
16. Recpt 16  *   .1
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Harbor Drive and RentaCar am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
     U=    .5 M/S             Z0= 100. CM          ALT=      0. (M)
   BRG= WORST CASE            VD=   .0 CM/S
  CLAS=     7 (G)             VS=   .0 CM/S
  MIXH= 1000. M              AMB=   .0 PPM
 SIGTH=   10. DEGREES       TEMP= 19.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. HDEBLA	115	1306	265	1306	AG	70	1.6	.0	10.0
B. HDEBTA	115	1300	265	1300	AG	3145	1.6	.0	10.0
C. HDEBRA	115	1295	265	1295	AG	100	1.6	.0	10.0
D. HDEBD	265	1300	415	1300	AG	3355	1.6	.0	10.0
E. HDWBLA	415	1306	265	1306	AG	240	1.6	.0	10.0
F. HDWBTA	415	1312	265	1312	AG	4449	1.6	.0	10.0
G. HDWBRA	415	1317	265	1317	AG	15	1.6	.0	10.0
H. HDWBD	265	1312	115	1312	AG	4539	1.6	.0	10.0
I. RACCNBLA	265	1206	265	1306	AG	80	1.6	.0	10.0
J. RACCNBTA	269	1206	269	1306	AG	20	1.6	.0	10.0
K. RACCNBRA	269	1206	269	1306	AG	200	1.6	.0	10.0
L. RACCNBD	269	1306	269	1406	AG	105	1.6	.0	10.0
M. RACCSBLA	265	1406	265	1306	AG	10	1.6	.0	10.0
N. RACCSBTA	261	1406	261	1306	AG	10	1.6	.0	10.0
O. RACCSBRA	261	1406	261	1306	AG	10	1.6	.0	10.0
P. RACCSBD	261	1306	261	1206	AG	350	1.6	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Harbor Drive and RentaCar am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	253	1287	1.8
2. Recpt 2	*	233	1287	1.8
3. Recpt 3	*	213	1287	1.8
4. Recpt 4	*	253	1267	1.8
5. Recpt 5	*	253	1247	1.8
6. Recpt 6	*	276	1290	1.8
7. Recpt 7	*	296	1290	1.8
8. Recpt 8	*	316	1290	1.8
9. Recpt 9	*	276	1270	1.8
10. Recpt 10	*	276	1250	1.8
11. Recpt 11	*	252	1322	1.8
12. Recpt 12	*	232	1322	1.8
13. Recpt 13	*	212	1322	1.8
14. Recpt 14	*	252	1342	1.8
15. Recpt 15	*	252	1362	1.8
16. Recpt 16	*	276	1326	1.8
17. Recpt 17	*	296	1326	1.8
18. Recpt 18	*	316	1326	1.8
19. Recpt 19	*	276	1346	1.8
20. Recpt 20	*	276	1366	1.8

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE  3

    JOB: Harbor Drive and RentaCar am
    RUN: Hour 1              (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
			CONC/LINK (PPM)							
1. Recept 1	71.	.7	.0	.0	.0	.3	.0	.3	.0	.0
2. Recept 2	72.	.7	.0	.1	.0	.2	.0	.3	.0	.0
3. Recept 3	76.	.7	.0	.2	.0	.2	.0	.3	.0	.0
4. Recept 4	62.	.4	.0	.0	.0	.2	.0	.2	.0	.0
5. Recept 5	55.	.3	.0	.0	.0	.1	.0	.1	.0	.0
6. Recept 6	288.	.8	.0	.4	.0	.0	.0	.0	.0	.3
7. Recept 7	287.	.8	.0	.2	.0	.2	.0	.0	.0	.3
8. Recept 8	285.	.8	.0	.1	.0	.3	.0	.0	.0	.3
9. Recept 9	295.	.4	.0	.2	.0	.0	.0	.0	.0	.2
10. Recept 10	305.	.3	.0	.1	.0	.0	.0	.0	.0	.2
11. Recept 11	106.	.8	.0	.0	.0	.2	.0	.5	.0	.0
12. Recept 12	105.	.8	.0	.0	.0	.2	.0	.3	.0	.3
13. Recept 13	103.	.8	.0	.0	.0	.2	.0	.2	.0	.4
14. Recept 14	113.	.4	.0	.0	.0	.1	.0	.2	.0	.0
15. Recept 15	121.	.3	.0	.0	.0	.1	.0	.2	.0	.0
16. Recept 16	251.	.6	.0	.2	.0	.0	.0	.0	.0	.4
17. Recept 17	251.	.6	.0	.2	.0	.0	.0	.1	.0	.3
18. Recept 18	254.	.7	.0	.2	.0	.0	.0	.2	.0	.2
19. Recept 19	190.	.4	.0	.0	.0	.0	.0	.1	.0	.0
20. Recept 20	236.	.3	.0	.0	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Harbor Drive and RentaCar am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	I	J	K	L	M	N	O	P
	*	CONC/LINK (PPM)							
1. Recpt 1	*	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	*	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	*	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	*	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Harbor Drive and RentaCar pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
     U=     .5 M/S             Z0= 100. CM          ALT=      0. (M)
   BRG= WORST CASE             VD=    .0 CM/S
  CLAS=      7 (G)             VS=    .0 CM/S
  MIXH= 1000. M               AMB=    .0 PPM
 SIGTH=    10. DEGREES       TEMP= 19.6 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. HDEBLA	*	115	1306	265	1306	*	AG	30	1.6	.0	10.0
B. HDEBTA	*	115	1300	265	1300	*	AG	4127	1.6	.0	10.0
C. HDEBRA	*	115	1295	265	1295	*	AG	80	1.6	.0	10.0
D. HDEBD	*	265	1300	415	1300	*	AG	4407	1.6	.0	10.0
E. HDWBLA	*	415	1306	265	1306	*	AG	260	1.6	.0	10.0
F. HDWBTA	*	415	1312	265	1312	*	AG	3620	1.6	.0	10.0
G. HDWBRA	*	415	1317	265	1317	*	AG	15	1.6	.0	10.0
H. HDWBD	*	265	1312	115	1312	*	AG	3720	1.6	.0	10.0
I. RACCNBLA	*	265	1206	265	1306	*	AG	80	1.6	.0	10.0
J. RACCNBTA	*	269	1206	269	1306	*	AG	10	1.6	.0	10.0
K. RACCNBRA	*	269	1206	269	1306	*	AG	270	1.6	.0	10.0
L. RACCNBD	*	269	1306	269	1406	*	AG	65	1.6	.0	10.0
M. RACCSBLA	*	265	1406	265	1306	*	AG	10	1.6	.0	10.0
N. RACCSBTA	*	261	1406	261	1306	*	AG	10	1.6	.0	10.0
O. RACCSBRA	*	261	1406	261	1306	*	AG	20	1.6	.0	10.0
P. RACCSBD	*	261	1306	261	1206	*	AG	350	1.6	.0	10.0

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Harbor Drive and RentaCar pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	253	1287	1.8
2. Recpt 2	233	1287	1.8
3. Recpt 3	213	1287	1.8
4. Recpt 4	253	1267	1.8
5. Recpt 5	253	1247	1.8
6. Recpt 6	276	1290	1.8
7. Recpt 7	296	1290	1.8
8. Recpt 8	316	1290	1.8
9. Recpt 9	276	1270	1.8
10. Recpt 10	276	1250	1.8
11. Recpt 11	252	1322	1.8
12. Recpt 12	232	1322	1.8
13. Recpt 13	212	1322	1.8
14. Recpt 14	252	1342	1.8
15. Recpt 15	252	1362	1.8
16. Recpt 16	276	1326	1.8
17. Recpt 17	296	1326	1.8
18. Recpt 18	316	1326	1.8
19. Recpt 19	276	1346	1.8
20. Recpt 20	276	1366	1.8

□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Harbor Drive and RentaCar pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	72.	.8	.0	.0	.0	.4	.0	.2	.0	.0
2. Recpt 2	75.	.7	.0	.0	.0	.3	.0	.2	.0	.0
3. Recpt 3	76.	.7	.0	.2	.0	.2	.0	.2	.0	.0
4. Recpt 4	64.	.5	.0	.0	.0	.2	.0	.1	.0	.0
5. Recpt 5	55.	.4	.0	.0	.0	.2	.0	.1	.0	.0
6. Recpt 6	287.	.8	.0	.5	.0	.0	.0	.0	.0	.2
7. Recpt 7	286.	.8	.0	.3	.0	.3	.0	.0	.0	.2
8. Recpt 8	285.	.8	.0	.1	.0	.4	.0	.0	.0	.2
9. Recpt 9	295.	.5	.0	.2	.0	.0	.0	.0	.0	.2
10. Recpt 10	305.	.4	.0	.2	.0	.0	.0	.0	.0	.1
11. Recpt 11	108.	.8	.0	.0	.0	.3	.0	.4	.0	.0
12. Recpt 12	106.	.8	.0	.0	.0	.3	.0	.2	.0	.2
13. Recpt 13	105.	.8	.0	.0	.0	.3	.0	.1	.0	.4
14. Recpt 14	115.	.4	.0	.0	.0	.2	.0	.2	.0	.0
15. Recpt 15	121.	.3	.0	.0	.0	.1	.0	.1	.0	.0
16. Recpt 16	110.	.6	.0	.0	.0	.3	.0	.3	.0	.0
17. Recpt 17	111.	.6	.0	.0	.0	.2	.0	.3	.0	.0
18. Recpt 18	250.	.6	.0	.2	.0	.0	.0	.3	.0	.0
19. Recpt 19	189.	.4	.0	.0	.0	.1	.0	.1	.0	.0
20. Recpt 20	188.	.3	.0	.0	.0	.0	.0	.0	.0	.0

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   4

     JOB: Harbor Drive and RentaCar pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

CONC/LINK (PPM)

RECEPTOR	I	J	K	L	M	N	O	P
1. Recept 1	.0	.0	.0	.0	.0	.0	.0	.0
2. Recept 2	.0	.0	.0	.0	.0	.0	.0	.0
3. Recept 3	.0	.0	.0	.0	.0	.0	.0	.0
4. Recept 4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recept 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recept 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recept 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recept 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recept 9	.0	.0	.0	.0	.0	.0	.0	.0
10. Recept 10	.0	.0	.0	.0	.0	.0	.0	.0
11. Recept 11	.0	.0	.0	.0	.0	.0	.0	.0
12. Recept 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recept 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recept 14	.0	.0	.0	.0	.0	.0	.0	.0
15. Recept 15	.0	.0	.0	.0	.0	.0	.0	.0
16. Recept 16	.0	.0	.0	.0	.0	.0	.0	.0
17. Recept 17	.0	.0	.0	.0	.0	.0	.0	.0
18. Recept 18	.0	.0	.0	.0	.0	.0	.0	.0
19. Recept 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recept 20	.0	.0	.0	.0	.0	.0	.0	.0

□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Grape Street & Pacific Hwy am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 0. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 19.6 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. GSEBLA	-150	0	0	0	AG	40	1.6	.0	10.0
B. GSEBTA	-150	-4	0	-4	AG	1272	1.6	.0	10.0
C. GSEBRA	-150	-6	0	-6	AG	61	1.6	.0	10.0
D. GSEBD	0	-4	150	-4	AG	1892	1.6	.0	10.0
E. GSWBLA	150	0	0	0	AG	0	1.6	.0	10.0
F. GSWBTA	150	4	0	4	AG	0	1.6	.0	10.0
G. GSWBRA	150	6	0	6	AG	0	1.6	.0	10.0
H. GSWBD	0	4	-150	4	AG	0	1.6	.0	10.0
I. PHNBLA	0	-150	0	0	AG	0	1.6	.0	10.0
J. PHNBTA	4	-150	4	0	AG	522	1.6	.0	10.0
K. PHNBRA	6	-150	6	0	AG	550	1.6	.0	10.0
L. PHNBD	4	0	4	150	AG	40	1.6	.0	10.0
M. PHSBLA	0	150	0	0	AG	70	1.6	.0	10.0
N. PHSBTA	-4	150	-4	0	AG	1170	1.6	.0	10.0
O. PHSBRA	-6	150	-6	0	AG	0	1.6	.0	10.0
P. PHSBD	-4	0	-4	-150	AG	1231	1.6	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Grape Street & Pacific Hwy am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	16	-14	1.8
7. Recpt 7	36	-14	1.8
8. Recpt 8	56	-14	1.8
9. Recpt 9	16	-34	1.8
10. Recpt 10	16	-54	1.8
11. Recpt 11	-16	14	1.8
12. Recpt 12	-36	14	1.8
13. Recpt 13	-56	14	1.8
14. Recpt 14	-16	34	1.8
15. Recpt 15	-16	54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	14	36	1.8
18. Recpt 18	14	56	1.8
19. Recpt 19	34	16	1.8
20. Recpt 20	54	16	1.8

□

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   3

     JOB: Grape Street & Pacific Hwy am
     RUN: Hour 1              (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	76.	.4	.0	.0	.0	.2	.0	.0	.0	.0
2. Recpt 2	79.	.3	.0	.0	.0	.2	.0	.0	.0	.0
3. Recpt 3	81.	.3	.0	.0	.0	.1	.0	.0	.0	.0
4. Recpt 4	45.	.3	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	25.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	283.	.4	.0	.2	.0	.0	.0	.0	.0	.0
7. Recpt 7	282.	.3	.0	.1	.0	.1	.0	.0	.0	.0
8. Recpt 8	281.	.3	.0	.0	.0	.2	.0	.0	.0	.0
9. Recpt 9	334.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	341.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	166.	.4	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	112.	.2	.0	.0	.0	.1	.0	.0	.0	.0
13. Recpt 13	105.	.2	.0	.0	.0	.1	.0	.0	.0	.0
14. Recpt 14	166.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	168.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	192.	.4	.0	.0	.0	.1	.0	.0	.0	.0
17. Recpt 17	189.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	189.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	202.	.3	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	210.	.2	.0	.0	.0	.1	.0	.0	.0	.0

□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Grape Street & Pacific Hwy am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.1
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.2
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0	.0	.0	.2
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0	.0	.0	.1
15. Recpt 15	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0	.0	.0	.1
17. Recpt 17	.0	.0	.0	.0	.0	.0	.0	.1
18. Recpt 18	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Grape Street & Pacific Hwy pm
     RUN: Hour 1              (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
     U=     .5 M/S            Z0= 100. CM          ALT=      0. (M)
   BRG= WORST CASE            VD=    .0 CM/S
  CLAS=      7 (G)            VS=    .0 CM/S
  MIXH= 1000. M              AMB=    .0 PPM
 SIGTH=    10. DEGREES      TEMP= 19.6 DEGREE (C)
```

II. LINK VARIABLES

	LINK DESCRIPTION	X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A.	GSEBLA	-150	0	0	0	AG	90	1.6	.0	10.0
B.	GSEBTA	-150	-4	0	-4	AG	2451	1.6	.0	10.0
C.	GSEBRA	-150	-6	0	-6	AG	95	1.6	.0	10.0
D.	GSEBD	0	-4	150	-4	AG	3691	1.6	.0	10.0
E.	GSWBLA	150	0	0	0	AG	0	1.6	.0	10.0
F.	GSWBTA	150	4	0	4	AG	0	1.6	.0	10.0
G.	GSWBRA	150	6	0	6	AG	0	1.6	.0	10.0
H.	GSWBD	0	4	-150	4	AG	0	1.6	.0	10.0
I.	PHNBLA	0	-150	0	0	AG	0	1.6	.0	10.0
J.	PHNBTA	4	-150	4	0	AG	1114	1.6	.0	10.0
K.	PHNBRA	6	-150	6	0	AG	1020	1.6	.0	10.0
L.	PHNBD	4	0	4	150	AG	90	1.6	.0	10.0
M.	PHSBLA	0	150	0	0	AG	220	1.6	.0	10.0
N.	PHSBTA	-4	150	-4	0	AG	810	1.6	.0	10.0
O.	PHSBRA	-6	150	-6	0	AG	0	1.6	.0	10.0
P.	PHSBD	-4	0	-4	-150	AG	905	1.6	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Grape Street & Pacific Hwy pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-14	-16	1.8
2. Recpt 2	*	-34	-16	1.8
3. Recpt 3	*	-54	-16	1.8
4. Recpt 4	*	-14	-36	1.8
5. Recpt 5	*	-14	-56	1.8
6. Recpt 6	*	16	-14	1.8
7. Recpt 7	*	36	-14	1.8
8. Recpt 8	*	56	-14	1.8
9. Recpt 9	*	16	-34	1.8
10. Recpt 10	*	16	-54	1.8
11. Recpt 11	*	-16	14	1.8
12. Recpt 12	*	-36	14	1.8
13. Recpt 13	*	-56	14	1.8
14. Recpt 14	*	-16	34	1.8
15. Recpt 15	*	-16	54	1.8
16. Recpt 16	*	14	16	1.8
17. Recpt 17	*	14	36	1.8
18. Recpt 18	*	14	56	1.8
19. Recpt 19	*	34	16	1.8
20. Recpt 20	*	54	16	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Grape Street & Pacific Hwy pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
			CONC/LINK (PPM)							
1. Recpt 1	76.	.6	.0	.0	.0	.4	.0	.0	.0	.0
2. Recpt 2	78.	.5	.0	.0	.0	.3	.0	.0	.0	.0
3. Recpt 3	81.	.4	.0	.1	.0	.2	.0	.0	.0	.0
4. Recpt 4	45.	.4	.0	.0	.0	.2	.0	.0	.0	.0
5. Recpt 5	29.	.4	.0	.0	.0	.1	.0	.0	.0	.0
6. Recpt 6	288.	.6	.0	.3	.0	.0	.0	.0	.0	.0
7. Recpt 7	288.	.6	.0	.1	.0	.3	.0	.0	.0	.0
8. Recpt 8	282.	.5	.0	.1	.0	.3	.0	.0	.0	.0
9. Recpt 9	333.	.5	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	340.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	163.	.5	.0	.1	.0	.0	.0	.0	.0	.0
12. Recpt 12	110.	.4	.0	.0	.0	.2	.0	.0	.0	.0
13. Recpt 13	105.	.4	.0	.0	.0	.2	.0	.0	.0	.0
14. Recpt 14	166.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	168.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	191.	.6	.0	.0	.0	.2	.0	.0	.0	.0
17. Recpt 17	188.	.5	.0	.0	.0	.1	.0	.0	.0	.0
18. Recpt 18	187.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	202.	.4	.0	.0	.0	.2	.0	.0	.0	.0
20. Recpt 20	238.	.4	.0	.0	.0	.2	.0	.0	.0	.0

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   4

      JOB: Grape Street & Pacific Hwy pm
      RUN: Hour 1              (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
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IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.1
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.1	.1	.0	.0	.0	.0	.0
10. Recpt 10	.0	.1	.1	.0	.0	.0	.0	.0
11. Recpt 11	.0	.1	.0	.0	.0	.0	.0	.1
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.1	.0	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	.0	.2	.2	.0	.0	.0	.0	.0
17. Recpt 17	.0	.1	.1	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Laurel Street & Pacific Hwy am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	19.6 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
	*	LINK COORDINATES (M)				*					
A. LSEBLA	*	-150	0	0	0	*	AG	705	1.6	.0	10.0
B. LSEBTA	*	-150	-4	0	-4	*	AG	1051	1.6	.0	10.0
C. LSEBRA	*	-150	-6	0	-6	*	AG	30	1.6	.0	10.0
D. LSEBD	*	0	-4	150	-4	*	AG	1441	1.6	.0	10.0
E. LSWBLA	*	150	0	0	0	*	AG	70	1.6	.0	10.0
F. LSWBTA	*	150	4	0	4	*	AG	1022	1.6	.0	10.0
G. LSWBRA	*	150	6	0	6	*	AG	120	1.6	.0	10.0
H. LSWBD	*	0	4	-150	4	*	AG	2648	1.6	.0	10.0
I. PHNBLA	*	0	-150	0	0	*	AG	110	1.6	.0	10.0
J. PHNBTA	*	4	-150	4	0	*	AG	500	1.6	.0	10.0
K. PHNBRA	*	6	-150	6	0	*	AG	140	1.6	.0	10.0
L. PHNBD	*	4	0	4	150	*	AG	1325	1.6	.0	10.0
M. PHSBLA	*	0	150	0	0	*	AG	250	1.6	.0	10.0
N. PHSBTA	*	-4	150	-4	0	*	AG	480	1.6	.0	10.0
O. PHSBRA	*	-6	150	-6	0	*	AG	1516	1.6	.0	10.0
P. PHSBD	*	-4	0	-4	-150	*	AG	580	1.6	.0	10.0

□

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Laurel Street & Pacific Hwy am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	16	-14	1.8
7. Recpt 7	36	-14	1.8
8. Recpt 8	56	-14	1.8
9. Recpt 9	16	-34	1.8
10. Recpt 10	16	-54	1.8
11. Recpt 11	-16	14	1.8
12. Recpt 12	-36	14	1.8
13. Recpt 13	-56	14	1.8
14. Recpt 14	-16	34	1.8
15. Recpt 15	-16	54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	14	36	1.8
18. Recpt 18	14	56	1.8
19. Recpt 19	34	16	1.8
20. Recpt 20	54	16	1.8

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   3

     JOB: Laurel Street & Pacific Hwy am
     RUN: Hour 1             (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
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IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	A	B	C	D	E	F	G	H
			CONC/LINK (PPM)							
1. Recept 1	11.	.7	.0	.0	.0	.0	.0	.0	.0	.1
2. Recept 2	22.	.5	.0	.0	.0	.0	.0	.0	.0	.1
3. Recept 3	59.	.5	.0	.1	.0	.0	.0	.0	.0	.2
4. Recept 4	9.	.6	.0	.0	.0	.0	.0	.0	.0	.0
5. Recept 5	8.	.5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recept 6	286.	.6	.0	.1	.0	.0	.0	.0	.0	.2
7. Recept 7	284.	.6	.0	.0	.0	.0	.0	.0	.0	.2
8. Recept 8	282.	.5	.0	.0	.0	.1	.0	.0	.0	.2
9. Recept 9	347.	.5	.0	.0	.0	.0	.0	.0	.0	.0
10. Recept 10	348.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. Recept 11	134.	.6	.0	.0	.0	.0	.0	.0	.0	.2
12. Recept 12	109.	.6	.0	.0	.0	.1	.0	.0	.0	.2
13. Recept 13	106.	.6	.0	.0	.0	.0	.0	.0	.0	.3
14. Recept 14	154.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. Recept 15	161.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. Recept 16	255.	.7	.0	.0	.0	.0	.0	.0	.0	.3
17. Recept 17	247.	.5	.0	.0	.0	.0	.0	.0	.0	.1
18. Recept 18	209.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. Recept 19	258.	.6	.0	.0	.0	.0	.0	.0	.0	.2
20. Recept 20	260.	.5	.0	.0	.0	.0	.0	.0	.0	.2

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   4

     JOB: Laurel Street & Pacific Hwy am
     RUN: Hour 1              (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
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IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	I	J	K	L	M	N	O	P
	CONC/LINK (PPM)							
1. Recpt 1	.0	.0	.0	.1	.0	.0	.2	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.1	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.1	.0	.0	.2	.0
5. Recpt 5	.0	.0	.0	.1	.0	.0	.1	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.1	.0	.0	.1	.0
10. Recpt 10	.0	.0	.0	.0	.0	.0	.1	.0
11. Recpt 11	.0	.0	.0	.0	.0	.0	.1	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0	.0	.2	.0
15. Recpt 15	.0	.0	.0	.0	.0	.0	.2	.0
16. Recpt 16	.0	.0	.0	.1	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.1	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.2	.0	.0	.1	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Laurel Street & Pacific Hwy pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= .5 M/S	Z0= 100. CM	ALT= 0. (M)
BRG= WORST CASE	VD= .0 CM/S	
CLAS= 7 (G)	VS= .0 CM/S	
MIXH= 1000. M	AMB= .0 PPM	
SIGTH= 10. DEGREES	TEMP= 19.6 DEGREE (C)	

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. LSEBLA	*	-150	0	0	0	*	AG	758	1.6	.0	10.0
B. LSEBTA	*	-150	-4	0	-4	*	AG	1425	1.6	.0	10.0
C. LSEBRA	*	-150	-6	0	-6	*	AG	80	1.6	.0	10.0
D. LSEBD	*	0	-4	150	-4	*	AG	1955	1.6	.0	10.0
E. LSWBLA	*	150	0	0	0	*	AG	100	1.6	.0	10.0
F. LSWBTA	*	150	4	0	4	*	AG	1034	1.6	.0	10.0
G. LSWBRA	*	150	6	0	6	*	AG	180	1.6	.0	10.0
H. LSWBD	*	0	4	-150	4	*	AG	2201	1.6	.0	10.0
I. PHNBLA	*	0	-150	0	0	*	AG	150	1.6	.0	10.0
J. PHNBTA	*	4	-150	4	0	*	AG	1110	1.6	.0	10.0
K. PHNBRA	*	6	-150	6	0	*	AG	280	1.6	.0	10.0
L. PHNBD	*	4	0	4	150	*	AG	2048	1.6	.0	10.0
M. PHSBLA	*	0	150	0	0	*	AG	250	1.6	.0	10.0
N. PHSBTA	*	-4	150	-4	0	*	AG	830	1.6	.0	10.0
O. PHSBRA	*	-6	150	-6	0	*	AG	1017	1.6	.0	10.0
P. PHSBD	*	-4	0	-4	-150	*	AG	1010	1.6	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Laurel Street & Pacific Hwy pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	16	-14	1.8
7. Recpt 7	36	-14	1.8
8. Recpt 8	56	-14	1.8
9. Recpt 9	16	-34	1.8
10. Recpt 10	16	-54	1.8
11. Recpt 11	-16	14	1.8
12. Recpt 12	-36	14	1.8
13. Recpt 13	-56	14	1.8
14. Recpt 14	-16	34	1.8
15. Recpt 15	-16	54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	14	36	1.8
18. Recpt 18	14	56	1.8
19. Recpt 19	34	16	1.8
20. Recpt 20	54	16	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Laurel Street & Pacific Hwy pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	12.	.8	.0	.1	.0	.0	.0	.0	.0	.1
2. Recpt 2	22.	.6	.0	.1	.0	.0	.0	.0	.0	.1
3. Recpt 3	64.	.5	.0	.2	.0	.0	.0	.0	.0	.1
4. Recpt 4	10.	.6	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	9.	.5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	285.	.7	.0	.2	.0	.0	.0	.0	.0	.2
7. Recpt 7	283.	.6	.0	.1	.0	.1	.0	.0	.0	.2
8. Recpt 8	282.	.6	.0	.0	.0	.2	.0	.0	.0	.1
9. Recpt 9	346.	.6	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	348.	.5	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	106.	.7	.0	.0	.0	.2	.0	.1	.0	.0
12. Recpt 12	107.	.6	.0	.0	.0	.1	.0	.0	.0	.2
13. Recpt 13	105.	.6	.0	.0	.0	.1	.0	.0	.0	.2
14. Recpt 14	159.	.6	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	163.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	255.	.8	.0	.1	.0	.0	.0	.0	.0	.2
17. Recpt 17	243.	.6	.0	.0	.0	.0	.0	.0	.0	.1
18. Recpt 18	204.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	258.	.6	.0	.1	.0	.0	.0	.0	.0	.2
20. Recpt 20	259.	.6	.0	.1	.0	.0	.0	.0	.0	.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Laurel Street & Pacific Hwy pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.2	.0	.1	.2	.0
2. Recpt 2	.0	.0	.0	.1	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.2	.0	.0	.1	.0
5. Recpt 5	.0	.0	.0	.1	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.2	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.1	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.1	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0	.0	.1	.0
15. Recpt 15	.0	.0	.0	.0	.0	.0	.1	.0
16. Recpt 16	.0	.0	.0	.2	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.2	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

Harbor Island Hotel Port Master Plan Amendment

San Diego Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	175	Room

1.2 Other Project Characteristics

Urbanization Urban

Wind Speed (m/s) 2.6

Utility Company

Climate Zone 13

Precipitation Freq (Days) 40

1.3 User Entered Comments

Project Characteristics -

Land Use - Sunroad Hotel Project

Construction Phase - Construction schedule based on Traffic Impact Assessment - for 1 hotel only

Demolition - Demolition of locker facility and parking lot - based on EIR URBEMIS runs

Trips and VMT - Trips based on Traffic Impact Analysis

Architectural Coating - Assume Rule 67.0 compliant coatings

Vehicle Trips - Based on Traffic Impact Analysis - for Business Hotel, 7 trips/room

Road Dust - USEPA ubiquitous baseline

Area Coating - Rule 67.0 compliant coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.45	53.46	31.55	0.06	12.85	2.85	15.69	3.31	2.80	5.26	0.00	6,274.72	0.00	0.57	0.00	6,286.63
2014	47.21	36.84	32.83	0.06	2.06	2.21	4.27	0.03	2.19	2.22	0.00	5,972.08	0.00	0.57	0.00	5,984.11
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.45	53.46	31.55	0.06	9.30	2.85	12.15	1.29	2.80	3.24	0.00	6,274.72	0.00	0.57	0.00	6,286.63
2014	47.21	36.84	32.83	0.06	2.06	2.21	4.27	0.03	2.19	2.22	0.00	5,972.08	0.00	0.57	0.00	5,984.11
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Mobile	5.10	10.01	46.69	0.07	2.03	0.42	2.45	0.11	0.37	0.48		6,926.41		0.36		6,934.05
Total	**11.72**	**14.16**	**50.18**	**0.09**	**2.03**	**0.42**	**2.77**	**0.11**	**0.37**	**0.80**		**11,910.13**		**0.46**	**0.09**	**11,948.10**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Mobile	5.10	10.01	46.69	0.07	2.03	0.42	2.45	0.11	0.37	0.48		6,926.41		0.36		6,934.05
Total	**11.72**	**14.16**	**50.18**	**0.09**	**2.03**	**0.42**	**2.77**	**0.11**	**0.37**	**0.80**		**11,910.13**		**0.46**	**0.09**	**11,948.10**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.81	0.00	5.81	0.00	0.00	0.00						0.00
Off-Road	5.07	38.45	23.67	0.04		2.29	2.29		2.29	2.29		3,946.47		0.46		3,956.03
Total	**5.07**	**38.45**	**23.67**	**0.04**	**5.81**	**2.29**	**8.10**	**0.00**	**2.29**	**2.29**		**3,946.47**		**0.46**		**3,956.03**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.26	14.92	6.99	0.02	6.87	0.55	7.42	0.02	0.51	0.53		2,192.25		0.06		2,193.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.09	0.88	0.00	0.17	0.01	0.18	0.00	0.01	0.01		135.99		0.01		136.17
Total	**1.34**	**15.01**	**7.87**	**0.02**	**7.04**	**0.56**	**7.60**	**0.02**	**0.52**	**0.54**		**2,328.24**		**0.07**		**2,329.71**

3.2 Demolition - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.26	0.00	2.26	0.00	0.00	0.00						0.00
Off-Road	5.07	38.45	23.67	0.04		2.29	2.29		2.29	2.29	0.00	3,946.47		0.46		3,956.03
Total	**5.07**	**38.45**	**23.67**	**0.04**	**2.26**	**2.29**	**4.55**	**0.00**	**2.29**	**2.29**	**0.00**	**3,946.47**		**0.46**		**3,956.03**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.26	14.92	6.99	0.02	6.87	0.55	7.42	0.02	0.51	0.53		2,192.25		0.06		2,193.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.09	0.88	0.00	0.17	0.01	0.18	0.00	0.01	0.01		135.99		0.01		136.17
Total	**1.34**	**15.01**	**7.87**	**0.02**	**7.04**	**0.56**	**7.60**	**0.02**	**0.52**	**0.54**		**2,328.24**		**0.07**		**2,329.71**

3.3 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.16	0.00	6.16	3.31	0.00	3.31						0.00
Off-Road	4.70	37.12	22.15	0.04		1.94	1.94		1.94	1.94		3,827.58		0.42		3,836.44
Total	**4.70**	**37.12**	**22.15**	**0.04**	**6.16**	**1.94**	**8.10**	**3.31**	**1.94**	**5.25**		**3,827.58**		**0.42**		**3,836.44**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.05	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.18		0.00		7.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.07	0.68	0.00	0.13	0.00	0.14	0.00	0.00	0.01		104.61		0.01		104.75
Total	**0.06**	**0.12**	**0.70**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**111.79**		**0.01**		**111.94**

3.3 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.40	0.00	2.40	1.29	0.00	1.29						0.00
Off-Road	4.70	37.12	22.15	0.04		1.94	1.94		1.94	1.94	0.00	3,827.58		0.42		3,836.44
Total	**4.70**	**37.12**	**22.15**	**0.04**	**2.40**	**1.94**	**4.34**	**1.29**	**1.94**	**3.23**	**0.00**	**3,827.58**		**0.42**		**3,836.44**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.05	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.18		0.00		7.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.07	0.68	0.00	0.13	0.00	0.14	0.00	0.00	0.01		104.61		0.01		104.75
Total	**0.06**	**0.12**	**0.70**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**111.79**		**0.01**		**111.94**

3.4 Paving - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.16	25.92	16.81	0.03		2.21	2.21		2.21	2.21		2,393.42		0.37		2,401.25
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**4.16**	**25.92**	**16.81**	**0.03**		**2.21**	**2.21**		**2.21**	**2.21**		**2,393.42**		**0.37**		**2,401.25**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.16	0.08	0.00	0.14	0.01	0.15	0.00	0.01	0.01		23.60		0.00		23.61
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.10	1.02	0.00	0.20	0.01	0.20	0.00	0.01	0.01		156.91		0.01		157.12
Total	**0.10**	**0.26**	**1.10**	**0.00**	**0.34**	**0.02**	**0.35**	**0.00**	**0.02**	**0.02**		**180.51**		**0.01**		**180.73**

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3.4 Paving - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.16	25.92	16.81	0.03		2.21	2.21		2.21	2.21	0.00	2,393.42		0.37		2,401.25
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**4.16**	**25.92**	**16.81**	**0.03**		**2.21**	**2.21**		**2.21**	**2.21**	**0.00**	**2,393.42**		**0.37**		**2,401.25**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.16	0.08	0.00	0.14	0.01	0.15	0.00	0.01	0.01		23.60		0.00		23.61
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.09	0.10	1.02	0.00	0.20	0.01	0.20	0.00	0.01	0.01		156.91		0.01		157.12
Total	**0.10**	**0.26**	**1.10**	**0.00**	**0.34**	**0.02**	**0.35**	**0.00**	**0.02**	**0.02**		**180.51**		**0.01**		**180.73**

3.5 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	28.63	19.52	0.04		1.88	1.88		1.88	1.88		3,233.11		0.47		3,242.90
Total	**5.20**	**28.63**	**19.52**	**0.04**		**1.88**	**1.88**		**1.88**	**1.88**		**3,233.11**		**0.47**		**3,242.90**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.61	7.17	4.11	0.01	0.39	0.24	0.62	0.01	0.22	0.23		1,144.92		0.03		1,145.55
Worker	0.64	0.72	7.28	0.01	1.40	0.05	1.45	0.02	0.04	0.06		1,119.32		0.07		1,120.82
Total	**1.25**	**7.89**	**11.39**	**0.02**	**1.79**	**0.29**	**2.07**	**0.03**	**0.26**	**0.29**		**2,264.24**		**0.10**		**2,266.37**

3.5 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	28.63	19.52	0.04		1.88	1.88		1.88	1.88	0.00	3,233.11		0.47		3,242.90
Total	**5.20**	**28.63**	**19.52**	**0.04**		**1.88**	**1.88**		**1.88**	**1.88**	**0.00**	**3,233.11**		**0.47**		**3,242.90**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.61	7.17	4.11	0.01	0.39	0.24	0.62	0.01	0.22	0.23		1,144.92		0.03		1,145.55
Worker	0.64	0.72	7.28	0.01	1.40	0.05	1.45	0.02	0.04	0.06		1,119.32		0.07		1,120.82
Total	**1.25**	**7.89**	**11.39**	**0.02**	**1.79**	**0.29**	**2.07**	**0.03**	**0.26**	**0.29**		**2,264.24**		**0.10**		**2,266.37**

698

3.5 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.75	26.63	19.13	0.04		1.69	1.69		1.69	1.69		3,233.11		0.43		3,242.06
Total	**4.75**	**26.63**	**19.13**	**0.04**		**1.69**	**1.69**		**1.69**	**1.69**		**3,233.11**		**0.43**		**3,242.06**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.56	6.64	3.78	0.01	0.39	0.22	0.60	0.01	0.20	0.21		1,146.79		0.03		1,147.37
Worker	0.59	0.66	6.69	0.01	1.40	0.05	1.45	0.02	0.04	0.06		1,095.90		0.07		1,097.29
Total	**1.15**	**7.30**	**10.47**	**0.02**	**1.79**	**0.27**	**2.05**	**0.03**	**0.24**	**0.27**		**2,242.69**		**0.10**		**2,244.66**

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699

3.5 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.75	26.63	19.13	0.04		1.69	1.69		1.69	1.69	0.00	3,233.11		0.43		3,242.06
Total	**4.75**	**26.63**	**19.13**	**0.04**		**1.69**	**1.69**		**1.69**	**1.69**	**0.00**	**3,233.11**		**0.43**		**3,242.06**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.56	6.64	3.78	0.01	0.39	0.22	0.60	0.01	0.20	0.21		1,146.79		0.03		1,147.37
Worker	0.59	0.66	6.69	0.01	1.40	0.05	1.45	0.02	0.04	0.06		1,095.90		0.07		1,097.29
Total	**1.15**	**7.30**	**10.47**	**0.02**	**1.79**	**0.27**	**2.05**	**0.03**	**0.24**	**0.27**		**2,242.69**		**0.10**		**2,244.66**

61728 PAGE 700

3.6 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	40.73					0.00	0.00		0.00	0.00						0.00
Off-Road	0.45	2.77	1.92	0.00		0.24	0.24		0.24	0.24		281.19		0.04		282.03
Total	**41.18**	**2.77**	**1.92**	**0.00**		**0.24**	**0.24**		**0.24**	**0.24**		**281.19**		**0.04**		**282.03**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.13	1.31	0.00	0.27	0.01	0.28	0.00	0.01	0.01		215.08		0.01		215.36
Total	**0.12**	**0.13**	**1.31**	**0.00**	**0.27**	**0.01**	**0.28**	**0.00**	**0.01**	**0.01**		**215.08**		**0.01**		**215.36**

3.6 Architectural Coating - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	40.73					0.00	0.00		0.00	0.00						0.00
Off-Road	0.45	2.77	1.92	0.00		0.24	0.24		0.24	0.24	0.00	281.19		0.04		282.03
Total	41.18	2.77	1.92	0.00		0.24	0.24		0.24	0.24	0.00	281.19		0.04		282.03

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.12	0.13	1.31	0.00	0.27	0.01	0.28	0.00	0.01	0.01		215.08		0.01		215.36
Total	0.12	0.13	1.31	0.00	0.27	0.01	0.28	0.00	0.01	0.01		215.08		0.01		215.36

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.10	10.01	46.69	0.07	2.03	0.42	2.45	0.11	0.37	0.48		6,926.41		0.36		6,934.05
Unmitigated	5.10	10.01	46.69	0.07	2.03	0.42	2.45	0.11	0.37	0.48		6,926.41		0.36		6,934.05
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,225.00	1,225.00	1225.00	2,327,415	2,327,415
Total	1,225.00	1,225.00	1,225.00	2,327,415	2,327,415

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Hotel	9.50	7.30	7.30	19.40	61.60	19.00

5.0 Energy Detail

61728 703

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
NaturalGas Unmitigated	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	42361.6	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total		**0.46**	**4.15**	**3.49**	**0.02**		**0.00**	**0.32**		**0.00**	**0.32**		**4,983.72**		**0.10**	**0.09**	**5,014.05**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	42.3616	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total		**0.46**	**4.15**	**3.49**	**0.02**		**0.00**	**0.32**		**0.00**	**0.32**		**4,983.72**		**0.10**	**0.09**	**5,014.05**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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705

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.73					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.44					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**6.17**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.73					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.44					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**6.17**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Harbor Island Hotel Port Master Plan Amendment

San Diego Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	175	Room

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**
Climate Zone	13	**Precipitation Freq (Days)**	40	

1.3 User Entered Comments

Project Characteristics -

Land Use - Sunroad Hotel Project

Construction Phase - Construction schedule based on Traffic Impact Assessment - for 1 hotel only

Demolition - Demolition of locker facility and parking lot - based on EIR URBEMIS runs

Trips and VMT - Trips based on Traffic Impact Analysis

Architectural Coating - Assume Rule 67.0 compliant coatings

Vehicle Trips - Based on Traffic Impact Analysis - for Business Hotel, 7 trips/room

Road Dust - USEPA ubiquitous baseline

Area Coating - Rule 67.0 compliant coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.54	53.84	32.09	0.06	12.85	2.85	15.70	3.31	2.81	5.26	0.00	6,252.85	0.00	0.57	0.00	6,264.73
2014	47.30	37.02	32.92	0.06	2.06	2.21	4.27	0.03	2.19	2.22	0.00	5,862.03	0.00	0.57	0.00	5,874.02
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2013	6.54	53.84	32.09	0.06	9.30	2.85	12.16	1.29	2.81	3.24	0.00	6,252.85	0.00	0.57	0.00	6,264.73
2014	47.30	37.02	32.92	0.06	2.06	2.21	4.27	0.03	2.19	2.22	0.00	5,862.03	0.00	0.57	0.00	5,874.02
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Mobile	5.42	10.51	47.27	0.07	2.03	0.42	2.45	0.11	0.37	0.48		6,485.22		0.32		6,491.91
Total	**12.04**	**14.66**	**50.76**	**0.09**	**2.03**	**0.42**	**2.77**	**0.11**	**0.37**	**0.80**		**11,468.94**		**0.42**	**0.09**	**11,505.96**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Mobile	5.42	10.51	47.27	0.07	2.03	0.42	2.45	0.11	0.37	0.48		6,485.22		0.32		6,491.91
Total	**12.04**	**14.66**	**50.76**	**0.09**	**2.03**	**0.42**	**2.77**	**0.11**	**0.37**	**0.80**		**11,468.94**		**0.42**	**0.09**	**11,505.96**

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3.0 Construction Detail

711

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.81	0.00	5.81	0.00	0.00	0.00						0.00
Off-Road	5.07	38.45	23.67	0.04		2.29	2.29		2.29	2.29		3,946.47		0.46		3,956.03
Total	**5.07**	**38.45**	**23.67**	**0.04**	**5.81**	**2.29**	**8.10**	**0.00**	**2.29**	**2.29**		**3,946.47**		**0.46**		**3,956.03**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.29	15.30	7.58	0.02	6.87	0.56	7.43	0.02	0.51	0.54		2,180.81		0.06		2,182.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.10	0.84	0.00	0.17	0.01	0.18	0.00	0.01	0.01		125.56		0.01		125.74
Total	**1.37**	**15.40**	**8.42**	**0.02**	**7.04**	**0.57**	**7.61**	**0.02**	**0.52**	**0.55**		**2,306.37**		**0.07**		**2,307.87**

3.2 Demolition - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.26	0.00	2.26	0.00	0.00	0.00						0.00
Off-Road	5.07	38.45	23.67	0.04		2.29	2.29		2.29	2.29	0.00	3,946.47		0.46		3,956.03
Total	**5.07**	**38.45**	**23.67**	**0.04**	**2.26**	**2.29**	**4.55**	**0.00**	**2.29**	**2.29**	**0.00**	**3,946.47**		**0.46**		**3,956.03**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.29	15.30	7.58	0.02	6.87	0.56	7.43	0.02	0.51	0.54		2,180.81		0.06		2,182.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.10	0.84	0.00	0.17	0.01	0.18	0.00	0.01	0.01		125.56		0.01		125.74
Total	**1.37**	**15.40**	**8.42**	**0.02**	**7.04**	**0.57**	**7.61**	**0.02**	**0.52**	**0.55**		**2,306.37**		**0.07**		**2,307.87**

3.3 Grading - 2013

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Fugitive Dust					6.16	0.00	6.16	3.31	0.00	3.31						0.00
Off-Road	4.70	37.12	22.15	0.04		1.94	1.94		1.94	1.94		3,827.58		0.42		3,836.44
Total	**4.70**	**37.12**	**22.15**	**0.04**	**6.16**	**1.94**	**8.10**	**3.31**	**1.94**	**5.25**		**3,827.58**		**0.42**		**3,836.44**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.00	0.05	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.14		0.00		7.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.07	0.65	0.00	0.13	0.00	0.14	0.00	0.00	0.01		96.59		0.01		96.72
Total	**0.06**	**0.12**	**0.67**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**103.73**		**0.01**		**103.87**

3.3 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.40	0.00	2.40	1.29	0.00	1.29						0.00
Off-Road	4.70	37.12	22.15	0.04		1.94	1.94		1.94	1.94	0.00	3,827.58		0.42		3,836.44
Total	**4.70**	**37.12**	**22.15**	**0.04**	**2.40**	**1.94**	**4.34**	**1.29**	**1.94**	**3.23**	**0.00**	**3,827.58**		**0.42**		**3,836.44**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.05	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.14		0.00		7.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.07	0.65	0.00	0.13	0.00	0.14	0.00	0.00	0.01		96.59		0.01		96.72
Total	**0.06**	**0.12**	**0.67**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**103.73**		**0.01**		**103.87**

3.4 Paving - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.16	25.92	16.81	0.03		2.21	2.21		2.21	2.21		2,393.42		0.37		2,401.25
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**4.16**	**25.92**	**16.81**	**0.03**		**2.21**	**2.21**		**2.21**	**2.21**		**2,393.42**		**0.37**		**2,401.25**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.16	0.08	0.00	0.14	0.01	0.15	0.00	0.01	0.01		23.47		0.00		23.49
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.11	0.97	0.00	0.20	0.01	0.20	0.00	0.01	0.01		144.88		0.01		145.08
Total	**0.11**	**0.27**	**1.05**	**0.00**	**0.34**	**0.02**	**0.35**	**0.00**	**0.02**	**0.02**		**168.35**		**0.01**		**168.57**

PAGE 61728

716

3.4 Paving - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.16	25.92	16.81	0.03		2.21	2.21		2.21	2.21	0.00	2,393.42		0.37		2,401.25
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**4.16**	**25.92**	**16.81**	**0.03**		**2.21**	**2.21**		**2.21**	**2.21**	**0.00**	**2,393.42**		**0.37**		**2,401.25**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.16	0.08	0.00	0.14	0.01	0.15	0.00	0.01	0.01		23.47		0.00		23.49
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.11	0.97	0.00	0.20	0.01	0.20	0.00	0.01	0.01		144.88		0.01		145.08
Total	**0.11**	**0.27**	**1.05**	**0.00**	**0.34**	**0.02**	**0.35**	**0.00**	**0.02**	**0.02**		**168.35**		**0.01**		**168.57**

3.5 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	28.63	19.52	0.04		1.88	1.88		1.88	1.88		3,233.11		0.47		3,242.90
Total	**5.20**	**28.63**	**19.52**	**0.04**		**1.88**	**1.88**		**1.88**	**1.88**		**3,233.11**		**0.47**		**3,242.90**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.64	7.30	4.63	0.01	0.39	0.24	0.63	0.01	0.22	0.23		1,135.86		0.03		1,136.53
Worker	0.69	0.79	6.91	0.01	1.40	0.05	1.45	0.02	0.04	0.06		1,033.49		0.07		1,034.92
Total	**1.33**	**8.09**	**11.54**	**0.02**	**1.79**	**0.29**	**2.08**	**0.03**	**0.26**	**0.29**		**2,169.35**		**0.10**		**2,171.45**

3.5 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.20	28.63	19.52	0.04		1.88	1.88		1.88	1.88	0.00	3,233.11		0.47		3,242.90
Total	**5.20**	**28.63**	**19.52**	**0.04**		**1.88**	**1.88**		**1.88**	**1.88**	**0.00**	**3,233.11**		**0.47**		**3,242.90**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.64	7.30	4.63	0.01	0.39	0.24	0.63	0.01	0.22	0.23		1,135.86		0.03		1,136.53
Worker	0.69	0.79	6.91	0.01	1.40	0.05	1.45	0.02	0.04	0.06		1,033.49		0.07		1,034.92
Total	**1.33**	**8.09**	**11.54**	**0.02**	**1.79**	**0.29**	**2.08**	**0.03**	**0.26**	**0.29**		**2,169.35**		**0.10**		**2,171.45**

61728

719

3.5 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.75	26.63	19.13	0.04		1.69	1.69		1.69	1.69		3,233.11		0.43		3,242.06
Total	**4.75**	**26.63**	**19.13**	**0.04**		**1.69**	**1.69**		**1.69**	**1.69**		**3,233.11**		**0.43**		**3,242.06**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.59	6.75	4.29	0.01	0.39	0.22	0.61	0.01	0.20	0.21		1,137.54		0.03		1,138.15
Worker	0.64	0.72	6.33	0.01	1.40	0.05	1.45	0.02	0.04	0.06		1,011.65		0.06		1,012.98
Total	**1.23**	**7.47**	**10.62**	**0.02**	**1.79**	**0.27**	**2.06**	**0.03**	**0.24**	**0.27**		**2,149.19**		**0.09**		**2,151.13**

3.5 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.75	26.63	19.13	0.04		1.69	1.69		1.69	1.69	0.00	3,233.11		0.43		3,242.06
Total	**4.75**	**26.63**	**19.13**	**0.04**		**1.69**	**1.69**		**1.69**	**1.69**	**0.00**	**3,233.11**		**0.43**		**3,242.06**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.59	6.75	4.29	0.01	0.39	0.22	0.61	0.01	0.20	0.21		1,137.54		0.03		1,138.15
Worker	0.64	0.72	6.33	0.01	1.40	0.05	1.45	0.02	0.04	0.06		1,011.65		0.06		1,012.98
Total	**1.23**	**7.47**	**10.62**	**0.02**	**1.79**	**0.27**	**2.06**	**0.03**	**0.24**	**0.27**		**2,149.19**		**0.09**		**2,151.13**

61728 721

3.6 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	40.73					0.00	0.00		0.00	0.00						0.00
Off-Road	0.45	2.77	1.92	0.00		0.24	0.24		0.24	0.24		281.19		0.04		282.03
Total	**41.18**	**2.77**	**1.92**	**0.00**		**0.24**	**0.24**		**0.24**	**0.24**		**281.19**		**0.04**		**282.03**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.14	1.24	0.00	0.27	0.01	0.28	0.00	0.01	0.01		198.55		0.01		198.81
Total	**0.13**	**0.14**	**1.24**	**0.00**	**0.27**	**0.01**	**0.28**	**0.00**	**0.01**	**0.01**		**198.55**		**0.01**		**198.81**

61728 PAGE 722

3.6 Architectural Coating - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	40.73					0.00	0.00		0.00	0.00						0.00
Off-Road	0.45	2.77	1.92	0.00		0.24	0.24		0.24	0.24	0.00	281.19		0.04		282.03
Total	**41.18**	**2.77**	**1.92**	**0.00**		**0.24**	**0.24**		**0.24**	**0.24**	**0.00**	**281.19**		**0.04**		**282.03**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.13	0.14	1.24	0.00	0.27	0.01	0.28	0.00	0.01	0.01		198.55		0.01		198.81
Total	**0.13**	**0.14**	**1.24**	**0.00**	**0.27**	**0.01**	**0.28**	**0.00**	**0.01**	**0.01**		**198.55**		**0.01**		**198.81**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.42	10.51	47.27	0.07	2.03	0.42	2.45	0.11	0.37	0.48		6,485.22		0.32		6,491.91
Unmitigated	5.42	10.51	47.27	0.07	2.03	0.42	2.45	0.11	0.37	0.48		6,485.22		0.32		6,491.91
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,225.00	1,225.00	1225.00	2,327,415	2,327,415
Total	1,225.00	1,225.00	1,225.00	2,327,415	2,327,415

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Hotel	9.50	7.30	7.30	19.40	61.60	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
NaturalGas Unmitigated	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	42361.6	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total		**0.46**	**4.15**	**3.49**	**0.02**		**0.00**	**0.32**		**0.00**	**0.32**		**4,983.72**		**0.10**	**0.09**	**5,014.05**

61728 725

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	42.3616	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total		**0.46**	**4.15**	**3.49**	**0.02**		**0.00**	**0.32**		**0.00**	**0.32**		**4,983.72**		**0.10**	**0.09**	**5,014.05**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

726

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.73					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.44					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**6.17**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.73					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.44					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**6.17**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

708

Harbor Island Subarea 23 Port Master Plan Amendment

San Diego Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	175	Room

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**
Climate Zone	13	**Precipitation Freq (Days)**	40	

1.3 User Entered Comments

Project Characteristics -

Land Use - Second hotel of three hotels

Construction Phase - Construction of second hotel

Demolition - Assume pavement demolition

Trips and VMT - Based on traffic impact analysis

Architectural Coating - Assume Rule 67.0 compliant coatings

Vehicle Trips - Based on Traffic Impact Analysis - for Resort Hotel

61728

729

Road Dust - USEPA ubiquitous baseline

Area Coating - Rule 67.0 compliant coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	46.18	33.02	30.45	0.06	6.35	1.79	7.82	3.31	1.77	4.78	0.00	5,914.87	0.00	0.48	0.00	5,924.97
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	46.18	33.02	30.45	0.06	2.69	1.79	4.45	1.29	1.77	2.76	0.00	5,914.87	0.00	0.48	0.00	5,924.97
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

61728 731

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Mobile	5.27	10.16	46.47	0.08	2.32	0.45	2.78	0.12	0.44	0.56		7,443.90		0.32		7,450.57
Total	**11.89**	**14.31**	**49.96**	**0.10**	**2.32**	**0.45**	**3.10**	**0.12**	**0.44**	**0.88**		**12,427.62**		**0.42**	**0.09**	**12,464.62**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Mobile	5.27	10.16	46.47	0.08	2.32	0.45	2.78	0.12	0.44	0.56		7,443.90		0.32		7,450.57
Total	**11.89**	**14.31**	**49.96**	**0.10**	**2.32**	**0.45**	**3.10**	**0.12**	**0.44**	**0.88**		**12,427.62**		**0.42**	**0.09**	**12,464.62**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.00	0.00	1.00	0.00	0.00	0.00						0.00
Off-Road	4.13	30.94	21.38	0.04		1.68	1.68		1.68	1.68		3,946.47		0.37		3,954.23
Total	**4.13**	**30.94**	**21.38**	**0.04**	**1.00**	**1.68**	**2.68**	**0.00**	**1.68**	**1.68**		**3,946.47**		**0.37**		**3,954.23**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.17	2.01	0.93	0.00	2.13	0.07	2.20	0.00	0.07	0.07		378.34		0.01		378.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.07	0.69	0.00	0.17	0.01	0.18	0.00	0.01	0.01		127.01		0.01		127.15
Total	**0.23**	**2.08**	**1.62**	**0.00**	**2.30**	**0.08**	**2.38**	**0.00**	**0.08**	**0.08**		**505.35**		**0.02**		**505.66**

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3.2 Demolition - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.39	0.00	0.39	0.00	0.00	0.00						0.00
Off-Road	4.13	30.94	21.38	0.04		1.68	1.68		1.68	1.68	0.00	3,946.47		0.37		3,954.23
Total	**4.13**	**30.94**	**21.38**	**0.04**	**0.39**	**1.68**	**2.07**	**0.00**	**1.68**	**1.68**	**0.00**	**3,946.47**		**0.37**		**3,954.23**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.17	2.01	0.93	0.00	2.13	0.07	2.20	0.00	0.07	0.07		378.34		0.01		378.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.07	0.69	0.00	0.17	0.01	0.18	0.00	0.01	0.01		127.01		0.01		127.15
Total	**0.23**	**2.08**	**1.62**	**0.00**	**2.30**	**0.08**	**2.38**	**0.00**	**0.08**	**0.08**		**505.35**		**0.02**		**505.66**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Fugitive Dust					6.17	0.00	6.17	3.31	0.00	3.31						0.00
Off-Road	3.93	29.69	19.99	0.04		1.46	1.46		1.46	1.46		3,827.58		0.35		3,834.99
Total	**3.93**	**29.69**	**19.99**	**0.04**	**6.17**	**1.46**	**7.63**	**3.31**	**1.46**	**4.77**		**3,827.58**		**0.35**		**3,834.99**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Hauling	0.00	0.04	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.92		0.00		7.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.05	0.53	0.00	0.13	0.00	0.14	0.00	0.00	0.01		97.70		0.01		97.81
Total	**0.05**	**0.09**	**0.55**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**105.62**		**0.01**		**105.73**

3.3 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.41	0.00	2.41	1.29	0.00	1.29						0.00
Off-Road	3.93	29.69	19.99	0.04		1.46	1.46		1.46	1.46	0.00	3,827.58		0.35		3,834.99
Total	**3.93**	**29.69**	**19.99**	**0.04**	**2.41**	**1.46**	**3.87**	**1.29**	**1.46**	**2.75**	**0.00**	**3,827.58**		**0.35**		**3,834.99**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.04	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.92		0.00		7.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.05	0.53	0.00	0.13	0.00	0.14	0.00	0.00	0.01		97.70		0.01		97.81
Total	**0.05**	**0.09**	**0.55**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**105.62**		**0.01**		**105.73**

3.4 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.40	21.37	16.43	0.03		1.72	1.72		1.72	1.72		2,393.42		0.31		2,399.83
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.40**	**21.37**	**16.43**	**0.03**		**1.72**	**1.72**		**1.72**	**1.72**		**2,393.42**		**0.31**		**2,399.83**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.12	0.05	0.00	0.14	0.00	0.14	0.00	0.00	0.00		21.69		0.00		21.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.08	0.80	0.00	0.20	0.01	0.20	0.00	0.01	0.01		146.55		0.01		146.72
Total	**0.08**	**0.20**	**0.85**	**0.00**	**0.34**	**0.01**	**0.34**	**0.00**	**0.01**	**0.01**		**168.24**		**0.01**		**168.42**

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3.4 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.40	21.37	16.43	0.03		1.72	1.72		1.72	1.72	0.00	2,393.42		0.31		2,399.83
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.40**	**21.37**	**16.43**	**0.03**		**1.72**	**1.72**		**1.72**	**1.72**	**0.00**	**2,393.42**		**0.31**		**2,399.83**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.12	0.05	0.00	0.14	0.00	0.14	0.00	0.00	0.00		21.69		0.00		21.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.08	0.80	0.00	0.20	0.01	0.20	0.00	0.01	0.01		146.55		0.01		146.72
Total	**0.08**	**0.20**	**0.85**	**0.00**	**0.34**	**0.01**	**0.34**	**0.00**	**0.01**	**0.01**		**168.24**		**0.01**		**168.42**

738

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.96	22.58	18.51	0.04		1.35	1.35		1.35	1.35		3,233.11		0.36		3,240.57
Total	**3.96**	**22.58**	**18.51**	**0.04**		**1.35**	**1.35**		**1.35**	**1.35**		**3,233.11**		**0.36**		**3,240.57**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.49	5.77	3.24	0.01	0.39	0.19	0.57	0.01	0.17	0.18		1,150.04		0.02		1,150.54
Worker	0.52	0.56	5.70	0.01	1.40	0.05	1.45	0.02	0.05	0.06		1,045.37		0.06		1,046.57
Total	**1.01**	**6.33**	**8.94**	**0.02**	**1.79**	**0.24**	**2.02**	**0.03**	**0.22**	**0.24**		**2,195.41**		**0.08**		**2,197.11**

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3.5 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.96	22.58	18.51	0.04		1.35	1.35		1.35	1.35	0.00	3,233.11		0.36		3,240.57
Total	**3.96**	**22.58**	**18.51**	**0.04**		**1.35**	**1.35**		**1.35**	**1.35**	**0.00**	**3,233.11**		**0.36**		**3,240.57**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.49	5.77	3.24	0.01	0.39	0.19	0.57	0.01	0.17	0.18		1,150.04		0.02		1,150.54
Worker	0.52	0.56	5.70	0.01	1.40	0.05	1.45	0.02	0.05	0.06		1,045.37		0.06		1,046.57
Total	**1.01**	**6.33**	**8.94**	**0.02**	**1.79**	**0.24**	**2.02**	**0.03**	**0.22**	**0.24**		**2,195.41**		**0.08**		**2,197.11**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	40.73					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	**41.10**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**		**281.19**		**0.03**		**281.89**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.11	1.12	0.00	0.27	0.01	0.28	0.00	0.01	0.01		205.17		0.01		205.40
Total	**0.10**	**0.11**	**1.12**	**0.00**	**0.27**	**0.01**	**0.28**	**0.00**	**0.01**	**0.01**		**205.17**		**0.01**		**205.40**

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3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	40.73					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	**41.10**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**281.19**		**0.03**		**281.89**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.10	0.11	1.12	0.00	0.27	0.01	0.28	0.00	0.01	0.01		205.17		0.01		205.40
Total	**0.10**	**0.11**	**1.12**	**0.00**	**0.27**	**0.01**	**0.28**	**0.00**	**0.01**	**0.01**		**205.17**		**0.01**		**205.40**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.27	10.16	46.47	0.08	2.32	0.45	2.78	0.12	0.44	0.56		7,443.90		0.32		7,450.57
Unmitigated	5.27	10.16	46.47	0.08	2.32	0.45	2.78	0.12	0.44	0.56		7,443.90		0.32		7,450.57
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,400.00	1,400.00	1400.00	2,659,903	2,659,903
Total	1,400.00	1,400.00	1,400.00	2,659,903	2,659,903

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Hotel	9.50	7.30	7.30	19.40	61.60	19.00

5.0 Energy Detail

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5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
NaturalGas Unmitigated	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	42361.6	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total		**0.46**	**4.15**	**3.49**	**0.02**		**0.00**	**0.32**		**0.00**	**0.32**		**4,983.72**		**0.10**	**0.09**	**5,014.05**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	42.3616	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total		**0.46**	**4.15**	**3.49**	**0.02**		**0.00**	**0.32**		**0.00**	**0.32**		**4,983.72**		**0.10**	**0.09**	**5,014.05**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.73					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.44					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**6.17**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.73					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.44					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**6.17**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Harbor Island Subarea 23 Port Master Plan Amendment

San Diego Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	175	Room

1.2 Other Project Characteristics

Urbanization Urban

Climate Zone 13

Wind Speed (m/s) 2.6

Precipitation Freq (Days) 40

Utility Company

1.3 User Entered Comments

Project Characteristics -

Land Use - Second hotel of three hotels

Construction Phase - Construction of second hotel

Demolition - Assume pavement demolition

Trips and VMT - Based on traffic impact analysis

Architectural Coating - Assume Rule 67.0 compliant coatings

Vehicle Trips - Based on Traffic Impact Analysis - for Resort Hotel

Road Dust - USEPA ubiquitous baseline

Area Coating - Rule 67.0 compliant coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

2.0 Emissions Summary

617728

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2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	46.26	33.06	30.56	0.06	6.35	1.80	7.82	3.31	1.78	4.78	0.00	5,808.68	0.00	0.48	0.00	5,818.74
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	46.26	33.06	30.56	0.06	2.69	1.80	4.45	1.29	1.78	2.76	0.00	5,808.68	0.00	0.48	0.00	5,818.74
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Mobile	5.53	10.54	47.05	0.08	2.32	0.46	2.78	0.12	0.44	0.57		6,971.46		0.32		6,978.19
Total	**12.15**	**14.69**	**50.54**	**0.10**	**2.32**	**0.46**	**3.10**	**0.12**	**0.44**	**0.89**		**11,955.18**		**0.42**	**0.09**	**11,992.24**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Mobile	5.53	10.54	47.05	0.08	2.32	0.46	2.78	0.12	0.44	0.57		6,971.46		0.32		6,978.19
Total	**12.15**	**14.69**	**50.54**	**0.10**	**2.32**	**0.46**	**3.10**	**0.12**	**0.44**	**0.89**		**11,955.18**		**0.42**	**0.09**	**11,992.24**

3.0 Construction Detail

61728 751

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.00	0.00	1.00	0.00	0.00	0.00						0.00
Off-Road	4.13	30.94	21.38	0.04		1.68	1.68		1.68	1.68		3,946.47		0.37		3,954.23
Total	**4.13**	**30.94**	**21.38**	**0.04**	**1.00**	**1.68**	**2.68**	**0.00**	**1.68**	**1.68**		**3,946.47**		**0.37**		**3,954.23**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.17	2.05	1.03	0.00	2.13	0.07	2.20	0.00	0.07	0.07		376.25		0.01		376.42
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.07	0.65	0.00	0.17	0.01	0.18	0.00	0.01	0.01		117.20		0.01		117.34
Total	**0.24**	**2.12**	**1.68**	**0.00**	**2.30**	**0.08**	**2.38**	**0.00**	**0.08**	**0.08**		**493.45**		**0.02**		**493.76**

3.2 Demolition - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.39	0.00	0.39	0.00	0.00	0.00						0.00
Off-Road	4.13	30.94	21.38	0.04		1.68	1.68		1.68	1.68	0.00	3,946.47		0.37		3,954.23
Total	**4.13**	**30.94**	**21.38**	**0.04**	**0.39**	**1.68**	**2.07**	**0.00**	**1.68**	**1.68**	**0.00**	**3,946.47**		**0.37**		**3,954.23**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.17	2.05	1.03	0.00	2.13	0.07	2.20	0.00	0.07	0.07		376.25		0.01		376.42
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.07	0.65	0.00	0.17	0.01	0.18	0.00	0.01	0.01		117.20		0.01		117.34
Total	**0.24**	**2.12**	**1.68**	**0.00**	**2.30**	**0.08**	**2.38**	**0.00**	**0.08**	**0.08**		**493.45**		**0.02**		**493.76**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.17	0.00	6.17	3.31	0.00	3.31						0.00
Off-Road	3.93	29.69	19.99	0.04		1.46	1.46		1.46	1.46		3,827.58		0.35		3,834.99
Total	**3.93**	**29.69**	**19.99**	**0.04**	**6.17**	**1.46**	**7.63**	**3.31**	**1.46**	**4.77**		**3,827.58**		**0.35**		**3,834.99**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.04	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.88		0.00		7.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.06	0.50	0.00	0.13	0.00	0.14	0.00	0.00	0.01		90.16		0.01		90.26
Total	**0.05**	**0.10**	**0.52**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**98.04**		**0.01**		**98.14**

3.3 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.41	0.00	2.41	1.29	0.00	1.29						0.00
Off-Road	3.93	29.69	19.99	0.04		1.46	1.46		1.46	1.46	0.00	3,827.58		0.35		3,834.99
Total	**3.93**	**29.69**	**19.99**	**0.04**	**2.41**	**1.46**	**3.87**	**1.29**	**1.46**	**2.75**	**0.00**	**3,827.58**		**0.35**		**3,834.99**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.04	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.88		0.00		7.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.06	0.50	0.00	0.13	0.00	0.14	0.00	0.00	0.01		90.16		0.01		90.26
Total	**0.05**	**0.10**	**0.52**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**98.04**		**0.01**		**98.14**

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3.4 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.40	21.37	16.43	0.03		1.72	1.72		1.72	1.72		2,393.42		0.31		2,399.83
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.40**	**21.37**	**16.43**	**0.03**		**1.72**	**1.72**		**1.72**	**1.72**		**2,393.42**		**0.31**		**2,399.83**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.12	0.06	0.00	0.14	0.00	0.14	0.00	0.00	0.00		21.57		0.00		21.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.09	0.75	0.00	0.20	0.01	0.20	0.00	0.01	0.01		135.23		0.01		135.39
Total	**0.09**	**0.21**	**0.81**	**0.00**	**0.34**	**0.01**	**0.34**	**0.00**	**0.01**	**0.01**		**156.80**		**0.01**		**156.97**

3.4 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.40	21.37	16.43	0.03		1.72	1.72		1.72	1.72	0.00	2,393.42		0.31		2,399.83
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**3.40**	**21.37**	**16.43**	**0.03**		**1.72**	**1.72**		**1.72**	**1.72**	**0.00**	**2,393.42**		**0.31**		**2,399.83**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.12	0.06	0.00	0.14	0.00	0.14	0.00	0.00	0.00		21.57		0.00		21.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.09	0.75	0.00	0.20	0.01	0.20	0.00	0.01	0.01		135.23		0.01		135.39
Total	**0.09**	**0.21**	**0.81**	**0.00**	**0.34**	**0.01**	**0.34**	**0.00**	**0.01**	**0.01**		**156.80**		**0.01**		**156.97**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.96	22.58	18.51	0.04		1.35	1.35		1.35	1.35		3,233.11		0.36		3,240.57
Total	**3.96**	**22.58**	**18.51**	**0.04**		**1.35**	**1.35**		**1.35**	**1.35**		**3,233.11**		**0.36**		**3,240.57**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.51	5.83	3.74	0.01	0.39	0.19	0.58	0.01	0.18	0.19		1,140.40		0.03		1,140.92
Worker	0.57	0.61	5.38	0.01	1.40	0.05	1.45	0.02	0.05	0.06		964.66		0.05		965.81
Total	**1.08**	**6.44**	**9.12**	**0.02**	**1.79**	**0.24**	**2.03**	**0.03**	**0.23**	**0.25**		**2,105.06**		**0.08**		**2,106.73**

3.5 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.96	22.58	18.51	0.04		1.35	1.35		1.35	1.35	0.00	3,233.11		0.36		3,240.57
Total	3.96	22.58	18.51	0.04		1.35	1.35		1.35	1.35	0.00	3,233.11		0.36		3,240.57

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.51	5.83	3.74	0.01	0.39	0.19	0.58	0.01	0.18	0.19		1,140.40		0.03		1,140.92
Worker	0.57	0.61	5.38	0.01	1.40	0.05	1.45	0.02	0.05	0.06		964.66		0.05		965.81
Total	1.08	6.44	9.12	0.02	1.79	0.24	2.03	0.03	0.23	0.25		2,105.06		0.08		2,106.73

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3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	40.73					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20		281.19		0.03		281.89
Total	**41.10**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**		**281.19**		**0.03**		**281.89**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.12	1.05	0.00	0.27	0.01	0.28	0.00	0.01	0.01		189.33		0.01		189.55
Total	**0.11**	**0.12**	**1.05**	**0.00**	**0.27**	**0.01**	**0.28**	**0.00**	**0.01**	**0.01**		**189.33**		**0.01**		**189.55**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	40.73					0.00	0.00		0.00	0.00						0.00
Off-Road	0.37	2.37	1.88	0.00		0.20	0.20		0.20	0.20	0.00	281.19		0.03		281.89
Total	**41.10**	**2.37**	**1.88**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**281.19**		**0.03**		**281.89**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.11	0.12	1.05	0.00	0.27	0.01	0.28	0.00	0.01	0.01		189.33		0.01		189.55
Total	**0.11**	**0.12**	**1.05**	**0.00**	**0.27**	**0.01**	**0.28**	**0.00**	**0.01**	**0.01**		**189.33**		**0.01**		**189.55**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.53	10.54	47.05	0.08	2.32	0.46	2.78	0.12	0.44	0.57		6,971.46		0.32		6,978.19
Unmitigated	5.53	10.54	47.05	0.08	2.32	0.46	2.78	0.12	0.44	0.57		6,971.46		0.32		6,978.19
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,400.00	1,400.00	1400.00	2,659,903	2,659,903
Total	1,400.00	1,400.00	1,400.00	2,659,903	2,659,903

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Hotel	9.50	7.30	7.30	19.40	61.60	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
NaturalGas Unmitigated	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	42361.6	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total		**0.46**	**4.15**	**3.49**	**0.02**		**0.00**	**0.32**		**0.00**	**0.32**		**4,983.72**		**0.10**	**0.09**	**5,014.05**

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	42.3616	0.46	4.15	3.49	0.02		0.00	0.32		0.00	0.32		4,983.72		0.10	0.09	5,014.05
Total		**0.46**	**4.15**	**3.49**	**0.02**		**0.00**	**0.32**		**0.00**	**0.32**		**4,983.72**		**0.10**	**0.09**	**5,014.05**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	6.16	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.73					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.44					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**6.17**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.73					0.00	0.00		0.00	0.00						0.00
Consumer Products	5.44					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**6.17**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Harbor Island Subarea 23 Port Master Plan Final Phase

San Diego Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	150	Room

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**
Climate Zone	13	**Precipitation Freq (Days)**	40	

1.3 User Entered Comments

Project Characteristics -

Land Use - Final phase of hotel development

Construction Phase - Final phase of hotel development

Demolition - Assuming pavement demolition required

Trips and VMT - From traffic impact analysis

Architectural Coating - Rule 67.0 compliant coatings

Vehicle Trips - Resort hotel - from Traffic Impact Analysis

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Road Dust - USEPA ubiquitous baseline

Area Coating - Rule 67.0 compliant coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	38.78	28.33	27.27	0.06	6.34	1.44	7.53	3.31	1.44	4.50	0.00	5,520.57	0.00	0.39	0.00	5,528.69
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	38.78	28.33	27.27	0.06	2.69	1.44	4.09	1.29	1.44	2.49	0.00	5,520.57	0:00	0.39	0.00	5,528.69
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.28	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
Mobile	4.13	7.75	35.00	0.07	1.99	0.37	2.37	0.11	0.36	0.47		5,984.10		0.25		5,989.40
Total	**9.80**	**11.31**	**37.99**	**0.09**	**1.99**	**0.37**	**2.64**	**0.11**	**0.36**	**0.74**		**10,255.86**		**0.33**	**0.08**	**10,287.16**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.28	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
Mobile	4.13	7.75	35.00	0.07	1.99	0.37	2.37	0.11	0.36	0.47		5,984.10		0.25		5,989.40
Total	**9.80**	**11.31**	**37.99**	**0.09**	**1.99**	**0.37**	**2.64**	**0.11**	**0.36**	**0.74**		**10,255.86**		**0.33**	**0.08**	**10,287.16**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.00	0.00	1.00	0.00	0.00	0.00						0.00
Off-Road	3.58	26.50	20.18	0.04		1.33	1.33		1.33	1.33		3,946.47		0.32		3,953.15
Total	**3.58**	**26.50**	**20.18**	**0.04**	**1.00**	**1.33**	**2.33**	**0.00**	**1.33**	**1.33**		**3,946.47**		**0.32**		**3,953.15**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.15	1.77	0.82	0.00	2.13	0.06	2.19	0.00	0.06	0.06		379.64		0.01		379.79
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.06	0.59	0.00	0.17	0.01	0.18	0.00	0.01	0.01		121.44		0.01		121.57
Total	**0.21**	**1.83**	**1.41**	**0.00**	**2.30**	**0.07**	**2.37**	**0.00**	**0.07**	**0.07**		**501.08**		**0.02**		**501.36**

3.2 Demolition - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.39	0.00	0.39	0.00	0.00	0.00						0.00
Off-Road	3.58	26.50	20.18	0.04		1.33	1.33		1.33	1.33	0.00	3,946.47		0.32		3,953.15
Total	**3.58**	**26.50**	**20.18**	**0.04**	**0.39**	**1.33**	**1.72**	**0.00**	**1.33**	**1.33**	**0.00**	**3,946.47**		**0.32**		**3,953.15**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.15	1.77	0.82	0.00	2.13	0.06	2.19	0.00	0.06	0.06		379.64		0.01		379.79
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.06	0.59	0.00	0.17	0.01	0.18	0.00	0.01	0.01		121.44		0.01		121.57
Total	**0.21**	**1.83**	**1.41**	**0.00**	**2.30**	**0.07**	**2.37**	**0.00**	**0.07**	**0.07**		**501.08**		**0.02**		**501.36**

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.16	0.00	6.16	3.31	0.00	3.31						0.00
Off-Road	3.47	25.24	18.86	0.04		1.19	1.19		1.19	1.19		3,827.58		0.31		3,834.06
Total	**3.47**	**25.24**	**18.86**	**0.04**	**6.16**	**1.19**	**7.35**	**3.31**	**1.19**	**4.50**		**3,827.58**		**0.31**		**3,834.06**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.03	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.26		0.00		7.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.04	0.04	0.45	0.00	0.13	0.00	0.14	0.00	0.00	0.01		93.42		0.00		93.51
Total	**0.04**	**0.07**	**0.47**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**100.68**		**0.00**		**100.77**

3.3 Grading - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.40	0.00	2.40	1.29	0.00	1.29						0.00
Off-Road	3.47	25.24	18.86	0.04		1.19	1.19		1.19	1.19	0.00	3,827.58		0.31		3,834.06
Total	**3.47**	**25.24**	**18.86**	**0.04**	**2.40**	**1.19**	**3.59**	**1.29**	**1.19**	**2.48**	**0.00**	**3,827.58**		**0.31**		**3,834.06**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.03	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.26		0.00		7.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.04	0.04	0.45	0.00	0.13	0.00	0.14	0.00	0.00	0.01		93.42		0.00		93.51
Total	**0.04**	**0.07**	**0.47**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**100.68**		**0.00**		**100.77**

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day									lb/day		
Off-Road	2.96	18.60	16.23	0.03		1.43	1.43		1.43	1.43		2,393.42		0.27		2,399.00
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	2.96	18.60	16.23	0.03		1.43	1.43		1.43	1.43		2,393.42		0.27		2,399.00

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day									lb/day		
Hauling	0.01	0.11	0.05	0.00	0.14	0.00	0.14	0.00	0.00	0.00		22.76		0.00		22.76
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.07	0.68	0.00	0.20	0.01	0.20	0.00	0.01	0.01		140.12		0.01		140.27
Total	0.07	0.18	0.73	0.00	0.34	0.01	0.34	0.00	0.01	0.01		162.88		0.01		163.03

3.4 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.96	18.60	16.23	0.03		1.43	1.43		1.43	1.43	0.00	2,393.42		0.27		2,399.00
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**2.96**	**18.60**	**16.23**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**	**0.00**	**2,393.42**		**0.27**		**2,399.00**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.11	0.05	0.00	0.14	0.00	0.14	0.00	0.00	0.00		22.76		0.00		22.76
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.07	0.68	0.00	0.20	0.01	0.20	0.00	0.01	0.01		140.12		0.01		140.27
Total	**0.07**	**0.18**	**0.73**	**0.00**	**0.34**	**0.01**	**0.34**	**0.00**	**0.01**	**0.01**		**162.88**		**0.01**		**163.03**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	19.06	18.02	0.04		1.05	1.05		1.05	1.05		3,233.11		0.29		3,239.22
Total	**3.26**	**19.06**	**18.02**	**0.04**		**1.05**	**1.05**		**1.05**	**1.05**		**3,233.11**		**0.29**		**3,239.22**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.37	4.38	2.45	0.01	0.33	0.14	0.47	0.01	0.13	0.14		988.04		0.02		988.42
Worker	0.39	0.40	4.14	0.01	1.19	0.04	1.23	0.02	0.04	0.05		850.08		0.04		850.97
Total	**0.76**	**4.78**	**6.59**	**0.02**	**1.52**	**0.18**	**1.70**	**0.03**	**0.17**	**0.19**		**1,838.12**		**0.06**		**1,839.39**

3.5 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	19.06	18.02	0.04		1.05	1.05		1.05	1.05	0.00	3,233.11		0.29		3,239.22
Total	**3.26**	**19.06**	**18.02**	**0.04**		**1.05**	**1.05**		**1.05**	**1.05**	**0.00**	**3,233.11**		**0.29**		**3,239.22**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.37	4.38	2.45	0.01	0.33	0.14	0.47	0.01	0.13	0.14		988.04		0.02		988.42
Worker	0.39	0.40	4.14	0.01	1.19	0.04	1.23	0.02	0.04	0.05		850.08		0.04		850.97
Total	**0.76**	**4.78**	**6.59**	**0.02**	**1.52**	**0.18**	**1.70**	**0.03**	**0.17**	**0.19**		**1,838.12**		**0.06**		**1,839.39**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.39					0.00	0.00		0.00	0.00						0.00
Off-Road	0.30	2.00	1.85	0.00		0.15	0.15		0.15	0.15		281.19		0.03		281.75
Total	**34.69**	**2.00**	**1.85**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**		**281.19**		**0.03**		**281.75**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.08	0.82	0.00	0.23	0.01	0.24	0.00	0.01	0.01		168.15		0.01		168.32
Total	**0.08**	**0.08**	**0.82**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**168.15**		**0.01**		**168.32**

3.6 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.39					0.00	0.00		0.00	0.00						0.00
Off-Road	0.30	2.00	1.85	0.00		0.15	0.15		0.15	0.15	0.00	281.19		0.03		281.75
Total	**34.69**	**2.00**	**1.85**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**281.19**		**0.03**		**281.75**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.08	0.82	0.00	0.23	0.01	0.24	0.00	0.01	0.01		168.15		0.01		168.32
Total	**0.08**	**0.08**	**0.82**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**168.15**		**0.01**		**168.32**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.13	7.75	35.00	0.07	1.99	0.37	2.37	0.11	0.36	0.47		5,984.10		0.25		5,989.40
Unmitigated	4.13	7.75	35.00	0.07	1.99	0.37	2.37	0.11	0.36	0.47		5,984.10		0.25		5,989.40
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,200.00	1,200.00	1200.00	2,279,917	2,279,917
Total	1,200.00	1,200.00	1,200.00	2,279,917	2,279,917

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Hotel	9.50	7.30	7.30	19.40	61.60	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
NaturalGas Unmitigated	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	36309.9	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
Total		**0.39**	**3.56**	**2.99**	**0.02**		**0.00**	**0.27**		**0.00**	**0.27**		**4,271.76**		**0.08**	**0.08**	**4,297.76**

PAGE 61728

782

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	36.3099	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
Total		**0.39**	**3.56**	**2.99**	**0.02**		**0.00**	**0.27**		**0.00**	**0.27**		**4,271.76**		**0.08**	**0.08**	**4,297.76**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.28	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	5.28	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.62					0.00	0.00		0.00	0.00						0.00
Consumer Products	4.66					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**5.28**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.62					0.00	0.00		0.00	0.00						0.00
Consumer Products	4.66					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**5.28**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Harbor Island Subarea 23 Port Master Plan Final Phase

San Diego Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	150	Room

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**
Climate Zone	13	**Precipitation Freq (Days)**	40	

1.3 User Entered Comments

Project Characteristics -

Land Use - Final phase of hotel development

Construction Phase - Final phase of hotel development

Demolition - Assuming pavement demolition required

Trips and VMT - From traffic impact analysis

Architectural Coating - Rule 67.0 compliant coatings

Vehicle Trips - Resort hotel - from Traffic Impact Analysis

Road Dust - USEPA ubiquitous baseline

Area Coating - Rule 67.0 compliant coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	38.84	28.36	27.39	0.06	6.34	1.44	7.53	3.31	1.44	4.50	0.00	5,433.04	0.00	0.38	0.00	5,441.12
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	38.84	28.36	27.39	0.06	2.69	1.44	4.09	1.29	1.44	2.49	0.00	5,433.04	0.00	0.38	0.00	5,441.12
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.28	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
Mobile	4.28	8.10	35.43	0.07	1.99	0.38	2.37	0.11	0.36	0.47		5,605.06		0.26		5,610.45
Total	**9.95**	**11.66**	**38.42**	**0.09**	**1.99**	**0.38**	**2.64**	**0.11**	**0.36**	**0.74**		**9,876.82**		**0.34**	**0.08**	**9,908.21**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.28	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
Mobile	4.28	8.10	35.43	0.07	1.99	0.38	2.37	0.11	0.36	0.47		5,605.06		0.26		5,610.45
Total	**9.95**	**11.66**	**38.42**	**0.09**	**1.99**	**0.38**	**2.64**	**0.11**	**0.36**	**0.74**		**9,876.82**		**0.34**	**0.08**	**9,908.21**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.00	0.00	1.00	0.00	0.00	0.00						0.00
Off-Road	3.58	26.50	20.18	0.04		1.33	1.33		1.33	1.33		3,946.47		0.32		3,953.15
Total	**3.58**	**26.50**	**20.18**	**0.04**	**1.00**	**1.33**	**2.33**	**0.00**	**1.33**	**1.33**		**3,946.47**		**0.32**		**3,953.15**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.15	1.80	0.91	0.00	2.13	0.06	2.20	0.00	0.06	0.06		377.48		0.01		377.63
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.06	0.56	0.00	0.17	0.01	0.18	0.00	0.01	0.01		112.02		0.01		112.14
Total	**0.21**	**1.86**	**1.47**	**0.00**	**2.30**	**0.07**	**2.38**	**0.00**	**0.07**	**0.07**		**489.50**		**0.02**		**489.77**

790

3.2 Demolition - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.39	0.00	0.39	0.00	0.00	0.00						0.00
Off-Road	3.58	26.50	20.18	0.04		1.33	1.33		1.33	1.33	0.00	3,946.47		0.32		3,953.15
Total	**3.58**	**26.50**	**20.18**	**0.04**	**0.39**	**1.33**	**1.72**	**0.00**	**1.33**	**1.33**	**0.00**	**3,946.47**		**0.32**		**3,953.15**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.15	1.80	0.91	0.00	2.13	0.06	2.20	0.00	0.06	0.06		377.48		0.01		377.63
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.06	0.06	0.56	0.00	0.17	0.01	0.18	0.00	0.01	0.01		112.02		0.01		112.14
Total	**0.21**	**1.86**	**1.47**	**0.00**	**2.30**	**0.07**	**2.38**	**0.00**	**0.07**	**0.07**		**489.50**		**0.02**		**489.77**

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.16	0.00	6.16	3.31	0.00	3.31						0.00
Off-Road	3.47	25.24	18.86	0.04		1.19	1.19		1.19	1.19		3,827.58		0.31		3,834.06
Total	**3.47**	**25.24**	**18.86**	**0.04**	**6.16**	**1.19**	**7.35**	**3.31**	**1.19**	**4.50**		**3,827.58**		**0.31**		**3,834.06**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.03	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.21		0.00		7.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.05	0.43	0.00	0.13	0.00	0.14	0.00	0.00	0.01		86.17		0.00		86.26
Total	**0.05**	**0.08**	**0.45**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**93.38**		**0.00**		**93.48**

792

3.3 Grading - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.40	0.00	2.40	1.29	0.00	1.29						0.00
Off-Road	3.47	25.24	18.86	0.04		1.19	1.19		1.19	1.19	0.00	3,827.58		0.31		3,834.06
Total	**3.47**	**25.24**	**18.86**	**0.04**	**2.40**	**1.19**	**3.59**	**1.29**	**1.19**	**2.48**	**0.00**	**3,827.58**		**0.31**		**3,834.06**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.03	0.02	0.00	0.05	0.00	0.05	0.00	0.00	0.00		7.21		0.00		7.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.05	0.05	0.43	0.00	0.13	0.00	0.14	0.00	0.00	0.01		86.17		0.00		86.26
Total	**0.05**	**0.08**	**0.45**	**0.00**	**0.18**	**0.00**	**0.19**	**0.00**	**0.00**	**0.01**		**93.38**		**0.00**		**93.48**

793

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.96	18.60	16.23	0.03		1.43	1.43		1.43	1.43		2,393.42		0.27		2,399.00
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**2.96**	**18.60**	**16.23**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**		**2,393.42**		**0.27**		**2,399.00**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.11	0.05	0.00	0.14	0.00	0.14	0.00	0.00	0.00		22.63		0.00		22.64
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.07	0.64	0.00	0.20	0.01	0.20	0.00	0.01	0.01		129.26		0.01		129.40
Total	**0.08**	**0.18**	**0.69**	**0.00**	**0.34**	**0.01**	**0.34**	**0.00**	**0.01**	**0.01**		**151.89**		**0.01**		**152.04**

3.4 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.96	18.60	16.23	0.03		1.43	1.43		1.43	1.43	0.00	2,393.42		0.27		2,399.00
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**2.96**	**18.60**	**16.23**	**0.03**		**1.43**	**1.43**		**1.43**	**1.43**	**0.00**	**2,393.42**		**0.27**		**2,399.00**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.01	0.11	0.05	0.00	0.14	0.00	0.14	0.00	0.00	0.00		22.63		0.00		22.64
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.07	0.07	0.64	0.00	0.20	0.01	0.20	0.00	0.01	0.01		129.26		0.01		129.40
Total	**0.08**	**0.18**	**0.69**	**0.00**	**0.34**	**0.01**	**0.34**	**0.00**	**0.01**	**0.01**		**151.89**		**0.01**		**152.04**

61728-795

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	19.06	18.02	0.04		1.05	1.05		1.05	1.05		3,233.11		0.29		3,239.22
Total	**3.26**	**19.06**	**18.02**	**0.04**		**1.05**	**1.05**		**1.05**	**1.05**		**3,233.11**		**0.29**		**3,239.22**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.39	4.40	2.86	0.01	0.33	0.15	0.48	0.01	0.13	0.14		979.48		0.02		979.87
Worker	0.43	0.44	3.89	0.01	1.19	0.04	1.23	0.02	0.04	0.05		784.16		0.04		785.00
Total	**0.82**	**4.84**	**6.75**	**0.02**	**1.52**	**0.19**	**1.71**	**0.03**	**0.17**	**0.19**		**1,763.64**		**0.06**		**1,764.87**

PAGE 61728

796

3.5 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.26	19.06	18.02	0.04		1.05	1.05		1.05	1.05	0.00	3,233.11		0.29		3,239.22
Total	**3.26**	**19.06**	**18.02**	**0.04**		**1.05**	**1.05**		**1.05**	**1.05**	**0.00**	**3,233.11**		**0.29**		**3,239.22**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.39	4.40	2.86	0.01	0.33	0.15	0.48	0.01	0.13	0.14		979.48		0.02		979.87
Worker	0.43	0.44	3.89	0.01	1.19	0.04	1.23	0.02	0.04	0.05		784.16		0.04		785.00
Total	**0.82**	**4.84**	**6.75**	**0.02**	**1.52**	**0.19**	**1.71**	**0.03**	**0.17**	**0.19**		**1,763.64**		**0.06**		**1,764.87**

797

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.39					0.00	0.00		0.00	0.00						0.00
Off-Road	0.30	2.00	1.85	0.00		0.15	0.15		0.15	0.15		281.19		0.03		281.75
Total	**34.69**	**2.00**	**1.85**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**		**281.19**		**0.03**		**281.75**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.09	0.77	0.00	0.23	0.01	0.24	0.00	0.01	0.01		155.11		0.01		155.28
Total	**0.08**	**0.09**	**0.77**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**155.11**		**0.01**		**155.28**

798

3.6 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	34.39					0.00	0.00		0.00	0.00						0.00
Off-Road	0.30	2.00	1.85	0.00		0.15	0.15		0.15	0.15	0.00	281.19		0.03		281.75
Total	**34.69**	**2.00**	**1.85**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**281.19**		**0.03**		**281.75**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Worker	0.08	0.09	0.77	0.00	0.23	0.01	0.24	0.00	0.01	0.01		155.11		0.01		155.28
Total	**0.08**	**0.09**	**0.77**	**0.00**	**0.23**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**		**155.11**		**0.01**		**155.28**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.28	8.10	35.43	0.07	1.99	0.38	2.37	0.11	0.36	0.47		5,605.06		0.26		5,610.45
Unmitigated	4.28	8.10	35.43	0.07	1.99	0.38	2.37	0.11	0.36	0.47		5,605.06		0.26		5,610.45
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,200.00	1,200.00	1200.00	2,279,917	2,279,917
Total	1,200.00	1,200.00	1,200.00	2,279,917	2,279,917

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Hotel	9.50	7.30	7.30	19.40	61.60	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
NaturalGas Unmitigated	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	36309.9	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
Total		**0.39**	**3.56**	**2.99**	**0.02**		**0.00**	**0.27**		**0.00**	**0.27**		**4,271.76**		**0.08**	**0.08**	**4,297.76**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Hotel	36.3099	0.39	3.56	2.99	0.02		0.00	0.27		0.00	0.27		4,271.76		0.08	0.08	4,297.76
Total		**0.39**	**3.56**	**2.99**	**0.02**		**0.00**	**0.27**		**0.00**	**0.27**		**4,271.76**		**0.08**	**0.08**	**4,297.76**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.28	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	5.28	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.62					0.00	0.00		0.00	0.00						0.00
Consumer Products	4.66					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**5.28**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.62					0.00	0.00		0.00	0.00						0.00
Consumer Products	4.66					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**5.28**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

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Appendix G-1

Noise Analysis – Sunroad Harbor Island & East Harbor Island Subarea Port Master Plan Amendment (July 2013)

LATITUDE 33
PLANNING & ENGINEERING
5355 Mira Sorrento Place, Suite 650
San Diego, CA 92121
Tel 858.751.0633

July 8, 2013
File: 970.00

Tom Story
Sunroad Enterprises
4445 Eastgate Mall, Suite 400
San Diego, CA 92121

Subject: Harbor Island Hotel Water and Sewer Recommendations

Mr. Story:

This memo has been prepared in order to evaluate the impacts and provide water and sewer system recommendations with regard to a proposed Port Master Plan Amendment (PMP Amendment) that would allow a previously approved 500 room resort-oriented full service hotel to be developed in two or three hotels totaling no more than 500 rooms. The PMP Amendment is accompanied by a project specific proposal to develop a 175 room limited service hotel, known as the Harbor Island Hotel, as the first of the two or three hotels.

Water

The previously approved water system analysis for the 175 room Harbor Island Hotel has been updated to incorporate the water demand associated with the remaining one or two hotels of 325 units, bringing the total number of units to 500. Revised demand and results from the updated water system analysis have been provided (see attachment A) in order to verify that the 500 rooms to be developed in two or three hotels under the PMP Amendment to the Port's 1990 approval of a single 500 room hotel combined with the existing & previously proposed land use demands are adequately served by the existing and previously proposed water supply system.

Demand for the hotel that was calculated in the previously approved water system analysis totaled 2200 fixture units, which is equivalent to approximately 96 gallons per minute (gpm). The addition of 325 units brings the fixture count to 6050 fixture units, which is equivalent to approximately 265 gpm. The minimum pressure for the maximum day plus fire flow scenario for the previously approved analysis was calculated at 113.2 psi, and the minimum pressure for the addition of 325 units was calculated at 106.7 psi. The pressure loss of 6.5 psi due to the addition of 325 units **does not have significant impacts to the existing and proposed water system.**

Sewer

The previously approved sewer system analysis has been updated to incorporate the sewer demand associated with the remaining one or two hotels for a total of 500 units. Results of the analysis (see attachment B) show that the existing downstream sewer system does not have capacity to incorporate the added demand for the expansion of the hotel. Due to the fact that the slope of the existing 8 inch sewer line is approximately .46 percent, the City of San Diego requirement of maintaining a depth of flow not greater than half the inside diameter of the pipe cannot be met.

Demand for the hotel that was calculated in the previously approved sewer system analysis totaled 2200 fixture units, which is equivalent to approximately 106 Equivalent Dwelling Units (EDU's). The addition of 325 units brings the fixture count to 6050 fixture units, which is equivalent to approximately 303 EDU's. The addition of 325 units brings the depth of flow to more than half of the inside diameter of the pipe, which is not acceptable per City of San Diego standards.

In order to accommodate for the expansion of the hotel, it is recommended that approximately 600 additional feet of existing 8-inch sewer along with 4 existing manholes downstream of the proposed hotel be replaced with 10-inch sewer. Results of the revised analysis along with an exhibit that shows the limits of replacement (see attachment C) have been provided in order to demonstrate that replacing the existing 8 inch sewer line with a 10 inch sewer line will bring the depth of flow in the pipe below half the inside diameter which meets City of San Diego requirements.

Regarding regional impacts, the Point Loma Wastewater Plant that services the PMP Amendment area currently has a capacity to treat approximately 240 million GPD of wastewater, and averages treatment of approximately 175 million GPD. An additional 306 thousand GPD of wastewater from a total of not more than 500 hotel rooms that could occur under the proposed PMP Amendment would only increase this treatment average by 0.17%. However, this fractional increase was analyzed in the environmental documentation for the Port's 1990 approval of the single 500 room hotel. The additional 306 MGD of wastewater does not represent a new impact to regional facilities.

Please feel free contact me if you have any questions or need to discuss in further detail, 858-875-1704 or matt.semic@latitude33.com.

Sincerely,

Matthew J. Semic, P.E.
Associate

ATTACHMENT A

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880 HARBOR ISLAND DRIVE
PROPOSED CONDITIONS WATER DEMAND ANALYSIS
6/4/2013

WATER DEMAND, BY LAND USE (CITY OF S.D. DESIGN GUIDELINES, TABLE 2-2):

	USE	NET ACRES	GAL/AC-DAY	AVE. ANNUAL DEMAND		MAX. DAY	PEAK HOUR
Development				**GPD**	**MGD**	**GPM**	**GPM**
Existing							
Marina	COMM.	3.5	5000	17,500	0.018	29	73
Island Prime Restaurant	COMM.	1.5	5000	7,500	0.008	12	31
TOTAL				25,000	0.025		

WATER DEMAND, PER ARCHITECTURAL PLANS:

	USE	FIXTURE UNITS	EDUS	AVE. ANNUAL DEMAND		MAX. DAY	PEAK HOUR
Development				**GPD**	**MGD**	**GPM**	**GPM**
Existing							
Rueben E. Lee Restaurant	COMM.	520	26	13,650	0.014	23	57
Proposed							
Hotel	COMM.	6050	303	158,813	0.159	265	661
TOTAL				172,463	0.172		

TOTAL PROPOSED DEMAND: **197,463 GPD 0.197 MGD**

Water Peak Factors

Peak Hour (Figure 2:1 City Water Design Manual Coastal/Downtown)
@ 0.197 MGD, Peak Factor is 6.0 x AAD = 1.182 MGD or Approx. 820 GPM

Maximum Day (City Figure 2-2 City Water Design Manual Coastal/Downtown)
@ 0.197 MGD Maximum/Day = 2.4 x AAD = 0.473 MGD, or Approx. 330 GPM

Required Fire Flows

Per City Design Guide, Commercial Land Use requires 4,000 GPM fire flow with minimum 5 hour duration, and minimum 20 PSI residual water pressure. The system must provide either:
1) Maximum Day + Fire Flow, or
2) Peak Hour Flow

whichever is greater. Therefore, for this project minimum required design is for 4,000 GPM + 330 GPM =**4,330 GPM**

NOTE: POPULATION FACTORS AND EQUIVALENT UNITS:

20 FU'S = 1 EDU
1 EDU = 525 Gal/Day
1 MGD = 694 Gal/Min

FlexTable: Pipe Table (prop water 6-4-13.wtg)

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P-3	184	25: J-3	27: J-4	12.0	PVC	150.0	1,099.14	3.12	0.002
P-4	143	27: J-4	29: J-5	12.0	PVC	150.0	1,099.14	3.12	0.002
P-5	91	29: J-5	31: J-6	12.0	PVC	150.0	1,099.14	3.12	0.003
P-7	23	33: J-7	35: J-8	12.0	PVC	150.0	-2,923.86	8.29	0.024
P-10	56	39: J-10	41: J-11	12.0	PVC	150.0	-2,935.87	8.33	0.019
P-11	281	41: J-11	91: R-3	12.0	PVC	150.0	-2,935.87	8.33	0.014
P-15	237	52: J-14	47: H-1	6.0	PVC	150.0	0.00	0.00	0.000
P-16	233	27: J-4	48: H-2	6.0	PVC	150.0	0.00	0.00	0.000
P-17	122	37: J-9	57: J-15	12.0	PVC	150.0	-2,923.87	8.29	0.014
P-19	32	57: J-15	51: H-5	6.0	PVC	150.0	0.00	0.00	0.000
P-20	48	37: J-9	50: H-4	6.0	PVC	150.0	0.00	0.00	0.000
P-21	28	33: J-7	62: J-16	3.0	PVC	150.0	23.00	1.04	0.002
P-22	15	62: J-16	64: J-17	3.0	PVC	150.0	23.00	1.04	0.002
P-23	344	31: J-6	66: J-18	12.0	PVC	150.0	1,099.14	3.12	0.002
P-24	9	66: J-18	33: J-7	12.0	PVC	150.0	-2,900.86	8.23	0.041
P-25	132	66: J-18	49: H-3	6.0	PVC	150.0	4,000.00	45.39	0.826
P-26	37	35: J-8	70: J-19	12.0	PVC	150.0	-2,923.86	8.29	0.014
P-28	52	70: J-19	73: J-20	4.0	PVC	150.0	0.00	0.00	0.000
P-29	3	70: J-19	75: J-21	12.0	PVC	150.0	-2,923.86	8.29	0.014
P-30	3	75: J-21	37: J-9	12.0	PVC	150.0	-2,923.87	8.29	0.077
P-31	57	75: J-21	78: J-22	4.0	PVC	150.0	0.00	0.00	0.000
P-33	83	80: J-23	25: J-3	12.0	PVC	150.0	1,099.14	3.12	0.002
P-34	14	80: J-23	83: J-24	4.0	PVC	150.0	0.00	0.00	0.000
P-35	23	52: J-14	85: J-25	12.0	PVC	150.0	1,364.14	3.87	0.003
P-36	26	85: J-25	80: J-23	12.0	PVC	150.0	1,099.14	3.12	0.002
P-37	14	85: J-25	88: J-26	3.0	PVC	150.0	265.00	12.03	0.200
P-38	33	57: J-15	93: J-27	12.0	PVC	150.0	-2,923.87	8.29	0.014
P-39	20	93: J-27	39: J-10	12.0	PVC	150.0	-2,935.87	8.33	0.026
P-40	33	93: J-27	96: J-28	6.0	Ductile Iron	130.0	12.00	0.14	0.000
P-41	38	23: J-2	99: J-30	12.0	PVC	150.0	1,393.14	3.95	0.005
P-42	143	99: J-30	52: J-14	12.0	PVC	150.0	1,364.14	3.87	0.003
P-43	156	99: J-30	102: J-31	6.0	PVC	150.0	29.00	0.33	0.000
P-45	164	23: J-2	21: R-1	10.0	Asbestos Cement	140.0	-1,393.14	5.69	0.010

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FlexTable: Junction Table (prop water 6-4-13.wtg)

Current Time: 0.000 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-2	14.0	0.00	373.4	155.5
J-3	14.0	0.00	372.3	155.0
J-4	18.0	0.00	371.9	153.1
J-5	17.5	0.00	371.6	153.2
J-6	18.0	0.00	371.3	152.9
J-7	15.0	0.00	370.9	154.0
J-8	15.0	0.00	371.4	154.2
J-9	16.0	0.00	372.2	154.1
J-10	16.0	0.00	375.0	155.3
J-11	15.0	0.00	376.0	156.2
J-14	14.0	0.00	372.7	155.2
J-15	16.0	0.00	374.0	154.9
J-16	15.0	0.00	370.8	153.9
J-17	15.0	23.00	370.8	153.9
J-18	15.0	0.00	370.5	153.8
J-19	16.0	0.00	371.9	154.0
J-20	16.0	0.00	371.9	154.0
J-21	16.0	0.00	372.0	154.0
J-22	16.0	0.00	372.0	154.0
J-23	14.0	0.00	372.5	155.1
J-24	14.0	0.00	372.5	155.1
J-25	14.0	0.00	372.6	155.1
J-26	14.0	265.00	369.9	154.0
J-27	16.0	0.00	374.4	155.1
J-28	16.0	12.00	374.4	155.1
J-30	14.0	0.00	373.2	155.4
J-31	16.0	29.00	373.1	154.5

FlexTable: Hydrant Table (prop water 6-4-13.wtg)

Current Time: 0.000 hours

Label	Hydrant Status	Lateral Length (ft)	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	Closed	20	14.0	0.00	372.7	155.2
H-2	Closed	20	18.0	0.00	371.9	153.1
H-3	Closed	20	14.5	4,000.00	261.2	106.7
H-4	Closed	20	16.0	0.00	372.2	154.1
H-5	Closed	20	17.0	0.00	374.0	154.4

ATTACHMENT B

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Manhole A – Reach 1 Summary:

Existing Restaurant (Island Prime):

- Using City of San Diego Sewer Design Guide **Table 1-1**

Equivalent population / Net AC = 43.7 for Hotel/Commercial

Developable Area = 1.5 AC; < assumes approximate half of lot and parking >

1.5 AC (43 POP/Net C) $\boxed{\text{65.5 POP}}$ =

$$6.5\text{ POP} \times \frac{1\text{ EDU}}{3.5\text{ POP}} = \boxed{18.75\text{ EDU}}$$

Existing Restaurant (Ruben E. Lee):

-Based upon total estimated fixture units:

$$520 \times \frac{1\text{ EDU}}{20\text{ FU}} = \boxed{26\text{ EDU}}$$

$$26\text{ EDU} \times \frac{3.5\text{ POP}}{1\text{ EDU}} = \boxed{91\text{ POP}}$$

$\boxed{\text{Total Reach 1 = 44.75 EDU}}$

Reach 3 Summary:

Proposed Hotel:

500 Rooms – No mechanical data available

Assume each room contains:

1 Bath/Shower	=	4 FU
1 WTR Closet	=	5 FU
1 Bathroom Sink	=	2 FU
		11 FU x 500 Rooms = 5500 FU

Assume additional 10% for misc. fixtures (public bathrooms, wash machines)

5500 FU x 1.10 = 6050 FU ~ 303 EDU

303 EDU x 3.5 POP/ EDU = $\boxed{\text{1061 POP}}$

Manhole Nos. 31 & 32, reaches 5 & 6 Summary:

Entire lot area with Eastern boundary at edge of proposed Hotel curb line = 3.5 acres. Area assumed split between manholes 31 & 32. Area includes existing Marina.

- Using City of San Diego Sewer Design Guide **Table 1-1**

Equivalent Population for Commercial Hotels = 43.7 Net Acre

3.5 AC (43.7 POP/ AC) = 153 POP/ 2 = $\boxed{\text{76.5 POP for MH 31 \& 32}}$

$153 \text{ POP } \left(\frac{1 \text{ EDU}}{3.5 \text{ POP}}\right) = 44 \text{ EDU}/2 =$ $\boxed{\text{22 EDU for MH 31 \& 32}}$

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880 HARBOR ISLAND - CITY OF SAN DIEGO
FLOW CALCULATIONS (PUBLIC)
JN# 859.0

REACH NO.	MH TO MH OR C.O. TO C.O.	ZONE	POP/D.U.	D.U. IN LINE	POP TOTAL	CUMULATIVE POP TOTAL	GAL/DAY	AVE DRY WEATHER FLOW GAL/DAY	PEAK FACTOR	PEAK DRY WEATHER FLOW (GPD)	WET WEATHER P.F.	WET WEATHER PEAK FLOW (CFS)	PEAK FLOW (MGD)	LINE SIZE D (IN)	DESIGN SLOPE (%)	NORMAL DEPTH Dn	Dn/D	VELOCITY (FPS)
System No. 1																		
1	A TO B	Comm	3.5	44.8	157	157	80	12530	4.0	50120	1.5	0.1163	0.08	8	0.50	2.00	0.250	1.71
2	B TO C	Comm	3.5	0.0	0	157	80	12530	4.0	50120	1.5	0.1163	0.08	8	0.64	1.90	0.238	1.87
3	C TO 33	Comm	3.5	303.0	1061	1217	80	97370	2.4	236230	1.5	0.5482	0.35	8	0.64	4.31	0.539	2.86
4	33 TO 32	Comm	3.5	0.0	0	1217	80	97370	2.4	236230	1.5	0.5482	0.35	8	0.46	4.79	0.599	2.52
5	32 TO 31	Comm	3.5	22.0	77	1294	80	103530	2.4	249115	1.5	0.5781	0.37	8	0.46	4.96	0.620	2.54
6	31 TO 30	Comm	3.5	22.0	77	1371	80	109690	2.4	261898	1.5	0.6078	0.39	8	0.46	5.13	0.641	2.57
7	30 TO 4	Comm	3.5	0.0	0	1371	80	109690	2.4	261898	1.5	0.6078	0.39	15	4.80	2.12	0.141	5.75
				391.75	1371													

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TABLE NO. 1

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880 HARBOR ISLAND - CITY OF SAN DIEGO
FLOW CALCULATIONS (PUBLIC)
JN# 859.0

REACH NO.	MH TO MH OR C.O. TO C.O.	ZONE	POP/D.U.	D.U. IN LINE	POP TOTAL	CUMULATIVE POP TOTAL	GAL/DAY	AVE DRY WEATHER FLOW GAL/DAY	PEAK FACTOR	PEAK DRY WEATHER FLOW (GPD)	WET WEATHER P.F.	WET WEATHER PEAK FLOW (CFS)	PEAK FLOW (MGD)	LINE SIZE D (IN)	DESIGN SLOPE (%)	NORMAL DEPTH Dn	Dn/D	VELOCITY (FPS)
System No. 1																		
1	A TO B	Comm	3.5	44.8	157	157	80	12530	4.0	50120	1.5	0.1163	0.08	8	0.50	2.00	0.250	1.71
2	B TO C	Comm	3.5	0.0	0	157	80	12530	4.0	50120	1.5	0.1163	0.08	8	0.64	1.90	0.238	1.87
3	C TO 33	Comm	3.5	303.0	1061	1217	80	97370	2.4	236230	1.5	0.5482	0.35	10	0.64	3.84	0.384	2.84
4	33 TO 32	Comm	3.5	0.0	0	1217	80	97370	2.4	236230	1.5	0.5482	0.35	10	0.46	4.20	0.420	2.52
5	32 TO 31	Comm	3.5	22.0	77	1294	80	103530	2.4	249115	1.5	0.5781	0.37	10	0.46	4.33	0.433	2.56
6	31 TO 30	Comm	3.5	22.0	77	1371	80	109690	2.4	261898	1.5	0.6078	0.39	10	0.46	4.45	0.445	2.59
7	30 TO 4	Comm	3.5	0.0	0	1371	80	109690	2.4	261898	1.5	0.6078	0.39	15	4.80	2.12	0.141	5.75
				391.75	1371													

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TABLE NO. 1

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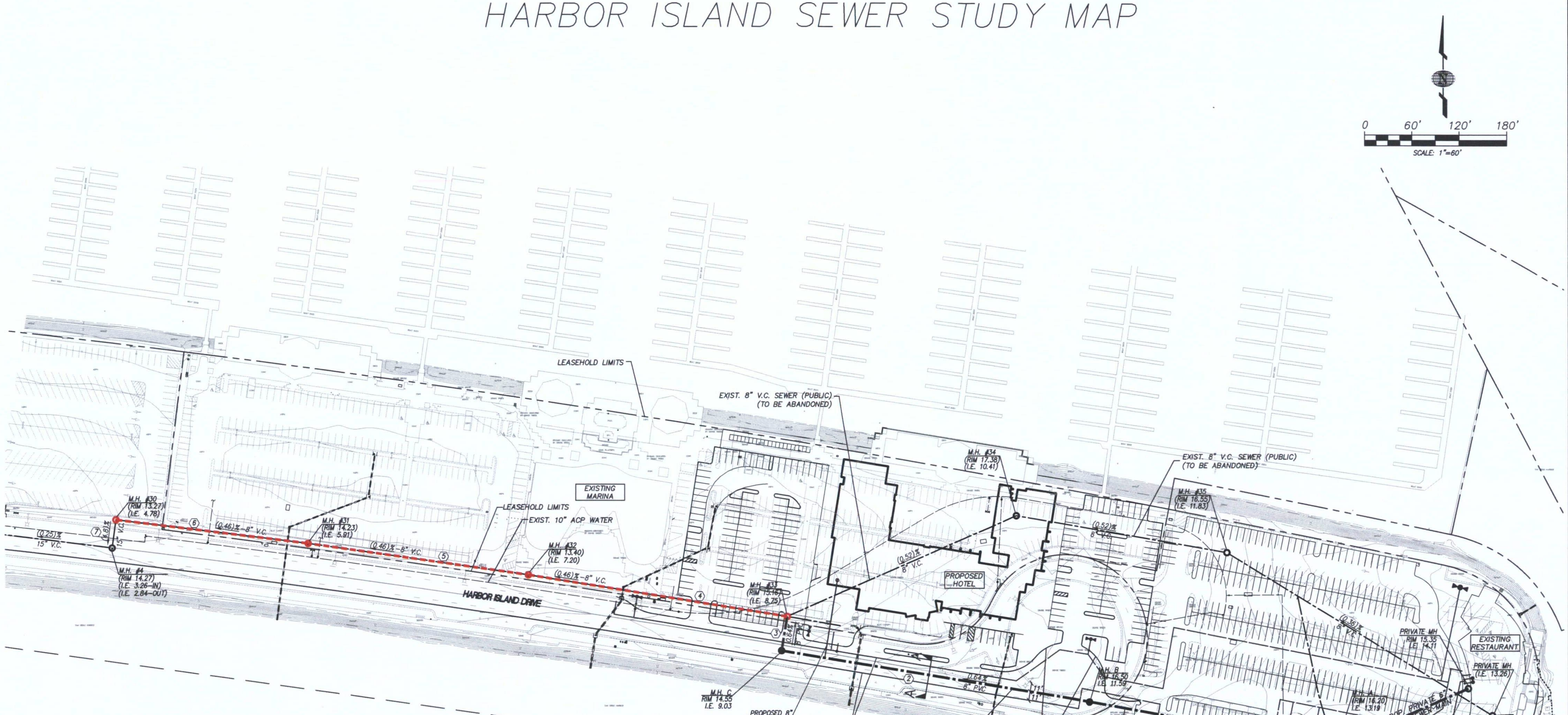
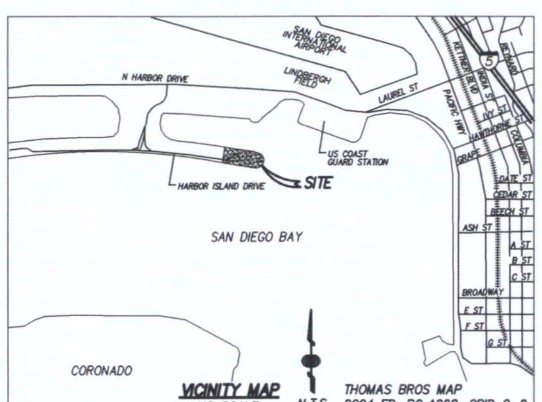
HARBOR ISLAND SEWER STUDY MAP



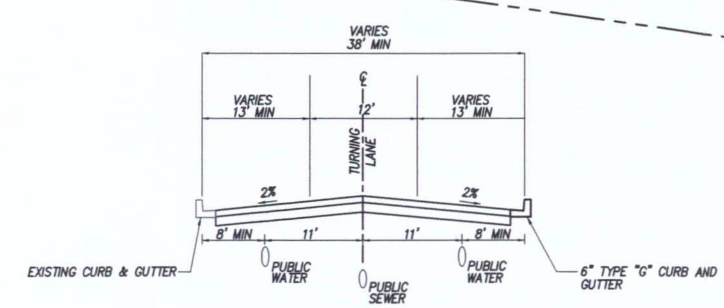


VICINITY MAP
NO SCALE

N.T.S. THOMAS BROS MAP 2004 ED. PG 1268, GRID G-2

LEGEND

EXISTING SANITARY SEWER & MANHOLE	M.H. #32 (RIM 13.40) (I.E. 7.20)	EXISTING MH ID (IF AVAILABLE) / EXISTING RIM ELEVATION / EXISTING INVERT
PROPOSED SANITARY SEWER & MANHOLE	M.H. A RIM 16.20 I.E. 13.43	PROPOSED MH ID / PROPOSED RIM ELEVATION / PROPOSED INVERT
SANITARY SEWER & MANHOLE REPLACEMENT	M.H. A RIM 16.20 I.E. 13.43	PROPOSED MH ID / PROPOSED RIM ELEVATION / PROPOSED INVERT
REACH NUMBER		
EXISTING WATER MAIN		
PROPOSED WATER MAIN		
EXISTING LEASEHOLD LINE		



SECTION A-A

Latitude 33
Planning and Engineering
4933 Paramount Dr. 2nd Flr.
San Diego, Ca. 92123
858-751-0633 Fax 858-751-0634

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Appendix J

Green House Gas Evaluation for the Harbor Island Subarea 23 Port Master Plan Amendment (January 2013)

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Green House Gas Evaluation

for the

Harbor Island Subarea 23
Port Master Plan Amendment
San Diego, California

Submitted To:

KLR Planning, Inc.
P.O. Box 882676
San Diego, CA 92186-2676

Prepared By:

Scientific Resources Associated
1328 Kaimalino Lane
San Diego, CA 92109
Dr. Valorie L. Thompson, Principal
(858) 488-2987

January 4, 2013

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Table of Contents

List of Acronyms

APCD	Air Pollution Control District
AB	Assembly Bill
AB 32	Assembly Bill 32, Global Warming Solutions Act of 2006
ARB	Air Resources Board
ASTM	American Society of Testing and Materials
CAPCOA	California Air Pollution Control Officers Association
CAT	Climate Action Team
CCAP	Center for Clean Air Policy
CCAR	California Climate Action Registry
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DWR	Department of Water Resources
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
EV	Electric Vehicles
GCC	Global Climate Change
GHG	Greenhouse Gas
GGEP	Greenhouse Gas Emissions Policy
GGRP	Greenhouse Gas Reduction Plan
GP	General Plan
GWP	Global Warming Potential
HFCs	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LEED	Leadership in Energy and Environmental Design
MMT	Million Metric Tons
MW	Megawatts
N_2O	Nitrous Oxide
NOx	Oxides of Nitrogen
OPR	State Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particulate Matter
ROG	Reactive Organic Gas
RPS	Renewable Portfolio Standards
S-3-05	Executive Order S-3-05
SB	Senate Bill
SDCGHGI	San Diego County Greenhouse Gas Inventory
SRI	Solar Reflective Index
THC	Total Hydrocarbon
UNFCCC	United Nations Framework Convention on Climate Change

USBGC	U.S. Green Building Council
VMT	Vehicle Miles Traveled

1.0 INTRODUCTION

This report presents an assessment of potential greenhouse gas (GHG) impacts associated with the Harbor Island Subarea 23 Port Master Plan Amendment 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 and surface parking lots.

The Harbor Island Subarea 23 Port Master Plan Amendment provides for the existing allowed 500 hotel rooms (currently designated for the SDIA employee parking lot) to occur as up to three smaller hotels (including the proposed 175-room hotel), which together total no more than 500 rooms. The proposed amendment involves the partial redevelopment of one leasehold, which is currently leased by Sunroad Marina Partners, LP, located at 955 Harbor Island Drive and an adjacent leasehold, currently leased to the San Diego International Airport (SDIA) for its current use as a 900-space employee parking lot. The proposed redevelopment would only affect the land side of these leaseholds. A traffic circle, located at the east end of Harbor Island Drive, as well as a portion of Harbor Island Drive, is also included in the proposed redevelopment.

This Global Climate Change analysis includes an evaluation of existing conditions in the project vicinity, an assessment of potential greenhouse gas emissions associated with project construction and operations, and project design features and other regulatory actions that will reduce greenhouse gas emissions.

1.1 General Principles and Existing Conditions

Global climate change (GCC) refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns, precipitation and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), which are known as greenhouse gases (GHGs). These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere. Gases that trap heat in the atmosphere are often called greenhouse gases, analogous to a greenhouse. GHGs are emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth's temperature. Without these natural GHGs, the Earth's temperature would be about 61° Fahrenheit cooler (California Environmental Protection Agency 2006). Emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere.

GHGs have been at the center of a widely contested political, economic, and scientific debate surrounding GCC. Although the conceptual existence of GCC is generally accepted, the extent to which GHGs contribute to it remains a source of debate. The State of California has been at the forefront of developing solutions to address GCC. GCC refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. GCC may result from natural factors, natural processes, and/or human activities that change the composition of the atmosphere and alter the surface and features of land.

Global climate change attributable to anthropogenic (human) emissions of GHGs (mainly CO_2, CH_4 and N_2O) is currently one of the most important and widely debated scientific, economic and political issues in the United States. Historical records indicate that global climate changes have occurred in the past due to natural phenomena (such as during previous ice ages). Some data indicate that the current global conditions differ from past climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The IPCC concluded that a stabilization of GHGs at 400 to 450 ppm CO_2 equivalent concentration is required to keep global mean warming below 3.6° Fahrenheit (2° Celsius), which is assumed to be necessary to avoid dangerous climate change (Association of Environmental Professionals 2007).

State law defines greenhouse gases as any of the following compounds: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (California Health and Safety Code Section 38505(g).) CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity.

1.2 Sources and Global Warming Potentials of GHG

The State of California GHG Inventory performed by the California Air Resources Board (ARB), compiled statewide anthropogenic GHG emissions and sinks. It includes estimates for CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs. The current inventory covers the years 1990 to 2004, and is summarized in Table 1. Data sources used to calculate this GHG inventory include California and federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the Intergovernmental Panel on Climate Change (IPCC). The 1990 emissions level is the sum total of sources and sinks from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories in the inventory. These sectors include: Agriculture; Commercial; Electricity Generation; Forestry; Industrial; Residential; and Transportation.

Table 1
State of California GHG Emissions by Sector

Sector	Total 1990 Emissions ($MMTCO_2e$)	Percent of Total 1990 Emissions	Total 2008 Emissions ($MMTCO_2e$)	Percent of Total 2008 Emissions
Agriculture	23.4	5%	28.06	6%
Commercial	14.4	3%	14.68	3%
Electricity Generation	110.6	26%	116.35	25%
Forestry (excluding sinks)	0.2	<1%	0.19	<1%
Industrial	103.0	24%	92.66	20%
Residential	29.7	7%	28.45	6%
Transportation	150.7	35%	174.99	37%
Recycling and Waste			6.71	1%
High GWP Gases			15.65	3%
Forestry Sinks	(6.7)		(3.98)	

When accounting for GHGs, all types of GHG emissions are expressed in terms of CO_2 equivalents (CO_2e) and are typically quantified in metric tons (MT) or millions of metric tons (MMT).

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas" (USEPA 2006). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main greenhouse gases that have been attributed to human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310. Table 2 presents the GWP and atmospheric lifetimes of common GHGs.

Table 2
Global Warming Potentials and Atmospheric Lifetimes of GHGs

GHG	Formula	100-Year Global Warming Potential	Atmospheric Lifetime (Years)
Carbon Dioxide	CO_2	1	Variable
Methane	CH_4	21	12 ± 3
Nitrous Oxide	N_2O	310	120
Sulfur Hexafluoride	SF_6	23,900	3,200

Human-caused sources of CO_2 include combustion of fossil fuels (coal, oil, natural gas, gasoline and wood). Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. Concentrations of CO_2 have increased in the atmosphere since the industrial revolution.

CH_4 is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure and cattle farming. Human-caused sources of N_2O include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid.

Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses.

In addition to the State of California GHG Inventory, a more specific regional GHG inventory was prepared by the University of San Diego School of Law Energy Policy Initiative Center (University of San Diego 2008). This San Diego County Greenhouse Gas Inventory (SDCGHGI) is a detailed inventory that takes into account the unique characteristics of the region in calculating emissions. The SDCGHGI calculated GHG emissions for 1990, 2006, and projected 2020 emissions. Based on this inventory and the emission projections for the region, the study found that emissions of GHGs must be reduced by 33 percent below business as usual in order for San Diego County to achieve 1990 emission levels by the year 2020. "Business as usual", or forecasted emissions, is defined as the emissions that would occur in the absence of AB 32's mandated reductions. Construction of buildings using Title 24 building standards or the County's 2006 building code would create "business as usual" emissions.

Areas where feasible reductions can occur and the strategies for achieving those reductions are outlined in the SDCGHGI. A summary of the various sectors that contribute GHG emissions in San Diego County for the year 2006 is provided in Table 3. Total GHGs in San Diego County are estimated at 34 $MMTCO_2e$.

Table 3
San Diego County 2006 GHG Emissions by Category

Sector	Total Emissions ($MMTCO_2e$)	Percent of Total Emissions
On-Road Transportation	16	46%
Electricity	9	25%
Natural Gas Consumption	3	9%
Civil Aviation	1.7	5%
Industrial Processes & Products	1.6	5%
Other Fuels/Other	1.1	4%
Off-Road Equipment & Vehicles	1.3	4%
Waste	0.7	2%
Agriculture/Forestry/Land	0.7	2%

Use		
Rail	0.3	1%
Water-Born Navigation	0.13	0.4%

The sources of GHG emissions, GWP, and atmospheric lifetime of GHGs are all important variables to be considered in the process of calculating CO_2e for discretionary land use projects that require a climate change analysis.

1.3 Regulatory Framework

All levels of government have some responsibility for the protection of air quality, and each level (Federal, State, and regional/local) has specific responsibilities relating to air quality regulation. GHG emissions and the regulation of GHGs is a relatively new component of air quality.

1.3.1 National and International Efforts

GCC is being addressed at both the international and federal levels. In 1988, the United Nations and the World Meteorological Organization established the IPCC to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent reports of the IPCC have emphasized the scientific consensus that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.

In October 1993, President Clinton announced his Climate Change Action Plan (CCAP), which had a goal of returning GHG emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in GHG emissions. On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of GCC. Recently, the United States Supreme Court declared in the court case of Massachusetts et al. vs. the Environmental Protection Agency et al., 549 C.S. 497 (2007) that the EPA does have the ability to regulate GHG emissions. In addition to the national and international efforts described above, many local jurisdictions have adopted climate change policies and programs.

Endangerment Finding. On April 17, 2009, EPA issued its proposed endangerment finding for GHG emissions. On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

> **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)--in the atmosphere threaten the public health and welfare of current and future generations.
>
> **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

The endangerment findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.

Mandatory GHG Reporting Rule. On March 10, 2009, in response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), EPA proposed a rule that requires mandatory reporting of greenhouse gas (GHG) emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of Greenhouse Gases Rule was signed, and was published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. The rule will collect accurate and comprehensive emissions data to inform future policy decisions.

EPA is requiring suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA. The gases covered by the proposed rule are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulfur hexafluoride (SF_6), and other fluorinated gases including nitrogen trifluoride (NF_3) and hydrofluorinated ethers (HFE).

Corporate Average Fuel Economy Standards. The federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the United States. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon by 2020. In May 2009, President Obama announced plans to increase CAFE standards to require light-duty vehicles to meet an average fuel economy of 35.5 miles per gallon by 2016.

1.3.2 State Regulations and Standards

The following subsections describe regulations and standards that have been adopted by the State of California to address GCC issues.

Assembly Bill 32, the California Global Warming Solutions Act of 2006. In September 2006, Governor Schwartzenegger signed California AB 32, the global warming bill, into law. AB 32 directs the ARB to do the following:

- Make publicly available a list of discrete early action GHG emission reduction measures that can be implemented prior to the adoption of the statewide GHG limit and the measures required to achieve compliance with the statewide limit.
- Make publicly available a GHG inventory for the year 1990 and determine target levels for 2020.

- On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures.
- On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020, to become operative on January 1, 2012, at the latest. The emission reduction measures may include direct emission reduction measures, alternative compliance mechanisms, and potential monetary and non-monetary incentives that reduce GHG emissions from any sources or categories of sources that ARB finds necessary to achieve the statewide GHG emissions limit.
- Monitor compliance with and enforce any emission reduction measure adopted pursuant to AB 32.

AB 32 required that by January 1, 2008, ARB determine what the statewide GHG emissions level was in 1990, and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. ARB adopted its Scoping Plan in December 2008, which provided estimates of the 1990 GHG emissions level and identified sectors for the reduction of GHG emissions. The ARB has estimated that the 1990 GHG emissions level was 427 MMT net CO_2e (ARB 2007a). The ARB estimates that a reduction of 173 MMT net CO_2e emissions below business-as-usual would be required by 2020 to meet the 1990 levels (ARB 2007a). This amounts to a 15 percent reduction from today's levels, and a 30 percent reduction from projected business-as-usual levels in 2020 (ARB 2008a).

Senate Bill 97. Senate Bill 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directs OPR to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by July 1, 2009 and directs the Resources Agency to certify and adopt the CEQA guidelines by January 1, 2010.

The Governor's Office of Planning and Research (OPR) published a technical advisory on CEQA and Climate Change on June 19, 2008. The guidance did not include a suggested threshold. The OPR does recommend that CEQA analyses include the following components:

- Identify greenhouse gas emissions
- Determine Significance
- Mitigate Impacts

In April, the OPR published its proposed revisions to CEQA to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."

- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

On July 3, the California Natural Resources Agency published proposed amendment of regulations based on OPR's proposed revisions to CEQA to address GHG emissions. On that date, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code section 21083.05. Having reviewed and considered all comments received, on December 30, 2009, the Natural Resources Agency adopted the proposed amendments to the state CEQA guidelines in the California Code of Regulations. These amendments became final on March 18, 2010.

Executive Order S-3-05. Executive Order S-3-05, signed by Governor Schwartzenegger on June 1, 2005, calls for a reduction in GHG emissions to 1990 levels by 2020 and for an 80 percent reduction in GHG emissions by 2050. Executive Order S-3-05 also calls for the California EPA (CalEPA) to prepare biennial science reports on the potential impact of continued GCC on certain sectors of the California economy. The first of these reports, "Our Changing Climate: Assessing Risks to California", and its supporting document "Scenarios of Climate Change in California: An Overview" were published by the California Climate Change Center in 2006.

Executive Order S-21-09. Executive Order S-21-09 was enacted by the Governor on September 15, 2009. Executive Order S-21-09 requires that the ARB, under its AB 32 authority, adopt a regulation by July 31, 2010 that sets a 33 percent renewable energy target as established in Executive Order S-14-08. Under Executive Order S-21-09, the ARB will work with the Public Utilities Commission and California Energy Commission to encourage the creation and use of renewable energy sources, and will regulate all California utilities. The ARB will also consult with the Independent System Operator and other load balancing authorities on the impacts on reliability, renewable integration requirements, and interactions with wholesale power markets in carrying out the provisions of the Executive Order. The order requires the ARB to establish highest priority for those resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health.

California Code of Regulations Title 24. Although not originally intended to reduce greenhouse gas emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008 and standards are set to be phased in beginning in January 2010. The new Title 24 standards are anticipated to increase energy efficiency by 15%, thereby reducing GHG emissions from energy use by 15% (Eden 2009). Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

State Standards Addressing Vehicular Emissions. California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by ARB would apply to 2009 and later model year vehicles. ARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicle fleet by an estimated 18% in 2020 and by 27% in 2030 (AEP 2007). Once implemented, emissions from new light-duty vehicles are expected to be reduced in San Diego County by 21 percent by 2020. The ARB has adopted amendments to the "Pavley" regulations that reduce greenhouse gas (GHG) emissions in new passenger vehicles from 2009 through 2016. The amendments, approved by the Board on September 24, 2009, are part of California's commitment toward a nation-wide program to reduce new passenger vehicle GHGs from 2012 through 2016. ARB's September amendments will cement California's enforcement of the Pavley rule starting in 2009 while providing vehicle manufacturers with new compliance flexibility. The amendments will also prepare California to harmonize its rules with the federal rules for passenger vehicles.

Executive Order S-01-07 was enacted by the Governor on January 18, 2007. Essentially, the order mandates the following: 1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and 2) that a Low Carbon Fuel Standard ("LCFS") for transportation fuels be established for California. It is assumed that the effects of the LCFS would be a 10% reduction in GHG emissions from fuel use by 2020. On April 23, 2009, ARB adopted regulations to implement the LCFS.

On December 29, 2011, the United States District Court for the Eastern District of California issued an injunction preliminarily enjoining the California Air Resources Board (CARB) from enforcing the Low Carbon Fuel Standard (LCFS) adopted for the State of California, which standard is relied on in part in connection with the GHG analysis for the project. On April 23, 2012, the United States Ninth Circuit Court of Appeals granted a motion to stay the injunction issued by the lower court. As a result, CARB is continuing to enforce the existing LCFS.

Senate Bill 375. Senate Bill 375 requires that regions within the state which have a metropolitan planning organization must adopt a sustainable communities strategy as part of their regional transportation plans. The strategy must be designed to achieve certain goals for the reduction of GHG emissions. The bill finds that GHG from autos and light trucks can be substantially reduced by new vehicle technology, but even so "it will be necessary to achieve significant additional greenhouse gas reductions from changed land use patterns and improved transportation. Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 provides that new CEQA provisions be enacted to "encourage developers to submit applications and local governments to make land use decisions that will help the state achieve its goals under AB 32," and that "current planning models and analytical techniques used for making transportation infrastructure decisions and for air quality planning should be able to assess the effects of policy choices, such as residential development patterns, expanded transit service and accessibility, the walkability of communities, and the use of economic incentives and disincentives."

1.3.3 Local Regulations and Standards

In 2006, the Port began a voluntarily Clean Air Program (CAP) to address air quality and greenhouse gas emissions from local port-related activities. This CAP seeks to voluntarily reduce criteria pollutants and greenhouse gas emissions from current and future Port operations through the identification and evaluation of feasible and effective control measures for each category of Port emissions. The Port has developed various control measures geared towards reducing emissions from the greatest contributors of air pollution. These controls measures are mainly applicable to operations conducted by the Port and do not necessarily regulate projects such as the Harbor Island Subarea 23 Port Master Plan. The CAP will continue to be refined and be adapted to future changes in Port operations (Port District 2013).

2.0 POTENTIAL CLIMATE CHANGE IMPACTS TO PROJECT SITE

2.1 Existing Conditions

CEQA Guidelines Section 15125(a) guides the discussion of the environmental setting for the proposed project and advises in the establishment of the project baseline. According to CEQA, "[a]n *EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published[...]. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.*"

The Harbor Island Subarea 23 Port Master Plan Amendment encompasses the east side of Harbor Island in the City of San Diego. The existing site is currently developed with a 600 slip marina including support buildings, lockers and surface parking as well as a SDIA employee parking lot containing 900 parking spaces. Just east of the project site, at the terminus of East Harbor Island Drive, is a leasehold with two restaurants; Island Prime and the Reuben E. Lee, and a parking lot providing 568 parking spaces to serve both restaurants. Island Prime is a fully functioning restaurant. The Reuben E. Lee is a barge with a super-structure constructed as a faux steam wheeler. The Reuben E. Lee is not currently an operating restaurant, however, the Port of San

Diego has approved the redevelopment of the restaurant, the City of San Diego has issued a building permit, and demolition has begun. As part of the redevelopment of the Reuben E. Lee, it has been temporarily moved to a shipyard for maintenance and is scheduled to return to the site sometime in 2013.

2.2 Typical Adverse Effects

The Climate Scenarios Report (CCCC 2006), uses a range of emissions scenarios developed by the IPCC to project a series of potential warming ranges (i.e., temperature increases) that may occur in California during the 21st century. Three warming ranges were identified: Lower warming range (3.0 to 5.5 degrees Fahrenheit (°F)); medium warming range (5.5 to 8.0 °F); and higher warming range (8.0 to 10.5 °F). The Climate Scenarios Report then presents an analysis of the future projected climate changes in California under each warming range scenario.

According to the report, substantial temperature increases would result in a variety of impacts to the people, economy, and environment of California. These impacts would result from a projected increase in extreme conditions, with the severity of the impacts depending upon actual future emissions of GHGs and associated warming. These impacts are described below.

Public Health. Higher temperatures are expected to increase the frequency, duration, and intensity of conditions conducive to air pollution formation. For example, days with weather conducive to O_3 formation are projected to increase by 25 to 35 percent under the lower warming range and 75 to 85 percent under the medium warming range. In addition, if global background O_3 levels increase as is predicted in some scenarios, it may become impossible to meet local air quality standards. An increase in wildfires could also occur, and the corresponding increase in the release of pollutants including $PM_{2.5}$ could further compromise air quality. The Climate Scenarios Report indicates that large wildfires could become up to 55 percent more frequent of GHG emissions are not significantly reduced.

Potential health effects from GCC may arise from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems (e.g., heat rash and heat stroke). In addition, climate sensitive diseases (such as malaria, dengue fever, yellow fever, and encephalitis) may increase, such as those spread by mosquitoes and other disease-carrying insects.

Water Resources. A vast network of reservoirs and aqueducts capture and transport water throughout the State from northern California rivers and the Colorado River. The current distribution system relies on Sierra Nevada mountain snowpack to supply water during the dry spring and summer months. Rising temperatures, potentially compounded by decreases in precipitation, could severely reduce spring snowpack, increasing the risk of summer water shortages. In addition, if temperatures continue to rise more precipitation would fall as rain instead of snow, further reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. The State's water resources are also at risk from rising sea levels. An influx of seawater would degrade California's estuaries, wetlands, and groundwater aquifers.

Agriculture. Increased GHG and associated increases in temperature are expected to cause widespread changes to the agricultural industry, reducing the quantity and quality of agricultural products statewide. Significant reductions in available water supply to support agriculture would also impact production. Crop growth and development will change as will the intensity and frequency of pests and diseases.

Ecosystems/Habitats. Continued global warming will likely shift the ranges of existing invasive plants and weeds, thus alternating competition patterns with native plants. Range expansion is expected in many species while range contractions are less likely in rapidly evolving species with significant populations already established. One of the major, most well-documented, and robust findings in ecology over the past century has been the crucial role of climate in determining the geographical distribution of species and ecological communities. Climate variability and change can affect plants and animals in a number of ways, including their distributions, population sizes, and even physical structure, metabolism, and behavior. These ecological responses to changes in climate have important implications, given the historical and continuing increases in atmospheric concentrations of greenhouse gases associated with human activities. Future human-induced changes in the global climate will directly affect regional conditions, such as geographic patterns of temperature and precipitation. Reports by the Pew Center on Global Climate Change (Center for Climate and Energy Solutions 2011) have identified a range of future adverse effects that could occur in U.S. marine and freshwater systems, forests, and ecosystem processes due to greenhouse gas-induced global climate change. According to the reports, the timing of important ecological events such as flowering of plants and breeding times of animals have shifted with changes in the U.S. climate. Geographic ranges of some plants and animals have shifted northward and upward in elevation as well, and in some cases, geographic ranges have contracted. Species composition within communities has changed with local temperature rise. Continued global warming is also likely to increase the populations of and types of pests. Continued global warming would also affect natural ecosystems and biological habitats throughout the State.

Wildland Fires. Global warming is expected to increase the risk of wildfire and alter the distribution and character of natural vegetation. If temperatures rise into the medium warming range, the risk of large wildfires in California could increase by as much as 55 percent, which is almost twice the increase expected if temperatures stay in the lower warming range. However, since wildfire risk is determined by a combination of factors including precipitation, winds, temperature, and landscape and vegetation conditions, future risks will not be uniform throughout the State.

Rising Sea Levels. Rising sea levels, more intense coastal storms, and warmer water temperatures will increasing threaten the State's coastal regions. Under the high warming scenario, sea level is anticipated to rise 22 to 35 inches by 2100. A sea level risk of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten levees and inland water systems, and disrupt wetlands and natural habitats. Given the project's location along the San Diego Bay, rising sea levels would have an adverse impact on the site.

3.0 CLIMATE CHANGE SIGNIFICANCE CRITERIA

According to the California Natural Resources Agency[1], "due to the global nature of GHG emissions and their potential effects, GHG emissions will typically be addressed in a cumulative impacts analysis." According to Appendix G of the CEQA Guidelines, the following criteria may be considered to establish the significance of GCC emissions:

Would the project:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As discussed in Section 15064.4 of the CEQA Guidelines, the determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency, consistent with the provisions in Section 15064. Section 15064.4 further provides that a lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance based standards.

Section 15064.4 also advises a lead agency to consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

[1] California Natural Resources Agency, Initial Statement of Reasons for Regulatory Action, Proposed Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gases Pursuant to SB 97. July 2009.

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

In the absence of formally adopted standards, the Port District employs the following significance thresholds, which are adapted from the thresholds recommended in Appendix G of the CEQA Guidelines for determining the significance of other impacts on air quality. GHG emissions would be significant 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.

4.0 GREENHOUSE GAS INVENTORY

GHG emissions associated with the Harbor Island Subarea 23 Port Master Plan Amendment were estimated separately for five categories of emissions: (1) construction; (2) energy use, including electricity and natural gas usage; (3) water consumption; (4) solid waste handling; and (5) transportation. The analysis includes an evaluation of the existing conditions, as well as proposed project conditions. The analysis includes a baseline estimate assuming Title 24-compliant buildings, which is considered business as usual for the Project. Emissions were estimated based on emission factors from the California Climate Action Registry General Reporting Protocol (CCAP 2009). This inventory presents emissions based on "business as usual" assumptions.

The complete emissions inventory is summarized below and included in the Appendix.

4.1 Existing Greenhouse Gas Emissions

As discussed in Section 2.1, the existing site is currently developed with a 600 slip marina including support buildings, lockers and surface parking as well as a SDIA employee parking lot containing 900 parking spaces. Just east of the project site, at the terminus of East Harbor Island Drive, is a leasehold with two restaurants; Island Prime and the Reuben E. Lee, and a parking lot providing 568 parking spaces to serve both restaurants. Island Prime is a fully functioning restaurant. The Reuben E. Lee is a barge with a super-structure constructed as a faux steam wheeler. The Reuben E. Lee is not currently an operating restaurant, however, the Port of San Diego has approved the redevelopment of the restaurant, the City of San Diego has issued a building permit, and demolition has begun. As part of the redevelopment of the Reuben E. Lee, it has been temporarily moved to a shipyard for maintenance and is scheduled to return to the site sometime in 2013.

Based on the *Traffic Impact Study – Harbor Island Subarea 23 Port Master Plan Amendment* (Linscott, Law & Greenspan 2012), the existing marina generates 2,400 average daily trips (ADT). Existing emissions from vehicles were estimated using the ARB's emission factors from their evaluation of the effect of the implementation of Pavley standards (ARB 2008b), assuming an average trip length of 5.8 miles based on data for average trip lengths within San Diego County estimated by the San Diego Association of Governments (SANDAG).

Estimated GHG emissions from vehicles associated with existing uses are presented in Table 5.

Table 5 SUMMARY OF ESTIMATED EXISTING OPERATIONAL GREENHOUSE GAS EMISSIONS				
Emission Source	**Annual Emissions (Metric tons/year)**			
	CO_2	**CH_4**	**N_2O**	**CO_2e**
Operational Emissions				
Vehicle Emissions	2,536	0.03	0.22	2,605
Global Warming Potential Factor	**1**	**21**	**310**	
CO_2 Equivalent Emissions	2,536	1	69	2,605
TOTAL CO_2 Equivalent Emissions	**2,605**			

4.2 Construction Greenhouse Gas Emissions

Construction GHG emissions include emissions from heavy construction equipment, truck traffic, and worker trips. Emissions were calculated using the CalEEMod Model. The CalEEMod Model contains emission factors from the OFFROAD2007 model for heavy construction equipment (ARB 2007b), and from the EMFAC2007 model (ARB 2007c) for on-road vehicles.

To address construction for 500 hotel rooms, assumed to comprise three separate hotels, it was assumed that each hotel would be constructed in a separate phase. The three hotels were assumed to include two 175-room hotels, and one 150-room hotel, for a total of 500 rooms. It was assumed that construction of each hotel would require the following subphases: demolition of existing structures/pavement, grading, paving/foundation construction, building construction, and architectural coatings application. The first hotel, which was assumed to include 175 rooms, would require demolition of the existing locker building and parking lot east of the existing marine building. The two additional hotels were assumed to require additional demolition of existing paved areas.

The assumed construction schedule for each individual hotel project was provided in the *Traffic Impact Study – Harbor Island Subarea 23 Port Master Plan Amendment* (Linscott, Law & Greenspan 2012). The first hotel was assumed to be constructed in 2013; the second hotel in 2014, and the third hotel in 2018, with full buildout of the project by the year 2020.

Table 5 presents a summary of construction GHG emissions.

Table 5 Construction GHG Emissions Metric tons/year	
Construction Phase	**CO_2e Emissions, metric tons**
175-Room Hotel	485
175-Room Hotel	596
150-Room Hotel	566
TOTAL	**1647**

In accordance with guidance from the City of San Diego, the SCAQMD, and the County of San Diego, construction GHG emissions are amortized over a 30-year period to account for their contribution to emissions over the lifetime of the project. Amortized construction emissions would therefore be 55 metric tons per year.

4.3 Operational Greenhouse Gas Emissions

4.3.1 Energy Use

Baseline energy use was calculated as a function of kWh per square foot based on average performance for southern California commercial buildings, according to the *California Commercial End-Use Survey* (Itron 2006). The energy use figures in these reports represent current state-wide average uses for all land uses, including those that are compliant with 2005

Title 24 standards. The baseline energy use provides a conservative estimate of current energy requirements relative to future energy requirements.

Electricity usage rates for the hotel space were calculated based on estimated annual rates of 12.13 kilowatt-hours (kWh) per square foot from the *California Commercial End-Use Survey* (Itron 2006) for hotel space. Emissions were calculated based on emission factors in the California Climate Action Registry General Reporting Protocol, Version 3.1 (CCAR 2009), which assumes that for California, energy use (electricity) would have emissions of 724.12 lbs/MWh of CO_2, 0.0302 lbs/MWh of CH_4, and 0.0081 lbs/MWh of N_2O. Natural gas usage rates were calculated based on estimated annual rates of 42.40 kiloBTUs/square foot/year for hotel space. For natural gas usage, the Protocol assumes that natural gas would have emissions of 53.06 kg/MMBTU of CO_2, 0.0059 kg/MMBTU of CH_4, and 0.0001 kg/MMBTU of N_2O.

4.3.2 Water Usage

GHG emissions were calculated on the basis of the embodied energy of water, assuming that in southern California, water has an embodied energy of 12,700 kWh/million gallons (CEC 2005). Water usage was estimated based on the water use calculated by the CalEEMod Model (ENVIRON 2011) for indoor and outdoor water use based on the land use categories. Total water usage would therefore be 14,092,650 gallons per year.

4.3.3 Vehicle Emissions

Mobile source greenhouse gas emissions were estimated based on the projected ADTs from the *Traffic Impact Study* (Linscott, Law & Greenspan 2012), which estimated the total net trip generation for the hotel projects of 3,825 ADT. Emissions from vehicles were estimated using the ARB's emission factors (ARB 2008b), assuming an average trip length of 5.8 miles based on data for average trip lengths within San Diego County estimated by the San Diego Association of Governments (SANDAG).

4.3.4 Solid Waste

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, transportation of waste, and disposal. Solid waste generation was estimated based on the CalEEMod Model (ENVIRON 2011), and was estimated at 273.75 tons per year. GHG emissions from solid waste management were estimated using the EPA's Waste Reduction Model (WARM) (EPA 2009), assuming landfilling of solid waste with flaring, for a total of 85 metric tons of CO_2e annually.

4.3.5 Operational Emissions Summary

The results of the inventory for operational emissions for business as usual are presented in Table 6. These include GHG emissions associated with buildings (natural gas, purchased electricity), water consumption (energy embodied in potable water), solid waste management (including transport and landfill gas generation), and vehicles. Table 6 summarizes projected emissions using the methodologies noted above.

Table 6
SUMMARY OF ESTIMATED OPERATIONAL GREENHOUSE GAS EMISSIONS BUSINESS AS USUAL SCENARIO

Emission Source	Annual Emissions (Metric tons/year)			
	CO_2	CH_4	N_2O	CO_2e
Operational Emissions				
Electricity Use	2,893	0.1206	0.0324	2,905
Natural Gas Use	1,633	0.1816	0.0031	1,638
Water Use	59	0.0025	0.0007	59
Solid Waste Management	85	-	-	85
Vehicle Emissions	2,964	0.0357	0.3401	3,070
Amortized Construction Emissions	55	-	-	55
Total	**7,689**	**0.3404**	**0.3763**	**7,812**
Global Warming Potential Factor	**1**	**21**	**310**	
CO_2 Equivalent Emissions	**7,689**	**7**	**116**	**7,812**
TOTAL CO_2 Equivalent Emissions	**7,812**			

5.0 SUMMARY OF PROJECT IMPACTS, DESIGN FEATURES, AND GHG REDUCTION MEASURES

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 the standards required by California's Energy Efficiency Standard for Residential and Nonresidential Buildings (Title 24, Part 6 of the California Code of Regulations) as of 2008. Such features will be incorporated as conditions fo 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.
- 10% of building materials and products that will be used are locally or regionally (within 500 miles) extracted and manufactured, when available.
- 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 0.3 solar heat gain coefficient.
- Install R-value optimized wall and roof insulation.
- Use better-than-code energy efficient lighting throughout the 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 CO2 sensors for meeting rooms.
- Use 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 (LEDs) for 50% of all the 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 of 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 potrable water use for irrigation by at least 50%.
- Install only low-flo (0.125 gallons per flush) or waterless urinals.
- Install only low-flo 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 5 minutes.
- Install bicycle parking facilities.
- Hotels will provide a shuttle service to and from the airport. It is estimated that the shuttle will reduce the total number of trips by 7.5%.

As shown in Table 6, and as discussed in the ARB's *Staff Report, California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit* (ARB 2007a), vehicular emissions are the greatest contributor to GHG emissions. Because the applicant does not have direct control over the types of vehicles or emission/fuel standards, the effect of California programs to reduce GHG emissions from vehicles was evaluated.

Based on the SDCGHGI, the percent reductions in GHG emissions anticipated through implementation of the Federal CAFE standards, LCFS, and Pavley fuel efficiency standard (analogous to the Federal CAFE standard), as well as the effect of light/heavy vehicle efficiency/hybridization programs can be estimated. Based on that study, emissions from vehicles would be reduced by 20 percent through implementation of the Federal CAFE standard/Pavley standard and 10 percent through implementation of the LCFS. Emissions from vehicles would therefore be reduced by as much as 30 percent from state and federal programs by the year 2020.

In addition to the energy efficiency and mobile source emissions reductions discussed above, reductions attributable to California's RPS (SB 1078; 2002) were included in the emission calculations for electricity use. SB 1078 initially set a target of 20% of energy to be sold from renewable sources by the year 2017. The schedule for implementation of the RPS was accelerated in 2006 with the Governor's signing of SB 107, which accelerated the 20% RPS goal from 2017 to 2010. On November 17, 2008, the Governor signed Executive Order S-14-08, which requires all retail sellers of electricity to serve 33 percent of their load with renewable energy by 2020. The Governor signed Executive Order S-21-09 on September 15, 2009, which directs ARB to implement a regulation consistent with the 2020 33% renewable energy target by July 31, 2010. As of September 23, 2010, the ARB has adopted the regulation that implements the 33% renewable energy standard.

According to the SDCGHGI, implementation of the 20% RPS goal by 2010 would reduce GHG emissions by a further 14% from 2006 levels; the inventory estimated that San Diego Gas and Electric was providing 6% of its electricity from renewable resource in 2006. To account for the implementation of the 20% RPS, a 14% reduction in GHG emissions was assumed. Implementation of Executive Order S-21-09 (i.e., the 33% RPS) will result in additional GHG reductions of 27% below 2006 levels.

Based on information regarding Title 24 standards as of 2008 (CEC 2007), it is anticipated that for the San Diego climate zone, estimated electricity savings for nonresidential buildings are 8.596% and natural gas savings are 8.633%. These reductions were considered in calculating emissions with GHG reduction measures. As discussed above, the project will achieve an energy efficiency that is 15% above Title 24 standards as of 2008. Based on CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA 2010), for San Diego's climate zone each percent improvement over Title 24 standards as of 2008 would result in an equivalent reduction in GHG emissions of 0.40% for electricity use and 0.82% for natural gas use for hotel uses.

Table 7 presents the estimated GHG emissions for the project, with implementation of the GHG reduction measures summarized.

Table 7 SUMMARY OF ESTIMATED OPERATIONAL GREENHOUSE GAS EMISSIONS WITH GHG EMISSION REDUCTIONS				
Emission Source	**Annual Emissions (Metric tons/year)**			
	CO_2	**CH_4**	**N_2O**	**CO_2e**
Operational Emissions				
Electricity Use	1,814	0.0757	0.0203	1,822
Natural Gas Use	1,335	0.1484	0.0025	1,339
Water Use	33	0.0014	0.0004	33
Solid Waste Management	85	-	-	85
Vehicle Emissions	1,850	0.0231	0.2448	1,926
Amortized Construction Emissions	55	-	-	55
Total	**5,172**	**0.2486**	**0.2680**	**5,260**
Global Warming Potential Factor	**1**	**21**	**310**	
CO_2 Equivalent Emissions	**5,172**	**5**	**83**	**5,260**
TOTAL CO_2 Equivalent Emissions	**5,260**			
Business as Usual CO_2 Equivalent Emissions	**7,812**			
Percent Reduction from Business as Usual	**32.7%**			

As shown in Table 7, with implementation of project design features and taking into account state and federal programs to reduce GHG emissions, emissions from the Proposed Project would be reduced by 32.7% over business as usual levels.

Because the project would reduce emissions over business as usual levels, and because the project would employ design features that are consistent with the Port's programs and the ARB's Scoping Plan, impacts would be less than significant. The proposed project would:

- Not conflict with or obstruct the goals or strategies of the California Global Warming Solutions Act of 2006 (AB 32) or related Executive Orders; or
- Not result in substantially increased exposure to the potential adverse effects of global warming identified in the California Global Warming Solutions Act of 2006.

6.0 CONCLUSIONS

Emissions of GHGs were quantified for both construction and operation of the Harbor Island Subarea 23 Port Master Plan Amendment. Operational emissions were calculated assuming a "business as usual" operational scenario as well as an operational scenario with GHG reduction measures employed. Based on the analysis, quantifiable emission reductions that will be implemented through state and local requirements demonstrate that emissions will be reduced by 32.7% below "business as usual" levels.

The project would implement design features that would reduce GHG emissions through energy efficiency measures and water conservation measures. Because the project would reduce emissions over business as usual levels, and because the project would employ design features that are consistent with the Port's programs and the ARB's Scoping Plan, impacts would be less than significant. The proposed project would:

- Not conflict with or obstruct the goals or strategies of the California Global Warming Solutions Act of 2006 (AB 32) or related Executive Orders; or
- Not result in substantially increased exposure to the potential adverse effects of global warming identified in the California Global Warming Solutions Act of 2006.

7.0 REFERENCES

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Appendix A

Greenhouse Gas Emission Calculations

Table A-1
On-Road Mobile Source Greenhouse Gas Emissions - Existing
Harbor Island Subarea 23 Port Master Plan Amendment

On Road Mobile Source

Land Use	Daily VMT	Annual VMT[a]
Total Project	14,500	5,292,500.00

[a] Multiplied Daily VMT by 365 to get Annual VMT

San Diego County CO_2 2012 AVG Gram/Mile w GHG Reduction M	479.1193518
San Diego County CH4 2012 AVG Gram/Mile w GHG Reduction M	0.0060384
N_2O Gram/Mile	0.042

GHG	Gram/Mile	Gram	metric tons	CO_2E (Metric Tons)
Project				
CO_2	479.11935	2,535,739,169.58	2,535.74	2,535.74
CH_4	0.0060384	31,958.23	0.03	0.67
N_2O	0.042	222,285.00	0.22	68.91
				2605.32

Averaged EMFAC2011 fleet values
Emission Factor for N_2O based on EPA Tier 0 emission factors

61728 864

Table A-2
Electricity Greenhouse Gases - Business as Usual
Harbor Island Subarea 23 Port Master Plan Amendment

Electricity

Land Use	1,000 Sqft or rooms	Usage Rate [a] (kWh\sq.ft\yr)	(KWh\year)	MWh\year
Project			0	0.00
Hotel	500.0	12.13	8,806,380	8806.38
Total Project			**8,806,380**	**8806.38**

[a] Electricity Usage Rates from *Commercial End-Use Survey,* CEC 2006

GHG	lbs/MWh[b]	lbs	metric tons	CO_2E
Project				
CO_2	724.21	6377668.46	2892.859392	2892.859392
CH_4	0.0302	265.952676	0.120634006	2.53331413
N_2O	0.0081	71.331678	0.032355478	10.03019833
				2905.42

[b] Emission factors for CO_2, CH_4, and N_2O were derived from the California Climate Action Registry General Reporting Protocol; Version 3.1, January 2009

Table A-3
Natural Gas Greenhouse Gas Emissions - Business as Usual
Harbor Island Subarea 23 Port Master Plan Amendment

Natural Gas

Land Use	1,000 Sqft or rooms	Usage Rate[c] kBTU/square foot/year	Total Natural Gas Usage kBTU/year	Total Natural Gas Usage (MMBTU/year)
Project				
Office	500.0	42.4	30,782,400	30,782
Total Project			**30,782,400**	**30,782**

[a] Natural Gas Usage Rates from Table A9-12-A, CEQA Air Quality Handbook, SCAQMD, 1993.

GHG	Kg/MMBtu[b]	Kg	metric tons	CO_2E (Metric Tons)
Project				
CO_2	53.06	1,633,314.14	1,633.31	1,633.31
CH_4	0.0059	181.62	0.1816	3.81
N_2O	0.0001	3.08	0.0031	0.95
				1638.08

[b] Emission factors for CO_2, CH_4, and N_2O were derived from the California Climate Action Registry General Reporting Protocol; Version 3.1, January 2009

Table A-4
Water Use Greenhouse Gas Emissions - Business as Usual
Harbor Island Subarea 23 Port Master Plan Amendment

Water Usage

Land Use	GPY	Usage Rate (kWh\MMgal)	(KWh\year)	MWh\year
Hotel - Indoor	12683385	12700	161,079	161.08
Hotel - Outdoor	1409265	12700	17,898	17.90
Total Project			**178,977**	**178.98**

[a] Electricity Usage Rates from Table A9-11-A, CEQA Air Quality Handbook, SCAQMD, 1993.

GHG	lbs/MWh[b]	lbs	metric tons	CO_2E
Project				
CO_2	724.21	129616.6833	58.79309062	58.79309062
CH_4	0.0302	5.405094981	0.002451708	0.051485865
N_2O	0.0081	1.449710906	0.000657577	0.203848953
				59.05

[b] Emission factors for CO_2, CH_4, and N_2O were derived from the California Climate Action Registry General Reporting Protocol; Version 3.1, January 2009

Table A-5
Solid Waste Generation and Emissions
Harbor Island Subarea 23 Port Master Plan Amendment

Land Use	Units	Solid Waste generation, tons/unit or sf	Solid Waste Tons/year
Project			
Hotel	500.0		273.8
Total Project			**273.75**

GHG	Metric Tons/ton	lbs	metric tons	CO_2E
Project				
CO_2e			0	85
				85.00

617728

868

Table A-6
On-Road Mobile Source Greenhouse Gas Emissions - Business as Usual
Harbor Island Subarea 23 Port Master Plan Amendment

On Road Mobile Source

Land Use	Daily VMT	Annual VMT[a]
Total Project	22,185	8,097,525.00

[a] Multiplied Daily VMT by 365 to get Annual VMT
[b] Factors dervied from URBEMIS2002

San Diego County CO_2 2015 AVG Gram/Mile[c]	366
San Diego County CH_4 2015 AVG Gram/Mile[c]	0.0044064
N_2O Gram/Mile	0.042

GHG	Gram/Mile	Gram	metric tons	CO_2E (Metric Tons)
Project				
CO_2	366	2,963,694,150.00	2,963.69	2,963.69
CH_4	0.0044064	35,680.93	0.0357	0.7493
N_2O	0.042	340,096.05	0.3401	105.4298
				3069.87

Averaged fleet values, ARB's Comparison of Greenhouse Gas
Emission Factor for N_2O based on EPA Tier 0 emission factors

Table A-7
Electricity Greenhouse Gases - with GHG Reductions
Harbor Island Subarea 23 Port Master Plan Amendment

Electricity

Land Use	1,000 Sqft or rooms	Usage Rate [a] (kWh\sq.ft\yr)	(KWh\year)	MWh\year
Project			0	0.00
Hotel	500.0	10.42	7,566,421	7566.42
Total Project			**7,566,421**	**7566.42**

[a] Electricity Usage Rates from *Commercial End-Use Survey,* CEC 2006

GHG	lbs/MWh[b]	lbs	metric tons	CO_2E
Project				
CO_2	528.6733	4000164.527	1814.442628	1814.442628
CH_4	0.022046	166.8093077	0.075663367	1.588930717
N_2O	0.005913	44.74024478	0.020293817	6.291083304
				1822.32

[b] Emission factors for CO_2, CH_4, and N_2O were derived from the California Climate Action Registry General Reporting Protocol; Version 3.1, January 2009

Table A-8
Natural Gas Greenhouse Gas Emissions - with GHG Reductions
Harbor Island Subarea 23 Port Master Plan Amendment

Natural Gas

Land Use	1,000 Sqft or rooms	Usage Rate[c] (cu.ft\sq.ft\mo)	Total Natural Gas Usage (cu.ft\year)	Total Natural Gas Usage (MMBTU\year)
Project				
Hotel	500.0	34.0	24,665,586	25,159
Total Project			**24,665,586**	**25,159**

[a] Natural Gas Usage Rates from Table A9-12-A, CEQA Air Quality Handbook, SCAQMD, 1993.

GHG	Kg/MMBtu[b]	Kg	metric tons	CO_2E (Metric Tons)
Project				
CO_2	53.06	1,334,931.11	1,334.93	1,334.93
CH_4	0.0059	148.44	0.1484	3.12
N_2O	0.0001	2.52	0.0025	0.78
				1338.83

[b] Emission factors for CO_2, CH_4, and N_2O were derived from the California Climate Action Registry General Reporting Protocol; Version 3.1, January 2009

Table A-9
Water Use Greenhouse Gas Emissions - with GHG Reductions
Harbor Island Subarea 23 Port Master Plan Amendment

Water Usage

Land Use	GPY	Usage Rate (kWh\MMgal)	(KWh\year)	MWh\year
Hotel - Indoor	10146708	12700	128,863	128.86
Hotel - Outdoor	704632.5	12700	8,949	8.95
Total Project			**137,812**	**137.81**

[a] Electricity Usage Rates from Table A9-11-A, CEQA Air Quality Handbook, SCAQMD, 1993.

GHG	lbs/MWh[b]	lbs	metric tons	CO_2E
Project				
CO_2	528.6733	72857.53769	33.04759624	33.04759624
CH_4	0.022046	3.038203889	0.001378105	0.028940205
N_2O	0.005913	0.8148825	0.000369624	0.114583497
				33.19

61728

872

Table A-10
On-Road Mobile Source Greenhouse Gas Emissions - with GHG Reductions
Harbor Island Subarea 23 Port Master Plan Amendment

On Road Mobile Source

Land Use	Daily VMT	Annual VMT[a]
Total Project	**20,521**	**7,490,210.63**

[a] Multiplied Daily VMT by 365 to get Annual VMT

San Diego County CO_2 2015 AVG Gram/Mile w GHG Reduction M	**247**
San Diego County CH4 2015 AVG Gram/Mile w GHG Reduction N	**0.003088112**
N_2O Gram/Mile	**0.032676**

GHG	Gram/Mile	Gram	metric tons	CO_2E (Metric Tons)
Project				
CO_2	247	1,850,082,024.38	1,850.08	1,850.08
CH_4	0.0030881	23,130.61	0.0231	0.4857
N_2O	0.032676	244,750.12	0.2448	75.8725
				1926.44

617728

873

Harbor Island Hotel Port Master Plan Amendment

San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	175	Room

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Utility Company**
Climate Zone	13	**Precipitation Freq (Days)**	40	

1.3 User Entered Comments

Project Characteristics -

Land Use - Sunroad Hotel Project

Construction Phase - Construction schedule based on Traffic Impact Assessment - for 1 hotel only

Demolition - Demolition of locker facility and parking lot - based on EIR URBEMIS runs

Trips and VMT - Trips based on Traffic Impact Analysis

Architectural Coating - Assume Rule 67.0 compliant coatings

Vehicle Trips - Based on Traffic Impact Analysis - for Business Hotel, 7 trips/room

874

Road Dust - USEPA ubiquitous baseline

Area Coating - Rule 67.0 compliant coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.38	2.39	1.82	0.00	0.20	0.14	0.35	0.04	0.14	0.19	0.00	286.16	286.16	0.03	0.00	286.80
2014	1.56	1.36	1.22	0.00	0.07	0.08	0.15	0.00	0.08	0.08	0.00	198.11	198.11	0.02	0.00	198.51
Total	**1.94**	**3.75**	**3.04**	**0.00**	**0.27**	**0.22**	**0.50**	**0.04**	**0.22**	**0.27**	**0.00**	**484.27**	**484.27**	**0.05**	**0.00**	**485.31**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2013	0.38	2.39	1.82	0.00	0.14	0.14	0.28	0.02	0.14	0.16	0.00	286.16	286.16	0.03	0.00	286.80
2014	1.56	1.36	1.22	0.00	0.07	0.08	0.15	0.00	0.08	0.08	0.00	198.11	198.11	0.02	0.00	198.51
Total	**1.94**	**3.75**	**3.04**	**0.00**	**0.21**	**0.22**	**0.43**	**0.02**	**0.22**	**0.24**	**0.00**	**484.27**	**484.27**	**0.05**	**0.00**	**485.31**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.12	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
Mobile	0.91	1.80	8.64	0.01	0.33	0.08	0.40	0.02	0.07	0.09	0.00	1,086.49	1,086.49	0.05	0.00	1,087.59
Waste						0.00	0.00		0.00	0.00	19.45	0.00	19.45	1.15	0.00	43.59
Water						0.00	0.00		0.00	0.00	0.00	0.05	0.05	0.14	0.00	3.94
Total	**2.11**	**2.56**	**9.28**	**0.01**	**0.33**	**0.08**	**0.46**	**0.02**	**0.07**	**0.15**	**19.45**	**1,911.65**	**1,931.10**	**1.36**	**0.02**	**1,965.25**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.12	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
Mobile	0.91	1.80	8.64	0.01	0.33	0.08	0.40	0.02	0.07	0.09	0.00	1,086.49	1,086.49	0.05	0.00	1,087.59
Waste						0.00	0.00		0.00	0.00	19.45	0.00	19.45	1.15	0.00	43.59
Water						0.00	0.00		0.00	0.00	0.00	0.04	0.04	0.11	0.00	3.15
Total	**2.11**	**2.56**	**9.28**	**0.01**	**0.33**	**0.08**	**0.46**	**0.02**	**0.07**	**0.15**	**19.45**	**1,911.64**	**1,931.09**	**1.33**	**0.02**	**1,964.46**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.21	0.13	0.00		0.01	0.01		0.01	0.01	0.00	19.69	19.69	0.00	0.00	19.73
Total	**0.03**	**0.21**	**0.13**	**0.00**	**0.03**	**0.01**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**19.69**	**19.69**	**0.00**	**0.00**	**19.73**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.08	0.04	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	10.91	10.91	0.00	0.00	10.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.00	0.00	0.64
Total	**0.01**	**0.08**	**0.04**	**0.00**	**0.03**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**11.55**	**11.55**	**0.00**	**0.00**	**11.56**

3.2 Demolition - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.21	0.13	0.00		0.01	0.01		0.01	0.01	0.00	19.69	19.69	0.00	0.00	19.73
Total	**0.03**	**0.21**	**0.13**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**19.69**	**19.69**	**0.00**	**0.00**	**19.73**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.01	0.08	0.04	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	10.91	10.91	0.00	0.00	10.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.00	0.00	0.64
Total	**0.01**	**0.08**	**0.04**	**0.00**	**0.03**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**11.55**	**11.55**	**0.00**	**0.00**	**11.56**

3.3 Grading - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.07	0.00	0.07	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.43	0.25	0.00		0.02	0.02		0.02	0.02	0.00	39.92	39.92	0.00	0.00	40.01
Total	**0.05**	**0.43**	**0.25**	**0.00**	**0.07**	**0.02**	**0.09**	**0.04**	**0.02**	**0.06**	**0.00**	**39.92**	**39.92**	**0.00**	**0.00**	**40.01**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	1.03	0.00	0.00	1.03
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.10**	**1.10**	**0.00**	**0.00**	**1.10**

3.3 Grading - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.03	0.00	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.43	0.25	0.00		0.02	0.02		0.02	0.02	0.00	39.92	39.92	0.00	0.00	40.01
Total	**0.05**	**0.43**	**0.25**	**0.00**	**0.03**	**0.02**	**0.05**	**0.01**	**0.02**	**0.03**	**0.00**	**39.92**	**39.92**	**0.00**	**0.00**	**40.01**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.00	0.00	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	1.03	0.00	0.00	1.03
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.10**	**1.10**	**0.00**	**0.00**	**1.10**

3.4 Paving - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.04	0.27	0.18	0.00		0.02	0.02		0.02	0.02	0.00	22.79	22.79	0.00	0.00	22.87
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.04**	**0.27**	**0.18**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**22.79**	**22.79**	**0.00**	**0.00**	**22.87**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22	0.00	0.00	0.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	1.40	0.00	0.00	1.41
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.62**	**1.62**	**0.00**	**0.00**	**1.63**

61728

882

3.4 Paving - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.04	0.27	0.18	0.00		0.02	0.02		0.02	0.02	0.00	22.79	22.79	0.00	0.00	22.87
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.04**	**0.27**	**0.18**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**22.79**	**22.79**	**0.00**	**0.00**	**22.87**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22	0.00	0.00	0.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	1.40	0.00	0.00	1.41
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.62**	**1.62**	**0.00**	**0.00**	**1.63**

3.5 Building Construction - 2013

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.20	1.10	0.75	0.00		0.07	0.07		0.07	0.07	0.00	112.89	112.89	0.02	0.00	113.23
Total	**0.20**	**1.10**	**0.75**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**112.89**	**112.89**	**0.02**	**0.00**	**113.23**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.02	0.27	0.17	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	39.86	39.86	0.00	0.00	39.88
Worker	0.02	0.03	0.27	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	36.73	36.73	0.00	0.00	36.78
Total	**0.04**	**0.30**	**0.44**	**0.00**	**0.06**	**0.01**	**0.07**	**0.00**	**0.01**	**0.01**	**0.00**	**76.59**	**76.59**	**0.00**	**0.00**	**76.66**

3.5 Building Construction - 2013

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.20	1.10	0.75	0.00		0.07	0.07		0.07	0.07	0.00	112.89	112.89	0.02	0.00	113.23
Total	**0.20**	**1.10**	**0.75**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**112.89**	**112.89**	**0.02**	**0.00**	**113.23**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.02	0.27	0.17	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	39.86	39.86	0.00	0.00	39.88
Worker	0.02	0.03	0.27	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	36.73	36.73	0.00	0.00	36.78
Total	**0.04**	**0.30**	**0.44**	**0.00**	**0.06**	**0.01**	**0.07**	**0.00**	**0.01**	**0.01**	**0.00**	**76.59**	**76.59**	**0.00**	**0.00**	**76.66**

3.5 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.18	1.00	0.72	0.00		0.06	0.06		0.06	0.06	0.00	109.96	109.96	0.01	0.00	110.26
Total	**0.18**	**1.00**	**0.72**	**0.00**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**109.96**	**109.96**	**0.01**	**0.00**	**110.26**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.02	0.24	0.15	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	38.88	38.88	0.00	0.00	38.90
Worker	0.02	0.02	0.24	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	35.02	35.02	0.00	0.00	35.07
Total	**0.04**	**0.26**	**0.39**	**0.00**	**0.06**	**0.01**	**0.07**	**0.00**	**0.01**	**0.01**	**0.00**	**73.90**	**73.90**	**0.00**	**0.00**	**73.97**

3.5 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.18	1.00	0.72	0.00		0.06	0.06		0.06	0.06	0.00	109.96	109.96	0.01	0.00	110.26
Total	**0.18**	**1.00**	**0.72**	**0.00**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**109.96**	**109.96**	**0.01**	**0.00**	**110.26**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.02	0.24	0.15	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	38.88	38.88	0.00	0.00	38.90
Worker	0.02	0.02	0.24	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	35.02	35.02	0.00	0.00	35.07
Total	**0.04**	**0.26**	**0.39**	**0.00**	**0.06**	**0.01**	**0.07**	**0.00**	**0.01**	**0.01**	**0.00**	**73.90**	**73.90**	**0.00**	**0.00**	**73.97**

887

3.6 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.32					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.09	0.06	0.00		0.01	0.01		0.01	0.01	0.00	8.29	8.29	0.00	0.00	8.31
Total	**1.33**	**0.09**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**8.29**	**8.29**	**0.00**	**0.00**	**8.31**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.96	5.96	0.00	0.00	5.96
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.96**	**5.96**	**0.00**	**0.00**	**5.96**

3.6 Architectural Coating - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.32					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.09	0.06	0.00		0.01	0.01		0.01	0.01	0.00	8.29	8.29	0.00	0.00	8.31
Total	**1.33**	**0.09**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**8.29**	**8.29**	**0.00**	**0.00**	**8.31**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.96	5.96	0.00	0.00	5.96
Total	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.96**	**5.96**	**0.00**	**0.00**	**5.96**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.91	1.80	8.64	0.01	0.33	0.08	0.40	0.02	0.07	0.09	0.00	1,086.49	1,086.49	0.05	0.00	1,087.59
Unmitigated	0.91	1.80	8.64	0.01	0.33	0.08	0.40	0.02	0.07	0.09	0.00	1,086.49	1,086.49	0.05	0.00	1,087.59
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,225.00	1,225.00	1225.00	2,327,415	2,327,415
Total	1,225.00	1,225.00	1,225.00	2,327,415	2,327,415

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Hotel	9.50	7.30	7.30	19.40	61.60	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
NaturalGas Unmitigated	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Hotel	1.5462e+007	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
Total		**0.08**	**0.76**	**0.64**	**0.00**		**0.00**	**0.06**		**0.00**	**0.06**	**0.00**	**825.11**	**825.11**	**0.02**	**0.02**	**830.13**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Hotel	1.5462e+007	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
Total		**0.08**	**0.76**	**0.64**	**0.00**		**0.00**	**0.06**		**0.00**	**0.06**	**0.00**	**825.11**	**825.11**	**0.02**	**0.02**	**830.13**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Hotel	3.70732e+006					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

61728

892

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Hotel	3.06191e+006					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.12	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	1.12	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

61728

893

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.13					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.12**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.13					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.12**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

61728

7.0 Water Detail

894

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.04	0.11	0.00	3.15
Unmitigated					0.05	0.14	0.00	3.94
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Hotel	4.43918 / 0.493243					0.05	0.14	0.00	3.94
Total						**0.05**	**0.14**	**0.00**	**3.94**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Hotel	3.55135 / 0.246621					0.04	0.11	0.00	3.15
Total						**0.04**	**0.11**	**0.00**	**3.15**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					19.45	1.15	0.00	43.59
Unmitigated					19.45	1.15	0.00	43.59
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Hotel	95.81					19.45	1.15	0.00	43.59
Total						**19.45**	**1.15**	**0.00**	**43.59**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Hotel	95.81					19.45	1.15	0.00	43.59
Total						**19.45**	**1.15**	**0.00**	**43.59**

9.0 Vegetation

Harbor Island Subarea 23 Port Master Plan Amendment

San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	175	Room

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.6 **Utility Company**

Climate Zone 13 **Precipitation Freq (Days)** 40

1.3 User Entered Comments

Project Characteristics -

Land Use - Second hotel of three hotels

Construction Phase - Construction of second hotel

Demolition - Assume pavement demolition

Trips and VMT - Based on traffic impact analysis

Architectural Coating - Assume Rule 67.0 compliant coatings

Vehicle Trips - Based on Traffic Impact Analysis - for Resort Hotel

Road Dust - USEPA ubiquitous baseline

Area Coating - Rule 67.0 compliant coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

2.0 Emissions Summary

61728

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2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.95	3.78	3.44	0.01	0.26	0.22	0.48	0.04	0.21	0.25	0.00	594.81	594.81	0.05	0.00	595.87
Total	**1.95**	**3.78**	**3.44**	**0.01**	**0.26**	**0.22**	**0.48**	**0.04**	**0.21**	**0.25**	**0.00**	**594.81**	**594.81**	**0.05**	**0.00**	**595.87**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.95	3.78	3.44	0.01	0.21	0.22	0.43	0.02	0.21	0.23	0.00	594.81	594.81	0.05	0.00	595.87
Total	**1.95**	**3.78**	**3.44**	**0.01**	**0.21**	**0.22**	**0.43**	**0.02**	**0.21**	**0.23**	**0.00**	**594.81**	**594.81**	**0.05**	**0.00**	**595.87**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.12	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
Mobile	0.93	1.82	8.59	0.01	0.37	0.08	0.46	0.02	0.08	0.10	0.00	1,167.93	1,167.93	0.05	0.00	1,169.04
Waste						0.00	0.00		0.00	0.00	19.45	0.00	19.45	1.15	0.00	43.59
Water						0.00	0.00		0.00	0.00	0.00	0.05	0.05	0.14	0.00	3.94
Total	**2.13**	**2.58**	**9.23**	**0.01**	**0.37**	**0.08**	**0.52**	**0.02**	**0.08**	**0.16**	**19.45**	**1,993.09**	**2,012.54**	**1.36**	**0.02**	**2,046.70**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.12	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
Mobile	0.93	1.82	8.59	0.01	0.37	0.08	0.46	0.02	0.08	0.10	0.00	1,167.93	1,167.93	0.05	0.00	1,169.04
Waste						0.00	0.00		0.00	0.00	19.45	0.00	19.45	1.15	0.00	43.59
Water						0.00	0.00		0.00	0.00	0.00	0.04	0.04	0.11	0.00	3.15
Total	**2.13**	**2.58**	**9.23**	**0.01**	**0.37**	**0.08**	**0.52**	**0.02**	**0.08**	**0.16**	**19.45**	**1,993.08**	**2,012.53**	**1.33**	**0.02**	**2,045.91**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.31	0.21	0.00		0.02	0.02		0.02	0.02	0.00	35.79	35.79	0.00	0.00	35.86
Total	**0.04**	**0.31**	**0.21**	**0.00**	**0.01**	**0.02**	**0.03**	**0.00**	**0.02**	**0.02**	**0.00**	**35.79**	**35.79**	**0.00**	**0.00**	**35.86**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.02	0.01	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	3.42	3.42	0.00	0.00	3.43
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08	1.08	0.00	0.00	1.08
Total	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**4.50**	**4.50**	**0.00**	**0.00**	**4.51**

3.2 Demolition - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.31	0.21	0.00		0.02	0.02		0.02	0.02	0.00	35.79	35.79	0.00	0.00	35.86
Total	**0.04**	**0.31**	**0.21**	**0.00**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**35.79**	**35.79**	**0.00**	**0.00**	**35.86**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.02	0.01	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	3.42	3.42	0.00	0.00	3.43
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08	1.08	0.00	0.00	1.08
Total	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**4.50**	**4.50**	**0.00**	**0.00**	**4.51**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.06	0.00	0.06	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.31	0.21	0.00		0.02	0.02		0.02	0.02	0.00	36.45	36.45	0.00	0.00	36.52
Total	**0.04**	**0.31**	**0.21**	**0.00**	**0.06**	**0.02**	**0.08**	**0.03**	**0.02**	**0.05**	**0.00**	**36.45**	**36.45**	**0.00**	**0.00**	**36.52**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.87
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.95**	**0.95**	**0.00**	**0.00**	**0.95**

3.3 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.03	0.00	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.31	0.21	0.00		0.02	0.02		0.02	0.02	0.00	36.45	36.45	0.00	0.00	36.52
Total	**0.04**	**0.31**	**0.21**	**0.00**	**0.03**	**0.02**	**0.05**	**0.01**	**0.02**	**0.03**	**0.00**	**36.45**	**36.45**	**0.00**	**0.00**	**36.52**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.87
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.95**	**0.95**	**0.00**	**0.00**	**0.95**

61728

906

3.4 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.04	0.25	0.19	0.00		0.02	0.02		0.02	0.02	0.00	24.96	24.96	0.00	0.00	25.03
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.04**	**0.25**	**0.19**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**24.96**	**24.96**	**0.00**	**0.00**	**25.03**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44	1.44	0.00	0.00	1.44
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.67**	**1.67**	**0.00**	**0.00**	**1.67**

3.4 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.04	0.25	0.19	0.00		0.02	0.02		0.02	0.02	0.00	24.96	24.96	0.00	0.00	25.03
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.04**	**0.25**	**0.19**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**24.96**	**24.96**	**0.00**	**0.00**	**25.03**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44	1.44	0.00	0.00	1.44
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.67**	**1.67**	**0.00**	**0.00**	**1.67**

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.39	2.21	1.81	0.00		0.13	0.13		0.13	0.13	0.00	287.36	287.36	0.03	0.00	288.02
Total	**0.39**	**2.21**	**1.81**	**0.00**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**287.36**	**287.36**	**0.03**	**0.00**	**288.02**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.05	0.55	0.35	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	101.89	101.89	0.00	0.00	101.93
Worker	0.05	0.05	0.53	0.00	0.12	0.00	0.12	0.00	0.00	0.01	0.00	87.28	87.28	0.00	0.00	87.38
Total	**0.10**	**0.60**	**0.88**	**0.00**	**0.15**	**0.02**	**0.17**	**0.00**	**0.02**	**0.03**	**0.00**	**189.17**	**189.17**	**0.00**	**0.00**	**189.31**

3.5 Building Construction - 2016

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.39	2.21	1.81	0.00		0.13	0.13		0.13	0.13	0.00	287.36	287.36	0.03	0.00	288.02
Total	**0.39**	**2.21**	**1.81**	**0.00**		**0.13**	**0.13**		**0.13**	**0.13**	**0.00**	**287.36**	**287.36**	**0.03**	**0.00**	**288.02**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.05	0.55	0.35	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	101.89	101.89	0.00	0.00	101.93
Worker	0.05	0.05	0.53	0.00	0.12	0.00	0.12	0.00	0.00	0.01	0.00	87.28	87.28	0.00	0.00	87.38
Total	**0.10**	**0.60**	**0.88**	**0.00**	**0.15**	**0.02**	**0.17**	**0.00**	**0.02**	**0.03**	**0.00**	**189.17**	**189.17**	**0.00**	**0.00**	**189.31**

617728

910

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.32					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.06	0.00		0.01	0.01		0.01	0.01	0.00	8.29	8.29	0.00	0.00	8.31
Total	**1.33**	**0.08**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**8.29**	**8.29**	**0.00**	**0.00**	**8.31**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.68	5.68	0.00	0.00	5.69
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.68**	**5.68**	**0.00**	**0.00**	**5.69**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.32					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.08	0.06	0.00		0.01	0.01		0.01	0.01	0.00	8.29	8.29	0.00	0.00	8.31
Total	**1.33**	**0.08**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**8.29**	**8.29**	**0.00**	**0.00**	**8.31**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.68	5.68	0.00	0.00	5.69
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**5.68**	**5.68**	**0.00**	**0.00**	**5.69**

61728

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

912

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.93	1.82	8.59	0.01	0.37	0.08	0.46	0.02	0.08	0.10	0.00	1,167.93	1,167.93	0.05	0.00	1,169.04
Unmitigated	0.93	1.82	8.59	0.01	0.37	0.08	0.46	0.02	0.08	0.10	0.00	1,167.93	1,167.93	0.05	0.00	1,169.04
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,400.00	1,400.00	1400.00	2,659,903	2,659,903
Total	1,400.00	1,400.00	1,400.00	2,659,903	2,659,903

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Hotel	9.50	7.30	7.30	19.40	61.60	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
NaturalGas Unmitigated	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Hotel	1.5462e+007	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
Total		**0.08**	**0.76**	**0.64**	**0.00**		**0.00**	**0.06**		**0.00**	**0.06**	**0.00**	**825.11**	**825.11**	**0.02**	**0.02**	**830.13**

61728

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Hotel	1.5462e+007	0.08	0.76	0.64	0.00		0.00	0.06		0.00	0.06	0.00	825.11	825.11	0.02	0.02	830.13
Total		**0.08**	**0.76**	**0.64**	**0.00**		**0.00**	**0.06**		**0.00**	**0.06**	**0.00**	**825.11**	**825.11**	**0.02**	**0.02**	**830.13**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Hotel	3.70732e+006					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

61728

915

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Hotel	3.06191e+006					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.12	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	1.12	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.13					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.12**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.13					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**1.12**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

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917

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.04	0.11	0.00	3.15
Unmitigated					0.05	0.14	0.00	3.94
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Hotel	4.43918 / 0.493243					0.05	0.14	0.00	3.94
Total						**0.05**	**0.14**	**0.00**	**3.94**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Hotel	3.55135 / 0.246621					0.04	0.11	0.00	3.15
Total						**0.04**	**0.11**	**0.00**	**3.15**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					19.45	1.15	0.00	43.59
Unmitigated					19.45	1.15	0.00	43.59
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Hotel	95.81					19.45	1.15	0.00	43.59
Total						**19.45**	**1.15**	**0.00**	**43.59**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Hotel	95.81					19.45	1.15	0.00	43.59
Total						**19.45**	**1.15**	**0.00**	**43.59**

9.0 Vegetation

Harbor Island Subarea 23 Port Master Plan Final Phase

San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Hotel	150	Room

1.2 Other Project Characteristics

Urbanization Urban

Climate Zone 13

Wind Speed (m/s) 2.6

Precipitation Freq (Days) 40

Utility Company

1.3 User Entered Comments

Project Characteristics -

Land Use - Final phase of hotel development

Construction Phase - Final phase of hotel development

Demolition - Assuming pavement demolition required

Trips and VMT - From traffic impact analysis

Architectural Coating - Rule 67.0 compliant coatings

Vehicle Trips - Resort hotel - from Traffic Impact Analysis

Road Dust - USEPA ubiquitous baseline

Area Coating - Rule 67.0 compliant coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.65	3.17	3.13	0.01	0.24	0.17	0.41	0.04	0.17	0.21	0.00	565.57	565.57	0.04	0.00	566.43
Total	**1.65**	**3.17**	**3.13**	**0.01**	**0.24**	**0.17**	**0.41**	**0.04**	**0.17**	**0.21**	**0.00**	**565.57**	**565.57**	**0.04**	**0.00**	**566.43**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.65	3.17	3.13	0.01	0.19	0.17	0.36	0.02	0.17	0.19	0.00	565.57	565.57	0.04	0.00	566.43
Total	**1.65**	**3.17**	**3.13**	**0.01**	**0.19**	**0.17**	**0.36**	**0.02**	**0.17**	**0.19**	**0.00**	**565.57**	**565.57**	**0.04**	**0.00**	**566.43**

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923

2.2 Overall Operational

<u>Unmitigated Operational</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.96	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.07	0.65	0.55	0.00		0.00	0.05		0.00	0.05	0.00	707.24	707.24	0.01	0.01	711.54
Mobile	0.72	1.39	6.47	0.01	0.32	0.07	0.39	0.02	0.07	0.09	0.00	939.04	939.04	0.04	0.00	939.93
Waste						0.00	0.00		0.00	0.00	16.67	0.00	16.67	0.99	0.00	37.36
Water						0.00	0.00		0.00	0.00	0.00	0.04	0.04	0.12	0.00	3.37
Total	**1.75**	**2.04**	**7.02**	**0.01**	**0.32**	**0.07**	**0.44**	**0.02**	**0.07**	**0.14**	**16.67**	**1,646.32**	**1,662.99**	**1.16**	**0.01**	**1,692.20**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.96	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.07	0.65	0.55	0.00		0.00	0.05		0.00	0.05	0.00	707.24	707.24	0.01	0.01	711.54
Mobile	0.72	1.39	6.47	0.01	0.32	0.07	0.39	0.02	0.07	0.09	0.00	939.04	939.04	0.04	0.00	939.93
Waste						0.00	0.00		0.00	0.00	16.67	0.00	16.67	0.99	0.00	37.36
Water						0.00	0.00		0.00	0.00	0.00	0.03	0.03	0.09	0.00	2.70
Total	**1.75**	**2.04**	**7.02**	**0.01**	**0.32**	**0.07**	**0.44**	**0.02**	**0.07**	**0.14**	**16.67**	**1,646.31**	**1,662.98**	**1.13**	**0.01**	**1,691.53**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.26	0.20	0.00		0.01	0.01		0.01	0.01	0.00	35.79	35.79	0.00	0.00	35.85
Total	**0.04**	**0.26**	**0.20**	**0.00**	**0.01**	**0.01**	**0.02**	**0.00**	**0.01**	**0.01**	**0.00**	**35.79**	**35.79**	**0.00**	**0.00**	**35.85**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.02	0.01	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	3.44	3.44	0.00	0.00	3.44
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	1.03	0.00	0.00	1.04
Total	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**4.47**	**4.47**	**0.00**	**0.00**	**4.48**

3.2 Demolition - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.26	0.20	0.00		0.01	0.01		0.01	0.01	0.00	35.79	35.79	0.00	0.00	35.85
Total	**0.04**	**0.26**	**0.20**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**35.79**	**35.79**	**0.00**	**0.00**	**35.85**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.02	0.01	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	3.44	3.44	0.00	0.00	3.44
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	1.03	0.00	0.00	1.04
Total	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**4.47**	**4.47**	**0.00**	**0.00**	**4.48**

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3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.07	0.00	0.07	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.29	0.22	0.00		0.01	0.01		0.01	0.01	0.00	39.92	39.92	0.00	0.00	39.99
Total	**0.04**	**0.29**	**0.22**	**0.00**	**0.07**	**0.01**	**0.08**	**0.04**	**0.01**	**0.05**	**0.00**	**39.92**	**39.92**	**0.00**	**0.00**	**39.99**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	0.00	0.00	0.92
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.99**	**0.99**	**0.00**	**0.00**	**1.00**

3.3 Grading - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.03	0.00	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.29	0.22	0.00		0.01	0.01		0.01	0.01	0.00	39.92	39.92	0.00	0.00	39.99
Total	**0.04**	**0.29**	**0.22**	**0.00**	**0.03**	**0.01**	**0.04**	**0.01**	**0.01**	**0.02**	**0.00**	**39.92**	**39.92**	**0.00**	**0.00**	**39.99**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.91	0.00	0.00	0.92
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.99**	**0.99**	**0.00**	**0.00**	**1.00**

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.03	0.20	0.18	0.00		0.02	0.02		0.02	0.02	0.00	23.88	23.88	0.00	0.00	23.93
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.20**	**0.18**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**23.88**	**23.88**	**0.00**	**0.00**	**23.93**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31	1.31	0.00	0.00	1.31
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.54**	**1.54**	**0.00**	**0.00**	**1.54**

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3.4 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.03	0.20	0.18	0.00		0.02	0.02		0.02	0.02	0.00	23.88	23.88	0.00	0.00	23.93
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.20**	**0.18**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**23.88**	**23.88**	**0.00**	**0.00**	**23.93**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.23	0.00	0.00	0.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31	1.31	0.00	0.00	1.31
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.54**	**1.54**	**0.00**	**0.00**	**1.54**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.32	1.87	1.77	0.00		0.10	0.10		0.10	0.10	0.00	287.36	287.36	0.03	0.00	287.90
Total	***0.32***	***1.87***	***1.77***	***0.00***		***0.10***	***0.10***		***0.10***	***0.10***	***0.00***	***287.36***	***287.36***	***0.03***	***0.00***	***287.90***

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.04	0.42	0.27	0.00	0.03	0.01	0.04	0.00	0.01	0.01	0.00	87.52	87.52	0.00	0.00	87.56
Worker	0.04	0.04	0.39	0.00	0.10	0.00	0.11	0.00	0.00	0.01	0.00	70.95	70.95	0.00	0.00	71.03
Total	**0.08**	**0.46**	**0.66**	**0.00**	**0.13**	**0.01**	**0.15**	**0.00**	**0.01**	**0.02**	**0.00**	**158.47**	**158.47**	**0.00**	**0.00**	**158.59**

3.5 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.32	1.87	1.77	0.00		0.10	0.10		0.10	0.10	0.00	287.36	287.36	0.03	0.00	287.90
Total	**0.32**	**1.87**	**1.77**	**0.00**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**287.36**	**287.36**	**0.03**	**0.00**	**287.90**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.04	0.42	0.27	0.00	0.03	0.01	0.04	0.00	0.01	0.01	0.00	87.52	87.52	0.00	0.00	87.56
Worker	0.04	0.04	0.39	0.00	0.10	0.00	0.11	0.00	0.00	0.01	0.00	70.95	70.95	0.00	0.00	71.03
Total	**0.08**	**0.46**	**0.66**	**0.00**	**0.13**	**0.01**	**0.15**	**0.00**	**0.01**	**0.02**	**0.00**	**158.47**	**158.47**	**0.00**	**0.00**	**158.59**

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3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.13					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.07	0.06	0.00		0.00	0.00		0.00	0.00	0.00	8.42	8.42	0.00	0.00	8.43
Total	**1.14**	**0.07**	**0.06**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**8.42**	**8.42**	**0.00**	**0.00**	**8.43**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.73	4.73	0.00	0.00	4.73
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**4.73**	**4.73**	**0.00**	**0.00**	**4.73**

3.6 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.13					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.07	0.06	0.00		0.00	0.00		0.00	0.00	0.00	8.42	8.42	0.00	0.00	8.43
Total	**1.14**	**0.07**	**0.06**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**8.42**	**8.42**	**0.00**	**0.00**	**8.43**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.73	4.73	0.00	0.00	4.73
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**4.73**	**4.73**	**0.00**	**0.00**	**4.73**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Mitigated	0.72	1.39	6.47	0.01	0.32	0.07	0.39	0.02	0.07	0.09	0.00	939.04	939.04	0.04	0.00	939.93
Unmitigated	0.72	1.39	6.47	0.01	0.32	0.07	0.39	0.02	0.07	0.09	0.00	939.04	939.04	0.04	0.00	939.93
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,200.00	1,200.00	1200.00	2,279,917	2,279,917
Total	1,200.00	1,200.00	1,200.00	2,279,917	2,279,917

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Hotel	9.50	7.30	7.30	19.40	61.60	19.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	0.07	0.65	0.55	0.00		0.00	0.05		0.00	0.05	0.00	707.24	707.24	0.01	0.01	711.54
NaturalGas Unmitigated	0.07	0.65	0.55	0.00		0.00	0.05		0.00	0.05	0.00	707.24	707.24	0.01	0.01	711.54
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Hotel	1.32531e+007	0.07	0.65	0.55	0.00		0.00	0.05		0.00	0.05	0.00	707.24	707.24	0.01	0.01	711.54
Total		**0.07**	**0.65**	**0.55**	**0.00**		**0.00**	**0.05**		**0.00**	**0.05**	**0.00**	**707.24**	**707.24**	**0.01**	**0.01**	**711.54**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Hotel	1.32531e+007	0.07	0.65	0.55	0.00		0.00	0.05		0.00	0.05	0.00	707.24	707.24	0.01	0.01	711.54
Total		**0.07**	**0.65**	**0.55**	**0.00**		**0.00**	**0.05**		**0.00**	**0.05**	**0.00**	**707.24**	**707.24**	**0.01**	**0.01**	**711.54**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Hotel	3.1777e+006					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Hotel	2.62449e+006					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.96	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unmitigated	0.96	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.11					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.85					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.96**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.11					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.85					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.96**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.03	0.09	0.00	2.70
Unmitigated					0.04	0.12	0.00	3.37
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Hotel	3.80502 / 0.422779					0.04	0.12	0.00	3.37
Total						**0.04**	**0.12**	**0.00**	**3.37**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Hotel	3.04401 / 0.21139					0.03	0.09	0.00	2.70
Total						**0.03**	**0.09**	**0.00**	**2.70**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					16.67	0.99	0.00	37.36
Unmitigated					16.67	0.99	0.00	37.36
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Hotel	82.13					16.67	0.99	0.00	37.36
Total						**16.67**	**0.99**	**0.00**	**37.36**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Hotel	82.13					16.67	0.99	0.00	37.36
Total						**16.67**	**0.99**	**0.00**	**37.36**

9.0 Vegetation

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Appendix K

Wave Uprush Study – Proposed Hotel Sites East Harbor Island Drive (June 2013)

WAVE UPRUSH STUDY
PROPOSED HOTEL SITES
EAST HARBOR ISLAND DRIVE
SAN DIEGO, CALIFORNIA

Prepared for
SUNROAD ENTERPRISES
San Diego, California

TerraCosta
Consulting Group

Prepared by
TERRACOSTA CONSULTING GROUP, INC.
San Diego, California

Project No. 2775
June 28, 2013

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TerraCosta
Consulting Group
Geotechnical Engineering
Coastal Engineering
Maritime Engineering

Project No. 2775
June 28, 2013

Mr. Tom Story, V.P. Development
SUNROAD ENTERPRISES
4445 Eastgate Mall, Suite 400
San Diego, California

WAVE UPRUSH STUDY
PROPOSED HOTEL SITES
EAST HARBOR ISLAND DRIVE
SAN DIEGO, CALIFORNIA

Dear Mr. Story:

In accordance with your request, TerraCosta Consulting Group, Inc. is pleased to present this wave uprush study for several proposed hotel sites to be located at the eastern end of Harbor Island Drive in San Diego, California. Our understanding of proposed improvements is based upon Section 9.1 of the June 2013 draft of the Port Master Plan Amendment for East Harbor Island, provided to us by Karen Ruggels of KLR Planning.

The accompanying report presents our evaluation of both potential present-day and future wave uprush and its effect on the proposed facilities, addressing the potential for sea level rise, wind, and boat wakes in San Diego Harbor. We previously prepared a Wave Uprush Study report dated May 24, 2013, for a proposed restaurant at 880 Harbor Island Drive.

We appreciate the opportunity to be of service and trust this information meets your needs. If you have any questions or require additional information, please give us a call.

Very truly yours,
TERRACOSTA CONSULTING GROUP, INC.

Walter F. Crampton, Principal Engineer
R.C.E. 23792, R.G.E. 245

WFC/jg
Attachments

3890 Murphy Canyon Road, Suite 200 ▲ San Diego, California 92123-4450 ▲ (858) 573-6900 *voice* ▲ (858) 573-8900 *fax*
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TABLE OF CONTENTS

WAVE UPRUSH STUDY
PROPOSED HOTEL SITES
EAST HARBOR ISLAND DRIVE
SAN DIEGO, CALIFORNIA

1. INTRODUCTION

We have reviewed Section 9.1 of the draft environmental impact report (EIR) for the Sunroad Harbor Island Hotel Project and East Harbor Island Subarea Port Master Plan Amendment (PMPA) dated June 2013, prepared by KLR Planning. It is our understanding that the current Port Master Plan provides for a 500 room hotel to be located on a specific site on East Harbor Island. We further understand that Sunroad Marina Partners proposes the development of a 175-room limited service hotel on their existing leasehold currently operating as a 600 slip marina (Figures 1. and 2.) on East Harbor Island. The proposed PMPA would allow up to 500 hotel rooms in two or three locations on East Harbor Island, with the first hotel project being the 175 room hotel proposed by Sunroad Marina Partners. We also understand that there are no development plans for any specific hotel project other than the 175 room limited service hotel. Per the amendment document, we understand that additional improvements, including restaurants, outdoor seating and dining areas, and retail shops will be integrated into the hotel building sites. Furthermore, a promenade will provide pedestrian access around the entirety of East Harbor Island, connecting hotel developments, marina, and restaurants to the rest of Harbor Island.

Figure 1. Location of proposed 175-room hotel and location for one additional hotel.

Figure 2. Location of proposed 175-room hotel and possible location for up to two additional hotels.

Due to the preliminary stage for hotel development plans, construction grades have not been established for proposed improvements. We have reviewed existing topographic data provided by Latitude 33 Planning & Engineering. At the 175-room hotel site, existing elevations for the top of the existing rock revetment on the marina side generally range from 15 feet to 18 feet MLLW. The crown of the revetment on the bayward side of Harbor Island appears to be between 14 and 15 feet MLLW. Grades across the parking lot that occupies the existing site generally range from 13 feet MLLW at the western end of the lot to approximately 18 feet MLLW at the northeast corner of the lot. With regard to the lots where the future one or two hotel buildings may be constructed (west of the marina office), top of revetment elevations generally range between 14 and 15 feet MLLW. The existing parking lot at the proposed site generally ranges between 10.5 and 15.5 feet MLLW.

Given the existing site elevations, and proposed grades at the adjacent 880 Harbor Island Drive restaurant site, we have assumed building pad grades of 14 feet MLLW, and finished floor elevations and promenade walkway elevations of 15 feet MLLW for the proposed developments.

The existing Harbor Island shoreline in this area includes both a protective rock revetment consisting of 1/4-ton rock and marina on the north side of the proposed hotel sites, and a similar protective revetment and Harbor Island Drive on the bayward side of the site. Absent architectural drawings, we understand that no proposed changes to the existing shoreline improvements are contemplated, with the proposed developments configured to complement the existing shoreline improvements.

2 WAVE CLIMATE

Waves provide nearly all of the energy input that drives shoreline processes along the California coast, including the state's protected harbors and bays. Waves within the bay are generated by winds blowing over the water surface (wind waves) and from ship-induced waves, with the largest generated by displacement vessels and a function of both the vessel characteristics and vessel speed.

Winds along coastal San Diego are primarily from the west, with velocities averaging 5 to 10 mph throughout the year. Statistically, extreme sustained wind speeds approaching 50 knots are expected off the southern California coast below 35 degrees latitude once in 100 years (NOAA, 1980). These winds may originate from the northern and northeastern quadrants as Santa Anas during the winter months, or as tropical storms out of the south.

Wind waves are limited by the fetch, or unobstructed length of water over which the wind blows, and are also a function of the wind speed given a minimum sustained duration to fully develop the wind wave. The longest unobstructed fetch is approximately 1.2 nautical miles out of the southeast. Shallow-water waves originating from the southeast could develop wind-driven wave heights approaching 3 feet, with a corresponding wave period of about 3 seconds from 50 knot winds, with a duration on the order of 10 minutes.

Tropical storms originating from the southeast have the highest potential impact on the site. Pacific Weather Analysis (PWA, 1983) conducted an extreme wave hindcast study of tropical storm-generated sea and swell[1] for the San Diego region to assess the design wave environment affecting both south- and west-facing beaches. In their 25-year data set (1958 – 1983), significant storms in February 1963, and in January and again in March 1983, approached the San Diego region from an azimuth of 150 and 160 degrees, which would likely have generated some of the highest wind-driven waves reaching Harbor Island during the study period.

The 25-year hindcast data set used by PWA for tropical storm swell, taken from USACE (1991), is reproduced in Table 1. All of the tropical storms listed in Table 1 formed off the west coast of Mexico, with all of the listed storms affecting San Diego County's south-facing beaches. Notably, all but three of the listed storms had storm tracked azimuths from the southeast, with all of these storms also likely affecting the study area.

The U.S. Army Corps of Engineers Coast of California Storm and Tidal Waves Study - State of the Coast Report for the San Diego Region predicted extreme wave climate for the San Diego region from 1990 through 2040, and specifically addressed storms from the south that could enter into San Diego Bay. A design wave height of 12 feet with a period of 10 seconds was determined from storm duration of about one day with 40 to 50 knot onshore winds. This condition is expected to occur twice in a 50-year period (USACE 1991). Using this

[1] Seas are waves generated from winds within the local area, while swell waves are generated from winds outside of the local area.

same design tropical storm within the bay, with an azimuth out of the southeast, results in an equivalent shallow-water wave height approaching 3 feet having a period of about 3 seconds.

Table 1. Pacific Weather Analysis Tropical Storm Swell Affecting South-Facing Beaches – 1967-1986 (From USACE 1991, Table 4-10)

Storm		Date		H_S (feet)	T (seconds)	Azimuth (degrees)
Lily	10	Sep	1967	7.4	11-12	184
Joanne	29	Aug	1968	5.6	11-12	195
Doreen	8	Aug	1969	7.8	12-13	153
Norma	6	Sep	1970	5.5	10-11	155
Monica	4	Sep	1971	6.7	10-11	166
Estelle	22	Aug	1972	7.7	8-9	178
Fernanda	25	Aug	1972	7.4	12-13	160
Gwen	29	Aug	1972	12.7	17-18	156
Hyacinth	5	Sep	1972	6.7	12-13	194
Emily	26	Jul	1973	7.0	12-13	156
Francesca	21	Jul	1974	4.6	9-10	159
Carlotta	7	Jul	1975	7.0	12-13	153
Hyacinth	12	Aug	1976	4.9	10-11	153
Heather	8	Oct	1977	5.1	9-10	153
Hector	28	Jul	1978	7.9	12-13	156
Norman	5	Sep	1978	8.7	12-13	155
Dolores	23	Jul	1979	5.6	11-12	174
Howard	7	Aug	1980	5.1	9-10	167
Beatriz	5	Jul	1981	6.6	10-11	167
Olivia	24	Sep	1982	11.1	15-16	158
Manual	19	Sep	1983	7.1	11-12	158
Iselle	11	Aug	1984	8.6	11-12	161
Marie	10	Sep	1984	7.3	10-11	155
Olaf	29	Aug	1985	6.7	10-11	160
Javier	27	Aug	1986	7.8	12-13	153

2.1 Boat Wakes

Boat wakes must also be considered in the design of any nearshore harbor facilities. Boat-induced waves represent a steep solitary or translational wave, unlike the gentler, sinusoidal waves created by wind shear on the water surface. Boat or ship-induced waves generated by displacement vessels are a function of both the vessel hull characteristics and speed. Ship wave heights increase as the square of the vessel speed, with the divergent wave train propagating outward from the vessel track on an angle of about 30 degrees, as shown in Figure 3, taken from Van Dorn (1974). The wave train propagates outward at a velocity of approximately 0.87 V_S, with a wave length of 0.42 V_S^2, where V_S is the vessel speed.

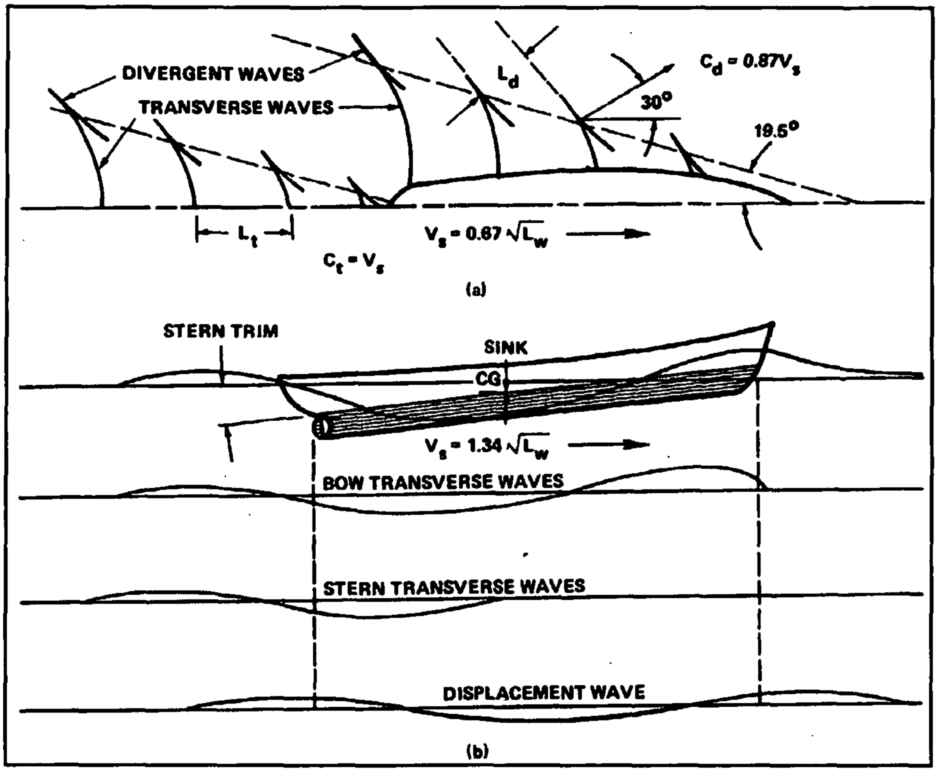


Figure 3. Plan view of ship-wave pattern (a, upper). Total wave pattern along hull (top) consists of transverse bow and stern waves, and a permanent displacement wave (b, lower). Pattern shown is of a speed where troughs of bow and stern waves coincide and produce maximum sink and stern trim.

Within San Diego Bay, the Navy's Sea Tractor Tug likely generates the normal worst-case ship-induced waves, with measured waves approaching 3 feet in height, and if we assume that these tugs steam at 10 to 11 knots, this would result in a 3-foot translatory wave with a wave length approaching 50 feet.

Wind waves are considered to be oscillatory waves, with the water particles moving forward and backward as the waves pass by. Although simple linear theory describes purely oscillatory waves, more rigorous methods demonstrate some degree of mass transport in the direction of wave advance, although water particles continue to move back and forth with the passage of each wave. When the water particles move only in the direction of wave advance, the wave is called a wave of translation or a solitary wave. Ship waves are also waves of translation, and although not purely solitary, they move across the water surface as a cnoidal wave, with a steeper and amplified wave peak compared to the equivalent sinusoidal, progressive oscillatory wave. Typical wave shapes are shown in Figure 4 from Wiegel (1964).

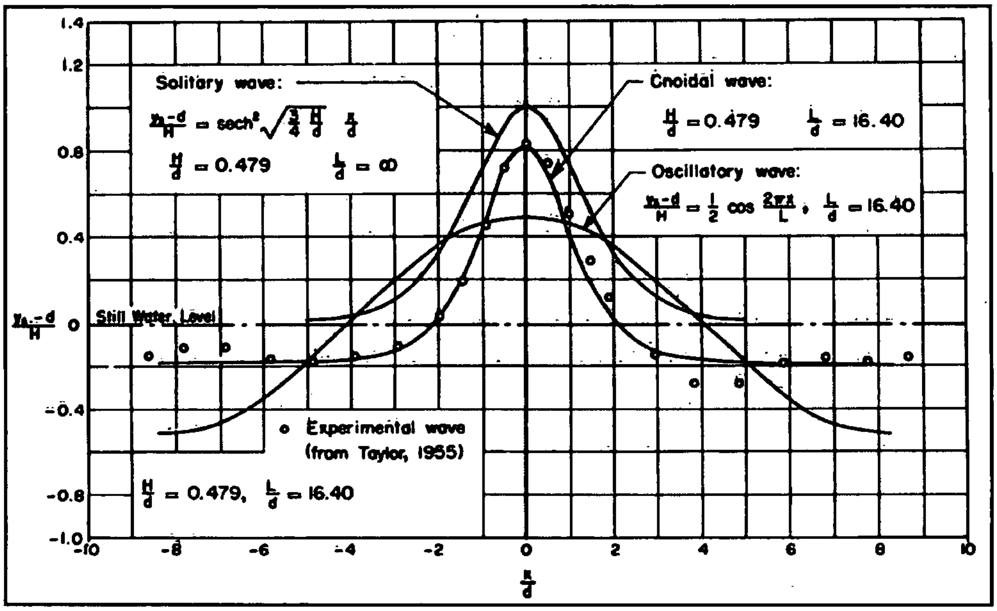


Figure 4. Comparison of measured and theoretical wave profiles (Wiegel 1960).

Assuming a 3-foot ship-induced wave height with a 50-foot wave length, the equivalent cnoidal wave has been plotted superimposed upon a simple sinusoidal wave that would develop from wind shear on the water surface as Figure 5. As can be seen from Figure 5, a 3-foot wind wave oscillates about the mean still water level, with its wave height 1.5 feet above the still water level, whereas the cnoidal wave developed from a ship wake would move across the still water level with its wave crest approximately 2.1 feet above the still water level, with a significantly steeper wave form that would result in a more severe design condition for the study area. It is this more severe design wave that also results in the worst wave uprush and potential for overtopping both the existing rock revetment and vertical bulkhead/seawall along the eastern end of Harbor Island.

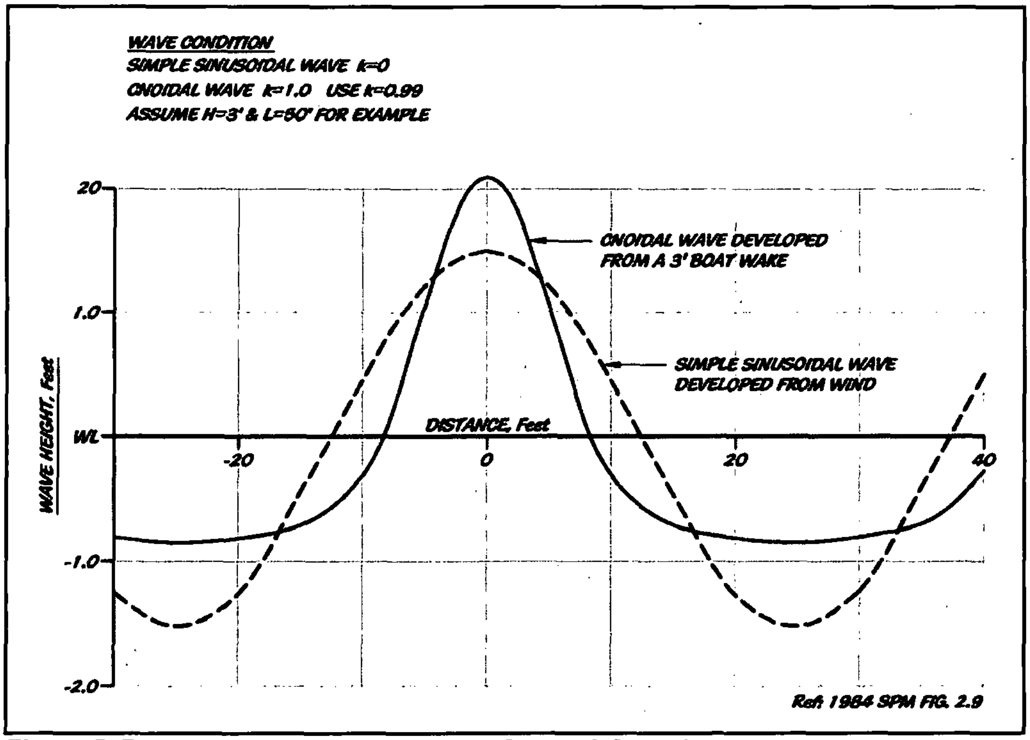


Figure 5. Design cnoidal wave condition from a 3-foot high boat wake.

2.2 Design Stillwater

The maximum design storm stillwater level (SWL) is critical to any wave analyses, as it determines the wave energy that can be propagated into the shoreline, eventually impacting and overtopping structures. It is the shallow-water wave height within the bay superimposed upon the extreme SWL that defines the joint probability of the design storm condition, creating the largest wave forces on structures, along with the maximum runup and overtopping volume. In addition to tidal fluctuation, water levels are influenced by storm surge and El Niño conditions, the latter resulting in unusually high water levels above the predicted tidal elevations for months at a time.

Any future rise in sea level also impacts the design SWL, increasing the frequency of flooding, along with the maximum volume and rate of any overtopping, and the wave impact forces of any waves that might overtop existing or proposed improvements.

Past and possible future changes in mean sea level (MSL) are of interest in design and planning for all coastal cities, as well as for any engineering activities on the coast. Global mean sea level rose at least 300 feet, and perhaps as much as 400 feet, during the past 18,000 years or so (CLIMAP, 1976). Sea level, both globally and along California, rose approximately 0.7 foot over the past century, as shown in Figure 6. Furthermore, evidence suggests that the rate of global mean sea level rise has accelerated since the mid-1800s, or even earlier (Church and White, 2006; Jevrejeva, et al., 2008), and that it has now reached a rate of about 1 foot per century over the past decade or so (Nerem, et al., 2006).

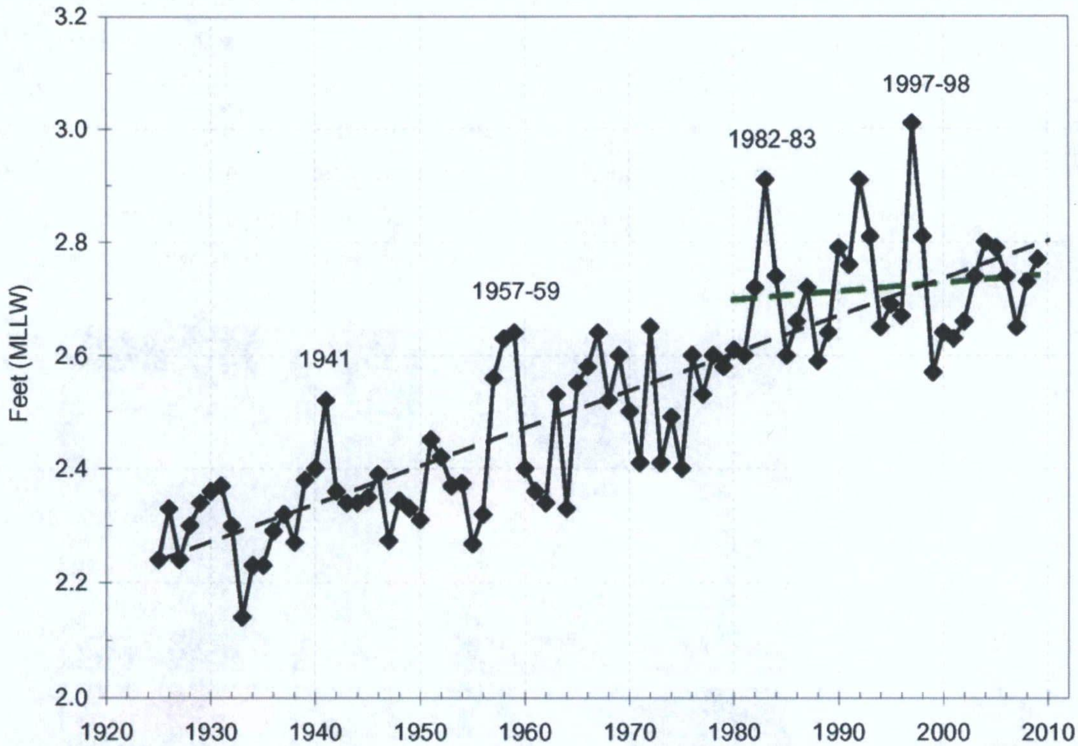


Figure 6. Annual average sea level history at La Jolla, 1925-2007. Broken line shows linear trend of 0.7 feet/century rise.

Figure 6 is a plot of the annual mean sea levels measured at the La Jolla tide gauge starting in 1925. The linear trend indicates the approximate 0.7 foot per century sea level rise. Also noticeable are the enhanced sea levels during the El Niño episodes of 1941, 1957-59, 1982-83, and 1997-98 (respectively labeled).

A notable feature of the sea level history at La Jolla is the leveling-off of sea level rise since about 1980 (Figure 6). The green broken line shows a much reduced trend of about 0.15 foot per century between 1980 and 2009, or about 4.5 times smaller than the overall trend of 0.67 foot per century. A similar reduction in the rate of sea level rise has been noted at San Francisco, which has a similar overall appearance as the La Jolla record, but is a much longer record extending back to 1856.

Figure 7 shows the global distribution of the rate of sea level change for the period of 1993-2006 (Cabanes, et al, 2001). Note that warm colors (yellow-orange-red) show areas of sea level rise (positive rates), while cool colors (green- blue) indicate falling sea level (negative rates) over the record. Inspection of the North Pacific reveals that sea levels in the western Pacific, especially in the lower latitudes, have risen at a rate of 3-9 mm/year (equivalent to 30-90 cm per century, or about 1-3 feet per century). Conversely, sea levels in the eastern Pacific, extending from Central America north to Washington State, have fallen at a rate of 0-3 mm per year (0-30 cm per century, or 0-1 foot per century). This may explain the coastal tide gauge observations (La Jolla sea level history; Figure 6) described above.

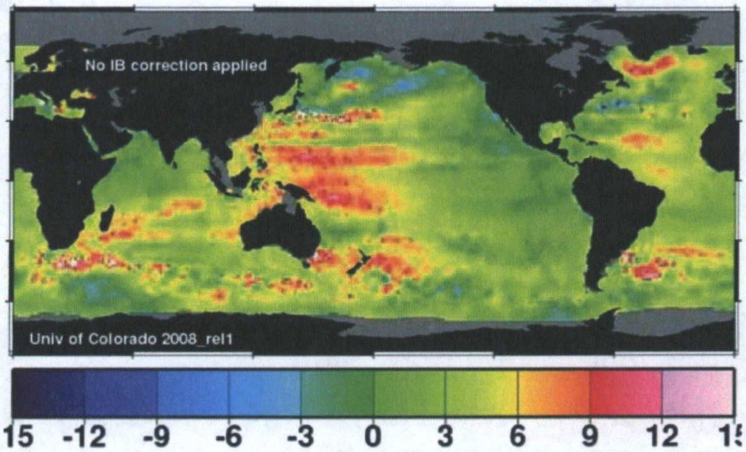


Figure 7. Global sea level change rates 1993-2006 as derived from satellite altimetry measurements, following Nerem (2005).

While the cause of these regional differences undoubtedly lies in the large-scale circulation of the Pacific Ocean and the overlying atmosphere, no detailed explanation is known. However, these observations could be a cause for some concern. If the conditions driving sea level up in the western Pacific and down in the eastern Pacific were to relax or even reverse, sea level along the coast of California could begin to increase at a much higher rate than what has been observed over the past several decades. Future global sea level rise scenarios could further increase the rate of sea level rise.

3 SEA LEVEL RISE PROJECTIONS

Sea level rise projections, including MSLR, tides, non-tide residual (NTR) sea level fluctuations (storm surges and effects related to El Niño), and waves, are discussed below.

3.1 Sea Level

ICLEI (2012) provides a general vulnerability assessment that evaluates how assets around San Diego Bay could be impacted by MSLR by 2050 and 2100, and recommends how resilience can be built into these assets. The report was issued before the National Research Council (NRC 2012) report was available.

ICLEI (2012) utilizes two scenarios: a 0.5 m (1.7 foot) MSLR by 2050, and a "high-end" 1.5 m (4.9 foot) MSLR by 2100. These are taken from the guidance provided by the State of California (2010),[2] which in turn relied on the methods of Rahmstorf (2007) and Vermeer and Rahmstorf (2009), and the results of Cayan *et al.* (2008). The State of California (2010) provided a range of MSLR projections for 2030, 2050, 2070, and 2100 as summarized in Table 2. Low, medium, and high refers to various future assumed greenhouse gas (GHG) emissions scenarios used in the climate models used in deriving these estimates.

[2] After NRC (2012) appeared, the State updated its Guidance Document (State of California 2013) to reflect the new results.

Table 2. Interim MSLR Guidance from State of California (2010)

Year		Average of Models	Range of Models
2030		7 in (18 cm)	5-8 in (13-21 cm)
2050		14 in (36 cm)	10-17 in (26-43 cm)
2070	Low	23 in (59 cm)	17-27 in (43-70 cm)
	Medium	24 in (62 cm)	18-29 in (46-74 cm)
	High	27 in (69 cm)	20-32 in (51-81 cm)
2100	Low	40 in (101 cm)	31-50 in (78-128 cm)
	Medium	47 in (121 cm)	37-60 in (95-152 cm)
	High	55 in (140 cm)	43-69 in (110-176 cm)

ICLEI (2012) assumes (as is common) that the given MSLR scenarios are applicable regionally and locally. Four planning scenarios are considered:

a. 2050 Daily Conditions – Mean high tide with 0.5 m MSLR;

b. 2050 Extreme Event – 100-year extreme high water event with 0.5 m MSLR (including El Niño, storm surge, and unusually high tides);

c. 2100 Daily Conditions – Mean high tide with 1.5 m MSLR;

d. 2100 Extreme Event – 100-year extreme high water event with 1.5 m MSLR (including El Niño, storm surge, and unusually high tides).

Unfortunately, ICLEI (2012) does not specify the elevation of the 100-year extreme high-water event, nor "mean high tide," and "unusually high tides." However, these numbers must be available somewhere, since maps were prepared that show the areas flooded under each of the four scenarios.

For the purposes of this report, we assume that "mean high tide" is the current mean high water (MHW) tidal datum height at the San Diego Bay tide gauge, which is about 0.62 m (2.0 feet) above MSL. We further assume that "unusually high tides" may mean extreme high water (*i.e.*, the highest so far observed), which is considerably higher than MHW at 1.7 m (5.6 feet) above MSL. However, this value includes a component of MSLR over the tide gauge record, and therefore cannot be interpreted in terms of a statistical return period without further analysis. Figure 8 shows the suite of tidal datum information available from San Diego Bay through 2012, including annual extreme high and low observations, and annual mean values. MSL data begins in 1906 and the other datums begin in 1927.

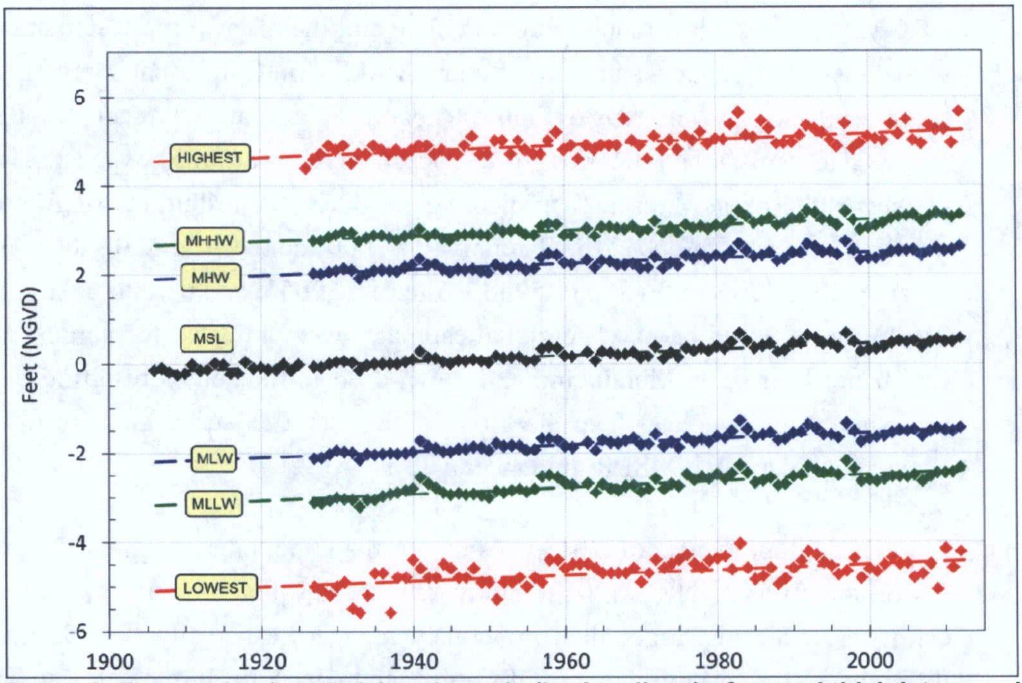


Figure 8. Time series (symbols) and trends (broken lines) of annual tidal datum and maximum and minimum observed sea level values. (NOAA San Diego Bay tide gauge 941-0170 located at Navy Pier).

An estimate of the 100-year return period flooding elevation in San Diego Bay is provided by Chadwick *et al.* (2011) who derived a value of 1.6 m (5.4 feet) above sea level as part of a study conducted by SPAWAR. This total maximum water level accounted for the co-occurrence of high predicted tides, storm surges, and El Niño effects. The values of total water level and its breakdown of components at their respective 1, 10, and 100 -year return periods are given in Table 3.

Table 3. Water Level at Selected Return Periods in San Diego Bay (Chadwick, *et al.* 2011)

San Diego Bay	Return	Tide	NTR	Total Water Level
	Yrs	m	m	m
Year	1	1.35	0.04	1.39
Decade	10	1.33	0.13	1.46
Century	100	1.42	0.21	1.64

NRC (2012) presents a much more complete and therefore complicated story of the possible global, west-coast, and state-wide future MSLR for California, Oregon, and Washington (Figure 9, dots) and its range (Figure 9, bars). These are based on the IPCC (2007) mid-range GHG emissions scenarios for the ocean steric (warming) expansion component added to the results of new research projecting the likely contributions of future ice-melt. The resulting projected *global* MSLR relative to 2000 ranged from 0.08 to 0.23 m (0.26 to 0.75 foot) by 2030; 0.18 to 0.48 m (0.59 to 1.6 feet) by 2050; and 0.50 to 1.4 m (1.6 to 4.6 feet) by 2100 (Figure 9, red bars). The global estimates were adjusted for vertical crustal movement (uplift north of Cape Mendocino and down-drop in the south) resulting in the orange bars, also shown in Figure 9. The State of California (2013) used these results of NRC (2012) shown as the updated MSLR guidance in Table 4.

The updated guidance of 2013 is simpler than the interim guidance provided in 2010. Unfortunately, the NRC (2012) study emphasizes that the uncertainty of future MSLR estimates, which is larger than previously realized, especially for 2050 and 2100. These differences (for California south of Cape Mendocino) are summarized in Table 5. Notably, the lower values of the updated ranges are much lower than those in the interim guidance. These decreased, respectively, from 13 to 4 cm, 26 to 12 cm, and 78 to 42 cm in 2030, 2050, and 2100. On the other hand, the upper values of the updated ranges did not change as much (21 to 30 cm, 43 to 61 cm, and 176 to 167 cm), with the maximum updated upper limit (167 cm) in 2100 actually 9 cm lower than the interim guidance upper limit.

NRC (2012) also provides projected central values and ranges of MSLR for regions of California, including Los Angeles, which are presumably applicable to San Diego. These values (from NRC 2012, Table 5.3) are summarized in Table 6.

No other common-date MSLR projection estimates are given in both State of California (2010) and (2013) reports or in NRC (2012). However, additional future-year MSLR values and ranges could be estimated more or less confidently using the existing information and making an assumption about the shape of the MSLR curves, which are often taken to be quadratic and concave-up. Coastal Commission Staff is developing guidance for such a procedure.

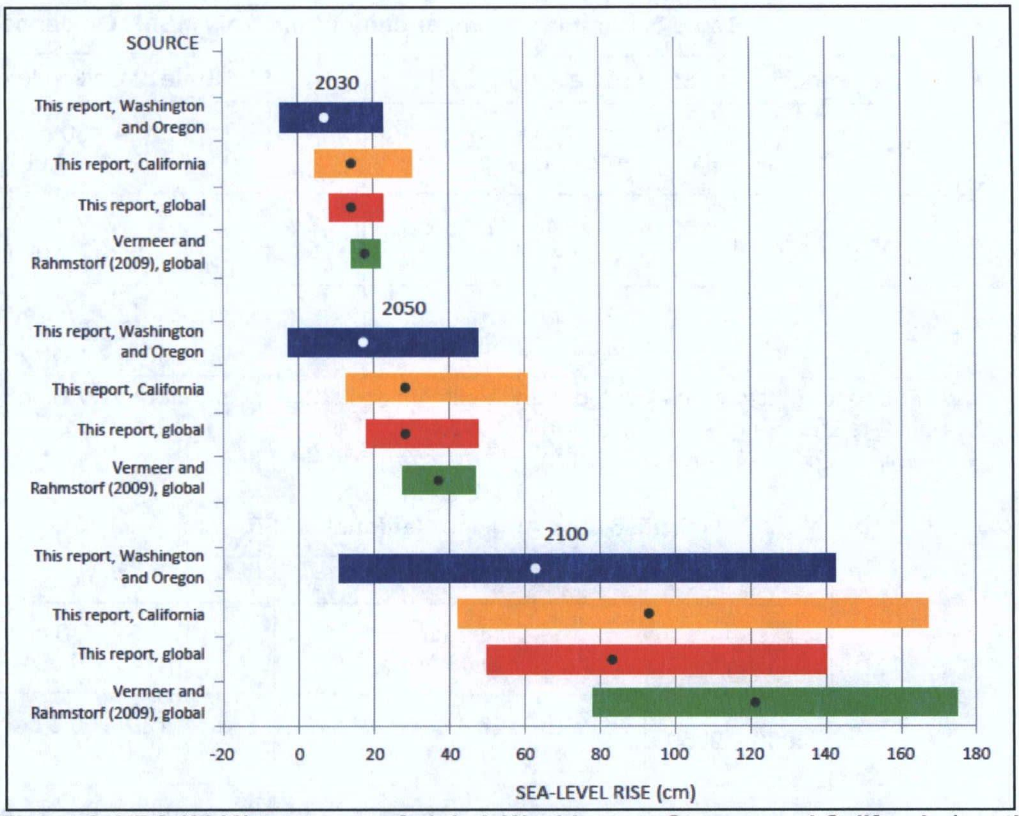


Figure 9. NRC (2012) summary of global, Washington, Oregon, and California (south of Cape Mendocino) MSLR projections for 2030, 2050, and 2100 relative to 2000.

Table 4. Updated MSLR Guidance from State of California (2013)

Time Period	North of Cape Mendocino[3]	South of Cape Mendocino
2000 - 2030	-4 to 23 cm (-0.13 to 0.75 ft)	4 to 30 cm (0.13 to 0.98 ft)
2000 – 2050	-3 to 48 cm (-0.1 to 1.57 ft)	12 to 61 cm (0.39 to 2.0 ft)
2000 – 2100	10 to 143 cm (0.3 to 4.69 ft)	42 to 167 cm (1.38 to 5.48 ft)

Table 5. Summary Comparison of California MSLR Guidance

Time Period	State of California (2010)[a]	State of California (2013)[b]
2000 – 2030	13 - 21 cm 0.43 - 0.69 ft	4 - 30 cm 0.13 – 0.98 ft
2000 – 2050	26 - 43 cm 0.85 - 1.41 ft	12 - 61 cm 0.39 - 2.00 ft
2000 – 2100	78 - 176 cm 2.56 - 5.77 ft	42 - 167 cm 1.38 - 5.48 ft

[a] Estimates in ft were calculated from the cm values and may therefore vary slightly from the original numbers that are given as inches in Table 2.
[b] Values are based on NRC (2103).

Table 6. Los Angeles Regional MSLR from (NRC 2012)

Time Period	Value	Range
2000 – 2030	14.7 cm 0.48 ft	4.6 - 30.0 cm 0.15 – 0.98 ft
2000 – 2050	28.4 cm 0.93 ft	12.7 - 60.8 cm 0.42 - 1.99 ft
2000 – 2100	93.1 cm 3.05 ft	44.2 - 166.5 cm 1.45 - 5.46 ft

3.2 Peak High Tides

Predicted future tide heights are accounted for in the extreme total water level statistics considered above. However, since the tides contribute most to the variability of sea level in San Diego Bay, and because they are essentially predictable for practical purpose, it is useful to consider the characteristics of peak high tides (also popularly referred to as "King Tides") and their future variations. This is useful to identify windows of vulnerability where facilities might be especially susceptible to flooding or damage from other sea level raising phenomenon such as storm surges or waves and boat wakes.

In southern California, high tides occur twice per day, but one high (low) is generally higher (lower) than the other. This is a consequence of the "mixed" nature of regional tides that have diurnal (once-per-day) tide components that are nearly as large as the semi-diurnal (twice-per-day) constituents. The typical daily sequence is higher-high tide, followed by lower-low, lower-high, higher low, and finally back to higher-high to complete the 24-hr, 50-min cycle.

Tides also peak twice per month, twice per year, and with 4.4 and 18.6 year-long cycles (Zetler and Flick, 1985). These patterns are driven by the astronomical forcing due to the gravitational interaction of the earth, moon, and sun, and the local ocean response to these forces. The peak high tides in winter occur in the morning, while those during summer occur in the evening. Inspection of the San Diego tide charts for January and July 2013 (Figures 10, 11) reveal several of these patterns. The highest tide in January 2013 (7.4 feet MLLW) occurred on the 11th at 08:11 AM near the time of new moon, with a second set of "spring tide" peaks (6.2 ft) two weeks later from the 25th-27th around full moon, also in the morning (Figure 10, red circles).

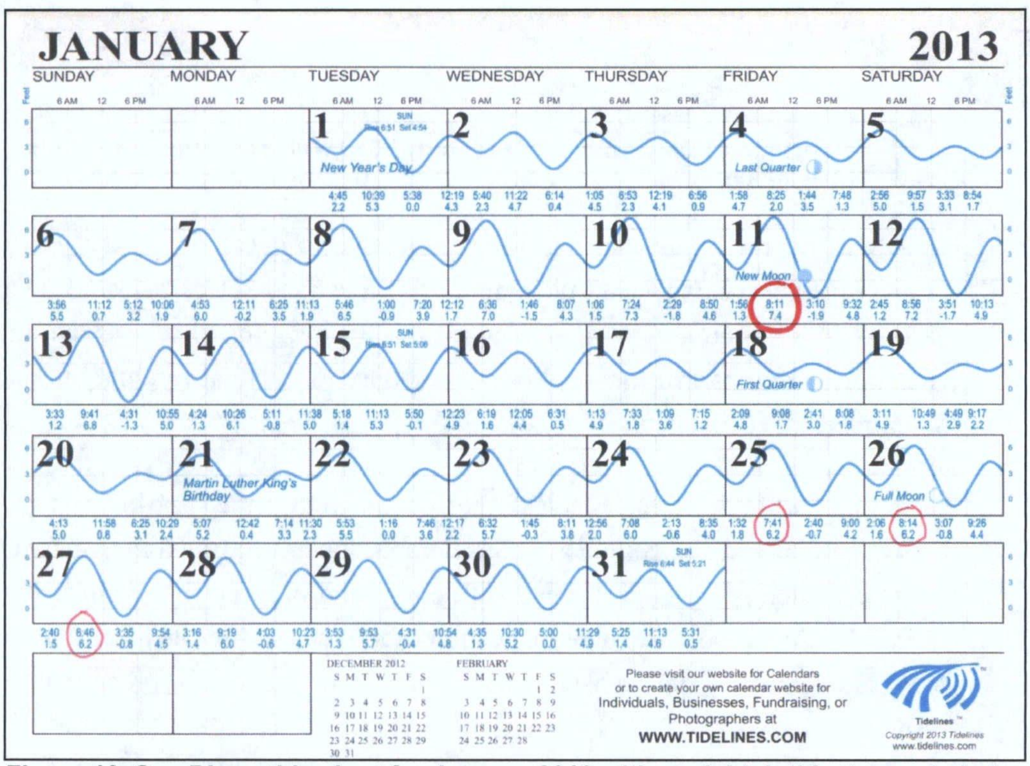


Figure 10. San Diego tide chart for January 2013 with peak high tide times circled (Tidelines.com).

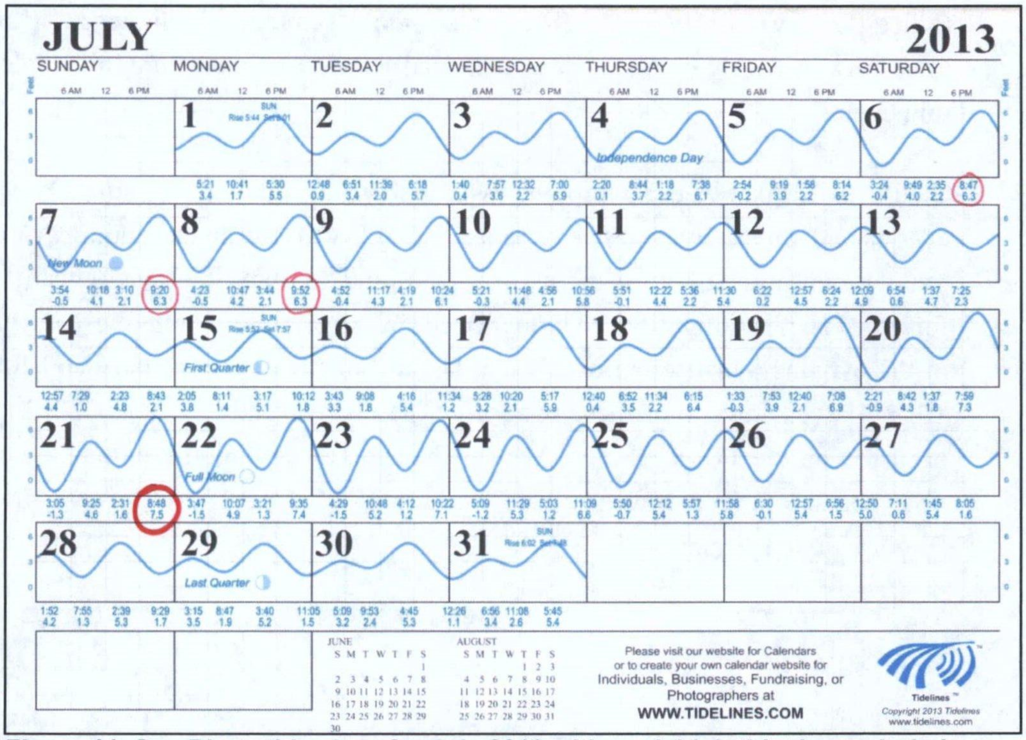


Figure 11. San Diego tide chart for July 2013 with peak high tide times circled (Tidelines.com).

In July 2013, the highest spring tide is predicted to occur on the 21st (7.5 feet) at 8:48 PM (20:48) in the evening near full moon, with a second set of peak tides (6.3 ft) two weeks earlier (6th-8th) around new moon and also in the evening. The seasonal time-of-day pattern is a coincidental part of the local ocean response to the tidal forcing, but one with interesting and important consequences (Flick, 2000).

Note that the highest "neap tides" that occur around the time of half-moon in the weeks between the monthly maxima are considerably lower. Storm surges that occur during spring tides are much more likely to cause flooding and damage than if they happen during neap tides. For this reason, frequent inspection of tide charts such as these is highly recommended for individuals with coastal management or disaster preparedness and response responsibilities.

Figure 12 presents predictions of maximum monthly tide heights for San Diego Bay for 2000-2100. This graph illustrates the fact that maximum tidal elevations occur in the winter and summer, with considerably lower peaks in the spring and fall of the year. Also shown are the aforementioned 4.4-year and 18.6-year cycles that enhance the maximum summer and winter annual high tides by about 0.3 foot and 0.2 foot, respectively. Note that the maximum high tides during the years 2009-2016 decrease steadily from about 7.7 feet to 7.3 feet, increasing back to 7.7 feet again by 2025-2026, and so on. This provides some predictive capacity for the times of maximum future coastal exposure. In contrast, the century's lowest monthly summer/winter high tide (about 7.0 feet) is predicted to occur in summer 2032.

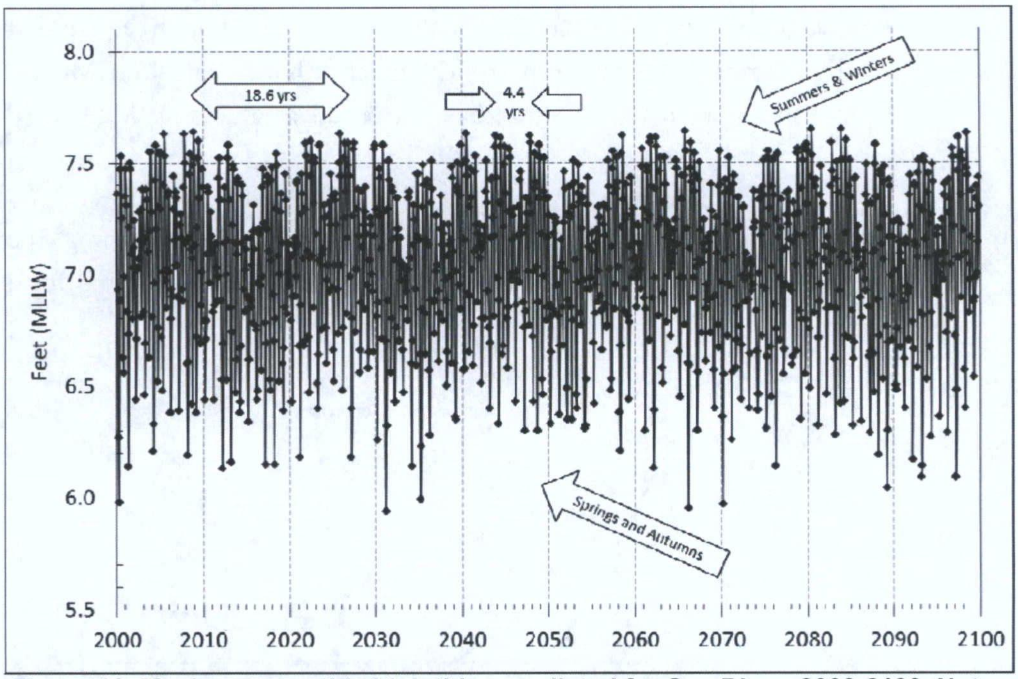


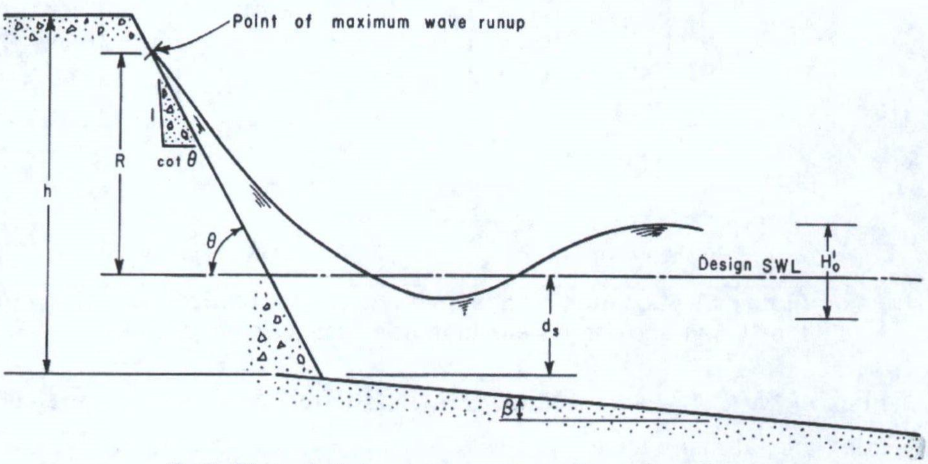
Figure 12. Maximum monthly high tides predicted for San Diego 2000-2100. Note the 18.6-yr and 4.4-yr peak high tide cycles noted (arrows).

Flick *et al.* (2003) analyzed all U.S. long-term tide gauge station data and showed that the tide range at many locations was changing, either increasing or decreasing. That is, the high tides were increasing either faster or more slowly than MSL at these sites. In San Diego Bay, it was found that from 1926-1999, MSL rose at 2.3 mm/yr while both MHHW and MHW rose at a slightly slower rate of 2.1 mm/yr. It was also found that the diurnal tide range (MHHW-MLLW) decreased at a rate of about 0.44 mm/yr and the mean tide range (MHW-MLW) decreased by 0.32 mm/yr over the same period. The observed tide range changes may be related to the development and dredging of San Diego Bay, but the causes are not known for sure. For this reason, and because the changes are small, they are not considered in the future projections of tide heights.

4 WAVE RUNUP AND OVERTOPPING ANALYSIS

Wave runup is defined as the rush of water up a beach or coastal structure that is caused by, or associated with, breaking waves. The maximum runup is the highest vertical elevation that the runup will reach above the stillwater level. If the maximum runup is higher than the top of a coastal structure, the excess represents overtopping. Runup elevation depends on the incident wave characteristics, the composition and profile of the structure, and other factors. Most wave runup and overtopping analyses are based upon equations and nomographs provided in the U.S. Army Corps of Engineers Shore Protection Manual (SPM, USACE, 1984), and the more recent Internet-based Coastal Engineering Manual (Part VI-Chapter 5, 2006).

The following definition sketch for both wave runup and overtopping, reproduced from the 1984 SPM, graphically illustrates the point of maximum wave runup for a particular design condition.



Definition sketch: wave runup and overtopping

It should also be clear from the sketch that any wave runup exceeding the height of the structure then represents overtopping.

We evaluated both the maximum height of runup and volume of overtopping based on the U.S. Army Corps of Engineers 2006 Coastal Engineering Manual (CEM), with maximum overtopping occurring on the rock revetment assumed to have a crown elevation of 15 feet and a 2 to 1 slope. We have used a 3-foot design wave height, along with a 3-second period, and then calculated the design stillwater level at which overtopping first occurs. Given these design assumptions, overtopping first occurs at a design stillwater level of 10.5 feet MLLW. Thus, and as indicated on Figure 8, given the highest recorded sea levels to date within the bay of approximately 5.8 feet (NGVD), or approximately 8.7 feet (MLLW), approximately 1.8 feet of MSLR could occur prior to waves overtopping the Harbor Island revetment adjacent the site.

5 CONCLUSIONS AND RECOMMENDATIONS

Given the current wave environment within the bay, the proposed hotel sites assuming finish floor elevation of 15 feet MLLW, will not be exposed to any wave uprush either from wind waves or boat wakes. Maximum wave uprush values of 4 to 5 feet are anticipated up the face of the Harbor Island rock revetment whenever there are maximum 50-knot sustained winds out of the southwest, or the Navy's Sea Tractor Tugs travel at 10 to 11 knots near East Harbor Island. Given this wave environment, a stillwater level of approximately 9.5 feet MLLW, corresponding to an MSLR of 0.8 feet (25 cm), would be necessary for wave uprush to overtop the localized lower revetment crown elevations near +14 feet MLLW along the Harbor Island rock revetment, resulting in localized flooding within parking lots with finished surface elevations below +14 feet. At an assumed hotel finish floor elevation of +15 feet MLLW, the overtopping and any associated flooding would not exceed a hotel's finished floor elevation unless there is a MSLR of 1.8 feet (55 cm). Referring to Section 2.1 (Boat Wakes) and Section 3.2 (Peak High Tides), it is important to reiterate that overtopping is only expected to occur during the relatively infrequent "King Tides" when peak high tides coincide with high winds or boat wakes. Considering that these King tides only occur several days a year with a relatively short duration, overtopping events under these conditions would be infrequent, short duration occurrences.

Thus, as indicated on Figure 9, when using the NRC (2012) data, by the year 2050 the median MSLR projection would result in about 3 cm of overtopping when there is a coincidence of high winds or boat wakes and peak high (King) tides. As discussed above, hotel structures having a finish floor elevation of +15 feet MLLW will not experience any overtopping from the median MSLR projection by the year 2050.

By the year 2100, most sea level rise projections suggest that overtopping will be more prevalent. We believe it appropriate to wait for several decades to reassess what, if any, future adaptive strategies might be appropriate as more information on MSLR becomes available. However, given the wide range of MSLR projections beyond 2050, adaptive strategies for accommodating the potential for sea level rise and the associated more frequent wave overtopping and wave-induced impact forces can be accommodated through the use of perimeter floodwalls or other flood barriers around either the outer margins of Harbor Island or the proposed developments to accommodate increases in MSLR.

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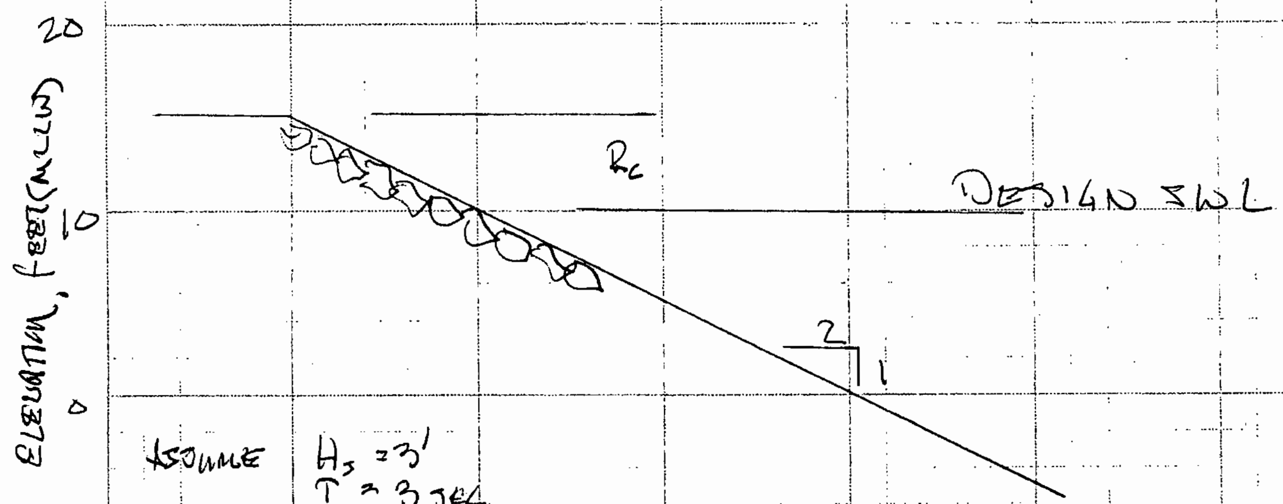
APPENDIX A

WAVE UPRUSH CALCULATIONS

REGISTERED PROFESSIONAL ENGINEER
WALTER F. CRAMPTON
No. 23792
CIVIL
STATE OF CALIFORNIA

TerraCosta
Consulting Group



ASSUME $H_s = 3'$
$T = 3$ SEC

$\therefore \xi_{om} = \dfrac{\tan\theta}{\sqrt{\dfrac{2\pi}{g}\dfrac{H_s}{T_m^2}}}$ EQ VI-5-2 CEM

$= \dfrac{\tan 26.6}{\sqrt{\dfrac{2\pi}{g}\dfrac{3}{9}}} = 1.96$

$R_{2\%} \Rightarrow$ FIG VI-5-12 FM CEM

SO W/ $\xi_{om} \approx 2$, $R_{2\%} \approx 1.5\,H_s = 4\frac{1}{2}$ ft

$\therefore$ OVERTOPPING STARTS TO OCCUR WITH A SWL = 10.5' MLLW

TSUNAMI SWL'S WITHIN THE BAY $\leq 3' < 4\frac{1}{2}'$ RUNUP

$\therefore$ WAVE RUNUP CONTROLS

TerraCosta Consulting Group

PROJECT NAME East Harbor Island PMP Amendment DRAWN BY Crampton

CHECKED BY

PROJECT NUMBER 2775 DATE 5/23/13 PAGE 1 OF 1

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