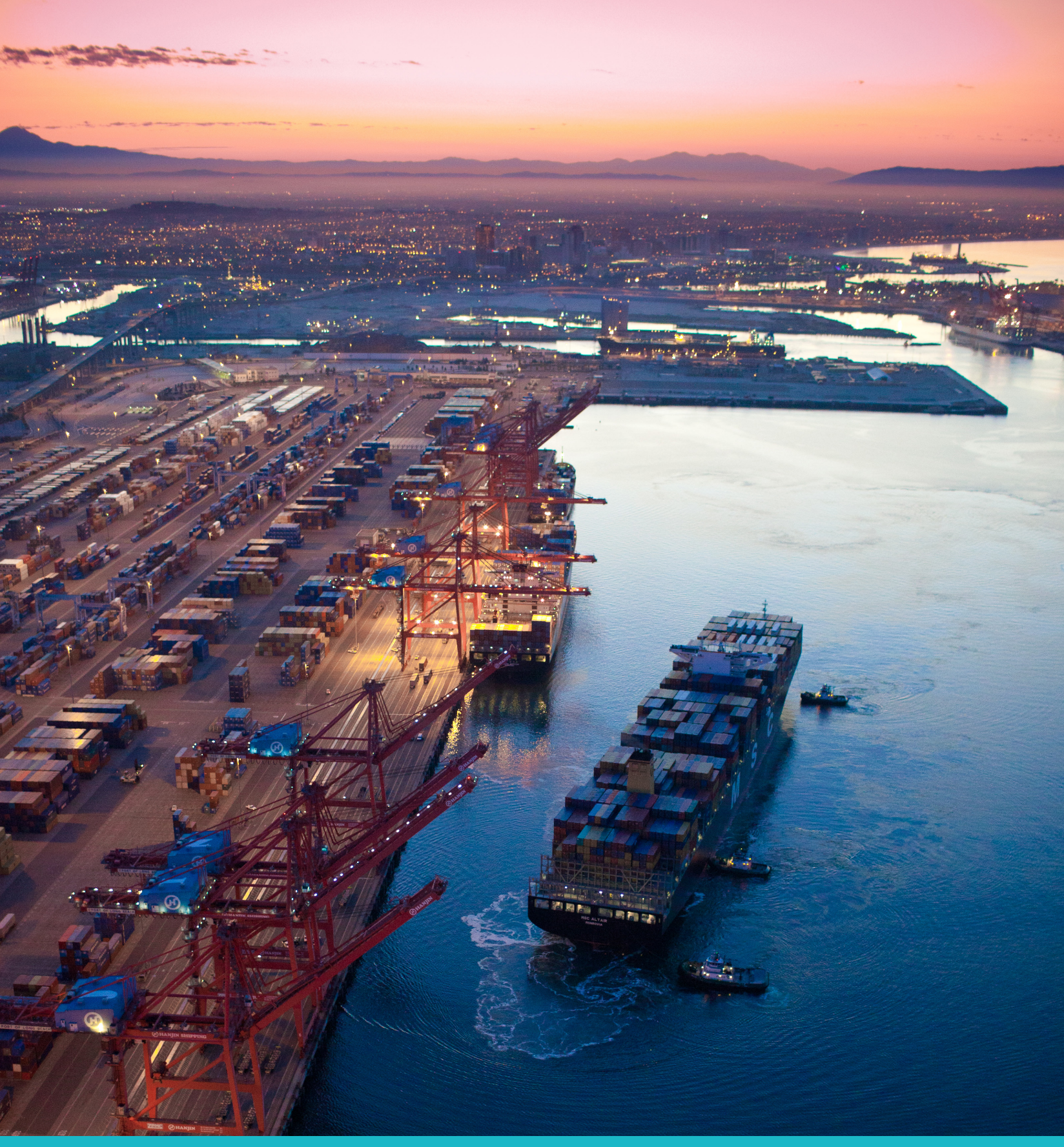
Appendix A
Port Master Plan Update

This page intentionally left blank.



Port of
LONG BEACH
The Green Port

Draft

Port Master Plan

Update 2020

TABLE OF CONTENTS

1 INTRODUCTION 1-1
1.1 1990 Port Master Plan and Amendments 1-2
1.2 Purpose of the Port Master Plan Update 1-3
1.3 Need for the Port Master Plan Update 1-4
1.4 Port Master Plan Update Planning Process 1-4
1.5 The Port of Long Beach 1-4
1.5.1 Establishment of the Port 1-4
1.5.2 Development of the Port 1-5
1.5.3 The Port of Long Beach Today 1-5
1.5.4 Overview of Port Operations 1-5
2 BACKGROUND 2-1
2.1 Federal Regulations 2-1
2.2 State Regulations 2-2
2.3 Regional and Local Regulations 2-5
2.4 Port Policies and Initiatives 2-9
2.5 Related Studies and Reports 2-12
2.6 Risk Management Plan 2-13
2.7 Agency Coordination 2-15
3 DEVELOPMENT GOALS AND GUIDING PRINCIPLES 3-1
3.1 Development Goals 3-1
3.2 Guiding Principles 3-3
4 FACTORS AFFECTING DEMAND FOR PORT DEVELOPMENT 4-1
4.1 Market Commodities and Trade Routes 4-1
4.2 San Pedro Long-Term Unconstrained Cargo Forecast 4-3
4.2.1 Container Cargo 4-4
4.2.2 Non-Container Cargo 4-5
4.3 Port Competitiveness 4-6
4.4 Port-Wide Capacity 4-8
4.5 Trade And Technology Factors 4-8
5 PLAN ELEMENTS 5-1
5.1 Public Access and Recreation 5-1
5.2 Environment and Sustainability 5-3
5.3 Climate Change Adaptation 5-5
5.4 Transportation and Circulation 5-7
5.5 Navigation 5-13

DRAFT

5.6 Terminal Operations 5-14
5.7 Rail Operations 5-16
5.8 Oil Operations 5-19
6 PLANNING DISTRICTS AND DEVELOPMENTS 6-1
6.1 Land Use and Water Use Designations 6-4
6.1.1 Land Use Designations 6-4
6.1.2 Water Use Designations 6-6
6.2 Harbor District Property Ownership 6-7
6.3 Harbor District Zoning 6-10
6.4 Planning Districts 6-10
6.4.1 Planning District 1 (North) 6-11
6.4.2 Planning District 2 (Northeast) 6-15
6.4.3 Planning District 3 (Northwest) 6-20
6.4.4 Planning District 4 (West Basin) 6-25
6.4.5 Planning District 5 (Southeast) 6-30
6.4.6 Planning District 6 (Anchorage and Open Water) 6-36
6.4.7 Planning District 7 (Queensway Bay) 6-40
6.5 Summary of Projects by Planning District 6-44
7 IMPLEMENTATION 7-1
7.1 Policies of General Applicability 7-1
7.2 Conformance of Anticipated Projects to CCA Policies 7-3
8 PERMITTING POLICIES 8-1
8.1 Permit Implementation Guidelines 8-1
8.2 Updates to the Implementation Guidelines and Permit Policies 8-2
8.3 Coastal Development Permit Process 8-3
9 COASTAL ACT COMPLIANCE 9-1
10 SUMMARY OF THE PROGRAM ENVIRONMENTAL IMPACT REPORT 10-1
11 REFERENCES 11-1

Appendix A GLOSSARY A-1
Appendix B PORT MASTER PLAN UPDATE COMMUNICATIONS AND ENGAGEMENT PROGRAM SUMMARY REPORT B-1

List of Tables

Table 1.1-1. PMP and Amendment Certifications 1-2
Table 1.5-1. Port of Long Beach Annual Import and Export Revenues (Metric Revenue Tons)[1] 1-9
Table 1.5-2. Total Imports and Exports (Metric Revenue Tons)[1] 1-9

DRAFT

Table 2.6-1. Vulnerable Resources 2-15
Table 4.1-1. 2018 Port of Long Beach Primary Trading Partners 4-1
Table 4.1-2. Port of Long Beach – Top Exports (2018) 4-2
Table 4.1-3. Port of Long Beach – Top Imports (2018) 4-2
Table 4.2-1. Port of Long Beach Growth Rate 4-4
Table 4.2-2. Summary of San Pedro Bay Ports 2014 Non-Container Volume 4-5
Table 5.2-1. PMP Update Anticipated Projects – Fill Estimates 5-4
Table 6.1-1. Land Use Designations 6-4
Table 6.1-2. Updated Land Use Definitions 6-5
Table 6.1-3. Existing and Proposed Water Use Designations 6-6
Table 6.1-4. Proposed Water Use Definitions 6-7
Table 6.4-1. PMP Update Project Categories 6-10
Table 6.4-2. Planning District 1 (North) Updates 6-11
Table 6.4-3. Planning District 1 (North) – Permitted Land Use Designations 6-14
Table 6.4-4. Planning District 2 (Northeast) Updates 6-15
Table 6.4-5. Planning District 2 (Northeast) – Permitted Land and Water Use Designations 6-18
Table 6.4-6. Planning District 3 (Northwest) Updates 6-20
Table 6.4-7. Planning District 3 (Northwest) – Permitted Land and Water Use Designations 6-23
Table 6.4-8. Planning District 4 (West Basin) Updates 6-25
Table 6.4-9. Planning District 4 (West Basin) – Permitted Land and Water Use Designations 6-28
Table 6.4-10. Planning District 5 (Southeast) Updates 6-30
Table 6.4-11. Planning District 5 (Southeast) – Permitted Land and Water Use Designations 6-33
Table 6.4-12. Planning District 6 (Anchorage and Open Water) Updates 6-36
Table 6.4-13. Planning District 6 (Anchorage and Open Water) – Permitted Water Use Designations 6-38
Table 6.4-14. Planning District 7 (Queensway Bay) Updates 6-40
Table 6.4-15. Planning District 7 (Queensway Bay) – Permitted Land and Water Use Designations 6-42
Table 6.5-1. PMP Update Planning Districts and Allowable Uses 6-44
Table 6.5-2. PMP Update Projects 6-45
Table 7.2-1. California Coastal Act Compliance 7-4
Table 9-1. PMP Update CCA Compliance 9-1

DRAFT

List of Figures

Figure ES-1. PMP Update Planning Districts and Existing Land Uses ES-7
Figure 1.5-1. Site Map 1-6
Figure 1.5-2. Port Container Total Throughput (2005–2018) 1-8
Figure 4.5-1. Containership Evolution 4-9
Figure 5.4-1. Overweight Truck Corridors and Oversize Truck Routes 5-9
Figure 5.4-2. Public Transit Facilities/Routes within the Harbor District 5-10
Figure 5.4-3. Bicycle Paths in the Harbor District 5-12
Figure 5.7-1. Intermodal Rail Network 5-17
Figure 5.8-1. Oil Operating Areas within the Harbor District 5-21
Figure 6.0-1. Evolution of the PMP Planning Districts – 1978–1996 6-2
Figure 6.0-2. PMP Update Planning Districts 6-3
Figure 6.2-1. Port of Long Beach Property Ownership 6-8
Figure 6.2-2. Port of Long Beach Harbor District 6-9
Figure 6.4-1. Planning District 1 (North) 6-12
Figure 6.4-2. Planning District 2 (Northeast) 6-16
Figure 6.4-3. Planning District 3 (Northwest) 6-21
Figure 6.4-4. Planning District 4 (West Basin) 6-26
Figure 6.4-5. Planning District 5 (Southeast) 6-31
Figure 6.4-6. Planning District 6 (Anchorage and Open Water) 6-37
Figure 6.4-7. Planning District 7 (Queensway Bay) 6-41
Figure 6.5-1. PMP Update Projects 6-46

DRAFT

ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AQMP	Air Quality Management Plan
bbls	barrels
BHC	Board of Harbor Commissioners
BMP	best management practice
CAA	Clean Air Act
CAAP	Clean Air Action Plan
CAD	confined aquatic disposal
CAGR	compound annual growth rate
CARB	California Air Resources Board
CCA	California Coastal Act
CCC	California Coastal Commission
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CRP	Climate Adaptation and Coastal Resiliency Plan
CSTF	Contaminated Sediments Task Force
CWA	Clean Water Act
cy	cubic yards
CZMA	Coastal Zone Management Act
ESA	Endangered Species Act
GDP	gross domestic product
GPS	Global Positioning System
Harbor District	Long Beach Harbor District
HDP	Harbor Development Permit
I-	Interstate
ICTF	Intermodal Container Transfer Facility
ILUT	Integrated Land Use Tool
IP	Port-Related Industrial
IPI	Inland Point Intermodal
LBCT	Long Beach Container Terminal
LBER	Long Beach Energy Resources Department
MLLW	mean lower low water
MOA	Memorandum of Agreement
MSC	Multi-Service Center
MTSA	Maritime Transportation Security Act
N/A	not applicable
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
No.	Number
NRG	NRG Energy, Inc.
OHSPER	Outer Harbor Sediment Placement and Ecosystem Restoration
PD-21	Planned Development District 21 (Queensway Bay)
PEIR	Program Environmental Impact Report
PMP	Port Master Plan
Port or POLB	Port of Long Beach
PRC	Public Resources Code
RMP	Risk Management Plan
Ro/Ro	roll on/roll off

DRAFT

Acronym	Definition
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SERRF	Southeast Resource Recovery Facility
TEU	twenty-foot equivalent unit
the City	City of Long Beach
U.S.	United States
ULCS	ultra large container ships
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VLCC	very large crude carriers
WASSS	Western Anchorage Sediment Storage Site
WRAP	Water Resources Action Plan

DRAFT

EXECUTIVE SUMMARY

The Port of Long Beach (Port or POLB) is one of the nation's busiest seaports and a leading gateway for trade between the United States (U.S.) and the Pacific Rim. The Port handles trade valued at more than $194 billion annually and supports approximately 51,090 Port-related jobs in the Long Beach area, over 576,350 jobs in Southern California, and approximately 2.6 million trade-related jobs across the nation. The Port and its facilities are an essential element of the national maritime industry.

The California Coastal Act of 1976 (CCA) identifies the Port as one of only five locations in the state's coastal zone approved for the purposes of international maritime commerce. The CCA requires ports to prepare and adopt master plans for land and water areas within their boundaries that are located in the coastal zone. Port Master Plans (PMPs) are long-range planning and policy documents that guide development and define allowable land and water uses for port jurisdictions; PMPs also ensure consistency with CCA requirements related to water-dependent and water-related activities, public access to coastal resources, and environmental protection.

The Port of Long Beach PMP was last comprehensively updated and certified in 1990. In the ensuing 30 years, the Long Beach Harbor District (Harbor District) has undergone a number of major physical changes; more importantly, the maritime industry that the Port serves has changed dramatically, the Port's role as a steward of other public resources (e.g., recreation and wildlife) has expanded beyond the scope envisioned by the 1990 PMP, and strategic challenges such as climate change and sustainability have come to the forefront. Accordingly, the 1990 PMP no longer adequately reflects its planning needs and does not provide a sound basis for addressing the challenges and opportunities of the future.

The Port is undertaking this comprehensive PMP Update to assess future land and water uses in the Harbor District and to ensure that the PMP reflects the changes that have occurred since the 1990 PMP. The PMP Update will reflect changes in the global shipping industry, technological advances, and important factors such as climate change and energy resources consistent with Green Port Policy objectives. The PMP Update considers the comprehensive environmental policy (the Green Port Policy, adopted in 2005, to establish a framework for environmentally friendly Port operations) as a strategic priority in the development of Port facilities to accommodate forecasted cargo activity. The PMP Update is also needed to re-evaluate land uses and ensure permitting flexibility for future development and has been developed to be consistent with the requirements of the CCA. Through this master planning process, the Port is strategically managing resources and proactively preparing for future challenges to remain competitive in the rapidly changing global economy.

ES.1 OVERVIEW OF THE PMP UPDATE

PLANNING PROCESS

The Port has used its comprehensive communications program for engaging the community, stakeholders, and general public in preparation of and during the PMP Update. The Port recognizes that public and stakeholder engagement is an important element of the PMP Update development process and has gathered and integrated public input into the planning and decision-making process.

As a key part of the process for developing the PMP Update, the Port engaged with a broad range of stakeholders, including community groups, environmental organizations, operators, tenants, and Port users. During that process, the Port established the following guiding principles that are

DRAFT

key concepts reflecting stakeholder feedback received during the PMP Update development process:

- Proactively plan for the future by modernizing facilities and infrastructure and creating operational efficiencies where possible;
- Fully integrate the Green Port Policy into land use planning and policy, including the advancement of environmental justice for adjacent Port communities;
- Ensure safety and security in all operations, land uses, and for all users;
- Continue to provide and enhance access to information, educational opportunities, recreational amenities, and cultural opportunities;
- Support and advance opportunities for workforce development commensurate with Port growth and equip future workers with the necessary skill sets; and
- Continue to collaborate with all stakeholders on land use planning and development.

DEVELOPMENT GOALS

The PMP Update addresses the Port's long-range planning goals related to future development. The goals balance the Port's role as an essential element of the national maritime industry with its responsibilities to protect coastal resources and maximize public access and recreational opportunities, while also maintaining consistency with policies and applicable regulations. In addition, the goals are intended to prioritize Primary Port and Port-related uses within existing industrialized areas while promoting compatibility with other uses within the Harbor District.

Goal 1. Accommodate Forecasted Demand for Diverse Cargoes

A primary goal of the PMP Update is to accommodate forecasted demand of diverse cargoes (e.g., container, liquid bulk, dry bulk, break bulk, and roll on/roll off [Ro/Ro]) within the Harbor District. An objective of the PMP Update is to maintain the Port's market share within the San Pedro Bay Port Complex. Cargo handling capacity may be enhanced by introducing more-efficient modes of operation on existing terminals. The PMP Update places a priority on accommodating larger vessels in the Middle Harbor and Outer Harbor (south of the Gerald Desmond Bridge) where there are fewer navigational constraints.

Goal 2. Develop Modern Terminal Facilities with Efficient Operations

Port facility modernization is necessary to optimize operational efficiencies, increase resilience against future risks such as climate change, and promote safety and security in design and operations. The PMP Update is a market-driven plan that will guide future capital planning and development. It is intended to be a flexible tool for the implementation of future projects, rather than a definitive timeline of capital improvements.

Goal 3. Integrate Green Port Policy and Land Use Planning

The Port demonstrates environmental stewardship through implementation of its Green Port Policy. Elements of the Green Port Policy include improvements to air quality, water quality, sediment management practices, sustainable energy initiatives, sea level rise adaptation, and protection of marine habitat. In addition, the Port is committed to engaging with the community on matters of environmental justice as efforts continue to reduce the negative effects of Port operations. New land use and water use designations in this PMP Update facilitate continued and future implementation of Green Port Policy initiatives.

DRAFT

Goal 4. Protect and Enhance the Coast for the Benefit of All Port Users and Communities

While the Port is an international maritime gateway with connections to points across the globe, it maintains a unique commitment to neighboring communities affected by Port operations. To maximize benefits to these communities, important Port goals include protecting and enhancing the coastal environment for the enjoyment of visitors to the waterfront. Under the Public Trust Doctrine, the Port acts as a steward of public tidelands granted in trust by the state for the benefit of the people of California. Public trust uses are generally limited to water-dependent activities, including commerce, fisheries, navigation, ecological preservation, and recreation. The public's right to water access and recreational opportunities (e.g., pedestrian and bicycle paths) is maintained through long-range land use planning and the Port's ongoing initiatives.

FACTORS AFFECTING DEMAND FOR PORT DEVELOPMENT

While a primary goal of the PMP Update is to accommodate forecasted growth of diverse cargoes, evolving terminal operational capabilities and changes within the global marketplace make today's planning process challenging. Essential factors affecting the demand for Port development include the following:

- The Port has a major role in facilitating the distribution of commerce and commodities throughout extensive market areas (i.e., international and domestic).
- Factors impacting international trade patterns include a country's macroeconomic environment, global demand for raw and finished goods, and the availability and price of energy resources.
- Proposed tenant facility developments are coordinated between the Port and its tenants.
- The Port competes with state and regional operating port authorities that may have access to larger economic development opportunities and control over more of the supply chain costs.

Market Commodities and Trade Routes

The Port handles imports and exports from over 150 countries, although trade with Pacific Rim countries has historically accounted for the largest volume of shipments through the Port.

New global transportation factors continue to place pressure on the U.S. maritime transportation industries. Three major factors will have future impacts on port planning:

- Growth or decline in global trade;
- Deployment of ultra large container ships on specific trade routes and the cascading effects on transpacific trade routes; and
- Competition among ports and intermodal service providers for cargo destined for the U.S. Midwest.

These factors are being driven by growing populations and expansion of the middle class, especially within the Southeast Asia/India markets, forecasted increases in global gross domestic product within the next 20 years, and escalating demands for energy in these emerging markets. As population growth and consumer demands shift to the Southeast Asia/India markets, pressure will be placed on carriers to evaluate vessel deployments and trade routes. These decisions will be influenced by trends in vessel size and improvements to the Panama and Suez canals.

DRAFT

San Pedro Long-Term Unconstrained Cargo Forecast

The San Pedro Bay Long-Term Unconstrained Cargo Forecast provides a 25-year forecast of growth of container and non-container cargo demand at the Port of Long Beach and Port of Los Angeles. The cargo forecasts are demand-based and do not account for practical constraints related to the physical and operational capacity of the Ports. The study forecasts a 4 percent compound annual growth rate in the throughput of container traffic, with 98 percent of the container throughput coming from international sources. Distribution from the ports of international containers will rely on inland point intermodal, local trans-loads via trucks, and trans-loads via rail. Forecasts for non-container cargoes, including dry bulk, liquid bulk, break bulk, and Ro/Ro, are mixed based on expected changes in domestic and foreign industrial demand for various commodities.

Port Competitiveness

A key factor in the future growth of cargo volumes through the Port of Long Beach will be the effects of competition from other ports, not only the Port of Los Angeles but other West Coast ports and even ports on the U.S. East and Gulf coasts. Existing data and forecasts suggest that retaining the inland point intermodal (IPI) portion of the Port's cargo throughput will require maintaining the Port as a preferred gateway for cargo from the Pacific Rim. This will be achieved by controlling costs, improving goods movement infrastructure, and ensuring adequate facilities for the largest vessels that will enter the transpacific services. Costs can be controlled by improving efficiency through optimizing terminal design and operating modes to handle the flood of cargo from such large vessels, modernizing logistics management outside the terminals, and implementing a variety of other measures. The goods movement infrastructure, especially the rail network and intermodal facilities, must be expanded and modernized to accommodate future intermodal cargo volumes. Finally, channels, turning basins, berths, and wharves must be expanded, reconfigured, and strengthened as necessary to ensure safe operation of the ultra-large vessels of the future.

Port-Wide Capacity

The Port conducted a land use study to analyze the capacity of the Port's marine terminals. The study determined that the Port-wide constrained container capacity is approximately 13.6 million containers (twenty-foot equivalent units [TEUs]) per year, representing roughly double the throughput in 2017. The Port has sufficient capacity to accommodate demand forecasted for San Pedro Bay up to year 2032. The study also concluded that the Port would need to expand the terminals' container yard capacity to increase overall container throughput. Existing non-container terminal facilities appear to be generally adequate in terms of capacity to accommodate future non-container cargo growth, although the kinds of terminals needed may change over time in response to market forces.

PLAN ELEMENTS

The plan elements establish the policy framework for future Port development and provide a Port-wide perspective on major functional areas or policy areas. The PMP Update encompasses eight plan elements:

- Public Access and Recreation;
- Environment and Sustainability;
- Climate Change Adaptation;
- Transportation and Circulation;

DRAFT

- Navigation;
- Terminal Operations;
- Rail Operations; and
- Oil Operations.

Public Access and Recreation

The Public Access and Recreation Element reflects the Port's commitment to protecting California's coast and access to coastal resources for the benefit of all people, in accordance with the CCA. As part of this commitment, the Port strives to preserve and enhance access to designated public areas and facilities for fishing, viewing, and other recreational activities. The planning goals for this element include protecting California's coastal resources and public access to the coast; providing safe and secure access to the Port to the public, including offering recreational activities; developing recreational opportunities for visitors to Queensway Bay; and encouraging alternative means of transportation to and from Queensway Bay, including recreational boat, bicycle, and foot.

Environment and Sustainability

The Environment and Sustainability Element embodies the Port's ongoing efforts to preserve and enhance the environment through its leadership in innovative goods movement, natural resources stewardship, and sustainability. The planning goals for this element include reducing environmental and health impacts from Port operations; preserving and enhancing natural resources at the Port so that all communities may benefit from them; minimizing habitat loss; identifying and remediating soil and groundwater contamination; promoting on-site renewable energy generation; and mitigating the potential impacts from proposed developments.

Climate Change Adaptation

The Climate Change Adaptation Element outlines the Port's goals for climate adaptation and coastal resiliency. The planning goals for this element include managing risks associated with climate change, including sea level rise and extreme weather, based on the best available science; safeguarding vulnerable assets to minimize impact of damage or loss; and developing and implementing adaptation strategies to protect the Port against the effects of climate change.

Transportation and Circulation

Transportation and circulation is an essential element for establishing policy direction for transportation activities within the Port. The planning goals for this element include reducing impacts of Port-related truck traffic on local roadways; managing truck traffic to and from the Port; improving the circulation of people and goods within the Port to support safe, efficient operations; coordinating Port development and operations with regional transportation projects; providing safe and convenient access to Queensway Bay visitors; and providing safe and secure bicycle and pedestrian paths that connect with the California Coastal Trail.

Navigation

Navigation is a critical planning element focused on accommodating the world fleet and maintaining navigational capabilities within the Harbor District. The planning goals for this element include providing deep-water access to commercial berths and anchorage areas to accommodate existing and future vessels; enhancing navigation capabilities for vessel safety while transiting or maneuvering within the Harbor District; improving access to anchorage areas within and adjacent

DRAFT

to the harbor's main channel; minimizing potential traffic conflicts between vessels; and managing the placement of contaminated sediment.

Terminal Operations

The Terminal Operations Element focuses on changes in vessel sizes, terminal capacities, the intermodal supply chain, and advances in technology that impact the Port's approach to terminal operations. The planning goals for this element include enhancing the capacities of container terminals to accommodate future demand; promoting cargo diversity; streamlining the movement of cargo within the port complex; modernizing container terminals to improve operational efficiency; and transitioning to cleaner operations consistent with the Clean Air Action Plan.

Rail Operations

The Rail Operations Element addresses the rail facilities serving the San Pedro Bay Ports, existing intermodal capabilities, and priorities with respect to future rail system improvements. The planning goals for this element include reducing regional truck traffic and congestion by increasing on-dock rail capabilities; increasing the velocity of cargo that is moved through on-dock rail facilities; and minimizing or removing constraints on the rail system so that a greater volume of cargo can move by rail.

Oil Operations

Oil production activities occur alongside Primary Port uses in the Harbor District. The overall goal of oil operations within the Port is to maximize economic recovery of oil and gas from the area. The planning goals for this element include consolidating oil and gas production into designated areas; avoiding damage and/or interference with Port activities that can result from oil and gas production; and ensuring oil field operational safety.

PLANNING DISTRICTS AND DEVELOPMENT

Planning Districts

To facilitate land use planning within the Harbor District, the PMP Update defines planning districts, which are geographic areas generally bound by major landmarks such as transportation corridors or navigational channels. The function of these planning districts is to organize land uses throughout the Harbor District and to promote land use compatibility among existing and new uses. Within each planning district, permitted land uses and water uses are defined based on the planning goals for the district.

The PMP planning districts have evolved since the certification of the PMP in 1978. This PMP Update reduces the number of planning districts from 10 to 7 and modifies the boundaries of some individual planning districts (**Figure ES-1**). The PMP Update would consolidate the planning districts based on current and projected land uses. The proposed planning districts are: 1) North; 2) Northeast; 3) Northwest; 4) West Basin; 5) Southeast; 6) Anchorage and Open Water; and 7) Queensway Bay. The PMP Update planning districts and allowable uses are summarized in **Table ES-1**.

DRAFT



Figure ES-1. PMP Update Planning Districts and Existing Land Uses

Table ES-1. PMP Update Planning Districts and Allowable Uses

Planning District	Land Uses	Water Uses
1 – North	Port-Related Facilities Institutional Facilities[1] Oil and Gas Production Facilities	N/A
2 – Northeast	Primary Port Facilities Port-Related Facilities Maritime Support Facilities Hazardous Cargo Facilities Oil and Gas Production Facilities Utilities Institutional Facilities Visitor-Serving Commercial Facilities	Navigable Corridor Maneuvering and Berthing Recreational Sediment Management Areas Environmental Protection
3 – Northwest (Formerly 1990 PMP Districts 3 and 4)	Primary Port Facilities Port-Related Facilities Maritime Support Facilities Hazardous Cargo Facilities Oil and Gas Production Facilities Utilities Renewable Energy Resources	Navigable Corridor Maneuvering and Berthing Sediment Management Areas Environmental Protection
4 – West Basin	Primary Port Facilities Port-Related Facilities Maritime Support Facilities Hazardous Cargo Facilities Oil and Gas Production Facilities Utilities Institutional Facilities Renewable Energy Resources Environmental Protection	Navigable Corridor Maneuvering and Berthing Sediment Management Areas Environmental Protection
5 – Southeast (Formerly 1990 PMP Districts 5, 7, 8, and 10)	Primary Port Facilities Port-Related Facilities Maritime Support Facilities Hazardous Cargo Facilities Oil and Gas Production Facilities Institutional Facilities Environmental Protection	Navigable Corridor Maneuvering and Berthing Sediment Management Areas Environmental Protection
6 – Anchorage and Open Water	N/A	Anchorage Area Navigable Corridor Maneuvering and Berthing Sediment Management Areas Environmental Protection
7 – Queensway Bay (Formerly 1990 PMP District 9)	Primary Port Facilities Maritime Support Facilities Oil and Gas Production Facilities Institutional Facilities Visitor-Serving Commercial Facilities Recreational Open Space Facilities Environmental Protection	Navigable Corridor Maneuvering and Berthing Recreational Sediment Management Areas Environmental Protection

Key: PMP = Port Master Plan
Note: [1] Per PMP Amendment #10, Institutional Facilities is a limited land use in Planning District 1 for the City of Long Beach Multi-Service Center.

DRAFT

Land and Water Use Designations

The PMP Update would modify the 1990 PMP as amended land and water use designations as described in **Table ES-2.**

Table ES-2. Existing and Proposed Land and Water Use Designations

1990 PMP Use Category	Proposed PMP Update Use Category	Comments
Land Use		
Primary Port Facilities	Primary Port Facilities	No change.
Hazardous Cargo Facilities	Hazardous Cargo Facilities	No change.
Port-Related Industries and Facilities	Port-Related Facilities	This category has been renamed to eliminate reference to industries.
Ancillary Port Facilities	Maritime Support Facilities	This category has been renamed to specify water-dependent facilities.
Commercial/Recreational Facilities	Visitor-Serving Commercial Facilities	This category has been renamed to specify general public commercial uses.
	Recreational Open Space Facilities	This is a new category that includes non-commercial general public areas, such as parks and waterfront access.
Non-Port Related Areas	Institutional Facilities	This category consolidates Non-Port Related Areas and Federal Use into a new category that includes activities associated with federal, state, regional, and local public agencies.
Federal Use		
Oil and Gas Production	Oil and Gas Production Facilities	This category has been renamed to specify facilities for production of oil and gas.
Utilities	Utilities	This category has been redefined to include only major utility facilities for electricity generation, water treatment, gas, telecommunications, resource recovery, waste handling, and rights-of-way dedicated for utilities.
N/A[1]	Renewable Energy Resources	This is a new category that includes areas utilized for power generation from renewable sources within the Harbor District.
N/A[1]	Environmental Protection	This is a new category that includes areas reserved for environmental restoration and protection.
Water Use		
Anchorage Areas	Anchorage Areas	No change.
Navigable Corridor	Navigable Corridor	No change.
Maneuvering Areas	Maneuvering and Berthing	This category was revised to specify the use of berthing areas adjacent to cargo handling berths and designated turning basins.
Recreational/Sport Fishing	Recreational	This category has been revised to include areas designated for general recreational navigation.
N/A[1]	Sediment Management Areas	This is a new category that includes areas for temporary and permanent placement of harbor dredge materials.

DRAFT

Table ES-2. Existing and Proposed Land and Water Use Designations		
1990 PMP Use Category	**Proposed PMP Update Use Category**	**Comments**
N/A[1]	Environmental Protection	This is a new category that includes water areas reserved for environmental restoration and protection.
Key: PMP = Port Master Plan; N/A = not applicable Note: [1] These are new land and water use categories that were not included in the 1990 PMP as amended.		

Ongoing/Allowable and Anticipated Projects

The PMP Update identifies two categories of projects within the Harbor District. Ongoing/allowable projects are those that are consistent with the 1990 PMP as amended and for which no further action by the California Coastal Commission (CCC) is required (some of those projects are not actually under construction yet, but they are still included in the 1990 PMP as amended and, thus, are considered "ongoing" for the purposes of this PMP Update). Anticipated projects are those that are expected for implementation in future capital development, but are not consistent with the 1990 PMP as amended. These anticipated projects all involve elements such as dredging, filling, or diking that must specifically be included in the PMP. Since they were not contemplated at the time of the 1990 PMP and have not been the subject of subsequent PMP amendments, they are not consistent with 1990 PMP as amended. Anticipated projects are proposed for approval and certification by the CCC in association with this PMP Update. **Table ES-3** summarizes the PMP Update projects by planning district.

Table ES-3. PMP Update Projects		
Planning District	**Ongoing/Allowable Projects**	**Anticipated Projects**
1	Pier B On-Dock Rail Support Facility	
2	Pier B On-Dock Rail Support Facility Gerald Desmond Bridge Replacement Pier B Street Support Yard Fireboat Station No. 20 Fourth Track at Ocean Boulevard Pier D Street Realignment Toyota Logistics Services Improvement Project	
3	Terminal Island Wye Gerald Desmond Bridge Replacement Pier S Mixed Use Development Pier S Shoreline Enhancement Southern California Edison Transmission Tower Replacement	
4	Terminal Island Wye Pier T Echo Support Yard Gerald Desmond Bridge Replacement POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project	Pier T Improvements Pier W Terminal Development
5	Middle Harbor Redevelopment Program Pier G Terminal Redevelopment Gerald Desmond Bridge Replacement Double Track Access from Pier G to J Fireboat Station No. 15 Ocean Boulevard Bicycle Gap Closure Administrative Building Demolition	Pier J Terminal Redevelopment Protective Boat Basin (Berth F202)

DRAFT

Table ES-3. PMP Update Projects

Planning District	Ongoing/Allowable Projects	Anticipated Projects
	Administrative Building Site Support Yard (Expansion) POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project	
6	POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project	OHSPER
7	Pier J Bicycle Path Shoemaker Bridge Replacement Long Beach Cruise Terminal Improvements Queen Mary Island	

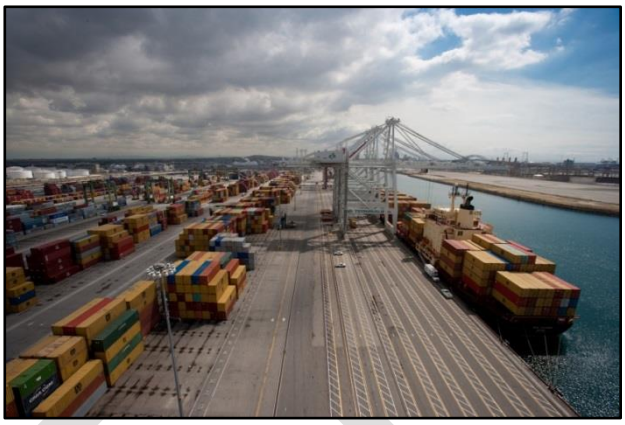
Key: No. = Number; OHSPER = Outer Harbor Sediment Placement and Ecosystem Restoration; PMP = Port Master Plan; POLB = Port of Long Beach

DRAFT

This page intentionally left blank

DRAFT

1 INTRODUCTION



The Port of Long Beach (Port or POLB) is located in San Pedro Bay in southern Los Angeles County, adjacent to the Port of Los Angeles (i.e., San Pedro Bay Port Complex). POLB is one of the nation's busiest seaports and a leading gateway for trade between the United States (U.S.) and Asia. As the second busiest container seaport in the U.S., the Port handles trade valued at more than $194 billion annually and supports approximately 51,090 jobs in the Long Beach area, more than 576,350 jobs in Southern California, and approximately 2.6 million trade-related jobs across the nation. In 2018, the busiest year in its history, the Port handled a record 8.1 million twenty-foot equivalent units (TEUs)[1].

The California Coastal Act of 1976 (CCA) identifies the Port as one of only five locations in the state's coastal zone approved for the purposes of maritime commerce. The CCA identifies the Port and its facilities as an essential element of the national maritime industry. Port activities should be water dependent and give highest priority to navigation, shipping, and necessary support facilities to accommodate the demands of foreign and domestic waterborne commerce. Under the CCA, existing ports are encouraged to modernize and develop as necessary to minimize or eliminate the need for the creation of new ports.

The CCA requires ports to prepare and adopt master plans for land and water areas within their boundaries that are located in the coastal zone. Port Master Plans (PMPs) are long-range planning and policy documents that guide development and define allowable land and water uses for port jurisdictions. PMPs describe how ports intend to develop and manage land and water areas, and how that management will be consistent with CCA requirements related to water-dependent and water-related activities, public access to coastal resources, and environmental protection. Required elements of PMPs are outlined in the CCA and include proposed uses of land and water areas, facilities to serve commercial traffic, an analysis of potential environmental impacts, a list of anticipated projects, and provisions for public participation in port planning and development decisions (California Public Resources Code, Section 30711).

PMPs outline land use goals, operational initiatives, and environmental policies of ports, and evaluate the consistency of future developments and land uses with those goals, initiatives, and policies. PMPs are the functional equivalent of a Local Coastal Program. Following California Coastal Commission (CCC) certification of the PMP, the Port is granted authority to issue Coastal Development Permits for all development within the Long Beach Harbor District (Harbor District). Approvals of certain categories of development defined in CCA Section 30715 may be appealed to the CCC. Appealable projects include liquefied natural gas and crude oil projects that could have a significant impact on oil and gas supplies; wastewater treatment facilities except those producing incidental amounts associated with Port activities; road or highway projects that are not principally for internal circulation within the Port; office and residential buildings not associated with Port administrative activities; hotels, motels, and shopping facilities not associated with commercial goods for water-oriented purposes; commercial fishing facilities; recreational small

[1] A TEU is a measure of containerized cargo volume roughly equivalent to the smallest-size shipping container.

DRAFT

craft marina related facilities; oil refineries; and petrochemical production plants (CCA Section 30715).

PMPs must be amended from time to time as projects or other circumstances arise that are not specifically included in the existing PMP. Examples include changes to the Port's physical configuration through land creation or channel widening, changes in uses allowed in specific planning districts, and changes in PMP policy or guidance. An amendment describes the change that is contemplated and analyzes its consistency with the CCA. Amendments must be approved by the CCC, and, once approved, become part of the PMP.

1.1 1990 PORT MASTER PLAN AND AMENDMENTS

On October 17, 1978, the CCC certified the Port's PMP as being in conformance with the policies of Chapter 8 (Ports) of the CCA. A list of PMP amendments certified by the CCC since 1978 is shown in **Table 1.1-1**. The amendments range from specific projects and programs to comprehensive updates of the PMP.

Table 1.1-1. PMP and Amendment Certifications

PMP	Title	CCC Certification Date
Original	Port of Long Beach Port Master Plan	October 1978
Amendment 1	Risk Management Plan	June 1981
Amendment 2	Guidelines for Implementation of the Port of Long Beach Certified Port Master Plan	February 1982
Amendment 3[1]	Port of Long Beach Port Master Plan Update	October 1983
Amendment 4	Pier A Berths 5-10 Expansion	June 1984
Amendment 5	Pier J Landfill and Anaheim Bay Mitigation Projects	March 1988
Amendment 6[1]	Port of Long Beach Port Master Plan Update	September 1990
Amendment 7	De Minimis Port Master Plan Amendment – Placement of Clean Dredge Material in Main Channel	September 1995
Amendment 8	Bolsa Chica Habitat Mitigation Credits	October 1996
Amendment 9	Naval Complex Permitted Uses; Terminal Island Planning District Boundary Modifications; and Homeless Service Center	July 1996
Amendment 10	Pier T Marine Terminal; Modify Permitted Location for Homeless Service Center; Add Credits to Habitat Mitigation Credit Account	May 1997
Amendment 11	Temporary Storage or Permanent Disposal of Clean Dredge Material at Borrow Site in Southwest Harbor Planning District	May 1998
Amendment 12	Construction of 30-acre Landfill in Slip 2 at Pier E in Middle Harbor Planning District	October 1998
Amendment 13	Modification of Anticipated Projects on Terminal Island	November 1998
Amendment 14	Terminal Island Planning District Landfill Projects	June 1999
Amendment 15	Construction of a 42 Acre Landfill at Piers G and J	December 2000
Amendment 16	Construction of Landfill on Pier D/E/F in the Middle Harbor Planning District	March 2001
Amendment 17	Widening of the Cerritos Channel	August 2002
Amendment 18	Modernization of the Existing Pier J South	N/A[2]
Amendment 19	Widening of the Navy Mole	February 2003

Key: CCC = California Coastal Commission; N/A = not applicable; PMP = Port Master Plan; POLB = Port of Long Beach

Notes: [1] Comprehensive updates to the PMP occurred with Amendment 3 (1983) and Amendment 6 (1990).
[2] Amendment 18 was initially considered by POLB but not carried forward for approval by the CCC.

Certification of the original PMP in 1978 was subject to the Port submitting a revised plan for re-certification within 5 years and preparing a Risk Management Plan (RMP) for assessing hazardous risks (i.e., transfer, handling, storage, and transport of hazardous cargoes). The RMP, certified by the CCC on June 16, 1981, was the first amendment to the 1978 PMP. The PMP was reviewed in 1983 to determine its adequacy and was updated to reflect the changing conditions that had occurred. The 1983 PMP was certified and became the third amendment to the 1978 PMP.

The PMP was updated again in 1990, representing the sixth amendment to the PMP. The 1990 update focused on reflecting changes that had occurred since the 1983 update. In 1990, the Port of Long Beach and Port of Los Angeles jointly completed the Operations Facilities and Infrastructure – 2020 Plan for San Pedro Bay Port Complex, which set a long-term development vision for the Harbor District. In addition to incorporating this long-term plan, the 1990 PMP also certified a number of anticipated projects consistent with the PMP and the CCA. Since 1990, the Board of Harbor Commissioners (BHC) and CCC have approved and certified 12 additional amendments.

Once certified by the CCC, this PMP Update would be Amendment #20. This PMP Update does not replace the 1978 PMP, 1983 PMP, or 1990 PMP due to the comprehensive data used to approve and certify these specific plans and the associated projects. Rather, this PMP Update is an independent document that incorporates the amendments approved since 1990 and addresses current economic trends and foreseeable projects. It should be considered in conjunction with the previously certified documents.

1.2 PURPOSE OF THE PORT MASTER PLAN UPDATE

Although there have been numerous amendments to the Port's PMP, the current PMP was last comprehensively updated and certified in 1990. In the ensuing 30 years, the Harbor District has undergone a number of major physical changes; more importantly, the maritime industry that the Port serves has changed dramatically, the Port's role as a steward of other public resources (e.g., recreation and wildlife) has expanded beyond the scope envisioned by the 1990 PMP, and strategic challenges such as climate change and sustainability have come to the forefront. Accordingly, the 1990 PMP as amended no longer adequately reflects its current planning priorities and does not provide a sound basis for addressing the challenges and opportunities of the future.

The purpose of this comprehensive PMP Update is to ensure that the Port's master planning document 1) reflects the changes in the Harbor District that have occurred since the PMP was last certified in 1990; and 2) allows the Port to respond to future changes, both anticipated and unexpected, in land use policy, maritime commerce, and facilities development. As such, the PMP Update is intended to reflect changes in the global shipping industry, technological advances, and important factors such as climate change and energy resources consistent with Green Port Policy objectives.

The overall development goals of the PMP Update include the following:

- Accommodate Forecasted Demand for Diverse Cargoes;
- Develop Modern Terminal Facilities with Efficient Operations;
- Integrate Green Port Policy and Land Use Planning; and
- Protect and Enhance the Coast for the Benefit of All Port Users and Communities.

These goals are discussed in further detail in Section 3 (Development Goals and Guiding Principles).

1.3 NEED FOR THE PORT MASTER PLAN UPDATE

Since the 1990 PMP, the global shipping industry has undergone significant changes aided by technological advances. In addition, cargo volumes at the Port have risen dramatically from 1.5 million TEUs in 1990 to 8.1 million TEUs in 2018. A sustained increase in cargo activity and execution of large capital projects, including the final phases of the Middle Harbor Terminal Redevelopment Program, have prompted the need for a comprehensive update to the 1990 PMP. This PMP Update provides a long-term plan for the development of Port facilities to accommodate forecasted cargo activity while supporting the Port's strategic priorities that include environmental stewardship, protecting the health of adjacent communities, and providing opportunities for jobs.

The strategic direction of the Port is based on the Port of Long Beach Strategic Plan (2019), which envisions the Port as a facilitator of international trade with a commitment to operational excellence, environmental stewardship, safety, security, and community partnership.

Beginning with this update, the PMP will be updated regularly and amended as the port industry responds to forecasts of cargo demand, economic trends of global trade, increasing sizes of container vessels, changing cargo handling technologies, and environmental sustainability goals and requirements.

1.4 PORT MASTER PLAN UPDATE PLANNING PROCESS

The Port has embarked on a master planning process to comprehensively review and update the 1990 PMP, which defines the vision and necessary policies and guidelines to direct future development of the Port. As part of this process, the Port is strategically managing resources and proactively preparing for future challenges to remain competitive in the rapidly changing global economy. The Port's vision, mission, and value proposition underlie the approach taken in the Port's master planning process that guides future land use and development, as follows:

- *Vision* – The Port will be the global leader in operational excellence and environmental stewardship.
- *Mission* – The Port is an international gateway for the reliable, efficient, and sustainable movement of goods for the benefit of our local and global economies.
- *Value Proposition* – Customers choose the Port because it is the greenest, most reliable, and most cost-effective gateway for the movement of goods to major consumer markets in the U.S.

The Port used its comprehensive communications program for engaging the community, stakeholders, and general public in preparation of and during the PMP Update. The Port recognizes that public and stakeholder engagement is an important element of the PMP Update process and has gathered and integrated public input into the planning and decision-making process. During the initial development phase, the Port conducted numerous public engagement activities with the general public and specific stakeholder groups. During these events, participants learned about the PMP Update process and were asked to provide general feedback as well as input on planning goals and recommended actions. The PMP Update Communications and Engagement Program Summary Report detailing the events is included in Appendix B.

1.5 THE PORT OF LONG BEACH

1.5.1 Establishment of the Port

In 1911 the State of California granted state tidelands "in trust" to the City of Long Beach (the City) "for the establishment, improvement, and conduct of a harbor…for the promotion and

accommodation of commerce and navigation" (Chapter 676, Statutes of 1911). The City promptly designated a portion of the City's tidelands at the mouth of the Los Angeles River as the Port and authorized the dredging of channels and construction of docks. Subsequent state legislation and City actions broadened the uses of tidelands trust lands to include commerce, navigation, marine recreation, and fisheries, and to establish the Long Beach Harbor Department, with jurisdiction over the Harbor District.



1.5.2 Development of the Port

Over the next century the Port expanded rapidly to support the growth of the Southern California economy. Channels were dredged, and the dredged material used to create new land for marine terminals. Lumber to support the building industry and petroleum products from newly developed oil fields (including those on Terminal Island and Pier A) were major cargoes in the early years of the Port. The years leading up to World War II saw a substantial increase in activity as the U.S. Navy established a major naval base and shipyard on Terminal Island. During the war the Port played a vital role in supporting operations in the Pacific theater, and numerous cargo facilities were constructed as a result.

The explosive population growth of the region in the post-war years led to more terminal development, but the major change in the appearance of the Port was driven by the advent of containerization. This mode of cargo operations, which still dominates the maritime industry, requires terminals to consist of very large, open areas, for container storage, rather than the enclosed cargo sheds and relatively small terminals that characterized the former cargo handling mode. Accordingly, the Port embarked on a program of land creation and channel deepening that has led to the Port's current configuration. Those changes included expanding Pier J, filling slips on Pier E and Pier G, converting an oil field on Pier A to a container terminal, and converting the former naval complex, which closed in 1996, to a container terminal.

1.5.3 The Port of Long Beach Today

The Port today comprises approximately 3,500 acres of land and 4,600 acres of water area, with 10 designated piers and 62 vessel berths supporting 22 shipping terminals (**Figure 1.5-1**). Much of the land area is devoted to the six container terminals, but the Port includes bulk terminals for dry products such as petroleum coke, cement, salt, coal, and gypsum; break bulk terminals for automobiles, lumber, steel, and other non-containerized, non-bulk cargoes; and liquid bulk terminals for petroleum products and chemicals.

1.5.4 Overview of Port Operations

Containers are the primary cargo moving through the Port. The Port's six container terminals have 80 berths and 71 modern, large gantry cranes for loading and unloading container vessels. In 2018, the busiest year in its history, the Port handled a record 8.1 million TEUs, a measure of containerized cargo volume roughly equivalent to the smallest-size shipping container.

DRAFT



Figure 1.5-1. Site Map

Other major cargoes include liquid bulk such as crude oil, refined products, and chemicals; dry-bulk cargoes such as gypsum, cement, aggregate, scrap metal, and petroleum coke; automobiles; and "break-bulk[2]" cargoes such as newsprint, forest products, fruit, steel coils and shapes, and other cargoes that require individualized handling.

The Port does not directly operate the cargo handling facilities; instead, it operates as a landlord port, leasing land and facilities (wharves, buildings, etc.) to companies engaged in maritime goods movement, such as stevedoring companies and other marine terminal operators, tugboat companies, various maritime service companies, and other water-dependent operations.

Vessels calling at the Port transit through navigational channels within the harbor, to and from their berths at marine terminals where their cargo is loaded and unloaded. In 2017, there were approximately 2,805 calls by oceangoing vessels. Container vessels are loaded and unloaded by large, electric-powered gantry cranes mounted on rails along the wharf face. Other cargoes are loaded and unloaded with conveyors (for most dry bulk), pipelines (for liquid bulk), or dock cranes, although automobiles are driven off the vessels onto the wharf. The amount of cargo a marine terminal handles in a given time period is defined as its throughput. A terminal's maximum possible throughput is its capacity, which is how much cargo the terminal could handle given its size, configuration, and equipment. A terminal's capacity may be limited by how many vessels it can handle ("berth-limited"), by how much cargo its landside facilities (e.g., container yard, truck gate, pumps, pipelines, and storage tanks) can handle ("backlands limited"), or by other factors.

Containers are sorted at the marine terminal container yards by a variety of diesel- or natural-gas-powered, diesel-electric hybrid, and electric-powered mobile cargo-handling equipment. Import containers that are loaded onto trucks are transported to destinations in Southern California and adjacent states, such as regional distribution centers and transloading warehouses. Portions of the import containers that are destined for more distant points in the central and eastern U.S. are loaded onto trains, either directly in the marine terminals or by being trucked to local intermodal railyards. Export containers follow the reverse pathways, with the exception that very few are handled at transloading facilities. In 2018, the Port handled 8.1 million TEUs, approximately, 23 percent of which were moved by on-dock rail and the rest by trucks. Liquid-bulk cargoes are transported to and from the marine terminals primarily by pipeline, although some is handled by trucks and railcars. The remaining cargo types are moved to and from marine terminals by trucks and trains. Most container terminals operate five day-shifts, Monday through Friday, and typically four to five off-peak (PierPass) shifts during week nights and Saturdays.

Road Network: The Port is served by three major freeways (Interstate [I]-710, SR 103, and I-110) and several major arterials (Ocean Boulevard/Seaside Avenue, Harbor Scenic Drive, Pico Avenue, and Anaheim Street). I-710 (Long Beach Freeway) connects the Port to I-405, to major railyards near downtown Los Angeles, and to the freeway network leading to the Inland Empire, where large goods distribution centers are located. SR 103 (Terminal Island Freeway) connects the Port to a nearby intermodal railyard and local distribution centers, and I-110 (Harbor Freeway) serves as a secondary connector to regional goods distribution facilities and I-405.

Local traffic uses Ocean Boulevard/Seaside Avenue and SR 47/103 to access marine terminals on Terminal Island (Piers S and T). Ocean Boulevard crosses the Back Channel to Terminal Island on the new Gerald Desmond Bridge that rises approximately 250 feet above the water and Seaside Avenue (SR 47) crosses the Port of Los Angeles' Main Channel and the Cerritos Channel to Terminal Island on similarly elevated bridges. Harbor Scenic Drive and Pico Avenue provide

[2] The term "break bulk" derives from days before containerization when virtually all non-bulk cargo was shipped on pallets or in crates, bales, bags, and barrels, but now refers to a more restricted range of non-containerized, non-bulk cargoes.

arterial access to marine terminals and other Port facilities on Piers A – J, and Anaheim Street provides east-west access to the northern portion of the Port.

Rail Network: A system of lead and spur tracks within the Port provides rail service to the marine terminals, including five on-dock intermodal railyards (i.e., rail facilities located within marine terminals that can transfer containers directly between vessels at dock and rail cars), supporting railyards and sidings, and a centralized signaling and control system. The Port's rail network is operated by a short-line rail company, Pacific Harbor Lines that provides railcar switching and train dispatching services.

Two Class 1 railroads, Union Pacific and Burlington Northern Santa Fe, provide rail service between the Port and the rest of the nation. The Class 1 railroads operate line-haul trains between the on-dock railyards and inland destinations (generally, east of the Sierra Nevada Mountains) and between nearby supporting railyards and the rest of the national rail network. Mainline trains access the Port via the Alameda Corridor, which connects the Port to the downtown railyards and the national rail network. Within the Port, both Class 1 and Pacific Harbor Lines trains use the Port's lead tracks that connect the Alameda Corridor to the various marine terminals. A key rail bottleneck is the single access to Terminal Island, over the Badger Bridge. That facility, a lift bridge that is traversed by all trains accessing the six container terminals and several other terminals on Terminal Island, experiences delays when the drawbridge is operated to allow vessel traffic to navigate the Cerritos Channel.

Port Activity: Today the Port is one of the nation's busiest seaports. Container throughput since 2005 is shown in **Figure 1.5-2** and annual import and export revenues from 2014 to 2018 are shown in **Table 1.5-1** and **Table 1.5-2**. The Port is a leading gateway for trade between the U.S. and Asia and supports over 2.6 million jobs nationally and generates billions of dollars in economic activity each year.

In 2018 total break bulk cargo was approximately 1.3 million metric revenue tons (less than 1 percent), dry bulk was approximately 8.2 million metric revenue tons (4.6 percent), and liquid bulk was 30.4 million metric revenue tons (16.9 percent). The remaining container cargo was approximately 140 million metric revenue tons (77.8 percent) (POLB 2019a). While a goal of the PMP Update to maintain cargo diversity, future land use and development within the Harbor District will focus on containerized cargo, which represents over 75 percent of the total cargo at the Port.

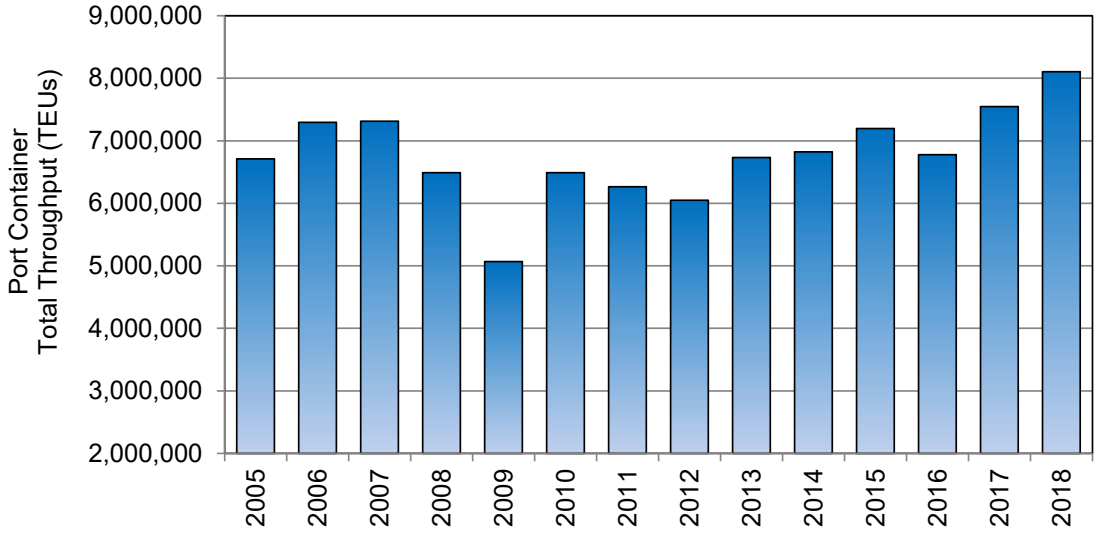


Figure 1.5-2. Port Container Total Throughput (2005–2018)

Table 1.5-1. Port of Long Beach Annual Import and Export Revenues (Metric Revenue Tons)[1]

Year	Coastwise	Foreign	Inter-Coastal	Total
Annual Import Tonnage				
2018	29,777,512	110,211,006	331,152	140,319,670
2017	31,683,111	103,854,067	319,609	135,856,787
2016	28,766,686	92,279,630	375,041	121,421,357
2015	27,762,129	96,903,385	373,415	125,038,928
2014	18,476,273	103,670,579	356,692	122,503,544
Annual Export Tonnage				
2018	1,238,648	35,821,382	2,271,806	39,331,836
2017	1,260,614	33,951,332	2,140,547	37,352,493
2016	1,213,438	33,011,049	2,206,279	36,430,766
2015	2,430,586	32,869,175	2,465,644	37,765,405
2014	3,157,786	35,849,985	2,342,178	41,349,949

Source: (POLB 2019a)
Note: [1] A metric revenue ton is a standard measure of cargo used in the maritime industry, but it has no direct equivalent in everyday weights because a metric revenue ton differs among commodities.

Table 1.5-2. Total Imports and Exports (Metric Revenue Tons)[1]

Year	Total
2018	179,651,506
2017	173,209,280
2016	157,852,123
2015	162,804,333
2014	163,853,493

Source: (POLB 2019a)
Note: [1] A metric revenue ton is the measure equivalent of the total assessed by the Port's tariff rate for a specific commodity within the specified category.

DRAFT

This page intentionally left blank

DRAFT

2 BACKGROUND

Numerous federal, state, and local laws, regulations, and policies affect the development and implementation of the Port Master Plan (PMP). Detailed information about background regulations and guidelines affecting development and the agencies that have jurisdiction within the Port of Long Beach (Port or POLB) Harbor District are provided in the original 1978 PMP, 1983 PMP, and 1990 PMP. These regulations and guidelines address the potential impacts of Port activities with respect to coastal resources management, biological resource management, air quality, transportation planning, and socioeconomic issues.

The primary purpose of this section is to summarize federal, state, regional, and local regulations that affect the Port, to discuss changes in regulations and guidelines that have occurred since the 1990 PMP, and to describe the Port's incorporation of those regulations and guidelines into its implementation of the PMP. Port policies and initiatives adopted since 1990 and studies involving environmental and land use issues are also discussed in this section. This section also discusses the Port's coordination efforts with federal, state, and regional agencies.

2.1 FEDERAL REGULATIONS

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972 provides for management of the nation's coastal resources to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." Section 307(c)(3)(A) of the CZMA states that "any applicant for a required federal license or permit to conduct an activity, in or outside the coastal zone, affecting any land or water use or natural resource of the coastal zone of that state shall provide a certification that the proposed activity complies with the enforceable policies of the state's approved program and that such activity would be conducted in a manner consistent with the program." In order to participate in the coastal zone management program, a state is required to prepare a program management plan. Once the plan and its enforceable program policies are approved, a state program gains "federal consistency" jurisdiction. This means that any deferral action (e.g., a project requiring federally issued licenses or permits) that occurs within a state's coastal zone must be consistent with state coastal policies before the federal action can occur.

Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 United States [U.S.] Code 1531–1543), as amended, provides for the conservation of endangered and threatened species and the ecosystems they inhabit. The U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration Fisheries share responsibilities for administering the ESA. Section 9 prohibits "take" of species federally listed as threatened or endangered. "Take" is defined as to harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct, and includes habitat modification or degradation that could potentially kill or injure wildlife by impairing essential behavioral patterns, including breeding, feeding, or sheltering. A take incidental to otherwise lawful activities can be authorized under Section 7 when there is federal involvement and under Section 10 when there is no federal involvement.

Section 7 of the ESA requires federal agencies to consult with and seek assistance of the Secretary of the Interior or Secretary of Commerce to ensure that actions authorized, funded, or carried out by federal agencies do not jeopardize the continued existence of threatened or endangered species, or result in the destruction or adverse modification of critical habitat for these species.

DRAFT

Federal Clean Air Act

The Clean Air Act (CAA) (42 U.S. Code Section 7401 et seq.) is the comprehensive federal law that regulates air emissions from stationary and mobile sources. This law includes U.S. Environmental Protection Agency (USEPA) authorization to establish National Ambient Air Quality Standards to protect public health and public welfare and regulate emissions of hazardous air pollutants. Under the CAA, the Diesel Emission Reduction Act and the CAA Advisory Committee represent established programs for reducing port emissions. Recently, USEPA announced the anticipated award of approximately $40 million in competitive grant funding through the Diesel Emission Reduction Act Clean Diesel Funding Assistance Program to achieve further reductions in diesel emissions. Since 2009, the Harbor District has received more than $8 million in grants for specific projects under federal clean air programs.

Federal Clean Water Act

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into waters of the U.S. and regulating quality standards for surface waters. The Act gave USEPA the authority to implement pollution control programs such as setting wastewater standards for industry. The basis for the CWA was enacted in 1948, and was called the Federal Water Pollution Control Act, but this was significantly reorganized and expanded in 1972. In 1977, the CWA as amended became the common name for the Act. A 1981 revision streamlined the municipal construction grants process.

Maritime Transportation Security Act of 2002

The Maritime Transportation Security Act (MTSA) of 2002 is designed to protect the nation's ports and waterways from terrorist attacks. The goal of the MTSA program is to prevent a Maritime Transportation Security Incident, which is defined as any incident resulting in loss of life, environmental damage, transportation system disruption, or economic disruption to a significant area. The Area Maritime Security Plan for the Harbor District is considered Sensitive Security Information under MTSA.

2.2 STATE REGULATIONS

California Coastal Act

The California Coastal Act (CCA) enacts the provisions of the CZMA in California. The CCA was enacted to provide policies and guidelines for the conservation and development of the California coastline. The CCA established policies, the coastal zone boundary, and different permitting procedures for projects within the coastal zone. Pursuant to CCA Section 30608, development prior to the effective date of the CCA (January 1, 1977) and which was previously permitted under the 1972 California Coastal Zone Conservation Act can be maintained and operated as previously permitted or existing. The CCA established the California Coastal Commission (CCC) and created a state and local government partnership to ensure that public concerns regarding coastal development are addressed. The following are the basic goals for the coastal zone:

- Protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources;
- Assure orderly, balanced utilization and conservation of coastal zone resources taking into account the social and economic needs of the people of the state;

- Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources, conservation principles, and constitutionally protected rights of private property owners;
- Assure priority for coastal dependent and coastal-related development over other development on the coast; and
- Encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone (Public Resources Code [PRC] Section 30001.5).

The CCA (PRC Section 30700 et seq.) identifies the Port and its facilities as "primary economic and coastal resources of the state, and an essential element of the national maritime industry" (PRC Section 30701). Existing ports are encouraged to modernize and construct necessary facilities to accommodate deep-draft vessels, considering the needs of waterborne commerce and other traditional and water-dependent and water-related facilities, to avoid the need to develop new ports elsewhere in the state (PRC Sections 30007.5 and 30701 [b]). The CCA also establishes that the highest priority for any water or land area use within the jurisdiction of the Board of Harbor Commissioners (BHC) shall be for developments that are completely dependent on such harbor water areas and/or harbor land areas for their operations (Sections 30001.5 [d], 30255, and 31260). The CCA further provides that ports should "[g]ive highest priority to the use of existing land space within harbors for port purposes, including, but not limited to, navigational facilities, shipping industries, and necessary support and access facilities (PRC Section 30708 [c])."

In 2015, the CCC adopted the Sea Level Rise Policy Guidance, which provides an overview of the best available science on sea level rise for California and recommended methods for addressing sea level rise for projects associated with CCC planning and regulatory actions. This guidance is intended to serve as a multi-purpose resource for a variety of audiences and includes a high level of detail on many subjects. Since the document is not specific to a particular geographic location or development intensity, readers should view the content as a menu of options to use if relevant, rather than as a checklist of required actions. A Science Update was adopted by the CCC in 2018 based on the best available science on sea level rise projections for California.

Pursuant to an amendment to the CCA in 2016 (AB 2616 [Burke]), the CCC was given new authority to consider environmental justice in their permitting process. The CCC adopted an environmental justice policy in March 2019 that provides a framework for considering environmental justice when making permit decisions. This legislation cross-references existing non-discrimination and civil rights law in the government code and requires the governor to appoint an environmental justice commissioner (CCC 2019).

California Tidelands Trust

The California State Lands Commission has authority over California's granted public trust lands and ungranted public trust lands (i.e., tidelands, submerged lands, and navigable waters). The Tidelands Trust also conveyed public trust lands, in trust, to several cities, counties, and governmental agencies, including the five major ports. Pursuant to the Tidelands Trust, state and local tidelands grantees are administrators of their respective public trust lands and are required to manage tidelands in a manner that is consistent with the Public Trust Doctrine. According to the Tidelands Trust, public trust uses are generally limited to water-dependent activities, including commerce, fisheries, navigation, ecological preservation, and recreation.

The Port is operated under legal mandates of the Tidelands Trust, which identify the Port and its facilities as a primary economic/coastal resource of the State and an essential element of the

national maritime industry for promotion of commerce, navigation, fisheries, and harbor operations. According to the Tidelands Trust, Port-related activities should be water dependent and give highest priority to navigation, shipping, and necessary support and access facilities to accommodate the demands of foreign and domestic waterborne commerce. The PMP provides the official planning policies, consistent with the Public Trust Doctrine, for the physical development of the tidelands and submerged lands conveyed and granted in trust to the Port.

California Clean Air Act

The California CAA of 1988 as amended provides specific requirements for achieving the state's more stringent air quality standards. Through the CAA, transportation control measures are under air district purview and requirements for alternative fuel vehicles are enumerated. The CAA delegates the enforcement of the federal standards to the states. In California, the California Air Resources Board (CARB) is responsible for enforcing air pollution regulations. In the South Coast Air Basin (SCAB), the South Coast Air Quality Management District (SCAQMD) has this responsibility. As the Port is located within the SCAB, construction and operations within the Harbor District are subject to SCAQMD rules and regulations.

California Environmental Quality Act

The purposes of the California Environmental Quality Act (CEQA) are to:

- Inform agency decision-makers and the public about the potential, significant environmental effects of a proposed project;
- Identify ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable environmental damage by requiring changes in the project through the use of alternatives or mitigation measures when the agency finds the changes to be feasible; and
- Disclose the reasons for the governmental decision (14 California Code of Regulations Section 15002).

An Environmental Impact Report is prepared if a lead agency determines that the project may have a significant impact on the environment. The substantive provisions of CEQA require agencies, to the extent feasible, to avoid or mitigate adverse impacts that the proposed project would have on the environment. The Port's implementation of CEQA is guided by CEQA Guidelines and significance thresholds are established by local agencies and pertinent resource agencies.

The Governor's Office of Planning and Research develops the administrative regulations that implement CEQA, and the Natural Resources Agency adopts those regulations following a formal rulemaking process. Those regulations, commonly referred to as the CEQA Guidelines, are required to be updated regularly. In 2013, Office of Planning and Research began a process to comprehensively update the CEQA Guidelines. Since that time, the Legislature has adopted numerous changes to CEQA requiring specific updates to the guidelines, including a reform regarding transportation impacts and the addition of tribal cultural resources as a consideration in environmental documents. The California Supreme Court has also published several decisions affecting the Guidelines. The updated CEQA Guidelines were adopted by the Natural Resources Agency in December 2018.

California Sustainable Freight Action Plan (Executive Order B-32)

The California Sustainable Freight Action Plan (Executive Order B-32) identified the need for a broad, unified approach by State agencies and stakeholders to improve efficiency, transition to

DRAFT

zero-emission technologies, and increase competitiveness of California's freight transport system. The Sustainable Freight Action Plan (July 2016) identified objectives to improve efficiency and reduce pollution in the freight transport system that include zero emissions as part of the long-term 2050 Vision. The Plan is a collaborative effort by CARB, California Department of Transportation, California Energy Commission, and the Governor's Office of Business and Economic Development.

Emission Reduction Plan for Ports and Goods Movement

In April 2006, CARB approved the Emission Reduction Plan for Ports and Goods Movement in California (CARB 2006). The Goods Movement Plan proposed measures to reduce emissions from the main sources associated with port cargo-handling activities, including ships, harbor craft, terminal equipment, trucks, and locomotives. This effort was a step in implementing the Goods Movement Action Plan developed by the California Business, Transportation, and Housing Agency and California Environmental Protection Agency. The Final Goods Movement Action Plan was released on January 11, 2007, and includes measures to address the various components of the goods movement system throughout the state, including freeways, rail, and ports.

2.3 REGIONAL AND LOCAL REGULATIONS

City of Long Beach General Plan

The City of Long Beach General Plan sets forth the goals, policies, and directions the City of Long Beach (the City) will take in managing its future. The General Plan is the citizens' "blueprint" for development and guiding the City's vision. California law requires each local government to adopt a local General Plan, which must contain at least seven elements: Land Use, Transportation, Housing, Conservation, Noise, Open Space, and Safety. The City's General Plan also includes three optional elements: Air Quality, Scenic Routes, and Seismic Safety. Most recently, the City adopted updates to the Mobility Element in 2013 and is currently working on updates to the Land Use Element and creation of an Urban Design Element, anticipated to be completed in 2019.

The General Plan Mobility Element is a policy document that provides the framework for future transportation construction and management programs addressing specifically the movement of goods by cargo ships, port facilities, rail, trucks, and airplanes. The Mobility Element identifies traffic, mobility of people, movement of goods, and management of resources in the City. The plan also identifies transportation goals and objectives, assesses future needs, evaluates alternative solutions, establishes policies for future improvements, and outlines actions to be implemented. The Mobility Element describes the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, ports, and other local public utilities and facilities.

In addition, under the CCA, the City must have a Local Coastal Program[3] as part of the General Plan. In the General Plan, the Harbor District falls within Land Use District Twelve, which accommodates Port-related industrial uses. These industrial uses contain a wide variety of activities, including shipping, open and closed storage, warehousing, transportation, and oil recovery (City of Long Beach 1989). As stipulated in the City of Long Beach General Plan, the 1990 PMP as amended is intended to serve as the official guide to the continued development and operation of the Port and is consistent with the City's General Plan land use designations.

[3] PMPs are the functional equivalent of the Local Coastal Programs that municipalities prepare for their coastal zones.

The General Plan assumes the water and land use designations within the harbor area are separately formulated and adopted as the Specific Plan of the Long Beach Harbor District (also known as the PMP, as amended). The General Plan indicates that the responsibilities for planning within legal boundaries of the harbor lie with the BHC.

City of Long Beach Charter

The Long Beach City Charter is the City's foundational document that defines the organization, powers, functions, and essential procedures of the City government. The current charter (dated March 6, 2019) has been amended numerous times since it was first passed in 1923.

The Charter creates the Harbor Department, whose function is to promote and develop the Port, and defines the boundaries of the Port (Section 1201), as well as the powers and duties of the BHC (Section 1203). These powers and duties include, but are not limited to, the following:

- Provide for the needs of commerce, navigation, recreation, and fishery in the Harbor District; plan, promote, develop, construct, re-construct, alter, repair, maintain, equip, and operate all properties; and modify plans from time to time as the requirements of commerce, navigation, recreation, or fishery may demand, and as the BHC may deem proper and desirable in its judgment.
- Direct, control, and supervise the Harbor District, including all waterfront properties, and adjacent lands and water, which are now or may hereafter be owned or possessed by the City, both inside and outside of the Harbor District.
- Control and have jurisdiction of that part of the City defined as the "Harbor District," as said district was bounded and described on the first day of February 1979, except the BHC shall not have control or jurisdiction of those lands, or parts thereof, that may be used for or in connection with the drilling for, developing, producing, extracting, processing, taking or removing, storing and disposing of oil, gas, and other hydrocarbon substances by the City.
- Require owners of water terminal properties and facilities within the Harbor District to keep properties and facilities in proper condition, and repair and maintain them with special reference to the safety of persons and property and the reduction of fire hazards or nuisances.
- Regulate and control all public service and public utilities operated in connection with, or for the promotion and accommodation of, commerce, navigation, recreation, or fishery in the Harbor District.
- Regulate the speed, berthing, anchoring, towing, loading, unloading, and mooring of vessels within the Harbor District.
- Provide for handling, storage, and reconditioning of all commodities; and to sell or otherwise dispose of personal property within its possession or ownership.
- Lend its aid to secure the improvements of navigable tidal waters within or adjacent to the Harbor District where, in its opinion, such improvements are economically justifiable.
- Manage the business of the Port and promote the maritime and commercial interests by proper advertisement of its advantages, and by the solicitation of business, within or outside the Harbor District, within California or other states, or in foreign countries.

DRAFT

- Acquire in the name of the City by purchase, condemnation, gift, lease, or otherwise take over and hold all lands, property, property rights, leases, or easements, and personal property of every kind, necessary or convenient for the development and operation of the Harbor District, or for the carrying out of the powers granted to the BHC. Whenever the BHC determines that any lands owned by the City within its jurisdiction have become unnecessary for Port purposes or harbor development, it may by ordinance, transfer such land to the control of the City Council, free from all restrictions, other than trust restrictions, if any.
- Enter into contracts, agreements, leases, or stipulations, germane to the scope of its powers and duties.
- Adopt and enforce such ordinances, orders, regulations, and practices as are necessary for the proper administration and discharge of its duties and powers, or for the management and government of the Harbor District and its facilities.

Section 1205 of the Charter (Control of Harbor Property) specifies that no franchise shall be granted, no property shall be acquired or sold, no street shall be opened, altered, closed, or abandoned, and no sewer, street, or other public improvement shall be located or constructed in the Harbor District by the City without the approval of the BHC.

Section 1207 of the Charter (Leasing) specifies that all tidelands and submerged lands within the Harbor District, now owned or acquired by the City, are declared to be required for use for purposes in connection with, or for the promotion and accommodation of commerce, navigation, recreation, or fishery, and shall continue to be withheld for such purposes. Notwithstanding any other provision of the Charter to the contrary, the BHC shall not be required to operate directly all of the properties, facilities, and utilities under its control or jurisdiction, and shall have the power to authorize the operation of any of such properties, facilities, and utilities by a private person, firm, association, or corporation.

Section 1208 of the Charter (Leasing and Operation of Railroad Facilities) specifies that the BHC shall have the power to contract for or permit the operation of trains and cars on the municipal terminal railroad of the City, upon such terms and conditions as it may prescribe. In order to provide for the unified or joint operation and control of railroad facilities in the Harbor District, both municipal and private, the BHC has the power to (a) lease all necessary privately owned railroads, tracks, facilities, and adjuncts and to operate, or provide for operation of, the same in conjunction with the municipal terminal railroad; or (b) lease the municipal terminal railroad to an association, corporation, or company for the purpose of operating the same together with all other privately owned railroads, tracks, facilities, and adjuncts in the Harbor District necessary to provide unified or joint operation and control of all such facilities.

Section 1215 of the Charter (Building Permits) specifies that no person or persons shall construct, extend, alter, improve, erect, remodel, or repair any pier, slip, basin, wharf, dock, or other harbor structure, or any building or structure within the Harbor District without first applying for and securing from the BHC a permit so to do, in accordance with the rules and regulations adopted by it. In approving or denying the right to said permit, the BHC shall consider the application for the character, nature, size, and location of the proposed improvement and exercise a reasonable and sound discretion during said consideration.

City of Long Beach Zoning Ordinance

The City of Long Beach Zoning Ordinance (Title 21 of the Municipal Code), in conformance with The City of Long Beach General Plan, regulates land use development within the city limits. The Ordinance specifies the permitted and prohibited uses and development standards (e.g., setbacks, heights, and parking and design standards) within each of the City's 30 Zoning Districts.

The City of Long Beach Zoning Ordinance also includes several special districts, including one Specific Plan District and 32 Planned Development Districts. A Specific Plan District establishes more specific land use regulations and design standards for properties and areas requiring special attention or treatment. Planned Development Districts are more comprehensive than zoning districts and are intended to achieve a specific outcome in a geographic area.

Lands within the Harbor District are zoned as Port-Related Industrial (IP) or Queensway Bay Planned Development District (PD-21). The IP zone is characterized predominantly by maritime industry and marine resources. Uses in this district are primarily Port-related or water dependent, but may include water-oriented commercial and recreational facilities. The Queensway Bay Planned District is zoned to create a visitor-serving destination for recreational and commercial users. Existing nonconforming uses and structures within the Harbor District can be maintained and repaired, but not expanded with the exception of uses permitted by a conditional use permit (Zoning Ordinance Chapter 21.27).

Los Angeles County Congestion Management Program

The Congestion Management Program for Los Angeles County was adopted by the Los Angeles County Metropolitan Transportation Authority in 1992 and is updated biannually. Each jurisdiction is responsible for monitoring building permit activity and then deciding how to offset the potential impacts of that development by choosing from a series of transportation mitigation strategies. The Congestion Management Program also includes a series of monitoring programs that measure the level of service on critical transportation systems, including major intersections, freeways, and major transit routes.

South Coast Air Quality Management District Air Quality Management Plan

SCAQMD under the CAA has the primary responsibility for regulating air pollutant emissions in the region. USEPA, in enforcing the mandates of the federal CAA, requires each state that does not attain the National Ambient Air Quality Standards to prepare a plan detailing how these air quality standards will be attained. The State of California requires each air quality district to prepare an Air Quality Management Plan (AQMP) specific for its region. The 2016 AQMP for SCAQMD was adopted by the SCAQMD Governing Board of Directors on March 3, 2017.

The 2016 AQMP provides a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures. The 2016 AQMP goals include reducing air pollution impacts (e.g., criteria pollutants, greenhouse gases, and toxic risk) from mobile sources and increasing efficiencies in energy use, transportation, and goods movement (SCAQMD 2017). The plan also addresses the importance of multiple agency coordination to develop new regulations and provide incentives and funding to promote the transition to cleaner technologies (SCAQMD 2017).

Southern California Association of Governments Regional Plans

Under federal law, the Southern California Association of Governments is designated as a Metropolitan Planning Organization and under state law as a Regional Transportation Planning Agency and a Council of Governments. The Southern California Association of Governments serves as the area-wide planning agency responsible for regional transportation planning, growth, and land use planning within Southern California, as well as for developing the growth factors used in forecasting air emissions within the SCAB. The agency develops long-range regional transportation plans/sustainable community strategies and growth forecast components, regional transportation improvement programs, regional housing needs allocations, and a portion of the South Coast AQMPs.

DRAFT

2.4 PORT POLICIES AND INITIATIVES

Port of Long Beach Strategic Plan (2019)

In March 2006, the Port published its first strategic plan in more than two decades. The 2006 plan articulated a vision for the Port for the decade spanning 2006 to 2016. In 2009, in the heart of the Great Recession, the 2006 Plan was updated to reflect the ongoing changes in the Port's operating environment. The Port updated the Strategic Plan in 2016 and again in 2017. The 2016 Strategic Plan update followed a shift to bigger ships whereas the 2017 Strategic Plan committed the Port to enhancing financial strength and market share growth.

The 2019 Strategic Plan builds on the Port's visionary investments that position it for success as ocean carriers continue to transition to fleets of ever larger ships, while expanding the Port's toolkit to provide operational excellence and, at the same time, meeting the ambitious goals set in the 2017 Clean Air Action Plan (CAAP) Update. The Strategic Plan outlines the Port's priorities for enhancing competitiveness, financial strength, and sustainability while also broadening economic benefits and support to the community and beyond.

The Strategic Plan guides the Port's priorities based on the Port's vision, mission, and core values. To realize the vision for the future, six strategic goals have been defined (POLB 2019b):

- Strengthen the Port's competitive position through secure and efficient movement of cargo while providing outstanding customer service;
- Maintain financial strength and security of assets;
- Develop and maintain state-of-the-art infrastructure that enhances productivity and efficiency in goods movement;
- Improve the environment through sustainable practices and the reduction of environmental impacts from Port operations and development;
- Broaden community access to Port-related opportunities and economic benefits; and
- Attract, develop, and retain a diverse, high-performing workforce.

Green Port Policy



Adopted in January 2005, the Green Port Policy addresses the Port's recognition that Port-related activities generate significant amounts of air pollution, as well as having the potential for adversely affecting wildlife, water and sediment quality, soil contamination, local and regional traffic, and recreational opportunities. In addition, climate change threatens Port facilities, and the Port is challenged to improve the energy efficiency and environmental sustainability of its activities.

The Green Port Policy formalizes five guiding principles for the Port's environmental protection efforts: 1) protect the local community and environment from harmful Port impacts; 2) employ the best available technology to minimize Port impacts and explore advanced technology solutions; 3) promote sustainability in terminal design, development, and operations; 4) distinguish the Port as a leader in environmental stewardship and regulatory compliance; and 5) engage and educate the community about Port development and environmental programs.

DRAFT

The Green Port Policy provides a coordinated approach to six basic programs areas: wildlife, air, water, soils and sediments, community engagement, and sustainability. The following programs describe implementing actions that address some of these program areas.

The Green Port Policy acknowledges that certain implementation measures may be beyond the independent justification of the BHC, in which case the BHC may work cooperatively with applicable local, state, and federal authorities for implementation. Furthermore, it should be noted that as a "landlord" port, leases are negotiated with tenants in the Harbor District. Certain policies may be included in those leases, but there may be regulations that are beyond the authority of the BHC.

Clean Air Action Plan

As an initiative of the Green Port Policy, the Port of Long Beach, in conjunction with the Port of Los Angeles, and with the cooperation of SCAQMD, CARB, and USEPA, adopted the CAAP on November 20, 2006, with updates in 2010 and in 2017. The CAAP is designed to align with state and regional air quality regulations, with the goal of reducing health risks posed by air pollution from port-related emissions sources, including ships, trains, trucks, terminal equipment, and harbor craft. The CAAP proposes to implement near-term measures largely through new lease agreements, CEQA and National Environmental Policy Act (NEPA) processes, and tariffs. The 2017 CAAP aligns with the California Sustainable Freight Action Plan and provides new and updated strategies and emission-reduction targets to cut emissions from sources operating in and around the San Pedro Bay Port Complex. The 2017 CAAP contains 14 strategies to reduce emissions from sources within and surrounding the San Pedro Bay Ports, plan for zero-emissions infrastructure, encourage freight efficiency, and address energy resources. While not a specified goal of the CAAP, implementation of the CAAP will improve water quality via reductions in atmospheric deposition of air pollutants that otherwise contribute to watershed loadings of acidic and toxic compounds.

Climate Adaptation and Coastal Resiliency Plan

The Climate Adaptation and Coastal Resiliency Plan (CRP) manages the direct and indirect risks associated with climate change and coastal hazards (POLB 2016). The CRP provides a framework for the Port to incorporate adaptive measures related to projected climate change into its policymaking and planning processes, construction practices, infrastructure design, and environmental documents. The CRP signifies the Port's compliance with Assembly Bill 691 and has been approved by the State Lands Commission.

The CRP recommends near-term solutions for protecting the Port's most vulnerable areas and long-term strategies that can assist the Port in maintaining business continuity across its infrastructure and operations into the next century. The CRP includes a review of the best available climate science, an inventory of Port assets, and detailed sea level and storm surge inundation mapping. Together, these data sets informed the development of vulnerability profiles for the Port's infrastructure, transportation networks, critical buildings, and utilities. A broad suite of potential adaptation strategies was developed to reduce the Port's vulnerabilities.

Key components of the CRP include:

- A framework for the Port to incorporate adaptive measures related to projected climate change into its policymaking and planning processes, environmental documents, infrastructure design, and construction practices;
- Protecting the built environment of the Port, as the Port's terminals and associated goods movement infrastructure are critically important economic assets for the region;

DRAFT

- Requiring the engagement of all Port divisions and tenants, as well as industry, regulatory, and community stakeholders, in the Port's climate change preparedness efforts; and
- Providing a framework for identifying and managing risk associated with climate change in the Harbor District to ensure resilience and business continuity of Port operations, the supply chain, and other businesses that depend on the Port.

Energy Initiative Roadmap



As the Port moves toward a goal of increasing zero-emission operations, reliance on electrical power will grow, necessitating greater resiliency in the electrical system and stabilized costs for energy. On-terminal electricity usage is predicted to quadruple by 2030, compared to 2005 levels. At the same time, the electrical grid is aging and its long-term energy costs are not predictable. The Port's Energy Initiative Roadmap will improve Port-wide energy management and infrastructure to provide system resiliency, create long-term cost stability, provide value for Port customers, and create new business opportunities, while achieving the Port's environmental and regulatory mandates (POLB 2017).

In 2013, the Port adopted an energy policy with objectives to reduce reliance on limited natural resources, work with customers on mutually beneficial energy choices and infrastructure, promote energy conservation and efficiency, optimize generation of alternative and renewable energy, foster innovative energy technologies, and ensure a safe and reliable energy supply to support continuity of Port operations (POLB 2017).

The Energy Initiative Roadmap describes the rationale, goals, and process by which the Port will move forward to ensure that the energy systems that will power the "Green Port of the Future" can operate reliably and competitively. The roadmap provides near-term (1-year), mid-term (2–5 years), and long-term (5+ years) priorities. It is intended to serve as a discussion document on the high-level approach for implementing energy conservation and power generation initiatives and securing feedback and guidance from the BHC and other advisors on the next steps.

Water Resources Action Plan

The Port of Long Beach and the Port of Los Angeles collaborated with the Regional Water Quality Control Board and USEPA in the development of a Water Resources Action Plan (WRAP). The WRAP is a guide to attain full beneficial uses of San Pedro Bay water bodies and sediments by promoting science-based studies and best management practices. Pollutant pathways, such as landside runoff, aerial deposition, direct discharge, and other regional influences such as river and storm drain inputs from outside the San Pedro Bay Port Complex, represent challenges for the management of water and sediment resources within the Port of Long Beach and Port of Los Angeles. The WRAP establishes a framework and mechanisms by which the San Pedro Bay Ports will achieve USEPA and Regional Water Quality Control Board Total Maximum Daily Load goals. The Port developed, as a component of the WRAP, a sediment management policy and guidance manuals to establish specific application of the Los Angeles Contaminated Sediments Task Force (CSTF) Long-Term Management Strategy to each port's development.

2.5 RELATED STUDIES AND REPORTS

This section summaries recent and ongoing planning efforts at the Port.

Land Use Study

In 2015, the Port began a comprehensive land use study that evaluated future land use concepts based on development and operational priorities relative to forecasted future cargo volumes. The purpose of the study was to develop tools that would help evaluate future land use scenarios, allowing the Port to proactively address major challenges and balance its role as a facilitator of international trade, while maintaining a strong commitment to environmental stewardship, safety, security, and community partnership.

The study resulted in an empirical model that enabled the Port to evaluate the benefits and impacts of potential future land uses, and to establish an informed balance between competing development priorities. The tools assisted the Port in developing conceptual land use plans that reflect existing conditions; estimate marine terminal input capacities and capital expenditures required to accommodate future land use needs; and compare cargo demand forecasts and capacity estimates to allow an informed approach to capacity expansion.

The scenarios evaluated in the study addressed future market and industry settings to complement the development of a number of planning initiatives at the Port, including the PMP Update.

San Pedro Bay Long-Term Unconstrained Cargo Forecast (2016)

The Port of Long Beach and the Port of Los Angeles constitute the busiest port complex in North America, and the ninth largest port complex in the world, measured in terms of volume of goods handled. Long-term projections of overall growth in container throughput at the San Pedro Bay Ports are prepared on a regular basis. The most recent comprehensive long-term cargo forecast for the San Pedro Bay Ports was completed in 2016 (Mercator 2016). Before the 2016 forecast, the most recent projections for overall San Pedro Bay Ports cargo growth were completed in 2007, with an update to the container forecast completed in 2009.



The 2016 report provides a 25-year unconstrained forecast of potential demand for container and non-container cargo volumes moving through the Port of Long Beach and the Port of Los Angeles and serves as a tool for infrastructure and transportation planning. The study analyzed projected demand under three macroeconomic conditions (expected, high, and low) absent limits, such as terminal capacity or existing land use, and examined various growth scenarios.

The 2016 forecast indicates that combined cargo volumes through the San Pedro Bay Ports are likely to grow at an average annual rate of 3.9 percent and exceed 41.1 million twenty-foot equivalent units (TEUs) by 2040. The Port of Long Beach and Port of Los Angeles had a throughput of 15.3 million TEUs in 2015. The 2016 forecast projected slower overall growth for the San Pedro Bay Ports than was forecast in the previous studies. Operational disruptions at the Port of Long Beach and Port of Los Angeles in 2014 and 2015, combined with relatively slower economic growth globally and for the U.S., resulted in a lower 2016 outlook for port container throughput than projected in 2009. A detailed discussion of

DRAFT

the San Pedro Bay Ports cargo forecast is provided in Section 4 (Factors Affecting Demand for Port Development).

San Pedro Bay Ports Comprehensive Rail Study Update

A comprehensive update of the San Pedro Bay Ports Rail Study began in 2018. The Rail Study Update will evaluate the rail network, including infrastructure and operational constraints and system capacities, in the San Pedro Bay Ports Complex. The goal of the study is to update the Port-wide Rail Improvement Program that will address rail system deficiencies (capital and operational), identify necessary improvements, and provide a plan for phased implementation.

2.6 RISK MANAGEMENT PLAN

The Port's Risk Management Plan (RMP) was certified as an amendment to the PMP. The RMP was required by the CCC as a means of judiciously managing, controlling, and directing proposed developments to prevent, ensure, protect against, and minimize the risks of loss or significant adverse impacts due to potential hazards within and surrounding the Port. The RMP is primarily concerned with the transfer, handling, storage, and transport of hazardous liquid bulk cargoes (POLB 1981).

Recognizing that much of the waterborne commerce moving through the San Pedro Bay Ports is and will continue to be liquid bulk cargoes representing varying degrees of hazard, the RMP is intended to:

- Identify, quantify, and analyze the existing hazardous liquid bulk activities and sites in the Port of Long Beach;
- Develop the analytical methodology to measure the degree of risk for application to any proposed development, whether that project represents a new hazardous facility or a proposed nonhazardous facility to be sited within an area that might be subject to some degree of risk from an existing hazardous facility;
- Develop criteria and standards to apply at the inception of project development planning that serve as mandatory requirements for compliance with siting, design, construction, and operating criteria. Compliance with these standards provides the basis for granting and issuing Coastal Development Permits (CDPs) by the port governing body; and
- Provide a relatively detailed working manual or technical reference as a guide in preparing the RMP and analyzing the risk factors in each future development project.

The RMP is to be considered adjunctive to all existing and future local, state, and federal laws and agency regulations. Application of the plan is primarily for the establishment of policies, processes, procedures, and conditions that shall be required for issuance of CDPs by the BHC.

The following is a synopsis of the policies and application of the RMP.

Policies and Implementation

This section summarizes the framework within which the Port will implement the RMP for hazardous liquid bulk cargoes and includes the following subsections:

- Definition of hazards, which describes the type and nature of the hazards that are generated by the shipment, transfer, and storage of hazardous liquid bulk commodities; and

- Definition of vulnerable resources, which describes the personnel and facilities in or near the Port that are subject to the hazards at the Port.



During the CDP process, the Port evaluates a project's consistency with the RMP. The overall policy goal pertaining to the permitting process is the elimination of overlaps of hazard footprints and areas of residential, recreational, and visitor populations, and with high-density working populations (POLB 1981).

Definitions of Hazards

Before establishing the policies for implementing the RMP, it is important to establish a conceptual framework for understanding the hazards involved. This includes defining hazardous materials and determining the level and kind of impacts an accident would have on surrounding people and facilities.

Identification of Hazards

The Fire Department defines the hazards of liquid bulk materials in accordance with applicable Fire Codes. For planning purposes, the National Fire Protection Association (NFPA) Hazard Identification System is used. The NFPA system numerically grades all materials in three separate hazard dimensions: health, flammability, and reactivity (i.e., tendency to react violently in contact with water or other common materials). There are five numerical gradings with number four representing the most severe hazard or danger and zero being no hazard at all. Any substance with a rating of two or more of any dimension that is shipped, transferred, or stored in bulk form within the Port is considered hazardous enough to be subject to the goals and policies of the RMP. Materials with an NFPA hazard code of less than two, in general, do not produce immediate, serious, or long-term hazards to either personnel or facilities, and therefore need not be included under the risk management policies of the Port (POLB 1981).

The RMP does not specifically address non-liquid bulk hazardous cargoes; however, there are existing regulations and procedures for non-liquid bulk hazardous cargoes that are administered and enforced by the Fire Department, Coast Guard, and Port, which also provide a comprehensive risk management program.

Hazard Footprints

The concept of hazard footprints represents the potential extent of and the safe distance from potential damage that would be associated with an accident of casualty involving hazardous materials. Each footprint consists of an outline drawn on a map showing the area around a facility within which unacceptable adverse impacts would occur should an incident occur at that facility. Land configuration, weather conditions, the type and amount of the substance, and type of incident are all taken into account. To demonstrate the hazard exposure associated with each facility, several hazard footprints may be necessary to demonstrate the full range of possible events (POLB 1981).

Incidents involving hazardous liquid bulk material can be categorized into four types of events that can occur separately or in some combination. These hazards include radiant heat, dangerous gases and other health hazards, blast overpressure, and flying debris or fragments.

DRAFT

Definitions of Vulnerable Resources

It is the goal of the Port to provide the maximum feasible level of protection to all types of vulnerable resources (i.e., populations, critical regional activities/facilities, and high value facilities) (**Table 2.6-1**). The RMP intends to eliminate exposure of vulnerable resources to risks resulting from the transfer, transportation, and storage of hazardous liquid bulk materials. Vulnerable resources of high value and/or critical regional significance within the Port are to be treated so as to minimize or eliminate their exposure to risks of hazardous liquid bulk material.

Table 2.6-1. Vulnerable Resources

Vulnerable Resources	Definition
Residential Populations	Residents living in the area around the Port represent the largest and most vulnerable number of people exposed to risks. They have the least amount of knowledge about the situation, and would be most difficult to evacuate in an emergency.
Recreational/Visitor Populations	Recreational and visitor populations generally are not aware of the hazardous situations in the Port, but are relatively mobile and could leave the area quickly in the case of an emergency.
High-Density Working Populations	The working population in the Port is exposed to the greatest amount of danger from hazardous bulk materials. However, working personnel are trained in emergency procedures and should be able to evacuate quickly if necessary.
Critical Regional Activities/Facilities	There are some facilities in the Port that are important to the local or regional economy, national defense, or some major aspect of commerce.
High Value Facilities	There are numerous nonhazardous facilities within and near the ports that have very high economic value. These include both facility improvements and cargo, such as container storage areas.

Source: (POLB 1981)

Risk Assessments

A risk assessment model is used to calculate the potential impacts following the hypothetical accidental release of a range of hazardous materials handled by the Port. The model is periodically updated, most recently in 2009, to reflect updated risk management modeling techniques (POLB 2009a). Although this model is used to implement RMP requirements, it is independent of the RMP and PMP. As such, any updates to the model would not require a PMP amendment.

2.7 AGENCY COORDINATION

The Port coordinates closely with the various agencies having jurisdiction to ensure that Port activities undertaken in accordance with the PMP are consistent with agency requirements. In many cases, these include long-term coordination efforts involving one or several federal, state, and regional agencies; in other cases, short-term multi-agency working groups address specific issues or projects. A few examples of the Port's long-term agency coordination efforts include:

- The Port participates in the regional planning efforts of the Southern California Association of Governments, which is responsible for developing regional approaches to growth management, transportation solutions, and economic development, among other issues. This participation includes ongoing coordination with city and county governments, the local air quality management district, the California Department of Transportation, the Los Angeles Department of Transportation, and the Metropolitan Transportation Agency. Numerous Southern California Association of Governments studies and reports have

relied on Port input, including the Port and Modal Elasticity Study, the Inland Port Report, and the Comprehensive Regional Goods Movement Plan and Implementation Strategy.

- The San Pedro Bay Ports CAAP was developed and is periodically updated by the ports of Long Beach and Los Angeles in close coordination with the SCAQMD and the CARB. The CAAP serves as high-level guidance for emission reduction activities in collaboration with industry stakeholders, regulatory agencies, local communities, and environmental groups, and guides the incorporation of federal, state, and local regulations into the Port's activities.
- The Port is a member of the Los Angeles CSTF, which manages dredging and disposal solutions in the region. The CSTF is directed by the Regional Water Quality Control Board and the CCC and is the implementing body for the Dredged Material Management Team in coastal Los Angeles County. Other members include the USEPA, the U.S. Army Corps of Engineers, the California Department of Fish and Wildlife, Heal the Bay, the Port of Los Angeles, and the Los Angeles County Beaches and Harbors.
- The Port participates, with the Regional Water Quality Control Board, USEPA, the Southern California Coastal Water Research Project, the cities of Los Angeles and Long Beach, and the Port of Los Angeles, in the Harbor Technical Working Group. This effort is aimed at ensuring that the Harbor Toxics Total Maximum Daily Load water quality standards are based on sound science and are feasible to implement.
- The Port is a major participant and funding partner for the Los Angeles County Metropolitan Transportation Agency's Interstate (I)-710 Corridor Project. This project has developed several alternatives for improving I-710 between the Port and State Route 60, a segment that is traveled by thousands of trucks hauling goods between the Port and the Inland Empire and downtown intermodal railyards. The project is also preparing studies of the potential environmental impacts of those alternatives.

DRAFT

3 DEVELOPMENT GOALS AND GUIDING PRINCIPLES

This section addresses the long-range planning goals related to future Port of Long Beach (Port or POLB) development. The Port Master Plan (PMP) Update was prepared in coordination with land use and development goals related to Port planning efforts and policy guidelines. Per the California Coastal Act (CCA), the Port must balance its role as an essential element of the national maritime industry with protecting coastal resources and maximizing public access and recreational opportunities. The goals are designed to maintain flexibility, respond to Port tenant needs, and allow the Port to respond effectively to national and international economic trends. In addition, the goals are intended to prioritize Primary Port and Port-related uses within existing industrialized areas while promoting compatibility with other uses within the Harbor District.

3.1 DEVELOPMENT GOALS

Goal 1. Accommodate Forecasted Demand for Diverse Cargoes

A general provision of the CCA is the protection and management of existing commercial ports to eliminate the need to create new ports in other coastal areas of the state. The statute encourages the Port to modernize and develop facilities to accommodate cargo demand.

A primary goal of the PMP Update is to accommodate forecasted demand of diverse cargoes (e.g., container, liquid bulk, dry bulk, break bulk, and roll on/roll off [Ro/Ro]) within the Harbor District. A related objective of the PMP Update is to maintain market share within the San Pedro Bay Port Complex. Historically, the Port of Long Beach has handled approximately 45 percent of baywide throughput, and the Port of Los Angeles has handled approximately 55 percent. Cargo handling capacity may be enhanced by introducing more-efficient modes of operation on existing terminals. The PMP Update places a priority on accommodating larger vessels in the Middle Harbor and Outer Harbor (south of the Gerald Desmond Bridge) where there are fewer navigational constraints.

Goal 2. Develop Modern Terminal Facilities with Efficient Operations

Port facility modernization is necessary to optimize operational efficiencies, increase resilience against future risks such as climate change, and promote safety and security in design and operations. The Port needs the support and assistance of industry shippers, carriers, and private terminal operators to modernize operations and increase efficiencies. The PMP Update is a market-driven plan that will guide future capital planning and development. It is intended to be a flexible tool for the implementation of future projects, rather than a definitive timeline of capital improvements. As such, projects would be evaluated for inclusion in the Port's Capital Program as part of the capital planning process.

To that end, the Port is working with terminal operators and other stakeholders to enhance berthing capabilities to meet "big ship" requirements and to expand on-dock rail in order to reduce dwell time of containers. As more containers are moved by rail, the Port's tenants achieve greater reliability and efficiency. With advances in technology, the Port is also integrating informational systems to reduce operational inefficiencies and streamline the flow of cargo.

Goal 3. Integrate Green Port Policy and Land Use Planning

The Port demonstrates environmental stewardship through implementation of its Green Port Policy adopted in 2005. Elements of the Green Port Policy include improvements to air quality, water quality, sediment management practices, sustainable energy initiatives, sea level rise adaptation, and protection of marine habitat. In addition, the Port actively engages with the

DRAFT

community on matters of environmental justice as efforts continue to reduce the negative effects of Port operations, such as air contaminants.

Since 2005, the Port has significantly reduced air contaminants, supported the use of cleaner fuels in oceangoing ships, completed a changeover of the truck fleet from heavy polluting diesel drayage trucks to newer model year trucks and continues to advance development of clean air technologies.

Long-range land use planning will support the continuing implementation of Green Port Policy initiatives. Consistent with other goals of this PMP Update, proposed terminal improvements will enhance operational efficiency and optimize land use by redeveloping existing facilities. Modernized terminals will have the ability to employ the latest technology to minimize environmental impacts. For example, the use of zero-emissions yard equipment is associated with reduced air pollutant emissions compared to diesel-powered equipment. The concentration of trucks, trains, cargo vessels, and cargo handling equipment in container terminals means that those terminals have historically been relatively intense sources of air pollution, including harmful diesel emissions. In response, the PMP Update prioritizes container terminal development in the Outer Harbor, which is further from communities, while uses in the Inner Harbor focus on non-container uses that tend to be smaller sources of air pollution, as needs dictate. This will increase the distance of air pollutant emissions generated by container cargo operations from sensitive receptors.

New land use and water use designations in this PMP Update facilitate continued and future implementation of Green Port Policy initiatives. As examples, a new Renewable Energy Resources designation permits the development of energy production facilities, such as solar, geothermal, or hydrogen fuel cell in certain districts. Sediment management areas will allow for the placement of sediment in previously unassigned water locations, which could support ecosystem restoration, including creating shallow-water habitat. A new Environmental Protection designation for land and water uses allows for the protection of habitat sites (e.g., Gull Park) and other natural areas.

Goal 4. Protect and Enhance the Coast for the Benefit of All Port Users and Communities

While the Port is an international gateway with a global reach, it maintains a unique commitment to neighboring communities affected by Port operations. In order to maximize benefits to these communities, the Port protects and enhances the coastal environment for the enjoyment of visitors to the waterfront. In particular, Queensway Bay, located within the Harbor District, provides areas for waterfront access and recreational opportunities.

Under the Public Trust Doctrine, the Port acts as a steward of public tidelands granted in trust by the state for the benefit of the people of California. Public trust uses are generally limited to water-dependent activities, including commerce, fisheries, navigation, ecological preservation, and recreation. The public's right to water access and recreational opportunities (e.g., pedestrian and bicycle paths) is maintained through long-range land use planning and the Port's ongoing initiatives.

In addition to maintaining public access to the waterfront, the Port promotes education and access to information regarding Port operations and environmental programs. The Port supports activities and school programs to increase understanding of Port operations and its significance to the regional economy. Educational programs include the POLB Academy, which offers industry-training and internship opportunities for high school and college students. The POLB Maritime Center of Excellence at Long Beach City College is a new initiative to provide training for individuals who seek to join the supply chain and logistics industry.

The POLB Community Grants Program aims to lessen Port impacts on the community by investing in projects outside the Harbor District to minimize port impacts related to air, noise, water, and traffic. The program prioritizes projects in the neighborhoods and corridors where these impacts are most acutely felt. It builds upon the success of the Port's previous mitigation grant programs, and provides additional funding for community programs and capital projects with long-lasting neighborhood benefits.

Continuing partnerships with local communities, industry representatives, educational institutions, government agencies, and other stakeholders are essential to a robust and inclusive planning process.

3.2 GUIDING PRINCIPLES

As a key part of developing the PMP Update, the Port engaged with a broad range of stakeholders, including community groups, environmental organizations, operators, tenants, and Port users. The guiding principles are key concepts reflecting stakeholder feedback received during the goals development process. The PMP Update Communications and Engagement Program Summary Report is included in Appendix B. The Port is committed to pursuing the development goals in line with the guiding principles below:

- Proactively plan for the future by modernizing facilities and infrastructure and creating operational efficiencies where feasible;
- Fully integrate the Green Port Policy into land use planning and policy, including the advancement of environmental justice for Port communities;
- Ensure safety and security in all operations, land uses, and for all users;
- Continue to provide and enhance access to information, educational opportunities, recreational amenities, and cultural opportunities;
- Support and advance opportunities for workforce development commensurate with Port growth and equip future workers with the necessary skill sets; and
- Continue to collaborate with all stakeholders on land use planning and development.

DRAFT

This page intentionally left blank

DRAFT

4 FACTORS AFFECTING DEMAND FOR PORT DEVELOPMENT

Two primary goals of the Port Master Plan (PMP) Update are to accommodate forecasted growth of diverse cargoes and develop modern terminal facilities with efficient operations. While these goals are consistent with previous PMPs, evolving terminal operational capabilities and changes within the global marketplace make today's planning process dynamic. Essential factors affecting the demand for the Port of Long Beach (Port or POLB) development described in the PMP Update include the following:

- The Port has a major role in facilitating commerce and the distribution of commodities throughout extensive market areas (i.e., international and domestic);
- Factors impacting international trade patterns include a country's macroeconomic environment, global demand for raw and finished goods, and the availability and price of energy resources;
- The Port operates as a "landlord" port. As such, proposed tenant facility developments are coordinated between the Port and its tenants; and
- The Port competes with state and regional operating port authorities that may have access to larger economic development opportunities and control over more of the supply chain costs.

4.1 MARKET COMMODITIES AND TRADE ROUTES

The Port's market areas are divided into nine regions: North America, Central America, South America, Europe, Asia, Australia and Oceania, Africa, United States (U.S.) Possessions and Territories, and miscellaneous. Although the Port's major trading partners are the Asian Pacific Rim countries, the Port handles imports and exports from over 150 countries. The Port's primary trading partners are listed in **Table 4.1-1**.

Table 4.1-1. 2018 Port of Long Beach Primary Trading Partners

Rank	Trading Countries	Value (Billions of U.S. Dollars)
1	China	52.22
2	Japan	13.06
3	South Korea	7.49
4	Australia	5.10
5	Vietnam	4.25
6	Taiwan	4.12
7	Saudi Arabia	2.92
8	Hong Kong	1.59
9	Philippines	1.14
10	Thailand	1.11

Source: (USCB 2018)
Key: U.S. = United States

Transpacific trade has historically accounted for the largest volume of shipments through the Port, as **Table 4.1-1** shows. Major trading partners on transpacific strings include China, Japan, South Korea, Australia, Vietnam, Taiwan, Hong Kong, Philippines, and Thailand.

DRAFT

A new focus area for marine intermodal competition is the U.S. Midwest. This area represents 15 percent of the U.S. gross domestic product (GDP), significant acres of U.S. agricultural cropland, a growing number of inland distribution centers for imported goods, inland waterway transportation routes, and U.S. manufacturing nodes.

Table 4.1-2 and **Table 4.1-3** list the Port's top export and import commodities. Top export commodities for transpacific trade consist of machinery, plastics, agricultural products and bulk commodities such as petroleum coke, liquid petroleum, and chemicals. Top import commodities for transpacific trade include crude oil and consumer goods such as electronics, furniture, plastic goods, and apparel.

Table 4.1-2. Port of Long Beach – Top Exports (2018)

Rank	Commodity Type	Value (Billions of U.S. Dollars)
1	Machinery and Machine Tools	4.41
2	Motor Vehicles and Parts	3.53
3	Plastics and Plastic Products	2.15
4	Meat Products	1.62
5	Edible Fruits and Nuts	1.60
6	Electric Machinery, Sound and Television Equipment	1.53
7	Cotton, Yarn and Fabric	1.28
8	Optic, Photo and Medical Instruments	1.18
9	Mineral Fuel and Oil	1.15
10	Miscellaneous Chemical Products	1.03

Source: (USCB 2018)
Key: U.S. = United States

Table 4.1-3. Port of Long Beach – Top Imports (2018)

Rank	Commodity Type	Value (Billions of U.S. Dollars)
1	Machinery and Machine Tools	14.41
2	Electric Machinery, Sound and Television Equipment	13.55
3	Mineral Fuel and Oil	7.30
4	Furniture, Bedding, and Lamps	4.38
5	Motor Vehicles and Parts	4.02
6	Toys, Games, and Sports Equipment	2.99
7	Plastics and Plastic Products	2.89
8	Iron and Steel Products	2.29
9	Footwear	2.22
10	Rubber and Rubber Products	1.64

Source: (USCB 2018)
Key: U.S. = United States

Evolution in the global shipping industry (e.g., shifting supply chains and technological change) force U.S. ports and transportation firms to adapt in order to remain competitive. Three developing trends expected to have the most significant impact on Port planning are:

- Growth or decline in global trade;
- Deployment of ultra large container ships (ULCS) on specific trade routes and the cascading effects on transpacific trade routes; and
- Competition among ports and intermodal service providers for cargo destined for the U.S. Midwest.

These factors are being driven by growing populations and expansion of the middle class, especially within the Southeast Asia/India markets, forecasted increases in global GDP, and escalating demands for energy in these emerging markets. As population growth and consumer demands shift to the Southeast Asia/India markets, pressure will be placed on carriers to evaluate vessel deployments and trade routes. These decisions will be influenced by trends in vessel size and improvements to the Panama and Suez canals. For example, Maersk is currently shifting vessels from transpacific trade routes to U.S. East Coast ports via the Suez Canal.

Sections 4.2 (San Pedro Long-Term Unconstrained Cargo Forecast) through 4.4 (Port-Wide Capacity) discuss the studies and reports associated with the Port's forecast demand, competitive factors, and terminal capacity, addressing the needs and driving factors for proposed development.

4.2 SAN PEDRO LONG-TERM UNCONSTRAINED CARGO FORECAST

The San Pedro Bay Long-Term Unconstrained Cargo Forecast (Mercator 2016) provides a 25-year forecast for growth of container and non-container cargo volumes moving through the Port of Long Beach and Port of Los Angeles. Intended uses of this forecast include:

- Port development planning;
- Technical studies supporting environmental impact analyses;
- Clean Air Action Plan and emissions forecast;
- Port and stakeholder financing;
- Regional planning efforts; and
- Strategic planning.

The methodology used to develop the long-term forecast includes:

- Breakdown of current volumes by inbound and outbound direction, commodity, and major market segment;
- Identification of the economic factors that influence the future performance of each commodity by direction;
- Analysis of the San Pedro Bay market position compared to other gateways;
- Quantification of cargo diversion risks; and
- Application of an econometric model to provide a 25-year forecast of volumes by direction for San Pedro Bay.

The unconstrained demand forecast evaluated three scenarios using the following macroeconomic assumptions:

- High: This scenario is based on a more aggressive set of assumptions and ambitious progress in global trade policies. It assumes annual real GDP growth that is one to two percentage points higher than the expected scenario between 2015 and 2040, and a gradual decline of average U.S. tariffs to near-zero by 2040 (this scenario also assumed full adoption of the Transatlantic Trade and Investment Partnership). This scenario is

DRAFT

assumed to predict the highest cargo volumes that could come to the San Pedro Bay Port Complex, but is not used for planning future facilities as it would likely lead to over-development.

- Expected: This scenario is based on economic assumptions that were deemed most likely to occur over the 25-year forecast period. It assumes a moderate pace of U.S. economic growth at 2.55 percent real GDP annually between 2015 and 2040, and a gradual lowering of tariff barriers to 1 percent by 2040. This expected base case scenario is used by the San Pedro Bay Ports to plan future facilities development. Each port assumes it will have a share of the future cargo; based on historical trends, it is assumed that the Port of Long Beach will handle approximately 45 percent of the cargo, and the Port of Los Angeles will handle the remaining 55 percent.
- Low: This scenario is based on a conservative set of economic assumptions. It assumes real GDP expands at an annual rate of 2 percent between 2015 and 2040. The lower growth assumption stems primarily from a lower rate of productivity growth and a more defensive U.S. trade policy, assuming average U.S. tariffs reaching 3.5 percent by 2040.

4.2.1 Container Cargo

The growth rate (based on million twenty-foot equivalent units [TEUs]) over the PMP Update planning period (2040) for the Port, along with the assumed compound annual growth rate (CAGR) is shown in **Table 4.2-1**.

Table 4.2-1. Port of Long Beach Growth Rate

Year	San Pedro Bay Ports Expected Forecast (Million TEUs)[1]	Port Expected Forecast (Million TEUs)[2]	Compound Annual Growth Rate (CAGR)
2015	15.4	6.9	-
2020	19.3	8.7	4.5%
2025	23.5	10.6	4.0%
2030	28.3	12.7	3.8%
2035	34.3	15.4	3.9%
2040	41.1	18.5	3.7%

Key: % = percent; CAGR = compound annual growth rate;
TEUs = twenty-foot equivalent units
Notes: [1] (Mercator 2016)
[2] Port calculation (approximately 45 percent of the San Pedro Bay Ports Expected Forecast column)

Loaded international imports are the primary driver of inbound container volume. In 2015, international imports represented nearly 52 percent of total San Pedro Bay Ports container throughput (TEUs). The expected forecast estimates that the percentage will remain at approximately 50 percent through 2025 and 2040 (Mercator 2016).

The forecast (Mercator 2016) identified three primary inland transportation segments for imported container traffic:

- Inland Point Intermodal (IPI) – containers that move directly from the arrival port to an interior point via rail;
- Local/Transloaded via Truck – containers that leave the port by truck to facilities for unloading and distribution for consumption by the local population or to manufacturing/processing plants within the port's hinterland (i.e., inland areas); and

- Transload Containers – containers that are moved to cargo handling facilities near the discharge port for unloading, after which these goods are mixed with items from other containers and loaded into domestic vans that are then moved to their final destination by truck or rail.

In 2014, 38 percent of international loaded container imports were moved directly by rail, and 62 percent were transported from the terminal by truck. Inland point intermodal containers that are directly moved by rail to their final destination are considered to be highly divertible because of competition from other West Coast ports. In addition, all-water routing services between Asia and East/Gulf Coast ports introduce other viable alternatives for lower-value, less time-sensitive commodities destined for points east of the Mississippi River Valley (Mercator 2016).

4.2.2 Non-Container Cargo

The non-container terminals handle a limited number of commodities due to their specialized handling requirements and storage infrastructure. Dry bulk, liquid bulk, and neo bulk (automobiles) terminals are designed to handle one cargo type. The specific non-container types identified in the forecast and PMP Update include liquid bulk, dry bulk, break bulk, and roll on/roll off (Ro/Ro).

The forecast for non-container cargoes is based on domestic and foreign industrial demand for various commodities. According to the 2016 cargo forecast, U.S. non-container exports are expected to "grow at a substantially higher rate than imports" (Mercator 2016). This trend will be largely driven by exports of refined petroleum products, whereas dry bulk and break bulk exports are expected to experience only modest increases. Overall, U.S. exports of non-container cargoes are expected to grow at an annual rate of approximately 1 percent. With respect to U.S. imports, the 2016 cargo forecast predicts that liquid bulk imports will grow very little, if at all, but that dry bulk and break bulk imports will grow steadily at 3 to 4 percent per year over the next 20 years.

The outlook for the San Pedro Bay Port Complex is somewhat different from the U.S. trend for various reasons, including proximity to Asian and Latin American markets, regional demand and production factors, and competitive factors among West Coast ports. **Table 4.2-2** shows the 2014 volume of imports, exports, and total by cargo handling type. Liquid bulk products are the largest single non-container cargo handling type, followed by dry-bulk products. Diversion risk for liquid bulk and dry-bulk products is low. The Ro/Ro automobile export market consists primarily of vehicles manufactured in the U.S. and exported to China (Mercator 2016).

Table 4.2-2. Summary of San Pedro Bay Ports 2014 Non-Container Volume

Cargo Handling Type	Imports (Million Metric Tons)	Exports (Million Metric Tons)	Total (Million Metric Tons)
Liquid Bulk (excludes pipelines)	30.30	3.40	33.70
Dry Bulk	0.40	7.30	7.70
Break Bulk	2.70	0.00	2.70
Ro/Ro	0.60	0.05	0.65
TOTAL	**34.0**	**10.75**	**44.75**

Source: (Mercator 2016)
Key: Ro/Ro = roll on/roll off

The forecast for non-containerized cargo through the San Pedro Bay Port Complex is mixed. The 2016 cargo forecast predicts that exports will grow at the rate of 1.6 percent per year, substantially higher than the nationwide rate. That rate will be driven more by break bulk and dry-bulk cargoes than by liquid bulk cargoes. Liquid bulk imported commodities, both crude oil and non-crude oil, are forecast to decline from 28.9 to 27.5 million metric tons by 2040. In contrast, non-crude oil exports are expected to double during the same period from 9 million metric tons to 18 million (Mercator 2016).

Imported gypsum and cement, serving the construction industry, make up the largest share of dry-bulk imports, and for which volumes are expected to increase. However, dry-bulk imports represent a very small share of total non-container imports (**Table 4.2-2**). Dry-bulk exports consist largely of petroleum coke, coal, and scrap metal. The 2015 level was 7.3 million tons, which is expected to increase to just over 8 million metric tons over the next 20 years. Dry-bulk imports and exports appear to be at low risk of diversion given steady local production and demand (Mercator 2016). Coal is the exception, being very susceptible to inter-port competition, but the San Pedro Bay Port Complex handles a relatively small volume of coal (1.5 million tons per year through the Pier G facility) that is not forecast to grow substantially by 2040 (Mercator 2016).

The volume of break bulk cargo likewise is anticipated to have a 5.7 percent CAGR between 2015 and 2020 due to the continued expansion of construction and manufacturing activities in Southern California, Nevada, and Arizona. Between 2020 and 2040, the CAGR is estimated to be approximately 1 percent and by 2040 there will be 2.4 million metric tons of non-containerized break bulk cargo (Mercator 2016). The 2016 forecast notes that the San Pedro Bay Port Complex will continue to lose share in the overall U.S. break bulk market as they focus on containerized cargo and relinquish break bulk cargo to other ports. The exception is metal product imports, which are consumed locally and will continue to be in demand.

Finally, the import and export Ro/Ro markets are both expected to increase in line with growth in the global automotive industry. Imports into Southern California are forecast to increase to over 1.4 million metric tons by 2040 (exports are a small-volume cargo but are forecast to grow at a similar rate as imports).

4.3 PORT COMPETITIVENESS

A key factor in the future growth of cargo volumes through the Port of Long Beach will be the effects of competition from other ports, not only the Port of Los Angeles but other West Coast ports and even ports on the U.S. East and Gulf coasts (Mercator 2016). Competition from the neighboring Port of Los Angeles could result in any of a number of scenarios for the Port of Long Beach, depending on the scale and timing of navigational and terminal improvements at the two ports. In recent years, the Port of Long Beach has handled approximately 45 percent of the cargo moving through the San Pedro Bay Port Complex. There are many factors influencing this share, including the relative terminal capacity available at the Port of Long Beach and Port of Los Angeles and discretionary choices by ocean carriers and ocean carrier alliances regarding where to deploy their regular liner services. As a result the share likely to be handled by the Port is variable from year to year and difficult to predict with certainty. The projects considered in this PMP Update are expected to maintain the Port's proportional share of terminal capacity and accommodate nearly 45 percent of the container throughput projected by the Mercator (2016) forecast.

Even with the raising of the Gerald Desmond Bridge, container terminals in the Inner Harbor area will be unable to accommodate the larger ULCS of the future, making the container terminals south of the bridge increasingly important for handling future cargo volumes. Necessary

improvements would include deeper, wider channels, more robust berthing facilities, expanded rail and roadway capacity, and additional electrical and other utility infrastructure capacity.

The more serious competition in the future is likely to be from more distant ports. According to Mercator (2016), although the San Pedro Bay Ports are still the leading container gateway in North America, they have lost share in recent years, since peaking in 2006, as a result of cargo diversion to other ports. That loss of share may continue if the San Pedro Bay Ports are unable to provide enough access for ULCS, as well as other key improvements, in the period from 2025 to 2040. In that case, shipping lines will increasingly turn to other ports, including all-water routes to the U.S. East Coast (facilitated by the expansion of the Panama Canal), where the major ports are developing container facilities for ULCS.

The Mercator study identifies a number of key strengths of the San Pedro Bay Ports, including greater proximity to northeast Asia (e.g., China, South Korea, Japan, and Taiwan) than Gulf Coast and East Coast ports, superior channel depths and terminal infrastructure, superior rail routes eastward compared with other West Coast ports, a very large regional population, and ownership stakes in terminal facilities by many of the major shipping lines. At the same time, shipping through the San Pedro Bay ports is more expensive than through other ports, due partly to high rail and PierPass fees, more restrictive environmental requirements, and rail lines that are more congested than is the case for Canadian ports. These disadvantages may increase if container terminal cargo handling and railroad company intermodal charges increase faster than at other ports, and if Alameda Corridor fees are raised. Furthermore, two Canadian West Coast ports—Prince Rupert and Vancouver—are increasing capacity, and their closer proximity to northeast Asia may entice major liner services away from the San Pedro Bay Port Complex.

Cargo destined for the local market—Southern California and nearby states—will continue to come to the Port because no other option makes economic sense. However, the Port faces serious competition from other ports for cargo that is destined for inland points in the U.S. (IPI cargo). IPI cargo travels by sea from Asia to a North American port and then by rail to its inland destination. Historically, the San Pedro Bay Ports have dominated this segment of containerized cargo, which accounts for over a quarter of loaded import containers that transit through the Port (Mercator 2016), sending large amounts of IPI cargo to the Midwest, Southeast, and Texas.

However, the factors summarized above—faster, cheaper all-water routes to the East Coast and Gulf Coast and expanded capacity in the Pacific Northwest—challenge that dominance. Three U.S. ports (New York/New Jersey, Savannah, and Houston) are already significant all-water gateways from Asia to the three major IPI destination areas. Although the routes to those ports are slower than through the San Pedro Bay Port Complex, they are less costly, often significantly so. If they increase their cost advantage enough to offset the time differential, shippers will likely divert cargo to those ports. Similarly, the two Canadian West Coast ports offer substantially cheaper rail rates and faster overall transit times to the Midwest than the San Pedro Bay Ports. Although this advantage has primarily affected other Pacific Northwest ports (e.g., Seattle-Tacoma), expansions at both Prince Rupert and Vancouver may attract business away from the San Pedro Bay Ports (Mercator 2016).

In summary, existing data and forecasts suggest that retaining the IPI (discretionary) portion of the Port's cargo throughput will require maintaining the Port as a preferred gateway for cargo from the Pacific Rim. This will be achieved by controlling costs, improving goods movement infrastructure, and ensuring adequate facilities for the largest vessels expected to enter the transpacific services. Costs can be controlled by improving efficiency through optimizing terminal design and operating modes to handle the flood of cargo from such large vessels, modernizing logistics management outside the terminals, and implementing a variety of other measures. The goods movement infrastructure, especially the rail network and intermodal facilities, must be

expanded and modernized to accommodate future intermodal cargo volumes. Finally, channels, turning basins, berths, and wharves must be expanded, reconfigured, and strengthened as necessary to ensure safe operation of the ultra-large vessels of the future.

4.4 PORT-WIDE CAPACITY

The Port conducted a land use study that involved development of the Integrated Land Use Tool (ILUT) to analyze the capacity and operating impacts of the marine terminals at the Port, specifically, container terminals, auto terminals, dry-bulk terminals, break bulk terminals, and liquid bulk terminals. The ILUT models the Port terminals and transportation components by considering all relevant aspects of Port operations, including ship and cargo profiles for each terminal, dwell times, work shifts, operating hours, on-dock/off-dock activity, as well as transportation and navigational networks. The model produces key performance indicators associated with various Port terminal designs, including terminal throughput capacity, inland transport modal splits, ship and train traffic, truck traffic, emissions, revenue, jobs, and “big ship” capability (WSP 2017).

Based on ILUT model outputs, Port-wide constrained container capacity is approximately 13.6 million TEUs per year, which is roughly double the throughput in 2017. The Port has sufficient capacity to accommodate 45 percent of the demand forecasted for San Pedro Bay up to year 2032 (WSP 2017).

4.5 TRADE AND TECHNOLOGY FACTORS

In addition to global economic factors, trade policy, and competition with other ports, the demand for Port development also reflects trends in vessel size and changes in cargo handling, and technology factors, which may result in greater operational efficiencies.

Carriers have begun to deploy increasingly larger vessels on the transpacific-North Europe trade routes. The evolution of containership size and capacity is one of the most dramatic technological changes to which global ports must respond (**Figure 4.5-1**).

The next generation of container ship that Port authorities will need to prepare for is ULCS. These vessels are forecast to have up to 24,000 TEU capacity, a length overall approaching 1,500 feet, a draft of over 50 feet, and a beam of over 200 feet. These largest ULCS would be some 200 feet longer and 50 feet wider than the existing 14,500 TEU ULCS that currently call at the Port. Although the largest vessels are unlikely to appear at San Pedro Bay terminals in the near future, they are predicted to arrive by 2030 (Mercator 2016) and will certainly appear by 2040 as they are displaced from the transpacific-Europe routes by newer, more economical vessels (Mercator 2016). Therefore, future berths should be designed based on 1,400-foot length overall vessels and the width of navigational channels may be the most important criterion in preparing for future ULCS.

In the past, break bulk, neo bulk, Ro/Ro, and heavy lift commodities were the primary methods of handling cargo. However, containerization has become the predominant cargo handling mode for previously break bulk commodities. Today, containerization is the dominant factor associated with non-bulk market commodities: 80 percent of general cargo is containerized and less than 1 percent is break bulk. As a result of both the switch to containerization and the growth in global trade, the amount of containerized cargo coming through the Port has increased dramatically. In 1990 the Port handled approximately 1.3 million TEUs, whereas in 2018 the Port handled 8.1 million TEUs.

DRAFT

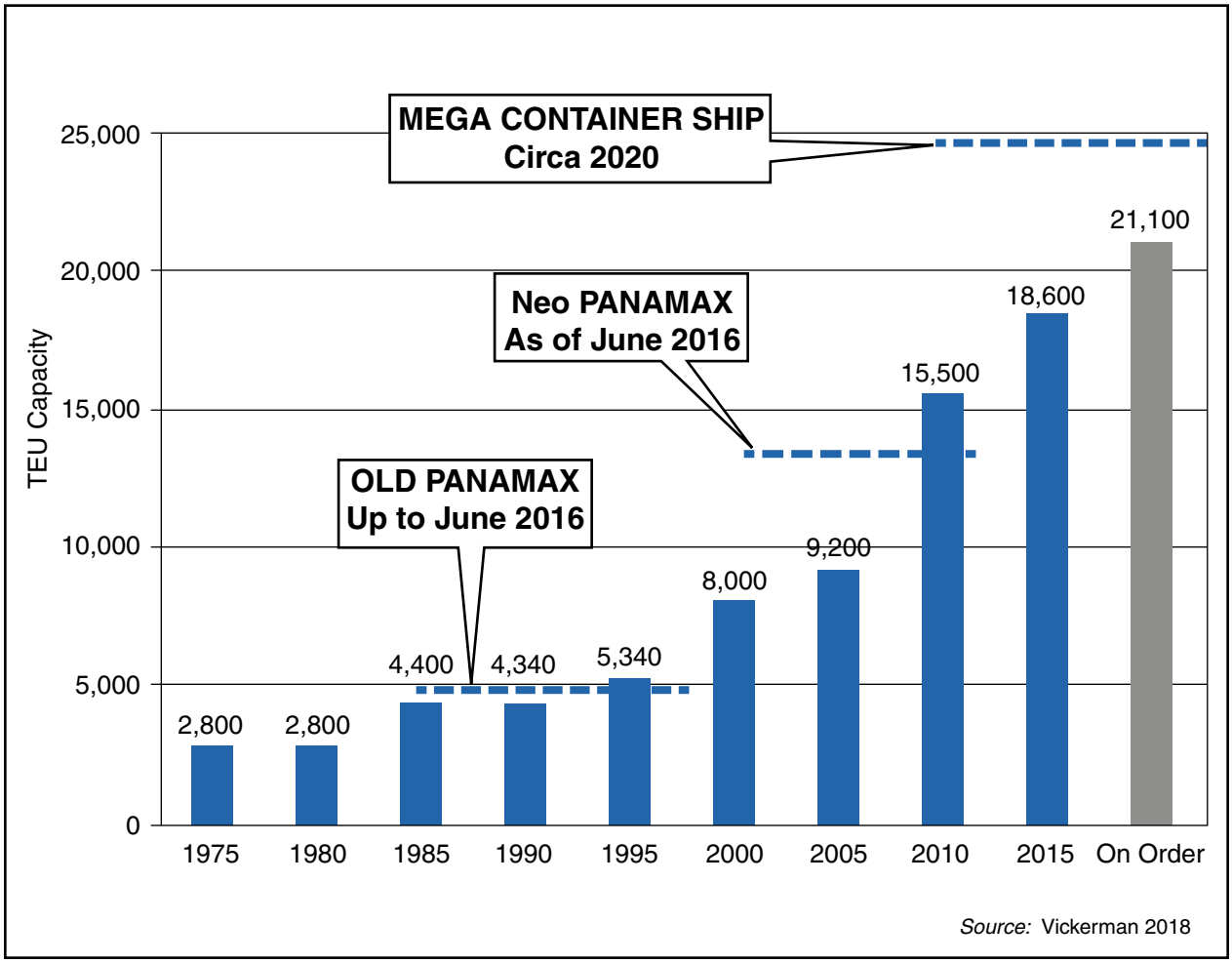


Figure 4.5-1. Containership Evolution

The rapid growth of container throughput volumes was aided by new techniques developed to facilitate cargo handling operations in the marine terminals, and shipment by truck and rail to inland destinations. Faster transit times and cost savings for shippers and carriers were key factors that drove development of West Coast ports. Accordingly, cargo for local and regional markets was augmented by discretionary intermodal cargo.

The factors described above—increasing ship sizes, the need for more-efficient cargo handling operations, increasing cargo volumes, and competitive pressures—have driven innovation throughput in the goods movement industry. For the Port, these innovations focus on the marine terminals that the Port builds and owns.

DRAFT

5 PLAN ELEMENTS

The plan elements establish the policy framework for future Port of Long Beach (Port or POLB) development and provide a Port-wide perspective on major functional areas or policy areas. The Port Master Plan (PMP) Update encompasses eight plan elements:

1. Public Access and Recreation;
2. Environment and Sustainability;
3. Climate Change Adaptation;
4. Transportation and Circulation;
5. Navigation;
6. Terminal Operations;
7. Rail Operations; and
8. Oil Operations.

Climate Change Adaptation and Terminal Operations are new plan elements that were not included in the 1990 PMP. Each plan element discusses Planning Goals, which are general aspirational statements that are intended to guide Port development.

5.1 PUBLIC ACCESS AND RECREATION

The Public Access and Recreation Element reflects the Port's commitment to protecting California's coast and access to coastal resources for the benefit of all people, in accordance with the California Coastal Act (CCA). As part of this commitment, the Port strives to preserve and enhance access to designated public areas and facilities for fishing, viewing, and other recreational activities, and to expand public recreation opportunities.

As a busy commercial port, the Port must balance public access and recreation opportunities with user safety and security of Primary Port and hazardous facilities. The Port uses best management practices (BMPs) to reduce conflicts between public, hazardous, and maritime uses. Activities at Primary Port terminals and hazardous material storage areas are generally the responsibility of the tenants and users. The CCA and the California Government Code recognize a need to provide public access and recreational activities in appropriate areas within the Harbor District.

Since the 1990 PMP, Congress enacted the Maritime Transportation Security Act (MTSA) of 2002. This Act provides provisions to control access at port facilities. Examples of MTSA-regulated facilities include container terminals, non-container terminals, passenger vessel terminals, and marine oil terminals. MTSA regulations place direct responsibilities on vessel and terminal operators to minimize risks and mitigate security threats. Marine terminal operators are the primary responsible parties for controlling access and providing security at their facilities.

Most visitor-serving and recreational uses within the Long Beach Harbor District (Harbor District) are located away from industrial Port uses and hazardous areas. An underlying port planning principle is to consolidate compatible uses and locate non-maritime uses in appropriate areas. Queensway Bay (Pier H) provides a buffer between the highly industrialized inner port complex and downtown waterfront recreational areas. Queensway Bay has been and continues to support visitor-serving commercial activities, temporary events, public access uses, recreational water uses, and cruise terminal facilities. Access to these activities from downtown Long Beach (the nearest local neighborhood) is typically via the Queensway Bridge from Ocean Boulevard and

DRAFT

Magnolia Street, additional access from points north is via Interstate (I)-710 and Harbor Scenic Drive.

The PMP Update establishes land use designations for Visitor-Serving Commercial Facilities and Recreational Open Space Facilities. The PMP Update authorizes Visitor-Serving Commercial Facilities in the northeastern portion (Pier C) of the Harbor District and Queensway Bay. Recreational Open Space Facilities and Recreational water uses are permitted in the southeastern portion of the Harbor District and Queensway Bay. Proposed land and water uses do not reduce or impact the public's right to use Harbor District waterways for navigation, fishing, boating, and other water-oriented activities.

The Queen Mary is a focal point for existing and future developments, educational programs, public displays, and other visitor-serving uses. Future development in Queensway Bay (Pier H) is guided by the Queensway Bay Planned Development Plan (for PD-21). The PMP Update concentrates public access, recreation, and commercial activities within Queensway Bay by supporting revitalization of the area and promoting recreational and tourist activities.

The Long Beach Cruise Terminal is another important visitor-serving use within this area. The Carnival Cruise Terminal supports the City of Long Beach's (the City's) visitor-serving industries and is one of the busiest cruise ship terminals in North America. The cruise terminal includes reuse of the Spruce Goose Dome for passenger staging as well as parking facilities.

Land uses within Queensway Bay are intended to avoid or minimize impacts on coastal resources and to complement the City's long-term vision for this area. This includes maintaining the Queen Mary as the focal point of the area; ensuring architecture reflects the maritime setting; ensuring the area is easily accessible to the public; promoting infrastructure improvements that emphasize connectivity to downtown and the greater Long Beach area; ensuring future development provides a wide range of activities and uses that attract visitors; creating and maintaining scenic views of the Queen Mary; and promoting public entertainment venues (City of Long Beach 2016).

The Port manages a number of public access and recreational amenities within the Harbor District. Currently under construction, the Pier J South Waterfront Bicycle Path project will extend an existing bicycle path into the Queen Mary complex and in areas of the Port's waterfront that are suitable for public access, which would add approximately 1.7 miles to the existing bicycle path. The extended bicycle path will provide visitors a panoramic view of the downtown skyline, marinas, beaches, and Long Beach Harbor. Other near-term bicycle and pedestrian facilities include the Mark Bixby Memorial Bicycle and Pedestrian Facility on the Gerald Desmond Bridge Replacement and the Ocean Boulevard Bicycle Gap Closure Project. The Port will also evaluate options for connections to the California Coastal Trail in the North Harbor area. In addition, the City is considering a proposal to revitalize the Queen Mary and develop the surrounding waterfront with enhanced commercial and recreational opportunities in a proposed development known as Queen Mary Island.

Ongoing/allowable projects[4] that will implement the goals of this element include:

- Ocean Boulevard Bicycle Gap Closure;
- Pier J Bicycle Path;
- Long Beach Cruise Terminal Improvements; and
- Queen Mary Island.

These projects are described in Section 6 (Planning Districts and Developments).

[4]Ongoing/allowable projects are consistent with the 1990 PMP as amended and do not require additional approval or certification by the California Coastal Commission (CCC).

The general planning goals that are intended to guide Port development related to the Public Access and Recreation Element are described below.

Goal 1: **Protect and enhance California's coastal resources and public access to the coast.**

Goal 2: **Provide safe and secure access to the Port to the public, including offering recreational activities.**

Goal 3: **Develop recreational opportunities for visitors to Queensway Bay.**

Goal 4: **Encourage alternative means of transportation to and from Queensway Bay, including recreational boat, bicycle, and foot.**

5.2 ENVIRONMENT AND SUSTAINABILITY

The Environment and Sustainability Element embodies the Port's ongoing efforts to preserve and enhance the environment through its leadership in innovative goods movement, natural resources stewardship, and sustainability. Since 1990, the Port has adopted various initiatives aimed at reducing emissions and promoting sustainability.

The Green Port Policy, which the Board of Harbor Commissioners (BHC) adopted in January 2005, serves as a guide for decision-making and establishes a framework for environmentally sustainable Port operations. The Green Port Policy formalizes the guiding principles for the Port's environmental protection efforts. The five guiding principles of this policy are to protect the community from harmful environmental impacts; distinguish the Port as a leader in environmental stewardship and compliance; promote sustainability; employ best available technology to avoid or reduce impacts; and engage and educate the community.

Reducing the impacts of Port operations on the environment and human health continues to be a high priority for the Port. Since 2005, through implementation of the Clean Air Action Plan and other initiatives, the Port has reduced diesel particulates by 88 percent, nitrogen oxides by 56 percent, and sulfur oxides by 97 percent. Key efforts have included:

- Implementing a program to reduce the speed of vessels approaching and within the harbor;
- Installing shore power for vessels at berth;
- Encouraging and assisting terminal operators to transition to cleaner cargo handling equipment, including zero- and near-zero-emission technologies;
- Reducing air pollution from harbor-area drayage trucks by banning older trucks calling at Port terminals, assisting the trucking industry to acquire cleaner trucks, and supporting development and testing of new, cleaner technologies;
- Identifying and removing contaminated soils and sediments;
- Implementing and improving stormwater BMPs and design standards, educating the Port community about stormwater issues, and ensuring compliance and enforcement of stormwater standards and regulations;
- Conducting a comprehensive marine survey (with the Port of Los Angeles) every 5 years to document the health of the harbor's resident wildlife;
- Exploring ways to reduce the potable water demand of the Harbor District by harvesting stormwater and utilizing recycled water; and
- Developing an advanced energy conservation and management initiative that will include exploring opportunities for renewable energy generation, implementing solar generation

DRAFT

pilot projects and other energy storage options (e.g., microgrid controls), providing energy reduction incentives to Port tenants to reduce energy use; obtaining technical information on power generation technologies; and other energy-related initiatives.

Development Review

The *Guidelines for Implementation of the Port of Long Beach Certified Port Master Plan*, discussed in Section 8 (Permitting Policies), set forth the permitting procedures for proposed development. Harbor Development permits are issued pursuant to the CCA and the City's Charter. Through the Port's permit process, proposed developments are reviewed for their consistency with the CCA and other laws and regulations. The permitting process is subject to the California Environmental Quality Act (CEQA), which requires mitigation when projects are found to have significant effects on the environment. The Port incorporates, as appropriate, permit conditions that reflect the goals of the Green Port Policy, thereby forwarding the environmental and sustainability goals of the PMP.

Habitat Loss Mitigation

Under the Clean Water Act (CWA), one of the Port's obligations in constructing new land or otherwise reducing the amount of water area in the harbor is to provide mitigation for the lost marine resources—fish, wildlife, and their habitat. Mitigation traditionally has been provided by the creation/restoration of tidal wetlands along the coast of Southern California because the resource agencies (United States [U.S.] Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Game) consider tidal wetlands to provide "in-kind" mitigation, meaning that the resources being created are similar to the resources being lost to the Port development. These wetland restoration projects generate mitigation "habitat credits," each credit being equivalent to one acre of Outer Harbor water area. Unused credits can be saved or "banked" for use in mitigating future projects.

The Port currently has a total of approximately 235 acres of credits in the Port's mitigation bank. After the credits needed for the permitted Middle Harbor Redevelopment (approximately 12 acres) and Pier G Redevelopment (approximately 17 acres) projects, but absent any future development, it is estimated that there will be about 206 mitigation credits left in the mitigation credit bank. As **Table 5.2-1** shows, anticipated projects requiring mitigation for habitat losses will require more credits than are currently available to the Port. Accordingly, additional credits would need to be acquired by the Port for the PMP Update anticipated projects[5] that would require use of fill credits. The banked credits come from the Bolsa Chica Restoration project and were vested via the inter-agency Bolsa Chica Memorandum of Agreement (MOA) that was negotiated in 1996 and amended in 2003. The parties to the MOA include six federal and state resource and wildlife agencies, the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency, and the San Pedro Bay Ports.

Table 5.2-1. PMP Update Anticipated Projects – Fill Estimates

Project	Estimated Fill (Acres)
Protective Boat Basin (Berth F202)	0.3
Pier T Improvements	70.0
Pier J Terminal Redevelopment	75.0
Pier W Terminal Development	100.0
TOTAL	**245.3**

Key: PMP = Port Master Plan

[5]Anticipated projects would be approved and certified as part of the PMP Update approval process.

The Port keeps an accounting of the credits available in the mitigation bank, and also calculates, for a given project, the net result of cuts (creating water area) and fill (losing water area). The net gain or loss of habitat, and therefore of credits, is calculated by the Port and confirmed by USACE and the wildlife agencies on the basis of the as-built surveys. The credits required to result in no net loss of habitat are then debited from the mitigation bank and a copy of the resulting accounting is provided to the MOA signatories.

Future areas that may result in new mitigation credit purchase opportunities include the Colorado Lagoon Restoration and Cerritos Wetlands Restoration projects. Any future credits will not be part of the Bolsa Chica MOA process, but will instead be granted and maintained by the procedures described in the Mitigation Bank Enabling Instrument for each mitigation bank from which the Port purchases credits.

The general planning goals that are intended to guide Port development related to the Environment and Sustainability Element are described below.

Goal 1: **Reduce environmental and health impacts from Port operations.**

Goal 2: **Preserve and enhance natural resources at the Port so that all communities may benefit from them.**

Goal 3: **Minimize habitat loss.**

Goal 4: **Identify and remediate soil and groundwater contamination.**

Goal 5: **Promote on-site renewable energy generation in location(s) appropriate to accommodate it.**

Goal 6: **Mitigate the potential impacts on coastal resources from proposed developments.**

5.3 CLIMATE CHANGE ADAPTATION

The Climate Change Adaptation Element, a new element of the PMP, outlines the Port's goals for climate change adaptation and coastal resiliency. The increasing frequency of extreme weather events presents risks to Port infrastructure, which could adversely affect cargo handling operations, recreational facilities, and areas of public access. Extreme weather events have already resulted in infrastructure and economic loss in the Port as well as damage to wildlife habitat within the Harbor District. Hurricane Marie in August 2014, for example, caused significant damage to road infrastructure on the Navy Mole and Pier F from storm surge and wave hazards and resulted in multiple days of operational disruption at various Port terminals. These weather events, such as flooding, storm surge, and heavy surf, can adversely affect water and sediment quality and marine habitats. Higher average temperatures and prolonged periods of heat also place extreme loads on the electrical grid serving Port terminals and other facilities critical to Port operations.

In 2015, the California Coastal Commission (CCC) adopted the Sea Level Rise Policy Guidance to help focus adaptation planning and in 2018 issued draft policy guidance for addressing sea level rise in coastal management programs. Also in 2018, the State of California's Ocean Protection Council updated its guidance to local governments for analyzing and evaluating risks associated with sea level rise. A Science Update was adopted by the CCC in 2018 based on the best available science on sea level rise projections. The Port developed the 2016 Climate Adaptation and Coastal Resiliency Plan (CRP) in accordance with California Assembly Bill 691 (2014) to manage the direct and indirect risks associated with climate change and coastal hazards and to ensure continuity of Port operations. The CRP, which was submitted to the California State

DRAFT

Lands Commission in April 2017 in accordance with Assembly Bill 691, is divided into the following steps for implementation:

- Review current climate science to determine primary stressors and potential impacts;
- Complete an inventory of Port assets (terminals, infrastructure, ecological resources, and public access/recreational facilities) and a vulnerability assessment;
- Complete inundation mapping for various sea level rise scenarios based on the most appropriate sea level rise model(s) for Port assets;
- Develop vulnerability profiles for Port assets by system;
- Identify near- and long-term adaptation strategies; and
- Implement and integrate adaptation strategies into Port guidelines, policies, and operations.

CRP development included a comprehensive inventory to identify and organize all Port assets and operations. The inventory identifies piers, wharves, utilities, roadways, rail, and critical buildings and backland areas essential to Port operations. This type of inventory assisted in prioritizing and developing actions necessary to avoid or minimize impacts on Port assets. Assets were organized by system (e.g., transportation network, piers, utilities, breakwater, etc.), which became the basis for vulnerability profiles devised for each system.

Climate change risks include flooding events from anticipated sea level rise, precipitation, riverine flooding, and storm surge. Impacts from a flood event can vary; for example, assets such as paved roads may be temporarily closed when flooded, but regain normal function once floodwaters recede. Some assets may remain fully functional if the inundation is limited to a few inches or less, while other assets such as railway systems may be completely shut down if significant inundation occurs. If flooding events become more frequent, severe, or even permanent, the Port will need to assess structural enhancements to its facilities.

The timing of future climate events is uncertain, but there is strong consensus that the global mean temperature is rising and will be associated with more extreme or frequent events in the future. For example, sea levels adjacent to the Port are projected to rise 0.5 to 2.0 feet by mid-century and 1.3 to 5.5 feet by the end of the century (POLB 2016), and these projections are already worsening greatly based on new science and more sophisticated sea level rise modeling software. For example, recent statewide guidance suggests using sea levels rise projections of 2.6 feet by mid-century and 9.9 feet by end of century under what is called the H++ extreme risk aversion projection. However, the Port's CRP utilizes the 2012 National Research Council sea level rise model as this model assesses sea level rise scenarios that most appropriately align with the average lifespan of Port infrastructure and the planning horizon on which Port assets and terminals are redeveloped. Additionally, the National Research Council model produces inundation scenarios that are more conservative than the current state guidance and show higher potential for sea level rise for near-term planning horizons (i.e., 2030 and 2050).

Pacific hurricanes and other extreme storm events with high wind speeds and large waves are also increasing in both frequency and intensity. These changes can damage infrastructure, disrupt operations, and impact worker safety. Further, extreme temperatures may result in electrical outages as well as transmission inefficiencies that can stress the Port's electrical grid and isolate its critical facilities.

The CRP enables the Port to prepare for climate change and associated coastal hazards by providing a framework for incorporating adaptive measures into policymaking and planning processes, environmental documents, infrastructure design, and construction practices. The strategies identified in the CRP include addressing climate change impacts through existing Port policies, plans, and guidelines, and including climate change analysis and considerations to the

DRAFT

Port's development permitting process; a sea level rise vulnerability analysis was incorporated into the Harbor Development Permit application in 2018. Additional strategies focus on design criteria for infrastructure projects, including, but not be limited to, impacts of riverine and coastal flooding as part of risk assessment; incorporating shoreline protection; and evaluating multiple strategies and options for protection of shoreline utilities and infrastructure.

One example of a current, ongoing/allowable project that will implement the goals of this element is the Pier S Shoreline Enhancement project. This project is described in Section 6 (Planning Districts and Developments).

The general planning goals that are intended to guide Port development related to the Climate Change Adaptation Element are described below.

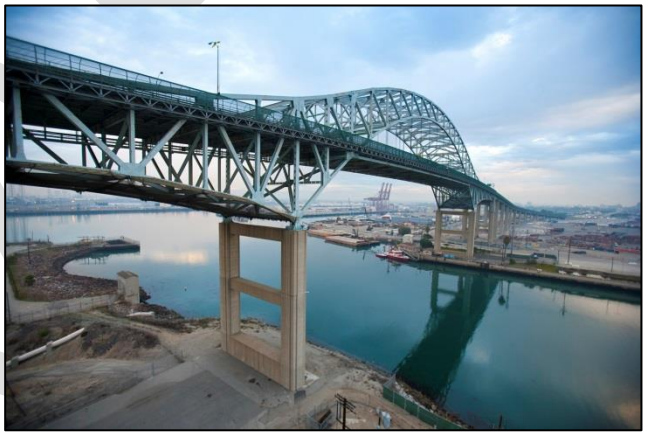
Goal 1: **Manage risks associated with climate change, including sea level rise and extreme weather, based on the best available science.**

Goal 2: **Safeguard vulnerable assets to minimize impact of damage or loss.**

Goal 3: **Develop and implement adaptation strategies to protect the Port against the effects of climate change.**

5.4 TRANSPORTATION AND CIRCULATION

This element was added to the 1990 PMP and remains an essential element for establishing policy direction for transportation access and circulation. This element emphasizes vehicular and pedestrian transportation issues; rail transportation is considered in Section 5.7 (Rail Operations).



Minimizing impacts and providing adequate highway access to handle the forecasted cargo volumes are major transportation challenges facing the Port. In addition, the Port needs to maintain and enhance safe pedestrian and bicycle access to appropriate areas of the harbor.

The total volume of cargo coming through the Port will continue to increase. To accommodate that growth as well as the access needs of all Port users (e.g., workers, truckers, and visitors), the Port's transportation infrastructure will need improvement.

Thousands of drayage trucks move cargo in and out of the Port's terminals each day, frequently resulting in congestion on Port and regional roadways. Improving the flow of truck traffic is a key priority, and will have the added benefit of improving air quality. An important congestion management tool is a truck appointment system implemented by the terminal operators and local trucking industry. The system improves traffic flow along the main access routes to the Port and helps reduce bunching and idling at the gates by distributing truck arrival and container pick-up times throughout the day.

The Port is also committed to improving the flow of cargo trucks beyond the Harbor District through its involvement in regional transportation planning efforts aimed at addressing the challenges of goods movement in the region's roadway network. The Los Angeles County Intelligent Transportation Systems Architecture Update is a comprehensive plan that serves as a

framework for planning and deploying technology and for managing and operating the transportation system in Los Angeles County. The Gateway Cities Technology Plan for Goods Movement provides a blueprint for an end-to-end information support system that can improve the efficiency of goods movement in Southern California through the integration of traditional real-time road and traveler information technologies, along with intermodal freight, port, and truck technologies. The San Pedro Bay Ports have collaborated to produce focused studies of port-related traffic. These studies develop transportation planning tools to address the technical challenges associated with the San Pedro Bay Ports' growth, identify existing and future transportation system deficiencies in and around the San Pedro Bay Port Complex, and recommend physical and operational strategies to mitigate future system deficiencies. An updated study is planned for the near future.

Another important strategy for helping to move cargo is to designate and maintain overweight and oversize vehicle routes that serve the Port's terminals. **Figure 5.4-1** depicts the existing overweight truck corridors and oversize truck routes. Overweight and oversize loads, such as steel coil and construction equipment being trucked to and from terminals, often mean slow trucks, which can impede traffic flow. Coordination with the California Department of Transportation and Los Angeles Department of Transportation to ensure adequate access for overweight/oversize trucks ensures that such cargo types can continue to be moved efficiently with minimal traffic impacts.

Regional studies conducted by other agencies, but relevant to the Port, include various Southern California Association of Governments reports such as the 2016 Regional Transportation Plan, which establishes a vision for a sustainable goods movement system in Southern California. The Multi-County Goods Movement Action Plan, completed by the Los Angeles County Metropolitan Transportation Authority in 2008, addresses the multi-county goods movement challenges and identifies strategies and options (short, mid and long-term) that can be implemented for the region or for individual counties. Other recent studies include the Los Angeles County Strategic Goods Movement Arterial Plan (2015) and Gateway Cities Council of Government Strategic Transportation Plan (2016). At the statewide level, the California Freight Mobility Plan identifies a current freight vision consistent with federal guidelines and establishes the need for additional freight funding. The involvement of regional and state agencies in goods movement planning ensures that regulatory and funding decisions incorporate the need to facilitate the movement of cargo throughout the region.

Visitor-Serving Facilities

Queensway Bay is the primary visitor-serving area of the Harbor District. The Queensway Bay Planned Development Plan, administered by the City, provides a framework for the development of Queensway Bay as a visitor-serving destination with recreational and commercial uses.

Additionally, Queensway Bay Planned Development Plan specifies development standards for building design, minimum parking and parking structure requirements, and guidelines for landscaping and urban design. To minimize parking demands and traffic congestion, shuttle systems such as buses or other form of shared transportation, connecting the downtown area to the Queensway Bay area are encouraged. The shuttle system may be a priority based on anticipated intensification in use of the Queen Mary area and the Carnival Cruise Terminal. As the Queen Mary site is redeveloped, visitor access and egress routes will be designed to avoid co-mingling visitor vehicle traffic with the heavy trucks associated with Primary Port activities. **Figure 5.4-2** depicts the existing public transit facilities/ routes within the Harbor District.

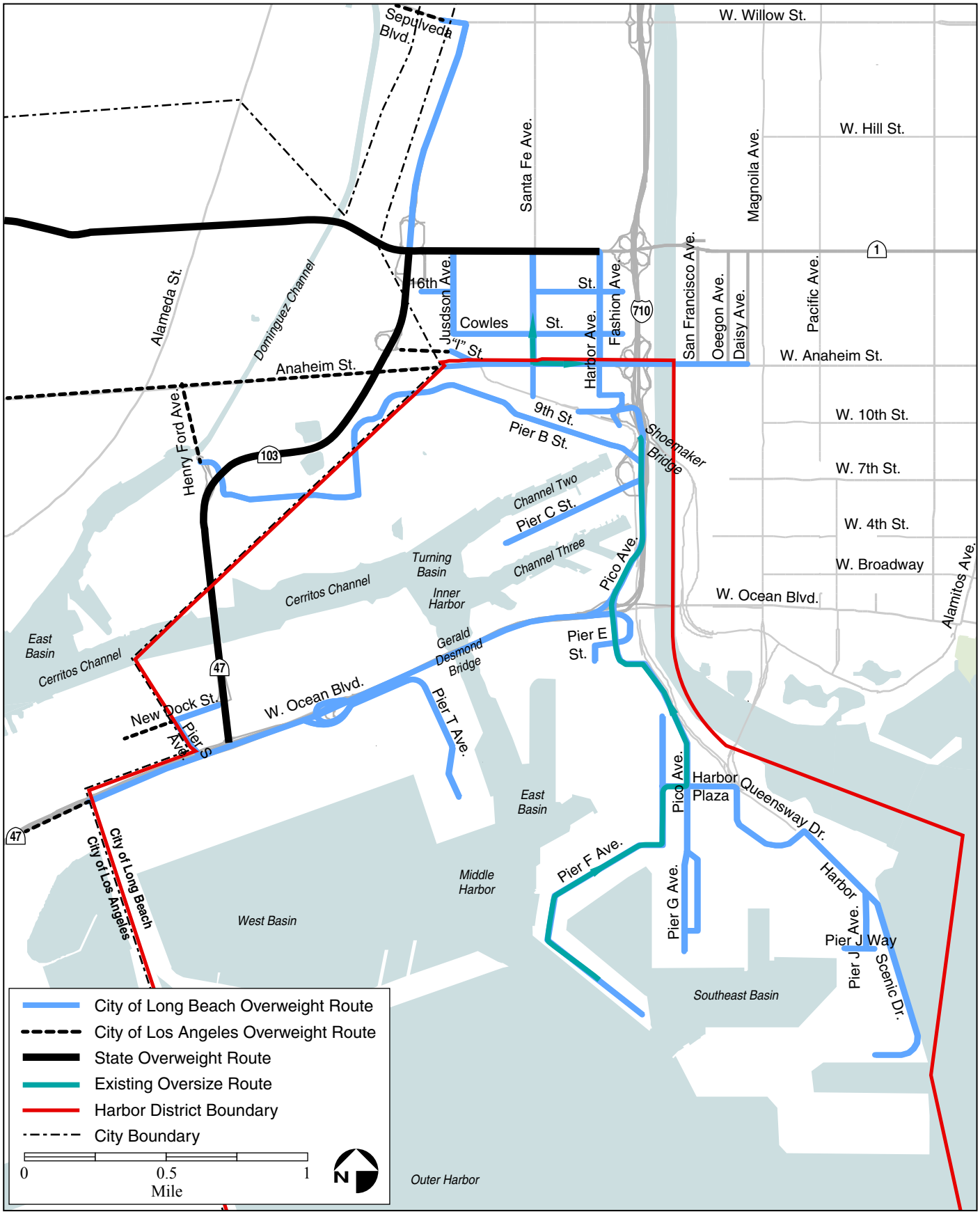


Figure 5.4 1. Overweight Truck Corridors and Oversize Truck Routes

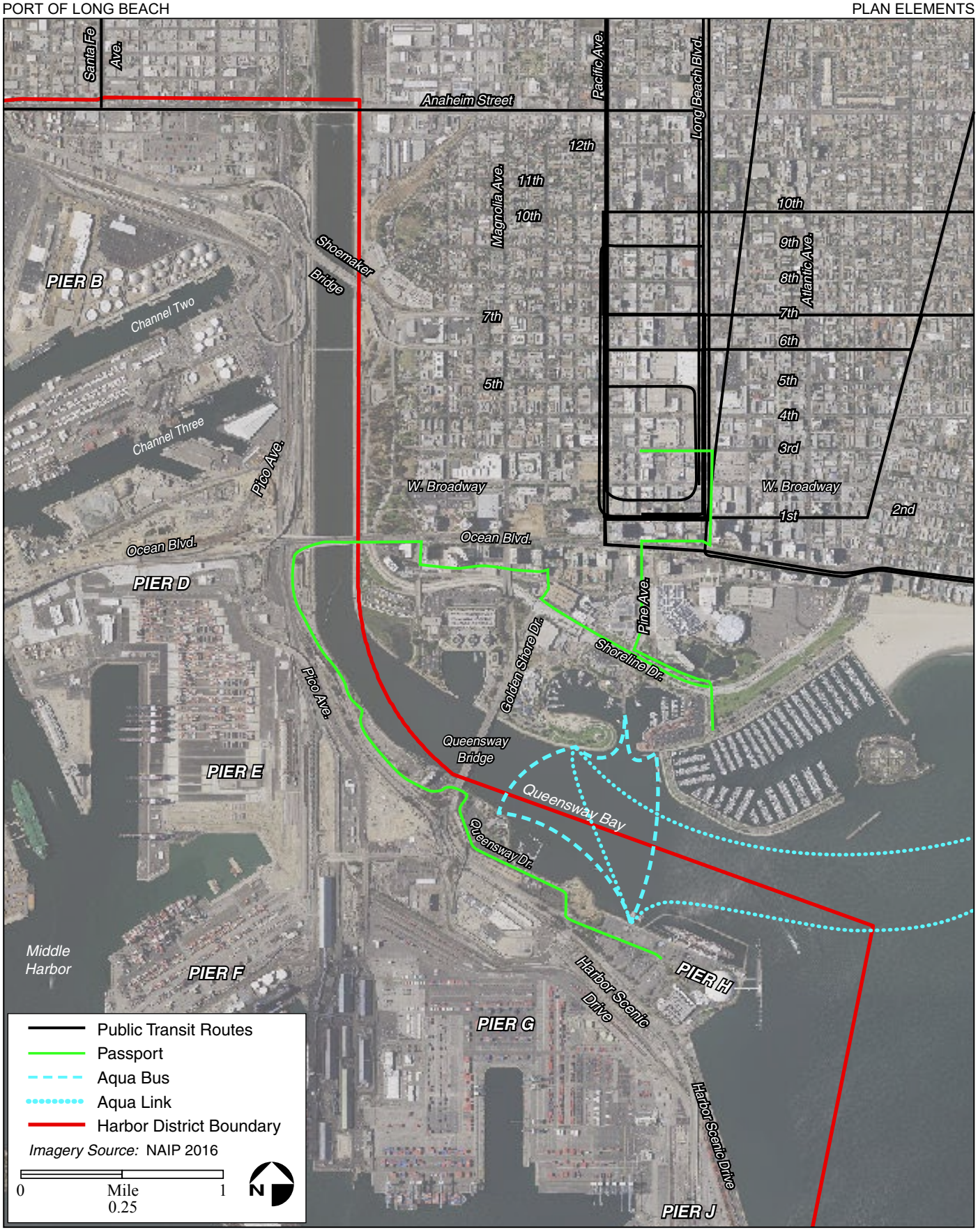


Figure 5.4-2. Public Transit Facilities/Routes within the Harbor District

Active Transportation Network

The Port provides a number of public access amenities that support bicycle mobility within the Harbor District. The California Coastal Trail, once completed, will extend 1,200 miles between the Oregon and Mexican borders. The California Coastal Trail is intended to traverse the northern portion of the Harbor District, and to that end, the Port is evaluating options for connections to the trail within the North Harbor area. In addition, the Port is currently planning the Ocean Boulevard Bicycle Gap Closure Project, which will connect the Mark Bixby Memorial Bicycle and Pedestrian Facility on the Gerald Desmond Bridge bicycle path to existing Ocean Boulevard and to bicycle paths along the Los Angeles River and downtown Long Beach. The Ocean Boulevard Bicycle Gap Closure Project could provide additional connections to the California Coastal Trail depending on the Port of Los Angeles's plans for the Vincent Thomas Bridge. The Port has also begun construction on improvements to the south waterfront/Pier J bicycle path along Queensway Drive and Harbor Scenic Drive (**Figure 5.4-3**).

Ongoing/allowable projects that will implement the goals of this element include:

- Gerald Desmond Bridge Replacement;
- Ocean Boulevard Bicycle Gap Closure;
- Pier J Bicycle Path; and
- Shoemaker Bridge Replacement.

These projects are described in Section 6 (Planning Districts and Developments).

The general planning goals that are intended to guide Port development related to the Transportation and Circulation Element are described below.

Goal 1: **Reduce the impacts of Port-related truck traffic on local roadways.**

Goal 2: **Manage truck traffic to and from the Port.**

Goal 3: **Improve the circulation of people and goods within the Port to support safe, efficient operations.**

Goal 4: **Coordinate Port development and operations with regional transportation projects.**

Goal 5: **Provide safe and convenient access to Queensway Bay visitors.**

Goal 6: **Provide safe and secure bicycle and pedestrian paths that connect with the California Coastal Trail.**

DRAFT

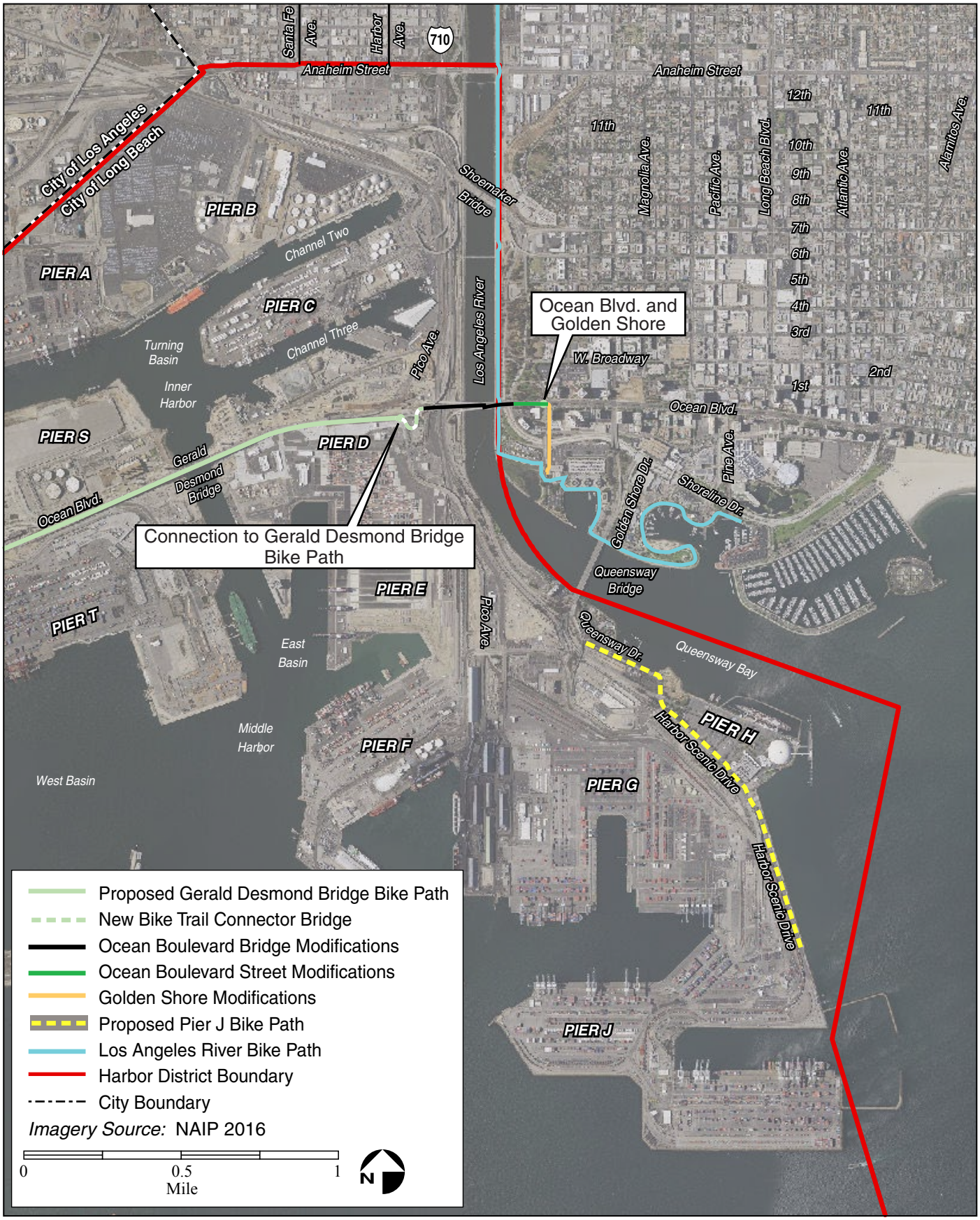


Figure 5.4-3. Bicycle Paths in the Harbor District

5.5 NAVIGATION

Accommodation of the world fleet, including liquid bulk, dry bulk, and post-Panamax container vessels, continues to be a critical planning element for maintaining navigational capabilities within the Harbor District. A primary PMP Update goal is to accommodate cargo growth consistent with changing shipping industry demands. Today's challenge is to ensure that current marine terminals are capable of meeting vessel fleet changes (e.g., vessel size, draft, beam, and length). Since adoption and certification of the 1990 PMP, the Port has met this challenge. In 1990, the early post-Panamax container vessel held 4,000 twenty-foot equivalent units (TEUs); by 1995 a large container vessel held 5,000 TEUs; by 2004 the maximum vessel size had grown to 8,500 TEUs; and currently vessels as large as 18,000 TEUs are calling at the Port.

Future development of container services in San Pedro Bay will be a function of the following factors (Mercator 2016):

- Pace of overall cargo volume growth;
- Availability of larger vessels in the trades; and
- Capabilities of the ports to handle larger vessels.



The average capacity for the transpacific vessels calling at the San Pedro Bay Ports in 2015 was approximately 8,100 TEUs. As container vessel capacities increase, ocean carriers are reducing the number of weekly sailings. This new deployment results in lowering the slot costs on the route and results in carriers combining services into alliances to support larger vessels. For San Pedro Bay, studies indicate there will be a cascading effect on the size of container vessels between 10,000 and 16,000 TEUs, which will affect the number and capacity of terminal services. In the long term, future navigation needs may require accommodation of the emerging 20,000 to 24,000 TEU vessels, referred to as ultra large container ships.

The San Pedro Bay Ports will face competition in meeting future demands to accommodate larger vessels and discretionary cargo. The primary competition will come from Canada (Port of Prince Rupert), Pacific Northwest Alliance (Ports of Seattle and Tacoma), and East Coast ports served via the expanded Panama Canal or the Suez Canal.

In addition to the container trade, the Port continues to serve the liquid bulk carriers (e.g., very large crude carriers [VLCC]) at Pier T (Berth 121), which is the only VLCC berth on the West Coast. The San Pedro Bay Ports handle approximately 50 percent of the State's oil products (imports and exports). There is only a 5-day supply of oil ashore.

Dredging of the harbor's channels and berths is needed to improve and maintain safe navigation and deep-water access to accommodate larger ships and crucial cargo. The Port and USACE are in the process of preparing the POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project that will identify and evaluate improvements to existing navigation channels within the Port.

Navigational Safety

The Harbor District's navigational radar, range markers, range lights, and availability of tug-assist vessels are critical to safe navigation. The Port's shoreside radar system is located in the

southeastern portion of the Harbor District. In partnership with the Marine Exchange of Southern California and the U.S. Coast Guard, Port Pilots direct the flow of ships in the harbor. When a container vessel passes into the Inner Harbor, radar use can be impaired and require Port Pilots to use other navigational aids. It is recommended that the navigation radar be relocated to a site that can provide full surveillance of the harbor to optimize navigational safety.

The ongoing/allowable project that will implement the goals of this element is the POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project. In addition, the Outer Harbor Sediment Placement and Ecosystem Restoration (summarized below) is an anticipated project that supports the goals of this element. These projects are described in Section 6 (Planning Districts and Developments).

Sediment Management

Port dredging and fill projects necessary to maintain channels, turning basins, and berths generate contaminated and uncontaminated sediments that must be managed appropriately. The Port continues its commitment to beneficial reuse of dredge sediments in accordance with Contaminated Sediments Task Force policy. Best practices for sediment management require the Port to match dredging and fill opportunities; however, this is not always possible. When all beneficial reuse options are exhausted, one of the strategies for management of contaminated sediments is confined aquatic disposal. Development of the Outer Harbor Sediment Placement and Ecosystem Restoration site is an anticipated project included in the PMP Update. Specifically, the Port proposes to convert the existing Western Anchorage Sediment Storage Site into a confined aquatic disposal site for management of clean and contaminated sediments in a way that will also provide marine habitat benefits.

The general planning goals that are intended to guide Port development related to the Navigation Element are described below.

Goal 1: **Provide deep-water access to commercial berths and anchorage areas to accommodate existing and future vessels.**

Goal 2: **Enhance navigation capabilities for vessel safety while transiting or maneuvering within the harbor.**

Goal 3: **Improve access to anchorage areas within and adjacent to the harbor's main channel.**

Goal 4: **Minimize potential traffic conflicts between vessels.**

Goal 5: **Manage the placement of contaminated sediment.**

5.6 TERMINAL OPERATIONS

The Terminal Operations Element is a new plan element in this PMP Update. Changes in vessel sizes, terminal capacities, and the intermodal supply chain, and advances in technology all impact the Port's approach to terminal operations. The Port must ensure that it meets those challenges by modernizing and expanding Port facilities in ways that are consistent with the CCA.



As described in Section 4 (Factors Affecting Demand for Port Development) of this PMP Update, cargo volumes and vessel sizes have increased dramatically since the 1990 PMP and are forecast to continue to grow in the foreseeable future.

More cargo and larger ships put pressure on terminal operations, local roads, and rail systems. As shipping lines, terminal operators, and shippers place more pressure on the Port to accommodate bigger ships, improve cargo velocity through the terminals, and adopt new cargo handling technologies, future facilities will need to be planned and developed accordingly, and terminal operations will have to evolve to be more efficient.

A primary goal of the PMP Update is to accommodate forecasted demand. In 2014, 15.2 million TEUs moved through the San Pedro Bay Ports. This represents just over 31 percent of the combined throughput of all seaports located in the U.S. and Canada, indicating the economic importance of the Southern California "container hub." Based on the San Pedro Long-Term Unconstrained Cargo Forecast (Mercator 2016), the container forecast anticipates an average 4 percent annual growth rate to 2040, leading to a container volume of 41.1 million TEUs.

In addition, non-container terminal cargo volumes are also predicted to grow, although more slowly than container volumes, from approximately 45 million metric tons in 2014 to approximately 56 million tons in 2040 (Mercator 2016). While existing terminal capacity may be adequate to accommodate that increase, terminals will still need to be modernized to ensure they remain competitive and to reduce their environmental impacts. For the PMP Update, non-container terminals are classified as follows:

- Liquid bulk (crude and non-crude oil);
- Dry bulk;
- Break bulk; and
- Roll on/roll off (Ro/Ro) (automobiles/light trucks).

The modernization and expansion of marine terminals necessary to meet future cargo demands will meet the requirements of the CCA. For example, the CCA (Public Resource Code Section 30701) specifically states that "[e]xisting ports…shall be encouraged to modernize and construct necessary facilities within their boundaries in order to minimize or eliminate the necessity for future dredging and filling to create new ports in new areas of the state." CCA Section 30705 allows ports to fill or dredge water areas for "construction, deepening, widening, lengthening, or maintenance of ship channel approaches, ship channels, turning basins, berthing areas, and facilities that are required for the safety and the accommodation of commerce and vessels to be served by port facilities," as well as for "new or expanded facilities or waterfront land for port-related facilities."

The ongoing/allowable projects that will implement the goals of this element include:

- Middle Harbor Redevelopment Program;
- Pier S Mixed Use Development;
- Pier G Terminal Redevelopment;
- Pier B Street Support Yard;
- Pier T Echo Support Yard;
- Administrative Building Demolition; and
- Administrative Building Site Support Yard (Expansion).

The anticipated projects that will implement the goals of this element include:

DRAFT

- Pier J Terminal Redevelopment;
- Pier T Improvements; and
- Pier W Terminal Development.

These projects are described in Section 6 (Planning Districts and Developments).

The general planning goals that are intended to guide Port development related to the Terminal Operations Element are described below.

Goal 1: **Enhance the capacities of container terminals to accommodate future demand.**

Goal 2: **Promote cargo diversity.**

Goal 3: **Streamline the movement of cargo within the port complex.**

Goal 4: **Modernize container terminals to improve operational efficiency.**

Goal 5: **Transition to cleaner operations consistent with the Clean Air Action Plan.**

5.7 RAIL OPERATIONS

The Rail Operations Element addresses the rail facilities serving San Pedro Bay (described in Section 1.5, The Port of Long Beach), existing intermodal capabilities, and priorities with respect to future rail system improvements

For cargo destined to inland points more than 500 miles from the Port (commonly referred to as Inland Point Intermodal [IPI] cargo), the most efficient means of moving cargo to its ultimate destination is by intermodal rail, in which containerized cargo is moved by rail from the marine terminal or trucked to a nearby railyard for long-haul transport to its destination. This mode of goods movement is particularly important from a historical perspective because it opened the inland U.S., especially the Midwest and Southeastern U.S., to Asian shippers, who could ship containers to the U.S. West Coast for train transfer eastward. There are three basic types of intermodal rail facilities: off-dock, near-dock, and on-dock. On-dock railyards, where the facility is inside or immediately adjacent to a marine terminal, provide the most efficient method for IPI cargo, since containers can be transferred from ship to train without a truck trip. However, for various reasons a small proportion of IPI containers utilize near-dock (i.e., within 5 miles of the Port) and off-dock (i.e., railyards near downtown Los Angeles, approximately 20 miles to the north of the Port) facilities. For example, near- and off-dock railyards are able to consolidate small amounts of cargo from various sources, including a particular marine terminal, that are bound for a common destination onto a single train. On-dock facilities, by contrast, tend to make up trains in which all of the containers are bound for a single inland destination; small numbers of containers bound for other destinations are sent by truck to the other types of intermodal facilities. This is a particular function of Union Pacific's near-dock Intermodal Container Transfer Facility, in Carson, which only handles marine containers from San Pedro Bay Port Complex terminals.

Figure 5.7-1 depicts the intermodal rail network within and adjacent to the Harbor District. The Port's five current on-dock rail facilities are at Pier J, Pier G, Piers D/E/F, Pier A, and Pier T. The Pier B rail support yard also provides rail switching and railcar staging services that support the on-dock yards.

The 2006 San Pedro Bay Ports Rail Study Update evaluated the rail system performance and recommended enhancements to Port infrastructure. The Port of Long Beach previously conducted a Rail Master Planning Study (POLB 2002) and the Port of Los Angeles conducted a Rail Capacity Analysis (Port of Los Angeles 2003) based on year 2000 conditions. The 2006 study



Figure 5.7-1. Intermodal Rail Network

This page intentionally left blank

DRAFT

incorporated changed market conditions, revised Port development plans, and a modified cargo forecast based on the latest information available in 2005.

In partnership with the Port of Los Angeles, the 2020 Comprehensive San Pedro Bay Ports Rail Study Update will build upon the 2006 Update and evaluate the rail network, including infrastructure and operational constraints and system capacities. This study will incorporate changes in market conditions, revised Port development plans, and the latest 2016 cargo demand forecast. The goal of the study is to update the Port-wide Rail Improvement Program that will address rail system deficiencies (e.g., capital and operational), identify necessary improvements, and provide a plan for phased implementation.

A number of external issues are expected to affect intermodal rail in the future. With expansion of the Panama Canal to accommodate the larger post-Panamax container vessels, competition may come from other U.S. ports in the Gulf and South Atlantic regions. Also, with the shifting of manufacturing in the Far East away from Korea, Japan, and northern China to Southeast Asia and India, cargo once destined for West Coast regions may find new trade routes through the Suez Canal and Mediterranean directly to the U.S. East Coast.

Another external intermodal rail constraint is the Henry Ford Avenue railroad bridge, also known as Badger Bridge. Badger Bridge provides access for trains across the Cerritos Channel to Port of Long Beach and Port of Los Angeles facilities on Terminal Island. Although located in the Harbor District, Badger Bridge is operated by Pacific Harbor Lines under the jurisdiction of the U.S. Coast Guard, and is owned by the Port of Los Angeles; the Port has no control over this facility. Due to the low height of the Badger Bridge, it is lifted to allow vessels to pass under the bridge. Allowing Badger Bridge to lift for vessel passage causes significant declines in rail network system operations. The U.S. Coast Guard may consider a bridge lockdown to provide more-efficient intermodal services.

Ongoing/allowable projects that will implement the goals of this element include:

- Pier B On-Dock Rail Support Facility;
- Fourth Track at Ocean Boulevard;
- Terminal Island Wye Improvements; and
- Double Track Access from Pier G to J.

These projects are described in Section 6 (Planning Districts and Developments).

The general planning goals that are intended to guide Port development related to the Rail Operations Element are described below.

Goal 1: **Reduce regional truck traffic and congestion by increasing on-dock rail capabilities.**

Goal 2: **Increase the velocity of cargo that is moved through on-dock rail facilities.**

Goal 3: **Minimize or remove constraints on the rail system so that a greater volume of cargo can move by rail.**

5.8 OIL OPERATIONS

State legislation requires the City, as Tidelands trustee, to operate oil production activities in the best interests of the State, including managing the extraction of oil and gas from the State Tidelands. The State has an interest in the revenues derived from oil operations in the Port. Oil operations within the Port, including the abandonment and consolidation of production equipment,

should maximize economic recovery of oil and gas from the area. The management of oil activities is the responsibility of the Long Beach Energy Resources Department (LBER, formerly Long Beach Gas and Oil, formerly Department of Oil Properties). Oil production within the Harbor District is allowed by the Long Beach City Charter, Sections 1203c and 1203d. The Port has a Memorandum of Understanding with LBER, which was approved in 1992 and amended in 2004, that provides guidelines for coordination of oil operations within the Harbor District (**Figure 5.8-1**).

Oil production activities have occurred in the Harbor District since 1936. Cumulative production of the State Tidelands portion of the Wilmington Field reached 1,386 million barrels (bbls) in 2017, with estimated reserves of approximately 31 million bbls effective December 2017. The term "reserves" refers only to oil that is economically recoverable. The field currently produces 27,820 bbls per day. Production in State Tidelands is currently 25,000 bbls per day or 89 percent of the local portion of the field.

Current estimates predict the useful life of the Tidelands portion of the Wilmington Field to be in operation until 2037. This estimate is dependent on recovery technology and the price of oil. Future implementation of tertiary recovery techniques, if successful, could extend the useful life of the field beyond current estimates.

Primary land use policies that guide oil and gas production activities within the Harbor District have not changed since the 1990 PMP. These policies include maximizing efficient oil recovery operations, allowing cargo storage among existing oil wells, consolidating oil production, and minimizing disruption to oil production areas.

By preserving maximum flexibility for ongoing and future oil and gas operations, the Port will continue to work with LBER to consolidate oil and gas activities within areas specifically designated for such purpose, called Oil Operating Areas. Likewise, as the Port undertakes new construction projects, having dedicated consolidated sites will minimize disruption to the oil and gas production activities.

The general planning goals that are intended to guide Port development related to the Oil Operations Element are described below.

Goal 1: Consolidate oil and gas production into designated Oil Operating Areas.

Goal 2: Avoid damage and/or mutual interference between Port activities and oil and gas production.

Goal 3: Ensure oil field operational safety.

DRAFT



Figure 5.8-1. Oil Operating Areas

This page intentionally blank.

DRAFT

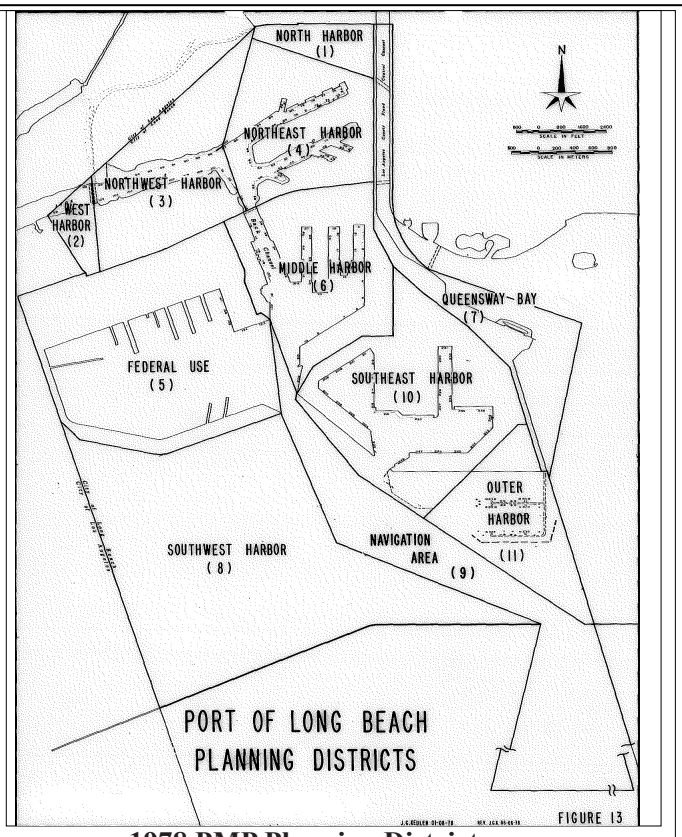
6 PLANNING DISTRICTS AND DEVELOPMENTS

In order to facilitate land use planning within the Long Beach Harbor District (Harbor District), the Port Master Plan (PMP) Update defines planning districts, which are geographic areas generally bound by major landmarks such as transportation corridors or navigational channels. The function of these planning districts is to organize land uses throughout the Harbor District and promote land use compatibility among existing and new uses. Within each planning district, permitted land uses and water uses are defined based on the planning goals for the district.

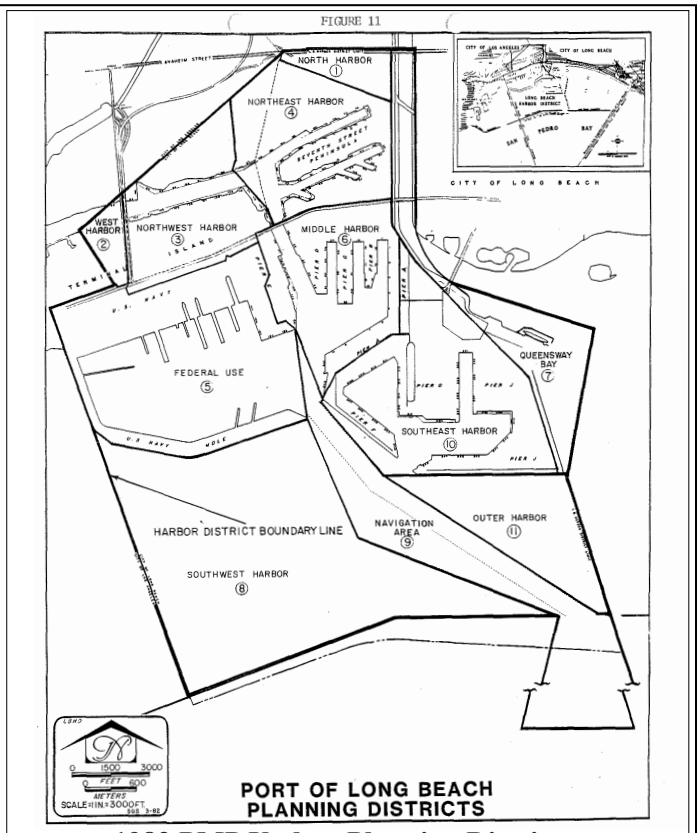
The PMP planning districts have evolved throughout the Port of Long Beach's (Port or POLB) master planning process (**Figure 6.0-1**). The 1978 PMP subdivided the Harbor District into 11 functional planning districts that were defined by physical and geographical constraints and configurations of land and water areas. The 1978 PMP planning districts included: District 1 (North Harbor); District 2 (West Harbor); District 3 (Northwest Harbor); District 4 (Northeast Harbor); District 5 (Federal Use); District 6 (Middle Harbor); District 7 (Queensway Bay); District 8 (Southwest Harbor); District 9 (Navigation Area); District 10 (Southeast Harbor); and District 11 (Outer Harbor). These districts were established to consolidate similar and compatible land and water uses, encourage maximum utilization of facilities, improve cargo handling efficiency, promote multi-company terminal use, and separate hazardous cargo areas from other Port areas (POLB 1978). The 1983 PMP Update retained the 11 planning districts, but modified some district boundaries to accommodate significant changes in planning goals and anticipated projects. Specifically, the boundaries between the Northwest Harbor, Northeast Harbor, Southeast Harbor, and Outer Harbor planning districts were modified to accommodate major changes in anticipated projects (POLB 1983). The 1990 PMP Update also included 11 planning districts, but modified the Southeast Harbor and Outer Harbor planning district boundaries to conform to changes in land and water uses associated with construction of the 147-acre Pier J expansion (POLB 1990). In 1996, PMP Amendment #9 reduced the number of planning districts to 10 and realigned the boundaries of several planning districts to simplify the designation of permitted uses on Terminal Island (POLB 1996). This PMP Update further reduces the number of planning districts from 10 to 7, and modifies the boundaries of several individual planning districts.

The PMP Update redefines the planning districts based on current and projected land uses. The updated planning districts include 1) North; 2) Northeast; 3) Northwest; 4) West Basin; 5) Southeast; 6) Anchorage and Open Water; and 7) Queensway Bay (**Figure 6.0-2**). Land and water use designations are updated to reflect environmental priorities and accommodate anticipated operational needs at the Port. The goals and objectives in each planning district have been updated to reflect current economic trends, environmental sustainability, intermodal services, and terminal parameters (e.g., vessel size, train lengths, and terminal operating efficiencies). The PMP Update identifies ongoing/allowable and anticipated projects within the Harbor District, as summarized in the respective sections for each planning district. A summary of projects by planning district is presented in Section 6.5 (Summary of Projects by Planning District).

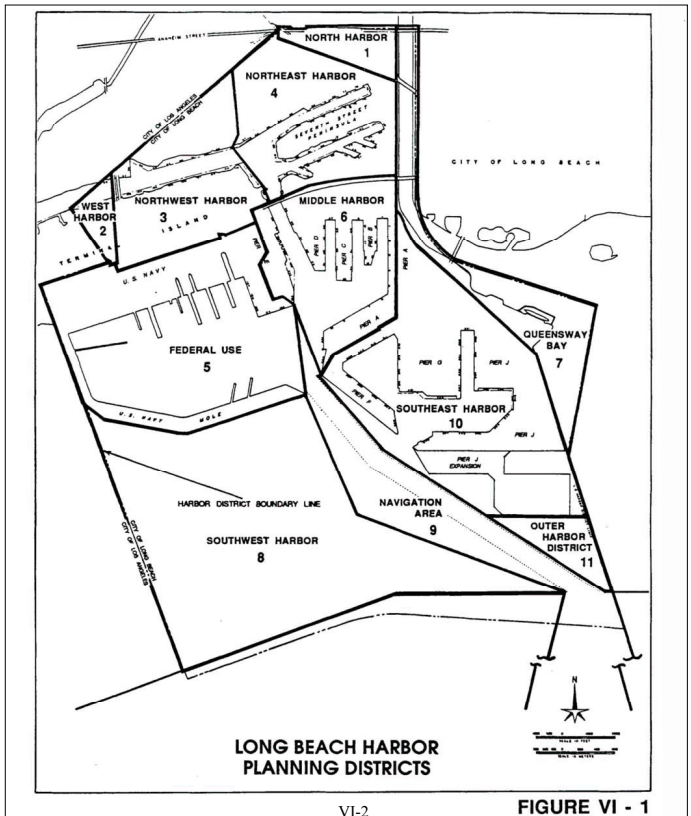
DRAFT



1978 PMP Planning Districts

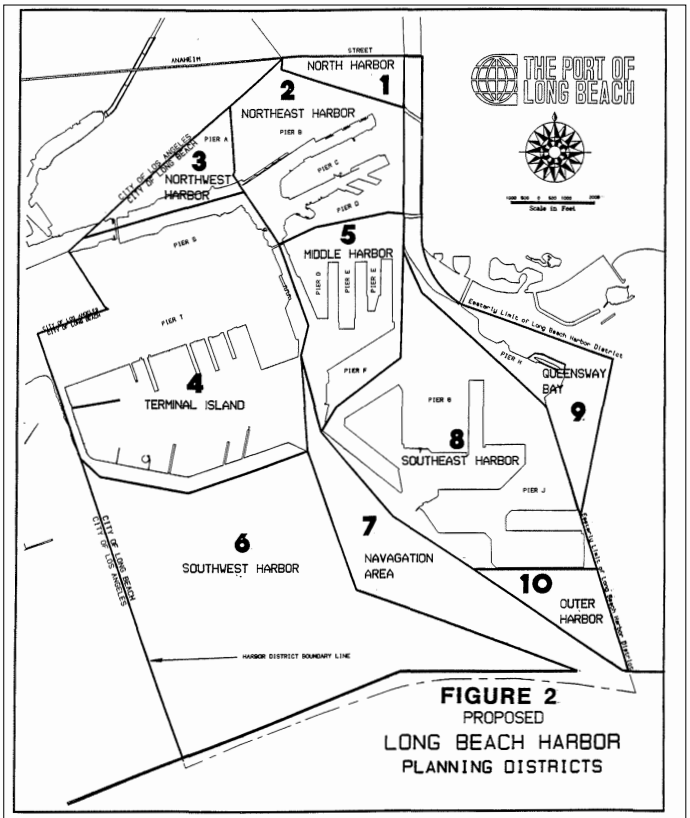


1983 PMP Update Planning Districts



VI-2

1990 PMP Update Planning Districts



1996 PMP Amendment #9 Planning Districts

5

Figure 6.0-1. Evolution of the PMP Planning Districts 1978 – 1996



Figure 6.0-2. PMP Update Planning Districts

6.1 LAND USE AND WATER USE DESIGNATIONS

As required by the California Coastal Act (CCA), this PMP Update identifies "proposed uses of land and water areas, where known." To satisfy this requirement, functional land use and water use designations were established and updated as necessary in the PMP Update.

The revised and updated land use and water use designations are discussed in Section 6.1.1 and Section 6.1.2, respectively.

6.1.1 Land Use Designations

The 1990 PMP as amended includes nine land use designations. The PMP Update revises some land use designations from those used previously, and renames designations to reflect the allowable land uses in the districts. A summary of changes is described below.

- The Ancillary Facilities designation has been renamed Maritime Support Facilities to specify water-dependent facilities.
- A new Institutional Facilities designation replaces Federal Uses and includes activities associated with federal, state, regional, and local public agencies.
- The Commercial/Recreational designation has been renamed Visitor-Serving Commercial Facilities to specify general public commercial uses.
- A new Recreational Open Space Facilities designation includes non-commercial general public areas such as parks, and waterfront access.
- A new Environmental Protection designation includes areas reserved for environmental restoration and protection.
- A new Renewable Energy Resources designation includes areas utilized for power generation from renewable sources and energy storage.

The existing and updated PMP Update land use designations are listed in **Table 6.1-1**. Land use definitions are provided in **Table 6.1-2**.

Table 6.1-1. Land Use Designations

Existing Land Use Designations (1990 PMP)	Updated Land Use Designations
Primary Port Facilities	Primary Port Facilities
Hazardous Cargo Facilities	Hazardous Cargo Facilities
Port-Related Industries and Facilities	Port-Related Facilities
Ancillary Port Facilities	Maritime Support Facilities
Commercial/Recreational Facilities	Visitor-Serving Commercial Facilities
	Recreational Open Space Facilities
Federal Use	Institutional Facilities
Non-Port Related Areas[1]	
Oil and Gas Production	Oil and Gas Production Facilities
Utilities	Utilities
N/A[2]	Renewable Energy Resources
N/A[2]	Environmental Protection

Key: N/A = not applicable; PMP = Port Master Plan
Notes: [1] The only instance of a Non-Port Related Area is the Multi-Service Center, a homeless services center of the City of Long Beach, located in the North Harbor.
[2] This is a new land use designation that is not included in the 1990 PMP as amended.

DRAFT

Table 6.1-2. Updated Land Use Definitions

Land Use	Description	Examples
Primary Port Facilities	Marine terminal uses for vessel berthing, cargo loading/unloading, handling, storage, and movements. The scope of activities includes cargo handling systems, administrative offices supporting terminal operations, maintenance and repair facilities, transit sheds, gate operations, on-dock intermodal facilities, and other activities supporting Primary Port uses	Container, break bulk, roll on/roll off (Ro/Ro), omni (combination of cargo handling), dry bulk, liquid bulk, and cruise terminals and facilities
Hazardous Cargo Facilities	Primary and Maritime Support Facilities that handle hazardous materials in sufficient volume to create a potential for a catastrophic loss	Terminals engaged in the primary loading and unloading, storage, and transfer of petroleum and chemical products with a National Fire Protection Association rating of a 2 or greater; facilities that handle raw crude, intermediate hydrocarbon products, refined products, gases and liquefied gases (flammable and/or toxic)
Maritime Support Facilities	Ancillary and Port-Related facilities other than those included as Primary Port uses that are water dependent and are necessary to support Port operations	Ship yards, towboat and salvage operations, bunker barge loading, and marine research
Port-Related Facilities	Ancillary and Port-Related facilities other than those included as Primary Port uses that are not water dependent and are necessary to Port operations	Warehousing, distribution activities, off-terminal cargo storage, chassis storage and repair, off-dock rail within Harbor District boundaries, and Port Authority operations and maintenance facilities
Oil and Gas Production Facilities	Areas utilized for oil and gas production sites	Oil and gas production facilities, including tankage, processing plants, drilling sites, and water injection wells
Institutional Facilities	Areas dedicated and operated by local, state, or federal agencies other than the Port Authority	Facilities for public safety, emergency response staging areas, education and marine research, offices involved in direct support of maritime activities, and one homeless services center in the North Harbor
Utilities	Areas utilized for major utility facilities and rights-of-way dedicated for utilities	Major utility facilities for electricity generation, water treatment, gas, telecommunications, resource recovery, waste handling, and rights-of-way dedicated for utilities (e.g., the SCE Transmission Tower right-of-way, NRG Long Beach Generating Station, and SERRF)

DRAFT

Table 6.1-2. Updated Land Use Definitions		
Land Use	**Description**	**Examples**
Visitor-Serving Commercial Facilities	Areas serving commercial uses for the public. The special visitor-serving uses at the Queen Mary are included in this land use designation.	These facilities include cultural uses, museums, theaters, restaurants, retail, harbor tours, sport fishing and tackle shops, conference centers, marinas, and boat sales.
Recreational Open Space Facilities	Areas reserved for the general public such as parks and waterfront access.	Public parks and cultural areas.
Environmental Protection	Areas reserved for environment restoration and protection.	Protected habitat sites (e.g., Gull Park) and other natural areas.
Renewable Energy Resources	Areas utilized for power generation from renewable sources and energy storage.	Solar, geothermal, wind, hydrogen fuel cells, and production of hydrogen for Port-related uses and/or power generation.
Key: SCE = Southern California Edison; SERRF = Southeast Resource Recovery Facility, NRG = NRG Energy, Inc.		

6.1.2 Water Use Designations

The 1990 PMP as amended includes four water use designations.

Since 1990, there have been two amendments relating to placement of dredge materials and sediments, and they remain in effect as water areas. The PMP Update creates two new water use designations and renames designations to reflect the allowable water uses in the districts. A summary of changes is described below.

- A new Sediment Management Areas designation recognizes water sites to be used for storage and disposal of sediments.
- A new Environmental Protection designation includes water areas reserved for habitat restoration and protection.
- The Maneuvering Areas designation is renamed Maneuvering and Berthing to add vessel berthing activities.

The existing and updated PMP Update water use designations are provided in **Table 6.1-3**. Water use definitions are provided in **Table 6.1-4**.

Table 6.1-3. Existing and Proposed Water Use Designations	
Existing Water Use Designations	**Proposed Water Use Designations**
Anchorage Areas	Anchorage Areas
Maneuvering Areas	Maneuvering and Berthing
Navigable Corridor	Navigable Corridor
Recreational/Sport Fishing	Recreational
N/A[1]	Sediment Management Areas
N/A[1]	Environmental Protection
Key: N/A = not applicable Note: [1] This is a new water use designation that was not included in the 1990 Port Master Plan as amended.	

Table 6.1-4. Proposed Water Use Definitions		
Water Use	**Description**	**Examples**
Anchorage Areas	Designated areas for temporary vessel anchorage for bunkering, lightering, and maritime activities	Anchorage areas, including 24-hour limited stay, commercial and recreational vessels, lightering and bunkering, 48-hour deep draft, explosive, and vessels over 40 feet draft or 800 feet length overall
Maneuvering and Berthing	Water areas needed for handling, turning, and maneuvering of vessels from the navigation channel to the berthing basins	Berthing areas adjacent to cargo handling berths and designated turning basins
Navigable Corridor	Water area designated "Long Beach Main Channel" by the U.S. Army Corps of Engineers	Designated Federal Channel
Recreational	Open and sheltered water areas that are used for recreational navigation	Water areas used for sport fishing, recreational mooring, and navigation to and from the Queensway Bay Planning District
Sediment Management Areas	Areas for temporary or permanent placement of harbor dredge materials	• Storage and disposal of clean materials deemed suitable for open-water disposal and disposal of contaminated materials (i.e., material not suitable for open-water disposal) in a sediment storage site or a Confined Aquatic Disposal site • Clean materials can be disposed of in U.S. Environmental Protection Agency ocean dumping sites, transported to nearby fill sites, approved landfills, and sediment storage areas approved by the California Coastal Commission. • Placement of material for ecosystem restoration, including creating shallow-water habitat • Advanced placement of materials in future fill sites
Environmental Protection	Water areas reserved for environmental restoration and protection	Water areas used for habitat restoration and protection
Key: U.S. = United States		

6.2 HARBOR DISTRICT PROPERTY OWNERSHIP

Figure 6.2-1 shows an overview of the Port's property ownership. The majority of land in the Harbor District is owned by the Port. However, some lands within the Harbor District are privately owned or under lease from the federal government. The Port also owns property outside of the Harbor District, which is located in the City of Los Angeles; these properties are not included in the PMP, but are subject to their local jurisdiction regulations (e.g., City of Los Angeles). The Harbor District boundary defines the geographic scope of the PMP Update prepared pursuant to CCA Chapter 8 (**Figure 6.2-2**). All lands within the Harbor District, including privately owned land, are subject to the CCA and PMP. Port acquisition of privately held property within the Harbor District will allow the Port to have more control over land uses that accommodate Port-supporting uses (e.g., north side of Pier D in the North Harbor).

DRAFT

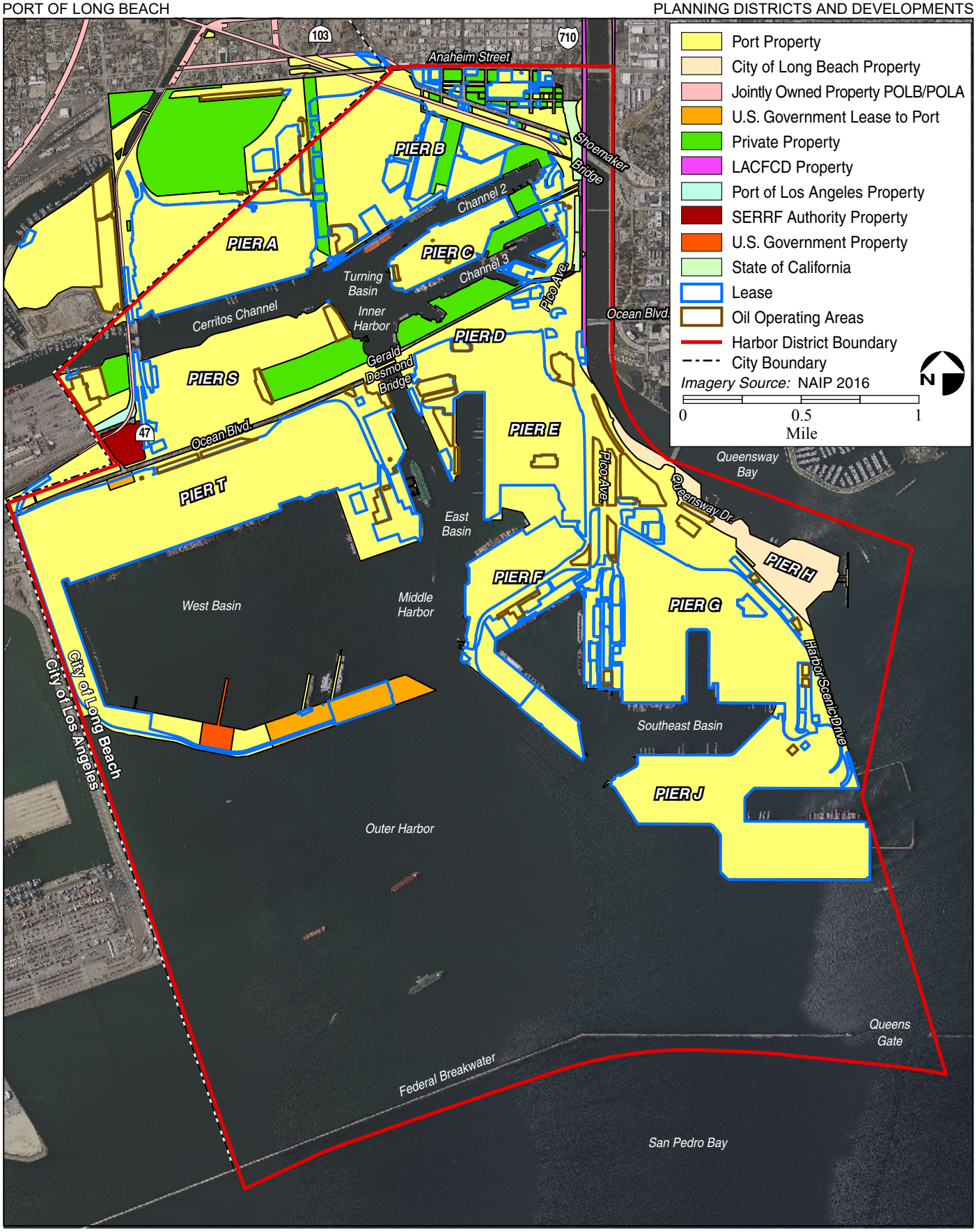


Figure 6.2-1. Port of Long Beach Property Ownership



Figure 6.2-2. Port of Long Beach Harbor District

6.3 HARBOR DISTRICT ZONING

The City of Long Beach Zoning Ordinance (Title 21 of the Municipal Code) regulates land use development within the city limits. The land west of Harbor Scenic Drive is zoned Port-Related Industrial (IP) and the land east of Harbor Scenic Drive is zoned Planned Development District (PD-21). The Queensway Bay Planned Development Plan was established in 1987 and amended several times thereafter. The intent of the Planned Development District is to provide a flexible planning mechanism related to the phased recreation/commercial development planned for the Queen Mary and adjacent waterfront along Queensway Bay.

6.4 PLANNING DISTRICTS

The Harbor District is subdivided into planning districts generally defined by physical constraints and the configuration of land and water areas (**Figure 6.0-1**). The PMP Update reduces the number of planning districts from 10 to 7. In the PMP Update, there are three districts in the Inner Harbor, three in the Middle/Outer Harbor, and the Queensway Bay District is the seventh planning district. The Inner and Middle/Outer Harbor areas are divided by the Long Beach Tidelands Line (Chapter 138[6]), which is generally aligned with Ocean Boulevard. The planning district boundaries serve the following functional purposes:

- Consolidating similar and compatible land and water uses;
- Encouraging maximum use of existing Port facilities;
- Increasing cargo handling efficiency; and
- Separating hazardous cargo from other areas of the Port.

Certain facilities and land use designations will by necessity overlap planning district boundaries. This section describes the existing conditions, boundaries, planning goals, and land and water use designations for each planning district. Together with the PMP Update development goals (Section 3, Development Goals and Guiding Principles) and the Plan Element goals (Section 5, Plan Elements), the planning district goals guide land and water use designations as well as PMP Update projects (i.e., ongoing/allowable and anticipated projects) within each planning district. The implementation of planning goals and projects should be in accordance with the Green Port Policy, which is restated as a planning district goal in every planning district for emphasis. These project categories are described in **Table 6.4-1**.

Table 6.4-1. PMP Update Project Categories

Project Category	Description
Ongoing/Allowable Projects	Ongoing/Allowable Projects are consistent with the 1990 PMP as amended and may have been incorporated into the Port's 10-Year Capital Program. Because these projects are consistent with the 1990 PMP as amended, no further action by the CCC is required.
Anticipated Projects	Anticipated Projects are anticipated for implementation in future capital development, but are not consistent with the 1990 PMP as amended. Anticipated projects are proposed for approval and certification by the CCC in association with this PMP Update.
Key: CCC = California Coastal Commission; PMP = Port Master Plan	

[6] Chapter 138 is an act relating to the tidelands and submerged lands granted by the State to the City of Long Beach and associated revenues. The Act was approved on June 4, 1964.

6.4.1 Planning District 1 (North)

6.4.1.1 Planning District 1 Existing Conditions (2019)

Planning District 1 (North) is one of three planning districts located in the Inner Harbor (**Figure 6.4-1**). This planning district is located along the Anaheim Street corridor, which includes light industries and businesses that support port activities, such as truck fueling and maintenance facilities, logistics providers, and container storage yards. The Multi-Service Center (MSC), an existing homeless services facility is on Anaheim Street. Planning District 1 consists of a combination of Port-owned property and small, privately-owned parcels and street or highway rights-of-way. This planning district contains older industrial buildings, vacant land, and some uses that are not port-related. There is no navigational water frontage.

Table 6.4-2 summarizes the PMP Update modifications to Planning District 1 (North).

Table 6.4-2. Planning District 1 (North) Updates

Boundary Change	Land Use Change	Water Use Change	Ongoing/Allowable Project(s)	Anticipated Project(s)
No	Yes[1]	N/A	Yes[2]	No

Key: N/A = not applicable
Notes: [1] Adds Oil and Gas Production Facilities
[2] Pier B On-Dock Rail Support Facility

6.4.1.2 Planning District 1 Boundaries

Planning District 1 (North) boundaries include the following:

- North Boundary: Northern edge of Anaheim Street;
- East Boundary: Western property line of the Los Angeles County Flood Control Channel;
- South Boundary: Northern edge of the 20-foot alley north of the main line tracks on the existing Pier B railyard; and
- West Boundary: Harbor District boundary and City of Long Beach city limit.

The geographic extent and land uses of Planning District 1 (North) are the same as in the 1990 PMP and are not changed in this PMP Update.

6.4.1.3 Planning District 1 Goals

The current goals and objectives for this planning district encourage effective use of industrial land to promote maritime support land uses, improvement of mobility infrastructure, and promote improvements for roads and rail cargo movement, including a direct link to the Alameda Corridor[7].

Goal 1: Utilize maritime support land uses in close proximity to marine terminals to maximize terminal efficiencies.

Land uses in this planning district should maintain Port-related support uses associated with Primary Port land uses. This planning district, which has no navigational frontage but benefits from adjacency to regional connections, allows the potential for supporting nearby marine terminals. The ongoing effort described in the 1990 PMP for Port acquisition of privately-owned property in this planning district represents one primary way to ensure the effective use of Harbor

[7]The Alameda Corridor is a fully grade-separated rail line that runs between the two San Pedro Bay Ports and downtown Los Angeles, connecting the Port of Long Beach and Port of Los Angeles with the nationwide rail network.

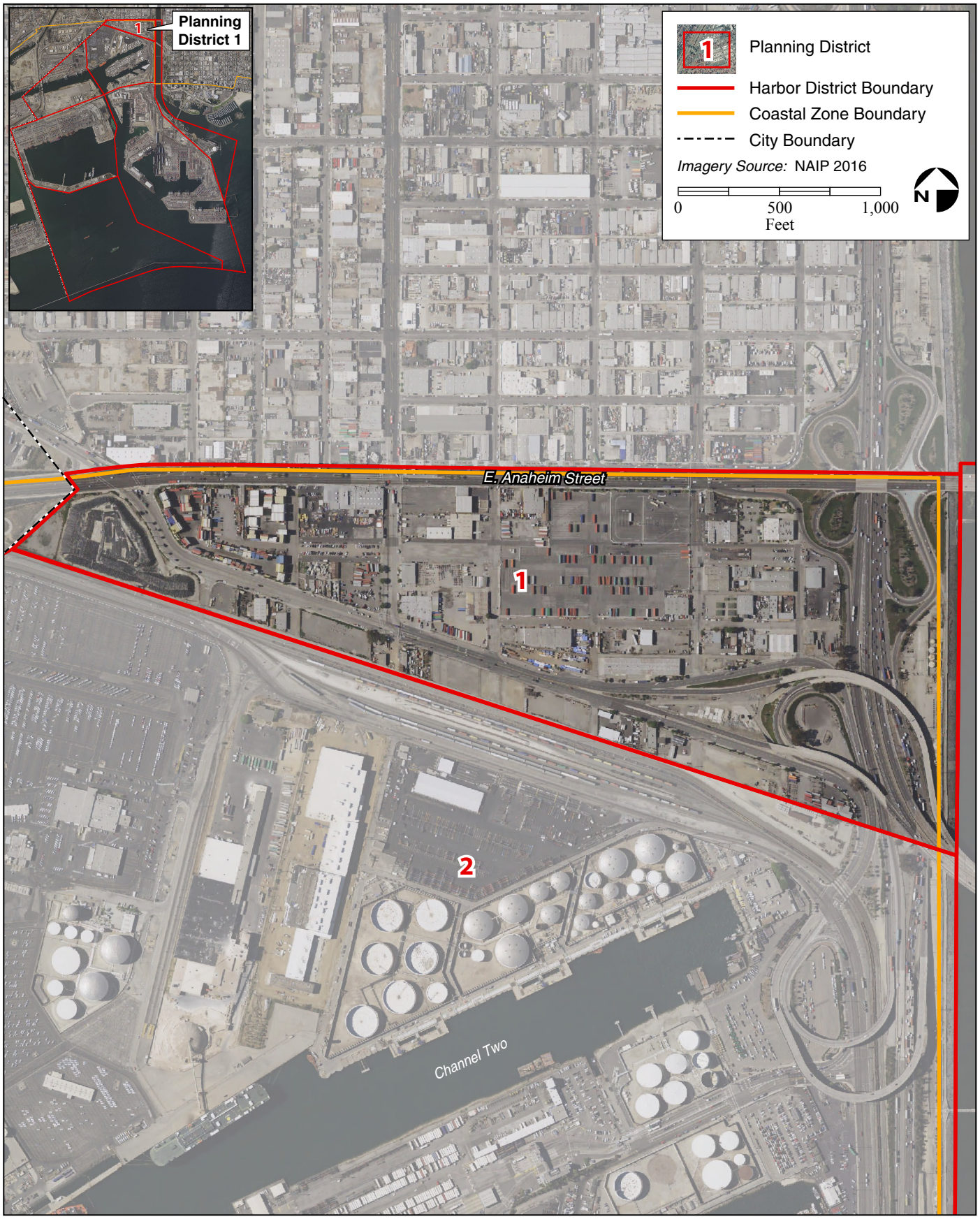


Figure 6.4-1. Planning District 1 (North)

District lands. The PMP encourages the conversion of all land uses in this Planning District 1 to Port-related uses, given its location within the Harbor District.

Goal 2: Improve mobility infrastructure to improve connectivity.

The northern boundary of Planning District 1 (North) is the northern edge of Anaheim Street. Anaheim Street is a major commercial corridor linking the City of Long Beach and the Community of Wilmington. Uses along the corridor include light industries and businesses that support port activities, such as truck fueling and maintenance facilities, logistics providers, and container storage yards. Several intersections provide access to the North Harbor and Pier B, as well as to Interstate (I)-710 and Pico Boulevard at the east end of the North Harbor. The intersection improvements of recent years, including the Shoemaker Ramp removal, have improved circulation in the North Harbor.

Due to its location at the northern edge of the Harbor District and its proximity to pedestrian-accessed facilities, like the MSC, any public access improvements (e.g., new sidewalks and ramps at crosswalks) should comply with current regulations, including Americans with Disabilities Act requirements.

Goal 3: Provide safe and secure bicycle and pedestrian paths that connect with the California Coastal Trail.

Planning District 1 is identified as accommodating a segment of the California Coastal Trail, which would allow for a non-motorized means of transportation along the California coast. More locally, it would serve as a connection between the Community of Wilmington and the City of Long Beach, which has a network of bicycle paths to local and regional destinations.

Goal 4: Enhance intermodal connectivity from the Alameda Corridor to Outer Harbor marine terminals.

The Pier B On-Dock Rail Support Facility (described in Section 6.4.1.5, Planning District 1 PMP Update Projects) is an approved ongoing project that would improve the Port's ability to enable increased movement of cargo using rail transportation. One of the early stages of implementation of the Pier B project was the closure of the 9th Street at-grade rail crossing to allow for the assembly of longer trains to move cargo faster.

Goal 5: Incorporate environmentally sustainable operations.

The objectives of this goal are to reduce air emissions from Port activities; improve water quality within the harbor; protect aquatic ecosystems and marine habitats; implement sustainable practices in terminal design, development, and operations; and coordinate with Port tenants to carry out the Green Port Policy initiatives.

6.4.1.4 Planning District 1 Land and Water Use Designations

Existing Planning District 1 (North) includes facilities that do not require access to berthing facilities or water frontage, but are heavily dependent on Primary Port operations. These Port-related industries include warehousing, container storage, railroad facilities that support Port activities, and processing operations whose products or materials move through the Port.

In July 1997, PMP Amendment #10 added the Non-Port Related Areas designation to this planning district. This amendment changed the permitted location of the MSC, a homeless service center, from Planning District 4 (West Basin) to the North Harbor. The MSC is the only Non-Port Related use permitted in this planning district. For this PMP Update, the MSC is an existing conforming use under the new Institutional Facilities land use designation.

Oil and gas production outside of Oil Operating Areas is an existing land use within this planning district.

Table 6.4-3 identifies the existing and updated PMP Update permitted land use designations. There are no water uses in Planning District 1 (North).

Table 6.4-3. Planning District 1 (North) – Permitted Land Use Designations

Existing Designations	Updated Designations
Land Use	
Port-Related Industries and Facilities Non-Port Related Areas	Port-Related Facilities Institutional Facilities[1] Oil and Gas Production Facilities[2]

Notes: [1] This is a limited land use per Port Master Plan (PMP) Amendment #10 that only permits the 15,000-square foot Multi-Service Center (homeless service center) in this planning district.
[2] This land use designation was not included for this planning district in the 1990 PMP as amended.

6.4.1.5 Planning District 1 PMP Update Projects

Ongoing/Allowable Projects

The ongoing/allowable project in Planning District 1 (North) is described below.

- Pier B On-Dock Rail Support Facility – The project will reconfigure and expand the existing on-dock rail support railyard in the northern portion of Pier B. The project is situated between Dominguez Channel to the west, I-710 to the east, Ocean Boulevard to the south, and Anaheim Street to the north. The footprint of this project extends into Planning District 2 (Northeast) and Planning District 5 (Southeast). The purposes of this project are to: 1) provide an adequate facility to accommodate the expected cargo demand to be moved via on-dock rail in the foreseeable future; 2) maximize on-dock intermodal operations to fulfill the long-term goal of handling 30 to 35 percent of cargo containers by on-dock rail; and 3) provide a facility that can accept and handle longer container trains (POLB 2018a). This project is an important component of overall goods movement handling within the Port because it is the only rail-serving facility within the Harbor District that can assist the on-dock terminals with the task of assembling trains and dispatching them onto the Alameda Corridor and then, subsequently, to the Class I railroad main lines.

Anticipated Projects

There are no anticipated projects to be approved and certified by the PMP Update in this planning district.

DRAFT

6.4.2 Planning District 2 (Northeast)

6.4.2.1 Planning District 2 Existing Conditions (2019)

Planning District 2 (Northeast) consists of container and non-container facilities at Pier B, Pier C (container terminal), and Pier D (dry bulk and private maritime support properties). The waterways in this planning district include the Inner Harbor, Turning Basin, and Channels Two and Three (**Figure 6.4-2**). This planning district is currently home to various legacy Primary Port uses, visitor-serving activities (Berth 55 sport fishing), rail infrastructure, Southern California Edison (SCE) transmission right-of-way (at the district perimeter), and road and highway rights-of-way.

Primary Port terminals located in Planning District 2 (Northeast) include:

- Pier B non-container terminals, including liquid bulk (petroleum), dry bulk (gypsum), and roll on/roll off (Ro/Ro) services (automobiles and light trucks).
- Pier C terminals, including a cargo container terminal primarily dedicated to handling cargo between the United States (U.S.) mainland and Hawaii and U.S. Pacific territories. The characteristics of this terminal's container trade include small ships, no on-dock rail facilities, and use of portions of the terminal for staging non-container cargo. A limited amount of international container cargo is handled on Pier C. The Pier C cargo operation does not benefit from intermodal services, including on-dock rail. In addition to the container terminal, Pier C has liquid bulk terminal capabilities from other operators.
- Pier D terminals, including non-container cargo (dry-bulk terminal) and support services such as tug assist, bunkering, and warehousing.

The northern portion of the Middle Harbor Redevelopment Program is located on Pier D.

Table 6.4-4 summarizes the PMP Update modifications to Planning District 2 (Northeast).

Table 6.4-4. Planning District 2 (Northeast) Updates

Boundary Change	Land Use Change	Water Use Change	Ongoing/Allowable Project(s)	Anticipated Project(s)
No	Yes[1]	Yes[2]	Yes[3]	No

Notes: [1] Adds Utilities, Visitor-Serving Commercial Facilities, Maritime Support Facilities, and Institutional
[2] Adds Maneuvering and Berthing, Recreational, Sediment Management Areas, and Environmental Protection
[3] Pier B On-Dock Rail Support Facility, Gerald Desmond Bridge Replacement, Pier B Street Support Yard, Fireboat Station No. 20, Fourth Track at Ocean Boulevard, Pier D Street Realignment, Toyota Logistics Services Improvement Project

6.4.2.2 Planning District 2 Boundaries

Planning District 2 (Northeast) boundaries include the following:

- North Boundary: Harbor District boundary and City of Long Beach city limit (northwest section) and the southern boundary of Planning District 1 (North);
- East Boundary: Western property line of the Los Angeles County Flood Control Channel;
- South Boundary: Long Beach Tidelands Line (Chapter 138); and
- West Boundary: Western edge of Carrack Avenue and a line directly to the waterfront, then extending through the Turning Basin to the point of intersection between the centerline of the Back Channel and Long Beach Tidelands Line (Chapter 138).

The geographic boundaries and uses of Planning District 2 are the same as in the 1990 PMP and are not changed in this PMP Update.

DRAFT



Figure 6.4-2. Planning District 2 (Northeast)

6.4.2.3 Planning District 2 Goals

Primary goals for Planning District 2 (Northeast) are to improve efficiency in cargo movements and provide better allocation of available Primary Port facilities by expansion through acquiring privately-held property. The PMP Update restates the goal of expanding Primary Port uses in terms of current economic trends and translates them into four specific goals intended to support Primary Port uses.

Goal 1: Accommodate cargo demand associated with containers, Ro/Ro, and liquid bulk and dry bulk users.

The ability to accommodate a variety of cargo, including containers, Ro/Ro, and liquid bulk and dry bulk users is a key component of responding to cargo demand changes or economic trends. This entails land and water use designations to allow flexibility for Port-related support functions.

Goal 2: Utilize maritime support land uses in close proximity to marine terminals to maximize terminal efficiencies.

Planning District 2 is situated near regional roadway connections and includes marine terminals, which is advantageous for maritime support land uses. The allowable land and water designations should be flexible to allow for combinations of different uses, while enabling existing uses to remain and continue to operate.

Goal 3: Maintain safe and secure navigational facilities for larger vessels.

Vessels must transit the Inner Harbor Turning Basin to access marine terminals within Planning District 2. The area near the Turning Basin can be restrictive for navigation; however, the PMP Update supports dredging and fill projects necessary to maintain channels, turning basins, and berths, particularly in areas that can be limited in space for larger vessels. Furthermore, navigational aids such as radar can also assist vessel movement.

Goal 4: Incorporate environmentally sustainable operations.

The primary implementation objectives are to reduce air emissions from Port activities with the use of shore power for vessels; improve water quality within the harbor; protect aquatic ecosystems and marine habitats; implement sustainable practices in terminal design, development, and operations; and coordinate activity with Port tenants to carry out Green Port Policy goals.

6.4.2.4 Planning District 2 Land and Water Use Designations

Table 6.4-5 identifies the existing and proposed PMP Update land and water use designations.

The new Utilities land use designation allows public utility rights-of-way, including the SCE transmission lines along the western border of the planning district. The Visitor-Serving Commercial Facilities designation is added to reflect the existing sport fishing and visitor facilities located at Berth 55 in the planning district. Maritime Support Facilities include the Pier B on-dock support yard, Pier D warehouse/container freight station, and Port maintenance facilities. The Institutional land use designation was added to recognize existing uses, including Fireboat Station 20 on Pier D.

The PMP Update adds Maneuvering and Berthing (i.e., Turning Basin, Pier B, Pier C, and Pier D berths), Recreational (i.e., water areas used for sport fishing operations), and Environmental Protection to Planning District 2 (Northeast).

DRAFT

Table 6.4-5. Planning District 2 (Northeast) – Permitted Land and Water Use Designations	
Existing Designations	**Proposed Designations**
Land Use	
Primary Port Facilities Port-Related Industries and Facilities Hazardous Cargo Facilities Oil and Gas Production	Primary Port Facilities Port-Related Facilities Maritime Support Facilities Hazardous Cargo Facilities Oil and Gas Production Facilities Utilities[1] Visitor-Serving Commercial Facilities[1] Institutional[1]
Water Use	
Navigable Corridor	Navigable Corridor Maneuvering and Berthing[1] Recreational[1] Sediment Management Areas[2] Environmental Protection[2]
Notes: [1] These land and water use designations were not included for this planning district in the 1990 Port Master Plan (PMP) as amended. [2] This is a new water use designation that was not included in the 1990 PMP as amended.	

6.4.2.5 Planning District 2 PMP Update Projects

Ongoing/Allowable Projects

The ongoing/allowable projects in Planning District 2 (Northeast) are described below.

- Pier B On-Dock Rail Support Facility – The project would reconfigure and expand the existing on-dock rail support railyard in the northern portion of Pier B. Please refer to Section 6.4.1.5 (Planning District 1 PMP Update Projects) for additional details.
- Gerald Desmond Bridge Replacement – The project, which is nearing completion, replaces the existing Gerald Desmond Bridge and constructs adjacent roadway improvements. The existing bridge will be demolished. This is a joint project with the Port, the California Department of Transportation, and the Federal Highway Administration.
- Pier B Street Support Yard – The project would be located on an approximately 13-acre parcel site at 1550 Pier B Street, and would be used as a chassis support facility for the distribution, storage, and maintenance of chassis serving the Middle Harbor Terminal.
- Fireboat Station No. 20 – The project would construct a landside fire station and a waterside concrete wharf structure, covered boat bay structure, and floating dock at Berth D50.
- Fourth Track at Ocean Boulevard – The project would construct a fourth track with a modified switch layout connection at Ocean Boulevard and Harbor Scenic Drive, linking the four tracks north and south of the Ocean Boulevard overhead. Currently, there are four tracks north and south of Ocean Boulevard; however, at Ocean Boulevard these tracks narrow down to three. This project would relocate an existing roadway (i.e., Harbor Scenic Drive southbound) and main line track and add a new track to make a continuous four-track rail corridor to increase efficiency of the rail line, provide operational flexibility, and improve the connection to the Middle Harbor and Pier B railyards (POLB 2018b).
- Pier D Street Realignment –The project would realign Pier D Street, between the Middle Harbor out gate and Pico Avenue.

DRAFT

- Toyota Logistics Services Improvement Project – The project would demolish some existing facilities and construct a new consolidated vehicle processing and distribution center, a hydrogen cell and generator facility, and a new fueling station.

Anticipated Projects

There are no anticipated projects to be approved and certified by the PMP Update in this planning district.

DRAFT

6.4.3 Planning District 3 (Northwest)

6.4.3.1 Planning District 3 Existing Conditions (2019)

Planning District 3 (Northwest) includes the Pier A container terminal with an intermodal railyard and Pier S (**Figure 6.4-3**). Pier A facilities are located partially in the Harbor District and partially in the City of Los Angeles, but only the facilities located in the Harbor District are within the scope of the PMP Update. The Badger Bridge across the Cerritos Channel connects the marine terminals of the San Pedro Bay Ports on Terminal Island to the regional rail network.

The primary use on Pier A is a container terminal located in the Inner Harbor on the north side of the Cerritos Channel. Pier S, located on Terminal Island east of the Commodore Schuyler Heim Bridge and on the south side of the Cerritos Channel, is an undeveloped site. There are two private terminals located near Pier S: the Plains West Coast Terminal used for the storage of petroleum products (non-cargo) and the Long Beach Generation Peaker-plant facility used to support the SCE power grid. On the west side of the Badger Bridge access road is another petroleum and chemical terminal. In the southwest corner of the planning district is the Southeast Resource Recovery Facility (SERRF). PMP Amendment #9, certified in 1996, incorporated the SERRF as a Non-Port Related use.

The Pier A marine container terminal complex project was certified in the 1983 PMP. At that time, the Berths 95-97 Marine Terminal Development was added to the backland, filling out the current Pier A. Pier A consists of an approximately 3,600-foot wharf length and 160 acres of gross terminal space. Pier A is served by intermodal rail services from the north.

Pier S is currently undeveloped and has been identified as a potential site for a mix of non-container uses, such as automobile and/or dry-bulk terminals. Maritime support uses in this planning district include on-dock rail from the north serving Pier A.

Table 6.4-6 summarizes the PMP Update modifications to Planning District 3 (Northwest).

Table 6.4-6. Planning District 3 (Northwest) Updates

Boundary Change	Land Use Change	Water Use Change	Ongoing/Allowable Project(s)	Anticipated Project(s)
Yes[1]	Yes[2]	Yes[3]	Yes[4]	No

Notes: [1] Addition of Pier S (south side of Cerritos Channel)
[2] Adds Hazardous Cargo Facilities and Renewable Energy Resources
[3] Adds Sediment Management Areas and Environmental Protection
[4] Terminal Island Wye, Gerald Desmond Bridge Replacement, Pier S Mixed Use Development, Pier S Shoreline Enhancement, and Southern California Edison Transmission Tower Replacement

6.4.3.2 Planning District 3 Boundaries

Planning District 3 (Northwest) boundaries include the following:

- North Boundary: Harbor District boundary and City of Long Beach city limit;
- East Boundary: Western edge of Carrack Avenue and a line directly to the waterfront, then extending through the Turning Basin to the point of intersection between the centerline of the Back Channel and Long Beach Tidelands Line (Chapter 138);
- South Boundary: Northern edge of Ocean Boulevard, which corresponds to the Long Beach Tidelands Line (Chapter 138); and
- West Boundary: Harbor District boundary and City of Long Beach city limit.

DRAFT

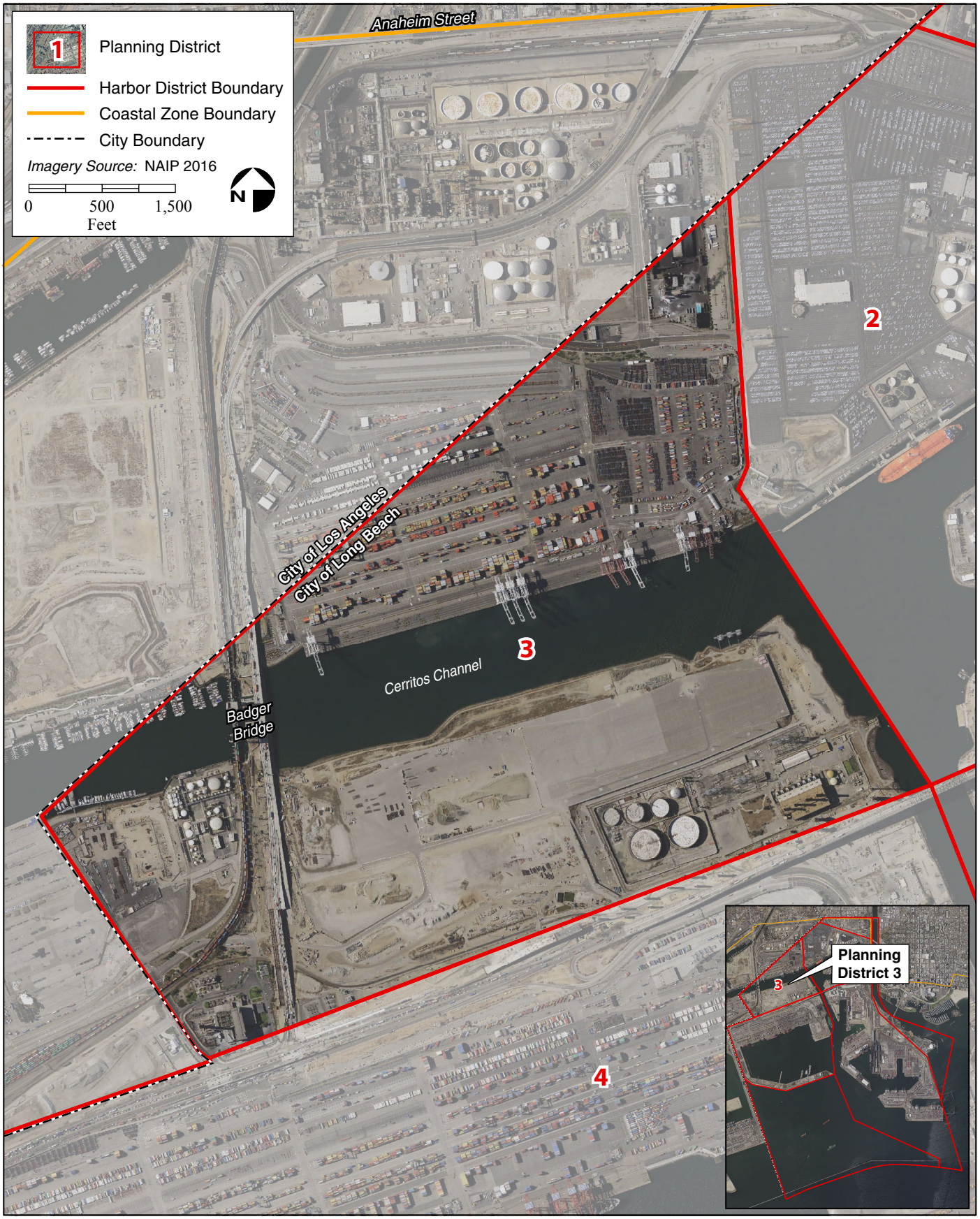


Figure 6.4-3. Planning District 3 (Northwest)

6.4.3.3 Planning District 3 Goals

Current goals for Planning District 3 (Northwest) are to acquire privately owned property and increase Primary Port uses by removing and consolidating oil facilities, dredging the Cerritos Channel, pursuing Primary Port terminal development, and relocating existing coastal dependent uses to other sites in the harbor. Over the years, the Port has acquired property on both the north and south side of the Cerritos Channel.

The overarching intent of the PMP Update goals for this planning district is to continue to increase Primary Port uses and Port-related uses that improve the operation of existing and future marine terminals.

Goal 1: Accommodate international cargo forecast associated with the container market demands.

Vacant or underutilized lands within the planning district should be considered for maritime support facilities for storage of containers, chassis, and transfer of loads to improve terminal yard storage capabilities.

In furtherance of the 1990 PMP as amended goals and objectives, the PMP Update proposes a mix of uses on Pier S to serve non-container marine terminals and Port-related support uses.

Goal 2: Enhance rail connectivity from the Alameda Corridor to Terminal Island.

In the long term, additional rail capacity on the Badger Bridge will be needed to facilitate intermodal rail traffic. To achieve that, the U.S. Coast Guard may consider a bridge lockdown to enhance rail efficiency, and the ports may consider adding additional trackage across the bridge. The Port should support efforts to improve rail connectivity from Terminal Island to the Alameda Corridor. This would improve rail access options for Pier S development scenarios, as well as benefit Pier T in Planning District 4.

Goal 3: Utilize maritime support land uses in close proximity to marine terminals and on-dock intermodal rail to maximize terminal efficiencies.

Port-related support uses, such as off-terminal storage of empty chassis near terminals and on-dock rail, are important for optimizing cargo handling operations and terminal efficiencies. This goal relates to dedicating certain lands for productive maritime support use.

Goal 4: Maintain safe and secure navigational facilities for larger vessels.

Vessels must transit the Inner Harbor Turning Basin and Cerritos Channel to access marine terminals within Planning District 3. The area near the Turning Basin can be restrictive for navigation; however, the PMP should support dredging and fill projects necessary to widen and maintain channels, turning basins, and berths, particularly in areas that can be limited in space for larger vessels.

Currently, the largest size vessel capable of calling at Pier A is 9,500 twenty-foot equivalent units (TEUs). The current typical vessel size is between 2,000 and 9,000 TEUs. As larger vessels may call at Pier A in the future, navigational safety considerations emphasize the need for appropriate vessel range siting, sector lights, Global Positioning System (GPS), and sounding charts to conduct safe operations.

Goal 5: Accommodate non-container cargo growth through the development of new Primary Port uses.

Planning District 3 has the capability for non-container Primary Port terminals (e.g., automobiles/light trucks, dry bulk and liquid bulk cargoes). Pier S was the focus of PMP Amendment #14 (1999), which was approved but never built. Amendment #17 (2002) was

certified to construct a new container terminal that involved widening Cerritos Channel along the north shore of Pier S to accommodate the next generation of container vessels; this project was not implemented. The PMP Update proposes to modify the land use designation for Pier S to accommodate a variety of uses, including container/chassis storage, peel-off yards, bulk and break-bulk terminals, liquefied natural gas bunkering facility, auto storage, or other terminal support uses, along with of administration buildings, rail improvements, wharf construction, and other operational support infrastructure.

Goal 6: Incorporate environmentally sustainable operations.

The primary implementation objectives are to reduce air emissions from Port activities; improve water quality within the harbor; protect aquatic ecosystems and marine habitats; implement sustainable practices in terminal design, development, and operations; and coordinate with Port tenants to carry out the Green Port Policy goals.

6.4.3.4 Planning District 3 Land and Water Use Designations

Table 6.4-7 identifies the existing and proposed PMP Update land and water use designations.

Table 6.4-7. Planning District 3 (Northwest) – Permitted Land and Water Use Designations

Existing Designations	Proposed Designations
Land Use	
Primary Port Facilities Utilities Oil and Gas Production Ancillary Port Facilities	Primary Port Facilities Utilities Oil and Gas Production Facilities Port-Related Facilities Maritime Support Facilities Hazardous Cargo Facilities[1] Renewable Energy Resources[2]
Water Use	
Navigable Corridor Maneuvering Areas	Navigable Corridor Maneuvering and Berthing Sediment Management Areas[2] Environmental Protection[2]

Notes: [1] This land use designation was not included for this planning district in the 1990 Port Master Plan (PMP) as amended.
[2]This is a new land use designation that was not included in the 1990 PMP as amended.

The PMP Update adds Hazardous Cargo Facilities and Renewable Energy Resources to recognize legacy land uses within the planning district. Hazardous cargo facilities include existing petroleum and chemical transfer facilities. The renewable energy resources use supports the continuing operation of SERRF and enables planning for future renewable energy generation. There is an existing tank farm on the Plains West Coast Terminal, which handles liquid bulk operations under the Hazardous Cargo Facilities designation.

The PMP Update retains the existing water uses for this planning district, including Navigable Corridor (Inner Harbor Turning Basin and Cerritos Channel connection to the Main Channel) and Maneuvering and Berthing (Pier A, Pier S, and private terminals).

6.4.3.5 Planning District 3 PMP Update Projects

Ongoing/Allowable Projects

The ongoing/allowable projects in Planning District 3 (Northwest) are described below.

- Terminal Island Wye – The project would realign existing track and construct approximately 9,000 feet of track (i.e., 5,000 feet of new track and two 2,000-foot siding tracks) through the south leg of the Terminal Island Wye that connects the Navy Mole to the Pier S on-dock railyard and the Pier T east lead track to improve rail efficiency.
- Gerald Desmond Bridge Replacement – The project replaces the existing Gerald Desmond Bridge and construct adjacent roadway improvements. Please refer to Section 6.4.2.5 (Planning District 2 PMP Update Projects) for additional details.
- Pier S Mixed Use Development – Approximately 125 acres of Pier S would be developed for non-container uses such as container/chassis storage, peel-off yards, bulk and break bulk terminals, a liquefied natural gas bunkering facility, auto storage, or other terminal support uses. This project could include construction of administration buildings, rail improvements, wharf construction, and other operational support infrastructure.
- Pier S Shoreline Enhancement – The Port's Climate Adaptation and Coastal Resiliency Plan identified Pier S as a vulnerable area for flooding due to climate change. The shoreline of Piers S and T also functions as a pathway for floodwaters to reach adjacent low-lying areas that contain critical assets. The project would retrofit or replace the existing seawall and rock dike at Pier S as a coastal resiliency measure to strengthen the shoreline against sea level rise and protect vulnerable Port assets on Pier S along the Cerritos Channel. The project is in the early stages of planning and development.
- SCE Transmission Tower Replacement – The project would replace a series of transmission towers and raise approximately 5,000 feet of existing power lines that cross the Cerritos Channel in the Long Beach Harbor to provide additional over-water vertical clearance. Existing underground utilities located in proximity to the existing and proposed tower locations would be removed, modified, or abandoned.

Anticipated Projects

There are no anticipated projects to be approved and certified by the PMP Update in this planning district.

DRAFT

6.4.4 Planning District 4 (West Basin)

6.4.4.1 Planning District 4 Existing Conditions (2019)

Planning District 4 (West Basin) encompasses the former U.S. Naval Station and is one of the three planning districts in the Middle/Outer Harbor (**Figure 6.4-4**).

In 1991, the Base Closure and Realignment Commission closed the Long Beach Naval facility. The Naval facility was transferred to the City/Port through a Local Redevelopment Authority process. The land and water use designations for this planning district are consistent with the Local Redevelopment Authority Reuse Plan for the naval facilities. The Port redeveloped the property as Pier T, which opened in 2002 as the first "mega-terminal" and continues operation as a container terminal.

A series of PMP amendments established the boundaries, land and water uses, and goals and objectives for Planning District 4 (West Basin). They include the following:

- PMP Amendment #9 (1996) renamed, renumbered, and added portions of the Northwest Harbor Planning District to the Terminal Island Planning District (Pier S).
- PMP Amendment #10 (1997) established a marine terminal project as a permitted use within the Terminal Island Planning District and transferred permitting authority to the Port. This amendment removed the homeless shelter as a Non-Port Related Areas land use.
- PMP Amendment #13 (1998) updated and modified the Terminal Island Planning District by adding a non-Port use (City Police Headquarters/Academy) and adding descriptions of various proposed projects: container terminal and on-dock railyard, Pier T ship repair facility, Pier T liquid bulk terminal, relocation of lumber/break bulk facility, and expansion of recycled steel export terminal.
- PMP Amendment #19 (2003) added landfill area by widening the Navy Mole.

Planning District 4 (West Basin) includes a major container terminal on Pier T, representing a 381-acre terminal and 5,000-foot berth. PMP Amendment #10 (1997) provided for the construction of this container terminal on Terminal Island.

Non-container terminals/facilities are located on Pier T Echo at the easternmost part of Pier T. These facilities consist of a liquid bulk (crude oil) facility, a scrap metal export facility, and a lumber terminal.

Facilities on the Navy Mole include S7 Sea Launch, the U.S. Department of Transportation Maritime Administration area, and the U.S. Navy fueling dock at Pier 12. The Navy intends to renew fueling operations at Pier 12 as part of the Defense Fuel Support Point San Pedro.

Table 6.4-8 summarizes the PMP Update modifications to Planning District 4 (West Basin).

Table 6.4-8. Planning District 4 (West Basin) Updates

Boundary Change	Land Use Change	Water Use Change	Ongoing/Allowable Project(s)	Anticipated Project(s)
Yes[1]	Yes[2]	Yes[3]	Yes[4]	Yes[5]

Notes: [1] Removed Pier S
[2] Adds Environmental Protection and Renewable Energy Resources
[3] Adds Maneuvering and Berthing, Sediment Management Area, and Environmental Protection
[4] Terminal Island Wye, Pier T Echo Support Yard, Gerald Desmond Bridge Replacement
[5] Pier T Improvements and Pier W Terminal Development



Figure 6.4-4. Planning District 4 (West Basin)

6.4.4.2 Planning District 4 Boundaries

Planning District 4 (West Basin) boundaries include the following:

- North Boundary: Long Beach Tidelands Line (Chapter 138);
- East Boundary: A line from the point of intersection between the centerline of the Back Channel and Long Beach Tidelands Line to the tip of the Pier T complex to the tip of the southern shoreline of the Navy Mole;
- South Boundary: Southern shoreline of the Navy Mole; and
- West Boundary: Harbor District boundary and City of Long Beach city limit.

6.4.4.3 Planning District 4 Goals

The PMP Update focuses on accommodating increases in all general cargo, improving intermodal operations, maximizing container capabilities in the Outer Harbor, and preparing for regular calls of larger container vessels.

Goal 1: Accommodate container cargo forecast associated with international container market demands.

The Port is expected to experience increasing volumes of international containerized cargo, based on the San Pedro Long-Term Unconstrained Cargo Forecast (Mercator 2016). Planning District 4 includes land and water configurations that are most conducive to accommodating these volumes. Accordingly, terminals in Planning District 4 should be improved and modernized as needed to accommodate that cargo.

Goal 2: Utilize maritime support land uses in close proximity to the terminal and on-dock intermodal rail to maximize terminal efficiencies.

Development of a container support yard, such as the 17-acre Pier T Echo Support Yard, would maximize the efficiency of the Pier T terminal. The Pier T Echo Support Yard could be used for storage of empties and chassis, or as a peel-off yard.

Goal 3: Enhance rail connectivity from the Alameda Corridor to Outer Harbor marine terminals.

In the long term, additional rail capacity on the Badger Bridge will be needed to facilitate intermodal rail traffic. To achieve that, the U.S. Coast Guard may consider a bridge lockdown to enhance rail efficiency, and the ports may consider adding additional trackage across the bridge. Without those improvements, the capacity of the rail facilities on Pier T, including the on-dock railyard, may be strained by the growth of cargo volumes at Terminal Island marine terminals, including the container and non-container terminals on Pier T. The Port should support efforts to improve rail connectivity from Terminal Island to the Alameda Corridor. This would improve rail access options for Planning District 4 development scenarios.

Goal 4: Accommodate non-container cargo growth at existing non-container terminals.

The non-container Primary Port terminals located on Pier T Echo include liquid bulk (crude and non-crude petroleum products), break bulk lumber imports, and export recycle materials. The overall forecast for liquid bulk is 1 percent CAGR, and metal exports are 2.7 percent CAGR. There is no specific growth rate for lumber since this commodity is tied directly to the construction markets within the region. Based on the forecast and terminal capacity, there is no proposed expansion of these facilities.

DRAFT

Goal 5: Provide safe navigation for bigger liquid bulk vessels to Pier T.

Proposed improvements to existing navigation channels within the Port associated with the POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project are important because Pier T Berth T121 represents the only very large crude carriers berth on the West Coast. Navigational improvements could include deepening approach channels and berths, as well as installation of structural modifications to reinforce wharf designs.

Goal 6: Incorporate environmentally sustainable operations.

The primary implementation objectives are to reduce air emissions from Port activities; improve water quality within the harbor; protect aquatic ecosystems and marine habitats; implement sustainable practices in terminal design, development, and operations; and coordinate with Port tenants to carry out the Green Port Policy goals.

6.4.4.4 Planning District 4 Land and Water Use Designations

Table 6.4-9 identifies the existing and proposed PMP Update land and water use designations.

Table 6.4-9. Planning District 4 (West Basin) – Permitted Land and Water Use Designations

Existing Designations	Proposed Designations
Land Use	
Primary Port Facilities Hazardous Cargo Facilities Port-Related Industries and Facilities Ancillary Port Facilities Federal Use Oil and Gas Production Utilities Non-Port Related Areas[1]	Primary Port Facilities Hazardous Cargo Facilities Port-Related Facilities Maritime Support Facilities Institutional Facilities Oil and Gas Production Facilities Utilities Renewable Energy Resources[3] Environmental Protection[3]
Water Use	
Navigable Corridor	Navigable Corridor Maneuvering and Berthing[2] Sediment Management Areas[3] Environmental Protection[3]

Notes: [1] Port Master Plan (PMP) Amendment #10 removed the Non-Port Related Areas designation from this planning district.
[2] This water use designation was not included for this planning district in the 1990 PMP as amended.
[3] These are new land and water use designations that were not included in the 1990 PMP as amended.

The Proposed Plan adds Environmental Protection and Renewable Energy Resources land uses to designate areas for environmental protection and enable planning for future renewable energy generation. The Proposed Plan retains the existing water use and also adds Maneuvering and Berthing to accommodate use of berthing areas adjacent to cargo handling berths and designated turning basins; adds Sediment Management Areas to accommodate areas for temporary and permanent disposal of harbor dredge materials; and adds Environmental Protection to accommodate water areas reserved for environmental restoration and protection.

6.4.4.5 Planning District 4 PMP Update Projects

Ongoing/Allowable Projects

The ongoing/allowable projects in Planning District 4 (West Basin) are described below.

DRAFT

- Terminal Island Wye – The project would provide approximately 9,000 feet of track through the south leg of the Terminal Island Wye. Please refer to Section 6.4.3.5 (Planning District 3 PMP Update Projects) for additional details.
- Pier T Echo Support Yard – The project would construct a 17-acre support yard (chassis, empties, or peel-off) that would serve the Pier T container terminal. This site is currently vacant, but is sometimes used as a temporary construction staging site or storage site for the Pier T container terminal. This project would require minor construction activity, including demolition and/or construction of infrastructure (e.g., paving, lighting, and buildings).
- Gerald Desmond Bridge Replacement – The project would replace the existing Gerald Desmond Bridge and construct adjacent roadway improvements. Please refer to Section 6.4.2.5 (Planning District 2 PMP Update Projects) for additional details.
- POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project – The project would improve existing navigation channels within the Port, focusing on improving conditions for current and future container and liquid bulk vessel operations in regards to safety, reliability, and waterborne transportation efficiencies. Container movements along the secondary channels serving Pier J and Pier T/West Basin and liquid bulk vessel movements along the main channel are constrained by current conditions. Navigation improvements for liquid bulk vessels include deepening the Approach Channel (extending seaward from the Queen's Gate opening of the Long Beach Breakwater) up to 80 feet below mean lower low water (MLLW), widening portions of the Main Channel, and constructing an anchorage area for very-large liquid bulk vessels, adjacent to the Main Channel, with an inner depth of -73 feet and an outer depth of -67 feet MLLW. Navigation improvements for container vessels would include deepening the Pier J approach channel, berths, and constructing a turning basin to Pier J up to a depth of -55 feet MLLW. Navigational improvements for container vessels would also include deepening the Pier T/West Basin and berths up to -55 feet MLLW. An estimated total volume of up to 9.0 million cubic yards (cy) of material would be dredged.

In addition, improvements along existing revetments, breakwaters, and moles may be undertaken, and a new electrical substation may be constructed to provide electricity to electrical dredge equipment that is not able to access the existing electrical substation on Pier T. This substation would likely be built on Pier J.

Anticipated Projects

The anticipated projects in Planning District 4 (West Basin) are described below.

- Pier T Improvements – The project would include extending an existing berth eastward in the area of T-130, dredging and redeveloping the berth at Pier T Echo in the area of T-126/128 (5-acre extension fill), and expanding the intermodal yard with approximately 65 acres of fill to provide additional storage tracks and arrival/departure tracks.
- Pier W Terminal Development – The project would construct a new container terminal on approximately 100 acres of fill. Pier W would provide one berth and backland to support cargo handling operations. The project would involve extensive construction, including discharge of fill; dredging to provide a deep-water berth and approach channel; and construction of rock dikes, a wharf, paved container yard, utilities, buildings, and a gate complex. Terminal activities that would have environmental impacts include vessel arrivals and departures; vessel loading and unloading; container handling by a variety of cargo handling equipment; truck arrivals and departures; and train arrivals and departures.

6.4.5 Planning District 5 (Southeast)

6.4.5.1 Planning District 5 Existing Conditions (2019)

Planning District 5 (Southeast) consolidates four existing planning districts into one. The PMP Update includes this mega-container district to meet future cargo demands and support the introduction of larger container vessels into the transpacific markets.

Planning District 5 (Southeast) consists of the former Middle Harbor Planning District, Southeast Planning District, Navigation Area Planning District, and Outer Harbor Planning District, and will be the largest primary container area of the Port (**Figure 6.4-5**).

Since 1990, Planning District 5 (Southeast) has been modified by the following PMP amendments:

- Amendment #9 (1996) renumbered the Middle Harbor Planning District;
- Amendment #12 (1998) certified a 30-acre land fill within Slip 2 Pier E in the Middle Harbor Planning District;
- Amendment #15 (2000) certified a proposed land fill to reconfigure Piers G and J terminals for expansion of container capacity; and
- Amendment #16 (2001) certified land fill (45.4 acres) between Piers E and F for the purpose of consolidating, redeveloping, and modernizing the Middle Harbor container terminal.
    - The terminals at Piers D/E/F are part of the Middle Harbor Redevelopment Program, which will construct a single large terminal, known as the Long Beach Container Terminal (LBCT), when complete. The new, modern terminal employs new technologies and upgrades infrastructure to improve the Port's cargo handling capabilities while also improving the environment. The gross terminal area is 300 acres with a wharf length of 4,250 feet. When complete, the LBCT complex will have the capability of handling vessels up to 22,000 TEU capacity.

The Pier G container terminal consists of 260 acres and three wharves in excess of 3,700 feet.

Non-container terminals located in Planning District 5 (Southeast) include:

- Break bulk and general cargo (automobile) on Pier F;
- Dry-bulk terminals (cement) located on Pier D and Pier F;
- Dry bulk (e.g., salt, petroleum coke, sulfur, soda ash, calcined coke, coal) on Pier G; and
- Liquid bulk (petroleum and bunker fuel) on Pier F.

Table 6.4-10 summarizes the PMP Update modifications to Planning District 5 (Southeast).

Table 6.4-10. Planning District 5 (Southeast) Updates

Boundary Change	Land Use Change	Water Use Change	Ongoing/Allowable Project(s)	Anticipated Project(s)
Yes[1]	Yes[2]	Yes[3]	Yes[4]	Yes[5]

Notes: [1] Consolidates four existing planning districts into one district
[2] Adds Hazardous Cargo Facilities, Institutional Facilities, Recreational Open Space Facilities, and Environmental Protection
[3] Adds Sediment Management Areas and Environmental Protection
[4] Middle Harbor Redevelopment Program, Pier G Terminal Redevelopment, Gerald Desmond Bridge Replacement, Double Track Access from Pier G to J, Fireboat Station No. 15, Ocean Boulevard Bicycle Gap Closure, Administrative Building Demolition, Administrative Building Site Support Yard (Expansion), and Port of Long Beach (POLB) Deep Draft Navigation Feasibility Study and Channel Deepening Project
[5] Pier J Terminal Redevelopment and Protective Boat Basin (Berth F202)

DRAFT

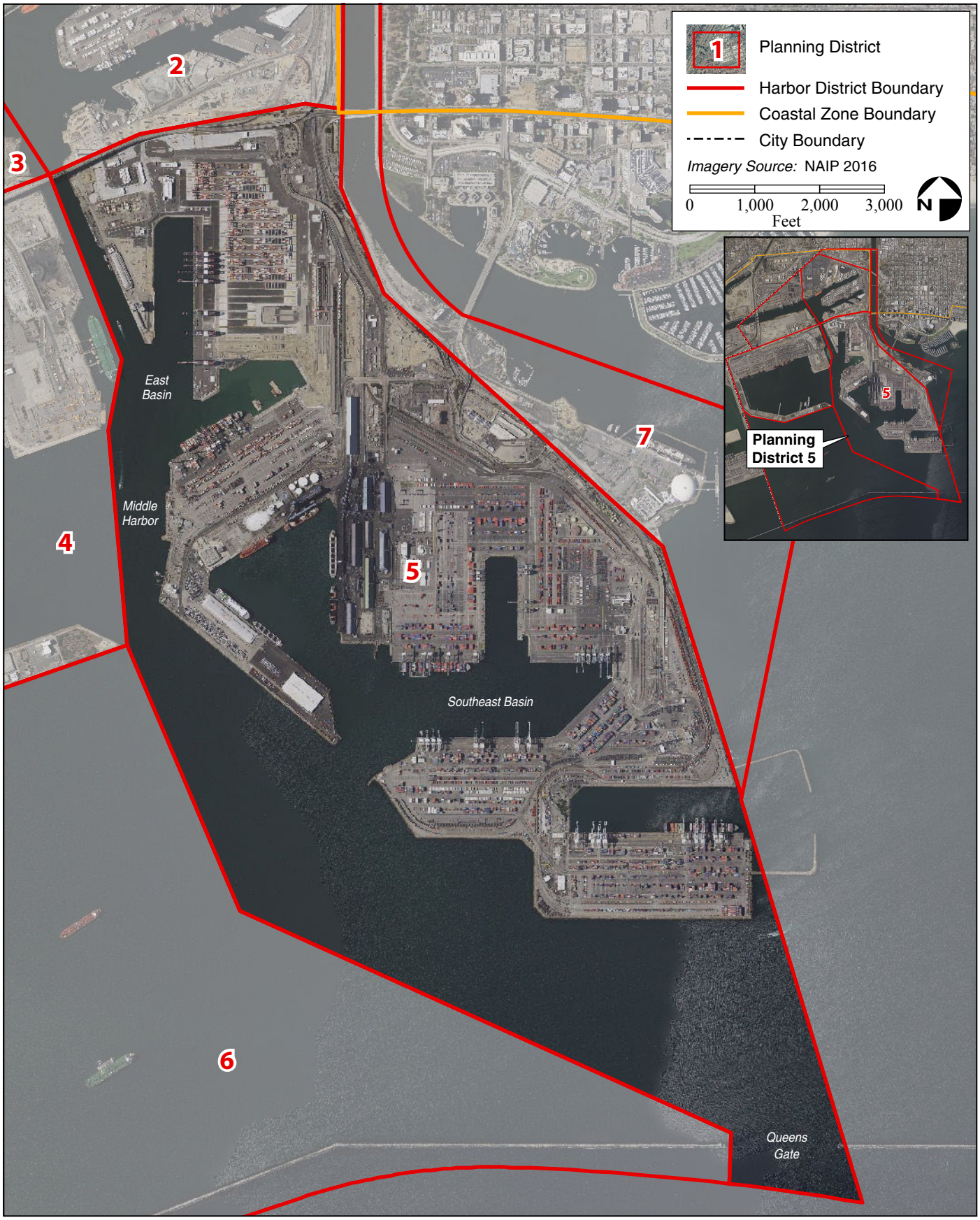


Figure 6.4-5. Planning District 5 (Southeast)

6.4.5.2 Planning District 5 Boundaries

Planning District 5 (Southeast) boundaries include the following:

- North Boundary: Long Beach Tidelands Line (Chapter 138);
- East Boundary: Western right-of-way of Harbor Scenic Drive along the shoreline to the Queensway Bay Planning District and Pier H to the east;
- South Boundary: Harbor District boundary at the Queens Gate harbor opening; and
- West Boundary: A line from the west side of the Queens Gate harbor opening at the Harbor District boundary to the eastern tip of the Navy Mole and continuing to the point of intersection between the centerline of the Back Channel and Long Beach Tidelands Line.

6.4.5.3 Planning District 5 Goals

The goals of Planning District 5 focus on responding to container cargo demands on Primary Port container facilities. Modernization of the Port's existing facilities is consistent with the CCA.

Development and operation of the container terminals within Planning District 5 (Southeast) have contributed significantly to the Port's ability to accommodate cargo growth, modernize existing facilities, enhance on-dock rail capacities, and establish the Port as an industry leader in green technologies.

The PMP Update restates the goals to accommodate cargo growth, prepare for larger container vessels, improve on-dock rail opportunities, maximize container operations in the Outer Harbor, and provide flexibility to develop and implement Green Port Policy initiatives.

Goal 1: Accommodate container cargo forecast associated with international container market demands.

Capital improvements to accommodate container cargo forecasts have largely been through terminal redevelopment efforts. The PMP Update supports this as a continuing goal.

Goal 2: Utilize maritime support land uses to maximize efficiency of the primary maritime users in the Outer Harbor.

Adequate off-terminal storage yard capacity is important for optimizing cargo handling operations. For example, utilizing support land for empty chassis storage near terminals is a productive maritime support land use. The site of the former Port Administrative Building is proposed as a maritime support yard to improve container cargo efficiencies.

Goal 3: Enhance rail connectivity from the Alameda Corridor to Outer Harbor marine terminals.

Connectivity between the on-dock rail system and the Alameda Corridor is an important component of this process, and enhancing connectivity is critical for optimizing cargo handling efficiencies. An ongoing/allowable project that will support this goal is the Double Track Access from Pier G to J Project (refer to Section 6.4.5.5, Planning District 5 PMP Update Projects, for details).

Goal 4: Accommodate non-container cargo growth in association with existing Port users.

The Port seeks to maintain a diversity of cargoes handled throughout the Harbor District. Although the container uses are generally prioritized in the Outer Harbor, Pier G has an existing dry-bulk terminal handling a variety of cargoes such as petroleum coke, soda ash, coal, and sulfur. Based on expected growth and existing terminal capacity analysis for dry bulk, an expansion of these terminals is not warranted at this time.

DRAFT

Goal 5: Provide safe navigation for bigger ships in the Main Channel, maneuvering, turning basins, and to the berths.

Proposed improvements to existing navigation channels within the Port associated with the POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project would occur within this planning district. Based on current projected dimensions, ultra large container ships would not change water depth requirements in the Main Channel, but may affect width requirements. Navigational safety requires that the Port Pilots have appropriate vessel range siting, sector lights, GPS, and sounding charts in place.

Goal 6: Incorporate environmentally sustainable operations.

The primary implementation objectives are to reduce air emissions from Port activities; improve water quality within the harbor; protect aquatic ecosystems and marine habitats; implement sustainable practices in terminal design, development, and operations; and coordinate with Port tenants to carry out the Green Port Policy goals.

6.4.5.4 Planning District 5 Land and Water Use Designations

Table 6.4-11 identifies the existing and proposed PMP Update land and water use designations.

Table 6.4-11. Planning District 5 (Southeast) – Permitted Land and Water Use Designations

Existing Designations	Proposed Designations
Land Use	
Primary Port Facilities Port-Related Industries and Facilities Ancillary Port Facilities Oil and Gas Production	Primary Port Facilities Port-Related Facilities Maritime Support Facilities Oil and Gas Production Facilities Hazardous Cargo Facilities[1] Institutional Facilities[1] Environmental Protection[2]
Water Use	
Navigable Corridor Maneuvering Areas	Navigable Corridor Maneuvering and Berthing Sediment Management Areas[2] Environmental Protection[2]

Notes: [1] These land use designations were not included for this planning district in the 1990 Port Master Plan (PMP) as amended.
[2] These are new land and water use designations that were not included in the 1990 PMP as amended.

Hazardous Cargo Facilities has been added to accommodate existing Chemoil marine terminal operations on Pier F. Institutional Facilities has been added to Planning District 5 to accommodate two fireboat station projects.

The PMP Update retains the existing water uses and also adds the Sediment Management Areas designation to accommodate areas for temporary and permanent disposal of harbor dredge materials in this planning district and Environmental Protection to accommodate water areas reserved for environmental restoration and protection.

6.4.5.5 Planning District 5 PMP Update Projects

Ongoing/Allowable Projects

The ongoing/allowable projects in Planning District 5 (Southeast) are described below.

- Middle Harbor Redevelopment Program – The project would rehabilitate or replace deteriorated and obsolete terminal facilities; provide deeper water (-55 feet MLLW) at berths and in basins and channels; create new land; modernize marine terminal facilities; and implement environmental controls, including the Port's Green Port Policy and Clean Air Action Plan. Thus, the project would accommodate a portion of the predicted future increases in containerized cargo volume and the modern, larger cargo vessels that are expected to transport these goods to and from the Port (POLB 2009b). The project includes terminal consolidation, redevelopment, and expansion on areas of existing and newly created land, dredge and fill operations, wharf construction to create three deep-water berths with -55 feet MLLW depths, and rail infrastructure improvements (e.g., mainline track realignment at Ocean Boulevard/Harbor Scenic Drive, Pier F Avenue storage yard and tracks, Pier F tail track, and expanding the existing Pier F intermodal railyard). The project also includes construction of a 66 kilovolt substation (Pier E Substation) to provide power that would support Middle Harbor container terminal operations, including supplying shore-to-ship power, and future power needs for other Port facilities.
- Pier G Terminal Redevelopment – The project would redevelop Pier G from an existing 246-acre container terminal into a 315-acre container terminal by filling the Pier G slip, reconstructing the wharf, and reconfiguring the container yard.
- Gerald Desmond Bridge Replacement – The project would replace the existing Gerald Desmond Bridge and construct adjacent roadway improvements. Please refer to Section 6.4.2.5 (Planning District 2 PMP Update Projects) for additional details.
- Double Track Access from Pier G to J – The project would construct a second departure track for trains serving four marine terminals along the East Basin: Pier J Pacific Container Terminal, Pier G International Transportation Service, Pier G Metro; and Pier E/F LBCT (i.e., Middle Harbor).
- Fireboat Station No. 15 – The project would construct a new fire station and boat bay at Pier F, Berth F202 to replace the existing Fireboat Station No. 15.
- Ocean Boulevard Bicycle Gap Closure – The project would provide a Class I bike path (approximately 0.5 mile) connecting the eastern terminus of the Mark Bixby Bicycle Path on the new Gerald Desmond Bridge to the City's bicycle network east of Los Angeles River. The approximate project limit is between Pico Avenue and Golden Shore along Ocean Boulevard across the Los Angeles River.
- Administrative Building Demolition – The project would demolish the former Port Administration Building at 925 Harbor Plaza.
- Administrative Building Site Support Yard (Expansion) – The project would expand the existing 7-acre temporary chassis support yard, currently serving the Middle Harbor Terminal and located in the footprint of the former Port Administration Building parking lot, by approximately 13 acres. The existing support yard would expand into the footprint of the former Port Administration Building, which would be demolished under a separate Port project, and used as a support yard (chassis, empties, or peel-off) for nearby terminals. This project could involve demolition or construction of infrastructure (e.g., buildings or trailers, utility infrastructure, gates, or other support structures) within the expanded yard.
- POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project – The project would improve existing navigation channels within the Port, focusing on improving conditions for current and future container and liquid bulk vessel operations in regards to safety, reliability, and waterborne transportation efficiencies. Please refer to Section 6.4.4.5 (Planning District 4 PMP Update Projects) for additional details.

DRAFT

Anticipated Projects

The anticipated projects in Planning District 5 (Southeast) are described below.

- Pier J Terminal Redevelopment – The project would redevelop the Pier J Terminal and include dredging and filling the 44-acre south slip and 22-acre triangle, cutting a 9-acre notch, and constructing a wharf extension (9-acre extension fill). The redeveloped terminal would consist of an approximately 212-acre container yard, 52-acre intermodal yard, and approximately 23 acres for a reconstructed 4,000-linear foot wharf. This project would also reconfigure the existing rail line and yard. The intermodal yard would include three working tracks.

  In addition, approximately 14 acres at the tip of Pier F would be cut off to create additional water area and widen the entrance to the Southeast Basin. Existing infrastructure (buildings, wharves, utilities) and operations (e.g., break bulk terminals) within the Pier F cut area would be demolished and relocated to Pier S or other areas in the Harbor District.
- Protective Boat Basin (Berth F202) – The project would construct a small boat basin, protected by a breakwater, along the Main Channel to shelter Joint Command and Control Center small craft. The project would involve relocation and extension of the existing Jacobsen Pilots dock; construction of a new multi-use dock with nine boat slips to provide berthing spaces for the POLB Security Division, Long Beach Police Department, and other visiting Governmental Security Agency boats; and dredging and construction of a fixed breakwater and dike (approximately 12,000 square feet or 0.3 acre of fill) to provide necessary wave protection to the proposed docks. An additional third dock for overflow/haul-out staging of the user vessels described above would be constructed to the north. The project would also include removal of the docks at Pier F. Further, this project would include construction of other support infrastructure and utilities.

DRAFT

6.4.6 Planning District 6 (Anchorage and Open Water)

6.4.6.1 Planning District 6 Existing Conditions (2019)

Planning District 6 (Anchorage and Open Water) encompasses the water area south of the Navy Mole (**Figure 6.4-6**). **Table 6.4-12** summarizes the PMP Update modifications to Planning District 6 (Anchorage and Open Water).

Table 6.4-12. Planning District 6 (Anchorage and Open Water) Updates

Boundary Change	Land Use Change	Water Use Change	Ongoing/Allowable Project(s)	Anticipated Project
Yes	N/A	Yes[1]	No	Yes[2]

Key: N/A = not applicable
Notes: The south boundary is coincident with the Harbor District boundary.
[1] Adds Sediment Management Areas and Environmental Protection
[2] Outer Harbor Sediment Placement and Ecosystem Restoration (OHSPER)

6.4.6.2 Planning District 6 Boundaries

Planning District 6 (Anchorage and Open Water) boundaries include the following:

- North Boundary: Southern water edge of the Navy Mole;
- East Boundary: A line from the east tip of the Navy Mole to a point on the Harbor District boundary near the western opening of the Queen's Gate;
- South Boundary: Harbor District boundary; and
- West Boundary: Harbor District boundary and City of Long Beach city limit.

6.4.6.3 Planning District 6 Goals

The PMP Update revises the Planning District 6 (Anchorage and Open Water) goals as described below.

Goal 1: Provide safe navigation for bigger ships in the Main Channel, maneuvering, turning basins, and to the berths.

Proposed improvements to existing navigation channels within the Port associated with the POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project would occur within this planning district.

Goal 2: Designate appropriate water areas for contaminated sediment management.

The Port is committed to beneficial reuse and disposal of dredged sediments. When beneficial reuse options are unavailable or infeasible, other strategies for managing contaminated sediments, such as use of confined aquatic disposal (CAD), are evaluated. Currently, the Port is evaluating development of the Outer Harbor Sediment Placement and Ecosystem Restoration (OHSPER) site by converting the existing Western Anchorage Sediment Storage Site (WASSS) into a CAD site for management of clean and contaminated sediments in the harbor.

Goal 3: Incorporate environmentally sustainable technologies and innovations.

The primary implementation objectives are to improve water quality within the harbor and protect and encourage aquatic ecosystems and marine habitats.

DRAFT



Figure 6.4-6. Planning District 6 (Anchorage and Open Water)

6.4.6.4 Planning District 6 Land and Water Use Designations

Table 6.4-13 identifies the existing and updated PMP Update permitted water use designations. There are no land uses in Planning District 6 (Anchorage and Open Water).

Table 6.4-13. Planning District 6 (Anchorage and Open Water) – Permitted Water Use Designations

Existing Designations	Updated Designations
Water Use	
Navigable Corridor Maneuvering Areas	Anchorage Areas Navigable Corridor Maneuvering and Berthing Sediment Management Areas[1] Environmental Protection[1]
Note: [1] These are new water use designations that were not included in the 1990 Port Master Plan as amended.	

The existing water use designations in this planning district remain the same in the PMP Update. In addition to the existing water uses, the PMP Update adds the Sediment Management Areas designation to accommodate areas for temporary and permanent disposal of harbor dredge materials in this planning district. The Environmental Protection designation is added to recognize an existing shallow-water habitat area.

6.4.6.5 Planning District 6 PMP Update Projects

Ongoing/Allowable Projects

The ongoing/allowable project in Planning District 6 (Anchorage and Open Water) is described below.

- POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project – The project would improve existing navigation channels within the Port, focusing on improving conditions for current and future container and liquid bulk vessel operations in regards to safety, reliability, and waterborne transportation efficiencies. Please refer to Section 6.4.4.5 (Planning District 4 PMP Update Projects) for additional details.

Anticipated Projects

The anticipated project in Planning District 6 (Anchorage and Open Water) is described below.

- OHSPER Site – The project would re-designate the WASSS[8] as the OHSPER site and serve as a permitted CAD[9] location for maintenance dredging and capital development projects that generate contaminated sediments and sediments suitable for ocean disposal. The WASSS currently consists of two large underwater depressions called the North Lobe and South Lobe that are used for placement and storage of dredged sediments for future reuse in Port landfills. The 1990 PMP as amended allows for the placement and reuse of clean sediments from within the Port boundaries into the WASSS (PMP Amendment #11). To re-designate the WASSS as the OHSPER, the project has been included in the PMP Update.

[8]The WASSS was named as such because it covers all or part of three "anchorages" (i.e., B5, B9, and B10), which are designated areas for ships to anchor while waiting for berth space or loading materials.
[9]CAD is a disposal method that involves the placement of contaminated dredged material from the aquatic environment at an appropriate open-water placement site, in this case an existing depression in the harbor bottom to hold layers of deposited material, which is then capped (i.e., buried) with a layer of clean sediment. This contains and isolates the contaminated material from the aquatic environment.

The Port, in coordination with the Los Angeles Regional Water Quality Control Board, U.S. Army Corps of Engineers, and Los Angeles Contaminated Sediment Task Force evaluated management alternatives for both clean and contaminated sediments within the North Lobe and South Lobe of the WASSS and determined that developing a CAD facility to manage contaminated sediments would be consistent with the Contaminated Sediment Task Force long-term management strategy; would represent a feasible disposal option for clean and contaminated sediments and regional coordination of sediment management efforts; and would ensure protection of aquatic resources from the discharge of contaminated dredged materials into the water. The project site could accommodate both clean and contaminated sediments and each lobe could potentially be further subdivided to hold material for disposal or clean sediments for reuse. The available capacity to accommodate sediment at the project site is estimated to be approximately 1.6 million cy for the North Lobe and 1.7 million cy for the South Lobe (Anchor QEA, LLC 2016).

DRAFT

6.4.7 Planning District 7 (Queensway Bay)

6.4.7.1 Planning District 7 Existing Conditions (2019)

Planning District 7 (Queensway Bay) is the Port's primary visitor-serving area for recreational and commercial users (**Figure 6.4-7**). Land and water uses within this planning district support Queensway Bay as a major visitor-serving destination and enhance the Port's relationship with downtown Long Beach, the Convention Center, and other tourist attractions.

The 1978, 1983, and 1990 PMPs detail the goals to promote commercial and recreational activities in this planning district. Oil production activities are also present in this planning district. Queensway Bay continues to serve as a recreational buffer between downtown Long Beach and the Port's industrial operations.

The City of Long Beach Municipal Code (Title 21, Zoning Regulations), which sets forth standards for land use planning and design, establishes the goals intended to influence the type, location, and density of new development in Planning District 7 (Queensway Bay). The Queensway Bay Planned Development District (PD-21) is zoned to create a visitor-serving destination for recreational and commercial users. Land uses within Queensway Bay are intended to complement the City's long-term vision for this area. Entitlements in Queensway Bay are administered by the City according to PD-21 regulations in collaboration with the Port.

The existing Queensway Bay goals were to intensify commercial and recreational activities, maintain a buffer between the planning district and other Primary Port planning districts, minimize disruption of view corridors, and encourage recreational use of the Flood Control Channel. To achieve these goals, the 1990 PMP notes that the Port should promote, preserve, and consolidate appropriate tourist and community-serving facilities within the Queensway Bay area. The cruise terminal has been operating since 1990, and has undergone changes as necessary to reflect changes in the market. The Port continues to encourage shuttle systems or other alternative transportation modes to and from downtown Long Beach.

Table 6.4-14 summarizes the PMP Update modifications to Planning District 7 (Queensway Bay).

Table 6.4-14. Planning District 7 (Queensway Bay) Updates

Boundary Change	Land Use Change	Water Use Change	Ongoing/Allowable Project(s)	Anticipated Project(s)
No	Yes[1]	Yes[2]	Yes[3]	No

Notes: [1] Adds Institutional Facilities and Environmental Protection.
[2] Adds Navigable Corridor, Sediment Management Areas, and Environmental Protection.
[3] Pier J Bicycle Path, Shoemaker Bridge Replacement, Long Beach Cruise Terminal Improvements, Queen Mary Island.

6.4.7.2 Planning District 7 Boundaries

Planning District 7 (Queensway Bay) boundaries include the following:

- North Boundary: Centerline of Anaheim Street and the Anaheim Street Bridge;
- East Boundary: Harbor District boundary along the east side of the Flood Control Channel and in the open water;
- South Boundary: North corner of the Pier J South slip opening; and
- West Boundary: West side of Harbor Scenic Drive separating Pier H and the Queen Mary's visitor area from Primary Port uses at Pier J. and continuing along the western property line of the Los Angeles County Flood Control Channel.

DRAFT



Figure 6.4-7. Planning District 7 (Queensway Bay)

6.4.7.3 Planning District 7 Goals

The goals for Planning District 7 (Queensway Bay) continue the intent of the 1990 PMP, but they have been updated to reflect current planning issues.

Goal 1: Accommodate commercial/recreation activities consistent with Chapter 3 of the CCA.

This goal aligns with the Port's commitment to providing and protecting access to coastal resources for the benefit of the public in accordance with the CCA. As part of this commitment, the Port strives to preserve and enhance access to designated public areas and facilities for fishing, viewing, and other recreational activities. Queensway Bay supports visitor-serving commercial activities, public access uses, recreational water uses, and cruise terminal facilities.

Goal 2: Maintain a buffer between Planning District 7 (Queensway Bay) and Primary Port uses.

An underlying PMP Update planning principle is to consolidate compatible uses and locate non-maritime uses in appropriate areas away from industrial Port uses and hazardous areas. This goal is to maintain Queensway Bay as a buffer between the highly industrialized inner San Pedro Bay Port Complex and downtown waterfront recreational areas.

Goal 3: Minimize disruption of significant view corridors.

This goal is intended to complement the City's long-term vision for the Queensway Bay, which includes creating and maintaining scenic views of the Queen Mary and promoting visual connectivity from Queensway Bay to downtown and the greater Long Beach area.

Goal 4: Incorporate environmentally sustainable technologies and innovations.

The primary implementation objectives are to carry out the Green Port Policy goals and comply with applicable City of Long Beach and California Building Standards Code regulations pertaining to "green" and sustainable development.

6.4.7.4 Planning District 7 Land and Water Use Designations

Table 6.4-15 identifies the existing and proposed PMP Update land and water use designations.

Table 6.4-15. Planning District 7 (Queensway Bay) – Permitted Land and Water Use Designations

Existing Designations	Proposed Designations
Land Use	
Commercial/Recreation Facilities Primary Port Facilities Oil and Gas Production Ancillary Port Facilities	Visitor-Serving Commercial Facilities Recreational Open Space Facilities Primary Port Facilities Oil and Gas Production Facilities Maritime Support Facilities Institutional Facilities[1] Environmental Protection[2]
Water Use	
Maneuvering Areas Recreational/Sport Fishing	Maneuvering and Berthing Recreational Navigable Corridor[1] Sediment Management Areas[2] Environmental Protection[2]

Notes: [1] These land and water use designations were not included for this planning district in the 1990 Port Master Plan (PMP) as amended.
[2] These are new land and water use designations that were not included in the 1990 PMP as amended.

The PMP Update adds Institutional Facilities to recognize legacy land uses within the planning district related to public facilities, education, and marine research areas. In addition to the existing water uses, the PMP Update adds the Navigable Corridor designation for use of waterways that serve the cruise terminal and small craft marinas (e.g., sport fishing and marina slips). The Environmental Protection water use designation is added to recognize the potential for future shallow-water habitat in the Pier J fishing area.

6.4.7.5 Planning District 7 PMP Update Projects

Ongoing/Allowable Projects

The ongoing/allowable projects in Planning District 7 (Queensway Bay) are described below.

- Pier J Bicycle Path – The South Waterfront/Pier J Bike and Pedestrian Path, Segment 1 begins at the Queensway Bridge, through the Maya Resort and Queen Mary area, then south to Pier J. The project would construct Segments 2 through 6, which will continue the path along the south waterfront at Harbor Scenic Drive and Pier J. The project includes roadway widening, a bio-filtration median and landscaping, retaining walls, a restroom building, bicycle racks, and two observation platforms.
- Shoemaker Bridge Replacement – The project would replace the existing Shoemaker Bridge over the Los Angeles River with a new bridge to improve existing traffic safety and operations and increase multi-modal connectivity. The old bridge would either be demolished or repurposed for recreational uses.
- Long Beach Cruise Terminal Improvements – The project includes landside and waterside improvements to the Carnival Cruise facilities on Pier H to accommodate a new, larger class of cruise ship and improve safe mooring of the ship at the existing berth. Waterside improvements include dredging to deepen the water depths, installing mooring dolphins and catwalks, fender replacements, and extending a passenger walkway bridge. Landside improvements include expansion of the existing parking garage and traffic lane reconfiguration.
- Queen Mary Island – The project would redevelop a 45-acre site located at 1126 Queens Highway to include 500,000 square feet of new development in support of the existing Queen Mary and Carnival cruise line. The new development could include renovating the Queen Mary, retail stores, restaurants, entertainment activities (e.g., theater, bowling alley, and golf venue), hotel, education and aquatic centers, event spaces, and marina and transportation improvements.

Anticipated Projects

There are no anticipated projects to be approved and certified by the PMP Update in this planning district.

DRAFT

6.5 SUMMARY OF PROJECTS BY PLANNING DISTRICT

Table 6.5-1 summarizes the allowable land and water uses for the planning districts. **Table 6.5-2** summarizes the PMP Update projects by planning district. These projects are depicted on **Figure 6.5-1**.

Table 6.5-1. PMP Update Planning Districts and Allowable Uses

Planning District	Land Uses	Water Uses
1 – North	Port-Related Facilities Institutional Facilities[1] Oil and Gas Production Facilities	N/A
2 – Northeast	Primary Port Facilities Port-Related Facilities Maritime Support Facilities Hazardous Cargo Facilities Oil and Gas Production Facilities Utilities Institutional Facilities Visitor-Serving Commercial Facilities	Navigable Corridor Maneuvering and Berthing Recreational Sediment Management Areas Environmental Protection
3 – Northwest (Formerly 1990 PMP Districts 3 and 4)	Primary Port Facilities Port-Related Facilities Maritime Support Facilities Hazardous Cargo Facilities Oil and Gas Production Facilities Utilities Renewable Energy Resources	Navigable Corridor Maneuvering and Berthing Sediment Management Areas Environmental Protection
4 – West Basin	Primary Port Facilities Port-Related Facilities Maritime Support Facilities Hazardous Cargo Facilities Oil and Gas Production Facilities Utilities Institutional Facilities Renewable Energy Resources Environmental Protection	Navigable Corridor Maneuvering and Berthing Sediment Management Areas Environmental Protection
5 – Southeast (Formerly 1990 PMP Districts 5, 7, 8, and 10)	Primary Port Facilities Port-Related Facilities Maritime Support Facilities Hazardous Cargo Facilities Oil and Gas Production Facilities Institutional Facilities Environmental Protection	Navigable Corridor Maneuvering and Berthing Sediment Management Areas Environmental Protection
6 – Anchorage and Open Water	N/A	Anchorage Area Navigable Corridor Maneuvering and Berthing Sediment Management Areas Environmental Protection
7 – Queensway Bay (Formerly 1990 PMP District 9)	Primary Port Facilities Maritime Support Facilities Oil and Gas Production Facilities Institutional Facilities Visitor-Serving Commercial Facilities Recreational Open Space Facilities Environmental Protection	Navigable Corridor Maneuvering and Berthing Recreational Sediment Management Areas Environmental Protection

Key: PMP = Port Master Plan
Notes: [1] Per PMP Amendment #10, Institutional Facilities is a limited land use in Planning District 1 for a 15,000-square foot building.

DRAFT

Table 6.5-2. PMP Update Projects

Planning District	Ongoing/Allowable Projects[1]	Anticipated Projects[2]
1	Pier B On-Dock Rail Support Facility	
2	Pier B On-Dock Rail Support Facility Gerald Desmond Bridge Replacement Pier B Street Support Yard Fireboat Station No. 20 Fourth Track at Ocean Boulevard Pier D Street Realignment Toyota Logistics Services Improvement Project	
3	Terminal Island Wye Gerald Desmond Bridge Replacement Pier S Mixed Use Development Pier S Shoreline Enhancement Southern California Edison Transmission Tower Replacement	
4	Terminal Island Wye Pier T Echo Support Yard Gerald Desmond Bridge Replacement POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project	Pier T Improvements Pier W Terminal Development
5	Middle Harbor Redevelopment Program Pier G Terminal Redevelopment Gerald Desmond Bridge Replacement Double Track Access from Pier G to J	Pier J Terminal Redevelopment Protective Boat Basin (Berth F202)
	Fireboat Station No. 15 Ocean Boulevard Bicycle Gap Closure Administrative Building Demolition Administrative Building Site Support Yard (Expansion) POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project	
6	POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project	Outer Harbor Sediment Placement Ecosystem Restoration
7	Pier J Bicycle Path Shoemaker Bridge Replacement Long Beach Cruise Terminal Improvements Queen Mary Island	

Key: No. = Number; PMP = Port Master Plan; POLB = Port of Long Beach

Notes: [1] These projects are consistent with the 1990 PMP as amended and no further action by the California Coastal Commission (CCC) is required.

[2] These projects are anticipated for implementation in future capital development, but are not consistent with the 1990 PMP as amended. Anticipated projects are proposed for approval and certification by the CCC in association with this PMP Update.

DRAFT



Ongoing/Allowable Projects

1. Pier B On-Dock Support Facility
2. Gerald Desmond Bridge Replacement
3. Pier B Street Chassis Support Yard
4. Fireboat Station No. 20
5. Fourth Track at Ocean Boulevard
6. Pier D Street Realignment
7. Toyota Logistics Services Improvement Project
8. Terminal Island Wye
9. Pier S Mixed Use Development
10. Pier S Shoreline Enhancement
11. Southern California Edison Transmission Tower Replacement
12. Pier T Echo Support Yard
13. Middle Harbor Redevelopment Program
14. Piers G and J Terminal Redevelopment
15. Double Track Access from Pier G to J
16. Fireboat Station No. 15
17. Ocean Boulevard Bicycle Gap Closure
18. Administrative Building Demolition
19. Administrative Building Site Support Yard (Expansion)
20. POLB Deep Draft Navigation Feasibility Study and Channel Deepening Project
21. Pier J Bicycle Path
22. Shoemaker Bridge Replacement
23. Long Beach Cruise Terminal Improvements
24. Queen Mary Island

Anticipated Projects

1. Pier T Improvements
2. Pier W Terminal Development
3. Pier J Terminal Redevelopment
4. Protective Boat Basin (Berth F202)
5. Outer Harbor Sediment Placement Ecosystem Restoration (OHSPER)

Figure 6.5-1. PMP Update Projects

7 IMPLEMENTATION

The Port Master Plan (PMP) Update has been prepared in accordance with California Coastal Act (CCA) Section 30716(a) and California Code of Regulations, Title 14 Section 13636 for a PMP amendment. PMP Update certification shall be performed in the same manner as provided in CCA Section 30714. The intent of the PMP Update is to provide to the California Coastal Commission (CCC) an amendment update to the 1990 PMP in accordance with Division 20 CCA/Chapter 8 Ports [30700–30721].

Section 30711 sets forth the provisions for the preparation of this PMP Update. The PMP Update has been prepared in sufficient detail to allow the Board of Harbor Commissioners (BHC) and CCC to determine its adequacy and conformity with the CCA.

A port master plan shall include all of the following:

(1) The proposed uses of land and water areas, where known;

(2) The projected design and location of port land areas, water areas, berthing, and navigation ways and systems intended to serve commercial traffic within the area of jurisdiction of the port governing body;

(3) An estimate of the effect of development on habitat areas and the marine environment; a review of existing water quality, habitat areas, and quantitative and qualitative biological inventories; and proposals to minimize and mitigate any substantial adverse impact;

(4) Proposed projects listed as appealable in Section 30715 in sufficient detail to determine their consistency with the policies of Chapter 3 (commencing with Section 30200) of this division; and

(5) Provisions for adequate public hearings and public participation in port planning and development decisions.

7.1 POLICIES OF GENERAL APPLICABILITY

The BHC and Port of Long Beach (Port or POLB) staff shall use the following policies of general applicability to determine if a development proposal is consistent with the PMP Update. The policies described below are guideline policies, and are not necessarily the limiting policies, consistent with the CCA. The section(s) of the CCA that each policy addresses are included in parentheses.

Port Facilities

Policy 1 [Section 30701(a) & (b)] Ports of the State of California constitute one of the state's primary economic and coastal resources and are an essential element of the national maritime industry. Ports are encouraged to modernize and construct necessary facilities within their boundaries in order to minimize or eliminate the necessity for future dredging and filling to create new ports in new areas of the state.

Policy 2 [Section 30701] Planning for new port-related industrial projects within the Long Beach Harbor District (Harbor District) shall take into consideration the Port's ability to accommodate forecast demand for diverse cargoes and modernize terminal facilities to achieve more-efficient operations.

DRAFT

Diking, Filling, and Dredging of Water Areas

Policy 3 [Section 30705(a)] Water areas may be diked, filled, or dredged when consistent with a certified port master plan.

Policy 4 [Section 30705(a)] Consistent purposes for diked, filled, or dredged water areas are:

1. Construction, deepening, widening, lengthening, or maintenance of ship channel approaches, ship channels, turning basins, berthing areas, and facilities that are required for the safety and the accommodation of commerce and vessels to be served by the Port;
2. New or expanded facilities or waterfront land for port-related facilities;
3. New or expanded commercial fishing facilities or recreational boat facilities;
4. Incidental public service purposes, including, but not limited to, burying cables or pipes or inspection of piers and maintenance of existing intake and outfall lines;
5. Mineral extraction, including sand for restoring beaches, except in biologically sensitive areas;
6. Restoration purposes or creation of new habitat areas;
7. Nature study, mariculture, or similar resource-dependent activities; and
8. Minor fills for improving shoreline appearance, public access to the water, or for maintaining the structural integrity of wharves and other structures.

Policy 5 [Section 30705(b)] The design and location of new or expanded facilities shall, to the extent practicable, take advantage of existing water depths in order to diminish the need for future dredging.

Policy 6 [Section 30705(c)] Dredging shall be planned, scheduled, and carried out to minimize disruption to fish and bird breeding and migrations, marine habitats, and water circulation.

Policy 7 [Section 30705(c)] Dredge sediments that meet water quality standards may be deposited in designated open coastal water areas. Sediments that do not meet water quality standards may be deposited in confined disposal facilities, confined aquatic disposal sites, or other sediment management areas as designated in the PMP Update.

Policy 8 [Section 30706] Fill proposed water areas to the minimum necessary to achieve the purpose of the fill. Maintain navigational safety after fills are completed in accordance with sound safety standards that will afford reasonable protection to persons and property against the hazards of unstable geologic or soil conditions.

Land Use and Development

Policy 9 [Section 30220] Coastal areas and waters in the Harbor District suitable for water-oriented recreational activities shall be protected for such uses where they do not interfere with commercial or hazardous operations or activities of the Port and its tenants.

Policy 10 [Section 30250] Develop new commercial or industrial projects within, contiguous with, or in close proximity to existing developed areas able to accommodate them with adequate public services.

Policy 11 [Section 30253] New developments within the Harbor District shall ensure the Port is being a good steward of the public tidelands and ensure the following:

DRAFT

1. Minimize risks to life and property in areas of high geologic, flood, and fire hazard;
2. Assure stability and structural integrity of developments;
3. Be consistent with requirements imposed by the South Coast Air Quality Management District;
4. Minimize energy consumption and vehicle miles traveled;
5. Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses; and
6. Engage and educate the community about the proposed development.

Policy 12 [Section 30708] Port-related developments shall be planned in accordance with the Port's Green Port Policy and located, designed, and constructed so as to:

1. Minimize substantial adverse environment impacts;
2. Minimize potential traffic conflicts between vessels;
3. Give highest priority to the use of existing land space within harbor for port purposes, including, but not limited to, navigational facilities, shipping industries, and necessary support and access facilities;
4. Provide for other beneficial uses consistent with the public trust, including, but not limited to, recreation and wildlife habitat uses, to the extent feasible; and
5. Encourage rail service to port areas and multi-company use of facilities.

Master Plan Implementation

Policy 13 [Section 30715.5] No development within the Harbor District shall be approved by the Port unless it finds that the proposed development conforms with the certified PMP Update.

Policy 14 [Section 30716(a)] Changes in long-range planning for land uses, water uses, and anticipated projects shall be considered in future updates to the certified PMP Update. Any proposed amendment shall be submitted to, and processed by, the CCC.

Policy 15 [Section 30716] An amendment to the certified PMP Update may be deemed "de minimis" if the executive director of the CCC determines that the proposed amendment 1) would have no impact, either individually or cumulatively, on coastal resources, 2) is consistent with the policies of Chapter 3 (commencing with Section 30200), proper public notice is given according to 30716(c)(1)(A), and 3) does not propose any change in land use or water uses or any change in the allowable use of property.

7.2 CONFORMANCE OF ANTICIPATED PROJECTS TO CCA POLICIES

This section describes the conformity of the anticipated projects, which are proposed for approval and certification by the CCC in association with this PMP Update, with CCA policies. The CCA conformity analyses for the Pier T Improvements, Pier W Terminal Development, Pier J Terminal Redevelopment, Protective Boat Basin (Berth F202), and Outer Harbor Sediment Placement and Ecosystem Restoration (OHSPER) are described below and summarized in **Table 7.2-1**.

DRAFT

Table 7.2-1. California Coastal Act Compliance								
Planning District	Anticipated Project	CCA Section						
		30705–30706 (Dredge, Fill, & Dikes)	30708(a) (Minimum Environmental Impact)	30708(b) (Vessel Traffic)	30708(c) (Priority Port Use)	30708(e) (Intermodal Services)	30701(b) (Port Modernization)	30715 (Appealable)
4	Pier T Improvements	•	•	•	•	•	•	
	Pier W Terminal Development	•	•	•	•	•	•	
5	Pier J Terminal Redevelopment	•	•	•	•	•	•	
	Protective Boat Basin (Berth F202)	•	•	•	•		•	
6	OHSPER		•	•	•		•	
Key: CCA = California Coastal Act; OHSPER = Outer Harbor Sediment Placement and Ecosystem Restoration								

Pier T Improvements

The project would extend an existing berth eastward in the area of T-130, dredge and redevelop the berth at Pier T Echo in the area of T-126/128 (5-acre extension fill), and expand the intermodal yard with approximately 65 acres of fill to provide additional storage tracks and arrival/departure tracks. The project would comply with CCA Sections 30705–30706 because dredge and fill activities would be conducted to expand berthing areas to accommodate vessels to be served by the Port and Port-related facilities. The project would be consistent with CCA Section 30708(a) because it would be designed to minimize environmental impacts with incorporation of mitigation measures and adherence to regulations. Any potential changes to vessel traffic in the Pier T area associated with additional berth space and storage tracks would be implemented in accordance with Harbor District vessel safety precautions, ensuring compliance with CCA Section 30708(b). The project would comply with CCA Sections 30708(c) and 30701(b) because it would modernize and expand the existing Pier T Terminal to accommodate forecast demands for cargoes and achieve more-efficient operations. This project would be consistent with CCA Section 30708(e) because it would increase on-dock rail capabilities within the Port.

Pier W Terminal Development

The project would construct a new 100-acre container terminal that would provide one berth and backlands to support cargo handling operations. The project would involve extensive construction, including discharge of fill; dredging to provide a deep-water berth and approach channel; and construction of rock dikes, a wharf, paved container yard, utilities, and buildings. The project would comply with CCA Sections 30705–30706 because dredge and fill activities would be conducted to construct new maritime facilities and deepen ship channels and berthing areas to accommodate vessels to be served by Pier W facilities. The project would be consistent with CCA Section 30708(a) because it would be designed to minimize environmental impacts with incorporation of mitigation measures and adherence to regulations. Any potential changes to vessel traffic in the Pier W area and West Basin associated with the new container terminal and berth would be implemented in accordance with Harbor District navigation and safety systems,

ensuring compliance with CCA Section 30708(b). The project would comply with CCA Sections 30708(c) and 30701(b) because it would create a new modernized terminal within the Harbor District to accommodate forecast demands for cargoes and achieve more-efficient operations. This project would be consistent with CCA Section 30708(e) because it would increase on-dock rail capabilities within the Port.

Pier J Terminal Redevelopment

The project would redevelop the Pier J Terminal, including dredging and filling the 44-acre south slip and 22-acre triangle, cutting a 9-acre notch, and constructing a wharf extension (9-acre extension fill). The redeveloped terminal would consist of an approximately 212-acre container yard, 52-acre intermodal yard, and approximately 23 acres for a reconstructed 4,000-linear foot wharf. This project would also reconfigure the existing rail line and yard. In addition, approximately 14 acres at the tip of Pier F would be cut off to create additional water area and widen the entrance to the Southeast Basin. Existing infrastructure (buildings, wharves, utilities) and operations (e.g., break bulk terminals) within the Pier F cut area would be demolished and relocated to Pier S or other areas in the Harbor District.

The project would comply with CCA Sections 30705–30706 because dredge and fill activities would be conducted to construct new maritime facilities and expand and deepen berthing areas to accommodate vessels to be served by Pier J facilities. The project would be consistent with CCA Section 30708(a) because it would be designed to minimize environmental impacts with incorporation of mitigation measures and adherence to regulations. Any potential changes to vessel traffic in the Pier J area and Southeast Basin associated with the new wharf, container terminal, and wider navigation channels would be implemented in accordance with Harbor District vessel safety precautions, ensuring compliance with CCA Section 30708(b). The project would comply with CCA Sections 30708(c) and 30701(b) because it would modernize and expand the existing Pier J terminal facilities to accommodate forecast demands for cargoes and achieve more-efficient operations. This project would be consistent with CCA Section 30708(e) because it would increase on-dock rail capabilities within the Port.

Protective Boat Basin (Berth F202)

The project would construct a small boat basin along the Main Channel to shelter Joint Command and Control Center small craft. The project would involve relocation and extension of the existing Jacobsen Pilots dock; construction of a new multi-use dock with nine boat slips to provide berthing spaces for the POLB Security Division, Long Beach Police Department, and other visiting Governmental Security Agency boats; and dredging and construction of a fixed breakwater and dike (approximately 12,000 square feet or 0.3 acre of fill) to provide necessary wave protection to the proposed docks. An additional third dock for overflow/haul-out staging would be constructed to the north. The project would also include removal of the docks at Pier F and construction of other support infrastructure and utilities.

The project would comply with CCA Sections 30705–30706 because dredge and fill activities would be conducted to construct a fixed breakwater and dike to protect and ensure the safety of vessels using the new dock. The project would be consistent with CCA Section 30708(a) because it would be designed to minimize environmental impacts with incorporation of mitigation measures and adherence to regulations. Any minor changes in small boat traffic adjacent to the Protective Boat Basin (Berth F202) would be implemented in accordance with Harbor District vessel safety precautions, ensuring compliance with CCA Section 30708(b). The project would comply with CCA Sections 30708(c) and 30701(b) because it would create a new multi-use dock for Port and other Government agencies required to support Port operations.

OHSPER

The project would re-designate the Western Anchorage Sediment Storage Site as the OHSPER site. The OHSPER would operate substantially similar to the currently permitted Western Anchorage Sediment Storage Site, but would serve as a permitted confined aquatic disposal location for maintenance dredging and capital development projects that generate contaminated sediments and sediments suitable for ocean disposal. OHSPER operations would involve the placement of contaminated dredged material at an existing depression in the harbor bottom that would store layers of deposited material. All deposited material would be capped with a layer of clean sediment, which would contain and isolate contaminated material from the aquatic environment. The project would be consistent with CCA Section 30708(a) because the site would be designed to isolate contaminated dredged material from the aquatic environment by burying the deposited material and capping it with a clean layer of sediment. The OHSPER project would be consistent with CCA Section 30708(b) because all vessel traffic would be monitored by the Captain of the Port and the Marine Exchange via the Vessel Traffic Service and be subject to standard safety precautions governing Harbor District navigation. The project would comply with CCA Sections 30708(c) and 30701(b) because the site would accommodate placement of harbor dredged materials generated from Port modernization projects dedicated to maritime-related uses.

DRAFT

8 PERMITTING POLICIES

The California Coastal Act (CCA) requires that the Port of Long Beach (Port or POLB) and its governing body (i.e., the Board of Harbor Commissioners [BHC]) adopt a Port Master Plan (PMP) with implementation and permitting policies and procedures for proposed developments. In accordance with this requirement, on December 4, 1978, the Port adopted *Guidelines for Implementation of the Port of Long Beach Certified Port Master Plan*, which were incorporated into Resolution Number (No.) HD-1135 and certified as PMP Amendment #2.

Pursuant to the requirements established by the CCA, the City of Long Beach granted to the Port's BHC coastal permitting authority for development projects within the Long Beach Harbor District (Harbor District).

In addition to the Coastal Development Permit (CDP) requirement, Long Beach City Charter Section 1215 provides that:

> No person or persons shall construct, extend, alter, improve, erect, remodel or repair any pier, slip, basin, wharf, dock or other harbor structure, or any building structure within the Harbor District without first applying for and securing from the Commission a permit so to do, in accordance with the rules and regulations adopted by it.

In implementing the City Charter and California Coastal Commission (CCC) requirements, the Port established a consolidated building permit and CDP referred to as a Harbor Development Permit (HDP).

This section addresses the general policies associated with implementation of the CDP. The permit procedures and policies, set forth in this section, comply with the guidelines set forth in Division 5.5, Title 14, California Administrative Code.

The HDP covers policies and procedures beyond the CDP; therefore, the local ordinance[10] governing the HDP permit is not incorporated into this PMP Update. The PMP Update only addresses the CDP process and procedures independent of the HDP. Future changes to the HDP process that may impact a CDP must be consistent with this section of the PMP Update unless modified and amended by a subsequent PMP amendment.

In accordance with CCA Section 30715.5, the policy of the BHC continues to be:

> The Board shall not approve or grant an application for a Permit for any public or private development within the Harbor District unless a determination has been made by the Board or, where authorized by these Guidelines, by the Director of the Harbor District that either (i) the development conforms with the certified Port Master Plan or (ii) the development is exempt from the provisions of the Coastal Act and the proponent thereof is or otherwise required to obtain a permit from the Board.

8.1 PERMIT IMPLEMENTATION GUIDELINES

In accordance with the CCA, and as an implementation component of the PMP Update, the BHC has the authority to issue CDPs for projects within the Harbor District. This authority is exercised in conformance with local ordinances and the CCA.

[10]Ordinance No. HD-1701 is a BHC ordinance that amends and restates Resolution Nos. 1135 and HD 1234 and Ordinance 1551 relating to the establishment of procedural guidelines, objectives, and criteria, and the enforcement thereof in accordance with the provisions of the CCA.

The 1990 PMP implementation guidelines (Ordinance No. HD-1701), updated in July 1996, define three permit levels. Designation of permit level depends on several factors, including estimated project development costs, potential changes to land and/or water use, potential changes in density or intensity, potential environmental impacts, and appealability under CCA Section 30715.

Prior to action by the BHC on a proposed development that the CCA identifies as appealable, the development is to be referred to the CCC in the manner set forth in the CCA. The following types of development are appealable to the CCC, as described in CCA Section 30715:

- Developments for storage, transmission, and processing liquefied natural gas and crude oil in such quantities as would have a significant impact on the oil and gas supply of the state and/or nation;
- Wastewater treatment facilities;
- Roads or highways that are not principally for internal circulation within the Harbor District boundaries;
- Hotels, motels, and shopping facilities not principally devoted to the sale of commercial goods utilized for water-oriented purposes, commercial fishing facilities, and recreational small craft marina related facilities;
- Oil refineries; and
- Petroleum production plants.

In addition to the permit categories above, the following projects may be exempt from a CDP, as described in CCA Section 30610:

- Maintenance dredging of existing navigation channels or moving dredged material from such channel to a disposal area outside the coastal zone pursuant to a United States (U.S.) Army Corps of Engineers permit;
- Repair and maintenance activities that do not result in an addition to, or enlargement or expansion of, the object of such repair or maintenance activities, except if such maintenance and repair activities may have a substantial adverse environmental impact;
- Installation of utility connections with mitigation of any potential adverse impacts; and
- Replacement of any structure other than a public works facility destroyed by a disaster.

8.2 UPDATES TO THE IMPLEMENTATION GUIDELINES AND PERMIT POLICIES

The PMP Update modifies the *Guidelines for Implementation of the Port of Long Beach Certified Port Master Plan* (Ordinance No. HD-1701):

1. Delete PMP Amendment #2 *Guidelines for Implementation of the Port of Long Beach Certified Port Master Plan* Ordinance No. HD-1701 and incorporate PMP Update Sections 8.1 and 8.2 as the guidelines for implementing and permitting under the certified PMP;
2. Delete the current three-level permit system, and create a two-level system (Level I and Level II);
3. Level I Permits[11] are for developments occurring within the Harbor District that are emergency, administrative, or minor and expected to have insignificant impacts on

[11]Level I permits issued or denied shall be reported to the BHC in writing at regularly scheduled BHC meetings.

the Port or surrounding environment[12]. Level I development projects include those associated with:

- Minimal capital resources required;
- Development costs at or below those established by the Port for minor projects;[13]
- No major change in land and/or water use;
- Minimal changes in density or intensity of the use of the land and/or water;
- No significant adverse environmental impacts; and
- Not appealable pursuant to CCA Section 30715.

4. Level II permits are for development of new Port facilities such as marine terminals; modification of structures for recreational purposes; creation of new landfills; dredging of water areas not presently used for navigation, maneuvering, or berthing; and in general major or minor alterations that are not exempt. Level II development projects include:
   - Capital expenditures greater than Level I limits;
   - Potential minor or major environmental impacts that can be mitigated;
   - Potential unavoidable adverse impacts that cannot be mitigated; and
   - Potential changes in land and water use.

8.3 COASTAL DEVELOPMENT PERMIT PROCESS

Any person wishing to perform or undertake any public or private development in the Harbor District is required to file a HDP application with the Port for a consolidated building permit and CDP. The following steps are necessary for application and subsequent issuance of a CDP pursuant to the PMP Update (CCA Section 30715.5):

1. Applications shall be made on the form approved by the Port and contain information as specified in PMP Update Sections 8.1 and 8.2.
2. A submitted permit application, together with all necessary attachments and exhibits shall be reviewed to determine the Level of permit[14] or if the proposed development is exempt from a CDP.
3. An application shall be deemed “filed” after (i) having been received together with the appropriate filing fees, if any, and (ii) reviewed and determined to be complete by Port staff.
4. The Port shall notify the CCC, in a form consistent with the rules and regulations adopted by the CCC, of any appealable development proposed within the Port’s jurisdiction during the planning and design phase of the development or as soon as the BHC becomes aware of such proposed development[15].
5. If applicable, a risk analysis shall be performed to identify the hazard footprint, nature and extent of vulnerability, and terms and conditions to conform to the Port’s Risk Management Plan (RMP).

[12]Level I permits may be issued by the Port’s Executive Director, or his/her designee.
[13]Level I projects cannot be a phase of or part of a larger project.
[14]For Level II projects, preparation of a study, analysis, and report shall be performed by the Port at the applicant’s cost in accordance with HDP ordinances and CEQA Guidelines.
[15]Chapter 8, Section 30715, of the CCA identifies types of appealable development projects.

6. At any time before the BHC's action on an application, an applicant may withdraw the application, or remove it from active consideration.

7. If a vote on an application is scheduled for a meeting subsequent to the public hearing on the application, preparation of a staff recommendation shall be made available in the Port offices to interested persons or organization. A final staff recommendation shall be made regarding whether the proposed development conforms to the requirements of the PMP.

8. Any vote on an application may be taken only at a properly noticed public hearing, after the requirements of the California Environmental Quality Act (CEQA) have been met, and following completion of staff reports and recommendations.

9. All decisions of the BHC relating to permit applications shall be accompanied by written conclusions about the consistency of the application with the PMP, and for Level II applications, findings of fact and reasons supporting the decision.

10. Following a BHC decision denying the application or the withdrawal of an application, no applicant or successor in interest may reapply to the BHC for a permit for substantially the same development for a period of 1 year from the date of withdrawal or the final decision.

DRAFT

9 COASTAL ACT COMPLIANCE

Table 9-1 summarizes the Port Master Plan (PMP) Update sections that most directly comply with California Coastal Act (CCA) Chapter 8 and Chapter 3 requirements. The table does not provide a comprehensive list of all PMP Update sections that would be certified by the California Coastal Commission (CCC).

Table 9-1. PMP Update CCA Compliance

CCA		PMP Update	
Section	**Title**	**Section(s)**	**Page Number(s)**
CCA Chapter 8 (Ports)			
30700	General Provisions for Port Facilities	All	–
30700.5	Other Provisions	All	–
30701	Legislature Findings	All	–
30702	Policies	2.2	2-2
30703	Preserve Commercial Fishing Harbor Space	N/A	N/A
30705	Diking, Filling, and Dredging of Water Areas	5.2, 5.5, 6.1.2, 6.4.3–6.4.7, 7.1	5-3, 5-13, 6-6, 6-20–6-40, 7-1
30706	Fill Areas	6.1.2, 6.4.3–6.4.6, 7.1	6-6, 6-20–6-36, 7-1
30707	Tanker Terminals	2.6, 5.1, 6.1.1, 6.4.3, 6.4.5, 7.1	2-13, 5-1, 6-4, 6-20, 6-30, 7-1
30708	Port Related Developments	3.1, 5.1–5.8, 6.4.1–6.4.7	3-1, 5-1–5-19, 6-11–6-40
30710	Map Delineating Port Boundaries, Wetlands, Estuary, and Recreation Areas	5.4, 6.2	5-7, 6-7
30711(a)	Preparation and Contents of PMPs	All	–
(a)(1)	Land and Water Area Uses	6.1.1, 6.1.2	6-4, 6-6
(a)(2)	Projected Design and Location	6.4.1–6.4.7	6-11–6-40
(a)(3)	Effects on Marine Environment	10	10-1
(a)(4)	Appealable Project Details	N/A	N/A
(a)(5)	Public Participation	1.4	1-4
30711(b)	CCA Compliance	9	9-1
30712	Public Notices and Hearings	2.6	2-13
30714	PMP Adoption and Certification	1.0, 2.2	1-1, 2-2
30715	Permit Authority and Appealable Projects	1.0, 8.1	1-1, 8-1
30715.5	Finding of Conformity	7.1, 7.2	7-1, 7-3
30716	Amendment Procedures	1.4, 2.2	1-4, 2-2
30717	Appealable Development Approval Process	1.0	1-1
30718	CEQA and NEPA Requirements	10	10-1
30719	Development Project Certification	8.1–8.3	8-1–8-3
30720	Judicial Prohibition and CCC Permit Authority	N/A[1]	N/A
30721	Port Hueneme Reimbursement Costs	N/A	N/A

DRAFT

Table 9-1. PMP Update CCA Compliance			
CCA		**PMP Update**	
Section	**Title**	**Section(s)**	**Page Number(s)**
CCA Chapter 3 (Coastal Resources Planning and Management Policies)			
30200	General Provisions and Conflict Resolution	All	–
30210	Maximize Public Access and Recreational Opportunities	3.1, 3.2, 5.1	3-1, 3-3, 5-1
30211	Development not to Interfere with Public Access	5.1	5-1
30212	New Development Public Access Provisions	5.1	5-1
30212.5	Distribution of Public Facilities	5.1	5-1
30213	Encourage and Protect Low-Cost Public Recreational Facilities	5.1	5-1
30214	Time and Location Public Access Considerations	5.1	5-1
30200	Protect Coastal Water-Oriented Recreational Uses	3.1, 3.2, 5.1	3-1, 3-3, 5-1
30221	Protect Oceanfront Land Suitable for Recreational Use	3.1, 3.2, 5.1	3-1, 3-3, 5-1
30222	Priority of Visitor-Serving Commercial Recreational Facilities	3.1, 3.2, 5.1	3-1, 3-3, 5-1
30222.5	Protect Coastal Dependent Aquaculture	N/A	N/A
30223	Preserve Upland Areas that Support Coastal Recreational Uses	5.1	5-1
30224	Encourage Recreational Boating Uses	5.1, 5.5	5-1, 5-13
30230	Maintain and Enhance Marine Resources	3.1, 5.2	3-1, 5-3
30231	Maintain Biological Productivity and the Quality of Coastal Waters	3.1, 5.2	3-1, 5-3
30232	Protection from Oil and Hazardous Substance Spills	2.6, 5.2	2-13, 5-3
30233	Diking, Filling, and Dredging Provisions	5.2, 5.5, 6.1.2, 6.4.3–6.4.7, 7.1	5-3, 5-13, 6-6, 6-40, 7-1
30234	Protect Commercial Fishing and Recreational Boating Industry Facilities	5.1, 5.5	5-1, 5-13
30234.5	Protect the Economic, Commercial, and Recreational Importance of Fishing Activities	5.1	5-1
30235	Construction of Revetments and Breakwaters for Coastal Dependent Uses	5.3, 6.4.3.5	5-5, 6-23
30236	Provisions for Channelization, Dams, and Other Substantial Alterations to Rivers and Streams	N/A	N/A
30240	Protect Environmentally Sensitive Habitat Areas	3.1, 6.1.1, 6.1.2	3-1, 6-4, 6-6
30241	Maintain Prime Agricultural Land	N/A	N/A
30241.5	Viability of Existing Agricultural Uses	N/A	N/A

DRAFT

Table 9-1. PMP Update CCA Compliance			
CCA		**PMP Update**	
Section	**Title**	**Section(s)**	**Page Number(s)**
30242	Agricultural Land Conversion Provisions	N/A	N/A
CCA Chapter 3 (Coastal Resources Planning and Management Policies)			
30243	Protect the Long-Term Productivity of Soils and Timberlands	N/A	N/A
30244	Mitigate Impacts to Archaeological or Paleontological Resources	10	10-1
30250	Location of New Developments	6.5	6-44
30251	Protect Scenic and Visual Qualities of Coastal Areas	5.1, 6.4.7.1	5-1, 6-40
30252	Maintain and Enhance Public Access to the Coast – New Development	3.1, 5.1	3-1, 5-1
30253	New Development Provisions to Minimize Risk, Assure Structural Integrity, Adhere to Air Pollution Control District Requirements, Minimize Energy Consumption, and Protect Visitor Destinations	PEIR	–
30254	New or Expanded Public Works Facilities Requirements	N/A	N/A
30254.5	Sewage Treatment Plant Development Provisions	N/A	N/A
30255	Priority of Coastal Dependent Developments	6.0	6-1
30260	Location or Expansion of Coastal Dependent Industrial Facilities	6.0	6-1
30261	Use and Design of Tanker Facilities	2.6	2-13
30262	Oil and Gas Development Provisions	5.8	5-19
30263	New or Expanded Refineries or Petrochemical Facilities Provisions	5.8	5-19
30264	New or Expanded Thermal Electric Generating Plant Provisions	N/A	N/A
30265	Legislative Declarations	N/A	N/A
30265.5	Legislative Coordination of Activities Concerning the Transport and Refining of Offshore Oil	N/A	N/A

Key: CCA = California Coastal Act; CCC = California Coastal Commission; CEQA = California Environmental Quality Act; N/A = not applicable; NEPA = National Environmental Policy Act; PEIR = Program Environmental Impact Report; PMP = Port Master Plan.

Note: [1] CCC approval and certification of the 1990 PMP as amended delegated permitting authority to the Board of Harbor Commissioners (BHC). If there was judicial stay on the PMP Update, the BHC would retain permit authority consistent with the 1990 PMP as amended.

DRAFT

This page intentionally left blank

DRAFT

10 SUMMARY OF THE PROGRAM ENVIRONMENTAL IMPACT REPORT

(Note: This section will be completed as part of the Final PMP Update.)

DRAFT

This page intentionally left blank

DRAFT

11 REFERENCES

Anchor QEA, LLC. 2016. *OHSPER Site Draft CAD Feasibility Evaluation.*

CARB. 2006. *Emission Reduction Plan for Ports and Goods Movement (Plan) in California.* California Air Resources Board.

CCC. 2019. *Draft Environmental Justice Policy.* California Coastal Commission. https://www.coastal.ca.gov/env-justice/.

City of Long Beach. 2016. *Queen Mary Land Development Task Force Guiding Principles.* September.

_____. 1989. *City of Long Beach General Plan, Land Use Element.* Adopted in 1989. http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=2815.

Mercator. 2016. *San Pedro Bay Long-term Unconstrained Cargo Forecast.* July.

POLB. 2019a. *Port of Long Beach Tonnage Summary*. Retrieved March 2019, from http://www.polb.com/economics/stats/tonnage.asp.

_____. 2019b. *Port of Long Beach 2019 Strategic Plan Summary.*

_____. 2018a. *Pier B On-Dock Rail Support Facility Project Final Environmental Impact Report and Application Summary Report.* January.

_____. 2018b. *Feasibility Study for Adding a Fourth Track at Ocean Boulevard.* December.

_____. 2017. *Port of Long Beach Energy Initiative Roadmap.* June.

_____. 2016. *Port of Long Beach Climate Adaptation and Coastal Resiliency Plan (CRP).*

_____. 2009a. *Application Document for Conducting Hazard Impact Assessments in Support of the Risk Management Plans of the Port of Los Angeles and the Port of Long Beach.* September.

_____. 2009b. *Middle Harbor Redevelopment Project. Final Environmental Impact Statement/Environmental Impact Report.* Prepared for the U.S. Army Corps of Engineers Los Angeles District and Port of Long Beach. April.

_____. 2002. *Port of Long Beach Rail Master Planning Study.* _____. 1996. *Port of Long Beach Port Master Plan Amendment No. 9.*

_____. 1990. *Port Master Plan Update 1990: An Amendment to the 1978 and 1983 Port Master Plans.* May.

_____. 1983. *Port Master Plan Update 1983: An Amendment to the 1978 Port Master Plan.* Port of Long Beach. May.

_____. 1981. *Port of Long Beach Risk Management Plan, An Amendment to the Certified Port Master Plan.* June.

_____. 1978. *Final Port Master Plan and Environmental Impact Report.* 1978.

Port of Los Angeles. 2003. *Port of Los Angeles Rail Capacity Analysis*. SCAQMD. 2017. *2016 Air Quality Management Plan.* South Coast Air Quality Management District.

USCB. 2018. *USA Trade Online.* Accessed November 2018. United States Census Bureau. https://usatrade.census.gov/.

WSP. 2017. *Port of Long Beach Integrated Land Use Tool.*

DRAFT

This page intentionally left blank

DRAFT

Appendix A
GLOSSARY

DRAFT

This page intentionally left blank

DRAFT

GLOSSARY

Alameda Corridor – A 20-mile freight rail "expressway" owned by the Alameda Corridor Transportation Authority that connects the national rail system near downtown Los Angeles, California, to the Port of Long Beach and Port of Los Angeles. The Alameda Corridor runs parallel to Alameda Street and serves to reduce truck traffic to and from the San Pedro Bay Ports.

Backlands – Storage area of a marine terminal that is distant from the wharf area.

Beam – The width of a vessel's hull at its widest part.

Berth – The water area reserved for a vessel at the waterfront edge of a wharf. The term is sometimes used to refer to the dock or wharf structure.

Break bulk cargo – General cargo, conventionally stevedored and stowed (palletized or sling), as opposed to bulk or containerized cargo.

Bulk cargo – Cargo stowed without benefit of package or container, meaning shipped loose as for grains or liquid.

Bulkhead – A structure designed to resist water, including partitions separating one part of a ship from another part.

Carrier – An individual company or corporation engaged in the transportation of goods.

Chassis – Special trailer or undercarriage on which containers are moved over-the-road, usually by trucks.

Container – A box for transporting cargo constructed with varying dimensions and designed to withstand transportation stresses.

Container terminal – An area designated for the handling, storage, and possibly loading or unloading of cargo into or out of containers, and where containers can be picked up, dropped off, maintained, stored, or loaded or unloaded from one mode of transport to another (i.e., vessel, truck, barge, or rail).

Container yard – Within a container terminal, the area dedicated to the movement or storage of containers.

Dock – A structure attached to land to which a vessel is moored.

Double Stack – A special articulated railcar to haul containers one on top of another. The typical car consists of five articulated rail "platforms," each capable of holding two 40-foot containers.

Dredging – Removal of sediment to deepen access channels, provide turning basins for ships, and maintain adequate water depth along waterside facilities.

Dry bulk – Loose, mostly uniform cargo, such as agricultural bulk products (e.g., grain and fertilizer), coal, and ores that are transported in bulk carriers.

Gantry crane – A crane fixed on a frame or structure spanning an intervening space, typically designed to traverse fixed structures such as cargo (container) storage areas or quays and which is used to hoist containers or other cargo in and out of vessels and place or lift from a vessel, barge, truck, chassis, or train.

Intermodal – Movement of cargo containers interchangeably between transport modes (e.g., ship to truck or train) where the equipment is compatible with the multiple systems.

DRAFT

Intermodal Transfer Facility – A facility used for the transfer of cargo from ship to truck to rail, in any order.

International Organization for Standardization (ISO) – Independent, nongovernmental international organization that develops voluntary, consensus-based, market relevant international standards.

Knot – Measure of ship speed, equal to one nautical mile (1,852 meters) per hour, equivalent to about 1.15 miles per hour.

Landlord Port – An institutional structure where the port authority or other relevant public agency retains ownership of the port land and responsibility for port planning and development, as well as the maintenance of basic port infrastructure and aids to navigation.

Longshoreman – Worker employed locally in a port to load and unload ships.

Neo bulk – Non-containerizable, or economically not feasible to containerize cargo such as timber, steel, and vehicles.

Off-dock – Refers to operations occurring at a distance from a wharf area.

On-dock – Refers to operations occurring at or adjacent to a wharf area.

Panamax – Refers to the maximum dimensions of a vessel that could transit through the Panama Canal.

Pier – The location in a seaport at which cargo arrives or departs. A dock for loading or unloading ships or vessels. A type of wharf, running at an angle with the shoreline of a body of water.

Pilotage – The act of assisting the master of a ship in navigation when entering or leaving a port or in a confined water body.

Port Tariff – Taxes and surcharges that apply to a ship and/or the cargo on board the ship once it reaches a port.

Railhead – End of the railroad line or point in the area of operations at which cargo is loaded and unloaded.

Railyard – A rail terminal at which traditional railroad activities occur for sorting and redistribution of railcars and cargo.

Reefer – Refrigerated container or vessel designed to transport refrigerated or frozen cargo.

Roll On/Roll Off (Ro/Ro) – Roll on/roll off (Ro/Ro) is a cargo handling method whereby vessels are loaded via one or more ramps that are lowered on the quay or wharf.

Stevedore – Worker or firm employing longshoremen (or other labor) for the purpose of loading and unloading a vessel.

Storage Track – A track on which railroad cars are placed when not in service.

Supply Chain – A logistics management system that integrates the sequence of activities from delivery of raw materials to the manufacturer through to the delivery of the finished product to the customer in measurable components.

Throughput – The amount of cargo that reasonably can be expected to be processed, given the physical facilities available, the operating conditions present, and the business conditions characteristic of the trade in which a terminal is engaged.

Toplift – A type of forklift with a spreader device for lifting containers from the top.

Transpacific Trade – Exchange of goods between Pacific Rim countries.

DRAFT

Twenty-foot Equivalent Unit (TEU) – Container size standard of 20 feet. Two 20-foot containers (TEUs) equal one 40-foot equivalent unit. Container vessel capacity and port throughput capacity are frequently referred to in TEUs.

Vessel Traffic Management System (VTMS) – Vessel control and management system usually under the authority of the harbor master, comprising equipment (such as radars, tracking software, and radio communications), personnel (traffic operators), and regulations. Most larger maritime ports have relatively advanced vessel traffic management systems for maritime safety, protection of the environment, and coordination of marine services.

Warehouse – Covered area for the reception, delivery, consolidation, distribution, and storage of cargo.

Waybill – Document prepared by a transportation line, which shows point of origin, destination, route, consignee, and description of a shipment. Also called a Bill of Lading.

Wharf – A berthing place for vessels to facilitate direct loading and discharge of cargo.

Working track – In an intermodal transfer facility, track used for loading or unloading containers from rail cars.

DRAFT

This page intentionally left blank

DRAFT

Appendix B
PORT MASTER PLAN UPDATE COMMUNICATIONS AND ENGAGEMENT PROGRAM SUMMARY REPORT

DRAFT

This page intentionally left blank

DRAFT

Port of Long Beach
Port Master Plan Update

Communications and Engagement Program Summary Report
Draft

July 2019

Prepared by:
Katz & Associates, Inc., under contract to Leidos, Inc.

2

Contents

Executive Summary 4
California Coastal Act 4
Coastal Commission Environmental Justice Policy 5
Stakeholder Engagement Activities 5
Workshops 6
Workshop #1 6
Workshop #2 7
Focus Groups 8
Focus Group #1 8
Focus Group #2 10
Stakeholder Briefings 11
Regulatory Agency Briefings 12
Informational Materials 12

Table 1: Record of Stakeholder Engagement Activities 5
Table 2. Focus Group Series #1 Meeting Schedule 8
Table 3. PMP Update Elements Discussed by Group – Focus Group Series #1 9
Table 4. Focus Group Series #2 Meeting Schedule 10
Table 5. Comment Topic Areas Discussed by Group – Focus Group Series #2 10

Executive Summary

The Port of Long Beach (Port) prepared a Communications and Engagement Plan (Plan) to establish a comprehensive communications program for engaging stakeholders in the preparation of the Port Master Plan Update (PMP Update). The Port recognizes that stakeholder engagement is an important element at the core of the planning process. Reflecting the Port's commitment to a transparent, comprehensive, and inclusive planning process, the Plan outlined coordinated communications and engagement activities that would involve the Port's various stakeholders in the PMP Update development process. In particular, the Plan established a roadmap identifying when and where stakeholders would receive opportunities to provide input and help shape the PMP Update document. Communications and engagement activities utilized a multi-pronged approach to disseminate project information and collect stakeholder input.

Objectives for communications and engagement were identified to guide the Port's project team in developing notices, informational materials, and engagement opportunities:

- Raise awareness and clearly communicate the purpose and need of the PMP Update.
- Communicate stakeholders' roles in the decision-making process and how input would be used.
- Engage the diversity of Port stakeholders and community members and their perspectives in the planning process.
- Conduct an open and transparent planning process that incorporates a variety of opportunities for participation.
- Solicit input, ideas, and feedback to inform and shape the planning process.
- Share project information and studies with the public through multiple communication channels.
- Report on progress made throughout the planning process to the public.
- Fully implement public involvement requirements in accordance with the California Coastal Act (CCA).

Port staff continues to accept comments and questions on the development of the PMP Update. Comments and questions may be submitted to pmp@polb.com.

California Coastal Act

The CCA specifies that public participation is an integral component of the coastal planning process (CCA Section 30006). Specific to port master plans, the CCA sets forth provisions for public participation in port planning and development decisions (CCA Section 30711(5)). The CCA requires ports to consider relevant testimony, statements, and evidence by the public, interested organizations, and governmental agencies; publish a Notice of Completion (NOC) for draft master plans; and submit a copy of draft master plans to the Coastal Commission and any interested person upon request (CCA Section 30712). A Coastal Commission public hearing is required no earlier than 30 days and no later than 90 days from the date that the NOC is published (CCA Section 30712).

Coastal Commission Environmental Justice Policy[1]

In 2016, Governor Jerry Brown signed AB 2616, which amended the Coastal Act and gave the Commission new authority to specifically consider environmental justice when making permit decisions. This legislation also cross-referenced existing non-discrimination and civil rights laws in the government code and required the governor to appoint an environmental justice commissioner to the Coastal Commission Board.

The Coastal Commission adopted its environmental justice policy on March 8, 2019, to help ensure equitable access to clean, healthy, and accessible coastal environments for communities disproportionately overburdened by pollution. Topics covered in the policy include climate change, coastal access, housing, tribal concerns, local government, accountability and transparency, and participation in the process. Under the new policy, in addition to traditional Coastal Act considerations, the Commission can now consider the impacts of a proposed project on an underserved community.

Stakeholder Engagement Activities

Below is a summary record of external stakeholder engagements conducted in support of the PMP Update from April 2018 through April 2019. The following pages describe the purpose, format, and general comments recorded for each engagement event.

Table 1: Record of Stakeholder Engagement Activities

Date	Event
April 4, 2018	Workshop #1 (Let's Talk Port – Central Long Beach)
May 2, 2018	Focus Group Series #1 (Day 1)
May 8, 2018	Focus Group Series #1 (Day 2)
May 10, 2018	Let's Talk Port – Alamitos Heights
May 24, 2018	Labor unions and workforce development briefing
June 13, 2018	WestPAC briefing
September 20, 2018	Coastal Commission briefing
October 24, 2018	Workshop #2 (Let's Talk Port – West Long Beach)
March 6, 2019	Coastal Commissioner briefing (Uranga)
April 9, 2019	Focus Group Series #2
April 16, 2019	Coastal Commission briefing
April 19, 2019	Environmental stakeholders briefing

[1] Source: Coastal Commission website – https://www.coastal.ca.gov/env-justice/ and environmental justice policy news release March 11, 2019 – https://documents.coastal.ca.gov/assets/press-releases/ej-page/EJ-Policy-Release-Final.pdf

Workshops

The Port held two public workshops for the PMP Update. These workshops offered the public and stakeholders opportunities to learn about the PMP Update, dialogue one-on-one with project team members, and provide feedback throughout the planning process. Workshop events were advertised through news releases, postcard mailings, social media, and display ads in local newspapers. Spanish language interpretation was provided during all workshops. Khmer was provided at Workshop #1 per community need.



Workshop #1

Detailed Summary Report available in Appendix and at www.polb.com/masterplanupdate

The Port hosted the first of two public workshops on April 4, 2018, at 6:00 p.m. at the Homeland Cultural Center in Central Long Beach. The workshop was conducted as a "Let's Talk Port" community forum meeting in conjunction with a regularly scheduled AOC7 Neighborhood Association meeting. An estimated 90 members of the public attended the workshop, which focused on an overview of the planning process and draft PMP Update goals.

The objectives of the workshop were to:

- Create an informative meeting setting where all attendees feel comfortable participating;
- Provide an opportunity for attendees to learn about the PMP Update and ask questions;
- Educate attendees on the PMP Update process, its goals and objectives, market forecast, industry trends, and regulatory requirements;
- Provide information on the role of public input and opportunities for participation; and
- Solicit input on the proposed discussion topics: land use goals and objectives.

The workshop format was aimed at providing attendees with project information while allowing ample time to participate in a feedback opportunity. The format included informational poster displays, video of historical photos, verbal presentation, and discussion activity. Comments were received through the following methods:

- A banner was posted near the event sign-in table that posed a simple open-ended question: "What role does the Port play in your life?" Participants were provided with notecards to add their ideas.
- During the discussion activity, attendees provided comments through a series of questions. The focus for this workshop was on the topic of the goals and objectives for the PMP Update. The discussion activity questions were:
    - What other goals should be considered?
    - What are some opportunities that would help the Port achieve these goals?
    - What barriers exist that would hinder the Port from achieving these goals?

The public was notified of the workshop date, time, and location via a variety of notification channels including a postcard mailer, newspaper and digital display ads, project web page, social media posts, email blast, and news release. Meeting notifications distributed via email were made available in Spanish and Khmer.

Through an interactive group discussion activity, workshop participants were asked to provide feedback on the draft goals. Major themes resulting from those discussions included 1) an interest in port-related job training opportunities; 2) the need for greater community awareness and educational programs to increase the community's understanding of port operations; 3) a desire for improved accessibility to the port and community serving recreational facilities; and 4) concerns about traffic, safety, and environmental issues including air quality.

Workshop #2

Detailed Summary Report available in Appendix and at www.polb.com/masterplanupdate

The Port of Long Beach hosted the second of two public workshops for the PMP Update on October 24, 2018, at 6:00 p.m. at the Silverado Park Community Center in West Long Beach. The workshop was conducted as a "Let's Talk Port" community forum. An estimated 20 members of the public attended the workshop, which focused on a review of key topics and stakeholder engagement activities conducted to date and an overview of the draft PMP Update.

Meeting Objectives

The workshop built on the objectives and accomplishments of Workshop #1, with a focus on:

- Informing attendees of project status and summarizing stakeholder engagement activities and comments received to date;
- Educating attendees on proposed, updated goals, draft Plan Element planning goals and recommended actions, and anticipated projects presented in the PMP Update working draft; and
- Soliciting input on the Draft PMP Update, specifically the draft planning goals and recommended actions for each draft Plan Element.

The workshop format included informational poster displays, video of historical photos, presentation, and discussion activity. Comments were received through the following methods:

- A comment card posed two open-ended questions: What role does the Port play in your life? What would you like to learn more about as part of the PMP Update?
- Participants worked in small groups to provide specific input on the planning goals for each plan element. The groups were organized by topic area, based on groupings of the plan elements:
    - Operations: (1) Terminal Operations, (2) Intermodal Rail, (3) Oil Operations
    - Navigation: (1) Navigation, (2) Transportation & Circulation
    - Community: (1) Recreation & Public Access
    - Environment: (1) Environment & Sustainability, (2) Climate Change

The public was notified of the workshop date, time, and location via a variety of notification channels including a postcard mailer, newspaper display ads, project web page, social media posts, email blast, and news release. Meeting notifications distributed via email were made available in Spanish.

Through an interactive group discussion activity, workshop participants were asked to provide their feedback on the draft planning goals for the eight plan elements: 1) Terminal Operations, 2) Intermodal Rail, 3) Oil Operations, 4) Navigation, 5) Transportation & Circulation, 6) Recreation & Public Access, 7) Environment & Sustainability, and 8) Climate Change. Major themes that resulted from the discussions included 1) a strong interest in improved accessibility and recreational opportunities at the Port; 2) an emphasis on ensuring the Port is a good neighbor and community partner; 3) concerns regarding monitoring of the environmental and health impacts related to Port growth; and 4) a desire for more transparency regarding how safety, emissions, and other impacts on community health and the environment are monitored and measured.

Focus Groups

The Port conducted a series of focus group meetings in 2018 and 2019. The primary objective of the focus group meetings was to present the draft PMP Update element goals and engage key stakeholder groups in discussions on the potential issues and proposed recommendations for each element.



Focus group participants were invited based on their ongoing involvement with Port operations, community, and environmental issues. An open call for interested individuals was also advertised in news releases.

Focus Group #1

Detailed Summary Report available in Appendix and at www.polb.com/masterplanupdate

Table 2. Focus Group Series #1 Meeting Schedule

Group	Schedule	Location
Community	Wed., May 2, 2018 (9-11 a.m.)	Port Administration Building
Environmental	Wed., May 2, 2018 (1-3 p.m.)	Port Administration Building
Tenant/Users	Tues., May 8, 2018 (10:30 a.m.-12:30 p.m.)	Port Administration Building
Operators	Tues., May 8, 2018 (2:30-4:30 p.m.)	Port Administration Building

The focus group series included four meetings for the following stakeholder groups: 1) Community; 2) Environmental; 3) Tenants/Users; and 4) Operators. Each two-hour focus group meeting was professionally facilitated and included the following five segments: 1) poster session; 2) introductions and overview of focus group format; 3) PMP Update overview presentation; 4) PMP Update elements

presentation and related facilitated discussion; and 5) closing. Each group consisted of 9 to 11 participants.

The presentation and facilitated discussion for each group focused on, but was not limited to, two to three primary PMP Update elements. The three primary PMP Update elements selected for discussion differed for each group based on the group's interests and area of expertise. **Table 3** identifies the elements discussed during each of the four focus group meetings.

Table 3. PMP Update Elements Discussed by Group – Focus Group #1

Focus Group/ Plan Element	Terminal Operations	Intermodal Rail	Navigation	Environment & Sustainability	Climate Change	Transportation & Circulation	Recreation & Public Access
Community				■		■	■
Environment				■	■	■	
Tenant/User	■	■					
Operations	■	■	■				

Comment Record

Notes from the discussions were captured by a scribe on a flip chart and in detail by a note taker.

Comment Cards

In addition to the questions discussed as part of the facilitated discussion, a comment card was distributed for participants to provide responses to the following questions:

- What are the most effective ways to communicate about the Plan to the stakeholder group(s) you represent?
- Who are some additional stakeholder groups the Port should consider engaging in this process and what is the best way to reach them?

Comment cards were also distributed via email after the focus group meetings for distribution to stakeholder networks.

Themes that resulted from the Community focus group discussion included: 1) a strong interest for improving accessibility to the Port specifically through improved visitor engagement, wayfinding, and promotion of Port-based small businesses; 2) more opportunities for recreational activity; 3) concern for noise and air pollution impacts from increasing activity; and 4) a recommendation to consider the increased use of rail for goods movement and restricted truck hours for Port operations.

Themes that resulted from the Environmental focus group discussion included: 1) an emphasis on the need for a zero-emissions goal; 2) a desire to see greater consistency between Port planning documents; 3) concerns about the impacts resulting from climate change; 4) an interest to see greater consideration for expanded rail activity.

Themes that resulted from the Tenant/Use focus group discussion included: 1) concerns for improved traffic circulation in and around the Port; 2) an interest in garnering a greater understanding for land efficiencies and optimizing land use between Ports; and 3) an emphasis on the need to consider changes in the demand forecast.

Themes that resulted from the Operations focus group discussion included: 1) concerns about the demand on electricity at the Port; 2) considerations for infrastructure needs to accommodate larger ships; 3) a recommendation to consolidate ship support services in larger terminals; and 4) concerns about the impacts of environmental regulations on operating costs.

Focus Group #2

Detailed Summary Report available in Appendix and at www.polb.com/masterplanupdate

In preparation for the public release draft of the PMP Update, the Port conducted a second series of focus group meetings on April 9, 2019. The objectives of the meetings were to: 1) reengage the members of the previous focus groups while the pre-public release draft of the PMP Update was in preparation; 2) gauge how well the draft PMP Update goals and recommended actions captured the intent of comments from 2018; and 3) present six comment topic areas from PMP Update outreach efforts and describe how the draft PMP Update addresses themes within those topics. The focus group series included three meetings for the following stakeholder groups: 1) Environmental/Community; 2) Operations; and 3) Various Interest Groups.

Table 4. Focus Group Series #2 Meeting Schedule

Focus Group	Schedule	Location
Community/Environmental	Tues., April 9, 2019 (12-2 p.m.)	Port Interim Administration Offices
Operations	Tues., April 9, 2019 (3-5 p.m.)	Port Interim Administration Offices
Various Interest Groups	Tues., April 9, 2019 (6-8 p.m.)	Port Interim Administration Offices

Each two-hour focus group meeting was professionally facilitated and included the following five segments: 1) poster session; 2) introductions and overview of focus group format; 3) PMP Update overview presentation; 4) selected comment theme areas and corresponding PMP Update elements presentation and related facilitated discussion; and 5) closing. Each group consisted of 6 to 11 participants.

The presentations and facilitated discussions for each group focused on, but were not limited to, two to three comment topic areas. For each topic area, the facilitator led a discussion through all or select themes that fall under that topic, depending on group interest within the meeting schedule.

Table 5. Comment Topic Areas Discussed by Group – Focus Group #2

Focus Group/ Topic Area	Community	Economic Development	Environmental	Operations	Land Uses	Outreach & Coordination
Community/ Environmental	■		■			■
Operations		■		■	■	
Various Interest Groups	■			■		

Comment Record

Notes from the discussions were captured by a scribe on a flip chart and in detail by a note taker.

Comment Cards

In addition to the questions discussed as part of the facilitated discussion, a comment card was made available. The comment card asked participants to provide responses to the following questions:

- What are the most effective ways to communicate about the Plan to the stakeholder group(s) you represent?
- Who are some additional stakeholder groups the Port should consider engaging in this process and what is the best way to reach them?

Comment cards were also distributed via email after the focus group meetings.

Themes that resulted from the Community/Environmental focus group discussion included: 1) concerns about the potential environmental impacts that could result from increased visitor activity; 2) a recommendation to increase community feedback opportunities on Port operations; 3) an interest in seeing Port educational information made accessible at community events.

Themes that resulted from the Operations focus group discussion included: 1) an interest in port-related job training opportunities; 2) a recommendation to provide greater consideration for chassis support areas; and 3) a desire to see greater emphasis on rail activity.

Themes that resulted from the Various Interests focus group discussion included: 1) a recommendation to provide greater clarification related to visitor-serving uses; 2) concerns about the potential impacts to jobs that could result from a decrease in truck activity and environmental mitigation measures; and 3) an interest in seeing greater interagency coordination as part of the port planning process.

Stakeholder Briefings

The Port met with stakeholder groups in various forums throughout the development of the PMP Update. The briefings focused on brief, informative presentations to stakeholders about the PMP Update and provided an opportunity for questions and answers.

As part of the Port's "Let's Talk Port" communications program, Port staff utilized a pre-established format and existing working relationships with these groups to discuss the PMP Update. An important goal of the "Let's Talk Port" program is to inform and engage the community by providing Port updates and giving residents an opportunity to share their thoughts and ideas about Port-related issues in a setting that encourages interaction with Port executives and decision makers. The forums help staff educate local stakeholders about the Port's importance throughout the region, its operations and investments, the capital improvement program, environmental stewardship, and current projects/campaigns.

The Port held briefings with external stakeholder groups, as follows:

May 10, 2018	Let's Talk Port – Alamitos Heights
May 24, 2018	Labor groups and workforce development briefing
June 13, 2018	WestPAC briefing
April 19, 2019	Environmental stakeholders briefing

Regulatory Agency Briefings

The Port provided two briefings to the California Coastal Commission prior to the release of the Draft PMP Update: September 20, 2018, and April 16, 2019. Coordination with Coastal Commission staff is ongoing.

Informational Materials

Available in Appendix and at www.polb.com/masterplanupdate

In addition to in-person engagement opportunities, a series of informational materials were developed to educate stakeholders on key project components and provide updates on participation opportunities, along with decisions and planning progress. A project fact sheet and a frequently asked questions document were prepared to support project communications. Other informational materials such as posters, handouts, and a comment summary report were also developed to support the various public engagement activities. Project materials were posted on the Port's website (www.polb.com/masterplanupdate), emailed to participants, and distributed at outreach engagements. The following materials were produced:

- Fact sheet (English, Spanish, Khmer)
- FAQs
- Workshop Posters
- Comments Summary

Appendix B
Integrated Land Use Tool (ILUT)

This page intentionally left blank.

Port Land Use Model

The 2040 capacity and cargo projections were calculated using the Port's Land Use Model. The model, developed by WSP USA Inc, is based on their pre-existing Port Rail Intermodal Modeling Environment (PRIME) and consists of two main components: an **Integrated Land Use Tool (ILUT)** based in Microsoft Visio™ and a **Port Terminal Capacity Model (PTCM)** based in Microsoft Excel™. The two models are integrated through custom-built Component Object Model (COM) Add-Ins, meaning data from the ILUT can affect outputs calculated in the PTCM and vice versa.

The Land Use Model:

- Is a port-wide model, meaning it models the interconnected activities of the entire Port complex, not just one individual facility or operation
- Considers all types of Port land uses: container, dry bulk, liquid bulk, RO/RO (Auto), break bulk, and logistics support facilities
- Contains a rail model that considers on-dock and the port rail network
- Provides a summary of Key Performance Indicators (KPIs)
- Integrates with the Port's GIS database

The following are some of the KPIs produced by the model. The KPI's highlighted in bold are utilized in support of the PEIR section of the PMP.

- **Berth Capacity**
- **Yard Capacity**
- **Terminal Capacity**
- Throughput Density
- Number of "Big Ship" Berths
- **On-Dock Rail Demand**
- **On-Dock Rail Capacity**
- **Modal Split**
  - **On-Dock Rail**
  - **Off-Dock Rail**
  - **Local Cargo**
- Air Emissions
- Truck Traffic
- **Train Traffic**
- **Ship Traffic**
- Port Revenue
- Capital Expenditure
- Direct Port Jobs
- Truck Driver Jobs

ILUT: Integrated Land Use Tool in Visio

The ILUT is the portion of the Land Use Model that establishes the physical layout of each marine terminal for analysis. This includes all existing and proposed container and non-container terminals found in the PMP Update. Container terminal elements considered in the model include berth and yard operations for all operating modes, including automated facilities. The ILUT also contains the physical layouts of the non-container terminals, including RO/RO, liquid bulk, breakbulk/neo-bulk, and dry bulk. In addition to the marine terminals, the ILUT contains the three transport networks as well: navigation, roadway, and rail system. The layouts are constructed using Visio "smart shapes" that reflect the operational dimensions and capabilities of the terminal operating components. Figure 1 shows the smart shapes developed for the ILUT.

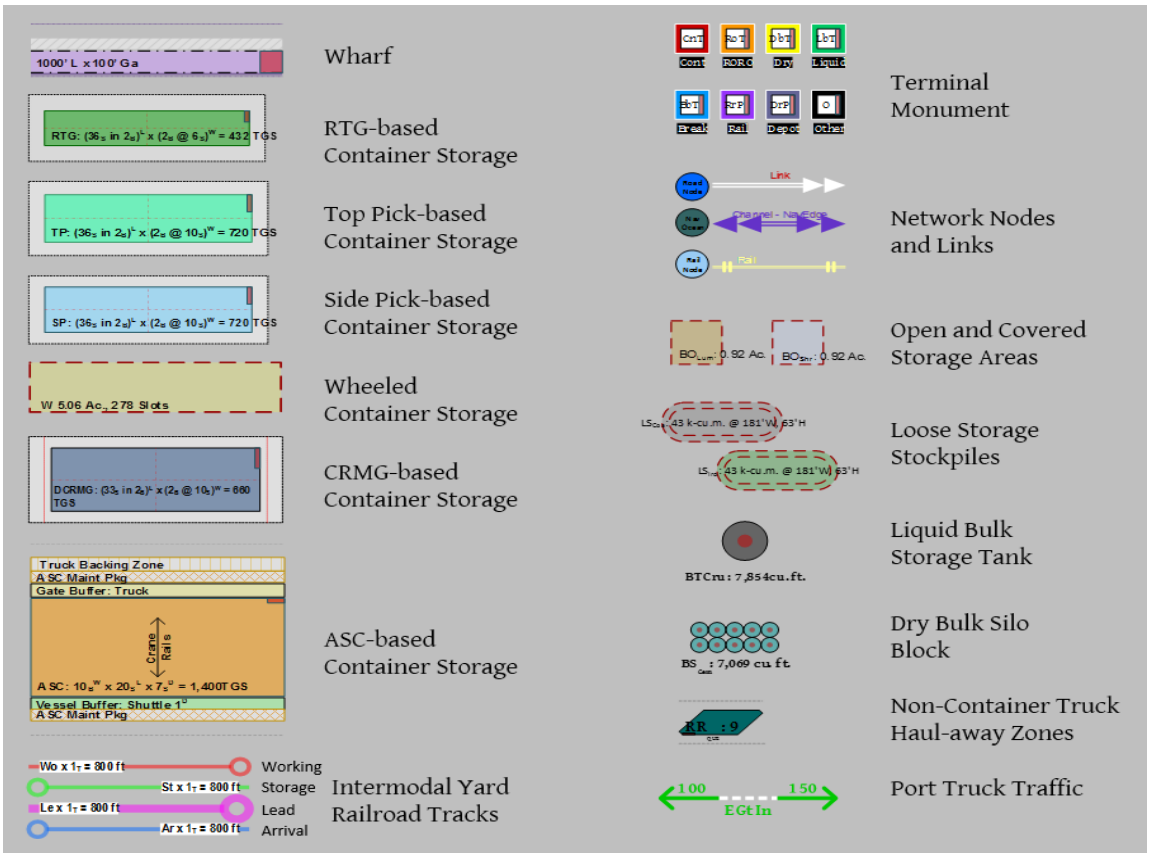


Figure 1. Sample of smart shapes in maritime library that are used in the ILUT.

Currently, the ILUT contains a base layout of the Port in its current configuration (with a fully developed Middle Harbor) as well as separate layouts for every one of the PMP development alternatives. Figure 2 shows the ILUT drawing of the Port of Long Beach in its Baseline configuration.



Figure 2 – Baseline Layout for POLB

Once the entire Port is laid out, a COM Add-in transfers all attributes of the plan directly into the Excel-based PTCM.

PTCM: Port/Terminal Capacity Model in Excel

The PTCM is a spreadsheet model that incorporates the physical layouts and constraints transferred from the ILUT and considers them in combination with all other relevant terminal operation inputs. Market force parameters such as throughput mixes, ship call profiles, train lengths and car type combinations, dwell times, container sizes, and seasonal peaking are all considered. Also considered are operational information such as stacking heights, equipment manning and productivity, cargo conversion factors, and ship physical dimensions.

The PTCM estimates capacity, equipment needs, equipment usage, labor, revenue, capital expenditure, and numerous environmental impacts including emissions and truck trips. It consists of a single Excel workbook with multiple worksheets, each with a specific task. The architecture of each sheet is strictly linear, such that each column represents an individual facility, and all logic flows from top to bottom.

The PTCM has six worksheets dedicated to container terminal operations. The outputs from the worksheets highlighted in bold are utilized in support of the PEIR section of the PMP:

- **Berth capacity**
- **Yard capacity**
- **On-dock rail yard capacity**
- Truck trips
- **Modal splits, operating hours, and labor**
- Emissions

The PTCM has four worksheets for non-container operations, one each for RO/RO, liquid bulk, breakbulk/neo-bulk, and dry bulk. Additional inputs from other sources provided by the Port of Long Beach, such as the 2016 San Pedro Bay Long-term Unconstrained Cargo Forecast, truck trip distributions from TransCAD models, emissions inventory numbers, revenue rates, and construction unit costs, are each held on independent worksheets for consideration in model calculations.

The PTCM includes a scenario analyzer. This tool allows the user to create any number of scenarios, by mixing and matching any of the operating parameters found in the model along with any combination of facility layouts that were created in the ILUT. For instance, within the PMP Update, the Port has multiple development options for some of its terminals. The analyzer tool allows the modeler to create and compare scenarios that combine different future operating assumptions with different configurations of a particular terminal to see how they affect the Port as a whole.

Throughput/Capacity

The Land Use Model is utilized to calculate and compare cargo throughput and help determine some of the subsequent impacts created by the development alternatives described within the PMP. These requirements were satisfied with three general outputs provided by the model:

1. Container cargo capacity
2. On-dock rail capacity
3. Non-container capacity

Container Terminal Throughput and Capacity

This section describes how container terminal capacity is calculated. In the Land Use Model, container terminals are represented using a “grey terminal” concept. This means all container terminals are assumed to be operating in roughly the same way, removing any uniqueness related to short-term tenant operating practices or market influences. Each terminal was modeled using Top-Picks (TPs) for export storage behind the wharf, Rubber Tired Gantry (RTGs) for import storage behind the top-pick blocks, and Empty-Container Handlers (ECHs) for empty storage at the back of the terminal. In addition, a “grey terminal” is modeled as having 80%-90% of the containers grounded without chassis, with a small amount of wheeled storage, on chassis, for specialty cargo. The exceptions to the “grey terminal” concept were Middle Harbor, which is automated, and Pier C, which has a different cargo mix profile reflecting service to a predominately domestic market.

Throughput is the amount of cargo that is moved through a terminal during a specified period of time, usually one calendar year. Throughput depends mainly on the market demand for the analysis year.

The model assumes that the Port of Long Beach handles 45% of the available San Pedro Bay freight market. This number is derived from historical throughput splits dating back to 1995. Terminal throughput can be less than or equal to terminal capacity. If market demand is greater than terminal capacity, then throughput is equal to capacity. If demand is less than capacity, then throughput is equal to the demand. Therefore, before we can determine cargo throughput for a terminal, we must first calculate the terminal capacity.

Terminal capacity is determined by calculating the estimated "maximum practical capacity" (MPC) of each terminal. MPC is the maximum volume that can pass through the terminal without experiencing a substantial loss of safety or efficiency, or a substantial increase in the unit cost of transport. Terminals can exceed MPC for short periods, but volumes above the MPC are not sustainable. To determine a terminal's MPC, we need to conduct two separate capacity calculations:

1. Berth Capacity
2. Yard Capacity

Once these two capacities have been calculated, the PTCM summarizes the berth- and yard-constrained capacities and selects the lesser of the two as the controlling terminal capacity. The two sections below give a high level summary of how the berth and yard capacities are calculated.

Berth Capacity

In summary, berth capacity is the amount of cargo that can be processed through the wharf without vessels having to wait for berth occupancy. In other words, the model estimates the number of calls of each vessel class that can be accommodated on a weekly basis at each terminal when the berth is at maximum practical utilization, above which we would expect to generate unacceptable vessel queuing for berth space. The container lifts associated with these vessel calls are then used to set the weekly throughput capacity. This is then annualized, accounting for the seasonal peaking factor of 1.15, to set the maximum practical berth-constrained capacity. The paragraphs below provide a general description of how berth capacity is calculated in the Land Use Model.

When describing the basic logic and assumptions behind the berth capacity model in greater detail, we must first begin with the navigation network for vessels within the ILUT. The network includes channels, turning basins, and berths. Limiting vessel dimensions are assigned for each segment of the navigation network based on research conducted by the Port with pilots and tug operators. The PTCM takes this information from the ILUT and adjusts vessel paths so that no ships with draft, air draft, length, or beam larger than permissible can reach each terminal's berth.

For each terminal, the total berth length is also imported into the PTCM from the ILUT. Berth utilization is measured based on the consumption of berth length and berth time, measured in "foot-hours." A berth 1,000 feet long has a maximum capacity of 7 x 24 x 1,000 = 168,000 foot-hours per week. Each vessel is assumed to consume berth length based on its overall length and the required mooring gaps between vessels. Each vessel is assumed to consume time based on its work duration plus inter-call gaps required to accommodate schedule variability without causing vessel queuing.

Next, a vessel mix, which represents the percent of calls by ship class, is assigned to each terminal. Five representative vessel mixes were developed: Small Ships, Large Ships, Capped Blend of Ship Sizes,

Uncapped Blend of Ship Sizes, and Future Large. Table 1 shows the vessels mixes for each category type. The vessel mixes are based on ship calls at the Port during calendar year 2016.

Vessel Mix			SmallShips	LargeShips	CapBlend	UncapBlend	FutureLarge
1kT	Traffic Fraction	% of calls	0%	0%	0%	0%	0%
2kT			26%	0%	20%	0%	0%
3kT			66%	0%	10%	2%	0%
4kT			8%	0%	14%	1%	0%
5kT			0%	1%	18%	15%	0%
6kT			0%	1%	12%	12%	2%
7kT			0%	0%	0%	0%	5%
8kT			0%	0%	1%	0%	10%
9kT			0%	13%	22%	16%	5%
10kT			0%	15%	2%	19%	23%
11kT			0%	28%	0%	17%	0%
12kT			0%	20%	0%	11%	0%
13kT			0%	0%	0%	0%	31%
14kT			0%	22%	0%	7%	0%
15kT			0%	0%	0%	0%	0%
16kT			0%	0%	0%	0%	18%
17kT			0%	0%	0%	0%	0%
18kT			0%	0%	0%	0%	3%
19kT			0%	0%	0%	0%	0%
20kT			0%	0%	0%	0%	3%
All		checksum	100%	100%	100%	100%	100%

Table 1 – Vessel Mixes (1kT = 1,000 TEU Class)

The PTCM then calculates the number of lifts per call for each class based on vessel turnover. For lift ratios, twenty-foot equivalent unit (TEU) to vessel lift ratios of **1.79** TEUs / lift for international and **1.99** TEUs/life for domestic containers were used. These numbers were based on statistics provided by terminal operators. In terms of vessel turnover, containerships will not typically exchange 100% of their capacity at a single port call. Some of the ship's holds may have cargo destined for other ports of call, and/or the ship might not have been completely laden in the first place. Table 2 summarizes the vessel turnover rates for each class of vessel mixes.

Vessel Turnover			SmallShips	LargeShips	CapBlend	UncapBlend	FutureLarge
1kT	Vessel Turnover	% of capacity	0%	0%	0%	0%	0%
2kT			73%	0%	17%	0%	0%
3kT			50%	0%	18%	28%	0%
4kT			34%	0%	39%	23%	0%
5kT			0%	74%	54%	29%	0%
6kT			0%	63%	37%	11%	15%
7kT			0%	0%	0%	8%	42%
8kT			0%	0%	81%	47%	67%
9kT			0%	50%	67%	57%	52%
10kT			0%	59%	56%	63%	64%
11kT			0%	61%	0%	57%	0%
12kT			0%	60%	0%	60%	0%
13kT			0%	0%	0%	0%	62%
14kT			0%	47%	0%	47%	0%
15kT			0%	0%	0%	0%	0%
16kT			0%	0%	0%	0%	65%
17kT			0%	0%	0%	0%	0%
18kT			0%	0%	0%	0%	65%
19kT			0%	0%	0%	0%	0%
20kT			0%	0%	0%	0%	65%
All		wtd average	55%	56%	42%	47%	61%

Table 2 - Vessel Turnover per Call

Once vessel mixes and turnover profiles are assigned, the model then determines how many berths the terminal has for each individual ship class based on ship length and mooring gap. The mooring gap is set equal to the vessel's beam dimension to allow for adequate spread of vessel midline mooring lines at the bow and stern. A single fixed wharf, for example, may be able to accommodate four small vessels, or three medium vessels, or only two of the largest vessels. The model will assign berth occupancy limits for each vessel class based on how many berths are available for that class. These allowable berth occupancy percentages are shown in Table 3. These limits are required to avoid vessel queuing for regularly-scheduled services. Berth occupancy can be higher for facilities with more berths for a given class.

Number of Berths	Allowable Berth Occupancy
1	55%
2	60%
3+	65%

Table 3 – Allowable Berth Occupancy (Source UNCTAD)

Calculating allowable berth occupancy is important as it establishes the inter-call time gap required to avoid vessel queuing. For example, a vessel with a gross berth time of 100 hours on a two-berth facility would generate 100 / 60% = 167 gross occupancy hours. The model calculates the contribution of each ship class to total possible occupancy, and ranks the classes in order of decreasing share of occupancy. This establishes the preferential order for assigning ships to the berth space. The model works through the ordered classes, assigning vessels to the call schedule until no capacity remains. Some classes in the vessel mix may be left off the schedule if there is insufficient remaining space when their class is considered. The model corrects the schedule to fill any remaining capacity using the smaller ships in the terminal's vessel mix. The model reports the total number of calls in the adjusted schedule for a peak week. The peak week berth throughput is then converted into annual throughput after taking into account the 15% seasonal peaking factor. This final calculation represents the maximum practical annual berth-constrained capacity.

Yard Capacity

The yard capacity represents the estimated maximum amount of cargo a container yard can accommodate and process on a sustained and productive level. The Land Use Model calculates capacity by first laying out the terminal storage areas in the ILUT and then exporting out the physical attributes into the PTCM. Included in that transfer of information is the total number of container storage slots available by storage type.

After the physical attributes are imported into the PTCM, a throughput mix is assigned to the terminal. The throughput mixes used in the model are derived from the 2016 San Pedro Bay Long-term Unconstrained Cargo Forecast. In the forecast, total cargo is broken down into Imports/Exports, Loads/Empties, and Local truck/Rail, and Domestic/International. The rail traffic portion, referred to as IPI cargo, represents the combined movement of container boxes through on- and off-dock rail yards. From the forecast data, the PTCM creates a throughput mix depending on the growth scenario and the analysis year selected. Depot empty moves, defined as empty containers which both arrive and depart the marine terminal via the gate, are not included in the 2016 San Pedro Bay Cargo Forecast. Therefore, percentages of depot empty moves are calculated from weighted averages of 2014 and 2015 data provided by the marine terminal operators. Table 4 shows a sample international and domestic throughput mix. The abbreviations used in this table and throughout are as follows:

"Imp" for Import, "Exp" for Export, "Dpt" for "Depot"

"F" for Full, "E" for Empty

"Rd" for movements by road, "IP" for movements via Inland Point Intermodal rail,

"All" for all IPI, "On" for on-dock IPI, and "Off" for off-dock IPI

For instance, ImpFRd is a full import container travelling via the roadway. ImpFIPAll is a full import container travelling via rail, either on-dock or off-dock. If moving via off-dock rail, such a move would traverse the Port's roadway network to or from the rail yard.

Throughput Mix	International	Domestic
ImpFRd	33.4%	10.5%
ImpFIPAll	17.7%	0.0%
ExpFRd	11.2%	64.1%
ExpFIPAll	13.5%	0.0%
ImpERd	1.1%	24.8%
ImpEIPAll	0.1%	0.0%
ExpERd	21.2%	0.6%
ExpEIPAll	1.8%	0.0%
DptERd	7.0%	28.8%

Table 4 – Sample Throughput Mix

For the PMP Update analysis, all terminals use the same International throughput mix for a particular analysis year, except for Pier C, which uses the Domestic mix.

After a throughput mix is assigned, the PTCM will then calculate the mean container population in the yard during a peak week for each of the throughput elements described above, based on throughput and mean dwell times. Container storage dwell time averages used in the PTCM were calculated using

data provided by terminal operators. Data request responses were received for Piers A, C, J, G, and F. Data sets from two time periods were provided, a roughly two month period during spring 2014 and a roughly one month period during summer 2015. Using the collected data, weighted average dwell times by container type were developed for International and Domestic terminals. Results are summarized in Table 5.

Flow	International	Domestic
ImpFRd	3.1	1.9
ImpFIPOn	2.7	-
ImpFIPOff	2.2	-
ImpFIPAll	2.7	-
ExpFRd	6.4	1
ExpFIPAll	6.1	-
ImpERd	5.8	14.4
ExpERd	9	24.4
ImpEIPAll	-	-
ExpEIPAll	10.6	-
DptERd	4.6	4.4

Table 5 – Mean Container Storage Dwell Times (days)

Next, the model then considers the mean stacking heights allowable for each storage mode. Shown in Table 6, the mean heights for each mode was based on common terminal operating practice and modern machine capabilities. For example, in the case of side pick storage, a maximum height of six containers is allowed per slot. Each container in that stack equals one TEU. This means each stack can have a maximum height equivalent of six TEUs. But, for optimal terminal operation, the mean stack height for side pick stacks should not exceed 75% of the maximum height limit, or essentially 4.5 TEUs. If mean stacking height across the terminal exceeds these limits, operating performance will degrade and operating cost will increase substantially. As such, these values are essential in establishing the "maximum practical capacity" of the container yard.

Storage Mode	MaxHt	TEU Rate	Util	TEU/Slot
Wheeled	1.00	1.80	90%	1.62
SidePick	6.00	1.00	75%	4.50
TopPick	4.60	1.00	80%	3.68
RTG	4.33	1.00	75%	3.25
ASC	6.00	1.00	85%	5.10

Table 6 – Mean Container Heights at Maximum Practical Capacity

The model then applies a Tactical Peaking Factor (TPF) that is based on the number of vessel calls during the week and the mean dwell time for that element. This is to take into account the natural peaks and troughs in inventory due to exports gradually accumulating prior to a ship call and departing rapidly during vessel loading, and imports arriving rapidly during ship discharge and draining out of the terminal over the course of the following dwell period. The TPF is higher for shorter dwell times and for wider vessel spacing. A higher TPF means bigger peaks and lower overall storage utilization. Essentially, the terminal needs to leave storage space available to accommodate big surges in cargo. The TPF is important when calculating peak inventory during the peak week as the terminal must be sized to accommodate this sustained, recurring inventory demand in order to remain productive.

Finally, the model divides this peak storage demand by permissible mean stack height to determine the peak number of ground slots needed in a peak week to satisfy the demand. This percentage is compared to the number of ground slots imported from the ILUT for each storage mode. The fraction grounded and the storage configurations on each terminal are adjusted so that the utilization of each storage mode is about equal. The goal is to have the deviation from the overall capacity/demand ratio between the most highly utilized area and the lowest be 20% or less. Once the yard has been balanced, the model takes the container slots laid out in the ILUT, combined with the throughput mix (Table 4) and modes splits (Table 6) to generate the static capacity of the yard in TEUs. Incorporating the average dwell time into that number will let you know how many days it takes to turn over the yard. Taking the number of days and annualizing it will produce the maximum practical annual yard-constrained capacity.

On-Dock Rail Capacity

The Port of Long Beach transports a certain amount of container cargo through rail. According to the 2016 San Pedro Bay Long-term Unconstrained Cargo Forecast, the IPI demand for the Bay is 33% of total container movements. Most of that cargo will be moved via terminal on-dock yards. The other containers will move via off-dock yards by truck. In the model, the industry minimum of 5% of rail volume is assumed to be moving via off-dock yards. This value represents those containers moving to relatively small rail markets, for which it is not efficient to allocate a large block of rail cars in the on-dock terminal.

The model needs to determine the capacity of on-dock yards in order to calculate the division of IPI rail traffic between on-dock and off-dock intermodal movements as well as determine the appropriate allocation of containers to be transported via rail and trucks. Like berths and container yards, the first step in calculating on-dock capacity is to begin with designing the physical layout of the on-dock yard in the ILUT and then importing that information into the PTCM. These physical characteristics include a combination of “working” tracks, where trains are discharged and loaded, and “storage” tracks, where trains are held before or after being worked. Terminals will usually have an “arrival/departure” track, which must be traversed once upon arrival and upon departure, and a “lead” track, which must be traversed each time a train segment is decoupled or coupled. Some terminals will also have “Storage Track from Drop Points.” These “Drop Points” reflect off-dock rail storage units, including those at Pier B and elsewhere, that are “assigned” to the marine terminals they serve on a pro rata basis tied to working track capacity.

Once track geometries are completed, a train type is assigned to each terminal. The type selected is based on the best possible use of each terminal’s working yard track configurations. For simplicity, the model builds a train based on single car types. In practice, trains are mixed, but the mixing of car types has minimal impact on capacity. Table 7 lists the different car types used to build trains and Table 8 shows the categories of different train types used in the model.

Car Data	*Units*	H53	H53ISO	Maxi I	Maxi III	Maxi IV	TOFC
Number of Wells	*#*	1	1	5	5	3	2
Well Length	*ft*	53	45	40	45	53	40
Well Height	*1 or 2*	2	2	2	2	2	1
Car Length	*feet over couplers*	80.4	80.4	265.1	290.0	203.8	89.7
TEU Capacity	*TEUs per car*	5.3	4.5	20.0	22.5	15.9	4.0
TEU Density	*TEUs per foot*	0.066	0.056	0.075	0.078	0.078	0.045

Table 7 – Intermodal Car Characteristics

Intermodal Rail Market Data			4.5k Maxi I	5.0k Maxi I	5.5k Maxi I	6.0k Maxi I	6.5k Maxi I	7.0k Maxi I	7.5k Maxi I	8.0k Maxi I	6.0k Maxi III
	Maximum Train Length	*kft*	4.5k	5.0k	5.5k	6.0k	6.5k	7.0k	7.5k	8.0k	6.0k
Lt		*feet*	4,500	5,000	5,500	6,000	6,500	7,000	7,500	8,000	6,000
Tnm	Train nominal length	*feet*	4,352	4,778	5,278	5,778	6,204	6,704	7,204	7,704	5,778
Tnl	Train net length	*feet*	4,242	4,772	5,037	5,568	6,098	6,628	7,158	7,689	5,510
Ct	Car Type	*name*	Maxi I	Maxi I	Maxi I	Maxi I	Maxi I	Maxi I	Maxi I	Maxi I	Maxi III
Lc	Car Length	*feet*	265.1	265.1	265.1	265.1	265.1	265.1	265.1	265.1	290.0
Kuc	TEU Capacity	*TEUs per car*	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	22.5
Nc	Number of cars	*#*	16	18	19	21	23	25	27	29	19
Wn	Number of Wells	*#*	5	5	5	5	5	5	5	5	5
Ln	Number of locomotives	*#*	2	3	3	3	4	4	4	4	3
Wt	Wells per train	*#*	80	90	95	105	115	125	135	145	95
	TEUs per train	*#*	320	360	380	420	460	500	540	580	428

Table 8 – Train and Car Combined Characteristics

Next, the model accounts for reduced train speed when pushing into stub-end tracks, breaking up trains to fit on multiple pieces of working tracks, breaking up trains to keep mid-track crossings clear, and pushing around a curve. The model then estimates the time required to spot, work, and remove a train in a terminal's rail yard, based on the nature of the train, the geometry of the rail yard, and operational productivity.

To do this, the model first estimates how many such trains will fit in the rail yard based on train and track geometry. Next, the model estimates how many train turnovers can be completed in a working day, based on train turnaround time and the terminal's working schedule. To calculate this, the number of gross working hours per day, equipment utilization numbers, and equipment productivity were determined for each terminal. Table 9 summarizes the rail operating assumptions that apply to all of the on-dock intermodal rail yards. These values were determined through discussions with POLB Rail staff, PHL, UP, BNSF, and container terminal rail operations managers.

Intermodal Rail Operations Data			Value
Vbm	Spotting speed (pull)	*mph*	5
Vbf		*ft/min*	440
	Speed Adjustment for Stub En	*%*	20%
	Speed Adjustment for Curved	*%*	10%
Tc	Decoupling Time	*min/cut*	15
Ts	Setup Time	*min/train*	10
Tf	Finish Time	*min/train*	60
Fu	Percent of Train Unloaded	*Percent*	*65%*
Fl	Percent of Train Loaded	*Percent*	*95%*
Wdy	Working Days per Year	*gross days/year*	360

Table 9 – Railroad Systemic Operating Parameters

Working Track Operating Information		
Working Hours per Day	gross hrs/day	16
Equipment on Working Track	#	2/3*
Productivity per Equipment	net lifts/net wk hour	30

**LBCT can accommodate 3 cranes on each working track, while other terminals can accommodate 2*

Table 10 – Specified Yard Productivity

Once the gross amount of time it takes to turnover a train, the number of trains a yard can turnover per day, and the amount of containers each train can hold are determined, a capacity can be calculated for each on-dock yard. After the individual capacity of each on-dock yard has been calculated, the PTCM then factors in the rail system constraints. The logic is conceptually similar to berth capacity, where there is a limited amount of rail track feet available on a 24-hour basis. The length of each train combined with the assumed transit speed yields the track feet-hours consumed by each train as it passes each of a series of specified key junctions. A minimum 60-minute headway is assumed between each train and the number of trains are aggregated at each junction in the rail system network. The rail network constraints reduces the capacity of the individual on-dock yards, producing what is called the degraded or operating capacity. This number is then prorated by the number of workdays to establish an annual capacity.

Non-Container Throughput and Capacity

The Port's non-container terminals are also part of the Land Use Model. The PTCM has four individual models for dry bulk terminals, liquid bulk terminals, RORO terminals, and breakbulk/neobulk terminals. The logic for each model follows the same system. The capacities for the three main operational components are calculated and the limiting component is identified as the overall capacity. The three main operational components are: 1) berth/apron activity, 2) storage yard, and 3) inland transfer.

Berth/Apron Capacity

The following list of calculations are used for all four terminal types to determine berth capacity.

Maximum Berth Capacity = (maximum vessel calls/year) * [(vessel capacity) * (% of vessel loaded or unloaded)]

Average Time at Berth = (hours to load vessel) + (hours to berth and unberth vessel)

Maximum Vessel Calls per Year (based on berth capacity) = (operating hours/year) / [(average vessel time at berth) * (number of berths available)]

Some non-container terminals share a wharf structure, which affects the number of berths available. The model accounts for this by allocating the berth availability on a percentage basis determined by the number of annual calls. For example, Koch Carbon, Morton Salt, Mitsubishi Cement, and Chemoil all share the Pier F wharf which has three berths. Chemoil has the most annual calls, so it gets 52% of the berth resource. Mitsubishi has the second most annual calls, so it gets 37% of the berth. Koch gets 9% of the berth and Morton gets 2%.

The model requires the user to select whether vessel calls are scheduled or unscheduled. In general, calls are scheduled. If the calls are unscheduled, a 70% reduction in berth utilization is assumed. This is a typical industry benchmark, and represents a higher utilization percentage than was assumed for the container vessels because non-container shipping lines are more tolerant of vessel queuing delays.

The apron is generally not a point of rest at dry bulk and liquid bulk terminals. Therefore, apron capacity equals berth capacity and the cargo transfers directly to storage. For RORO and break-bulk terminals,

the berth-to-apron transfer is considered a possible limitation to berth capacity. The following list of calculations is used to determine berth-to-apron transfer capacity.

Average net working time at berth = (amount of cargo loaded) ÷ [(loading rate per loader) * (number of loaders)]

Maximum number of vessels per year = [(operating days per year / (average net working time at berth / operating hours per working day)] * vessel scheduled/unscheduled factor

Sustainable Capacity of Apron = (maximum number of vessels * amount of cargo loaded)

Storage Capacity

The next step in the modeling sequence is to calculate the capacity of the storage yard. The following list of calculations is used similarly for all four terminal types to determine storage capacity.

Static Storage Capacity = This is the capacity of all storage units (open, covered, silo or tanks) considering density of material stored without consideration of cargo velocity (dwell times). The size of the storage area is set in the ILUT drawing

Sustained Rate of Transfer to Storage = (number of transfer units * peak transfer rate * peak duration in months) + (number of transfer units * sustained transfer rate * non-peak duration in months)

Turns Per Year = (operating days/year) / (average dwell time in days) or (factored throughput / static storage capacity) if dwell times not provided

Maximum Storage Constraint Capacity = (static storage capacity) * (number of turns per year)

The model ensures sufficient static capacity is available to handle vessel to yard surge loads by comparing turns per year based on dwell versus throughput capabilities. Peaking Factor results in a higher throughput but for a shorter period of time. Peak rates cannot be sustained for a lengthy period.

Inland Transfer Capacity

The next step in the modeling sequence is to calculate the capacity of the inland transfer process. The following list of calculations is used similarly for all four terminal types to determine berth capacity.

Processing rate = (number of loaders) * (peak loading rate during peak periods or non-peak loading rates during non-peak periods) + (time to position truck/railcar under loading arm)

Peak & Non-Peak Throughput = (number of trucks/railcars processed per working day) * (number of working days per year)

Truck, rail and pipeline transfer capacity = [(peak volume throughput/week) * (peak weeks)] + [(non-peak volume/week) * (non-peak weeks)]

Rail switching activity and track capacity were factored into the processing rates by including two hours for switching in and out of the facility

Gate activity was also considered in the model but gates for non-container facilities do not process any transactions (security only); capacity was not affected.

Maximum transfer capacity = (truck transfer capacity) + (rail transfer capacity) + (pipeline transfer capacity)

Data Support for Impact Calculations

Beyond calculating terminal throughput and capacity, data outputs from the Land Use Model also inform other key calculations. The two most important relate to truck/truck trips and emissions generated from Port activity.

Truck/Truck Trip

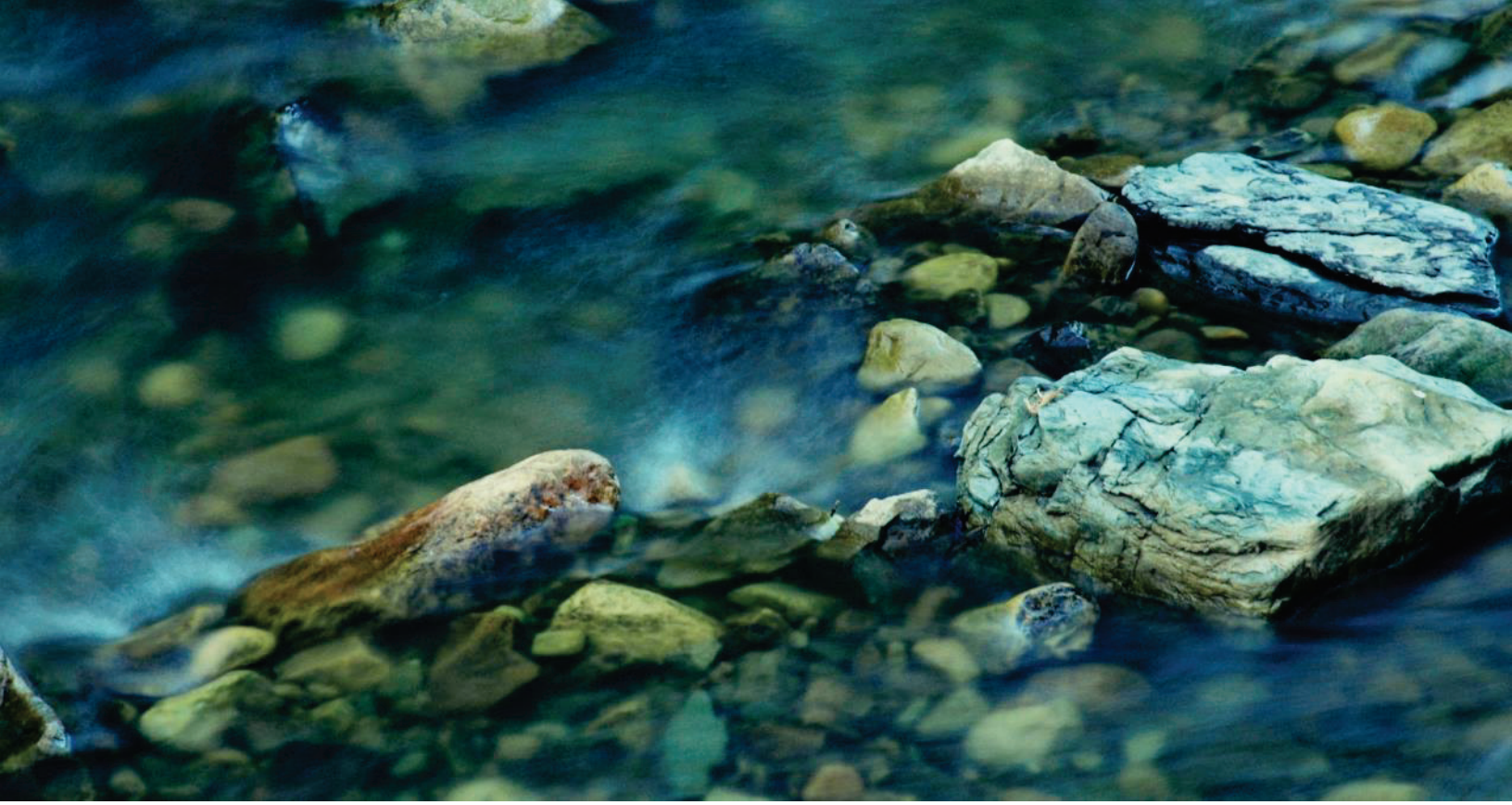
After container, non-container and on-dock throughput for a particular development scenario are calculated for each terminal, this information is transferred to a transportation modeling software (QuickTrip) to calculate the number of trucks/truck trips generated by each terminal and to determine the impacts that such truck activity will generate. For a more detailed explanation of how truck trips are generated, please refer to the Transportation section of the PMP.

Emissions

In determining the container and non-container throughput of each terminal for a particular development alternative and analysis year, the number of vessels, trains, and support equipment required to move that amount of cargo is also calculated. An emissions factor, consistent with the Port's 2017 Emissions Inventory methodology, is then applied to each respective mode of transportation to calculate a per unit emission result. Emissions factors for vessels are separated into two categories of operation: at berth and not a berth (includes transit, maneuvering, and anchorage). The emissions rates for at berth and not at berth are expressed in pounds per hour and pounds per call respectively. There are 17 different cargo handling equipment considered in the model. Some of these include side picks, rubber-tired gantry cranes, forklift, top handler, etc. Emissions factors for cargo handling equipment are expressed in grams/hour of operation. Locomotive emission factors were provided in grams per horsepower-hour. Each locomotive needed per train is assumed to be 4,000 horse power and each train travels an average of 105 miles. This and more detailed information discussing how emissions are calculated can be found in the Air Quality section of the PEIR.

Appendix C
OHSPER Technical Report

This page intentionally left blank.



May 2019

ANCHOR QEA

Outer Harbor Sediment Placement and Ecosystem Restoration Site Technical Report

Prepared for Port of Long Beach

May 2019

Outer Harbor Sediment Placement and Ecosystem Restoration Site Technical Report

Prepared for
Port of Long Beach
4801 Airport Plaza Drive
Long Beach, California 90815

Prepared by
Anchor QEA, LLC
9700 Research Drive
Irvine, California 92618

Project Number: 180343-19.13

TABLE OF CONTENTS

1 Introduction 1

1.1 Background 1

1.2 OHSPER Project Description 2

1.3 Project Need/Objectives 4

1.4 Document Organization 5

2 Authorization and Oversight 7

2.1 Legal Authority 7

2.2 Regional Precedence 8

3 Site Characteristics 9

3.1 Site Description 9

3.2 Historical Site Use 9

3.3 Chemical Evaluation of In Situ Sediments 9

3.3.1 North Lobe 9

3.3.2 South Lobe 11

3.4 Site Bathymetry 11

3.4.1 North Lobe 11

3.4.2 South Lobe 12

3.5 Remaining Capacity 13

3.6 Physical Environment 13

3.6.1 Tides and Currents 13

3.6.2 Groundwater Interface 14

3.7 Biological Conditions 15

4 Evaluation of Management Alternatives for OHSPER Site 16

4.1 Management Alternatives for North Lobe 16

4.2 Comparison of Management Alternatives for North Lobe 17

4.3 Preferred Site Use Alternative for North Lobe and South Lobe 19

5 Technical Feasibility Evaluation for OHSPER CAD 20

5.1 Physical Isolation of Contaminants 20

5.1.1 Propwash Scour Evaluation 20

5.1.2 Anchor Scour Evaluation 21

5.1.3 Bioturbation Evaluation 22

5.2 Chemical Containment 22

5.2.1 Groundwater Interaction 23
5.2.2 Chemical Isolation Analysis 23
5.3 Contaminant Mobilization During Construction 27
5.3.1 Potential Sediment Loss During Placement Operations 27
5.3.2 Water Quality During Placement Operations 28
5.4 Summary of Findings 28
6 Operations Management and Monitoring 29
6.1 Activities Requiring Permits/Authorization 29
6.2 Permit Application Process 30
6.3 Procedures for Selecting Projects for Placement at OHSPER 30
6.3.1 Characterization of Placed Material 30
6.4 Operating Procedures 32
6.4.1 Agency Coordination 32
6.4.2 Placement Procedures 32
6.4.3 Interim Capping Procedures 33
6.4.4 Closure Procedures 33
6.5 Monitoring 34
6.5.1 Construction Monitoring 34
6.5.2 Post-Closure Long-Term Monitoring 35
6.5.3 Event-Related Monitoring 37
6.6 Navigation and Safety Requirements 38
6.7 Contingency Plans 38
6.7.1 Emergency Notification Procedures 39
6.7.2 Incidents and Unusual Occurrences 39
6.7.3 Cap Effectiveness and Maintenance Actions 40
7 References 41

TABLES

Table 1 Model-Predicted Loading and Final Concentrations Within the Bioturbation Layer for Port Dredged Material 25
Table 2 Model-Predicted Loading and Final Concentrations Within the Bioturbation Layer for North Lobe Stockpiled Material 26
Table 3 Water Quality Monitoring Requirements 35
Table 4 Long-Term Monitoring Schedule 36

FIGURES

Figure 1	Vicinity Map
Figure 2	North (-45 Feet MLLW) and South (-50 Feet MLLW) Lobe Fill Areas
Figure 3	North Lobe – Historical Sampling Locations from 2007 to 2012
Figure 4	North Lobe – Historical Sampling Locations from 2014
Figure 5a	North Lobe – Surface Sample Interval Concentrations – Total Chlordanes
Figure 5b	North Lobe – Surface Sample Interval Concentrations – Total DDT
Figure 5c	North Lobe – Surface Sample Interval Concentrations – Total PCB Congeners
Figure 6a	North Lobe – Post-dredge Surface Concentrations – Total Chlordanes
Figure 6b	North Lobe – Post-dredge Surface Concentrations – Total DDT
Figure 6c	North Lobe – Post-dredge Surface Concentrations – Total PCB Congeners
Figure 7	South Lobe – Historical Sampling Locations
Figure 8	North Lobe – Comparison of 1975 and Pre-fill (1998) Bathymetric Data
Figure 9	North Lobe – Post-fill Bathymetric Data (2007)
Figure 10	North Lobe – Isopach Comparing Pre-fill (1998) and Post-fill (2007) Bathymetric Data
Figure 11	North Lobe – 2013 Bathymetry Data
Figure 12	South Lobe – Comparison of 1975 and Pre-fill (1998) Bathymetric Data
Figure 13	South Lobe – Post-fill Bathymetric Data (2007)
Figure 14	South Lobe – Isopach Comparing Pre-fill (1998) and Post-fill (2007) Bathymetric Data
Figure 15	South Lobe – Isopach Comparing Post-fill (2007) and Post-dredge (2011) Bathymetric Data
Figure 16	South Lobe – Isopach Comparing Pre-fill (1998) and Post-dredge Bathymetric Data (2011)
Figure 17	South Lobe – 2013 Bathymetry Data
Figure 18	Fill Areas with Sideslopes
Figure 19	Hydrogeologic Features
Figure 20	Anchorage Locations Relevant to North and South Lobes
Figure 21	Placement Project Boundary and Example Water Quality Sampling Locations
Figure 22	Proposed Sediment Core Sampling Locations Within the -45 Feet MLLW Fill Area (North Lobe)
Figure 23	Proposed Sediment Core Sampling Locations Within the -50 Feet MLLW Fill Area (South Lobe)
Figure 24	Sediment Core Schematic

APPENDIX

Appendix A	Operations Management and Monitoring Plan

ABBREVIATIONS

µg/kg	microgram per kilogram
µg/L	microgram per liter
BMP	best management practice
CAD	confined aquatic disposal
cm	centimeter
cy	cubic yard
COPC	contaminant of potential concern
CSLC	California State Lands Commission
CSTF	Contaminated Sediments Task Force
CTR	California Toxics Rule
DDT	dichlorodiphenyltrichloroethane
DGBP	Dominguez Gap Barrier Project
DMMP	Dredged Material Management Plan
DO	dissolved oxygen
DTSC	California Department of Toxic Substances Control
EMI	Earth Mechanics, Inc.
ERL	effects range low
ERM	effects range median
HMW	high molecular weight
HPAH	high-molecular-weight polycyclic aromatic hydrocarbon
kg	kilogram
LMW	low molecular weight
LPAH	low-molecular-weight polycyclic aromatic hydrocarbon
m	meter
m/s	meters per second
mcy	million cubic yards
mg/L	milligram per liter
MLLW	mean low lower water
NA	not applicable
NEIBP	North Energy Island Borrow Pit
NOAA	National Oceanic and Atmospheric Administration
OHSPER	Outer Harbor Sediment Placement and Ecosystem Restoration
OMMP	Operations Management and Monitoring Plan
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PMP	Port Master Plan

Port	Port of Long Beach
RGP	Regional General Permit
RWQCB	Regional Water Quality Control Board
STFATE	Short Term Fate
TMDL	Total Maximum Daily Load
TSS	total suspended solids
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
WASSS	Western Anchorage Sediment Storage Site
WDR	Waste Discharge Requirement
WRAP	Water Resource Action Plan

1 Introduction

The Port of Long Beach (Port) proposes to develop a confined aquatic disposal (CAD) facility at the existing Western Anchorage Sediment Storage Site (WASSS). The WASSS is located in the Outer Harbor of the Port and consists of two large and deep underwater borrow pits referred to as the North and South Lobes (Figure 1). The WASSS is used to temporarily or permanently store clean sediment for reuse in Port landfill projects. The CAD site will be developed to receive both clean and contaminated sediments for long-term sediment management. A CAD facility is a disposal method that involves the placement of contaminated dredged material from the aquatic environment at an appropriate open-water placement site—in this case, an existing depression in the harbor bottom to hold layers of deposited material, which is then capped (i.e., buried) with a layer of clean sediment. This contains and isolates the contaminated material from the aquatic environment.

The current Port Master Plan (PMP) allows for the placement and reuse of clean sediments from within the Port boundaries into the WASSS (PMP Amendment No. 11, 1998). Clean sediments placed into the WASSS can be removed and beneficially reused as fill for future capital improvement projects. The PMP is being amended to allow the WASSS to be used as a CAD facility for the long-term disposal and management of clean and contaminated sediments and for the site to be renamed the Outer Harbor Sediment Placement and Ecosystem Restoration (OHSPER) site. As a CAD site, the Port plans to fill the site to the surrounding grade, which includes -45 feet and -50 feet mean lower low water (MLLW) fill areas for the North and South Lobes, respectively (Figure 2).

This technical report was developed to support the PMP Update Program Environmental Impact Report and includes a summary of background information, the development process, and previous studies to support implementation and use of the CAD site.

1.1 Background

The WASSS borrow pits are part of a larger borrow area used by the Port between the 1950s and 1980s to mine sand for use as fill material during the creation of Pier J and other terminal development projects. In 1998, the borrow pits were officially designated as a beneficial reuse storage and disposal site called the WASSS (Knatz 1998). Between 1998 and 2011, the Port and the U.S. Army Corps of Engineers (USACE) placed dredged sediments at both the North and South Lobes with the intention that it could be either beneficially reused in future Port fill projects or permanently disposed of at the site. Over those same years, material placed within the South Lobe was used for various Port development projects. In 2011, material from the North Lobe was targeted for use at the Middle Harbor development project, using hydraulic excavation and placement methods. A routine environmental evaluation prior to construction, however, determined that a large portion of the material was contaminated and therefore not suitable for beneficial reuse at the intended location. This discovery launched a more thorough investigation of impacted material extent and options for management.

In 2015, the Port conducted an alternatives analysis to evaluate management alternatives for clean and contaminated sediments within the site (Anchor QEA 2015a). The alternatives included continuing to use the storage site as is (no action), removing contaminated sediments, capping and closing the site, and developing a CAD site to manage contaminated sediments in place and provide a long-term sediment management tool for both clean and contaminated sediments. The Port's preferred alternative was to develop a CAD site in the North Lobe of the WASSS site for the management of both clean and contaminated sediments and to continue to use the South Lobe, initially, for placement and reuse of clean material only. During discussions with the Contaminated Sediments Task Force (CSTF) members, it was recommended that the South Lobe also be considered and evaluated for use as a CAD site in anticipation of the Port's changing needs.

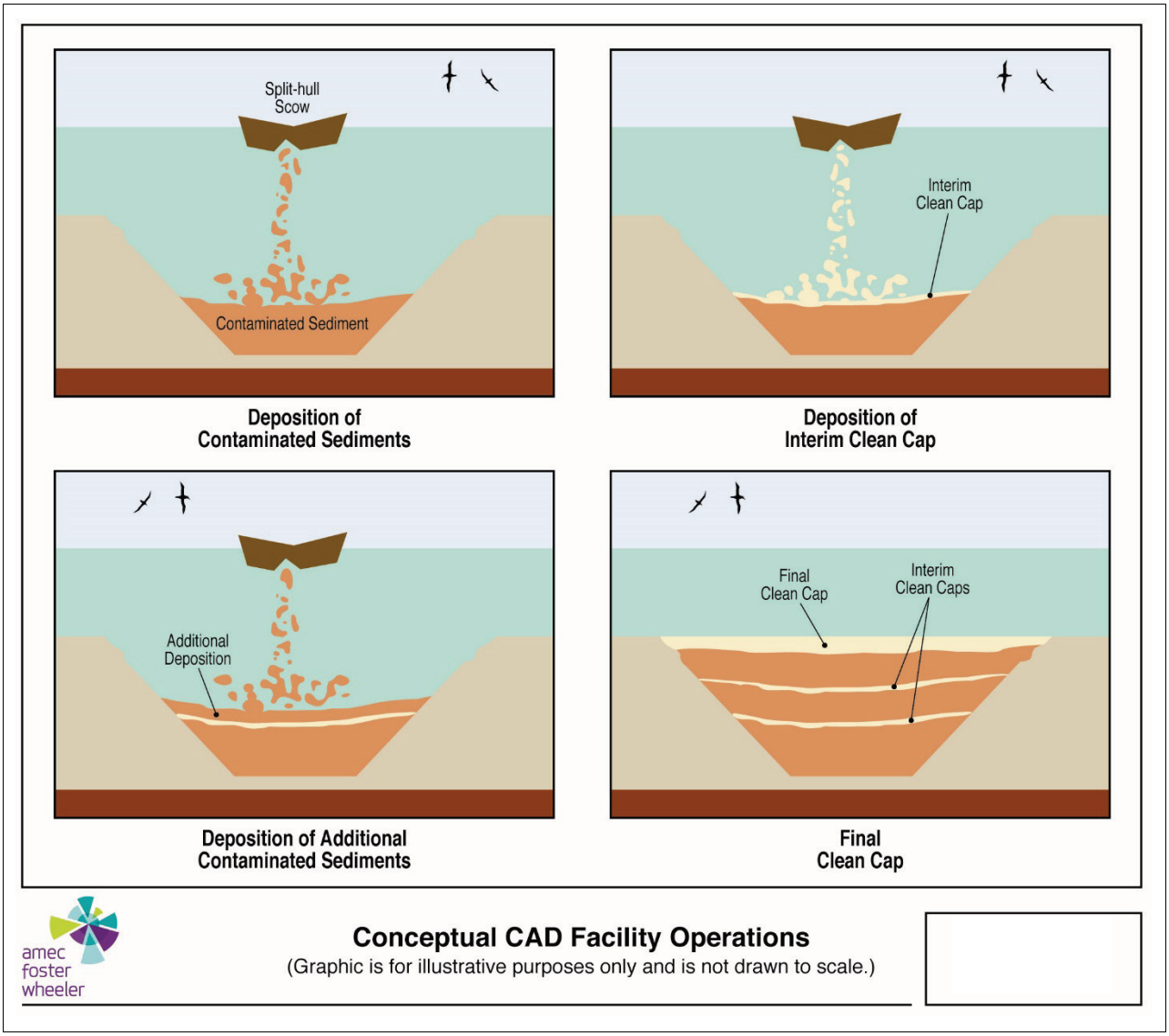
In 2016, the Port conducted a CAD technical feasibility evaluation for the North and South Lobes, which included a series of technical studies to evaluate anticipated environmental and operational concerns regarding contaminant release during placement activities and post-construction (Anchor QEA 2016a). The studies evaluated specific technical challenges inherent to CAD site development at the site, including water quality impacts during disposal and capping, resuspension of sediments and cap disturbances resulting from prop wash and anchor scour, bioturbation by benthic organisms, and the potential for groundwater upwelling at the site, which could affect chemical containment. Through these evaluations, it was determined that this alternative is economically feasible, environmentally protective, compliant with both the Port's internal sediment management plan (Anchor QEA 2018) as well as the CSTF's regional strategy, and allows for future use of the OHSPER site as a sediment storage and disposal area. This alternative is also supported by the CSTF regulatory agencies, adding to its feasibility.

In 2016, an Operations Management and Monitoring Plan (OMMP) was developed to document the planned approach for managing the site (Appendix A). The OMMP included monitoring procedures for key aspects of site use, including sediment placement, interim capping, and site closure. A Long-Term Monitoring Plan and Water Quality Monitoring Plan were developed as part of the OMMP.

1.2 OHSPER Project Description

As a CAD facility, the proposed OHSPER site would be able to accommodate both clean and contaminated sediments and each lobe could potentially be further subdivided to hold material for disposal or clean sediments for reuse. While the existing WASSS currently provides unconfined storage space for sediments suitable for unconfined ocean disposal, when needed, the proposed CAD facility would require the placement of an interim clean sediment cap layer after each contaminated dredged sediment placement event into the OHSPER site. Each interim cap, when needed, would be designed and placed in such a way to confine the contaminated sediments and control the potential for future exposure of the contaminants through resuspension and/or chemical leaching. Once each lobe is filled to capacity, a final cap will be engineered. The final engineered cap

will contain and isolate the contaminated material from the aquatic environment. This process is illustrated below.



In addition, the existing footprint of the site would be expanded (see Figure 2) and the site would be renamed the OHSPER site to better reflect the location and the level of ecosystem restoration that would be taking place at the site. Operation of the proposed OHSPER site as a sediment disposal area would accomplish multiple key criteria under the California State Lands Commission (CSLC) Public Trust Doctrine. Filling the existing depressions in the North and South Lobes of the WASSS would eliminate lower elevation areas that could collect contaminants due to the settlement of finer particles, which bind more easily with chemicals. Once the depressions have been filled and covered with a clean cap,

the North and South Lobes would mimic the bathymetry and sediment characteristics of the surrounding environment and present a more suitable habitat for aquatic species.

Based on bathymetric surveys conducted by the National Oceanographic and Atmospheric Administration (NOAA) in September and November 2013, current depths within the North and South Lobes of the current WASSS, which together comprise the proposed OHSPER site, range from -48 to -64 feet MLLW and -50 to -70 feet MLLW, respectively. Consequently, the proposed OHSPER site currently has a large capacity for receiving sediments before the elevation reaches the surrounding bathymetry. The available capacity to accommodate sediment at the proposed OHSPER site has been estimated to be approximately 1.6 million cubic yards (mcy) for the North Lobe and 1.7 mcy for the South Lobe.

The placement of dredged material at the WASSS is currently permitted by both USACE and the Regional Water Quality Control Board (RWQCB) for each project that is dredged and placed at the site. The same permitting would apply to the OHSPER site for the placement of fill material, whether the material is intended for permanent placement within the site or temporarily for future reuse, on a project-by-project basis. Material that is planned for placement within the OHSPER site would need to be permitted with the USACE (Section 404 of the Clean Water Act/Section 10 of the Rivers and Harbors Act) and RWQCB (Section 401 of the Clean Water Act), specifying the intended location and nature of the placement. Any permits issued pursuant to Section 404 of the Clean Water Act would likewise recognize the OMMP (Appendix A) and would not impose disposal restrictions that could conflict with the PMP or Tidelands Trust Agreement. With the exception of maintenance dredging projects under the Port's Regional General Permit (RGP), it is anticipated that these permits would be obtained on an individual, project-by-project basis. The Port's current maintenance dredging RGP authorizes this site for the disposal of clean sediment only and requires project-specific sediment suitability determinations prior to dredging and placement. The Port's current RGP would be amended to include the placement of contaminated material at the proposed OHSPER site.

1.3 Project Need/Objectives

The need to sustainably and efficiently manage clean and contaminated sediments will continue to be a priority for the Port in the future. Current available management and beneficial use alternatives for clean and contaminated sediments are limited, and it is important that a variety of sediment management strategies are available to the Port. Ocean disposal is possible for clean material, but the ocean disposal site management limits the quantities placed per year and does not provide an opportunity for beneficial reuse. Transporting and disposing this material in an upland landfill would be expensive; would impact air quality, traffic, and noise; and would cause other impacts associated with hauling the material via trucks on the local roads and highways.

To date, the Port has successfully managed large quantities of material within capital landfill development projects, but the timing for projects requiring fill may not always line up with Port sediment management needs. Having the flexibility to manage sediments without being tied to a capital landfill project is critical for Port operations and future development. Without this option, the Port would have to either delay development activities until a fill site becomes available or find alternate sites to place fill material. The proposed OHSPER site would receive and contain clean and contaminated sediment and would result in capacity to address planned development projects with minimal environmental impacts, flexible schedules, and reduced costs, and it would be managed in a way that improves overall sediment quality in the Long Beach Outer Harbor.

Other key objectives for the proposed Project are as follows:

- Address existing contamination in the North Lobe of the WASSS in a way that is environmentally protective of the surrounding aquatic environment.
- Restore the overall bathymetry of the North and South Lobes of the WASSS by filling the existing depressions, which collect contamination due to the settlement of finer particles that bind more easily with contaminants.
- Provide ecosystem restoration benefits by bringing the existing North and South Lobes depressions to grade and reducing impacts to benthic habitat and water quality.
- Re-designate the contaminated North Lobe of the WASSS as well as the South Lobe, which would only to be used as a CAD after the North Lobe has been closed, for use as a sediment management facility for both clean and contaminated sediments generated by current and future Port projects.

1.4 Document Organization

The remainder of this document has been organized into the following sections:

Section 2 – Authorization and Oversight		
2.1	Legal Authority	Discusses the legal authority by which the Port can develop the site into a long-term sediment management facility
2.2	Regional Precedence	Summarizes recent CAD site projects in Southern California that have helped pave the way for agency acceptance of the current proposal
Section 3 – Site Characteristics		
3.1	Site Description	Summarizes site use and the characterization of sediments placed in the WASSS
3.2	Historical Site Use	Summarizes extent and boundaries of the OHSPER site
3.3	Chemical Evaluation of In Situ Sediments	Summarizes historical and recent sediment chemical characterizations for North and South Lobes
3.4	Site Bathymetry	Summarizes historical and current bathymetric conditions for North and South Lobes, including changes in elevations and volumes following placement or dredging
3.5	Remaining Capacity	Summarizes the remaining capacity within each lobe

3.6	Physical Environment	Summarizes physical conditions for the Outer Harbor area, including hydrodynamic conditions and groundwater
3.7	Biological Conditions	Summarizes biological conditions for Outer Harbor area
Section 4 – Evaluation of Management Alternatives for OHSPER Site		
4.1	Management Alternatives for North Lobe	Summarizes management alternatives evaluated by the Port for the North Lobe
4.2	Comparison of Management Alternatives for North Lobe	Provides a comparison of the pros and cons of each management alternative for the North Lobe, as well as the recommended alternative moving forward
4.3	Preferred Site Use Alternative for North Lobe and South Lobe	Summarizes preferred site use for the North and South Lobes
Section 5 – Technical Feasibility Evaluation for OHSPER CAD		
5.1	Physical Isolation of Contaminants	Evaluates the potential for propwash scour, anchor scour, or bioturbation from benthic organisms
5.2	Chemical Containment	Evaluates the potential for chemical flux and groundwater upwelling through the site
5.3	Contaminant Mobilization During Construction	Evaluates the potential for chemical losses during disposal activities and water
5.4	Summary of Findings	Summarizes results of the chemical diffusion, bioturbation, anchor scour, and chemical flux analyses regarding technical feasibility of CAD site and thickness of cap required to isolate contaminants
Section 6 – Operations Management and Monitoring		
6.1	Activities Requiring Permits/Authorization	Describes the required permits and agency approvals for operating the CAD site and steps for complying with each requirement
6.2	Permit Application Process	Describes the process that will be used to permit each placement or reuse activity at the CAD site and its relationship to the project Environmental Impact Report
6.3	Procedures for Selecting Projects for Placement at OHSPER	Summarizes testing to determine suitability of material for unconfined or confined placement within the CAD site
6.4	Operating Procedures	Describes process for notifying resource and regulatory agencies when the CAD site will be used, general placement procedures, interim capping needs, and site closure procedures
6.5	Monitoring	Summarizes monitoring procedures and approach, including construction monitoring, post-closure long-term monitoring, and event related monitoring
6.6	Navigation and Safety Requirements	Describes how navigation impacts and safety concerns will be managed during CAD site use
6.7	Contingency Plans	Details the process and timing for notifying agency members in the event of containment breach or site damage, documents the mitigation activities that will occur in the event of an unintended impact to the site, and documents contingency plans for ensuring site performance
Section 7 – References		Lists relevant citations for documents or data cited throughout this document

2 Authorization and Oversight

2.1 Legal Authority

Submerged lands in the State of California are managed by the CSLC. The City of Long Beach acts as a Trustee of the State for managing tidelands in Long Beach and up to 3 miles from the shore, which includes the area containing the proposed OHSPER site. Current CSLC guidelines for environmental management of State aquatic land include the following:

> The California State Lands Commission has broad mandates for protection of California's natural environment. In its 1892 opinion in Illinois Central Railroad v. Illinois [146 U.S. 387], the U.S. Supreme Court declared that the "Sovereign Lands" of a state are held in trust by the State for all present and future generations, and that such land may not be sold for development incompatible with uses covered by the Public Trust Doctrine. Historically, the Public Trust Doctrine provided for the public our waterways for "commerce, navigation, and fisheries". Later court rulings added hunting, fishing, swimming and recreational boating, and in 1971 expanded them to include "preservation of those lands in their natural state", in order to protect scenic and wildlife habitat values.
>
> A 1983 California Supreme Court ruling [National Audubon Society v. Superior Court, 33 C3rd 419] held that the State has an "affirmative duty to take the public trust into account" in making decisions affecting public trust resources, and also the duty of continuing supervision over these resources which allows and may require modification of such decisions. The Commission follows this mandate when considering the use of "Sovereign Lands" under its jurisdiction, and seeks cooperation of other agencies having authority over public trust resources. (CSLC 2019)

Because the OHSPER site is intended as a key disposal alternative for sediments accumulating in navigation channels important for commercial purposes, operation of the OHSPER CAD as a potential disposal area fulfills multiple key criteria under the CSLC Public Trust Doctrine (Commerce and Navigation). In addition, once the depressions have been filled, and a clean sand cover installed, it will mimic the bathymetry and sediment characteristics of the surrounding environment and present a much more suitable habitat for aquatic species. This, in turn, will provide an added environmental benefit to the region by improving the water quality and fish habitat, also a key criterion outlined in the Public Trust Doctrine.

2.2 Regional Precedence

The effective use of CAD sites for long-term management of contaminated sediments in Southern California has been validated through recent and similar projects within the region.

In 1998, to resolve re-occurring regulatory issues inhibiting necessary dredging by the Ports of Long Beach and Los Angeles and the USACE, and to address public health concerns about contaminated sediments, the regulatory and resource agencies, Ports of Long Beach and Los Angeles, environmental groups, and other interested parties in the Los Angeles Region established the CSTF. The CSTF was chartered with developing a long-term strategy for managing contaminated sediments. Concurrently, the USACE began development of a regional Dredged Material Management Plan (DMMP; USACE 2000) to provide the regulatory framework for managing both clean and contaminated sediment originating from federal projects within the Los Angeles Basin.

In 2001, the USACE initiated the Los Angeles Regional DMMP Pilot Studies to evaluate the feasibility of managing contaminated sediments in the Los Angeles region through various disposal or treatment options. The purpose of these studies was to provide technical information to support both the DMMP and CSTF Strategy documents.

As part of the DMMP Pilot Studies, the USACE conducted a field pilot study to test the effectiveness of aquatic capping and CAD technologies as alternatives for managing contaminated sediments in the region. The CAD field pilot study included dredging more than 130,000 cubic yards (cy) of contaminated sediment from the Los Angeles River Estuary and placing it in an existing pit (North Energy Island Borrow Pit [NEIBP]) located within the inner harbor of Long Beach. After allowing the material to settle for a few months, a clean sand cap layer was placed over the contaminated sediments to isolate them from release back into the water column and prevent contact from aquatic biota. The site was then monitored for 12 years to evaluate the effectiveness of the design, at which time the USACE concluded that the CAD was operating exactly as it was designed (Anchor QEA 2014a).

Building on the success of the NEIBP, a second CAD site was constructed in Port Hueneme by the Oxnard Harbor District, U.S. Navy, and USACE in 2009 and 2010. The Port of Hueneme CAD site started with the excavation of a large disposal cell that was about 925,000 cy. Approximately 325,000 cy of contaminated sediments were dredged from throughout the harbor and placed into the CAD cell, followed by approximately 325,000 cy of clean sand from the Federal Entrance Channel into the harbor to act as a clean cap layer. A rock armor layer completed the cap design to protect the surface from vessel scour. Post construction, a 5-year monitoring program was initiated to monitor for potential chemical release, uneven settling or fractures, or any other surface disturbances (Anchor QEA 2015b). All monitoring suggested the CAD was operating as designed and no chemical releases were detected.

3 Site Characteristics

3.1 Site Description

The WASSS borrow pits are part of a larger borrow area used by the Port between the 1950s and 1980s to mine sand for use as fill material. The larger borrow area includes the North and South Lobes but also extends all the way to the Federal Navigation Channel to the east. The proposed OHSPER site boundary includes the extents of the larger borrow area; however, it is constrained on the east by the Port's anchorage B-7 and a planned standby anchorage area (Figure 2). The limits of the anchorage (plus buffer) were set as the eastern site boundary of the proposed OHSPER site. Sediment placement within the site will be limited to the elevations of the surrounding grade (-45 and -50 feet MLLW).

3.2 Historical Site Use

In 1998, the borrow pits were officially designated as a beneficial reuse storage and disposal site called the WASSS (Knatz 1998). Sediments from the Queens Gate (Federal Main Channel) deepening project and the West Basin (Pier T) redevelopment project were stockpiled at the WASSS from the mid-1990s to 2004. Stockpiled material was historically used as fill for the Navy Mole expansion, Pier G slip fill, and as capping material for a pilot study on the Palos Verdes Shelf. Prior to dredging and placement at the WASSS, sediments from the Queens Gate deepening project and the West Basin redevelopment project were characterized to determine suitability and gain regulatory approval.

The Queens Gate material was characterized by Sea Surveyor in 1994 as fine- to medium-grained sands with shell hash overlying "highly variable" sediment (Sea Surveyor 1994); the chemical concentrations only slightly exceeded effects range low (ERL) values with no chemicals exceeding effects range median (ERM) values developed by Long et al. (1995). No toxicity or bioaccumulation tests were conducted on the Queens Gate material (AMEC 2010). A total of 3.8 mcy of material was placed at WASSS during the Queens Gate federal channel deepening project (CSTF 2005).

The West Basin (Pier T) material was characterized by MEC Analytical Systems in 1999 as predominantly sand with minor ERL exceedances of copper, mercury, and polychlorinated biphenyls (PCBs). No toxicity was present, and contaminants did not bioaccumulate (AMEC 2010). Approximately 667,000 cy of suitable sediments were placed at WASSS during the West Basin (Pier T) redevelopment project (CSTF 2005).

3.3 Chemical Evaluation of In Situ Sediments

3.3.1 North Lobe

North Lobe sediments were previously characterized by AMEC in 2007 and Anchor QEA in 2012 (Anchor QEA 2012a) and 2014 (Anchor QEA 2015c). In addition, geotechnical investigations were

performed by Kleinfelder in 2007, Diaz Yourman in 2010, and Earth Mechanics, Inc. (EMI), in 2011 to identify potential source material, as described in EMI 2012. Historical sampling locations for each study are shown in Figures 2 and 3.

In 2007, cores were collected from 1.5 to 7 feet below the sediment surface within the North Lobe (AMEC 2010). North Lobe sediments comprised approximately equal portions of sand and silt; very little gravel and clay were measured (less than 5%). Sediments were found to have detectable metals concentrations less than ERL values, with the exception of copper and mercury (greater than ERL value). Low but detectable levels of DDE, PCBs, phthalates, and polycyclic aromatic hydrocarbons (PAHs) were also measured in North Lobe sediments. Organotins and phenols were not detected.

In 2012, cores were collected to a depth of 10 feet below the sediment surface at 12 stations within the North Lobe (Anchor QEA 2012a). Six composite samples were created for analysis. North Lobe sediments comprised 36.5% to 52% fines (silt and clay). Sediments were found to have detectable metals concentrations less than ERM values, except for mercury, nickel, and zinc in one sample (DU6-COMP), which was greater than ERM values. Total PAHs were measured at concentrations greater than the ERM value in sample DU5-COMP. Individual and/or total DDTs were greater than the ERM value in three samples (DU3-COMP, DU4-COMP, and DU6-COMP). Total PCBs were greater than the ERM value in all samples, except for DU2-COMP. Based on this study, areas of higher contamination requiring further delineation included DU1, DU3, DU4, DU5, and DU6 (see Figure 3).

During the AMEC study, core lengths averaged approximately 4.5 feet, while the Anchor QEA study analyzed the top 10 feet of sediment from each area. Concentrations of contaminants were higher in the Anchor QEA study (greater than ERM values). These data suggested that the more contaminated sediments were located deeper in the fill; however, the vertical extent of contamination was still unclear.

Geotechnical data from Kleinfelder, Diaz Yourman, and EMI were reported by EMI (2012). North Lobe sediments were predominantly silty sands with some clay. No clear differentiations were identified between surface materials and deeper layers, although surface samples typically contained more fine-grained material.

In 2014, a sediment characterization study was conducted on material from the North Lobe to confirm vertical and horizontal extents of impacted sediments (Anchor QEA 2015c). This study represents the most current chemical conditions for the North Lobe. Sediment cores were collected at 15 stations and vertically segmented based on observed stratification for chemical analyses. Station locations for this study are shown in Figure 4. Elevated concentrations (greater than the ERM value) of lead, mercury, zinc, total chlordanes, total DDTs, and total PCBs were measured in North Lobe sediments. Elevated contaminants were measured beyond the depth of stockpiled material, at depths below the pre-placement condition in 1998. This suggests that impacted material either settled into the depression prior to 1998 or was placed there and not documented.

A conceptual dredge plan was developed to determine what the post-dredge surface would be after removal of material known to be stockpiled in the North Lobe between 1998 and 2003. Contaminant interpolative maps were created for total chlordanes, total DDTs, and total PCB congeners. Current surface conditions within the conceptual dredge footprint are shown in Figures 5a to 5c. Post-dredge surface conditions are shown in Figures 6a to 6c. Results show that if dredging was performed to -63 MLLW (includes overdepth) to remove Port-placed stockpiled material, a more contaminated surface layer would be left after dredging.

3.3.2 South Lobe

South Lobe sediments were previously characterized by AMEC in 2007. Station locations are shown in Figure 7.[1] Sediment cores were collected from 2.5 to 12 feet below the sediment surface, and composite samples were submitted for analysis (AMEC 2010). South Lobe sediments contained 33% to 70% sand. Sediments were found to have detectable metals concentrations less than ERL values. Organics were not detected, with the exception of phthalates and pyrene; both were measured at low concentrations, less than the threshold effect level and ERL value, respectively. During this investigation, concentrations of contaminants of potential concern (COPCs) within South Lobe were universally lower than those measured in North Lobe. Data from this study suggest stockpiled material from South Lobe is clean. Current conditions are expected to be consistent with this study. Sediment does not appear to be accumulating within the site, and there has been no placement of additional material that would impact sediment quality. In 2011, the Port dredged stockpiled material from South Lobe to construct the Pier G North slip fill. The dredge footprint included the area around stations G2, G3, and F3 (Figure 7).

3.4 Site Bathymetry

3.4.1 North Lobe

The North Lobe is part of a larger borrow area used by the Port between the 1950s and 1980s to mine sand for use as fill material during the creation of Pier J and other terminal development projects. Prior to borrowing material, depths within the North Lobe ranged from -39 to -40 feet MLLW, based on a 1954 NOAA chart. Following mining of borrow material, depths within the North Lobe extended as deep as -72 feet MLLW, based on a 1975 NOAA chart and may have extended deeper depending on how much earlier than 1975 mining was conducted.

Pre-fill bathymetry was surveyed prior to known fill operations in 1998. Depths typically ranged from -60 to -65 feet MLLW, with some small areas as shallow as -50 feet MLLW. Sediment accumulation in the North Lobe prior to 1998 (the first known Port placement activities) was evaluated by comparing 1975 and pre-fill bathymetric conditions (Figure 8). Accumulation in North Lobe typically ranged from 5 to 10 feet and may have extended up to 20 feet in some areas. Based on the comparison of 1975 and

[1] In 2011, the area encompassing stations G2, G3, and F3 was dredged for beneficial reuse at the Pier G slip fill.

pre-fill bathymetric conditions, it is estimated that 319,000 cy[2] of sediments accumulated in the North Lobe due to natural deposition and/or unknown sources prior to known Port placement activities.

In 1998, the Port began to stockpile material within WASSS for future beneficial reuse (Knatz 1998; CSTF 2005). Post-fill bathymetry was conducted on March 6, 2007 (Figure 9). Following fill operations, depths ranged from -48 to -62 feet MLLW. An isopach comparing pre- and post-fill bathymetric conditions is presented in Figure 10. The majority of material was placed in the center of the North Lobe (generally between 6 and 14.5 feet thick) with minimal material settling around the east and west edges (0 to 2 feet thick). Based on the comparison of pre- and post-fill bathymetry, the volume of stockpiled material placed within the North Lobe was estimated to be 376,000 cy.[3] However, as previously described, approximately 319,000 cy of additional material accumulated within the North Lobe due to natural deposition and/or unknown sources prior to known placement activities in 1998. Based on current chemical conditions, bathymetry, and volume estimates, the total volume of impacted sediment that may require management is estimated to be 695,000 cy.

Current conditions within the North Lobe, based on bathymetry surveys conducted by NOAA in September and November 2013 (NOAA 2013), are presented in Figure 11. Depths range from -48 to -64 feet MLLW.

3.4.2 South Lobe

The South Lobe is part of a larger borrow area used by the Port between the 1950s and 1980s to mine sand for use as fill material during the creation of Pier J and other terminal development projects. Prior to borrowing material, depths within the South Lobe ranged from -43 to -48 feet MLLW, based on a 1954 NOAA chart. Following mining of borrow material, depths within the North Lobe extended as deep as -72 feet MLLW, based on a 1975 NOAA chart and may have extended deeper depending on how much earlier than 1975 mining was conducted.

Pre-fill bathymetry was surveyed prior to known fill operations in 1998. Depths typically ranged from -55 to -70 feet MLLW. Sediment accumulation in the South Lobe prior to 1998 (the first known placement activities) was evaluated by comparing 1975 and pre-fill bathymetric conditions (Figure 12). Depths were relatively consistent between surveys, showing minimal accumulation prior to known placement activities.

In 1998, the Port began to stockpile material within WASSS for future beneficial reuse (Knatz 1998; CSTF 2005). Post-fill bathymetry was conducted on March 6, 2007 (Figure 13). Following fill operations, depths ranged from -48 to -63 feet MLLW. An isopach comparing pre- and post-fill bathymetric conditions is presented in Figure 14. The majority of material was placed in the center of the South Lobe (generally

[2] This value and others presented in this section are exact volumes determined by comparing the bathymetric files using AutoCAD. These values have been rounded up or down for discussion in the following sections.

[3] This volume is slightly higher than what AMEC calculated in 2010 and 2013 (326,000 and 296,565 cy, respectively).

between 8 and 16 feet thick). Based on the comparison of pre- and post-fill bathymetry, the volume of stockpiled material placed within the South Lobe was estimated to be 807,000 cy.[4]

In 2011, the Port dredged stockpiled material from South Lobe for beneficial reuse at the Pier G slip fill. An isopach comparing post-fill and post-dredge (2011) bathymetric conditions is presented in Figure 15, which shows dredging was performed within two areas of South Lobe and the dredge cut generally ranged between 6 and 16 feet deep. The volume of dredged material was estimated to be 173,560 cy. The current volume of Port-placed material within South Lobe, following dredging and beneficial reuse of this stockpiled material, was estimated by comparing pre-fill and post-dredge bathymetric conditions and is presented in Figure 16. Based on this comparison, the volume of Port-placed material remaining within the South Lobe was estimated to be 612,000 cy.

Current conditions within the South Lobe, based on bathymetry surveys conducted by NOAA in September and November 2013, are presented in Figure 17. Depths range from -50 to -70 feet MLLW.

3.5 Remaining Capacity

Current bathymetric conditions within the OHSPER site, based on bathymetry surveys conducted by NOAA in September and November 2013, are presented in Figures 11 and 17. Existing depths within the site range from -48 to -70 feet MLLW. It is the Port's plan to fill the site to the surrounding grade, which includes -45 feet and -50 feet MLLW fill areas due to the natural slope of the Long Beach Outer Harbor (Figures 2 and 18). Based on current bathymetry, the remaining capacities of the fill areas are approximately 1.6 and 1.7 mcy for the North and South Lobes, respectively.

3.6 Physical Environment

3.6.1 Tides and Currents

The proposed OHSPER site is located in the Long Beach Outer Harbor. Like the rest of Southern California, this area experiences mixed semi-diurnal tides (i.e., two high tides and two low tides per day, each with varying heights). The mean tidal range (i.e., the difference between mean high and low water) for the NOAA Long Beach, Terminal Island, California Station (ID 9410680) is 3.84 feet (NOAA 2016); the mean diurnal tidal range (i.e., the difference between the mean highest high and lowest low water) is 5.51 feet.

The Port's hydrodynamic model (Water Resource Action Plan [WRAP] Model, developed by Everest International Consultants) uses NOAA tide data and water quality data collected throughout the Greater Los Angeles and Long Beach Harbor Waters to predict the hydrodynamics of the system (POLA and POLB 2009). In the Greater Harbor Waters, specifically in the vicinity of the proposed

[4] This volume is slightly lower than what AMEC calculated in 2010 and 2013 (843,000 and 820,000 cy, respectively).

OHSPER site, typical flood and ebb current patterns predicted by the WRAP Model may be described as follows:

- Flood tide currents are strongest at Angels Gate and Queens Gate but quickly diminish in strength as they are bifurcated by Pier 400 in Port of Los Angeles and Pier J in Port of Long Beach. This results in a convergence of water and a further reduction in current speeds in Outer Long Beach Harbor as currents trend toward the east-northeast after passing through Angels Gate and from the west after passing through Queens Gate. Data generated from the WRAP model for a 2-week period in June 2005 were evaluated in greater detail. Current velocities showed some differences between the surface and bottom layers, with the surface layer having greater speeds (maximum of 0.37 foot/second) and more uniform northerly direction in the vicinity of the OHSPER site, whereas the bottom layer had lesser speeds (maximum of 0.21 foot/second) and trended toward the west throughout the project area—with the exception of along the western and northern-most portions of Outer Long Beach Harbor where bottom currents trended more north-northeasterly (Figure 14).
- In contrast to flood current patterns, during ebb tides there is a divergence of water in Outer Long Beach Harbor as water travels either west-southwest toward Angels Gate or east toward Queens Gate. Ebb currents tend to have lower speeds than flood currents, except when near the two gates. Current velocities are consistent throughout the water column with maximum surface and bottom current speeds of 0.26 and 0.16 foot/second, respectively.

3.6.2 Groundwater Interface

The proposed OHSPER site is located in the West Coast Groundwater Basin in the Coastal Plain of Los Angeles County. Prior to development of the Los Angeles Basin, groundwater in the West Coast Basin was recharged through local infiltration and underflow from adjacent groundwater basins and discharged to the Santa Monica Bay and San Pedro Bay. Due to over-pumping during the development of the Los Angeles Basin, water levels in most of the West Coast Basin declined and remained below sea level, which resulted in seawater intrusion along the coast. To control seawater intrusion, freshwater has been injected since the 1960s and 1970s at a series of injection wells, which constitute the West Coast Basin Barrier Project and Dominguez Gap Barrier Project (DGBP).

The proposed OHSPER site is located within San Pedro Bay in the Dominguez Gap area of the West Coast Basin, offshore from the DGBP. Although water levels have risen since the DGBP began operation in 1971, water levels in the vicinity of the DGBP through 1997 were still below sea level (Land et al. 2004). A search of the Los Angeles County Department of Public Works groundwater well data (DPW 2016) suggested that the water levels around the DGBP in 2008 were around sea level or slightly below sea level. Therefore, the DGBP has not completely stopped seawater intrusion in the Dominguez Gap area (Nishikawa et al. 2009).

The water-bearing units between the DGBP and the OHSPER site are grouped into an Upper aquifer system and a Lower aquifer system. The Upper aquifer system consists of, from top to bottom, the Gaspur aquifer, which is composed of Holocene deposits, and the Gage aquifer, which is composed of the upper Pleistocene deposits. The Lower aquifer system is composed of lower Pleistocene deposits, and consists of, from top to bottom, the Lynwood, Silverado, and Sunnyside aquifers. The Pico unit underlying the Lower aquifer system is composed of upper Pliocene deposits and is considered a low-transmissive zone.

Figure 19 shows the approximate extent of the Gaspur aquifer and the location of a hydrogeological cross section. The OHSPER site is beyond the farthest boring location in San Pedro Bay (Long Beach-5). Based on electromagnetic-induction log conductivity measurements as proxy for salinity, groundwater from both the Upper and Lower aquifer systems beneath the OHSPER site is of high salinity and high density. Therefore, the OHSPER site is outside the freshwater discharge zone.

3.7 Biological Conditions

The Long Beach Outer Harbor comprises various habitats including the Long Beach shallow water habitat, riprap along piers and wharves, breakwaters, and soft-bottom habitat. The area near the OHSPER site comprises soft sediments that support a diverse benthic population of fish and invertebrates. Kelp communities flourish along the breakwater to the south of the site. Marine mammals traverse the site on occasion. The Outer Harbor area is included in various regional marine monitoring programs and the Ports of Long Beach and Los Angeles periodic biological surveys.

Results of the 2013 to 2014 harbor-wide biological survey (MBC and Merkel 2016) suggest that the Los Angeles and Long Beach Harbor (Harbor) Complex continues to support healthy and robust biological communities. The establishment of eelgrass in Inner Harbor areas not previously colonized, and record canopy coverage of giant kelp, suggests that water clarity and quality continue to improve in the Harbor Complex. For the first time, a pollution-sensitive infaunal species was the most abundant species collected in Port sediments, and community parameters suggest that benthic conditions continue to improve. Fish and invertebrate communities within the Harbor are diverse and abundant, and region-wide changes in community composition and abundance were reflected within the Harbor Complex. Non-native species are established throughout the Ports of Long Beach and Los Angeles but do not appear to be proliferating more than previous biological surveys in 2000 and 2008. Kelp, macroalgae, fish, and birds undergo wide seasonal changes in distribution and abundance, but results in 2013 to 2014 were similar to those of previous surveys and reflect the improvements in water, sediment, and habitat quality in the Harbor Complex that began in the 1970s and continue to this day. Potential biological impacts associated with the site were considered as potential receptors when evaluating the chemical flux modeling data and determining interim and final cap thickness.

4 Evaluation of Management Alternatives for OHSPER Site

As summarized previously, the North Lobe contains material that is elevated in contaminants. The Port conducted a study to evaluate various management alternatives. During that evaluation, the South Lobe was planned for continual use as a sediment storage and disposal site. Sections 4.1 and 4.2 provide a summary of the management alternative evaluation for the North Lobe.

4.1 Management Alternatives for North Lobe

The Port conducted an alternatives analysis for the management of contaminated material within the North Lobe (Anchor QEA 2015a). The alternatives included:

- No action: This alternative consists of leaving contaminated material in place in the North Lobe and continuing to use the site as a temporary sediment storage site.
- Cap and close temporary aquatic storage site for future use: This alternative consists of placing an engineered cap[5] over the affected sediments in the North Lobe as an additional environmental protective measure to ensure that resuspension due to ship traffic does not occur and that there is minimal potential for chemical partitioning.
- Remove Port-placed impacted material and maintain temporary aquatic placement designation: For this alternative, all impacted Port-placed material (e.g., approximately 376,000 cy of material placed after 1998) would be excavated using a mechanical (clamshell) dredge and placed into a confined disposal facility fill site elsewhere within the Port that is permitted to receive such material. The North Lobe would then be returned to use as a temporary aquatic storage site. Designing and implementing this alternative would be costly and challenging, and the post-dredge surface would be more contaminated than the current surface.
- Remove all impacted material and maintain temporary aquatic placement designation: This alternative is similar to the option presented above, except it assumes removing all impacted material identified within the North Lobe (approximately 695,000 cy) regardless of how it may have arrived there. This includes material placed by the USACE prior to the Port's managed use of the site. This alternative would result in a cleaner post-dredge surface compared to the previous alternative but would be the most expensive option to implement and would require use of the greatest volume of capacity from future Port fills.
- Cap and fill site to surrounding elevation using clean material: Under this alternative, an initial clean sediment cap layer would be placed over the impacted sediments to provide a clean surface for Total Maximum Daily Load (TMDL) compliance. Later, additional lifts of clean sediment would be added to the North Lobe until the elevation reaches the surrounding bathymetry. All the material that would be placed into the North Lobe depression would have

[5] An engineered cap is one where computer models and other chemical and biological data inputs are used to determine the required cap thickness. Inputs include considerations for chemical partitioning, biological disturbances, and physical erosion or settlement.

been determined to be suitable for open ocean disposal. This alternative differs from current site use in that material would not be available for reuse.

- Development of CAD site for contaminated material: A CAD is essentially a confined disposal facility that is constructed underwater using an existing depression, or creating a depression, and typically holds contaminated material. Layers are placed inside the depression, allowed to settle, and then capped with clean sediment, typically to an elevation that matches the surrounding grade. This alternative would be similar to the previous alternative, except the material placed into the core of the fill would consist primarily of contaminated (unsuitable for ocean disposal) material. Intermittent layers may include clean material previously slated for ocean disposal.

4.2 Comparison of Management Alternatives for North Lobe

Each alternative was compared against a set of decision criteria to assist in selecting the most appropriate option for the site. The criteria represent key decision points that Port management can use to evaluate the costs and benefits from not only a short-term immediate perspective but also from a longer-term sediment management perspective. The criteria included the following:

- Green Port Policy: The Port has been implementing its Green Port Policy for more than 10 years and has recently readopted and updated the policy to emphasize its continuing commitment to improving the environment. The policy has resulted in innovative approaches to environmental restoration, renewable energy, water quality and sediment management, and air quality. As part of this proactive management approach, Port staff have developed a sediment management plan (Anchor QEA 2018) that describes the Port's preferred approach for managing clean and contaminated sediment in a responsible manner that favors beneficially reusing material as part of its capital development programs whenever possible. The development of a CAD site was determined to be supportive of and consistent with the Green Port Policy and the Port's sediment management plan.
- Permitting/agency acceptance: The CSTF was created in 1999 to develop a long-term management strategy for contaminated sediment treatment, disposal, and reuse. The basis of that strategy was to minimize disposal situations and promote beneficial reuse of sediments as Port fill material and for other economic purposes. The current PMP includes a provision that allows for short-term and long-term storage or permanent placement of clean sediments from within the Port boundaries. Any material (clean or contaminated) from outside of the Port, or contaminated material from within the Port, must be separately permitted for placement into the CAD facility. The development of a CAD site was determined to be consistent with CSTF policies and is likely to gain agency approval.
- Maintain use as sediment management site for clean sediments: The current PMP allows for the placement and reuse of clean (ocean-suitable) sediments from within the Port boundaries into the OHSPER site. Sediments placed into the site can be removed and reused beneficially

as fill for future capital improvement projects. Having the ability to store sediments for short or long periods for beneficial use among development projects is critical for Port operations and development. Without this option, the Port would have to either delay development activities until a fill site is available, which could cause tremendous economic impacts, or find alternate sources for fill material, which could also cause significant additional development costs. This decision criterion was developed to evaluate each alternative against its ability to maintain the OHSPER site for sediment storage as originally intended. If the CAD site is managed properly, it can continue to serve as a clean sediment management site for materials kept separate from contaminated materials.

- Provide opportunity for managing additional contaminated sediments: Current Port development plans may include Pier S terminal development and approach channel, both of which could generate large volumes of contaminated sediments that would require containment. Transporting and disposing that material in an upland landfill is not only costly but can also result in potentially significant air quality, traffic, and noise impacts associated with hauling the material via trucks on the local roads and highways. The OHSPER site currently has a large capacity for receiving sediments before the elevation reaches the surrounding bathymetry. Selecting a management option that includes the ability to receive and contain additional contaminated sediment represents a significant cost savings to future Port development projects, decreases environmental impacts, and provides greater flexibility in accommodating variable project schedules. The CAD alternative provides an opportunity to manage contaminated sediments.
- Requires relocation of contaminated sediments: The development of a CAD facility would negate the need to manage a large quantity of impacted sediment that could have a significant impact on future development projects as a result of lost fill capacity.
- Technical difficulty/environmental impacts: Each of the evaluated management alternatives requires a different degree of planning and development and impacts associated with the construction activities. The intent with this decision criterion is to compare the relative difficulty for implementing each alternative, including in that assessment the potential risk for causing environmental impacts outside the immediate work area. Building a CAD has a moderate degree of technical difficulty and risk of adverse environmental impacts.
- Implementation costs: This decision criterion seeks to compare the costs to implement each alternative not only from a direct implementation aspect but also from a larger Port management perspective. For example, if a specific alternative requires that material be excavated from the OHSPER site and placed into another Port fill site there will be both a direct cost to relocate the material as well as a future development cost associated with the lost capacity of the future fill. The CAD was determined to have a relatively low overall implementation cost.

4.3 Preferred Site Use Alternative for North Lobe and South Lobe

Using the decision criteria presented in Section 4.2, the Port's preferred alternative is to develop a CAD in the North Lobe of the OHSPER for the management of both clean and contaminated sediment. It is the Port's intent to continue to use the South Lobe, initially, for placement and reuse of clean material. During discussions with the CSTF members, it was recommended that the South Lobe also be considered and evaluated for use as a CAD site in anticipation of the Port's changing needs. Therefore, the CAD technical feasibility evaluation was expanded to include the South Lobe (Section 5).

This alternative is economically feasible, environmentally protective, compliant with both the Port's internal sediment management plan (Anchor QEA 2018) and the CSTF regional strategy, and allows for future use of the OHSPER site as a sediment storage and disposal area. Building upon the recent success of the NEIBP CAD and Port of Hueneme CAD, this alternative is also supported by the CSTF regulatory agencies, adding to its feasibility.

5 Technical Feasibility Evaluation for OHSPER CAD

The Port conducted a series of technical studies to support the design, permitting, and operation of the proposed OHSPER CAD site (Anchor QEA 2016a). Specific objectives of the technical studies were to determine cap thickness, ensure long-term integrity of the cap, and evaluate potential impacts during placement activities. These studies examined the following:

- Physical isolation of contaminants: Potential physical factors that affect the cap integrity were evaluated and include propwash, anchor scour, and bioturbation.
- Chemical containment: Site characteristics that may affect the migration of contaminants through advection or diffusive processes were examined.
- Contaminant mobilization during construction: Impacts from standard construction methods that may mobilize contaminants or affect water quality were estimated.

5.1 Physical Isolation of Contaminants

Physical isolation of contaminants may be compromised by physical disturbance or erosion of a cap. Due to the location and depth of the proposed OHSPER site, physical disturbance due to waves or currents is not a concern; however, the site will be susceptible to anchors and ship traffic. In addition, multiple species of benthic organisms live in the Outer Harbor, including deep bioturbators (i.e., ghost shrimp [*Neotrypaea californiensis*]). Bioturbation, or mixing of sediments by benthic organisms, has the potential to compromise or breach a cap and mobilize contaminants. Each of these considerations were evaluated to support the design of the cap and determine the appropriate cap thickness.

5.1.1 Propwash Scour Evaluation

Propwash (or propeller-induced resuspension of sediment) analysis was performed to evaluate the potential impacts of vessel movements on the proposed cap. Propwash-induced velocities and corresponding scour depths were calculated for the North and South Lobes for a variety of vessel types, tidal conditions, and representative capping materials (i.e., maximum amount of coarse-grained material, maximum amount of fine-grained material, and average condition of all material). The propwash analysis report is summarized below.

Bed velocities, critical scouring speeds, and maximum bed scour depths were predicted at two final elevations, -45 and -50 feet MLLW (-13.7 and -15.2 meters [m], respectively), for the three proposed capping materials, the selected tidal conditions (i.e., MLLW, mean sea level, mean higher high water, and lowest observed water level), and the representative vessel types (i.e., auto carrier, breakbulk, small and mid-size container, dry bulk, and liquid bulk). Predicted maximum bed velocities are

2.2 meters per second (m/s) at -45 foot MLLW elevations (expected to be caused by 4,000 to 8,000[6] twenty-foot equivalent unit container and liquid bulk vessels).

Critical scouring speeds necessary to initiate scouring of the capping materials at both lobes are estimated at 0.2 m/s for the maximum coarse-grained material type, 0.4 m/s for the average material type, and 0.7 m/s for the maximum fine-grained material type. For final elevations at -45 feet MLLW, predicted maximum bed scour depths are 0.6, 0.7, and 0.8 m for the maximum coarse-grained, average, and maximum fine-grained material types, respectively. As such, the scouring analyses indicate that none of the representative vessels and representative capping materials are expected to cause scour holes that exceed 0.8 m (2.6 feet) in depth.

5.1.2 Anchor Scour Evaluation

Both the North and South Lobes are located in the commercial anchorage grounds at the Port (Figure 20). Routine anchoring of large vessels may affect cap integrity and must be considered when evaluating the final cap thickness and determining if restrictions or institutional controls are needed. A review of existing literature was performed to evaluate anchor penetration depths and the impact on sediment caps.

As described in the *Guidance for Subaqueous Dredged Material Capping* (Palermo et. al 1998), for most capping projects, impacts to the cap due to anchoring are not usually a concern because the size of the area impacted by anchor scour is minimal compared to the size of the cap and the area disturbed by the anchor quickly fills in when the anchor is removed.

A few recent investigations have evaluated large (commercial) anchor scour to determine disturbance to bottom sediments. In 2013, a series of anchor dropping and drag tests were performed in the German North Sea to evaluate the penetration of ship anchors and determine the appropriate burial depth of submarine cables (Luger and Harkes 2013; Maushake 2013). Anchor drops were performed using an 8,325-kilogram (kg) AC-14 anchor and an 11,700-kg Hall anchor. Video recordings indicated that anchors remained largely on top of the sediment after being dropped and penetrated following the pull. Penetration depths ranged from 0.19 to 0.69 m for the AC-14 anchor and 0.26 to 0.88 m for the Hall anchor. It was determined that none of the anchors penetrated into the sediment more than 1.0 m.

The anchors used in these tests are representative of the design vessel, a 294-m cargo ship with 80,000 deadweight tonnage. The size of this vessel is consistent with the Panamax, which has a draft of 39.5 feet. Anchorage locations relative to the North and South Lobes are shown in Figure 20. The maximum draft allowed at Anchorages B-6 and B-9′ are 34.5 and 39.5 feet, respectively.[7] Therefore, ships anchoring at the OHSPER CAD site will be similar in size to—if not smaller than—the design vessel used in this study,

[6] The design vessel used in this study is representative of those that will be used at the CAD site. Larger vessels are not expected to berth at these anchorages due to the anchorage depths and corresponding maximum ship drafts.

[7] Based on minimum depth requirements and under keel clearance of 2.5 feet.

and anchors used in the penetration tests are representative of those that will be used at the CAD site. The measured penetration depths in this study are believed to provide a reliable estimation of what can be expected at the OHSPER CAD site during routine anchoring of large vessels.

5.1.3 Bioturbation Evaluation

Determination of the required cap thickness must include consideration for bioturbation by aquatic organisms. In soft-bottom marine substrates, bioturbation is the mixing and overturning of sediments caused by organisms residing in the sediments (benthic organisms). In terms of relative abundance, diversity, and biomass, the vast majority of benthic organisms reside in the upper few centimeters of the surface sediments (Berner 1980). Consequently, the upper few centimeters of most unconsolidated marine sediments are extremely well mixed and sometimes referred to as the mixed layer. In marine sediments, the mixed layer typically ranges from 10 to 15 centimeters (cm) in depth (Clark et al. 2001). However, some organisms burrow in sediments deeper than 15 cm, extending the mixed layer. A common method of estimating the lower extent of bioturbation is to examine those organisms present or likely to be present at the site and identify the deepest burrowers. Ghost shrimp inhabit San Pedro Bay and are used for this project to conservatively determine an acceptable cap thickness that will confine contaminated sediments to depths below deep burrowers. A literature review was performed to assess the bioturbation potential of ghost shrimp at the OHSPER site and determine the appropriate cap thickness to account for mixing by this deep borrower. A summary of the literature review is presented below.

The preferred habitat for dense beds of ghost shrimp is sandy or muddy intertidal to extremely shallow subtidal estuarine bays. The proposed OHSPER aquatic cap will be at a depth of approximately -40 to -50 feet MLLW, well below the preferred depth range. Existing regional information indicates the presence of *Neotrypaea sp.* but in relatively low densities. The deepest commonly reported burrowing depth for ghost shrimp is about 90 cm; however, only a small fraction of the shrimp in any bed are expected to reach these depths. The cap thickness to protect against bioturbation can be conservatively set at the usual reported lower limit of adult ghost shrimp burrowing, which is 60 cm. A cap thickness of 60 cm or greater should be more than protective of deep bioturbation with sporadic exceptions by a few individuals. The overall bioturbation rates at 60 cm below the cap surface are expected to be extremely close to zero. Consequently, a final cap thickness of more than 0.6 m (2 feet) would be expected to be sufficient to essentially prevent all bioturbation of underlying sediment.

5.2 Chemical Containment

Chemical containment must be considered to ensure long-term integrity of the cap. Contaminant flux through a cap may occur through advection or diffusive processes. Advection is the movement of porewater, which could occur due to groundwater flow. Diffusion is a much slower molecular

process where chemicals move from a higher to a lower concentration. The additional thickness for the chemical isolation component of the cap was evaluated using a chemical isolation model. Prior to modeling, a review of groundwater interaction at the site was performed.

5.2.1 Groundwater Interaction

Groundwater upwelling velocity is a key input parameter in the chemical isolation model and was evaluated from hydrogeological information in the vicinity of the site. The groundwater basin description is summarized in Section 3.6.2. The potential for groundwater upwelling at the site is low for the following reasons:

- The DGBP has not increased the water levels in the Dominquez Gap area substantially above the sea level. Therefore, the driving force for freshwater discharge to the San Pedro Bay is low.
- The OHSPER site is sufficiently offshore such that it is not within the zone where freshwater discharge occurs. Although Reichard et al. (2003) simulated some groundwater discharge to the San Pedro Bay in the Upper aquifer systems, the discharge (if present) would occur in areas much closer to the shore than the OHSPER site.

5.2.2 Chemical Isolation Analysis

A modeling assessment was performed to evaluate the cap's chemical isolation layer requirements. This modeling was performed consistent with U.S. Environmental Protection Agency (USEPA) and USACE guidance for designing subaqueous caps for aquatic systems (Appendix B of Palermo et al. 1998). The primary goal of this modeling was to simulate the transport of COPCs within the sediment cap to support the design of a cap that would maintain concentrations within the bioturbation zone that are below sediment quality guidelines. A summary of the chemical isolation analysis for the OHSPER site is presented below.

Specific material has not been identified for placement within the CAD site at this time. To evaluate the cap, modeling was performed for two types of representative disposal material, including the following:

- Dredge material throughout the Port based on historic sediment characterization studies performed from 2012 to 2016 (Anchor QEA 2012b, 2013, 2014b, 2016b; MBC 2014; Ramboll Environ 2016)
- Stockpiled material currently within the North Lobe (Anchor QEA 2015c)

COPCs were identified for modeling based on sediment chemical concentrations that exceeded ERM values. COPCs for Port dredge material include mercury, PAHs, DDTs, and PCB congeners. COPCs for North Lobe stockpiled material include mercury, PAHs, DDTs, chlordanes, and PCB congeners. The two representative disposal materials were evaluated separately.

The Lampert and Reible (2009) steady-state model was used for this assessment. This model has been approved by the USEPA and various state agencies for use at numerous other sediment sites. Using the steady-state model framework with the assumptions and input values, the model was used to simulate the transport of COPCs through a 1-foot-thick cap. This is the minimum cap thickness proposed for interim layers and less than the proposed cap thickness for the final layer. Model simulations were performed for each type of representative disposal material with capping material from the South Lobe and Outer Harbor. Results from the modeling analysis are presented in Tables 1 and 2.

The model predicted loading in the bioturbation zone (top 15 cm of the cap; expressed as a vertical average) at steady state. Average bioturbation layer loading was added to the initial sediment concentrations within the cap to determine the influence from disposal material. Final concentrations within the bioturbation layer were compared to ERL and ERM values to evaluate the potential for environmental impacts. As shown in Tables 1 and 2, the influence of underlying disposal material on concentrations within the top 15 cm of the cap at steady state was minimal, and all concentrations were below ERM values. Therefore, a 0.3-m (1-foot) cap would be sufficient to isolate COPCs and maintain concentrations within the bioturbation zone that are protective of benthic organisms.

Table 1
Model-Predicted Loading and Final Concentrations Within the Bioturbation Layer for Port Dredged Material

Capping Material	Initial Concentration in Cap (µg/kg; average)		Average Loading to Bioturbation Layer (top 15 cm; µg/kg)		Final Concentration in Bioturbation Layer (top 15 cm; µg/kg)		Sediment Quality Guideline (µg/kg)	
	South Lobe (A)	Outer Harbor (B)	South Lobe (C)	Outer Harbor (D)	South Lobe (A+C)	Outer Harbor (B+D)	ERL	ERM
Mercury	43.5	155	1.2E-05	2.1E-05	43.5	155	150	710
Total HMW PAHs[1]	6.6	291	110	2.4E-04	116	291	1,700	9,600
Total LMW PAHs[2]	0	66.8	100	44.8	100	112	552	3,160
Total PAHs	6.6	358	210	44.8	216	403	4,022	44,792
Total DDTs[3]	0	14.5	0.042	1.5E-07	0.042	14.5	1.58	46.1
Total PCB Congeners	0[4]	6.59	0.130	4.9E-07	0.130	6.59	22.7	180

Notes:
1. Total HMW PAHs are the sum of six HPAHs: benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene.
2. Total LMW PAHs are the sum of seven LPAHs: 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, fluorene, naphthalene, and phenanthrene.
3. Total DDTs are the sum of: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT.
4. PCB Aroclor data

Detected concentration is greater than ERL and less than ERM

E: Exponent

Table 2
Model-Predicted Loading and Final Concentrations Within the Bioturbation Layer for North Lobe Stockpiled Material

	Initial Concentration in Cap (µg/kg; average)		Average Loading to Bioturbation Layer (top 15 cm; µg/kg)		Final Concentration in Bioturbation Layer (top 15 cm; µg/kg)		Sediment Quality Guideline (µg/kg)	
Capping Material	**South Lobe (A)**	**Outer Harbor (B)**	**South Lobe (C)**	**Outer Harbor (D)**	**South Lobe (A+C)**	**Outer Harbor (B+D)**	**ERL**	**ERM**
Mercury	43.5	155	3.4E-06	6.6E-06	43.5	155	150	710
Total HMW PAHs[1]	6.6	291	3.0E-04	5.1E-04	7	291	1,700	9,600
Total LMW PAHs[2]	0	66.8	74.2	105	74	172	552	3,160
Total PAHs	6.6	358	74.2	105	81	463	4,022	44,792
Total DDTs[3]	0	14.5	1.7E-07	3.4E-07	1.7E-07	14.5	1.58	46.1
Total Chlordanes[4]	0[5]	0	4.3E-07	8.4E-07	4.3E-07	8.4E-07	0.5	6
Total PCB Congeners	0[6]	6.59	3.1E-07	6.3E-07	3.1E-07	6.59	22.7	180

Notes:
1. Total HMW PAHs are the sum of six HPAHs: benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, and pyrene.
2. Total LMW PAHs are the sum of seven LPAHS: 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, fluorene, naphthalene, and phenanthrene.
3. Total DDTs are the sum of: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT.
4. Total Chlordanes are the sum of: alpha chlordane, gamma chlordane, cis-nonachlor, oxychlordane, and trans-nonachlor.
5. For South Lobe, chlordane reported as the sum of all the identifiable chlordane components
6. PCB Aroclor data

Detected concentration is greater than ERL and less than ERM

E: Exponent

5.3 Contaminant Mobilization During Construction

Potential water column impacts must be considered during placement of sediment at the proposed OHSPER CAD site. Contaminant mobilization may occur as a result of sediment that is loss or dispersed off site or contaminants that are released to the water column. Short Term Fate (STFATE) modeling was performed to evaluate these concerns.

5.3.1 Potential Sediment Loss During Placement Operations

STFATE model scenarios were developed, executed, and evaluated in order to estimate the potential for off-site transport and loss of material during placement operations at the OHSPER site. Hydrodynamic data generated from the WRAP Model (developed by Everest International Consultants) and physical characteristics of sediments within the Port that have recently been evaluated as part of maintenance and construction dredging programs were used to inform the STFATE model. Results from the model scenarios were used to estimate sediment dispersion patterns associated with disposal operations at the North and South Lobe boundaries.

The STFATE model is a module of the Automated Dredging and Disposal Alternatives Management System developed by the USACE. STFATE predicts the transport of a single barge-load of dredged material through the water column and subsequently the area and thickness of deposits on the seabed through three phases of movement: convective descent (material settling through water column under the influence of gravity), dynamic collapse (neutral buoyancy and horizontal spreading), and passive transport-dispersion (dominated by ambient currents and turbulence). The model assumes material is not resuspended due to erosion or bedload transport once deposited on the seabed. Additional information regarding the model's capabilities and assumptions may be found in the Inland Testing Manual (USEPA and USACE 1998).

Input parameters to the model fall under four primary categories consisting of site description, velocity data, material type, and disposal operation. Results from the model scenarios were used to estimate depositional patterns within the North and South Lobe boundaries during various tidal currents. Key findings from these model simulations are as follows:

- Between 97.6% and 99.9% of the material deposited by a split-hull barge is predicted to be retained within the North or South Lobe boundaries.
- In all model scenarios, greater than 98% of the material was deposited within 335 feet of the placement location.
- The maximum observed thicknesses of deposited material ranged from 1.5 to 4.5 feet within the model grid cell directly associated with the placement location. Deposit thicknesses rapidly decreased (one order of magnitude) in adjacent model grid cells (within 125 feet).

These results suggest that material placement can be successfully achieved without significant losses of material due to drift and water currents. Disposal planning will be needed, however, to target disposal events to periods when currents are not at their greatest—as a way to minimize the risk—and when placing material around the edges of the target disposal area.

5.3.2 Water Quality During Placement Operations

STFATE was used to evaluate the maximum copper contaminant concentration within the boundary of the model grid. The California Toxics Rule (CTR) saltwater continuous concentration criteria for dissolved copper (3.1 micrograms per liter [µg/L]) was used in the model as the water quality standard. The background water concentration for copper was calculated as the average dissolved copper concentration (0.553 µg/L) measured in the Outer Long Beach Harbor (Station 16) as part of the Harbor Toxics TMDL compliance monitoring program for the four monitoring events occurring between summer 2014 and summer 2015 (Anchor QEA 2015d).

Three representative scenarios were selected for the water quality analysis. These included an average grain size condition, maximum observed total fine-grained condition, and the maximum observed total coarse-grained condition during a disposal event occurring on a flood tide at one of the three disposal locations. The maximum predicted copper concentration at any point (surface or mid-depth) was compared to the water quality criteria to determine if a potential for water quality exceedances existed.

For each modeled scenario, copper concentrations predicted in the water column were an order of magnitude below the CTR criteria of 3.1 µg/L. The maximum predicted copper concentration was 0.59 µg/L for the average grain size and copper concentration condition.

5.4 Summary of Findings

The special studies conducted to investigate specific concerns or environmental impacts suggest that CAD site development at the OHSPER site is technically feasible and can meet the Port's site use objectives for the area as a long-term sediment management facility. Results of the chemical diffusion, bioturbation, anchor scour, and chemical flux analyses suggest that a 1-m (3.3-foot) thick final cap layer is sufficient to provide chemical and physical isolation of the contaminated material located within the North Lobe and South Lobe.

6 Operations Management and Monitoring

In 2017, an OMMP was developed to document the planned approach for managing the site as both a disposal and reuse site for long-term sediment management (Appendix A). The OMMP relies heavily on the lessons learned during development of the NEIBP and Port of Hueneme CAD sites, both of which have been successfully permitted and constructed since 2001 with feedback from CSTF members. The objectives of the OMMP included the following key elements:

- Define the process for permitting and agency approval for site use
- Define the monitoring procedures for key aspects of site use, including:
  - Placement of materials at the site
  - Interim capping of unsuitable materials between long durations in placement events
  - Site closure/capping once maximum fill elevations have been achieved
- Define the mitigation measures that will be employed to minimize risks to the environment or impacts to Port operations
- Define procedures for notifying agency stakeholders of site use and monitoring results
- Define the process for updating and/or modifying the OMMP

6.1 Activities Requiring Permits/Authorization

From a regulatory perspective, both the proposed OHSPER site and the source material, whether intended for permanent disposal or temporary placement for future reuse, need to be permitted with both the USACE and RWQCB. The WASSS is currently permitted with both entities and included in the PMP for use as a sediment storage and disposal site for ocean suitable dredge material. The PMP is being amended to allow its use as a CAD site for the same current uses, as well as the long-term disposal of impacted or non-ocean suitable dredge materials.

Placement of material within the site must also be permitted with the USACE (Section 404 of the Clean Water Act and Section 10 of the River and Harbors Act) and RWQCB (Section 401 Water Quality Certification and Waste Discharge Requirements [WDRs]), specifying the intended location and nature of the sediment placement. Any permits issued by the agencies must recognize the OHSPER site OMMP and must not impose disposal restrictions that could conflict with the PMP or Tidelands Trust Agreement. With the exception of maintenance dredging projects under the Port's RGP, it is anticipated that these permits would be obtained on an individual basis for each project. The Port's current maintenance dredging RGP authorizes this site for disposal of clean sediments but requires project-specific sediment suitability determinations prior to dredging and placement. The RGP also imposes annual (150,000 cy) and cumulative (750,000 cy over 5 years) limits on maintenance dredging that may be performed under the permit.

6.2 Permit Application Process

The Port anticipates obtaining all necessary permits and approvals to operate the proposed OHSPER site as a multi-project sediment management site. Project-specific authorizations for sediment placement would be obtained by the Port under its RGP or as individual projects. Prior to applying for permits, sediment proposed for dredging would be characterized to determine its suitability for placement and to evaluate any potential impacts to water quality or risks to aquatic organisms. Dredged material generated within the Port through both maintenance dredging and capital dredging could be placed in the site subject to determination of suitability and regulatory approval. Environmental analysis under the California Environmental Quality Act and National Environmental Policy Act for dredging and placement of the material at the OHSPER site and any interim caps and construction of the final engineered cap would be analyzed on a project-by-project basis.

6.3 Procedures for Selecting Projects for Placement at OHSPER

Currently, the -45 and -50 feet fill areas can accommodate approximately 1.6 and 1.7 mcy of material, respectively. Prior to construction, material must be characterized to determine suitability for placement at the OHSPER site and to evaluate any potential impacts to water quality or risks to aquatic organisms. Under the proposed site use, any dredged material generated within the Port (e.g., capital and maintenance projects) would qualify for placement at the OHSPER site, as long as it is not considered as hazardous waste according to Title 22 regulations. Any material not suitable for ocean disposal will eventually require a cap to minimize exposure to aquatic life through direct contact with benthic organisms or via chemical partitioning. When possible, projects would be planned or phased for placement where less contaminated material is placed over more contaminated material. Only material that has been characterized as suitable for ocean disposal will be considered for interim and final cap layers.

6.3.1 Characterization of Placed Material

Material to be placed temporarily for reuse or for permanent disposal should be characterized as part of the CSTF review process to determine suitability for placement within the OHSPER site. Material determined suitable for unconfined placement can be placed at the site in bulk or used as interim or final capping material. Material determined unsuitable or not fully characterized for unconfined placement will need to be capped. As recommended in the Port's sediment management plan (Anchor QEA 2018), testing to evaluate potential environmental impacts associated with the placement of material within the site will include physical and chemical analyses of bulk sediment and may include elutriate chemistry using the standard elutriate test or biological testing depending on the placement objectives.

The testing approach will vary based on the proposed placement objectives. For unconfined placement (material not capped), testing will be performed in accordance with the Inland Testing

Manual (USEPA and USACE 1998). A Tier I evaluation with confirmatory chemistry may be sufficient to demonstrate suitability for unconfined placement if the material is very clean (i.e., less than the effects range low value) and exclusionary criteria have been met. Otherwise, a full Tier III evaluation,[8] including chemistry and biological testing, should be performed to demonstrate suitability for unconfined placement. For confined placement (material that is capped), sediment and elutriate chemistry using the standard elutriate test is sufficient. For both placement objectives, the testing approach and sampling results would be presented to the CSTF for review and approval.

Material for confined placement is limited by the magnitude of contaminants present. Contaminant levels in harbor sediments are generally acceptable, but heavily contaminated sediments that would fall into any of the following categories are not acceptable:

- Constitutes "hazardous waste" as termed by the USEPA or the California Department of Toxic Substances Control (DTSC)
- Has land use restrictions or other long-term operations and maintenance requirements imposed by DTSC or another regulatory agency

The required cap thicknesses for interim and final cap layers were evaluated as part of the technical studies to support the design and planning for the development of the OHSPER site. A chemical isolation model was used to determine the cap thickness that would be sufficient to isolate known COPCs (Section 5.2.2). Based on the chemical isolation model, a 0.3-m (1-foot) cap would be sufficient to isolate COPCs and maintain concentrations within the bioturbation zone that are protective of benthic organisms. If actual disposal material contains additional COPCs or concentrations are significantly higher than those modeled as part of this analysis, additional model simulations would be needed prior to placement to confirm the appropriate cap thickness.

The final cap layer should also consider other regulatory limits within the Port. The Harbor Toxics TMDL includes limits on fish tissue for human health consumption. It may be necessary to demonstrate PCBs, DDTs, and other bioaccumulatives are not at levels that would affect human health consumption risks.

[8] Details on conducting a Tier III evaluation, which includes physical and chemical analyses and biological testing, are provided in the Port's *Sediment Management Handbook for Dredge and Fill Projects* (Anchor QEA 2018). Chemical testing would include the standard suite of chemicals as defined by USEPA, and physical testing would focus on grain size analyses. Biological testing would include solid phase, suspended particulate phase, and bioaccumulation testing to determine whether anthropogenic contaminants of concern are present at concentrations such that unconfined aquatic disposal of the dredged material would pose an unacceptable risk of toxicity or bioaccumulation to biota.

6.4 Operating Procedures

6.4.1 Agency Coordination

Long-term use and management of the proposed OHSPER site will require a defined protocol and CSTF approval for individual dredging and placement projects. Future agency coordination will include annual reporting on site use and approval of dredge material suitability determinations for individual permit applications proposing material placement on a permanent or temporary basis within the OHSPER site. The Port will prepare and submit to the USACE, USEPA, RWQCB, and CSTF an annual report summarizing use of the OHSPER site for the previous year. The report will describe the project name, volume of sediment placed, and location of the placed sediment. The annual report will also describe the results of all monitoring activities during the previous year. The report will include a discussion of current and past monitoring data for the site and will propose adaptive management measures if appropriate for the site. The report will be submitted by the Port in a timely manner.

6.4.2 Placement Procedures

The proposed OHSPER site will be designed to receive clean and contaminated sediment. Some material may be placed in areas targeted for long-term disposal and confinement, while other material (ocean suitable only) may be temporarily placed until it can be reused as fill material) for a future capital development project. The North Lobe currently contains sediments with elevated chemical concentrations, and the South Lobe contains sediments found to be suitable for ocean disposal. Placement of contaminated material will be prioritized in the North Lobe (-45 feet MLLW fill area). Clean, medium- to coarse-grained material ideal for re-handling and reusing as geotechnical fill will be prioritized for placement in the South Lobe (-50 feet MLLW fill area) until the North Lobe can no longer accept dredged material.

The most common material placement method uses a bottom-dump scow. Dredged material is removed by mechanical means and placed in the bottom-dump scow. The scow is transported into the fill site by tugboats and is centered over the disposal location. After the specified disposal location has been reached, the scow will open (or split in the case of a split-hull barge), allowing the sediment to fall through the water column to the fill base. The contractor will use best management practices (BMPs) to control material placement.

Placement activities will be monitored using a differential GPS, along with barge-tracking software at all times to track placement activities. Using a pre-placement bathymetric survey, target placement areas within the OHSPER will be identified, and coordinates for "drop zones" will be provided to the contractor. Interim bathymetric surveys will be used to monitor all placement activities.

Releases of dredged sediment outside of the OHSPER site could occur during transport of the material from the source areas to the OHSPER placement area. Flat-deck barges, scows, and/or haul

barges that transport dredged sediment to and through the Port must be sealed to prevent leakage during transport. The contractor will control disposal of materials within the CAD so that loss of suspended sediment outside of the site itself, as determined by water quality monitoring, will be below the limiting criteria set forth in the WDRs.

6.4.3 Interim Capping Procedures

For instances when contaminated material (non-ocean suitable) will be left uncovered for longer than 12 months, an interim cap layer of ocean suitable material will be placed over the impacted material. As described in Section 5, a series of technical studies were performed to support the design, permitting, and operation of the CAD site. One of the specific objectives was to determine cap thickness. Based on the chemical isolation model, a 0.3-m (1-foot) cap would be sufficient to isolate COPCs and maintain concentrations within the bioturbation zone that are protective of benthic organisms. Interim caps will be placed at a minimum thickness of 0.3 m (1 foot). The interim cap layer would be designed and constructed to prevent disturbance. Likewise, specific BMPs would be incorporated into engineering design specifications to provide the appropriate guidance for construction, including means and methods. Placement methods and BMPs are consistent with those described in Section 6.4.2.

6.4.4 Closure Procedures

Sediment placement within the OHSPER site will be limited to the elevations of the surrounding grade (-45 and -50 feet MLLW). Sufficient capacity must be maintained within the site to allow placement of the final cap without exceeding target elevations and impacting navigation or operation of the existing anchorages. Site closure can be assumed when the usable capacity of the disposal areas has been achieved. It is possible that site closure schedules for the North (-45 feet MLLW fill area) and South Lobes (-50 feet MLLW fill area) will occur on different time scales, so each site will need to be evaluated independently. For the purpose of this document, "site closure" is defined as the point when no further placement events can occur due to site bathymetry and the final cap covering has been placed over the site.

As described in Section 5, a series of technical studies were performed to support the design, permitting, and operation of the CAD site. Specific objectives were to examine the physical isolation of contaminants and chemical containment to determine cap thickness. Based on the results of the bioturbation, propwash, anchor scour, and chemical isolation analyses, a 1-m (3.3-foot)-thick final cap layer is sufficient to provide chemical and physical isolation of contaminated material within the OHSPER site. Cap design considerations for developing a CAD site at the current WASSS are simplified due to the existing site geometry. The final cap layer would be designed and constructed to prevent disturbance by vessel or anchor scour. Likewise, specific BMPs would be incorporated into engineering

design specifications to provide the appropriate guidance for construction, including means and methods. Placement methods and BMPs are consistent with those described in Section 6.4.2.

6.5 Monitoring

6.5.1 Construction Monitoring

Construction monitoring for placement activities at the OHSPER will focus on confirming that contaminated sediments are not deposited outside of the designated CAD site. To achieve this objective, the following measures are proposed:

- Water column turbidity monitoring will be conducted on a routine basis to assess off-site transport during disposal operations.
- Bathymetric surveys will be used to confirm deposition area.

Based on the results of environmental monitoring, the Port may amend the placement methods to better match site conditions and minimize potential impacts.

6.5.1.1 Water Quality Monitoring

Water quality monitoring will be performed during construction to assess loss of materials outside the project boundaries and confirm water quality conditions are within the prescribed limits of relevant regulatory requirements (e.g., WDRs). The Port has designated a placement project boundary that defines the area in which temporary water quality impacts may occur. The project boundary includes the extent of the placement area, construction equipment, and site containment BMPs. Placement activities for the North (-45 feet MLLW fill area) and South Lobes (-50 feet MLLW fill area) will be conducted within the project boundary as presented in Figure 21. BMPs will be used, as needed, to reduce or limit suspended particulates and related water quality impacts outside of the project boundary. Potential loss of material outside the project boundary will be evaluated by particulate concentrations in the water column. A 30% decrease in light transmittance at a downcurrent monitoring location will serve as an indicator of potential migration of project materials off site.

Water quality monitoring will be performed during placement activities at two locations, one station 300 feet upcurrent of the project boundary to establish background conditions and one station 300 feet downcurrent of the project boundary to evaluate potential project-derived suspended particulate concentrations. Station locations will be positioned based on the tidal direction. Example sampling locations based on a hypothetical tidal direction are presented in Figure 21.

Water quality monitoring requirements are presented in Table 3. During placement activities, water quality monitoring will be conducted two times per week for the first 2 weeks of sediment placement and then weekly thereafter. Monitoring will be performed at least 1 hour after the start of sediment placement activities. Light transmittance, dissolved oxygen (DO), pH, and total suspended solids

(TSS) will be measured, as well as visual observations assessed at each station to determine potential short-term water quality impacts from placement activities. All water quality methods will meet those prescribed in the WDRs.

Table 3
Water Quality Monitoring Requirements

Parameter	Units	Stations	Timing and Frequency
Light transmittance[1]	% transmittance	300 feet upcurrent and 300 feet downcurrent of project boundary	Two times per week during the first 2 weeks of placement activities and then weekly thereafter (for each placement episode)
DO[1]	mg/L		
pH[1]	pH units		
TSS[2]	mg/L		
Visual observations	NA		

Notes:
1. Measurements will be taken at three discrete depths (surface, mid-water, and bottom).
2. TSS water sample will be collected at mid-depth.

6.5.1.2 Bathymetric Surveys

Bathymetry will be conducted prior to construction to establish baseline conditions and as needed during construction to monitor successful placement of contaminated material into the disposal cell and deposition outside the disposal area. During capping, bathymetric surveys will be performed to ensure cap material has been placed evenly over the entire site. A post-construction bathymetric survey will also be performed to quantify the final configuration and elevations of the OHSPER site and confirm the desired cap thickness was successfully achieved. The post-construction bathymetric survey following placement of the final cap layer will provide a baseline for comparison to long-term bathymetric surveys of the OHSPER site.

6.5.2 Post-Closure Long-Term Monitoring

Long-term monitoring is required after the final cap layer is complete to verify that the CAD site has maintained its physical integrity and that the cap is maintaining its ability to sequester underlying contaminants. These parameters will be measured through the use of periodic post-construction bathymetric surveys and sediment coring of the cap layer. Long-term monitoring will be performed at predetermined intervals following completion of construction, as shown in Table 4.

Table 4
Long-Term Monitoring Schedule

Monitoring Activities	Monitoring Frequency Post-Construction							
	Immediately Post-Placement – Baseline	6 Months	1 Year	2 Years	3 Years	4 Years	5 Years	10 Years
Bathymetric survey	X	X	X	X	X	X	X	X
Sediment core sampling	X	NA	X	NA	NA	NA	X	X

6.5.2.1 Bathymetric Surveys

A post-construction cap bathymetric survey will be performed immediately following placement of the final cap layer to quantify the final configuration and elevations of the capped site and confirm the desired minimum cap thickness was successfully achieved. This information will provide a baseline for comparison to long-term bathymetric surveys of the OHSPER site. Bathymetric surveys will be conducted at set intervals, following the completion of the final cap layer, to quantify the configuration and elevations of the capped site. Surveys will be conducted at 6 months and 1 year following placement of the final cap layer and then annually thereafter up to 5 years (Table 4). After 5 years, if the cap is performing as predicted, the monitoring frequency will be reduced. An additional survey will be conducted 10 years following placement of the final cap layer to confirm that design criteria continue to be met. After 10 years, if the cap is performing as predicted, additional monitoring will not be performed.

Cap elevations from each monitoring event will be compared to this baseline data and other long-term monitoring events to look for cap erosion, accumulation of materials on the cap surface, settlement of underlying or cap material, slope movement, or other physical disturbances of the cap. If anomalies are detected that might pose a threat to cap integrity, additional monitoring may be performed, including diver observations and/or remote cameras.

6.5.2.2 Sediment Core Sampling

Sediment core sampling will be performed immediately following placement of the final cap layer to establish baseline data, as well as 1 year, 5 years, and 10 years post-construction to evaluate cap thickness and chemical containment (Table 4). Sediment core sampling will be performed at 33 stations, including 15 stations within the -45 feet MLLW fill area (North Lobe) and 18 stations within the -50 feet MLLW fill area (South Lobe). Sampling locations were selected based on a grid sampling design to provide good spatial representation of each fill area. Proposed sampling locations are presented in Figures 22 and 23. Sediment cores will be collected to a depth that penetrates through the cap and into the underlying sediments. As previously described, a 1-m (3.3-foot)-thick final cap layer is proposed at the OHSPER site to provide chemical and physical

isolation of contaminated material. Therefore, sediment cores will be collected to a target depth of 5 feet below the sediment surface to ensure collection of the underlying material and the interface with the overlying cap.

Multiple subsamples will be collected from each core to provide vertical resolution of the physical and chemical properties of the sediment cap. Visual observations of the sediment core may not indicate an obvious boundary between the cap and the underlying material; therefore, subsamples will be collected based on set intervals (not stratification observed in the field). Each sediment core will be vertically segmented into 0.5-foot intervals down to a depth of 5 feet below the sediment surface. Initially, only the surface (top 0.5 foot) and every other sample interval down to 3.5 feet will be submitted for physical and chemical analyses. This will include recently deposited sediment on the core surface, multiple intervals from the cap layer, and the underlying material. The remaining sample intervals will be archived to allow for additional analysis to further delineate the cap thickness and vertical extent of chemical migration, if needed. The sediment core schematic showing sample intervals and prescribed testing is presented in Figure 24.

Physical and chemical analyses of sediment sample intervals were selected to determine whether any chemicals are migrating from the underlying sediment into the cap. Contaminants of concern include those previously elevated at the OHSPER site prior to placement activities and those existing within the Port that may be disposed of within the CAD. Physical and chemical analyses will include total solids, grain size, total organic carbon, metals, PAHs, PCB congeners, organochlorine pesticides, and organotins.

Sediment chemistry data will be analyzed to determine cap thickness and evaluate the cap's ability to sequester underlying contaminants. Chemistry will be compared to baseline chemistry data to determine whether any chemicals are migrating from the underlying sediment into the cap sediment. If, during long-term monitoring, increases in chemicals are found only in surface layers of the cap, this would be indicative of off-site chemical sources being deposited on the cap surface (rather than migration from beneath the cap). Because mixing or diffusion of chemicals through sediment is a time-dependent process, migration from underlying sediments will be observable first in the deepest layers of the cap. Cap thickness will be determined using visual clues and chemistry data.

6.5.3 Event-Related Monitoring

In addition to the long-term monitoring activities in Section 6.5.2, additional monitoring of the final cap layer will be conducted in the event of a major seismic event or a major wind or storm event that results in vessels being dislodged from the overlying anchorages. The occurrence of a major seismic event could result in slope movement, uneven settlement, or breaches of the cap surface. Likewise, while water depths at the site are too great to see excessive scour, a major wind or storm event could result in vessels breaking loose from their anchorages and dragging their anchors over the surface of

the CAD causing excessive mixing. To account for these unlikely, but potential, occurrences, the following mitigation measures will be conducted:

- In the event of a significant seismic event (defined as greater than a 6.0 magnitude earthquake), the Port will immediately conduct a bathymetric survey (described in Section 6.5.1.2) of the site and compare against previous events to look for evidence of slope movement, uneven settling, or fissures in the cap surface. If the results of the survey suggest that significant changes have occurred, additional monitoring techniques such as side-scan sonar or diver surveys will be conducted to inspect the damage and develop a plan for repair.
- In the event of a major wind or storm event at the site that results in vessels being dislodged from the overlying anchorages such that potential damage could have occurred at the site, the Port will follow a similar process as with the seismic events, which includes a bathymetric survey and possibly follow-up investigations to look for damage to the site.

If either of the above events are triggered, the Port will notify the CSTF agencies that monitoring has commenced and will share the results of the field surveys to determine if modifications to long-term monitoring are warranted.

6.6 Navigation and Safety Requirements

To ensure material placement and capping procedures are followed per the Port's commitments outlined in this document, strict guidelines will be used to direct any contractors performing the dredge material placement and/or capping activities. Typical BMPs like GPS and dump scow tracking will be used to ensure that material placement occurs only in pre-specified locations, and routine bathymetric surveys will be used to closely monitor actual disposition of the material. All requirements will be detailed in the engineering specifications, including contingencies for suspending or altering procedures if material is not placed in the proper location.

In addition to documenting detailed procedures for ensuring proper placement within the OHSPER site, close coordination will occur with the Port Pilots to ensure that placement activities do not disrupt vessel navigation or anchoring procedures. All contractor movements to and from the site will be coordinated to prevent potential safety concerns.

6.7 Contingency Plans

Environmental and maritime safety is of primary importance in the operation and management of the OHSPER site. However, it is recognized that unforeseen events can occur. Sound plans of action are required to ensure consistent and appropriate actions are taken to deal with such events.

6.7.1 Emergency Notification Procedures

Each engineering design package prepared by the Port that includes material placement or capping at the OHSPER site will include a detailed plan for handling emergency notifications and communications. The contractor's plan will include acknowledgment and specific points of contact in the event of emergencies. During the pre-disposal meeting, the contractor will be provided 24-hour emergency numbers for the City, USACE, USEPA, U.S. Coast Guard, and the Long Beach Police Department, with specific instructions on who to contact in the event of an emergency.

6.7.2 Incidents and Unusual Occurrences

The Port, which is responsible for the operation and management of the site, will work with the disposal contractor to establish safe working conditions within the site. At the pre-disposal meeting and in the contract agreement to be executed between the contractor and the Port for disposal in the OHSPER, it will be emphasized that the contractor's tug captain and USACE-certified inspector are the first line of defense for ensuring safety and compliance at the site. It will be emphasized that no activities should be started if the potential for problems appears possible and that any ongoing disposal activities should be ceased once the potential for problems arises. It is anticipated that most remedies will be precautionary (e.g., wait for better weather; repair faulty disposal equipment; alter disposal equipment; alter disposal methods; and coordinate conflicting activities among separate, ongoing disposal events).

If incidents/unusual occurrences do occur, the contractor and the Port will immediately cease the specific disposal activity and assess the situation. Remedies will be identified and provided to the Port and, if necessary, the U.S. Coast Guard for their concurrence. The contractor will be required to provide details on how the incident occurred and what immediate steps were taken to limit the extent of impact. The contractor will be required to report on immediate actions and notifications made. The Port will assess this information and evaluate the proposed remedy of the occurrence.

The Port will direct environmental monitoring during all specified disposal activities. The results of this monitoring will be reported to the Port. The Port will evaluate these results and work together to determine whether operations are environmentally sound. The results of environmental monitoring may require operational methods to be modified to help meet the determined goals.

Any change in dredged material disposal techniques, methods, or equipment must receive prior approval from the regulators, if relevant to provisions in the permits. Modifications to environmental permits may be required. If it becomes impractical to meet the criteria, considering the environmental and physical conditions within the site and equipment and methods available to the contractor, then engineering solutions will be considered and proposed. Modifications to the proposed actions and notifications described above will be made as lessons are learned in the operation and management of the site.

6.7.3 Cap Effectiveness and Maintenance Actions

Monitoring procedures were developed to meet the following specific objectives:

- Ensure that all materials are placed within the defined limits of the OHSPER site and not lost due to water current or improper placement techniques
- Ensure that placement of impacted materials into the OHSPER site and/or clean capping layers does not cause water quality impacts to adjacent biological communities
- Ensure that interim and final cap layers are placed per agreed-upon thicknesses and locations
- Ensure that placed materials remain isolated from the environment and are not disrupted due to Port operations or external environmental events

The Port shall be responsible for collecting suitable data to make these evaluations and reporting the results to the CSTF stakeholders. Any failure in this process will result in the need to alter or suspend use of the site until modifications can be developed and approved by the CSTF. Upon closure, the Port will be responsible for long-term monitoring and maintenance of the final cap layer to ensure it is not disturbed.

7 References

AMEC (AMEC Earth & Environmental, Inc.), 2010. *Final Report Western Anchorage Sediment Storage Site Inventory: Summary of Sediment Chemistry, Toxicity, and Bioaccumulation Test Results*. Prepared for the Port of Long Beach Planning Division. February 2010.

AMEC Foster Wheeler, 2017. *Revised Administrative Draft Initial Study/Mitigated Negative Declaration*. Outer Harbor Sediment Placement and Ecosystem Restoration (OHSPER) Site Development. September 2017.

Anchor QEA (Anchor QEA, LLC), 2012a. *Sampling and Analysis Report*. Western Anchorage Sediment Characterization. Prepared for the Port of Long Beach. June 2012.

Anchor QEA, 2012b. *Sampling and Analysis Report*. Piers T and J Sediment Characterization. Prepared for the Port of Long Beach. June 2012.

Anchor QEA, 2013. *Sampling and Analysis Report*. Port of Long Beach Phase I Maintenance Dredging. Prepared for the Port of Long Beach. November 2013.

Anchor QEA, 2014a. *Sampling and Analysis Report*. 12-year post-construction monitoring of the NEIBP. Prepared for the Los Angeles District Corps of Engineers. July 2014.

Anchor QEA, 2014b. *Sampling and Analysis Report*. Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo Sediment Characterization. Prepared for the Port of Long Beach. November 2014.

Anchor QEA, 2015a. *Western Anchorage Sediment Storage Site Management Alternatives Evaluation*. Prepared for the Port of Long Beach. July 2015.

Anchor QEA, 2015b. *5 Years Post-Construction Long-Term Monitoring Report, Port of Hueneme CAD Site Construction*. June 2015

Anchor QEA, 2015c. *Sampling and Analysis Report*. Western Anchorage Sediment Storage Site Sediment Characterization. Prepared for the Port of Long Beach. January 2015.

Anchor QEA, 2015d. 2014/15 *Annual Report. Harbor Toxics TMDL Coordinated Compliance Monitoring and Reporting, Greater Los Angeles and Long Beach Harbor Waters*. December 2015.

Anchor QEA, 2016a. *Outer Harbor Sediment Placement and Ecosystem Restoration Site Draft Confined Aquatic Disposal Feasibility Evaluation*. July 2016.

Anchor QEA, 2016b. *Sampling and Analysis Report*. Pier T Berth T124 Maintenance Dredging. Prepared for the Port of Long Beach. May 2016.

Anchor QEA, 2018. *Sediment Management Handbook for Dredge and Fill Projects*. Prepared for the Port of Long Beach. September 2018.

Berner, R.A., 1980. *Early Diagenesis*. Princeton, New York: Princeton University Press.

Clarke, D.G., M.R. Palermo, and T.C. Sturgis, 2001. *Subaqueous cap design: Selection of bioturbation profiles, depths, and rates, DOER Technical Notes Collection*. ERDC TN-DOER-C21, U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.

CSLC (California State Lands Commission), 2019. "City of Long Beach." Accessed April 22, 2019. Available at: https://slc.ca.gov/granted-public-trust-lands/grantees/city-of-long-beach/.

CSTF (Los Angeles Region Contaminated Sediments Task Force), 2005. *Contaminated Sediments Task Force: Long-Term Management Strategy*. Prepared by Anchor Environmental, CA L.P.; Everest International Consultants, Inc.; and AMEC.

DPW (Los Angeles County Department of Public Works), 2016. Groundwater well data. Accessed July 5, 2016. Available from: http://dpw.lacounty.gov/general/wells/.

EMI (Earth Mechanics, Inc.), 2012. *Geotechnical Data Report.* Dredge Material Source Characterization. Phase 2 Vibracore Program. Middle Harbor Redevelopment Project, Port of Long Beach, California. Prepared for Moffatt & Nichol. February 2012.

Knatz, G, 1998. Memorandum to Board of Harbor Commissioners. Regarding: Release of Port Master Plan Amendment 11 and Negative Declaration. January 28, 1998.

Lampert, D.J., and D. Reible, 2009. "An Analytical Modeling Approach for Evaluation of Capping of Contaminated Sediments." *Soil and Sediment Contamination: An International Journal* 18(4):470-488.

Land, M., E.G. Reichard, S.M. Crawford, R.R. Everett, M.W. Newhouse, and C.F. Williams, 2004. *Ground-Water Quality of Coastal Aquifer Systems in the West Coast Basin, Los Angeles County, California, 1999-2002*. U.S. Geological Survey Scientific Investigation Report 2004-5067.

Long, E.R., D.D. MacDonald, S.L. Smith, and F.D. Calder, 1995. "Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments." *Environmental Management* 19:81-97.

Luger, D. and M. Harkes, 2013. *Anchor Tests German Bight – Test set-up and results*. Project Report 1207052-002-GEO-0003, Deltares. September 2013.

Maushake, C., 2013. *How deep does an anchor penetrate the seafloor?* 6th Workshop "Seabed Acoustics," Rostock, November 14-15, 2013.

MBC (MBC Applied Environmental Sciences), 2014. *Sampling and Analysis Report.* Port of Long Beach Maintenance Dredge. Phase II Mechanical Dredge Sediment Characterization 2014. Prepared for the Port of Long Beach. February 2014.

MBC and Merkel (Merkel and Associates), 2016. *2013-2014 Biological Surveys of Long Beach and Los Angeles Harbors*. Prepared for Port of Long Beach and Port of Los Angeles. June 1, 2016.

Nishikawa, T., A.J. Siade, E.G. Reichard, D.J. Ponti, A.G. Canales, and T.A. Johnson, 2009. "Stratigraphic controls on seawater intrusion and implications for groundwater management, Dominguez Gap Area of Los Angeles, California, USA." *Hydrogeology Journal* 17:7:1699.

NOAA (National Oceanic and Atmospheric Administration), 2013. Report for H12617. Accessed January 2016. Available from: http://www.ngdc.noaa.gov/docucomp/page?url=http://surveys.ngdc.noaa.gov/mgg/NOS/hsmdb/H12001-H14000/H12617_hsmdb.xml&view=hydro/survey&header=none.

NOAA, 2016. National Oceanic and Atmospheric Administration. Tides & Currents. Accessed June 2016. Available from: https://tidesandcurrents.noaa.gov/stationhome.html?id=9410680.

Palermo, M.R., J.E. Clausner, M.P. Rollings, G.L. Williams, T.E. Myers, T.J. Fredette, and R.E. Randall, 1998. *Guidance for Subaqueous Dredged Material Capping*. Technical Report DOER-1, U.S. Army Corps of Engineer Waterways Experiment Station, Vicksburg, Mississippi.

POLA and POLB (Port of Los Angeles and Port of Long Beach), 2009. *Port of Los Angeles and Port of Long Beach Water Resources Action Plan Final Report.* August 2009.

Ramboll Environ, 2016. *Dredged Material Sampling and Analysis Report.* Pier A Berths A88-A96. Prepared for the Port of Long Beach. February 2016.

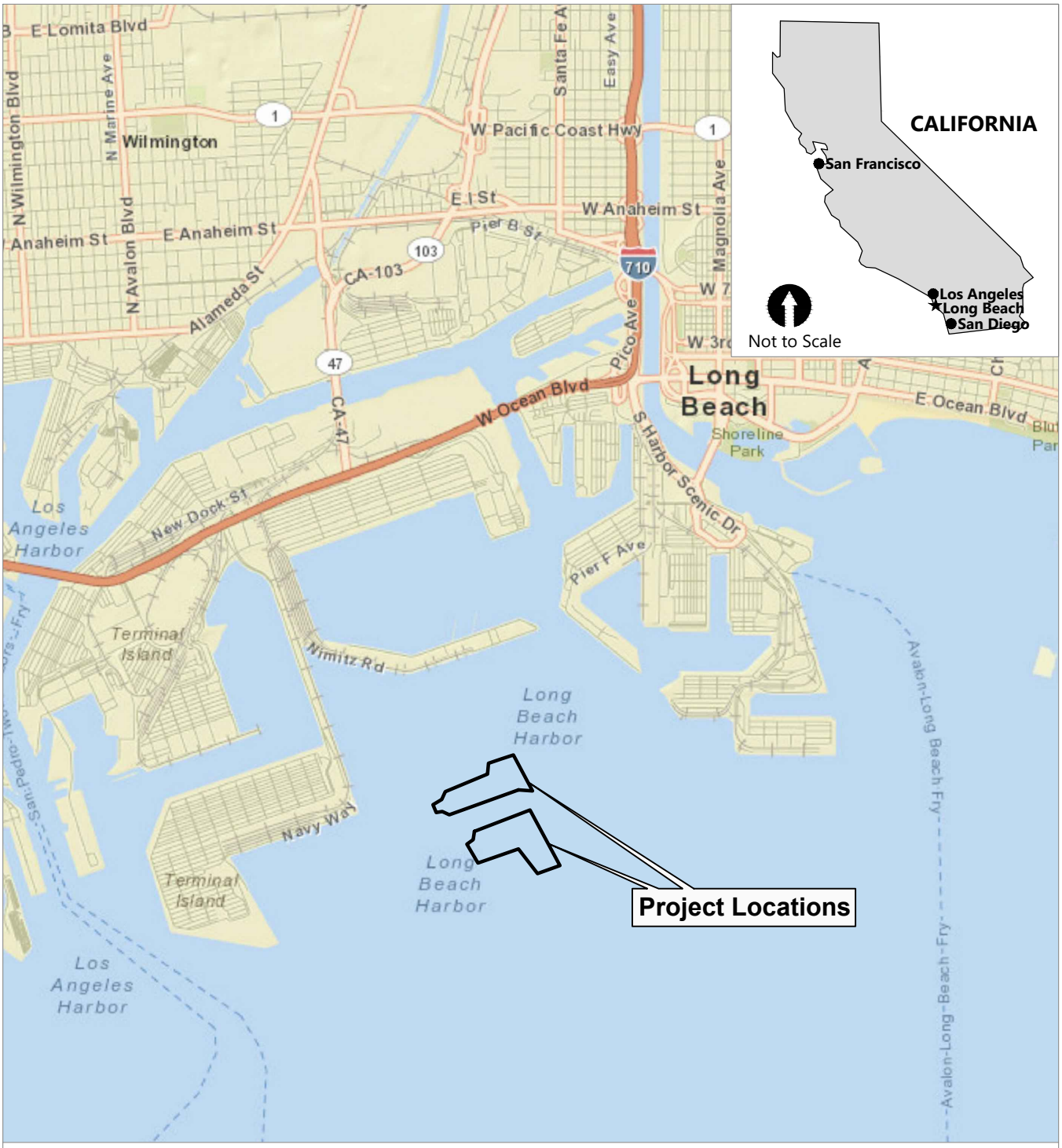
Reichard, E.G., M. Land, S.M. Crawford, T. Johnson, R.R. Everett, T.V. Kulshan, D.J. Ponti, K.L. Halford, T.A. Johnson, K.S. Paybins, and T. Nishikawa, 2003. *Geohydrology, geochemistry, and ground-water simulation-Optimization of the Central and West Coast Basin, Los Angeles County, California*. U.S. Geological Survey Water-Resources Investigation Report 03-4065.

Sea Surveyor (Sea Surveyor, Inc.), 1994. *Queen's Gate Dredging Geotechnical and Chemical Investigation, Final Report*. Prepared in conjunction with MEC Analytical Systems, U.S. Army Corps of Engineers Los Angeles District, Diaz Yourman & Associates, and MESA3, Inc., for the Port of Long Beach. December 1994.

USACE (U.S. Army Corps of Engineers), 2000. *Los Angeles County Regional Dredged Material Management Plan 905b Reconnaissance Report.*

USEPA (U.S. Environmental Protection Agency) and USACE, 1998. *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual: Inland Testing Manual*. USEPA-823-B-94-002. USEPA, Office of Water (4305).

Figures



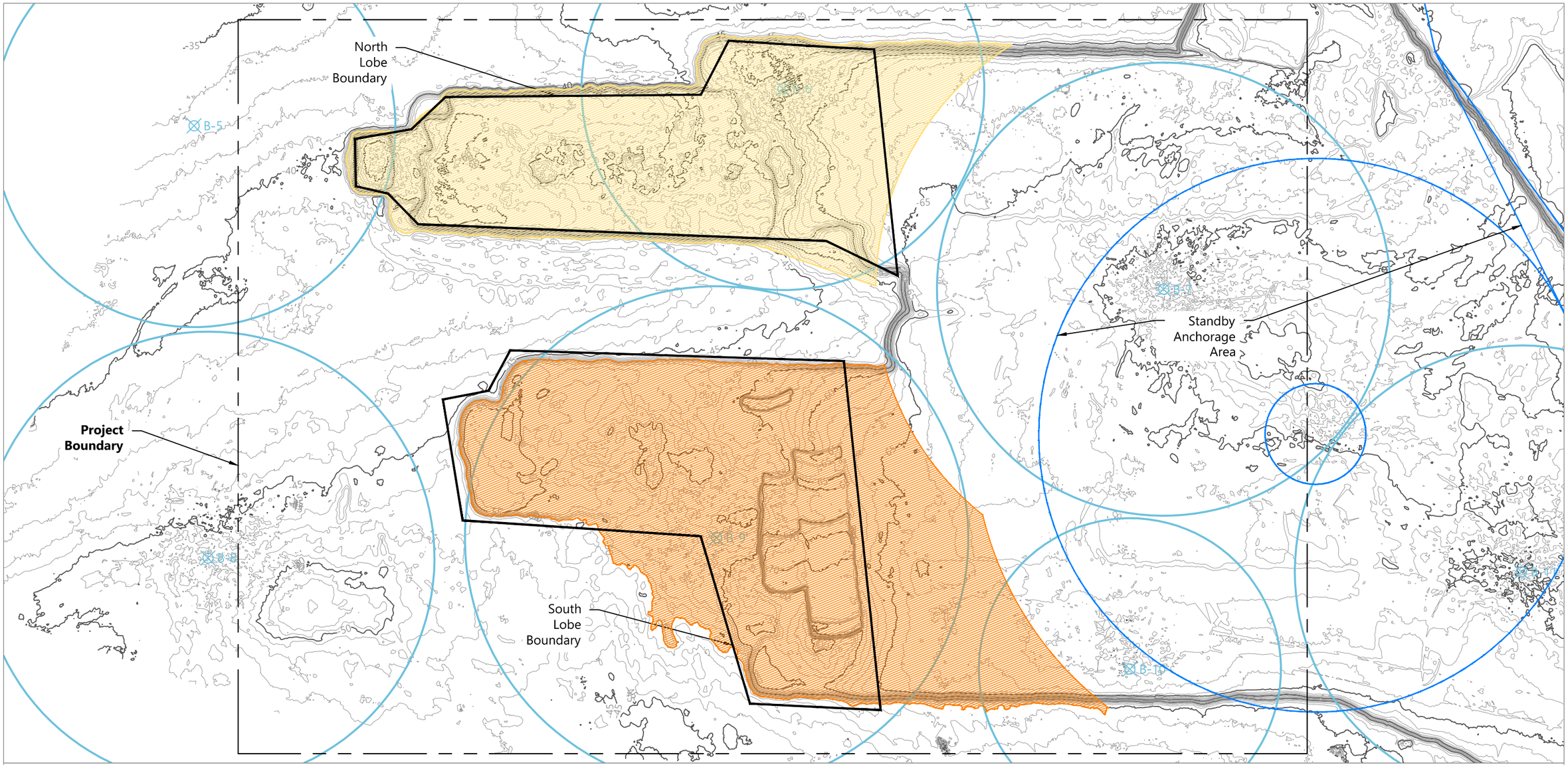
AERIAL SOURCE: Basemap from ESRI.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.

Publish Date: 2019/04/18 11:18 AM | User: mpratschner
Filepath: L:\AutoCAD Project Files_Projects\0159-KPFF\POLB Western Anch\0159-RP-002 VIC BATHY COMPARISON.dwg Figure 1

ANCHOR QEA

Figure 1
Vicinity Map

Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013. Anchorage locations provided by Port of Long Beach.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

-55 Contours from 2013 Bathymetry

B-# Port of Long Beach Anchorage Number

Anchorage Location

-45 Fill Area

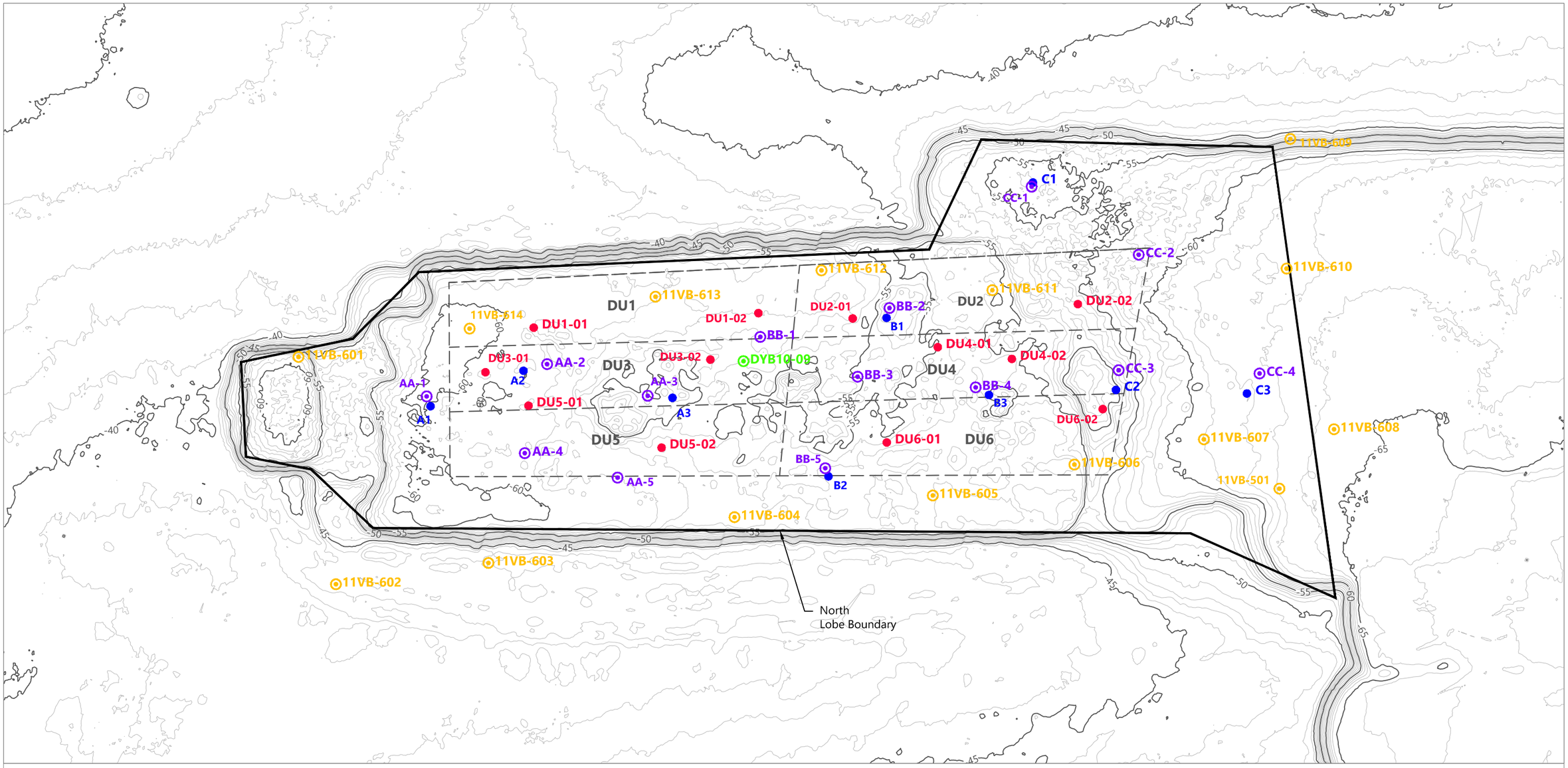
-50 Fill Area

Publish Date: 2019/04/22 8:38 AM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0343 RP-002 PLACEMENT.dwg Figure 2

ANCHOR QEA

Figure 2
North (-45 Feet MLLW) and South (-50 Feet MLLW) Lobe Fill Areas

Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

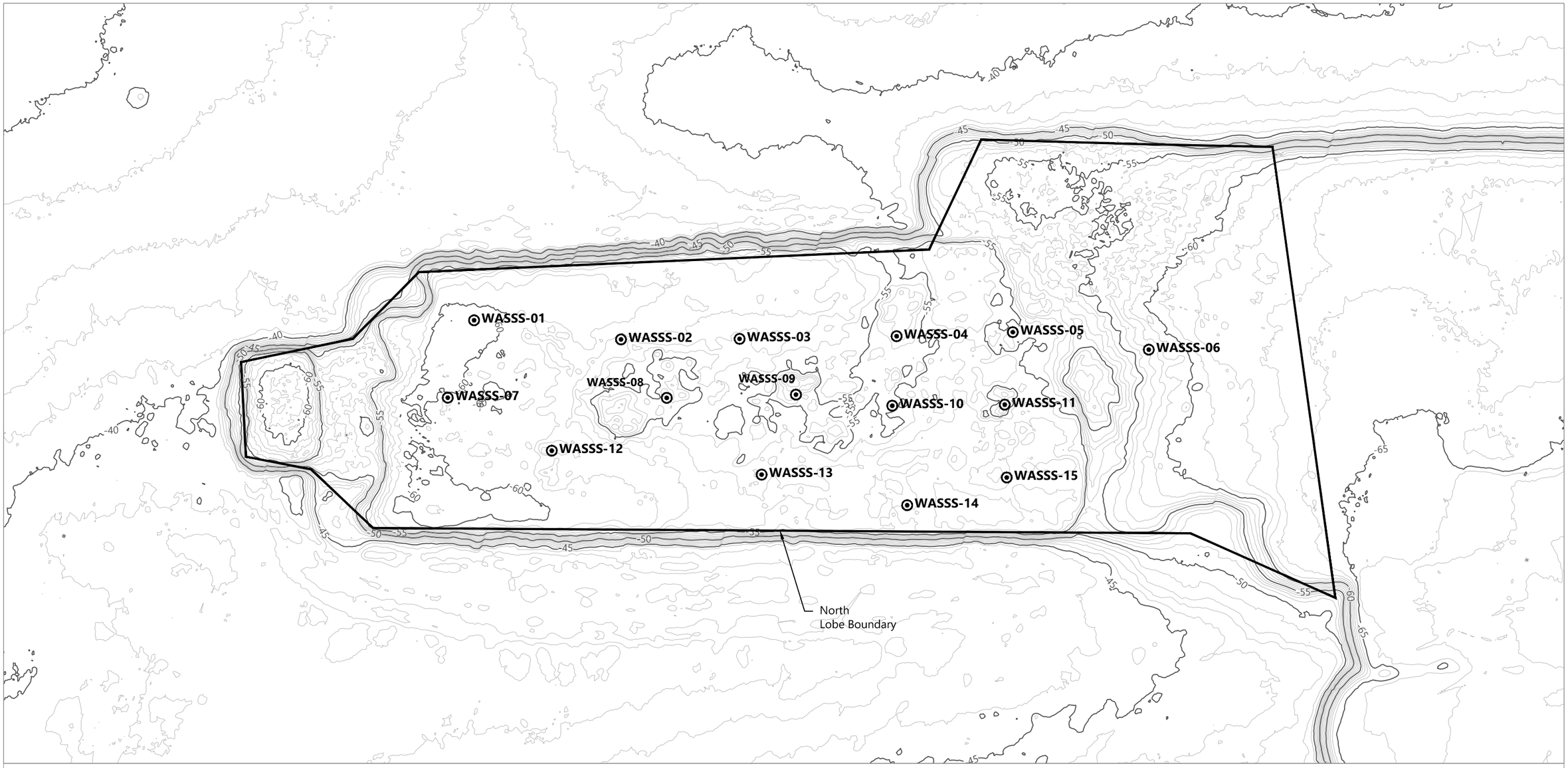
X#	AMEC (2010)	XX-#	Kleinfelder (2007)	DU#-##	Anchor QEA (2012)
DYB##-##	Diaz Yourman (2010)	-55	Existing Contour		Anchor QEA Dredge Unit (2012)
11VB-##	Earth Mechanics, Inc. (2011)				

0 300
Feet

Publish Date: 2019/04/22 9:24 AM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 003 SAMPLES.dwg Figure 3

ANCHOR QEA

Figure 3
North Lobe- Historical Sampling Locations from 2007 to 2012
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

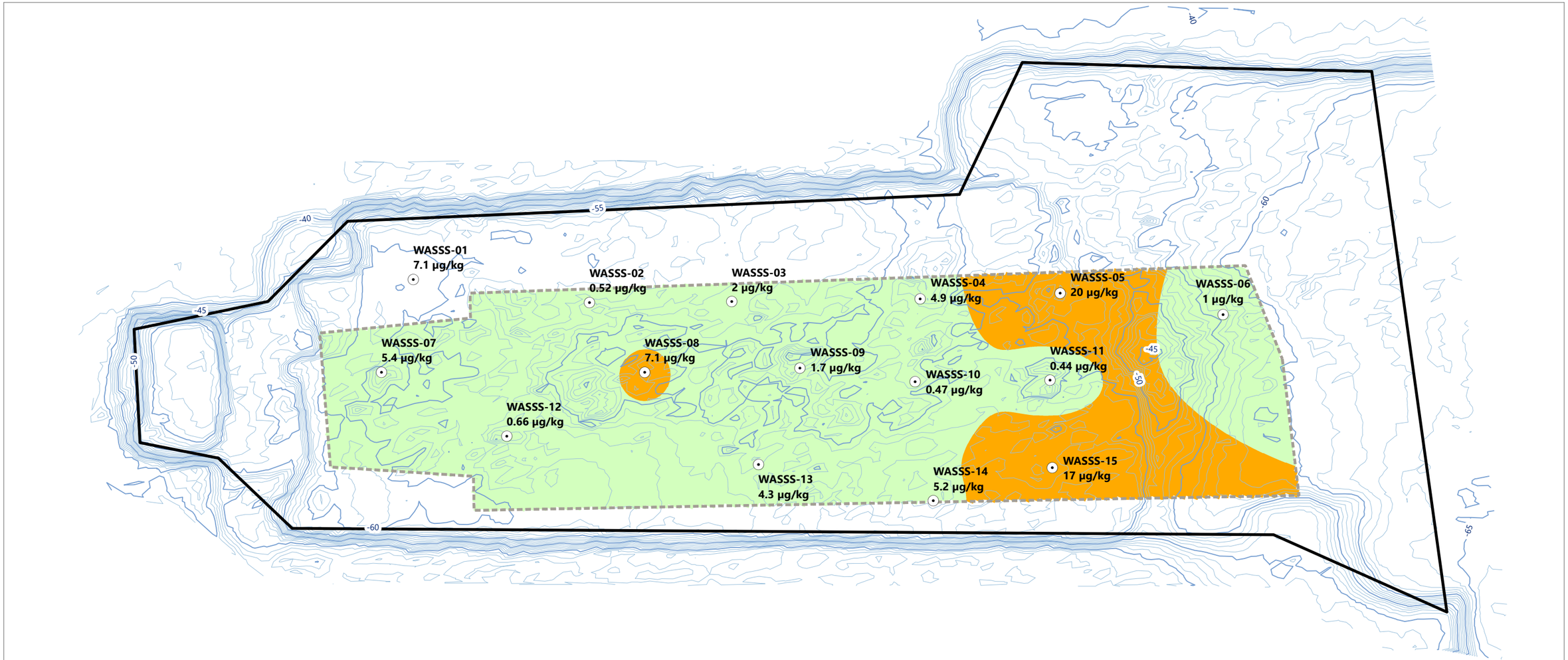
⊙WASSS-#	Sampling Locations
——-55——	Existing Contour

0 300
Feet

Publish Date: 2019/04/18 12:58 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 005b ACTUAL AQ SAMPLES.dwg Figure 4

ANCHOR QEA

Figure 4
North Lobe- Historical Sampling Locations from 2014
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



LEGEND:

- Core Location
- -62 ft Dredge Footprint
- North Lobe Boundary
- Bathymetry (MLLW ft, POLB 20070306)

Total Chlordanes (µg/kg, ND=0)

- ≤ ERL (0.5; TMDL numeric target)
- > ERL, ≤ ERM
- > ERM

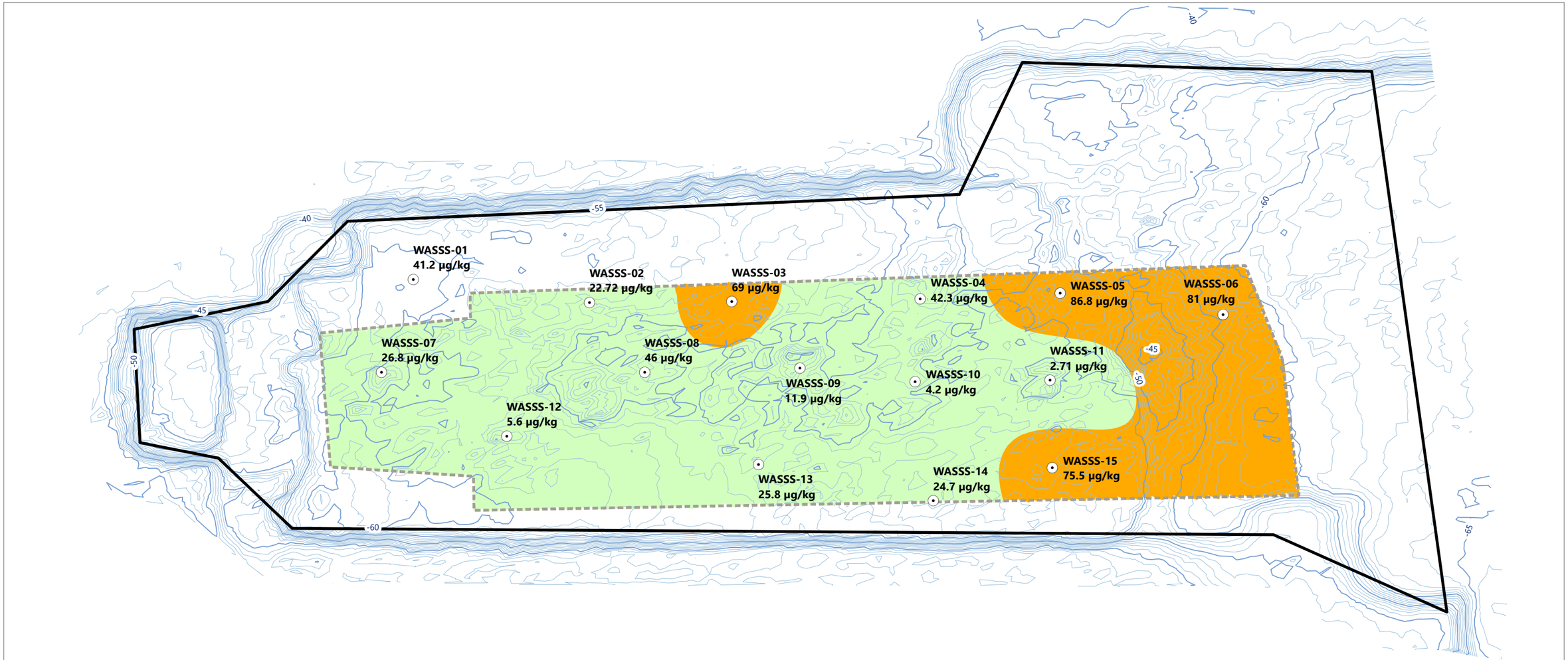
NOTE:
The -62 foot MLLW depth represents the average bathymetry of the site prior to Port-placed material. The red box represents the target dredge prism to remove the bulk of Port-placed material. Each color represents the approximate concentration (based on the surface sample interval) of material within the dredge prism. Average surface sample interval is 5 feet for all sample locations.

0 250
Feet

Publish Date: 2019/04/19, 5:39 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\KPFF_0159\POLB_Western_Anchorage\Maps\2019_04_TechnicalRpt\OHSPER_TechRept_Surface_IDWs_DDP.mxd

ANCHOR QEA

Figure 5a
North Lobe – Surface Sample Interval Concentrations – Total Chlordanes
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



LEGEND:

- Core Location
- -62 ft Dredge Footprint
- North Lobe Boundary
- Bathymetry (MLLW ft, POLB 20070306)

TDDT (µg/kg, ND=0)

- ≤ ERL (1.58; TMDL numeric target)
- > ERL, ≤ ERM
- > ERM

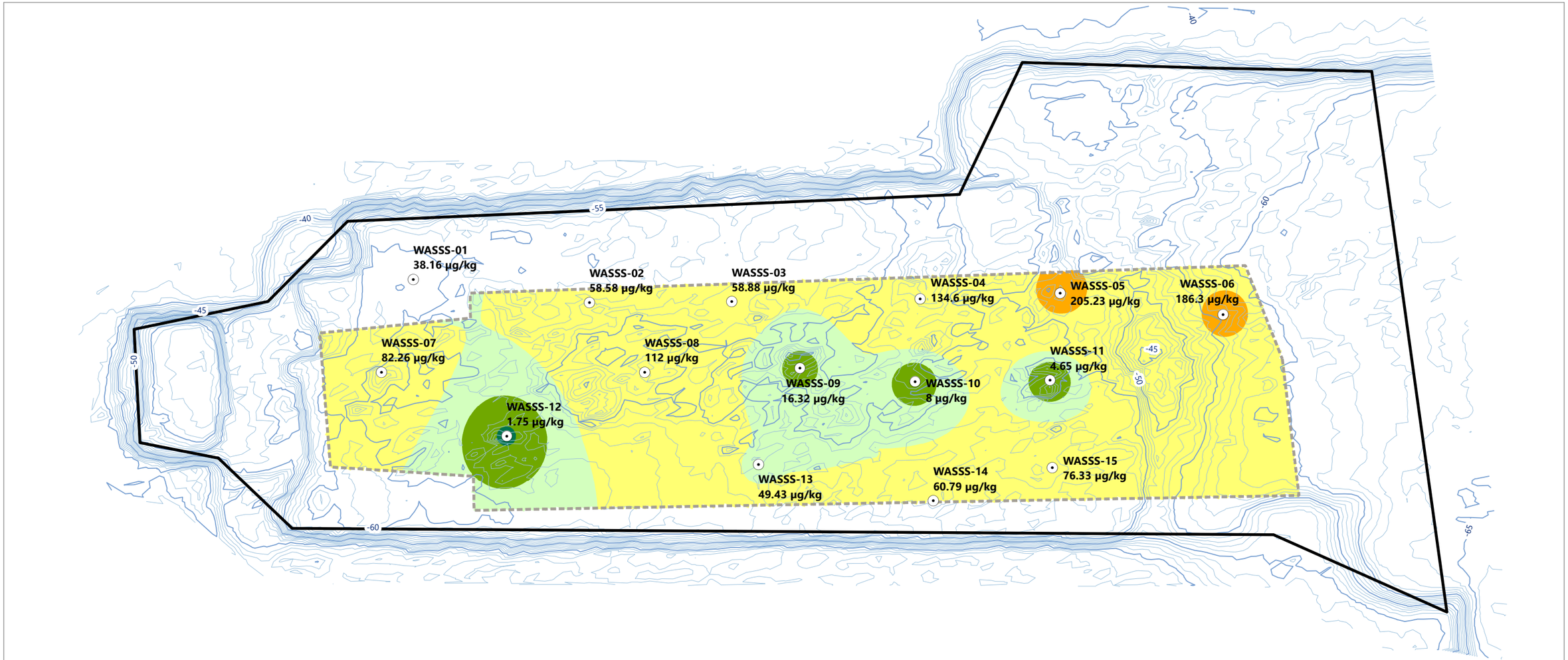
NOTE:
The -62 foot MLLW depth represents the average bathymetry of the site prior to Port-placed material. The red box represents the target dredge prism to remove the bulk of Port-placed material. Each color represents the approximate concentration (based on the surface sample interval) of material within the dredge prism. Average surface sample interval is 5 feet for all sample locations.

0 250
Feet

Publish Date: 2019/04/19, 5:39 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\KPFF_0159\POLB_Western_Anchorage\Maps\2019_04_TechnicalRpt\OHSPER_TechRept_Surface_IDWs_DDP.mxd

ANCHOR QEA

Figure 5b
North Lobe – Surface Sample Interval Concentrations – Total DDT
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



LEGEND:

- Core Location
- -62 ft Dredge Footprint
- North Lobe Boundary
- Bathymetry (MLLW ft, POLB 20070306)

TPCB Congeners (µg/kg, ND=0)

- ≤ 3.2 (TMDL numeric target)
- ≤ ERL (22.7)
- > ERL, ≤ 2.2 x ERL
- > 2.2 x ERL, ≤ ERM
- > ERM

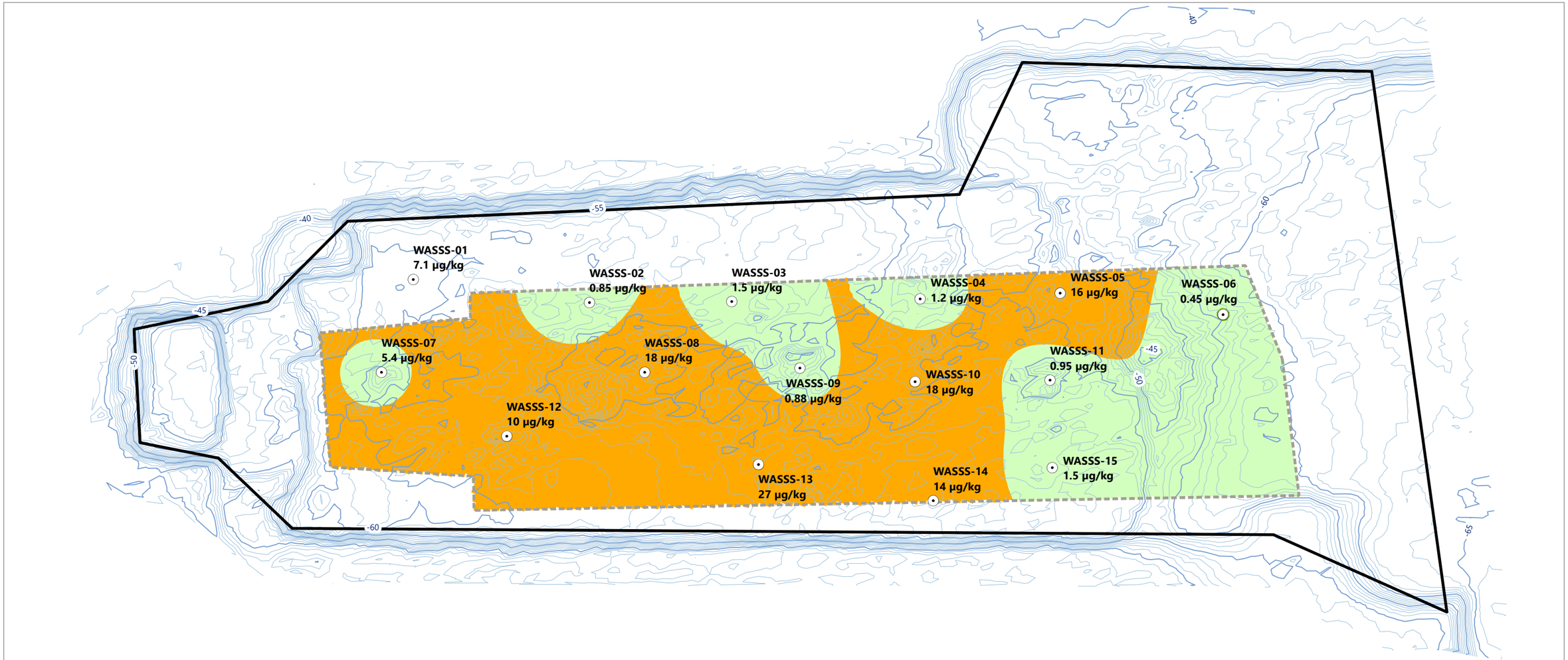
NOTE:
The -62 foot MLLW depth represents the average bathymetry of the site prior to Port-placed material. The red box represents the target dredge prism to remove the bulk of Port-placed material. Each color represents the approximate concentration (based on the surface sample interval) of material within the dredge prism. Average surface sample interval is 5 feet for all sample locations.

0 250
Feet

Publish Date: 2019/04/19, 5:40 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\KPFF_0159\POLB_Western_Anchorage\Maps\2019_04_TechnicalRpt\OHSPER_TechRept_Surface_IDWs_DDP.mxd

ANCHOR QEA

Figure 5c
North Lobe – Surface Sample Interval Concentrations – Total PCB Congeners
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



LEGEND:

- Core Location
- -62 ft Dredge Footprint
- North Lobe Boundary
- Bathymetry (MLLW ft, POLB 20070306)

Total Chlordanes (µg/kg, ND=0)

- ≤ ERL (0.5; TMDL numeric target)
- > ERL, ≤ ERM
- > ERM

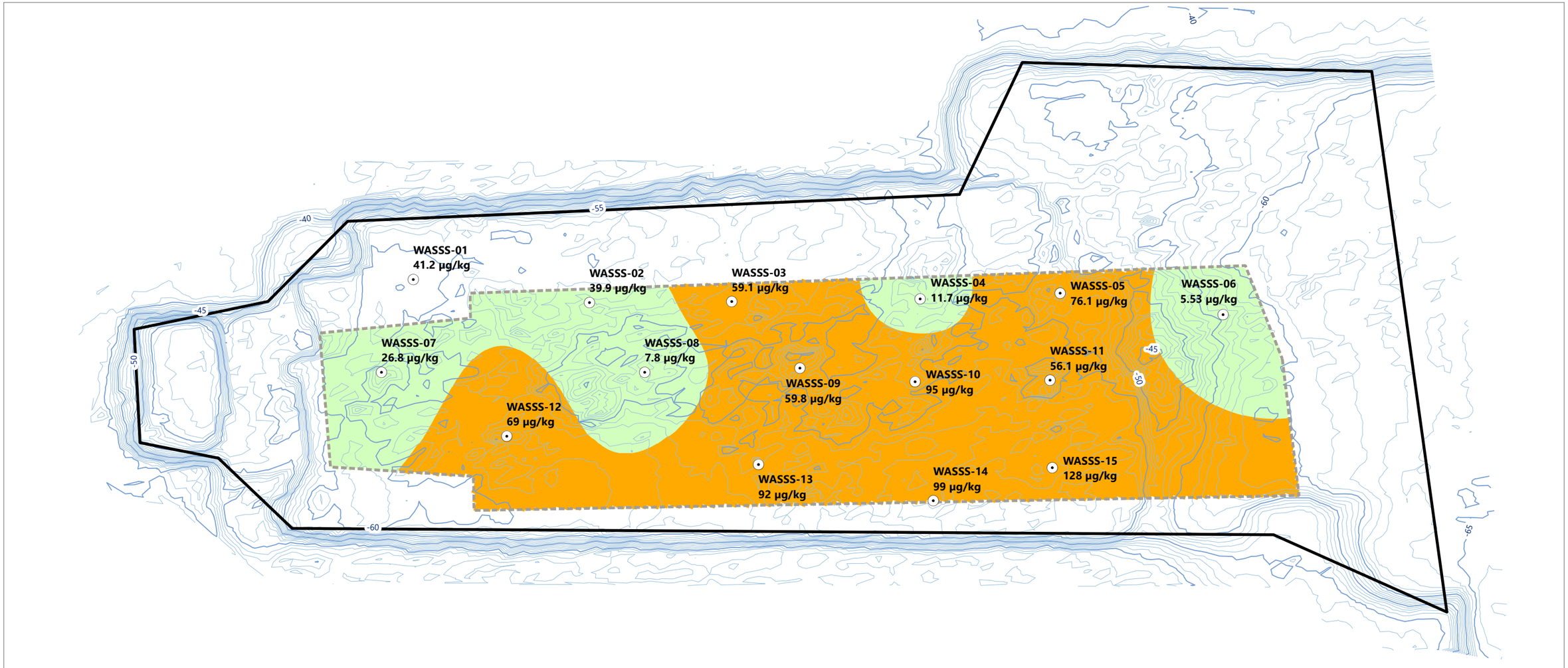
NOTE:
The -62 foot MLLW depth represents the average bathymetry of the site prior to Port-placed material. The red box represents the target dredge prism to remove the bulk of Port-placed material. Each color represents the approximate concentration (based on the uppermost core interval after removing sediments) of post-dredge surface material within the dredge prism.

0 250
Feet

Publish Date: 2019/04/19, 5:40 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\KPFF_0159\POLB_Western_Anchorage\Maps\2019_04_TechnicalRpt\OHSPER_TechRept_PostDredge_IDWs_DDP.mxd

ANCHOR QEA

Figure 6a
North Lobe – Post-Dredge Surface Concentrations – Total Chlordanes
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



LEGEND:

- Core Location
- -62 ft Dredge Footprint
- North Lobe Boundary
- Bathymetry (MLLW ft, POLB 20070306)

TDDT (µg/kg, ND=0)

- ≤ ERL (1.58; TMDL numeric target)
- > ERL, ≤ ERM
- > ERM

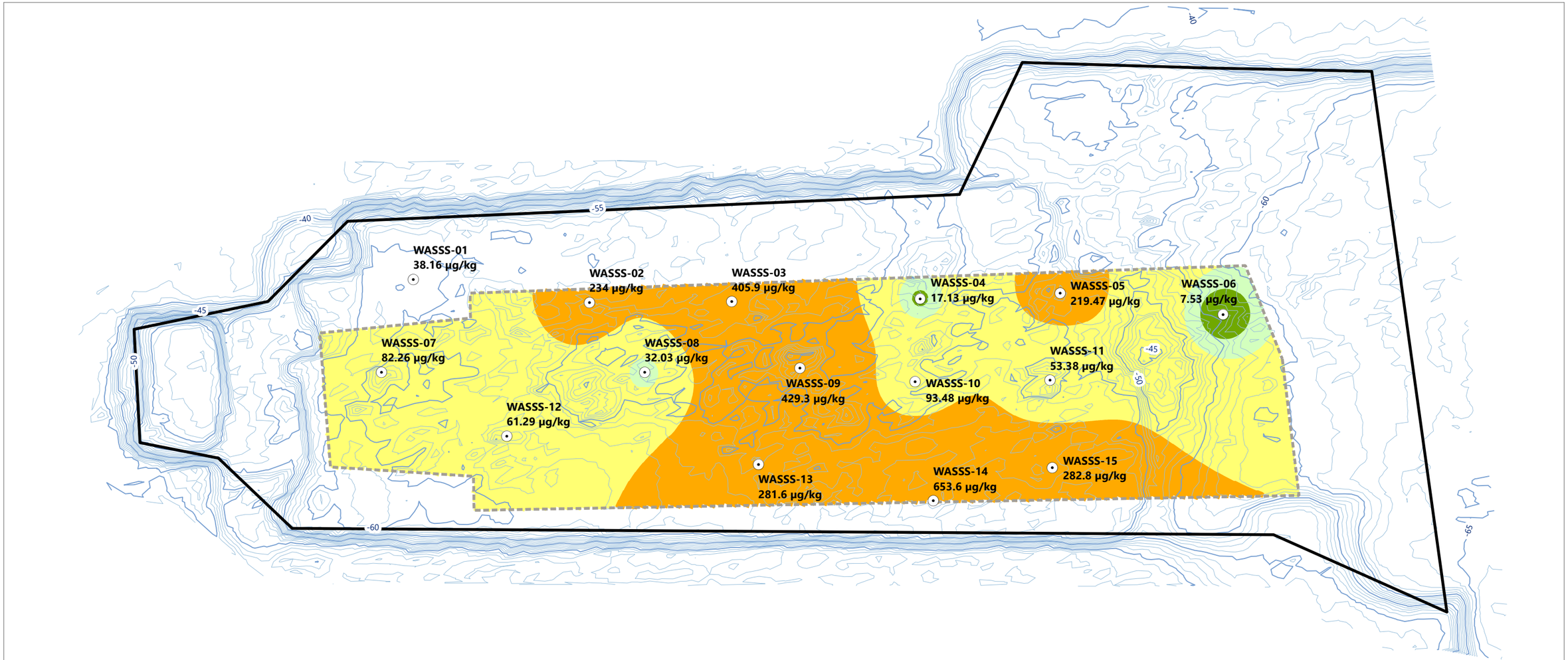
NOTE:
The -62 foot MLLW depth represents the average bathymetry of the site prior to Port-placed material. The red box represents the target dredge prism to remove the bulk of Port-placed material. Each color represents the approximate concentration (based on the uppermost core interval after removing sediments) of post-dredge surface material within the dredge prism.

0 250
Feet

Publish Date: 2019/04/19, 5:40 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\KPFF_0159\POLB_Western_Anchorage\Maps\2019_04_TechnicalRpt\OHSPER_TechRept_PostDredge_IDWs_DDP.mxd

ANCHOR QEA

Figure 6b
North Lobe – Post-Dredge Surface Concentrations – Total DDT
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



LEGEND:

- Core Location
- -62 ft Dredge Footprint
- North Lobe Boundary
- Bathymetry (MLLW ft, POLB 20070306)

TPCB Congeners (µg/kg, ND=0)

- ≤ 3.2 (TMDL numeric target)
- ≤ ERL (22.7)
- > ERL, ≤ 2.2 x ERL
- > 2.2 x ERL, ≤ ERM
- > ERM

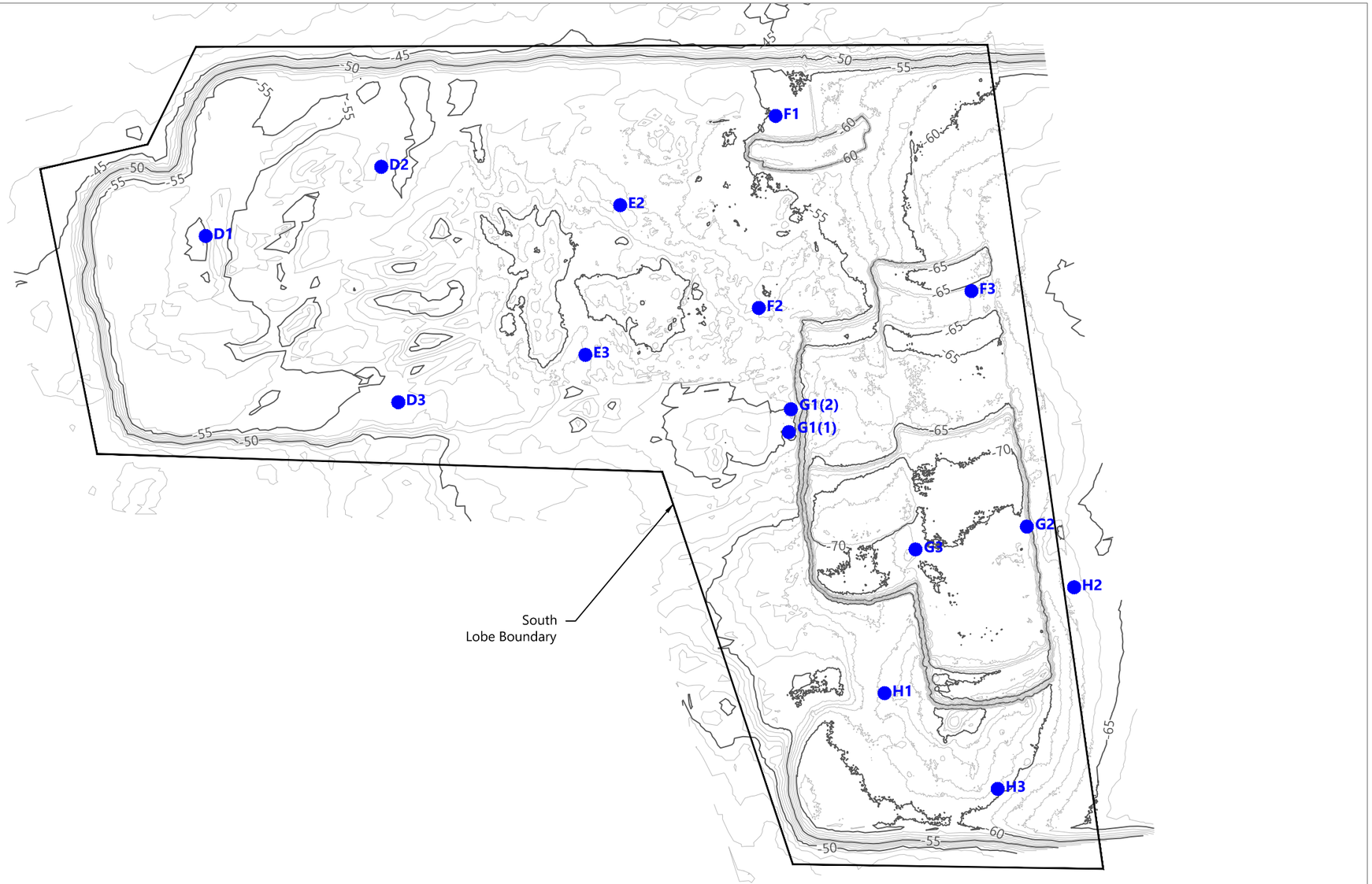
NOTE:
The -62 foot MLLW depth represents the average bathymetry of the site prior to Port-placed material. The red box represents the target dredge prism to remove the bulk of Port-placed material. Each color represents the approximate concentration (based on the uppermost core interval after removing sediments) of post-dredge surface material within the dredge prism.

0 250
Feet

Publish Date: 2019/04/19, 5:41 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\KPFF_0159\POLB_Western_Anchorage\Maps\2019_04_TechnicalRpt\OHSPER_TechRept_PostDredge_IDWs_DDP.mxd

ANCHOR QEA

Figure 6c
North Lobe – Post-Dredge Surface Concentrations – Total PCB Congeners
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



SOURCE: Post-cut bathymetry from Port of Long Beach survey dated September 28, 2011, supplemented with post-fill bathymetry from 2007.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

●# Sampling Locations

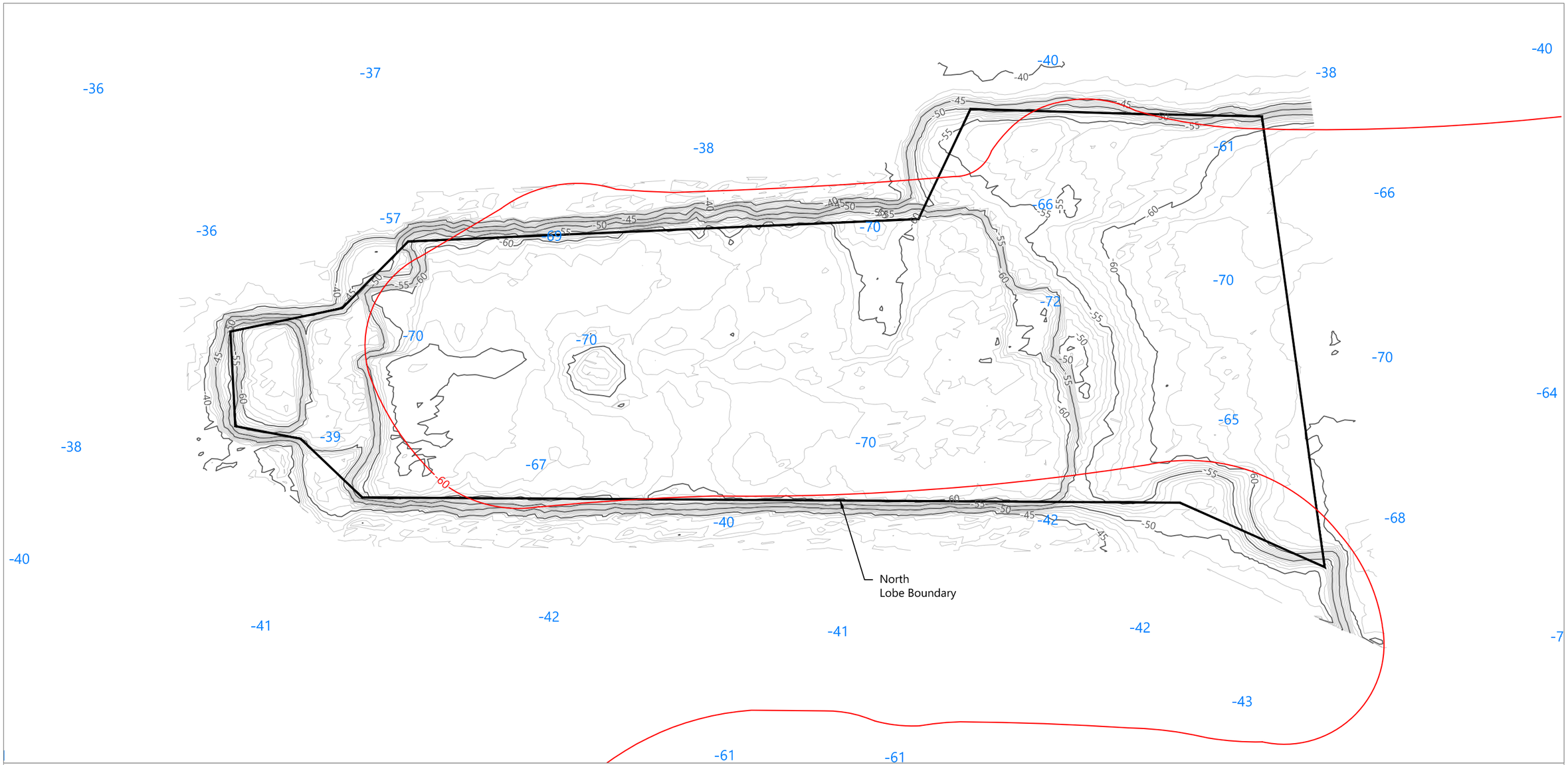
——-55—— Existing Contour

Publish Date: 2019/04/22 9:55 AM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 018 SAMPLING.dwg Figure 7

ANCHOR QEA

Figure 7
South Lobe- Historical Sampling Locations

Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



SOURCE: Bathymetry from NOAA National Ocean Survey dated 1975 and Port of Long Beach survey dated 1998. Contours shown are from 1998 survey.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

NOTE:
Estimated 319,000 cy of material accumulated between 1975 and 1998 bathymetric surveys.

LEGEND:

-41	1975 Bathymetry Sounding
-60	Hand-Drawn -60 ft Contour from 1975 NOAA Chart
-55	Contours from 1998 Bathymetry

0 300
Feet

Publish Date: 2019/04/22 10:04 AM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 010 ISO 1975 vs 1998 PRE-FILL.dwg Figure 8

ANCHOR QEA

Figure 8
North Lobe- Comparison of 1975 and Pre-Fill (1998) Bathymetric Data
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



SOURCE: Bathymetry from Port of Long Beach survey dated March 6, 2007.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

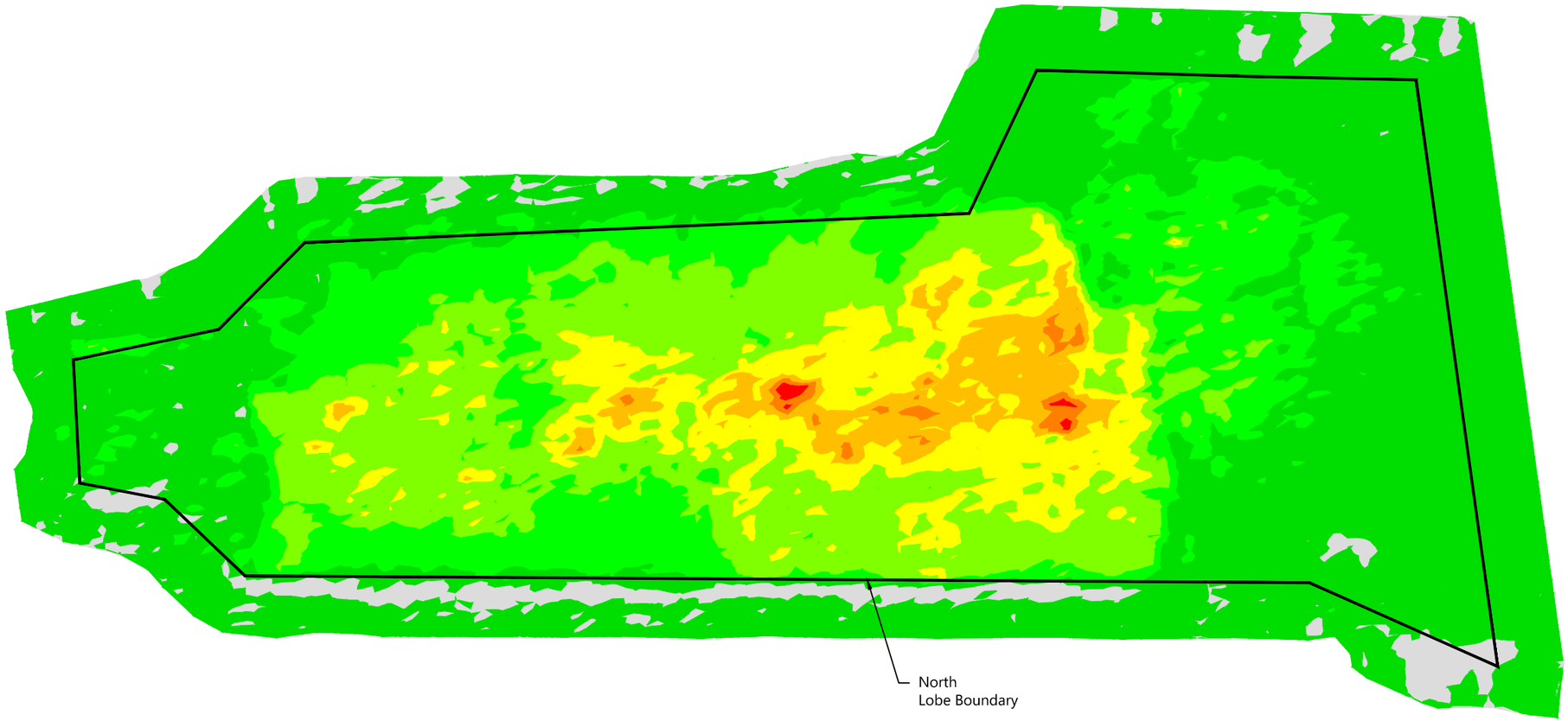
——-55—— 2007 Post-Fill Bathymetry

0 300
Feet

Publish Date: 2019/04/22 10:22 AM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 003a 2007 POST.dwg Figure 9

ANCHOR QEA

Figure 9
North Lobe- Post-Fill Bathymetric Data (2007)
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



Elevation Range Table	
Elevation Difference (ft)	**Color**
-2.7 to 0.0	
0.0 to 2.0	
2.0 to 4.0	
4.0 to 6.0	
6.0 to 8.0	
8.0 to 10.0	
10.0 to 12.0	
12.0 to 14.5	

SOURCE: Bathymetry from Port of Long Beach survey dated 1998 and March 6, 2007.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

NOTES:
Estimated 376,000 cy of material were placed between pre-fill and-post fill bathymetric surveys. AMEC 2010 and 2013 reports estimated 326,000 and 295,565 cy, respectively.

0 300
Feet

Publish Date: 2019/04/22 11:03 AM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 005 ISOPACH 1998 vs 2007.dwg Figure 10

ANCHOR QEA

Figure 10
North Lobe- Isopach Comparing Pre-fill (1998) and Post-Fill (2007) Bathymetric Data
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report

North
Lobe Boundary

SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

—-55— Contours from 2013 Bathymetry

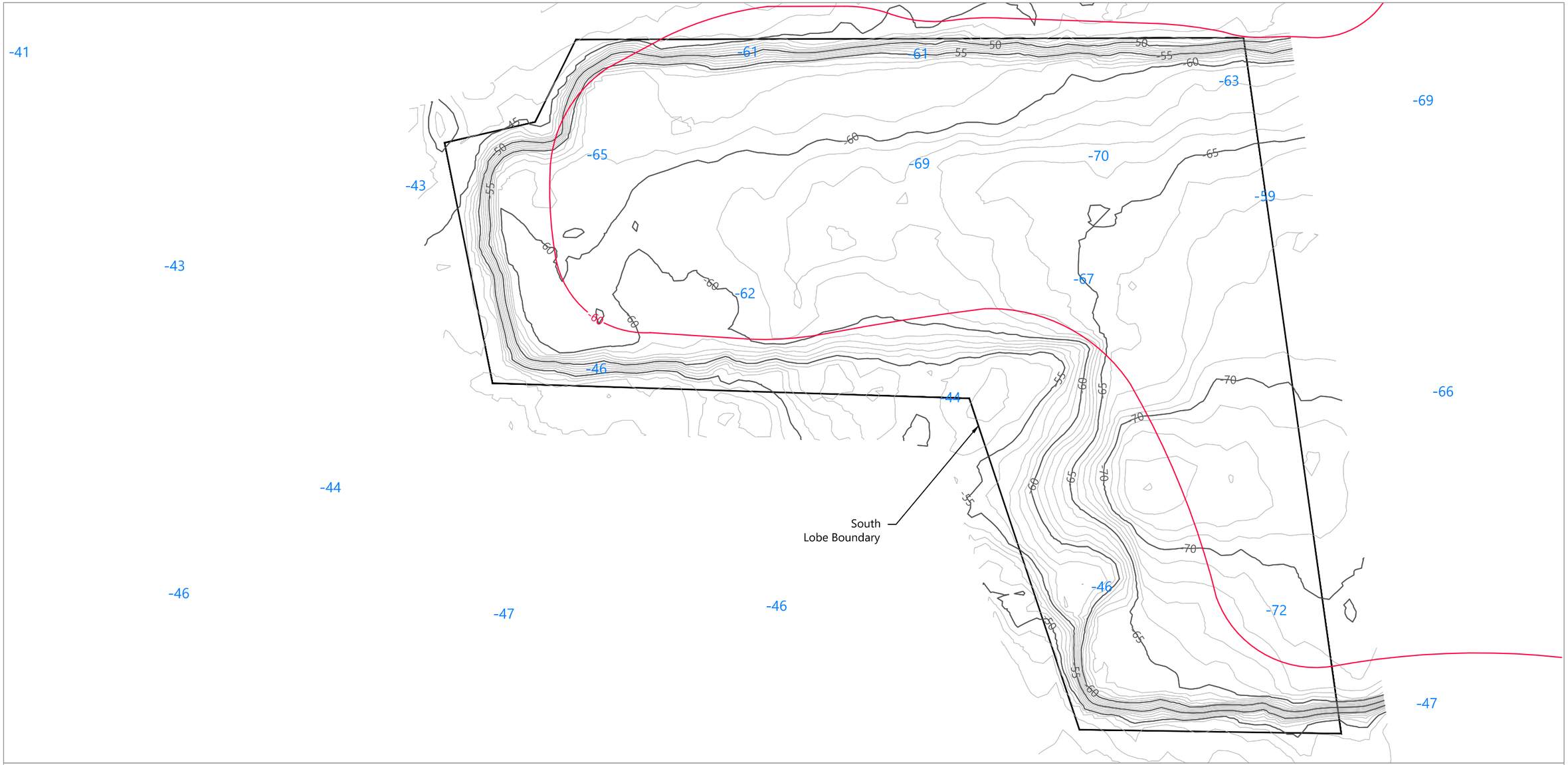
0 300
Feet

Publish Date: 2019/04/18 3:35 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 021 2013 BATHY.dwg Figure 11

ANCHOR QEA

Figure 11
North Lobe- 2013 Bathymetric Data

Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



SOURCE: Bathymetry from NOAA National Ocean Survey dated 1975 and Port of Long Beach dated 1998. Contours shown are from 1998 survey.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

NOTE:
Estimated 25,000 cy of material accumulated between 1975 and 1998 bathymetric surveys.

LEGEND:

-41	1975 Bathymetry Sounding
—-60—	Hand-Drawn -60 ft Contour from 1975 NOAA Chart
—-55—	Contours from 1998 Bathymetry

0 300
Feet

Publish Date: 2019/04/22 11:20 AM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 012 SOUTH ISO 1975 vs PRE-FILL.dwg Figure 12

ANCHOR QEA

Figure 12
South Lobe- Comparison of 1975 and Pre-Fill (1998) Bathymetric Data
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



SOURCE: Contours shown are from 2007 survey.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

-55 2007 Post-Fill Bathymetry

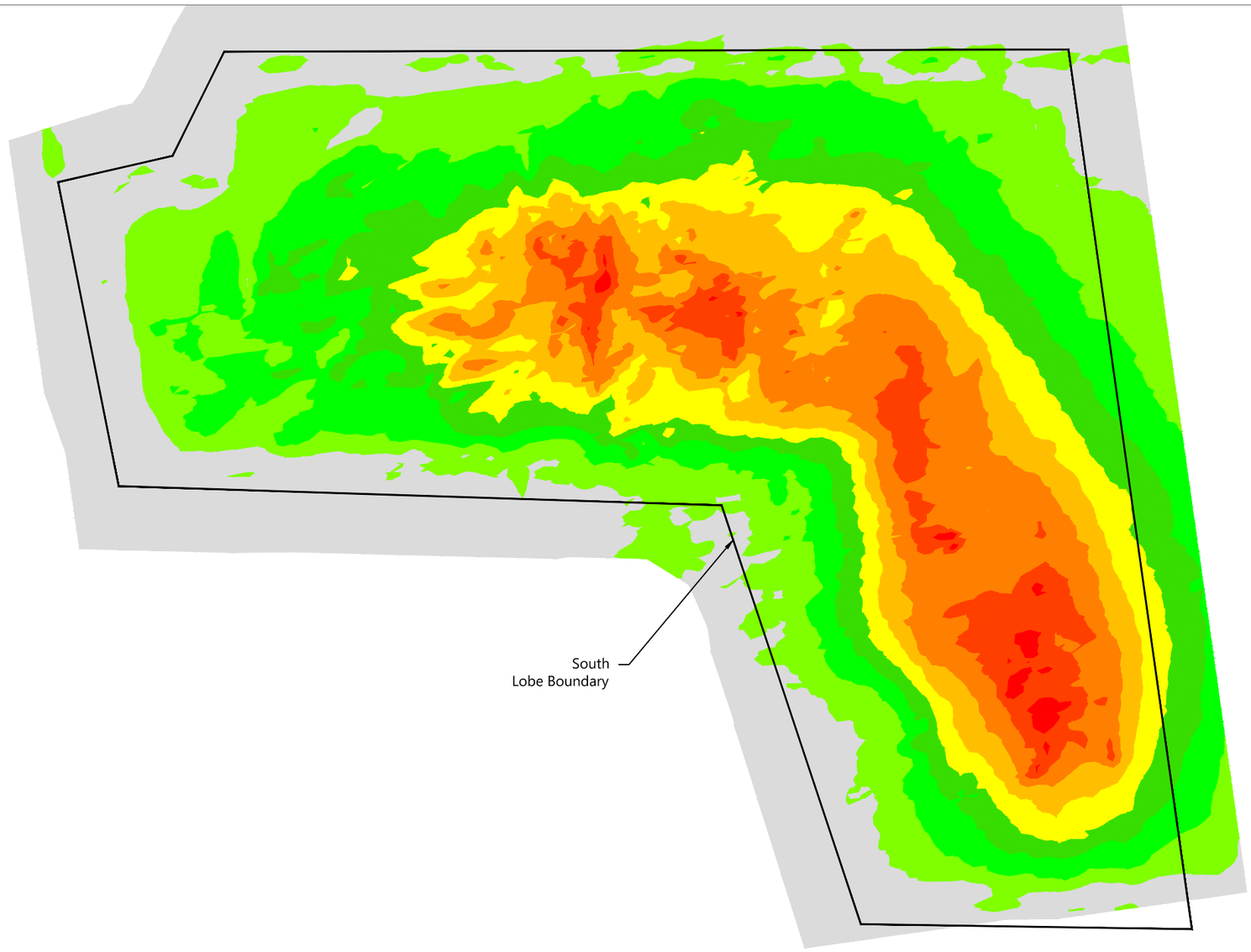
0 300
Feet

Publish Date: 2019/04/22 11:56 AM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 013 POST BATHY.dwg Figure 13

ANCHOR QEA

Figure 13
South Lobe- Post-Fill Bathymetric Data (2007)

Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



Comparison of Pre-Fill and Post-Fill Survey Data	
Change in Depth (ft)	**Color**
No Change (< 2.0)	
2.0 to 4.0	
4.0 to 6.0	
6.0 to 8.0	
8.0 to 10.0	
10.0 to 12.0	
12.0 to 14.0	
14.0 to 16.0	
16.0 and Greater	

SOURCE: Pre-fill bathymetry from 1998 survey and post-fill bathymetry from 2007 survey.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

NOTES:
Estimated 807,000 cy of material were placed between pre-fill and post-fill bathymetric surveys.
AMEC 2010 and 2013 reports estimated 843,000 and 820,000 cy respectively.

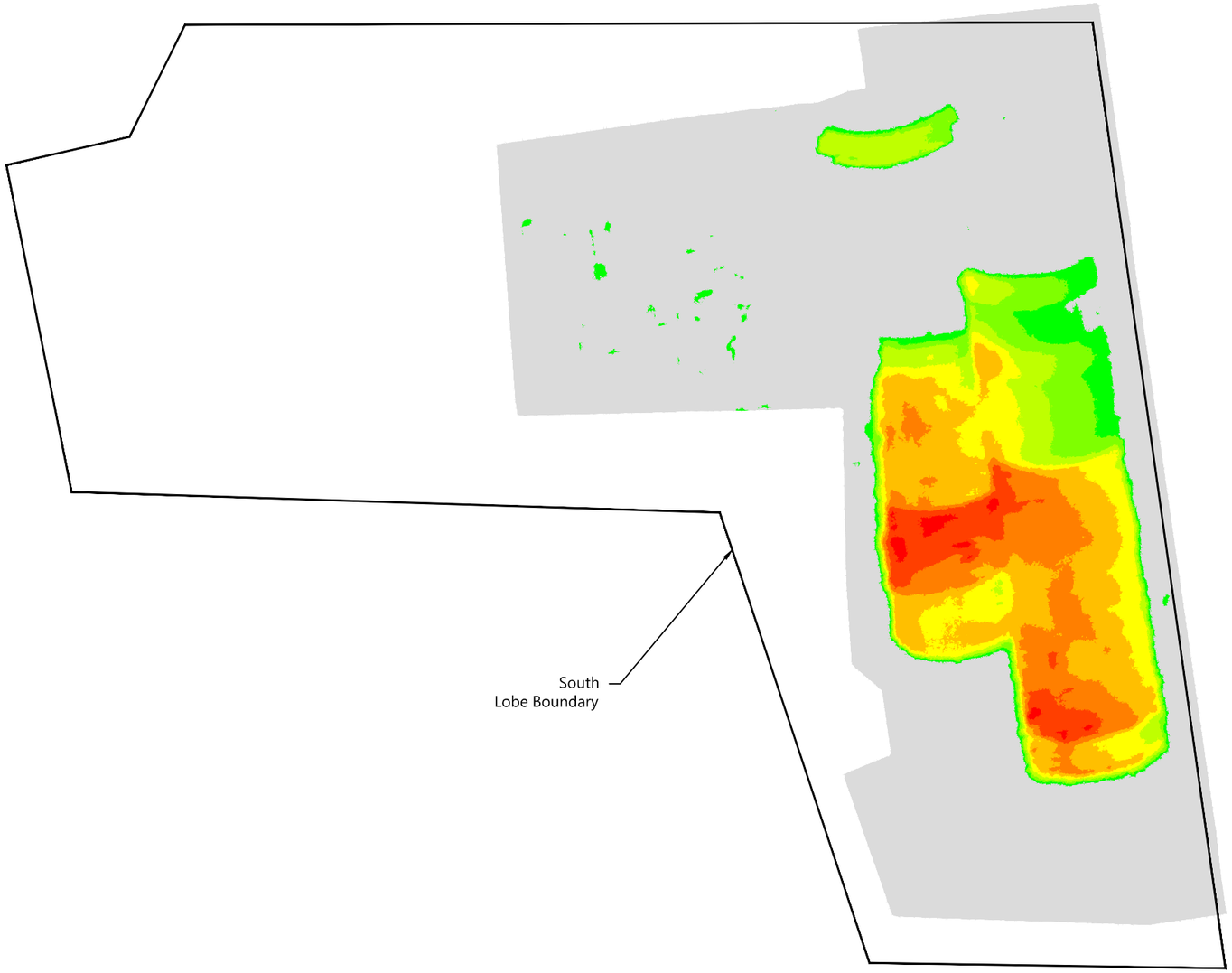
0 300
Feet

Publish Date: 2019/04/22 12:16 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 014 PRE vs POST ISOPACH.dwg Figure 14

ANCHOR QEA

Figure 14
South Lobe- Isopach Comparing Pre-Fill (1998) and Post-Fill (2007) Bathymetric Data

Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



Comparison of Post-Fill and 2011 Survey Data	
Change in Depth (ft)	**Color**
16.0 and Greater	
16.0 to 14.0	
14.0 to 12.0	
12.0 to 10.0	
10.0 to 8.0	
8.0 to 6.0	
6.0 to 4.0	
4.0 to 2.0	
No Change (<2.0)	

SOURCE: Post-fill bathymetry from 2007 survey and additional bathymetry from Port of Long Beach survey dated Sptember 28, 2011.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

NOTES:
Estimated 173,560 cy of material were dredged between 2007 post-fill and 2007 bathymetric surveys. Moffat & Nichol estimated 185,312 cy of material dredged.

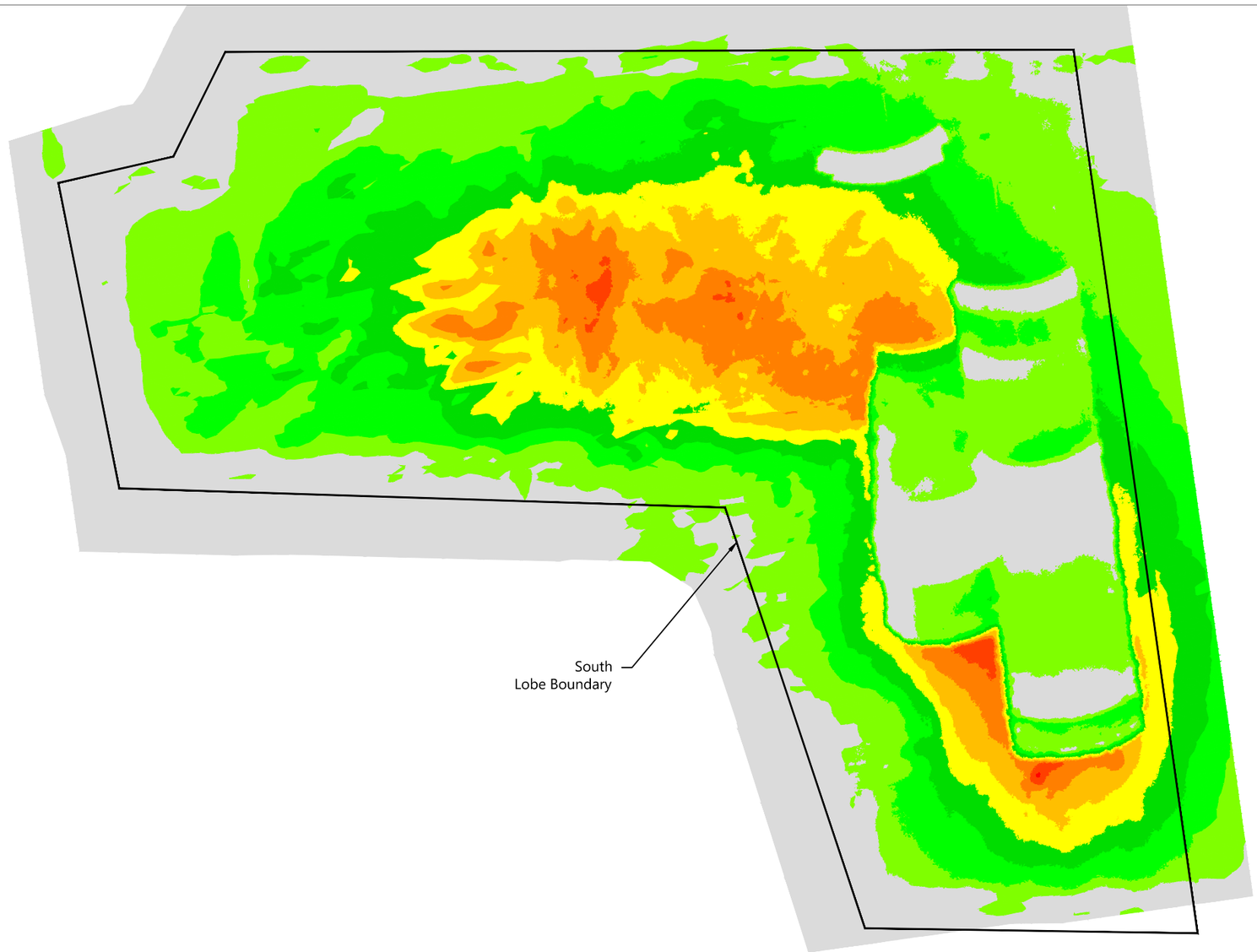
0 300
Feet

Publish Date: 2019/04/22 12:37 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 015 POST 2007 vs 2011 ISOPACH.dwg Figure 15

ANCHOR QEA

Figure 15
South Lobe- Isopach Comparing Post-Fill (2007) and Post-Dredge (2011) Bathymetric Data

Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



Comparison of Pre-Fill and Current Survey Data	
Change in Depth (ft)	**Color**
No Change (<2.0)	
2.0 to 4.0	
4.0 to 6.0	
6.0 to 8.0	
8.0 to 10.0	
10.0 to 12.0	
12.0 to 14.0	
14.0 to 16.0	
16.0 to 16.3	

SOURCE: Pre-fill bathymetry from 1998 survey and 2011 supplemental with post-fill bathymetry from 2007.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

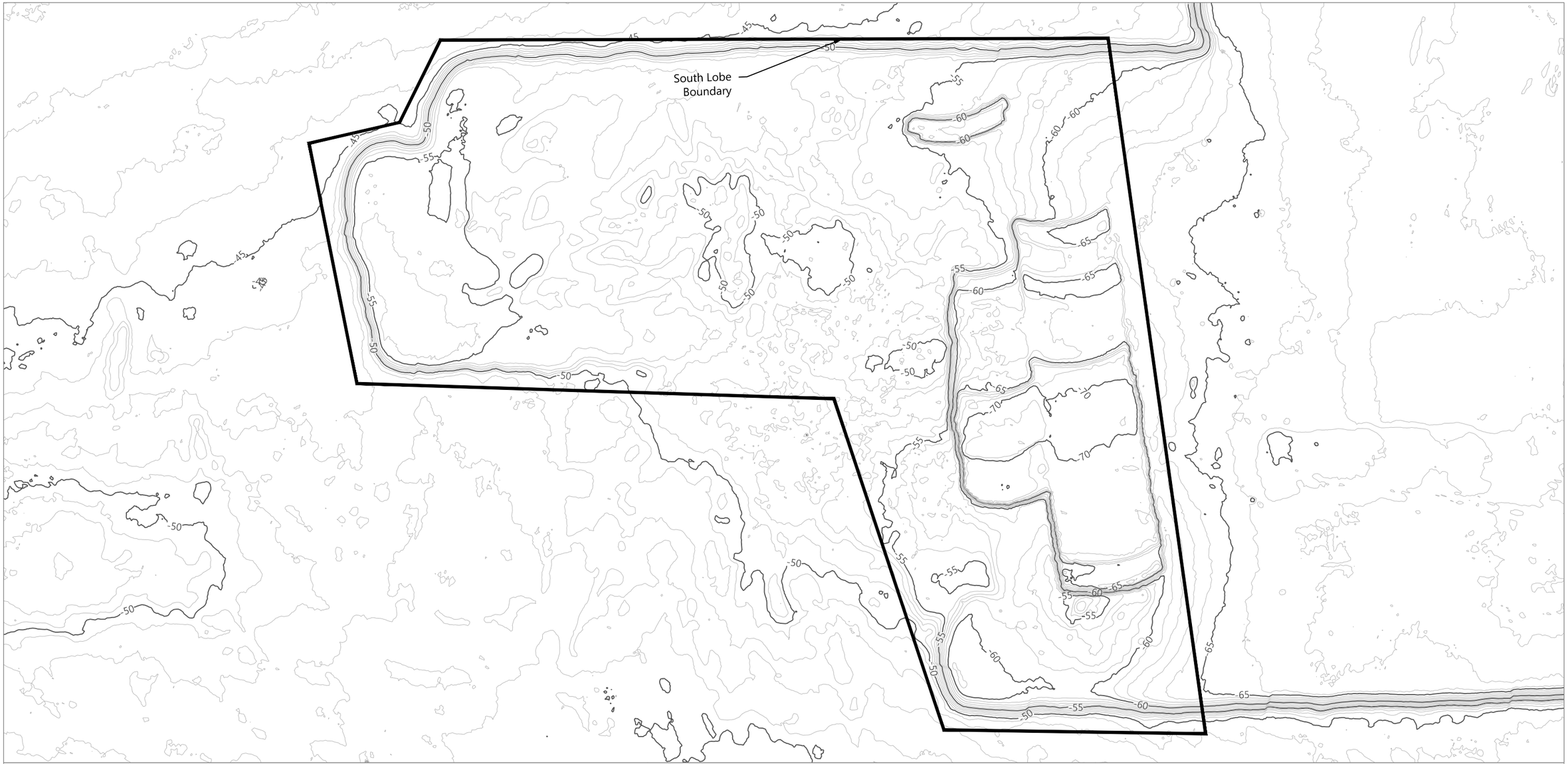
NOTE:
Estimated 162,000 cy of Port-placed material remaining in temporary storage site.

0 300
Feet

Publish Date: 2019/04/22 12:45 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 017 ISOPACH 1998 vs 2011.dwg FIG 16

ANCHOR QEA

Figure 16
South Lobe- Isopach Comparing Pre-Fill (1998) and Post-Dredge Bathymetric Data (2011)



SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

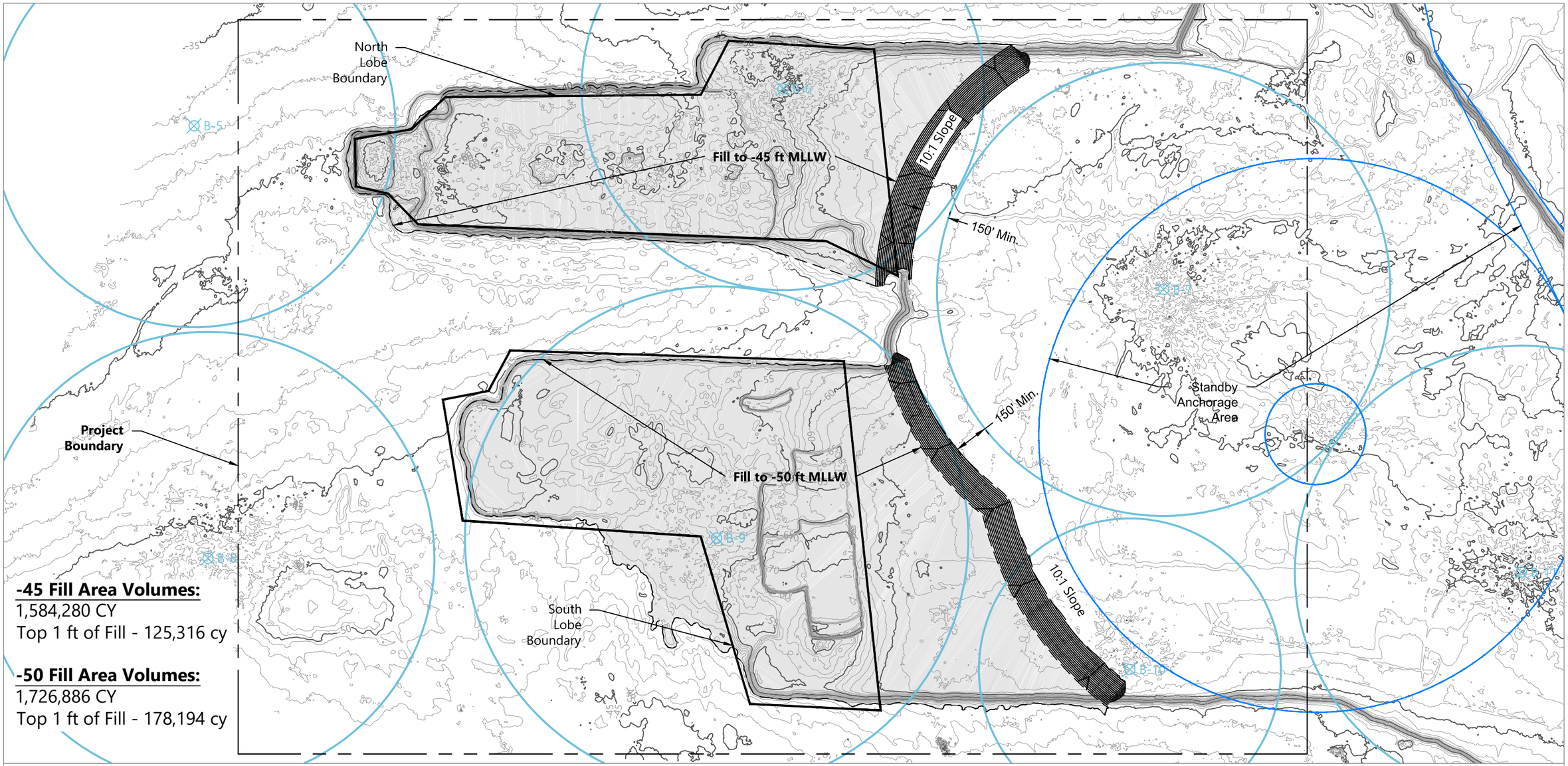
—-55— Contours from 2013 Bathymetry

0 300
Feet

Publish Date: 2019/04/22 12:52 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 021 2013 BATHY.dwg Figure 17

ANCHOR QEA

Figure 17
South Lobe- 2013 Bathymetric Data



SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013. Anchorage locations provided by Port of Long Beach.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

-55 Contours from 2013 Bathymetry

B-# Port of Long Beach Anchorage Number

Anchorage Location

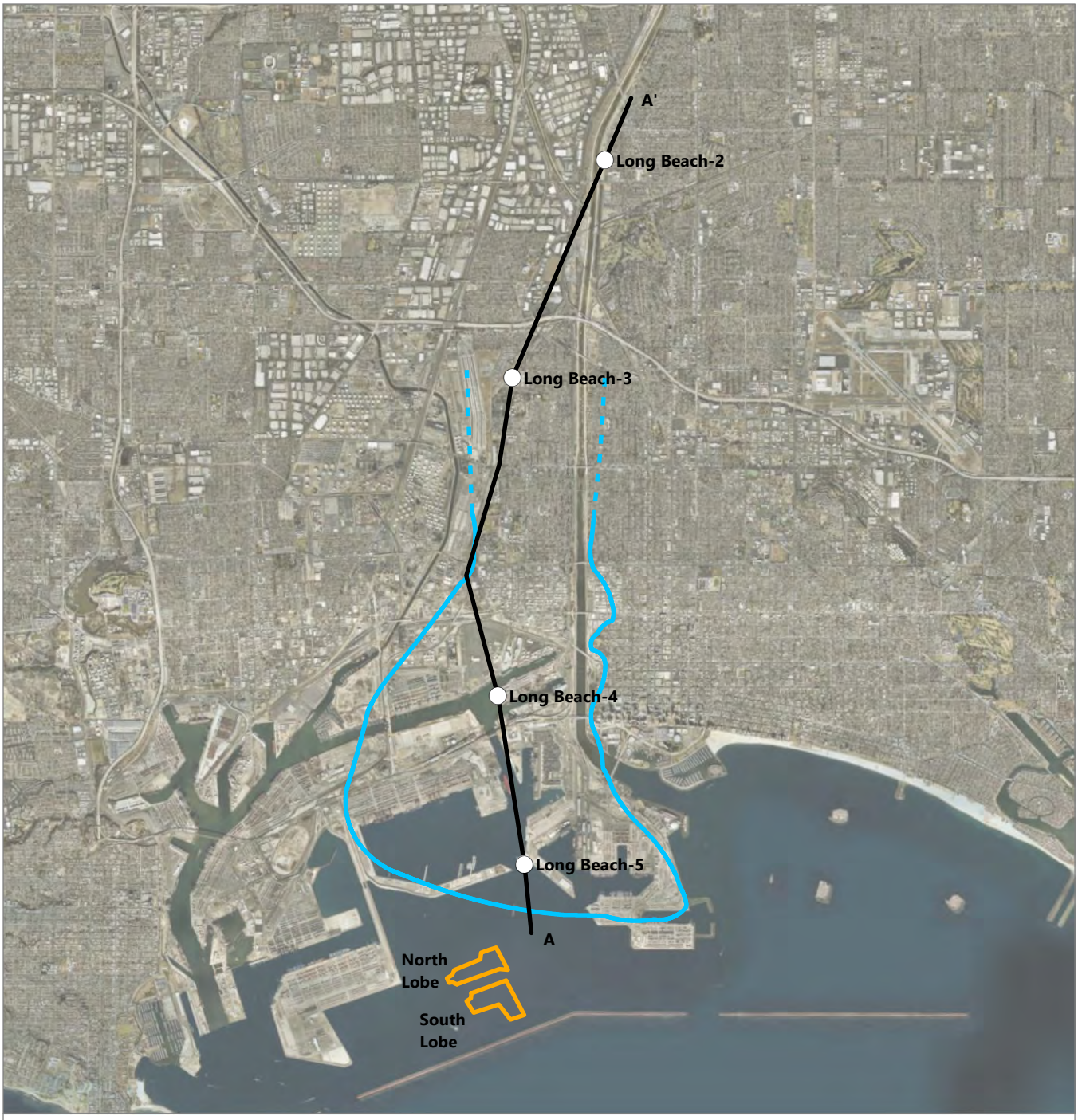
0 600
Feet

Publish Date: 2019/04/22 1:05 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0343 RP-003 FILL.dwg Figure 18

ANCHOR QEA

Figure 18
Fill Areas with Sideslopes

Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



LEGEND:

- OHSPER Lobes[1]
- Gaspur Aquifer[2]
- Aquifer Extends to North
- Hydrogeologic Cross Section A - A'[3]
- Boring Location[3]

NOTES:

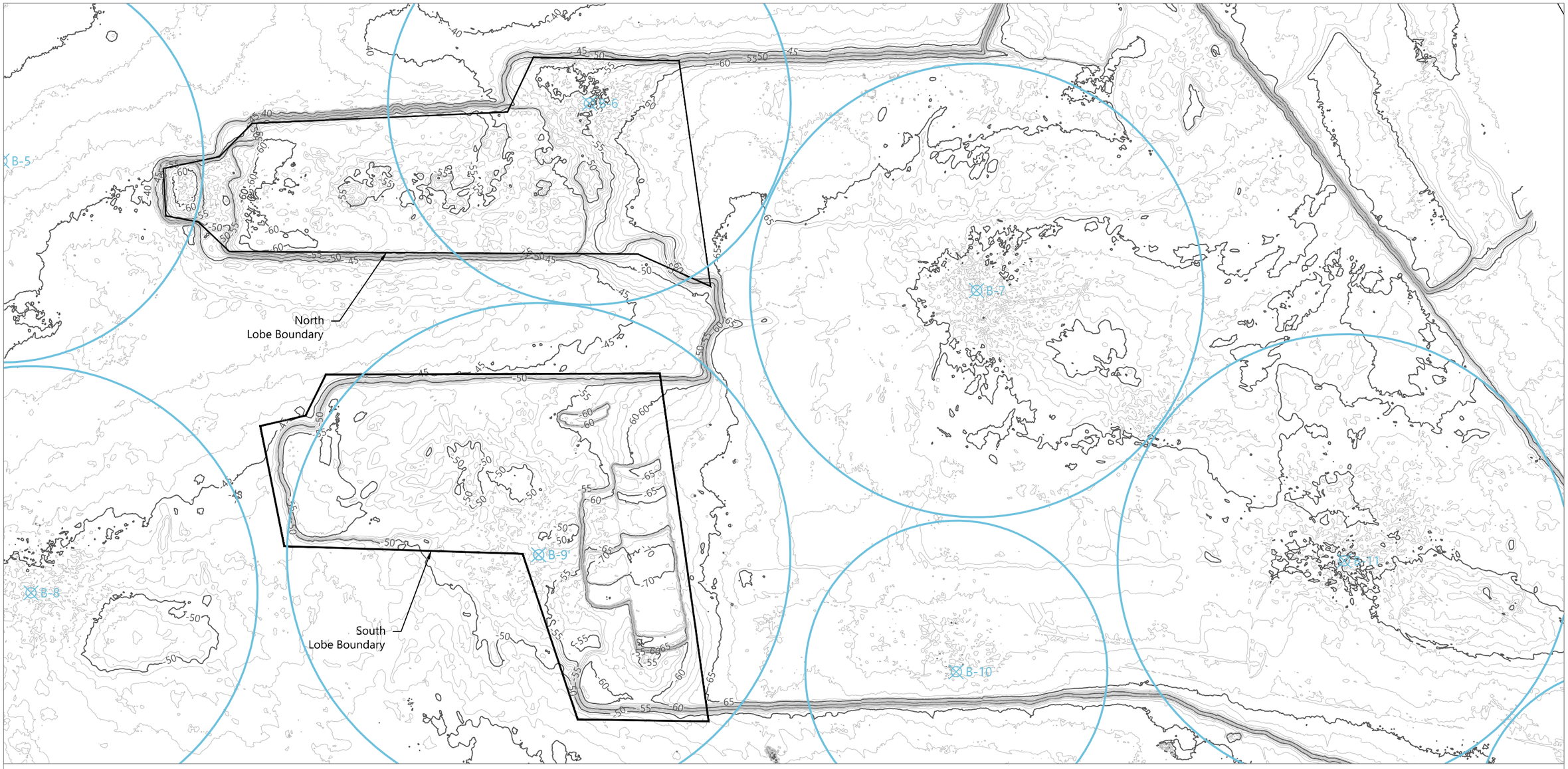
1. North and South Lobes of the Outer Harbor Sediment Placement and Ecosystem Restoration (OHSPER) site (formerly Western Anchorage Sediment Storage Site [WASSS]).
2. Derived from Long Beach Water District Seawater Desalination Plant Site Alternatives Study, Black & Veatch Project 138838, 2006.
3. Hydrogeologic cross section and boring locations are from *Ground-Water Quality of Coastal Aquifer Systems in the West Coast Basin, Los Angeles County, California, 1999-2002* (Land et al. 2004).

0 8,000
Feet

Publish Date: 2019/04/19, 5:45 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\KPFF_0159\POLB_Western_Anchorage\Maps\2019_04_TechnicalRpt\OHSPER_TechRept_Hydrogeology.mxd

ANCHOR QEA

Figure 19
Hydrogeologic Features
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013. Anchorage locations provided by Port of Long Beach.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

-55- Contours from 2013 Bathymetry

B-# Port of Long Beach Anchorage Number

Anchorage Location

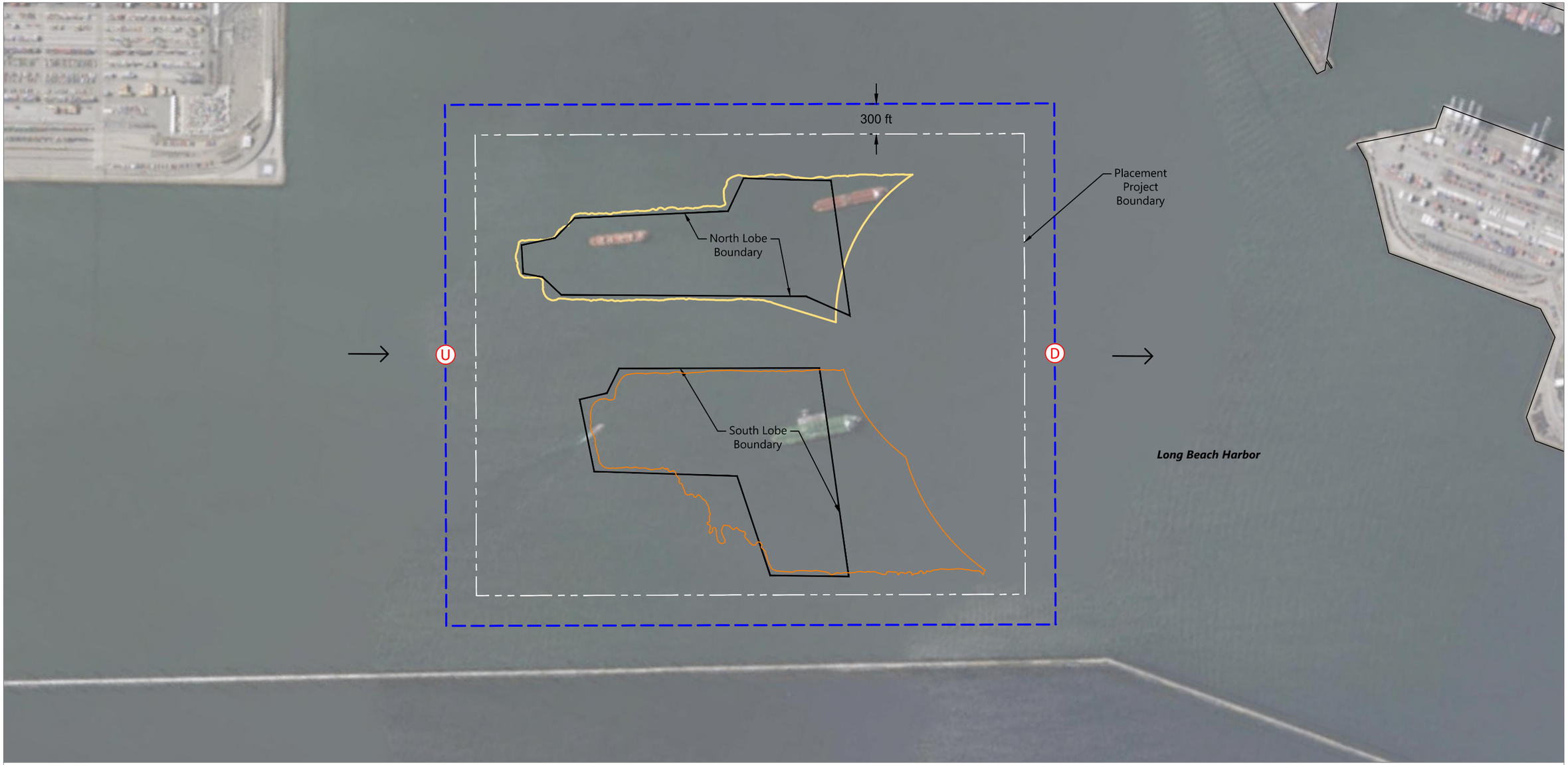
0 600
Feet

Publish Date: 2019/04/22 1:16 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0159-RP 022 2013 BATHY.dwg Figure 20

ANCHOR QEA

Figure 20
Anchorage Locations Relative to North and South Lobes

Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



SOURCE: Aerial from ESRI basemaps.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

Sampling Boundary

-45 ft MLLW Fill Area

LEGEND:

-50 ft MLLW Fill Area

Tidal Flow

(D) Downcurrent station - 300 feet downcurrent of the placement project boundary compliance station

(U) Upcurrent station - 300 feet downcurrent of the placement project boundary background conditions

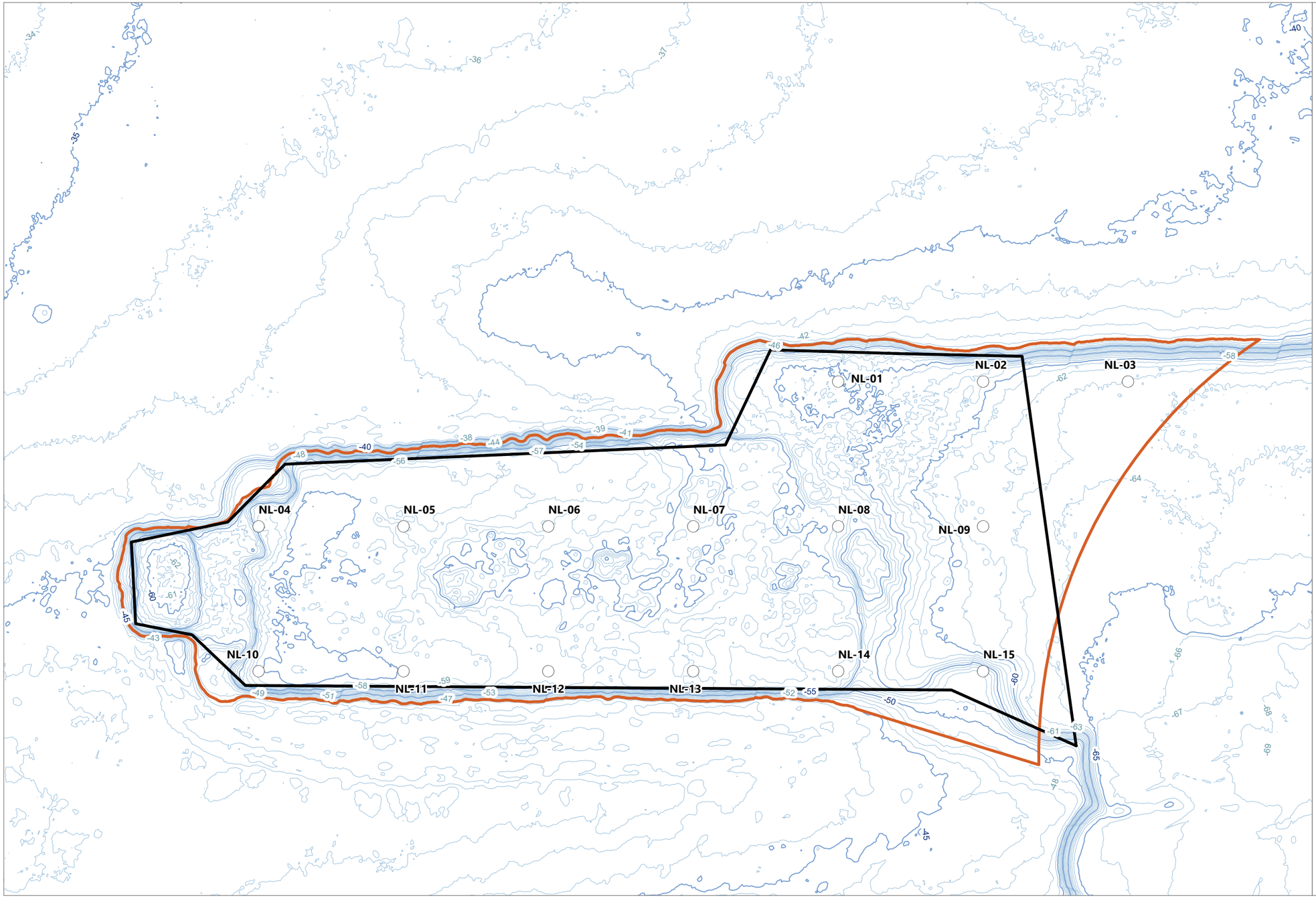
0 1000
Feet

Publish Date: 2019/04/18 5:11 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0343 RP-005 BOUNDARIES.dwg Figure 21

ANCHOR QEA

Figure 21
Placement Project Boundary and Example Water Quality Sampling Locations

Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



LEGEND:

- Sampling Locations
- North Lobe Boundary
- -45 feet MLLW Fill Area
- Bathymetry (feet MLLW)[1]

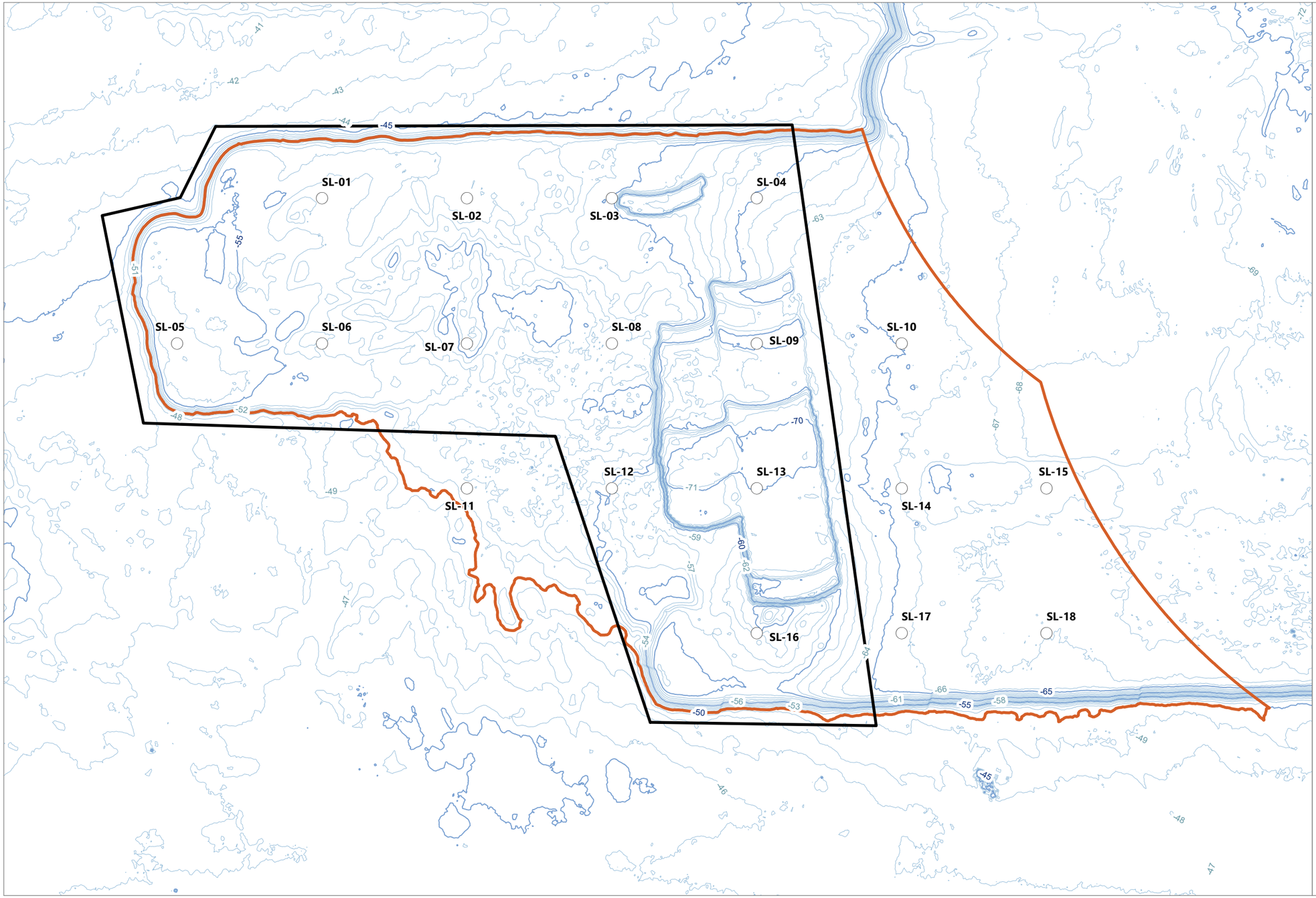
NOTE:
Bathymetry in feet MLLW, NOAA, November 2013

0 350
Feet

Publish Date: 2019/04/19, 5:38 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\KPFF_0159\POLB_Western_Anchorage\Maps\2019_04_TechnicalRpt\OHSPER_TechRept_Proposed_Sampling_DDP.mxd

ANCHOR QEA

Figure 22
Proposed Sediment Core Sampling Locations Within the -45 feet MLLW Fill Area (North Lobe)
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report



LEGEND:

- Sampling Locations
- South Lobe Boundary
- -50 feet MLLW Fill Area
- Bathymetry (feet MLLW)[1]

NOTE:
Bathymetry in feet MLLW, NOAA, November 2013

0 350
Feet

Publish Date: 2019/04/19, 5:38 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\KPFF_0159\POLB_Western_Anchorage\Maps\2019_04_TechnicalRpt\OHSPER_TechRept_Proposed_Sampling_DDP.mxd

ANCHOR QEA

Figure 23
Proposed Sediment Core Sampling Locations Within the -50 feet MLLW Fill Area (South Lobe)
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report

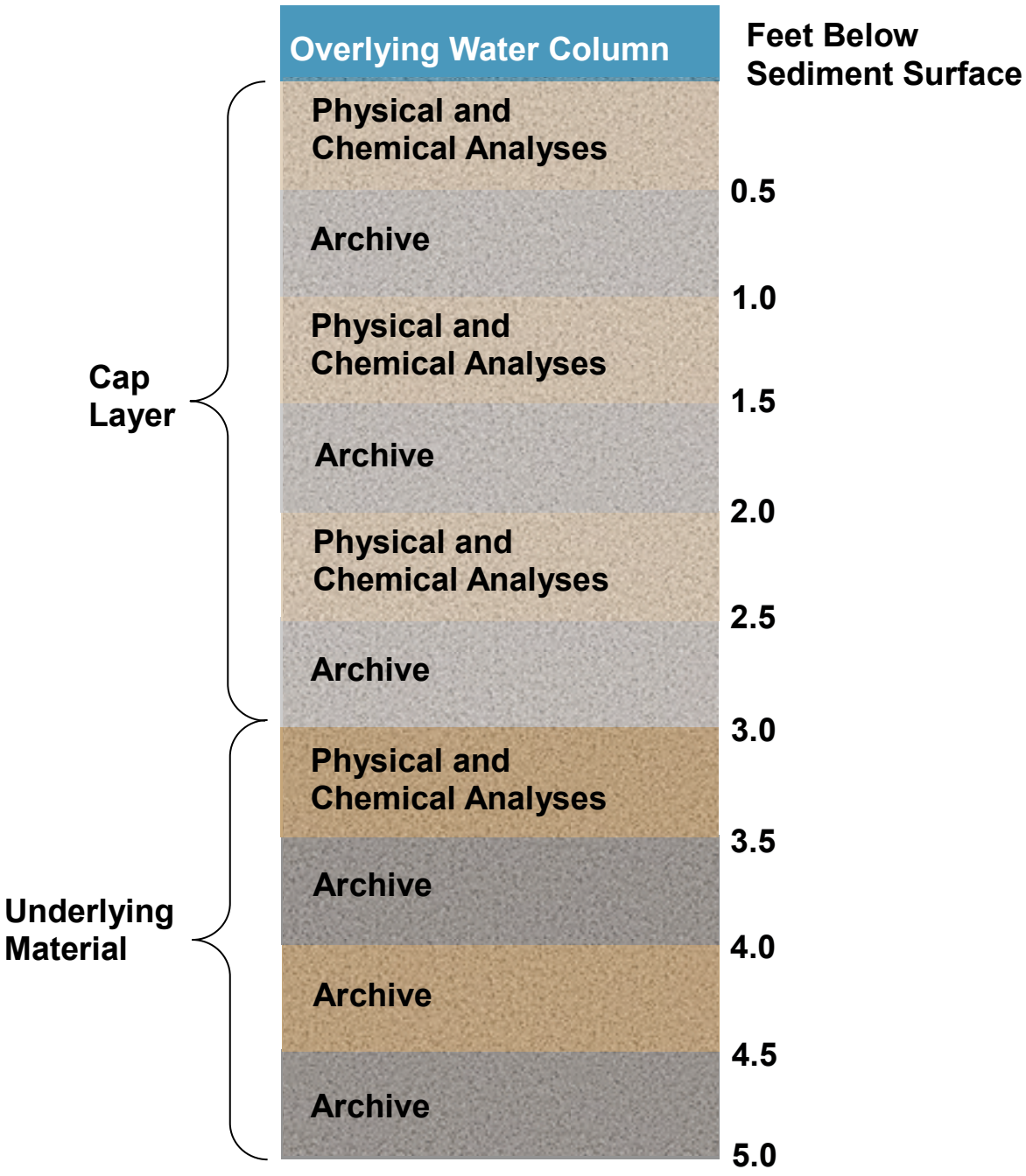


Figure 24
Sediment Core Schematic
Outer Harbor Sediment Placement and Ecosystem Restoration Site
Technical Report

Appendix A
Operations Management and Monitoring Plan



November 2017
Outer Harbor Sediment Placement and Ecosystem Restoration Site

ANCHOR QEA

Operations Management and Monitoring Plan

Prepared for Port of Long Beach

November 2017
Outer Harbor Sediment Placement and Ecosystem Restoration Site

Operations Management and Monitoring Plan

Prepared for
Port of Long Beach
4801 Airport Plaza Drive
Long Beach, California 90815

Prepared by
Anchor QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, California 92691

Latitude Environmental
630 Grand Avenue, Ste. D
Carlsbad, California 92008

Project Number: 160343-16.03

TABLE OF CONTENTS

1 Introduction 4

1.1 Site Overview and Need 4

1.2 Document Organization 7

2 OHSPER Site Description 9

2.1 Site Boundary 9

2.2 Adjacent Site Uses/Constraints 12

2.3 Physical Environment 12

2.3.1 Tides and Currents 12

2.3.2 Groundwater Interface 13

2.3.3 Current Chemical Conditions 13

2.3.4 Biological Conditions 13

3 Establishment of the OHSPER Site Operations Management and Monitoring Plan 15

3.1 Operations Management and Monitoring Plan Objectives 15

3.2 Legal Authority and Responsible Parties 15

3.3 Activities Requiring Permits/Authorization 16

3.4 Permit Application Process 17

3.5 Modifications to the Operations Management and Monitoring Plan 17

4 Procedures for Selecting Projects for Placement at OHSPER 18

4.1 Characterization of Placed Material 18

5 Operating Procedures 20

5.1 Agency Coordination and Communication 20

5.2 Placement Procedures 20

5.2.1 Construction Monitoring 21

5.3 Interim Capping Procedures 22

5.3.1 Construction Monitoring 22

5.4 Closure Procedures 23

5.4.1 Construction Monitoring 23

5.4.2 Post-closure Long-term Monitoring 24

5.5 Event-Related Monitoring 25

5.6 Navigation and Safety Requirements 26

6 Contingency Plans 27
6.1 Emergency Notification Procedures 27
6.2 Incidents and Unusual Occurrences 27
6.3 Cap Effectiveness and Maintenance Actions 28
7 References 29

TABLES

Table 1 Summary of Anticipated Port Dredging Needs 7

FIGURES

Figure 1 Project Map 5
Figure 2 Material Placement 10
Figure 3 Material Placement Area with Side Slopes 11

APPENDICES

Appendix A Maximum Sediment Concentrations Used for Chemical Isolation Analysis
Appendix B Water Quality Monitoring Plan
Appendix C Long-Term Monitoring Plan

ABBREVIATIONS

BMP	best management practice
CAD	confined aquatic disposal
CEQA	California Environmental Quality Act
City	City of Long Beach
COPC	contaminants of potential concern
CSTF	Contaminated Sediments Task Force
cy	cubic yards
DMMP	Dredged Material Management Plan
DTSC	California Department of Toxic Substances Control
ERM	effects range median
FS	feasibility study
Harbor	Los Angeles and Long Beach Harbor
m	meter
mcy	million cubic yards
MLLW	mean lower low water
NEIBP	North Energy Island Borrow Pit
NOAA	National Oceanic and Atmospheric Administration
OHSPER	Outer Harbor Sediment Placement and Ecosystem Restoration
OMMP	Operations Management and Monitoring Plan
PCB	polychlorinated biphenyl
Port	Port of Long Beach
Ports	Ports of Long Beach and Los Angeles
PMP	Port Master Plan
RGP	Regional General Permit
RWQCB	Regional Water Quality Control Board
SET	standard elutriate test
SLC	California State Lands Commission
State	State of California
STFATE	Short-term Fate
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USEPA	U.S. Environmental Protection Agency
WASSS	Western Anchorage Sediment Storage Site
WDR	Waste Discharge Requirement
WQMP	Water Quality Monitoring Plan
WRAP	Water Resource Action Plan

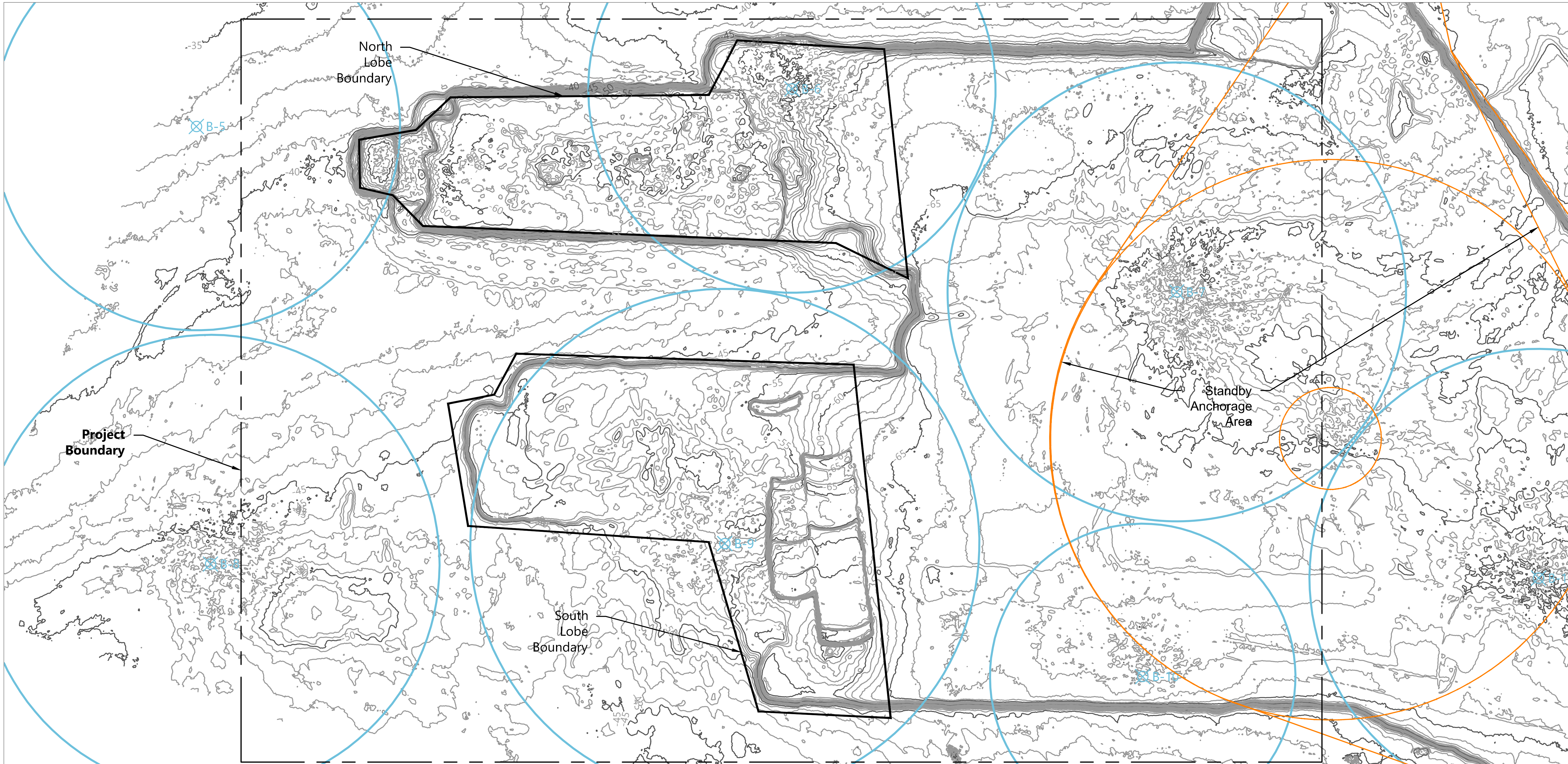
1 Introduction

1.1 Site Overview and Need

The Outer Harbor Sediment Placement and Ecosystem Restoration (OHSPER) site, is located in the Outer Harbor of the Port of Long Beach (Port) and consists of two large borrow pits referred to as the North and South Lobes (Figure 1). The OHSPER borrow pits are part of a larger borrow area used by the Port between the 1950s and 1980s to mine sand for use as fill material during the creation of Pier J and other terminal development projects.

In 1998, the borrow pits were officially designated as a beneficial reuse storage and disposal site called the Western Anchorage Sediment Storage Site (WASSS) (Knatz 1998). Between 1998 and 2011, the Port and the U.S. Army Corps of Engineers (USACE) placed dredged sediments at both the North and South Lobes with the intention that it could be either beneficially reused in future Port fill projects or permanently disposed of at the site. Over those same years, material placed within the South Lobe was used for various Port development projects. In 2011, material from the North Lobe was targeted for use at the Middle Harbor development project, using hydraulic excavation and placement methods. A routine environmental evaluation prior to construction, however, determined that a large portion of the material was contaminated and therefore not suitable for beneficial reuse at the intended location. This discovery launched a more thorough investigation of impacted material extent and options for management.

In 2015, the Port conducted an alternatives analysis to evaluate management alternatives for clean and contaminated sediments within the site. The alternatives included continuing to use the storage site as is (no action), removing contaminated sediments, capping and closing the site, and developing a confined aquatic disposal (CAD) site to manage contaminated sediments in place and provide a long-term sediment management tool for both clean and contaminated sediments. The Port's preferred alternative was to develop a CAD site in the North Lobe of the OHSPER site for the management of both clean and contaminated sediments, and to continue to use the South Lobe, initially, for placement and reuse of clean material only. During discussions with the Contaminated Sediments Task Force (CSTF) members, it was recommended that the South Lobe also be considered and evaluated for use as a CAD site in anticipation of the Port's changing needs. Therefore, the CAD technical feasibility study (FS) was expanded to include the South Lobe.



SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013. Anchorage locations provided by Port of Long Beach.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

-55 Contours from 2013 Bathymetry

B-# Port of Long Beach Anchorage Number

Anchorage Location

0 600
Feet

Publish Date: 2017/03/29 2:52 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0343 RP-001 SITE.dwg FIG 1

ANCHOR QEA

Figure 1
Project Map

Operations Management and Monitoring Plan
Outer Harbor Sediment Placement and Ecosystem Restoration Site

The FS included a series of technical studies to evaluate anticipated environmental and operational concerns regarding contaminant release during placement activities and post-construction (Anchor QEA 2016). The studies evaluated specific technical challenges inherent to CAD site development at the OHSPER site, including water quality impacts during disposal and capping, resuspension of sediments and cap disturbances resulting from prop wash and anchor scour, bioturbation by benthic organisms, and the potential for groundwater upwelling at the site, which could affect chemical containment. Through these evaluations, it was determined that this alternative is economically feasible, environmentally protective, compliant with both the Port's internal sediment management plan as well as the CSTF's regional strategy, and allows for future use of the OHSPER site as a sediment storage and disposal area. This alternative is also supported by the CSTF regulatory agencies, adding to its feasibility. The OHSPER site could be designed to receive and contain clean and contaminated sediments and would result in a significant cost savings to future Port development projects as well as provide greater flexibility in accommodating variable project schedules.

The Port needs the ability to manage large quantities of sediment. Examples of potential future projects are provided in Table 1. Current available management and beneficial use alternatives are limited. Ocean disposal is possible for clean material, but the ocean disposal site management limits the quantities placed per year and does not provide an opportunity for beneficial reuse. Transporting and disposing this material in an upland landfill would be expensive; would impact air quality, traffic, and noise; and would cause other impacts associated with hauling the material via trucks on the local roads and highways. To date, the Port has successfully managed large quantities of material within capital development projects, but projects requiring fill are not currently planned to provide sediment placement options that would be considered beneficial reuse. The OHSPER site will be developed to receive and contain clean and contaminated sediment and would result in capacity to address planned development projects with minimal environmental impacts, flexible schedules, and reduced costs, and it would be managed in a way that improves overall sediment quality in the Long Beach Outer Harbor.

This Operations Management and Monitoring Plan (OMMP) has been developed to document the planned approach for managing the site as both a disposal and reuse site for long-term sediment management. The OMMP relies heavily on the lessons learned during development of the North Energy Island Borrow Pit (NEIBP) and Port of Hueneme CAD sites, both of which have been successfully permitted and constructed since 2001 with feedback from CSTF members.

Table 1
Summary of Anticipated Port Dredging Needs

Project	Estimated Dredge Volume (cy)	Limitations for Placement in Fill
Pier S Dike Realignment	1,600,000	Known to be poor quality with likely chemical impacts, requiring confined disposal
Pier J Berths and Approach Channel (-55 feet MLLW)	2,500,000	Expected to be suitable for open water placement
Annual Maintenance Dredging	50,000 per year	Expected to be poor quality, requiring confined disposal
West Basin Approach Channel Expansion (-55 feet MLLW)	500,000	Expected to be suitable for open water placement
Outer Harbor Standby Anchorage Area	3,000,000	Expected to be suitable for open water placement
Queen's Gate Approach Channel	2,200,000	Expected to be suitable for open water placement
Southeast Basin (-55 feet MLLW)	100,000	Expected to be poor quality, requiring confined disposal

1.2 Document Organization

The organization of this document has been structured to provide pertinent information regarding operations and intended uses of the proposed management area, focusing on the communication and review steps, daily operations and contingency plans, and intended short- and long-term monitoring. It is intended to be a living document, subject to adaptive management, which is updated over time to adjust to changing site conditions and/or actual monitoring data which may suggest that more or less oversight is required to meet environmental concerns.

Section 2 – OHSPER Site Description		
2.1	Site Boundary	Summarizes the site boundary for the OHSPER site, including existing depths and remaining capacity
2.2	Adjacent Site Uses/Constraints	Summarizes adjacent site uses and constraints to the OHSPER site
2.3	Physical Environment	Summarizes the physical environment at the OHSPER site, including hydrodynamic conditions, groundwater, and biology
Section 3 – Establishment of the OHSPER Site Operations Management and Monitoring Plan		
3.1	Operations Management and Monitoring Plan Objectives	Describes the plan for managing the CAD site and provides construction and monitoring framework
3.2	Legal Authority and Responsible Parties	Describes the legal process by which the Port intends to operate the CAD site
3.3	Activities Requiring Permits/Authorization	Describes the required permits and agency approvals for operating the CAD site and steps for complying with each requirement
3.4	Permit Application Process	Describes the process that will be used to permit each placement or reuse activity at the CAD site and its relationship to the project Environmental Impact Report

3.5	Modifications to the Operations Management and Monitoring Plan	Describes the adaptive management nature of the document and how updates or modifications will be communicated to the agency stakeholders
Section 4 – Procedures for Selecting Projects for Placement at OHSPER		
4.1	Characterization of Placed Material	Summarizes testing to determine suitability of material for unconfined or confined placement within the CAD site
Section 5 – Operating Procedures		
5.1	Agency Coordination and Communication	Describes the process for notifying the resource and regulatory agencies when the CAD site will be used and the results of ongoing monitoring efforts
5.2	Placement Procedures	Describes the general placement procedures and planned monitoring activities associated with material placement at the CAD site
5.3	Interim Capping Procedures	Defines the interim capping needs and planned monitoring activities associated with interim cap placement in between disposal events
5.4	Closure Procedures	Describes site closure procedures, final cap design features, and long-term monitoring activities associated with site closure and post-cap placement
5.5	Event-related Monitoring	Describes potential monitoring activities that will be conducted as a result of defined events that could affect site containment and/or future use
5.6	Navigation and Safety Requirements	Describes how navigation impacts and safety concerns will be managed during CAD site use
Section 6 – Contingency Plans		
6.1	Emergency Notification Procedures	Details the process and timing for notifying agency members in the event of containment breach or site damage
6.2	Incidents and Unusual Occurrences	Documents the mitigation activities that will occur in the event of an unintended impact to the site
6.3	Cap Effectiveness and Maintenance Actions	Documents the contingency plans for ensuring site performance, including altering or ceasing site use
Section 7 – References		Lists relevant citations for documents or data cited throughout this document

2 OHSPER Site Description

2.1 Site Boundary

As described in Section 1.1, the OHSPER borrow pits are part of a larger borrow area used by the Port between the 1950s and 1980s to mine sand for use as fill material. The larger borrow area includes the North and South Lobes of the WASSS described in this document but also extends all the way to the Federal Navigation Channel to the east. The OHSPER site boundary includes the extents of the larger borrow area; however, it is constrained on the east by the Port's anchorage B-7 and a planned standby anchorage area (Figure 2).

Current bathymetric conditions within the OHSPER site, based on bathymetry surveys conducted by the National Oceanic and Atmospheric Administration (NOAA) in September and November 2013, are also presented in Figure 2. Existing depths within the site range from -48 to -70 feet MLLW. It is the Port's plan to fill the site to the surrounding grade, which includes -45 feet and -50 feet mean lower low water (MLLW) fill areas due to the natural slope of the Long Beach Outer Harbor (Figure 3). Based on current bathymetry, the remaining capacity of the fill areas are approximately 1.6 and 1.7 million cubic yards (mcy), for the north and south lobes respectively.

North Lobe Boundary

Project Boundary

South Lobe Boundary

Standby Anchorage Area

B-5

B-6

B-7

B-8

B-9

B-14

SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013. Anchorage locations provided by Port of Long Beach.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

-55 Contours from 2013 Bathymetry

B-# Port of Long Beach Anchorage Number

Anchorage Location

-45 Fill Area

-50 Fill Area

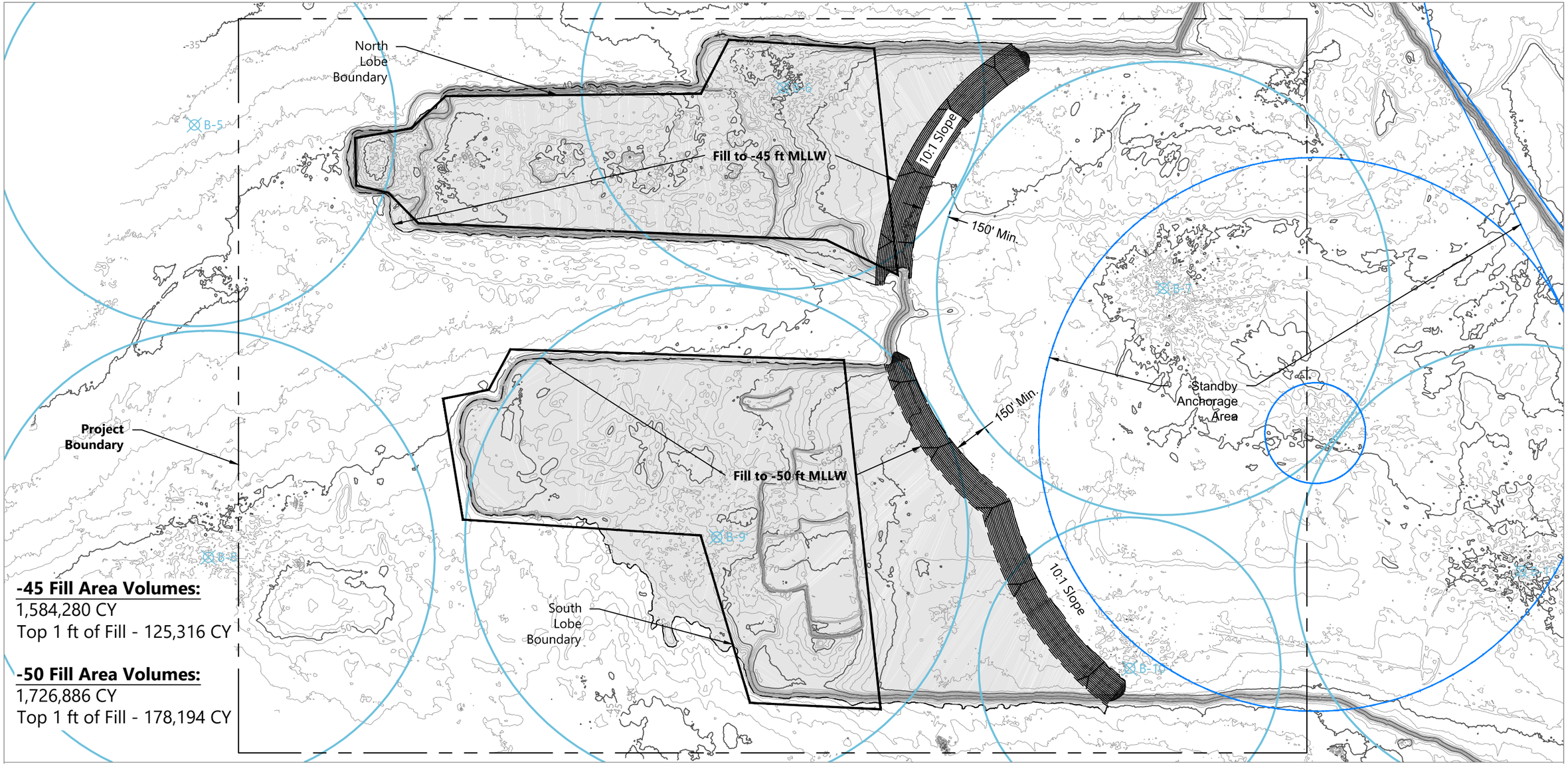
0 600
Feet

Publish Date: 2017/03/29 2:53 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0343 RP-002 PLACEMENT.dwg FIG 2

ANCHOR QEA

Figure 2
Material Placement

Operations Management and Monitoring Plan
Outer Harbor Sediment Placement and Ecosystem Restoration Site



SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013. Anchorage locations provided by Port of Long Beach.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

-55 Contours from 2013 Bathymetry

B-# Port of Long Beach Anchorage Number

Anchorage Location

0 600
Feet

Publish Date: 2017/03/29 2:57 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0343 RP-003 FILL.dwg FIG 3

ANCHOR QEA

Figure 3
Material Placement Areas with Sideslopes
Operations Management and Monitoring Plan
Outer Harbor Sediment Placement and Ecosystem Restoration Site

2.2 Adjacent Site Uses/Constraints

Development of the OHSPER site must not impact current Port operations or impact future uses of adjacent areas like the anchorage grounds. This section reviews the current and potential future site uses and presents them as constraints to the current project.

The site is located in the commercial anchorage grounds at the Port (Figure 2). The Federal Navigation Channel is located to the east. Routine anchoring of large vessels and vessel movements could potentially affect cap integrity and were considered when evaluating the final cap thickness. Based on the anchor scour and prop wash evaluations conducted during the FS, and the proposed final cap thickness, no restrictions or institutional controls are necessary to maintain cap integrity and isolate potential contaminants (Anchor QEA 2016).

As described in Section 2.1, the eastern boundary of the CAD site is constrained by the standby anchorage area and a 150-foot (50-yard) buffer to allow for an additional margin of safety. To maintain this anchorage, no sediment will be placed within this area. The limits of the anchorage (plus buffer) were set as the eastern site boundary of the OHSPER site. Sediment placement within the site will be limited to the elevations of the surrounding grade (-45 and -50 feet MLLW). Sufficient capacity must be maintained within the site to allow placement of the final cap without exceeding target elevations and impacting navigation or operation of the existing anchorages.

Following construction of the OHSPER site, future dredging activities will be restricted in areas that contain contaminated materials to maintain the integrity of the site and prevent contaminant release.

2.3 Physical Environment

As described in Section 1.1, the OHSPER site FS (Anchor QEA 2016) included technical studies and reviews of potential environmental impacts. This section summarizes the physical environment around the OHSPER as it relates to operational considerations. Greater detail of the general physical environment in and around the Port is provided in the Port's California Environmental Quality Act (CEQA) document.

2.3.1 Tides and Currents

The OHSPER site is in the Long Beach Outer Harbor. Like the rest of Southern California, this area experiences mixed semi-diurnal tides (i.e., two high tides and two low tides per day, each with varying heights). The Port's hydrodynamic model (Water Resource Action Plan [WRAP] Model, developed by Everest International Consultants) further illustrates dominant currents formed by the breakwater and port infrastructure. Flood tide currents are strongest at Angel's Gate and Queen's Gate but quickly diminish in strength as they are bifurcated by Pier 400 in Port of Los Angeles and Pier J in Port of Long Beach. This results in a convergence of water and a further reduction in current speeds in Long Beach Outer Harbor as currents trend toward the east-northeast after passing

through Angels Gate and from the west after passing through Queen's Gate. In contrast to flood current patterns, during ebb tides there is a divergence of water in Long Beach Outer Harbor as water travels either west-southwest toward Angels Gate or east toward Queen's Gate. Ebb currents tend to have lower speeds than flood currents, except when near the two gates.

During sediment placement at the OHSPER site, tides and currents may mobilize sediment off site. Short-term Fate (STFATE) modeling was performed to evaluate these concerns (Anchor QEA 2016). Hydrodynamic data generated from the WRAP Model were used to inform the STFATE model. Results from the model scenarios were used to estimate sediment dispersion patterns associated with disposal operations at the North and South Lobe boundaries. Results of this evaluation suggested that material placement can be successfully achieved without significant losses of material due to drift and water currents.

2.3.2 Groundwater Interface

The OHSPER site is located in the West Coast Groundwater Basin in the Coastal Plain of Los Angeles County. Prior to development of the Los Angeles Basin, groundwater in the West Coast Basin was recharged through local infiltration and underflow from adjacent groundwater basins, and discharged to the Santa Monica Bay and San Pedro Bay. Due to over-pumping during the development of the Los Angeles Basin, water levels in most of the West Coast Basin declined and remained below sea level, which resulted in seawater intrusion along the coast. The OHSPER site is outside the freshwater discharge zone, and there does not appear to be a potential for groundwater upwelling (Anchor QEA 2016).

2.3.3 Current Chemical Conditions

In 2014, a sediment characterization study was conducted on material from the North Lobe to confirm vertical and horizontal extents of impacted sediments (Anchor QEA 2015). This study represents the most current chemical conditions for the North Lobe. Elevated concentrations (greater than the effects range median [ERM] value) of lead, mercury, zinc, total chlordanes, total DDTs, and total polychlorinated biphenyls (PCBs) were measured in North Lobe sediments.

South Lobe sediments were previously characterized by AMEC in 2007 (AMEC 2010). Current conditions are expected to be consistent with that 2007 study, which showed concentrations of contaminants of potential concern (COPCs) universally lower than those measured in North Lobe, and at levels that suggest stockpiled material from the South Lobe is clean.

2.3.4 Biological Conditions

The Long Beach Outer Harbor comprises various habitats including the Long Beach shallow water habitat, riprap along piers and wharves, breakwaters, and soft bottom habitat. The area near the OHSPER site comprises soft sediments that support a diverse benthic population of fish and

invertebrates. Kelp communities flourish along the breakwater to the south of the site. Marine mammals traverse the site on occasion. The Outer Harbor area is included in various regional marine monitoring programs, and the Ports of Long Beach and Los Angeles (Ports') periodic biological surveys. Results of the 2013-2014 harbor-wide biological survey (MBC and Merkel 2016) suggest that the Los Angeles and Long Beach Harbor (Harbor) Complex continues to support healthy and robust biological communities. The establishment of eelgrass in Inner Harbor areas not previously colonized, and record canopy coverage of giant kelp, suggests that water clarity and quality continues to improve in the Harbor Complex.

For the first time, a pollution-sensitive infaunal species was the most abundant species collected in Port sediments, and community parameters suggest that benthic conditions continue to improve. Fish and invertebrate communities within the Harbor are diverse and abundant, and region-wide changes in community composition and abundance were reflected within the Harbor Complex. Non-native species are established throughout the Ports but do not appear to be proliferating more than previous biological surveys in 2000 and 2008. Kelp, macroalgae, fish, and birds undergo wide seasonal changes in distribution and abundance, but results in 2013-2014 were similar to those of previous surveys and reflect the improvements in water, sediment, and habitat quality in the Harbor Complex that began in the 1970s and continue to this day. Potential biological impacts associated with the site are fully vetted in the Port's CEQA document but were considered here as potential receptors when evaluating the chemical flux modeling data and determining interim and final cap thickness.

3 Establishment of the OHSPER Site Operations Management and Monitoring Plan

The goal of the OMMP is to document the planned operating and monitoring procedures for ongoing use of the OHSPER site, including mitigation measures for minimizing potential risks to the environment or to Port operations. The intent is that this document will serve as a basis for agreement with agency stakeholders on these key functions of the project, and to allow it to become a living document that can be modified and updated as conditions change or monitoring results dictate.

3.1 Operations Management and Monitoring Plan Objectives

The objectives of the OMMP include the following key elements:

- Define the process for permitting and agency approval for site use
- Define the monitoring procedures for key aspects of site use, including:
  - Placement of materials at the site
  - Interim capping of unsuitable materials between long durations in placement events
  - Site closure/capping once maximum fill elevations have been achieved
- Define the mitigation measures that will be employed to minimize risks to the environment or impacts to Port operations
- Define procedures for notifying agency stakeholders of site use and monitoring results
- Define the process for updating and/or modifying the OMMP

3.2 Legal Authority and Responsible Parties

Submerged lands in the State of California (State) are managed by the California State Lands Commission (SLC). The City of Long Beach (City) acts as a Trustee of the State for managing tidelands in Long Beach and up to 3 miles from the shore, which includes the area containing the OHSPER site. Current SLC guidelines for environmental management of State aquatic land include the following:

> The California State Lands Commission has broad mandates for protection of California's natural environment. In its 1892 opinion in Illinois Central Railroad v. Illinois [146 U.S. 387], the U.S. Supreme Court declared that the "Sovereign Lands" of a state are held in trust by the State for all present and future generations, and that such land may not be sold for development incompatible with uses covered by the Public Trust Doctrine. Historically, the Public Trust Doctrine provided for the public our waterways for "commerce, navigation, and fisheries". Later court rulings added hunting, fishing, swimming and recreational boating, and in 1971 expanded them to include "preservation of those lands in their natural state", in order to protect scenic and wildlife habitat values.

> A 1983 California Supreme Court ruling [National Audubon Society v. Superior Court, 33 C3rd 419] held that the State has an "affirmative duty to take the public trust into account" in making decisions affecting public trust resources, and also the duty of continuing supervision over these resources which allows and may require modification of such decisions. The Commission follows this mandate when considering the use of "Sovereign Lands" under its jurisdiction, and seeks cooperation of other agencies having authority over public trust resources.

Because the OHSPER site is intended as a key disposal alternative for sediments accumulating in navigation channels important for commercial purposes, operation of the site as a disposal area fulfills multiple key criteria under the SLC Public Trust Doctrine (Commerce and Navigation). In addition, once the depressions have been filled, and a clean cap installed, it will mimic the bathymetry and sediment characteristics of the surrounding environment and present a much more suitable habitat for aquatic species. This, in turn, will provide an added environmental benefit to the region by improving the water quality and fish habitat, also a key criterion outlined in the Public Trust Doctrine.

3.3 Activities Requiring Permits/Authorization

From a regulatory perspective, both the OHSPER site and the source material, whether intended for permanent disposal or temporary placement for future reuse, needs to be permitted with both the USACE and Regional Water Quality Control Board (RWQCB). The WASSS is currently permitted with both entities and included in the Port Master Plan (PMP) for use as a sediment storage and disposal site for ocean suitable dredge material. It is anticipated that the PMP will be amended or updated to allow its use as a CAD site for the same current uses, as well as the long-term disposal of impacted or non-ocean suitable dredge materials.

Placement of material within the site must also be permitted with the USACE (Section 404 of the Clean Water Act and Section 10 of the River and Harbors Act) and RWQCB (Section 401 Water Quality Certification and Waste Discharge Requirements [WDRs]), specifying the intended location and nature of the sediment placement. Any permits issued by the agencies must recognize the OHSPER site OMMP and must not impose disposal restrictions that could conflict with the Port's PMP or Tidelands Trust Agreement. With the exception of maintenance dredging projects under the Port's Regional General Permit (RGP), it is anticipated that these permits would be obtained on an individual basis for each project. The Port's current maintenance dredging RGP authorizes this site for sediment disposal but requires project-specific sediment suitability determinations prior to dredging and placement. The RGP also imposes annual (150,000 cubic yards [cy]) and cumulative (750,000 cy over 5 years) limits on maintenance dredging that may be performed under the permit.

3.4 Permit Application Process

The Port anticipates obtaining all necessary permits and approvals to operate the OHSPER site as a multi-project sediment management site. Project-specific authorizations for sediment placement would be obtained by the Port under its RGP or as individual projects. Prior to applying for permits, sediment proposed for dredging would be characterized to determine its suitability for placement and to evaluate any potential impacts to water quality or risks to aquatic organisms. Dredged material generated within the Port through both maintenance dredging and capital dredging could be placed in the site subject to determination of suitability and regulatory approval.

3.5 Modifications to the Operations Management and Monitoring Plan

The effective use of CAD sites for long-term management of contaminated sediments in Southern California has been validated through recent and similar projects within the region. In 2001, the USACE initiated the Los Angeles Regional Dredge Materials Management Plan (DMMP) Pilot Studies to evaluate the feasibility of managing contaminated sediments in the Los Angeles region through various disposal or treatment options. As part of the DMMP Pilot Studies, the USACE conducted a field pilot study to test the effectiveness of aquatic capping and CAD technologies as alternatives for managing contaminated sediments in the region at the North Energy Island Borrow Pit (NEIBP) located in Eastern San Pedro Bay. Following construction, the site was then monitored for a period of 12 years to evaluate the effectiveness of the design, at which time the USACE concluded that the CAD was operating exactly as it was designed (Anchor QEA 2014).

Building on the success of the NEIBP, a second CAD site was constructed in Port Hueneme by the Oxnard Harbor District, U.S. Navy, and USACE during 2009. Post construction, a 5-year monitoring program was initiated to monitor for potential chemical release, uneven settling or fractures, and any other surface disturbances. All monitoring suggested the CAD was operating as designed and no chemical releases were detected (Anchor QEA 2014).

The procedures presented in the document are based on the more than 15 years of collective experience with these previous CAD projects. While valuable information has been already gathered related to successful operation of a CAD site in Southern California, it is possible that site conditions at the OHSPER may necessitate modifications to the approach once construction gets underway. As such, it is the Port's intent that this OMMP become a living document, updated over time to best suit actual site conditions and concerns. Each time a modification is desired, the Port will work with CSTF members to make the appropriate modifications.

4 Procedures for Selecting Projects for Placement at OHSPER

Currently, the -45 feet and -50 feet fill areas can accommodate approximately 1.6 and 1.7 mcy of material, respectively. Prior to construction, material must be characterized to determine suitability for placement at the OHSPER site and to evaluate any potential impacts to water quality or risks to aquatic organisms. Under the proposed site use, any dredged material generated within the Port (e.g., capital and maintenance projects) would qualify for placement at the OHSPER site, as long as it is not considered as hazardous waste according to Title 22 regulations. Any material not suitable for ocean disposal will eventually require a cap to minimize exposure to aquatic life through direct contact with benthic organisms or via chemical partitioning. When possible, projects would be planned or phased for placement where less contaminated material is placed over more contaminated material. Only material that has been characterized as suitable for ocean disposal will be considered for interim and final cap layers.

4.1 Characterization of Placed Material

Material to be placed temporarily for reuse or for permanent disposal should be characterized as part of the CSTF review process to determine suitability for placement within the OHSPER site. Material determined suitable for unconfined placement can be placed at the site in bulk or used as interim or final capping material. Material determined unsuitable or not fully characterized for unconfined placement will need to be capped. As recommended in the Port's *Sediment Management Handbook for Dredge and Fill Projects* (Anchor QEA and Thomas Johnson 2011), testing to evaluate potential environmental impacts associated with the placement of material within the site will include physical and chemical analyses of bulk sediment and may include elutriate chemistry using the standard elutriate test (SET) or biological testing depending on the placement objectives.

The testing approach will vary based on the proposed placement objectives. For unconfined placement (material not capped), testing will be performed in accordance with the Inland Testing Manual (USEPA/USACE 1998). A Tier I evaluation with confirmatory chemistry may be sufficient to demonstrate suitability for unconfined placement if the material is very clean (i.e., less than the effects range low value) and exclusionary criteria have been met. Otherwise, a full Tier III evaluation[1], including chemistry and biological testing, should be performed to demonstrate suitability for unconfined placement. For confined placement (material that is capped), sediment and elutriate

[1] Details on conducting a Tier III evaluation, which includes physical and chemical analyses and biological testing, is provided in the Port's *Sediment Management Handbook for Dredge and Fill Projects* (Anchor QEA and Thomas Johnson 2011). Chemical testing would include the standard suite of chemicals as defined by USEPA, and physical testing would focus on grain size analyses. Biological testing would include solid phase, suspended particulate phase, and bioaccumulation testing to determine whether anthropogenic contaminants of concern are present at concentrations such that unconfined aquatic disposal of the dredged material would pose an unacceptable risk of toxicity or bioaccumulation to biota.

chemistry using the SET is sufficient. For both placement objectives, the testing approach and sampling results would be presented to the CSTF for review and approval.

Material for confined placement is limited by the magnitude of contaminants present. Contaminant levels in harbor sediments are generally acceptable, but heavily contaminated sediments that would fall into any of the following categories is not acceptable:

- Constitutes "hazardous waste" as termed by the U.S. Environmental Protection Agency (USEPA) or the California Department of Toxic Substances Control (DTSC)
- Has land use restrictions or other long-term operations and maintenance requirements imposed by DTSC or another regulatory agency

The required cap thicknesses for interim and final cap layers were evaluated as part of the technical studies to support the design and planning for the development of the OHSPER site. A chemical isolation model was used to determine the cap thickness that would be sufficient to isolate known COPCs (Anchor QEA 2016). Simulations were performed for representative disposal material (i.e., Port dredge material and North Lobe stockpiled material). Modeled COPCs included mercury, polycyclic aromatic hydrocarbons, DDTs, chlordanes, and PCBs, based on ERM exceedances within representative disposal material. Based on the chemical isolation model, a 0.3-meter (m; 1-foot) cap would be sufficient to isolate COPCs and maintain concentrations within the bioturbation zone that are protective of benthic organisms. If actual disposal material contains additional COPCs or concentrations are significantly higher than those modeled as part of this analysis, additional model simulations would be needed prior to placement to confirm the appropriate cap thickness. A summary of maximum concentrations of COPCs in representative disposal material evaluated as part of the chemical isolation analysis is presented in Appendix A. These values may be used to screen material placed at the site to determine if additional model simulations would be required. The detailed summary of all disposal material evaluated as part of the chemical isolation analysis is presented in Appendix A of the FS (Anchor QEA 2016).

The final cap layer should also consider other regulatory limits within the Port. The Harbor Toxics TMDL includes limits on fish tissue for human health consumption. It may be necessary to demonstrate PCBs, DDTs, and other bioaccumulatives are not at levels that would affect human health consumption risks.

5 Operating Procedures

5.1 Agency Coordination and Communication

In October 2015, the Port presented the preferred management alternative for the North Lobe, development of a CAD site, to CSTF agencies to inform them of the Port's recommendation and solicit input on project direction (e.g., agency technical needs and concerns). Based on comments received, the CSTF members recommended expanding the evaluation of the CAD site to both the North and South Lobes. This support was largely due to the Port's anticipated sediment management need for both clean and contaminated materials. The agreed-upon path forward was to evaluate the potential environmental impacts through a series of technical studies to gather all the necessary information to allow the alternative to be designed and permitted.

Long-term use and management of the OHSPER site will require a defined protocol and CSTF approval for individual dredging and placement projects. As described above, the Port is completing a separate environmental review supporting a PMP amendment to address the intended site uses and will involve the CSTF stakeholders in that process.

Future agency coordination will include annual reporting on site use and approval of dredge material suitability determinations for individual permit applications proposing material placement on a permanent or temporary basis within the OHSPER site.

The Port will prepare and submit to the USACE, USEPA, RWQCB, and CSTF an annual report summarizing use of the OHSPER site for the previous year. The report will describe the project name, volume of sediment placed, and location of the placed sediment. The annual report will also describe the results of all monitoring activities during the previous year. The reports will include a discussion of current and past monitoring data for the site and will propose adaptive management measures if appropriate for the site. These reports will be submitted by the Port in a timely manner.

5.2 Placement Procedures

The OHSPER site will be designed to receive clean and contaminated sediment. Some material may be placed in areas targeted for long-term disposal and confinement, while other material (ocean suitable only) may be temporarily placed until it can be reused as fill material) for a future capital development project. The North Lobe currently contains sediments with elevated chemical concentrations, and the South Lobe contains sediments found to be suitable for ocean disposal. Placement of contaminated material will be prioritized in the North Lobe (-45 feet MLLW fill area). Clean, medium- to coarse-grained material ideal for re-handling and reusing as geotechnical fill will be prioritized for placement in the South Lobe (-50 feet MLLW fill area) until the North Lobe can no longer accept dredged material.

The most common material placement method uses a bottom-dump scow. Dredged material is removed by mechanical means and placed in the bottom-dump scow. The scow is transported into the fill site by tugboats and is centered over the disposal location. After the specified disposal location has been reached, the scow will open (or split in the case of a split-hull barge), allowing the sediment to fall through the water column to the fill base. The contractor will use best management practices (BMPs) to control material placement.

Placement activities will be monitored using a differential GPS, along with barge-tracking software at all times to track placement activities. Using a pre-placement bathymetric survey, target placement areas within the OHSPER will be identified, and coordinates for "drop zones" will be provided to the contractor. Interim bathymetric surveys will be used to monitor all placement activities.

Releases of dredged sediment outside of the OHSPER site could occur during transport of the material from the source areas to the OHSPER placement area. Flat-deck barges, scows, and/or haul barges that transport dredged sediment to and through the Port must be sealed to prevent leakage during transport. The contractor will control disposal of materials within the CAD so that loss of suspended sediment outside of the site itself, as determined by water quality monitoring, will be below the limiting criteria set forth in the WDRs.

5.2.1 Construction Monitoring

Construction monitoring for placement activities at the OHSPER will focus on confirming that contaminated sediments are not deposited outside of the designated CAD site. To achieve this objective, the following measures are proposed:

- Water column turbidity monitoring will be conducted on a routine basis to assess off-site transport during disposal operations.
- Bathymetric surveys will be used to confirm deposition area.

Based on the results of environmental monitoring, the Port may amend the placement methods to better match site conditions and minimize potential impacts.

5.2.1.1 Water Column Monitoring

The Water Quality Monitoring Plan (WQMP) for placement activities at the OHSPER site is presented in Appendix B. The monitoring plan describes methods and documentation for the monitoring of turbidity (i.e., light transmittance), pH, dissolved oxygen, total suspended solids, and visual observations. The Port has designated a placement project boundary that defines the area in which temporary water quality impacts may occur. The project boundary includes the extent of the placement area, construction equipment, and site containment BMPs. Water quality monitoring will be performed at two locations, one station up current of the project boundary to establish background conditions and one station down current of the project boundary to evaluate potential

project derived suspended particulate concentrations. Station locations will be positioned based on the tidal direction. Water quality monitoring will be conducted at least once per week during placement activities. BMPs will be used, as needed, to limit the escape of suspended particulates beyond the placement project boundary. Additional details on the monitoring approach and methods, including specific water quality parameters, sampling locations, and monitoring depths and frequency are provided in the WQMP (Appendix B) for inclusion in the project permits.

5.2.1.2 Bathymetric Surveys

Bathymetry will be conducted prior to construction to establish baseline conditions, and as needed during construction to monitor successful placement of contaminated material into the disposal cell and deposition outside the disposal area. A post-construction bathymetric survey will also be performed to quantify the final configuration and elevations of the OHSPER site.

5.3 Interim Capping Procedures

For instances when contaminated material (non-ocean suitable) will be left uncovered for longer than 12 months, an interim cap layer of ocean suitable material will be placed over the impacted material. As described in Section 1.1, a series of technical studies were performed to support the design, permitting, and operation of the CAD site (Anchor QEA 2016). One of the specific objectives was to determine cap thickness. Based on the chemical isolation model, a 0.3-m (1-foot) cap would be sufficient to isolate COPCs and maintain concentrations within the bioturbation zone that are protective of benthic organisms. Interim caps will be placed at a minimum thickness of 0.3 m (1 foot). The interim cap layer would be designed and constructed to prevent disturbance. Likewise, specific BMPs would be incorporated into engineering design specifications to provide the appropriate guidance for construction, including means and methods. Placement methods and BMPs are consistent with those described in Section 5.2.

5.3.1 Construction Monitoring

Construction monitoring for placement of interim cap layers will include water quality monitoring and bathymetric surveys. Because interim cap layers are only intended to isolate contaminants between disposal episodes and will subsequently be covered, long-term monitoring of interim caps will not be performed.

5.3.1.1 Water Column Monitoring

Water column monitoring during placement of interim cap layers will be consistent with the methods described in Section 5.2.1.1. The WQMP for all placement activities is presented in Appendix B. Water quality methods will meet those prescribed in the WDRs.

5.3.1.2 Bathymetric Surveys

During capping, bathymetric surveys will be performed to ensure cap material has been placed evenly over the entire site. A post-cap construction bathymetry survey will also be performed to determine the final configuration and elevations of the capped site and confirm the desired minimum cap thickness was successfully achieved.

5.4 Closure Procedures

Sediment placement within the OHSPER site will be limited to the elevations of the surrounding grade (-45 and -50 feet MLLW). Sufficient capacity must be maintained within the site to allow placement of the final cap without exceeding target elevations and impacting navigation or operation of the existing anchorages. Site closure can be assumed when the usable capacity of the disposal areas has been achieved. It is possible that site closure schedules for the North (-45 feet MLLW fill area) and South Lobes (-50 feet MLLW fill area) will occur on different time scales, so each site will need to be evaluated independently. For the purpose of this document, "site closure" is defined as the point when no further placement events can occur due to site bathymetry and the final cap covering has been placed over the site.

As described in Section 1.1, a series of technical studies were performed to support the design, permitting, and operation of the CAD site (Anchor QEA 2016). Specific objectives were to examine the physical isolation of contaminants and chemical containment to determine cap thickness. Based on the results of the bioturbation, propwash, anchor scour, and chemical isolation analyses, a 1-m (3.3-foot)-thick final cap layer is sufficient to provide chemical and physical isolation of contaminated material within the OHSPER site. Cap design considerations for developing a CAD site at the OHSPER site are simplified due to the existing site geometry. The final cap layer would be designed and constructed to prevent disturbance by vessel or anchor scour. Likewise, specific BMPs would be incorporated into engineering design specifications to provide the appropriate guidance for construction, including means and methods. Placement methods and BMPs are consistent with those described in Section 5.2.

5.4.1 Construction Monitoring

Construction monitoring for placement of the final cap layers will include water quality monitoring and bathymetric surveys.

5.4.1.1 Water Column Monitoring

Water column monitoring during placement of the final cap layer will be consistent with the methods described in Section 5.2.1.1. A WQMP for all placement activities is presented in Appendix B. Water quality methods will meet those prescribed in the WDRs.

5.4.1.2 Bathymetric Surveys

During capping, bathymetric surveys will be performed to ensure cap material has been placed evenly over the entire site. A post-construction cap bathymetric survey will also be performed to quantify the final configuration and elevations of the capped site and confirm the desired minimum cap thickness was successfully achieved. This information will provide a baseline for comparison to long-term bathymetric surveys of the OHSPER site.

5.4.2 Post-closure Long-term Monitoring

Long-term monitoring after the final cap layer is completed is required to verify that the CAD site has maintained its physical integrity and that the cap is maintaining its ability to sequester underlying contaminants. These parameters will be measured through the use of periodic post-construction bathymetric surveys and sediment coring of the cap layer. The key elements addressed by the long-term monitoring program include:

- Confirming the CAD site cap has maintained its physical integrity
- Confirming erosional or depositional processes, propwash, and/or anchor scour have not compromised the cap's ability to sequester underlying contaminants

The Long-Term Monitoring Plan for the OHSPER site is presented in Appendix C. The plan describes methods for sample collection and analysis, including monitoring schedule, sampling locations and depths, chemical analysis, and reporting requirements.

5.4.2.1 Bathymetric Surveys

Bathymetric surveys will be conducted at set intervals, following the completion of the final cap layer, to quantify the configuration and elevations of the capped site. Surveys will be conducted at 6 months and 1 year following placement of the final cap layer and then annually thereafter up to 5 years. Bathymetric surveys will be reported to the responsible state and federal regulatory agencies (i.e., California Coastal Commission, RWQCB, USEPA, and USACE). If the cap is performing as predicted after 5 years, the monitoring frequency will be reduced.. This information will help determine whether design criteria continue to be met and quantify rates of erosion or deposition at the OHSPER site. If anomalies are detected that might pose a threat to cap integrity, additional monitoring may be performed, including diver observations and/or remote cameras.

5.4.2.2 Sediment Core Sampling

Sediment core sampling will be performed immediately following placement of the final cap layer to provide information both on the physical characteristics of the cap and underlying sediment (i.e., cap thickness, coverage, and extent of mixing between layers) and chemical characteristics of the cap once in place. Core chemistry data will be collected spatially across the OHSPER site to establish a baseline profile of chemicals in various layers of the cap and underlying sediment. Cap core

chemistry information will also help identify the extent of any mixing between the cap and underlying sediment due to placement. Cores will be collected using an electric vibracore to a depth that penetrates through the cap and into the underlying sediments. Multiple subsamples will be collected from each to provide vertical resolution of the physical and chemical properties of the sediment cap.

At 1 year after completion of the final cap layer and every 5 years thereafter (up to 10 years), sediment coring will be conducted to provide information both on the physical characteristics of the cap and underlying sediment and the chemical characteristics of the cap for comparison to baseline data collected immediately after cap construction. Core chemistry data will be collected at the same stations sampled during baseline sampling. Chemistry will be compared to the baseline chemistry data to determine whether any chemicals are migrating from the underlying sediment into the cap sediment. If during long-term monitoring, increases in chemicals are found only in surface layers of the cap, this would be indicative of off-site chemical sources being deposited on the cap surface (rather than migration from beneath the cap). Because mixing or diffusion of chemicals through sediment is a time-dependent process, migration from underlying sediments will be observable first in the deepest layers of the cap. Any issues with cap integrity and its ability to confine contaminants are discussed in Section 6, Contingency Plans.

5.5 Event-Related Monitoring

Numerous technical studies were conducted to simulate varying site conditions during operation of the OHSPER site and evaluate for potential adverse impacts to the environment or Port operations. While a wide range of potential site conditions were tested, it is impossible to consider every potential event that could affect site performance. For example, the occurrence of a major seismic event could result in uneven settlement or breaches of the cap surface. Likewise, while water depths at the site are too great to see excessive scour, a major wind or storm event could result in vessels breaking loose from their anchorages and dragging their anchors over the surface of the CAD causing excessive mixing[2]. To account for these unlikely, but potential, occurrences, the following mitigation measures are proposed:

- In the event of a significant seismic event (defined as greater than a 6.0 magnitude earthquake), the Port will immediately conduct a bathymetric survey of the site to compare against previous events and look for evidence of uneven settling or fissures in the cap surface. If the results of the survey suggest that significant changes have occurred, the Port can consider additional monitoring techniques such as side scan sonar or diver surveys to inspect the damage and develop a plan for repair.

[2] One of the CAD special studies specifically looked at the effects from anchor drops onto the CAD surface, but it did not consider the effects of an anchor being dragged across the surface as this does not represent a likely scenario.

- In the event of a major wind or storm event at the site that results in vessels being dislodged from the overlying anchorages such that potential damage could have occurred at the site, the Port will follow a similar process as with the seismic events, which includes a bathymetric survey and possibly follow-up investigations to look for damage to the site.

If either of the above events are triggered, the Port will notify the CSTF agencies that monitoring has commenced and will share the results of the field surveys to determine if modifications to this OMMP are warranted.

5.6 Navigation and Safety Requirements

To ensure material placement and capping procedures are followed per the Port's commitments outlined in this document, strict guidelines will be used to direct any contractors performing the dredge material placement and/or capping activities. Typical BMPs like GPS and dump scow tracking will be used to ensure that material placement occurs only in pre-specified locations, and routine bathymetric surveys will be used to closely monitor actual disposition of the material. All requirements will be detailed in the engineering specifications, including contingencies for suspending or altering procedures if material is not placed in the proper location.

In addition to documenting detailed procedures for ensuring proper placement within the OHSPER site, close coordination will occur with the Port Pilots to ensure that placement activities do not disrupt vessel navigation or anchoring procedures. All contractor movements to and from the site will be coordinated to prevent potential safety concerns.

6 Contingency Plans

Environmental and maritime safety is of primary importance in the operation and management of the OHSPER site. This OMMP has been developed with these factors in mind. However, it is recognized that unforeseen events can occur. Sound plans of action are required to ensure consistent and appropriate actions are taken to deal with such events.

6.1 Emergency Notification Procedures

Each engineering design package prepared by the Port that includes material placement or capping at the OHSPER site will include a detailed plan for handling emergency notifications and communications. The contractor's plan will include acknowledgment and specific points of contact in the event of emergencies. During the pre-disposal meeting, the contractor will be provided 24-hour emergency numbers for the City, USACE, USEPA, U.S. Coast Guard (USCG), and the Long Beach Police Department, with specific instructions on who to contact in the event of an emergency.

6.2 Incidents and Unusual Occurrences

The Port, which is responsible for the operation and management of the site, will work with the disposal contractor to establish safe working conditions within the site. At the pre-disposal meeting and in the contract agreement to be executed between the contractor and the Port for disposal in the OHSPER, it will be emphasized that the contractor's tug captain and USACE-certified inspector are the first line of defense for ensuring safety and compliance at the site. It will be emphasized that no activities should be started if the potential for problems appears possible and that any ongoing disposal activities should be ceased once the potential for problems arises. It is anticipated that most remedies will be precautionary (e.g., wait for better weather; repair faulty disposal equipment; alter disposal equipment; alter disposal methods; and coordinate conflicting activities among separate, ongoing disposal events).

If incidents/unusual occurrences do occur, the contractor and the Port will immediately cease the specific disposal activity and assess the situation. Remedies will be identified and provided to the Port and, if necessary, the USCG for their concurrence. The contractor will be required to provide details on how the incident occurred and what immediate steps were taken to limit the extent of impact. The contractor will be required to report on immediate actions and notifications made. The Port will assess this information and evaluate the proposed remedy of the occurrence.

The Port will direct environmental monitoring during all specified disposal activities. The results of this monitoring will be reported to the Port. The Port will evaluate these results and work together to determine whether operations are environmentally sound. The results of environmental monitoring may require operational methods to be modified to help meet the determined goals.

Any change in dredged material disposal techniques, methods, or equipment must receive prior approval from the regulators, if relevant to provisions in the permits. Modifications to environmental permits may be required. If it becomes impractical to meet the criteria, considering the environmental and physical conditions within the site and equipment and methods available to the contractor, then engineering solutions will be considered and proposed. Modifications to the proposed actions and notifications described above will be made as lessons are learned in the operation and management of the site.

6.3 Cap Effectiveness and Maintenance Actions

The monitoring procedures detailed in this OMMP were developed to meet the following specific objectives:

- Ensure that all materials are placed within the defined limits of the OHSPER site and not lost due to water current or improper placement techniques
- Ensure that placement of impacted materials into the OHSPER site and/or clean capping layers does not cause water quality impacts to adjacent biological communities
- Ensure that interim and final cap layers are placed per agreed-upon thicknesses and locations
- Ensure that placed materials remain isolated from the environment and are not disrupted due to Port operations or external environmental events

The Port shall be responsible for collecting suitable data to make these evaluations and reporting the results to the CSTF stakeholders. Any failure in this process will result in the need to alter or suspend use of the site until modifications can be developed and approved by the CSTF. Upon closure, the Port will be responsible for long-term monitoring and maintenance of the final cap layer to ensure it is not disturbed.

7 References

AMEC (AMEC Earth & Environmental, Inc.), 2010. *Final Report Western Anchorage Sediment Storage Site Inventory: Summary of Sediment Chemistry, Toxicity, and Bioaccumulation Test Results*. Prepared for the Port of Long Beach Planning Division. February 2010.

Anchor QEA, 2014. *Sampling and Analysis Report*. 12-year post-construction monitoring of the NEIBP. Prepared for the Los Angeles District Corps of Engineers. July 2014.

Anchor QEA, 2015. *Sampling and Analysis Report*. Western Anchorage Sediment Storage Site Sediment Characterization. Prepared for the Port of Long Beach. January 2015.

Anchor QEA, 2016. *Outer Harbor Sediment Placement and Ecosystem Restoration Site, Confined Aquatic Disposal Feasibility Evaluation*. Prepared for the Port of Long Beach. July 2016.

Anchor QEA and Thomas Johnson, 2011. *Sediment Management Handbook for Dredge and Fill Projects*.

Knatz, G, 1998. Memorandum to Board of Harbor Commissioners. Regarding: Release of Port Master Plan Amendment 11 and Negative Declaration. January 28, 1998.

MBC and Merkel (MBC Applied Environmental Sciences and Merkel & Associates), 2016. *2013-2014 Biological Surveys of Long Beach and Los Angeles Harbors*. Prepared for Port of Long Beach and Port of Los Angeles. June 1, 2016.

USEPA/USACE, 1998. *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual: Inland Testing Manual*. USEPA-823-B-94-002. USEPA, Office of Water (4305).

Appendix A
Maximum Sediment Concentrations Used for Chemical Isolation Analysis

Table A-1

Maximum Sediment Concentrations for Representative Disposal Material Evaluated as Part of Chemical Isolation Analysis

	Units	ERL	ERM	Maximum Concentration	Location	Source
Mercury (mg/kg)	mg/kg	0.15	0.71	2.5839 J	IHTB	Anchor QEA 2014
Total HMW PAHs [1]	µg/kg	1,700	9,600	25,980	North Lobe	Anchor QEA 2015
Total LMW PAHs [2]	µg/kg	552	3,160	4,735	North Lobe	Anchor QEA 2015
Total DDTs [3]	µg/kg	1.58	46.1	106.2 J	Back Channel	Anchor QEA 2014
Total Chlordanes [4]	µg/kg	0.5	6	20	North Lobe	Anchor QEA 2015
Total PCB Congeners	µg/kg	22.7	180	205.23	North Lobe	Anchor QEA 2015

Notes:

Anchor QEA, 2014. *Sampling and Analysis Report. Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo Sediment Characterization.* Prepared for the Port of Long Beach. November 2014.

Anchor QEA, 2015. *Sampling and Analysis Report. Western Anchorage Sediment Storage Site Sediment Characterization.* Prepared for the Port of Long Beach. January 2015.

1 Total HMW PAHs are the sum of 10 HPAHs: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h,)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene.

2 Total LMW PAHs are the sum of eight LPAHS: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, fluorene, napthalene, and phenanthrene.

3 Total DDTs are the sum of: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT.

4 Total Chlordanes are the sum of: alpha chlordane, gamma chlordane, cis-nonachlor, oxychlordane, and trans-nonachlor.

5 Total PCBs are the sum of 41 congeners used for the Bight '08 Regional Monitoring Program, which is the same list recommended by the U.S. Environmental Protection Agency for dredge material evaluations in Southern California.

µg/kg: micrograms per kilogram

DDT: dichlorodiphenyltrichloroethane

ERL: effects range low

ERM: effects range median

HMW: high molecular weight

IHTB: Inner Harbor Turning Basin

J: estimated value

LMW: low molecular weight

mg/kg: milligram per kilogram

PAH: polycyclic aromatic hydrocarbon

PCB: polychlorinated biphenyl

Appendix B
Water Quality Monitoring Plan



November 2017
Outer Harbor Sediment Placement and Ecosystem Restoration Site

ANCHOR QEA

Water Quality Monitoring Plan

Prepared for Port of Long Beach

November 2017
Outer Harbor Sediment Placement and Ecosystem Restoration Site

Water Quality Monitoring Plan

Prepared for
Port of Long Beach
4801 Airport Plaza Drive
Long Beach, California 90815

Prepared by
Anchor QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, California 92691

Latitude Environmental
630 Grand Avenue, Ste. D
Carlsbad, California 92008

Project Number: 160343-16.03

TABLE OF CONTENTS

1 Introduction 1

2 Water Quality Monitoring Approach 2

3 Methods 1

3.1 Sampling Locations 1

3.2 Timing and Frequency of Sampling 1

3.3 Water Quality Monitoring 1

3.4 Sample Labels 2

3.5 Sample Identification 2

3.6 Documentation 3

4 Potential Best Management Practices 4

5 Reporting 5

6 References 6

TABLE

Table 1 Water Quality Monitoring Requirements 2

FIGURE

Figure 1 Placement Project Boundary and Example Sampling Locations

ABBREVIATIONS

µg/L	microgram per liter
BMP	best management practice
CAD	confined aquatic disposal
DO	dissolved oxygen
mg/L	milligram per liter
MLLW	mean lower low water
NA	not applicable
OHSPER	Outer Harbor Sediment Placement and Ecosystem Restoration
OMMP	Operations Management and Monitoring Plan
Port	Port of Long Beach
RWQCB	Regional Water Quality Control Board
TSS	total suspended solids
WQMP	Water Quality Monitoring Plan

1 Introduction

The Port of Long Beach (Port) proposes to develop a confined aquatic disposal (CAD) facility at the Outer Harbor Sediment Placement and Ecosystem Restoration (OHSPER) site. The CAD site will be developed to receive both clean and contaminated sediments for long-term sediment management.

Following placement of contaminated sediment, an interim cap layer will be placed if material will be left uncovered for an extended period between disposal events. Site closure will occur following placement of the final cap layer. An Operations Management and Monitoring Plan (OMMP) was developed to document the planned approach for managing the site (Anchor QEA 2017), which included monitoring procedures for key aspects of site use.

Potential water quality impacts for the range of materials anticipated for placement at the site have already been assessed within the OMMP and its supporting documents. Construction specifications will include guidance for placement activities to limit potential loss of materials outside of project boundaries. Water quality monitoring will be conducted to confirm that placement operations are being performed as designed. If monitoring suggests materials are migrating out of project boundaries, the contractor will be notified and the contractor will implement best management practices (BMPs) to reduce off-site migration as detailed in the construction specifications. This Water Quality Monitoring Plan (WQMP) was developed to summarize procedures and methods that will be used to assess water quality during placement activities at the OHSPER site. Objectives of the WQMP are as follows:

- Confirm water quality conditions are within the prescribed limits of relevant regulatory requirements, usually defined in the Waste Discharge Requirements
- Document water quality monitoring procedures
- Plan and implement appropriate project BMPs to avoid and/or minimize project impacts to the maximum extent practicable
- Document the results of water quality monitoring efforts

2 Water Quality Monitoring Approach

The Port has designated a placement project boundary that defines the area in which temporary water quality impacts may occur. The project boundary includes the extent of the placement area, construction equipment, and site containment BMPs. Placement activities for the North (-45 feet mean lower low water [MLLW] fill area) and South Lobes (-50 feet MLLW fill area) will be conducted within the project boundary as presented in Figure 1. BMPs will be used, as needed, to reduce or limit suspended particulates and related water quality impacts outside of the project boundary. Potential loss of material outside the project boundary will be evaluated by particulate concentrations in the water column. A 30% decrease in light transmittance at a downcurrent monitoring location will serve as an indicator of potential migration of project materials off site.

Water quality monitoring will be performed during placement activities at two locations, one station upcurrent of the project boundary to establish background conditions and one station downcurrent of the project boundary to evaluate potential project-derived suspended particulate concentrations. Light transmittance, dissolved oxygen (DO), pH, and total suspended solids (TSS) will be measured as well as visual observations assessed at each station to determine potential short-term water quality impacts from placement activities.

3 Methods

Water column monitoring will be performed in accordance with the methods described in the following sections.

3.1 Sampling Locations

During placement activities, water quality monitoring will be performed at two stations, one station upcurrent of the project boundary and one station downcurrent of the project boundary. Station locations will be positioned based on the tidal direction. All station locations will be positioned at a safe distance from placement activities.

The upcurrent station will be located 300 feet upcurrent of the project boundary and will be used to determine background water quality conditions. The downcurrent station will be located 300 feet downcurrent of the project boundary and will be used to demonstrate that suspended sediments from placement activities are not present outside the project boundary. Example sampling locations based on a hypothetical tidal direction are presented in Figure 1. Sampling locations will be recorded in the field using a DGPS accurate to less than 10 feet.

3.2 Timing and Frequency of Sampling

During placement activities, water quality monitoring will be conducted two times per week for the first 2 weeks of sediment placement, then weekly thereafter. Monitoring will be performed at least 1 hour after the start of sediment placement activities.

3.3 Water Quality Monitoring

Water quality monitoring will include in situ water quality measurements, collection of water samples for analysis of TSS, and visual observations.

At each station, light transmittance, DO, and pH will be measured to assess short-term water quality impacts from placement activities. In situ water quality measurements will be conducted using a multi-parameter instrument equipped with transmissivity, DO, and pH probes. Field probes will provide "real-time" monitoring data where the results can be evaluated during placement activities. In situ water quality measurements will be taken at three discrete depths throughout the water column, surface, mid-depth, and bottom. Survey equipment will be maintained and calibrated according to manufacturer specifications. Water quality measurements will be performed by lowering the probes to each depth interval, allowing the readings to stabilize, and then recording the values.

A grab sample for TSS will be collected mid-depth at each station using a Van Dorn bottle (or equivalent). Water samples will be stored in coolers with ice and delivered to the appropriate laboratory for analysis. Proper chain-of-custody procedures will be followed.

Visual observations will be performed at each station. Photographs will be taken to record site conditions and visible effects of placement activities. At a minimum, observations will include the following:

- Date and time
- Weather conditions
- Tidal stage
- Evidence of floatable and suspended materials, such as trash, oily slick, or grease
- Evidence of discoloration or turbidity
- Evidence of odors

Water quality monitoring requirements are summarized in Table 1.

Table 1
Water Quality Monitoring Requirements

Parameter	Units	Stations	Timing and Frequency
Light transmittance[1]	% transmittance	300 feet upcurrent and 300 feet downcurrent of project boundary	Two times per week during the first 2 weeks of placement activities and then weekly thereafter (for each placement episode)
DO[1]	mg/L		
pH[1]	pH units		
TSS[2]	mg/L		
Visual observations	NA		

Notes:
1. Measurements will be taken at three discrete depths (surface, mid-water, and bottom).
2. TSS water sample will be collected at mid-depth.

3.4 Sample Labels

Each sample will have an adhesive plastic or waterproof paper label affixed to the container and will be labeled at the time of collection. The following information will be recorded on the label:

- Project name
- Sample identifier
- Date and time of sample collection
- Preservative type (if applicable)
- Analysis to be performed

Samples will be uniquely identified as described in Section 3.5.

3.5 Sample Identification

Each sample will be assigned a unique alphanumeric identifier using the following format:

- The first five characters identify the site (OHSPER)

- The next character identifies the station (U or D for upcurrent or downcurrent, respectively)
- The final characters identify the date of collection (MMDDYY)

3.6 Documentation

Station information, water quality measurements, and observations will be logged on a water quality monitoring form. All entries will be made in indelible ink. The following data will be recorded:

- Project name
- Name of field personnel
- Date
- Time
- Station identification
- Location coordinates (measured by DGPS)
- Water depth (from lead line or vessel fathometer)
- Tide (flood, ebb, or slack)
- Weather and wind conditions
- Predominant current direction
- Water quality measurements
- Observations
- Comments

Each station will be photographed to record the presence and extent of visible effects of placement activities.

4 Potential Best Management Practices

BMPs will be implemented to minimize potential water quality impacts if elevated turbidity (light transmittance at least 30% lower than the background) is observed at the downcurrent station. Recommended sediment placement BMPs will be included in the engineering design specifications.

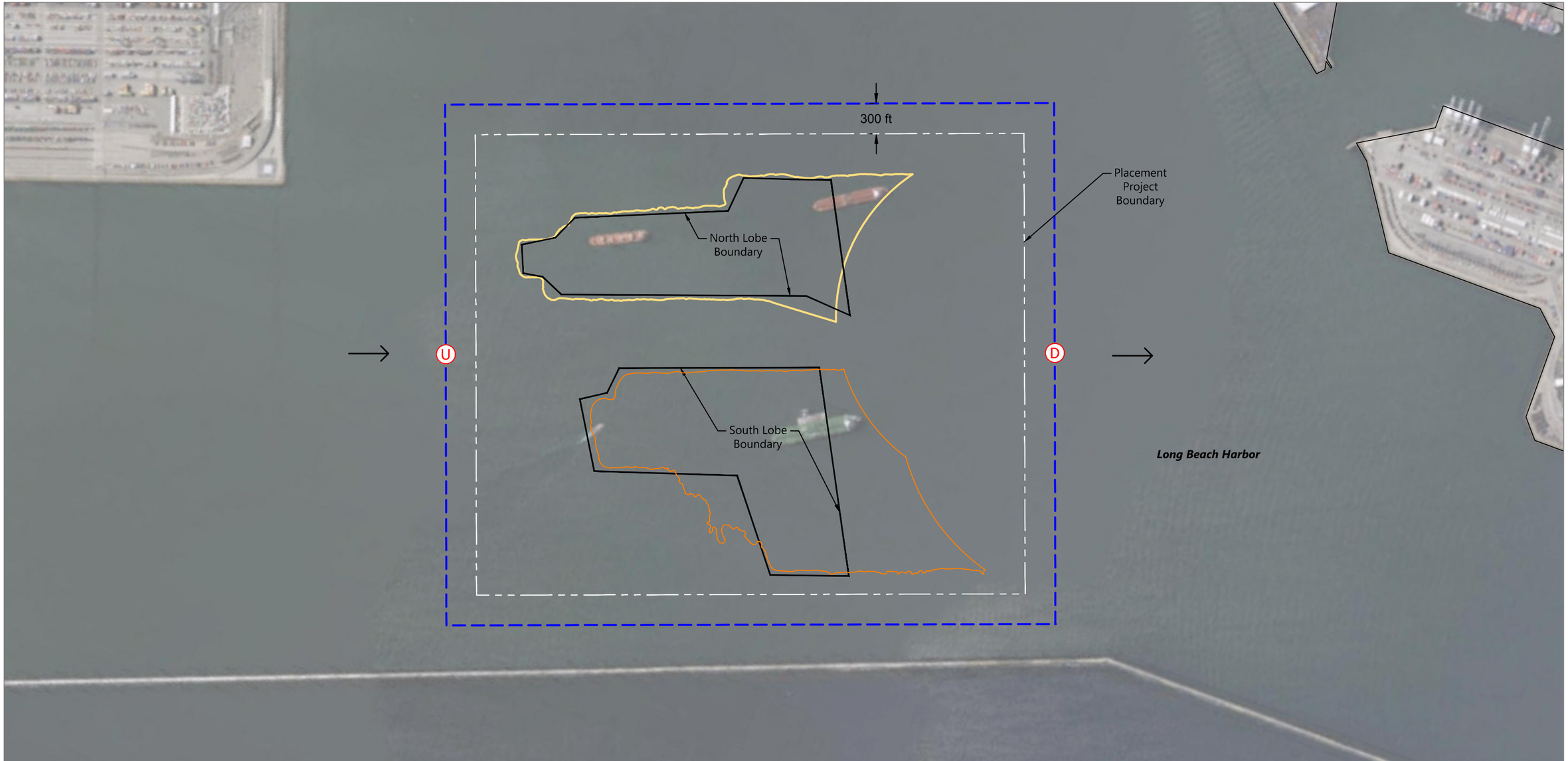
5 Reporting

Monitoring reports will be submitted to the Regional Water Quality Control Board (RWQCB) within 10 days following each weekly sampling period. Reports will be provided to the RWQCB in the format requested. The Port or its contractor will maintain daily records of all water quality monitoring results. In addition, the Port or its contractor will maintain information for equipment used, including calibration and maintenance records.

6 References

Anchor QEA, 2017. *Outer Harbor Sediment Placement and Ecosystem Restoration Site: Operations Management and Monitoring Plan*. Prepared for the Port of Long Beach. April 2017.

Figure



SOURCE: Aerial from ESRI basemaps.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

- Sampling Boundary
- -45 ft MLLW Fill Area

LEGEND:

- -50 ft MLLW Fill Area
- Tidal Flow

- (D) Downcurrent station - 300 feet downcurrent of the placement project boundary (compliance station)
- (U) Upcurrent station - 300 feet upcurrent of the placement project boundary (background conditions)

0 1000
Feet

Publish Date: 2017/10/31 1:12 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0343 RP-005 BOUNDARIES.dwg Figure 2

ANCHOR QEA

Figure 1
Placement Project Boundary and Example Sampling Locations
Water Quality Monitoring Plan
Outer Harbor Sediment Placement and Ecosystem Restoration Site

Appendix C
Long-Term Monitoring Plan



November 2017
Outer Harbor Sediment Placement and Ecosystem Restoration Site

ANCHOR QEA

Long-Term Monitoring Plan

Prepared for Port of Long Beach

November 2017
Outer Harbor Sediment Placement and Ecosystem Restoration Site

Long-Term Monitoring Plan

Prepared for
Port of Long Beach
4801 Airport Plaza Drive
Long Beach, California 90815

Prepared by
Anchor QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, California 92691

Latitude Environmental
630 Grand Avenue, Ste. D
Carlsbad, California 92008

Project Number: 160343-16.03

TABLE OF CONTENTS

1 Introduction 1

1.1 Background 1

1.2 Objectives 2

2 Long-Term Monitoring 3

2.1 Approach 3

2.2 Monitoring Schedule 3

2.3 Bathymetric Surveys 4

2.4 Sediment Core Sampling 4

2.4.1 Sampling Locations 5

2.4.2 Core Sample Collection 6

2.4.3 Sample Depths 6

2.4.4 Sample Identification 7

2.4.5 Chemical Analyses 7

2.5 Event-Related Monitoring 11

3 Data Analysis and Interpretation 12

3.1 Bathymetric Data Analysis 12

3.2 Sediment Chemistry and Physical Data Analysis 12

4 Reporting 13

5 References 14

TABLES

Table 1 Long-Term Monitoring Schedule 4

Table 2 Target Coordinates and Core Lengths for Sediment Core Sampling Locations 5

Table 3 Proposed Chemical and Conventional Analytes, Recommended Analytical Methods, and Target Reporting Limits 8

FIGURES

Figure 1 Outer Harbor Sediment Placement and Ecosystem Restoration Site Fill Areas

Figure 2 Proposed Sediment Core Sampling Locations Within the -45 Feet MLLW Fill Area (North Lobe)

Figure 3 Proposed Sediment Core Sampling Locations Within the -50 Feet MLLW Fill Area (South Lobe)

Figure 4 Sediment Core Schematic

ABBREVIATIONS

--	not applicable
(M)	modified
µg/kg	micrograms per kilogram
CAD	confined aquatic disposal
CSTF	Contaminated Sediments Task Force
FS	Feasibility Study
LTMP	Long-term Monitoring Plan
m	meter
mg/kg	milligrams per kilogram
MLLW	mean lower low water
NA	not applicable
NAD83	North American Datum 1983
OHSPER	Outer Harbor Sediment Placement and Ecosystem Restoration
OMMP	Operations Management and Monitoring Plan
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
Port	Port of Long Beach
SIM	selective ion monitoring
TOC	total organic carbon
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

1 Introduction

The Port of Long Beach (Port) proposes to develop a confined aquatic disposal (CAD) facility at the Outer Harbor Sediment Placement and Ecosystem Restoration (OHSPER) site. The OHSPER site is located in the Outer Harbor of the Port and consists of two large borrow pits referred to as the North and South Lobes. The Port plans to fill the site to the surrounding grade, which includes -45 feet and -50 feet mean lower low water (MLLW) fill areas for the North and South Lobes, respectively (Figure 1). The CAD site will be developed to receive both clean and contaminated sediments for long-term sediment management. Following placement of contaminated sediment, an interim cap layer will be placed if material will be left uncovered for an extended period between disposal events. Site closure will occur following placement of the final cap layer.

An Operations Management and Monitoring Plan (OMMP) was developed to document the planned approach for managing the site (Anchor QEA 2017), which included monitoring procedures for key aspects of site use. As described in the OMMP, long-term monitoring is required after the final cap layer is complete to verify that the CAD site has maintained its physical integrity and that the cap is maintaining its ability to sequester underlying contaminants. It is possible that site closure schedules for the North (-45 feet MLLW fill area) and South Lobes (-50 feet MLLW fill area) will occur on different time scales, so each site will be evaluated independently. This Long-Term Monitoring Plan (LTMP) was developed to summarize methods and an approach that will be used to monitor the final cap layer and assess long-term cap stability and isolation of contaminants.

1.1 Background

The OHSPER borrow pits are part of a larger borrow area used by the Port between the 1950s and 1980s to mine sand for use as fill material during the creation of Pier J and other terminal development projects. In 1998, the borrow pits were officially designated as a beneficial reuse storage and disposal site called the Western Anchorage Sediment Storage Site (Knatz 1998). Between 1998 and 2011, the Port and the U.S. Army Corps of Engineers (USACE) placed dredged sediments at both the North and South Lobes with the intention that it could be either beneficially reused in future Port fill projects or permanently disposed of at the site. Over those same years, material placed within the South Lobe was used for various Port development projects. In 2011, material from the North Lobe was targeted for use at the Middle Harbor development project; however, a routine environmental evaluation prior to construction determined that a large portion of the material was contaminated and therefore not suitable for beneficial reuse at the intended location.

In 2015, the Port conducted an alternatives analysis to evaluate management alternatives for clean and contaminated sediments within the site. The Port's preferred alternative was to develop a CAD site in the North Lobe of the OHSPER site for the management of both clean and contaminated sediments, and to continue to use the South Lobe, initially, for placement and reuse of clean material

only. During discussions with the Contaminated Sediments Task Force (CSTF) members, it was recommended that the South Lobe also be considered and evaluated for use as a CAD site in anticipation of the Port's changing needs.

A Feasibility Study (FS) was performed to support the design, permitting, and operation of the CAD site (Anchor QEA 2016). The FS determined that this alternative is economically feasible, environmentally protective, compliant with both the Port's internal sediment management plan as well as the CSTF's regional strategy, and allows for future use of the OHSPER site as a sediment storage and disposal area. The FS included a series of technical studies to examine the physical isolation of contaminants and chemical containment to determine the appropriate cap thickness. Based on the results of the bioturbation, propwash, anchor scour, and chemical isolation technical studies, a 1-meter (m; 3.3-foot)-thick final cap layer was determined to be sufficient to provide chemical and physical isolation of contaminated material within the OHSPER site.

1.2 Objectives

The key objectives of the long-term monitoring program are as follows:

- Confirm the final cap layer has maintained its physical integrity in that erosional or depositional processes, propwash, and/or anchor scour have not compromised the surface of the cap
- Confirm cap's ability to sequester underlying contaminants in that contaminants are not migrating through the cap at an unacceptable rate

These parameters will be measured through the use of periodic post-construction bathymetric surveys and sediment coring of the cap layer.

2 Long-Term Monitoring

2.1 Approach

Long-term monitoring after the final cap layer is completed is required to verify that the CAD site has maintained its physical integrity and that the cap is maintaining its ability to sequester underlying contaminants.

Physical integrity of the cap will be monitored using periodic post-construction bathymetric surveys and sediment coring. Bathymetric surveys will be conducted to monitor cap erosion, accumulation of materials on the cap surface, settlement of underlying or cap material, slope movement, and other physical disturbances of the cap such as anchor scour. If anomalies are detected that might pose a threat to cap integrity, additional monitoring may be performed, including diver observations and/or remote cameras. As previously described, a 1-m (3.3-foot)-thick final cap layer was determined to be sufficient to provide chemical and physical isolation of contaminated material within the OHSPER site. Bathymetric surveys, as well as sediment coring, will be used to assess cap thickness and ensure the designed thickness is maintained over time. Visual observations of the sediment core may not indicate an obvious boundary between the cap and the underlying material; therefore, physical and chemistry data will also be used as an indicator of cap thickness.

Chemical containment of the underlying material will be monitored using sediment coring. Sediment cores will be collected spatially across the OHSPER site and subdivided into multiple intervals for analysis. Chemistry will be compared to baseline chemistry data to determine whether any chemicals are migrating from the underlying sediment into the cap sediment. If during long-term monitoring, increases in chemicals are found only in surface layers of the cap, this would be indicative of off-site chemical sources being deposited on the cap surface (rather than migration from beneath the cap). Because mixing or diffusion of chemicals through sediment is a time-dependent process, migration from underlying sediments will be observable first in the deepest layers of the cap.

2.2 Monitoring Schedule

Long-term monitoring will be performed at predetermined intervals following completion of construction, as shown in Table 1.

A post-construction cap bathymetric survey will be performed immediately following placement of the final cap layer to quantify the final configuration and elevations of the capped site and confirm the desired minimum cap thickness was successfully achieved. This information will provide a baseline for comparison to long-term bathymetric surveys of the OHSPER site. Bathymetric surveys will be conducted at set intervals, following the completion of the final cap layer, to quantify the configuration and elevations of the capped site. Surveys will be conducted at 6 months and 1 year following placement of the final cap layer and then annually thereafter up to 5 years. After 5 years, if

the cap is performing as predicted, the monitoring frequency will be reduced. An additional survey will be conducted 10 years following placement of the final cap layer to confirm that design criteria continue to be met. After 10 years, if the cap is performing as predicted, additional monitoring will not be performed.

Sediment core sampling will be performed immediately following placement of the final cap layer to provide information both on the physical characteristics of the cap and underlying sediment (i.e., cap thickness, coverage, and extent of mixing between layers) and chemical characteristics of the cap once in place. Core chemistry data will be collected to establish a baseline profile of chemicals in various layers of the cap and underlying sediment. At 1 year after completion of the final cap layer and every 5 years thereafter (up to 10 years), sediment coring will be conducted and compared to baseline data collected immediately after cap construction. Core chemistry data will be collected at the same stations sampled during baseline sampling.

Table 1
Long-Term Monitoring Schedule

Monitoring Activities	Monitoring Frequency Post-Construction							
	Immediately Post-Placement – Baseline	**6 Months**	**1 Year**	**2 Years**	**3 Years**	**4 Years**	**5 Years**	**10 Years**
Bathymetric survey	X	X	X	X	X	X	X	X
Sediment core sampling	X	NA	X	NA	NA	NA	X	X

2.3 Bathymetric Surveys

As previously described, bathymetric surveys will be conducted to quantify the configuration and elevations of the capped site. Bathymetric data will be collected in accordance with standard government and industry practices for hydrographic surveying. Bathymetric surveys will be conducted of the entire -45 and/or -50 feet MLLW fill areas and a surrounding buffer using a multi-beam sonar. Procedures will follow those outlined in the USACE's *Hydrographic Survey Manual* (USACE 2004) to calibrate, test, and verify the accuracy of the multi-beam system. Horizontal and vertical data will be referenced in California State Plane, Zone 5, North American Datum 1983 (NAD83) and MLLW, respectively. All recorded data will be downloaded and compiled into a three-dimensional point format.

2.4 Sediment Core Sampling

As previously described, sediment core sampling will be performed immediately following placement of the final cap layer to establish baseline data, and 1 year, 5 years, and 10 years post-construction to evaluate cap thickness and chemical containment.

2.4.1 Sampling Locations

Sediment core sampling will be performed at 33 stations, including 15 stations within the -45 feet MLLW fill area (North Lobe) and 18 stations within the -50 feet MLLW fill area (South Lobe). Sampling locations were selected based on a grid sampling design to provide good spatial representation of each fill area. Proposed sampling locations are presented in Figures 2 and 3. Target coordinates and core lengths for each station are presented in Table 2.

Table 2
Target Coordinates and Core Lengths for Sediment Core Sampling Locations

Fill Area	Station ID	Latitude (Decimal Degrees)[1]	Longitude (Decimal Degrees)[1]	Target Core Length (feet)
-45 feet MLLW (North Lobe)	NL-01	33.732143	-118.222189	5.0
	NL-02	33.732616	-118.220645	5.0
	NL-03	33.733088	-118.219101	5.0
	NL-04	33.728962	-118.227798	5.0
	NL-05	33.729435	-118.226254	5.0
	NL-06	33.729907	-118.224711	5.0
	NL-07	33.730380	-118.223167	5.0
	NL-08	33.730853	-118.221623	5.0
	NL-09	33.731326	-118.220079	5.0
	NL-10	33.727672	-118.227232	5.0
	NL-11	33.728145	-118.225689	5.0
	NL-12	33.728617	-118.224145	5.0
	NL-13	33.729090	-118.222601	5.0
	NL-14	33.729563	-118.221057	5.0
	NL-15	33.730036	-118.219513	5.0
-50 feet MLLW (South Lobe)	SL-01	33.725865	-118.223296	5.0
	SL-02	33.726338	-118.221752	5.0
	SL-03	33.726811	-118.220209	5.0
	SL-04	33.727283	-118.218665	5.0
	SL-05	33.724102	-118.224274	5.0
	SL-06	33.724575	-118.222730	5.0
	SL-07	33.725048	-118.221187	5.0
	SL-08	33.725521	-118.219643	5.0
	SL-09	33.725993	-118.218099	5.0
	SL-10	33.726466	-118.216555	5.0
	SL-11	33.723758	-118.220621	5.0

Fill Area	Station ID	Latitude (Decimal Degrees)[1]	Longitude (Decimal Degrees)[1]	Target Core Length (feet)
	SL-12	33.724231	-118.219077	5.0
	SL-13	33.724703	-118.217533	5.0
	SL-14	33.725176	-118.215989	5.0
	SL-15	33.725649	-118.214446	5.0
	SL-16	33.723413	-118.216968	5.0
	SL-17	33.723886	-118.215424	5.0
	SL-18	33.724359	-118.213880	5.0

Note:
1. Based on NAD83

2.4.2 Core Sample Collection

Sediment cores will be collected to a depth that penetrates through the cap and into the underlying sediments. As previously described, a 1-m (3.3-foot)-thick final cap layer is proposed at the OHSPER site to provide chemical and physical isolation of contaminated material. Therefore, sediment cores will be collected to a target depth of 5 feet below the sediment surface to ensure collection of the underlying material and the interface with the overlying cap. Target core lengths may need to be adjusted based on the actual cap thickness following placement of the final cap layer.

Sediment cores will be collected using an electrically powered vibracore. Core tubes will consist of polyethylene liners (or similar material) inside a 4-inch-outer-diameter aluminum core barrel with a stainless-steel catcher to retain the sediment. A new liner will be inserted into the core tube prior to sampling at each station to eliminate the possibility of cross contamination among stations. The vibracore will be deployed from the vessel using a winch. The vibracore will be energized as it nears the bottom and supported upright with the winch line during penetration into the sediment. Upon completion of penetration at a station, the vibracore will be shut down, the position recorded, and the sampler recovered. If refusal is encountered prior to the target sampling depth, the vessel will be slightly moved and another core will be attempted. After the core is on deck, the liner containing sediment will be extracted onto a core tray. The liner will be cut lengthwise and opened for processing.

2.4.3 Sample Depths

Sediment core samples will be processed on the sampling vessel. Each core will be photographed and visually characterized according to the Unified Soils Classification System (ASTM D2488). Multiple subsamples will be collected from each core to provide vertical resolution of the physical and chemical properties of the sediment cap. Visual observations of the sediment core may not indicate an obvious boundary between the cap and the underlying material; therefore, subsamples

will be collected based on set intervals (not stratification observed in the field). Each sediment core will be vertically segmented into 0.5-foot intervals down to a depth of 5 feet below the sediment surface. Initially, only the surface (top 0.5 foot) and every other sample interval down to 3.5 feet will be submitted for physical and chemical analyses. This will include recently deposited sediment on the core surface, multiple intervals from the cap layer, and the underlying material. The remaining sample intervals will be archived to allow for additional analysis to further delineate the cap thickness and vertical extent of chemical migration, if needed. The sediment core schematic showing sample intervals and prescribed testing is presented in Figure 4. This sampling scheme may be adjusted if cores exhibit obvious stratification. All physical and chemical samples will be temporarily stored in coolers supplied with crushed ice or frozen blue ice packs. Proper chain-of-custody procedures will be followed.

2.4.4 Sample Identification

Each individual sediment sample will be assigned a unique alphanumeric identifier using the following format:

- The first two characters identify the fill area (i.e., NL for North Lobe or SL for South Lobe).
- The following characters identify the station location number (e.g., 01, 02, 03, and so on).
- The next characters identify the sample interval. The depth of the core segment will be listed in feet (e.g., 0.5-1.0 to represent a sample interval from 0.5 to 1.0 foot below the sediment surface).
- The final characters identify the sampling date (MMDDYY).

For example, a sample obtained from the 0.5 to 1.0 foot below the sediment surface at station 02 from the North Lobe on July 8, 2018, would be labeled: NL-02-0.5-1.0-070818.

2.4.5 Chemical Analyses

Physical and chemical analyses of sediment sample intervals were selected to determine whether any chemicals are migrating from the underlying sediment into the cap. Contaminants of concern include those previously elevated at the OHSPER site prior to placement activities and those existing within the Port that may be disposed of within the CAD. Physical and chemical analyses will include total solids, grain size, total organic carbon (TOC), metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, organochlorine pesticides, and organotins. PCBs will include the Southern California Coastal Water Research Project list of 41 congeners used for the Bight '08 Regional Monitoring Program, which is the same list used in Southern California Total Maximum Daily Loads and recommended by the U.S. Environmental Protection Agency (USEPA) for dredge material evaluations in Southern California. All analytical methods used will follow USEPA, Standard Method (SM), or ASTM protocols. Table 3 presents the proposed chemical and

conventional analytes, recommended analytical methods, and target reporting limits. Alternative methods may be used provided all target reporting limits are met.

Table 3
Proposed Chemical and Conventional Analytes, Recommended Analytical Methods, and Target Reporting Limits

Parameter	Recommended Analytical Method	Units	Target Reporting Limit[1]
Physical and Conventional Parameters			
Total solids	SM 2540B	% wet weight	0.1
Grain size	ASTM D4464 (M)	%	0.1
TOC	USEPA 9060A	%	0.050
Metals			
Arsenic	USEPA 6020	mg/kg	0.100
Cadmium	USEPA 6020	mg/kg	0.100
Chromium	USEPA 6020	mg/kg	0.100
Copper	USEPA 6020	mg/kg	0.100
Lead	USEPA 6020	mg/kg	0.100
Mercury	USEPA 7471A	mg/kg	0.0200
Nickel	USEPA 6020	mg/kg	0.100
Selenium	USEPA 6020	mg/kg	0.100
Silver	USEPA 6020	mg/kg	0.100
Zinc	USEPA 6020	mg/kg	1.00
PAHs			
1-Methylnapthalene	USEPA 8270C SIM	µg/kg	10
2-Methylnapthalene	USEPA 8270C SIM	µg/kg	10
Acenaphthene	USEPA 8270C SIM	µg/kg	10
Acenaphthylene	USEPA 8270C SIM	µg/kg	10
Anthracene	USEPA 8270C SIM	µg/kg	10
Benzo(a)anthracene	USEPA 8270C SIM	µg/kg	10
Benzo(a)pyrene	USEPA 8270C SIM	µg/kg	10
Benzo(b)fluoranthene	USEPA 8270C SIM	µg/kg	10
Benzo(g,h,i)perylene	USEPA 8270C SIM	µg/kg	10
Benzo(k)fluoranthene	USEPA 8270C SIM	µg/kg	10
Chrysene	USEPA 8270C SIM	µg/kg	10
Dibenzo(a,h)anthracene	USEPA 8270C SIM	µg/kg	10
Fluoranthene	USEPA 8270C SIM	µg/kg	10
Fluorene	USEPA 8270C SIM	µg/kg	10
Indeno(1,2,3-cd)pyrene	USEPA 8270C SIM	µg/kg	10

Parameter	Recommended Analytical Method	Units	Target Reporting Limit[1]
Naphthalene	USEPA 8270C SIM	µg/kg	10
Phenanthrene	USEPA 8270C SIM	µg/kg	10
Pyrene	USEPA 8270C SIM	µg/kg	10
Organotins			
Monobutyltin	Krone et al. 1989[2]	µg/kg	3.0
Dibutyltin	Krone et al. 1989[2]	µg/kg	3.0
Tributyltin	Krone et al. 1989[2]	µg/kg	3.0
Tetrabutyltin	Krone et al. 1989[2]	µg/kg	3.0
PCB Congeners[3]			
PCB018	USEPA 8270C SIM	µg/kg	0.2
PCB028	USEPA 8270C SIM	µg/kg	0.2
PCB037	USEPA 8270C SIM	µg/kg	0.2
PCB044	USEPA 8270C SIM	µg/kg	0.2
PCB049	USEPA 8270C SIM	µg/kg	0.2
PCB052	USEPA 8270C SIM	µg/kg	0.2
PCB066	USEPA 8270C SIM	µg/kg	0.2
PCB070	USEPA 8270C SIM	µg/kg	0.2
PCB074	USEPA 8270C SIM	µg/kg	0.2
PCB077	USEPA 8270C SIM	µg/kg	0.2
PCB081	USEPA 8270C SIM	µg/kg	0.2
PCB087	USEPA 8270C SIM	µg/kg	0.2
PCB099	USEPA 8270C SIM	µg/kg	0.2
PCB101	USEPA 8270C SIM	µg/kg	0.2
PCB105	USEPA 8270C SIM	µg/kg	0.2
PCB110	USEPA 8270C SIM	µg/kg	0.2
PCB114	USEPA 8270C SIM	µg/kg	0.2
PCB118	USEPA 8270C SIM	µg/kg	0.2
PCB119	USEPA 8270C SIM	µg/kg	0.2
PCB123	USEPA 8270C SIM	µg/kg	0.2
PCB126	USEPA 8270C SIM	µg/kg	0.2
PCB128	USEPA 8270C SIM	µg/kg	0.2
PCB138	USEPA 8270C SIM	µg/kg	0.2
PCB149	USEPA 8270C SIM	µg/kg	0.2
PCB151	USEPA 8270C SIM	µg/kg	0.2
PCB153	USEPA 8270C SIM	µg/kg	0.2
PCB156	USEPA 8270C SIM	µg/kg	0.2
PCB157	USEPA 8270C SIM	µg/kg	0.2

Parameter	Recommended Analytical Method	Units	Target Reporting Limit[1]
PCB158	USEPA 8270C SIM	µg/kg	0.2
PCB167	USEPA 8270C SIM	µg/kg	0.2
PCB168	USEPA 8270C SIM	µg/kg	0.2
PCB169	USEPA 8270C SIM	µg/kg	0.2
PCB170	USEPA 8270C SIM	µg/kg	0.2
PCB177	USEPA 8270C SIM	µg/kg	0.2
PCB180	USEPA 8270C SIM	µg/kg	0.2
PCB183	USEPA 8270C SIM	µg/kg	0.2
PCB187	USEPA 8270C SIM	µg/kg	0.2
PCB189	USEPA 8270C SIM	µg/kg	0.2
PCB194	USEPA 8270C SIM	µg/kg	0.2
PCB201	USEPA 8270C SIM	µg/kg	0.2
PCB206	USEPA 8270C SIM	µg/kg	0.2
Organochlorine Pesticides			
2,4-DDD	USEPA 8081A	µg/kg	1
2,4-DDE	USEPA 8081A	µg/kg	2
2,4-DDT	USEPA 8081A	µg/kg	1
4,4-DDD	USEPA 8081A	µg/kg	1
4,4-DDE	USEPA 8081A	µg/kg	1
4,4-DDT	USEPA 8081A	µg/kg	1
Aldrin	USEPA 8081A	µg/kg	1
alpha-BHC	USEPA 8081A	µg/kg	2
beta-BHC	USEPA 8081A	µg/kg	1
delta-BHC	USEPA 8081A	µg/kg	2
gamma-BHC (Lindane)	USEPA 8081A	µg/kg	1
alpha-Chlordane	USEPA 8081A	µg/kg	1
gamma-Chlordane (beta-Chlordane)	USEPA 8081A	µg/kg	2
Cis-nonachlor	USEPA 8081A	µg/kg	1
Dieldrin	USEPA 8081A	µg/kg	1
Endosulfan I	USEPA 8081A	µg/kg	1
Endosulfan II	USEPA 8081A	µg/kg	1
Endosulfan Sulfate	USEPA 8081A	µg/kg	1
Endrin	USEPA 8081A	µg/kg	1
Endrin Aldehyde	USEPA 8081A	µg/kg	1
Endrin Ketone	USEPA 8081A	µg/kg	1
Heptachlor	USEPA 8081A	µg/kg	1
Heptachlor Epoxide	USEPA 8081A	µg/kg	2

Parameter	Recommended Analytical Method	Units	Target Reporting Limit[1]
Methoxychlor	USEPA 8081A	µg/kg	1
Oxychlordane	USEPA 8081A	µg/kg	1
Toxaphene	USEPA 8081A	µg/kg	20
Trans-nonachlor	USEPA 8081A	µg/kg	1

Notes:
1. Target reporting limits are listed in wet weight.
2. Krone, C.A., D.W. Brown, D.G. Burrows, R.G. Bogar, S.L. Chan, and U. Varanasi, 1989. "A Method for Analysis of Butyltin Species and the Measurements of Butyltins in Sediment and English Sole Livers from Puget Sound." *Mar. Environ. Res.* 27:1-18.
3. Some PCB congeners may co-elute, resulting in raised reporting limits.

2.5 Event-Related Monitoring

In addition to the long-term monitoring activities scheduled in Table 1, additional monitoring of the final cap layer will be conducted in the event of a major seismic event or a major wind or storm event that results in vessels being dislodged from the overlying anchorages. The occurrence of a major seismic event could result in slope movement, uneven settlement, or breaches of the cap surface. Likewise, while water depths at the site are too great to see excessive scour, a major wind or storm event could result in vessels breaking loose from their anchorages and dragging their anchors over the surface of the CAD causing excessive mixing. To account for these unlikely, but potential, occurrences, the following mitigation measures will be conducted:

- In the event of a significant seismic event (defined as greater than a 6.0 magnitude earthquake), the Port will immediately conduct a bathymetric survey (described in Section 2.3) of the site and compare against previous events to look for evidence of slope movement, uneven settling, or fissures in the cap surface. If the results of the survey suggest that significant changes have occurred, additional monitoring techniques such as side scan sonar or diver surveys will be conducted to inspect the damage and develop a plan for repair.
- In the event of a major wind or storm event at the site that results in vessels being dislodged from the overlying anchorages such that potential damage could have occurred at the site, the Port will follow a similar process as with the seismic events, which includes a bathymetric survey and possibly follow-up investigations to look for damage to the site.

If either of the above events are triggered, the Port will notify the CSTF agencies that monitoring has commenced and will share the results of the field surveys to determine if modifications to this LTMP are warranted.

3 Data Analysis and Interpretation

Long-term monitoring data will be analyzed to verify that the CAD site has maintained its physical integrity and that the cap is maintaining its ability to sequester underlying contaminants.

3.1 Bathymetric Data Analysis

Bathymetric survey data will be used to evaluate the physical integrity of the cap. The post-construction cap bathymetric survey performed immediately following placement of the final cap layer quantifies the final elevations of the capped site and cap thickness. This information provides a baseline for comparison to long-term bathymetric surveys. Cap elevations from each monitoring event will be compared to this baseline data and other long-term monitoring events to look for cap erosion, accumulation of materials on the cap surface, settlement of underlying or cap material, slope movement, or other physical disturbances of the cap. As previously described, if anomalies are detected that might pose a threat to cap integrity, additional monitoring may be performed, including diver observations and/or remote cameras.

3.2 Sediment Chemistry and Physical Data Analysis

Sediment chemistry data will be analyzed to determine cap thickness and evaluate the cap's ability to sequester underlying contaminants.

Chemistry will be compared to baseline chemistry data to determine whether any chemicals are migrating from the underlying sediment into the cap sediment. If during long-term monitoring, increases in chemicals are found only in surface layers of the cap, this would be indicative of off-site chemical sources being deposited on the cap surface (rather than migration from beneath the cap). Because mixing or diffusion of chemicals through sediment is a time-dependent process, migration from underlying sediments will be observable first in the deepest layers of the cap. Cap thickness will be determined using visual clues and chemistry data.

Results of sediment chemistry will be compared to effects-range low and effects-range median values developed by Long et al. (1995). The effects range values are helpful in assessing the potential significance of elevated sediment-associated contaminants of concern.[1]

[1] These values were developed from a large dataset where results of both benthic organism effects (e.g., toxicity tests and benthic assessments) and chemical concentrations were available for individual samples. To derive these guidelines, chemical values for paired data demonstrating benthic impairment were sorted in ascending chemical concentration. The 10th percentile of this rank order distribution was identified as the effects range low value and the 50th percentile as the effects range median value.

4 Reporting

Annual monitoring reports will be prepared and submitted to the CSTF to summarize long-term monitoring results during the previous year. Annual monitoring reports will be completed by January 15 each year following completion of the monitoring year. Monitoring reports will include a summary of field activities, data results, a comparison of current findings with previous monitoring events, and QA/QC summary. Results will be analyzed to assess any changes in cap conditions and long-term effectiveness of the cap at confining underlying materials. Recommendations regarding management actions will be provided, if necessary.

5 References

Anchor QEA (Anchor QEA, LLC), 2016. *Outer Harbor Sediment Placement and Ecosystem Restoration Site, Confined Aquatic Disposal Feasibility Evaluation*. Prepared for the Port of Long Beach. July 2016.

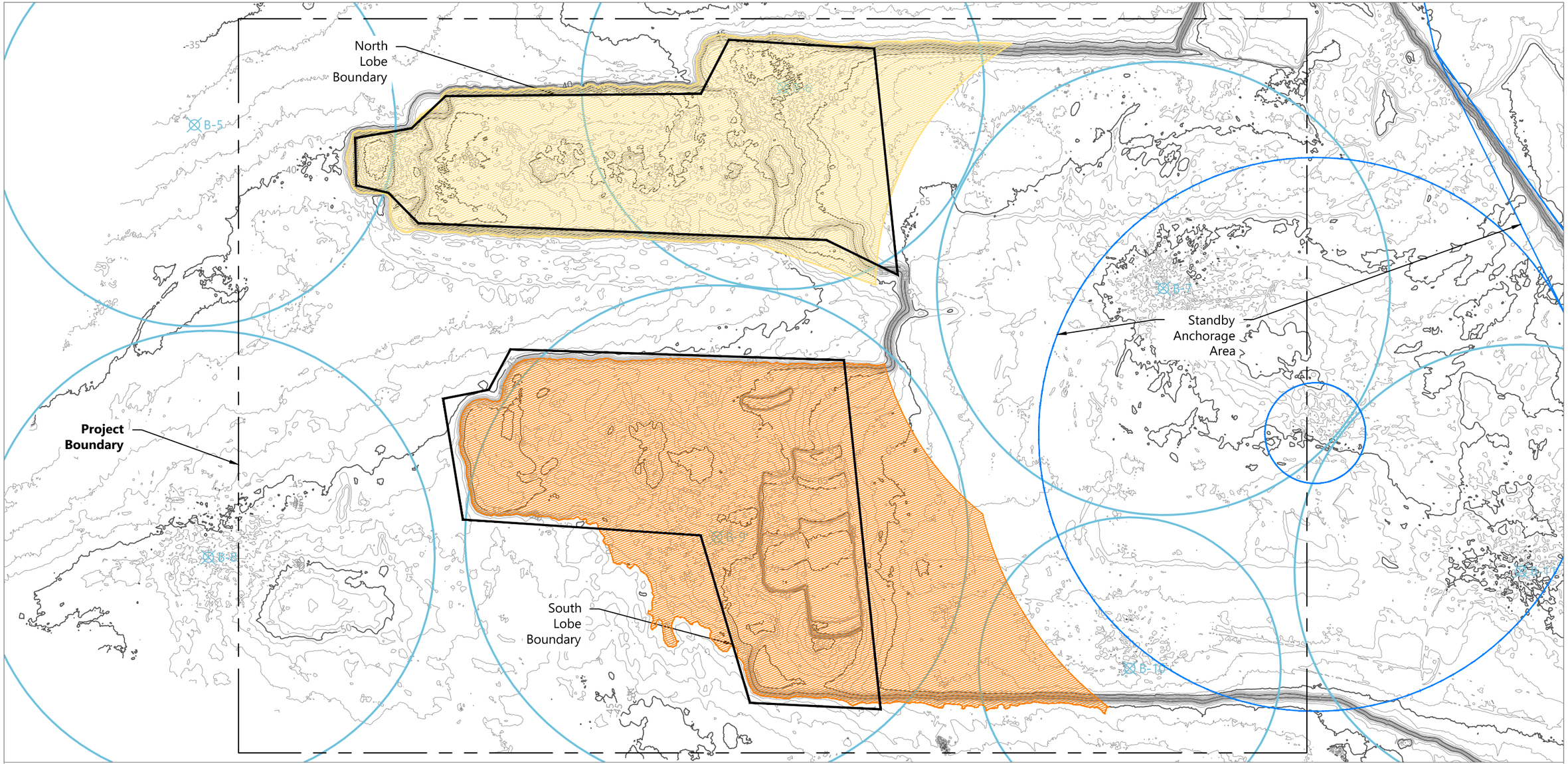
Anchor QEA, 2017. *Outer Harbor Sediment Placement and Ecosystem Restoration Site: Operations Management and Monitoring Plan*. Prepared for the Port of Long Beach. April 2017.

Knatz, G, 1998. Memorandum to: Board of Harbor Commissioners. Regarding: Release of Port Master Plan Amendment 11 and Negative Declaration. January 28, 1998.

Long, E.R., D.D. MacDonald, S.L. Smith, and F.D. Calder, 1995. "Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments." *Environmental Management* 19:81-97.

USACE (U.S. Army Corps of Engineers), 2004. *Hydrographic Survey Manual*. USACE EM-1110-2-1003. Updated April 1, 2004.

Figures



SOURCE: Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013. Anchorage locations provided by Port of Long Beach.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

-55 Contours from 2013 Bathymetry

B-# Port of Long Beach Anchorage Number

Anchorage Location

-45 Fill Area

-50 Fill Area

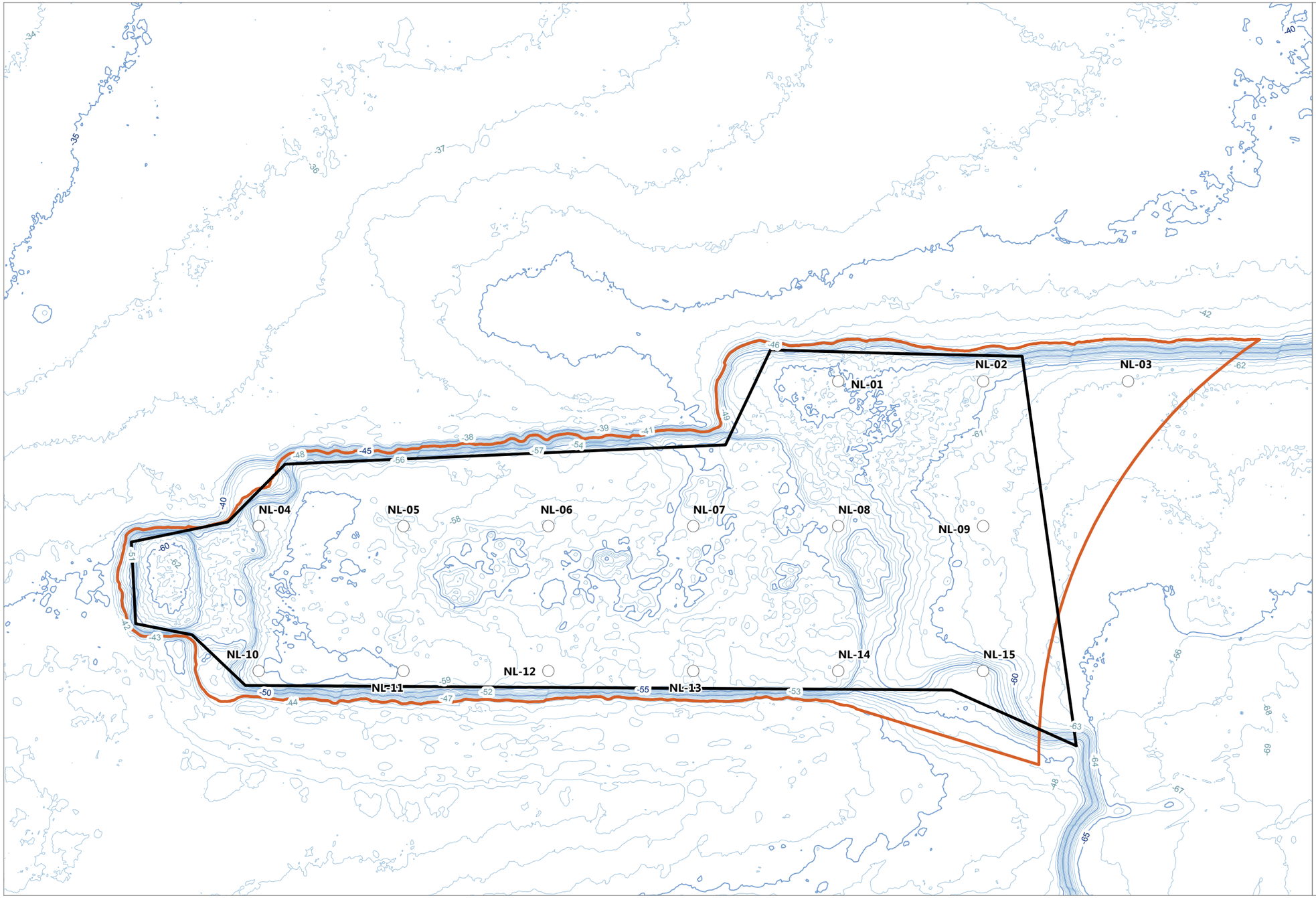
0 600
Feet

Publish Date: 2017/10/31 1:48 PM | User: mpratschner
Filepath: K:\Projects\0343 Port of Long Beach\WASSS (OHSPER) Special Studies\0343 RP-002 PLACEMENT.dwg FIG 2

ANCHOR QEA

Figure 1
Fill Areas

Long-Term Monitoring Plan
Outer Harbor Sediment Placement and Ecosystem Restoration Site



LEGEND:

- Sampling Locations
- North Lobe Boundary
- -45 feet MLLW Fill Area
- Bathymetry (feet MLLW)[1]

NOTE(S):

1. Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013.

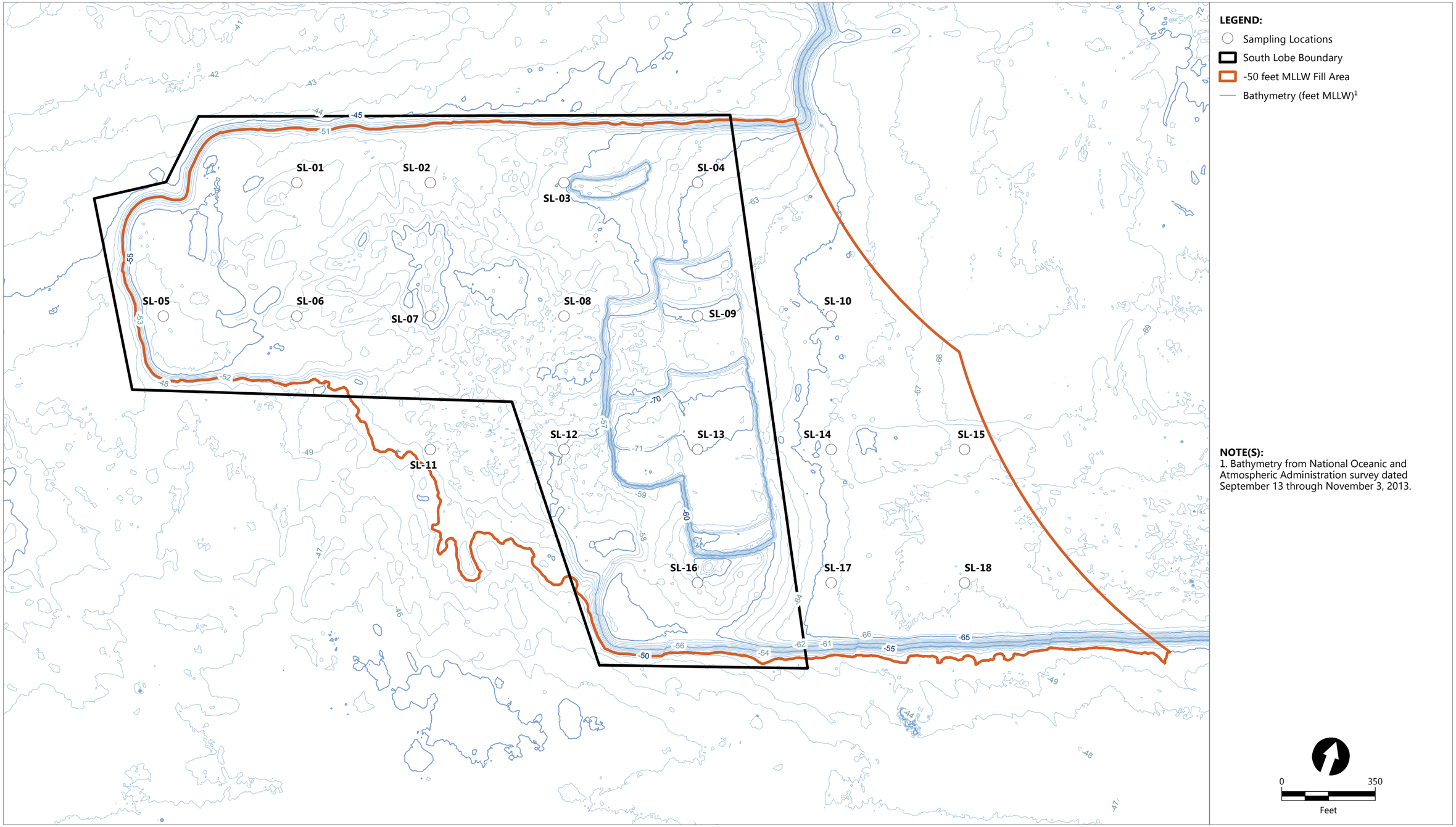
0 350

Feet

Publish Date: 2017/10/20, 1:06 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\Port_of_Long_Beach_0343\WASSS_OHSPER\Analysis\2017_10_OHSPER_Proposed_Sampling\OHSPER_Proposed_Sampling_DDP.mxd

ANCHOR QEA

Figure 2
Proposed Sediment Core Sampling Locations Within the -45 Feet MLLW Fill Area (North Lobe)
Long-Term Monitoring Plan
Outer Harbor Sediment Placement and Ecosystem Restoration Site



NOTE(S):
1. Bathymetry from National Oceanic and Atmospheric Administration survey dated September 13 through November 3, 2013.

Publish Date: 2017/10/20, 1:06 PM | User: ckiblinger
Filepath: \\orcas\gis\Jobs\Port_of_Long_Beach_0343\WASSS_OHSPER\Analysis\2017_10_OHSPER_Proposed_Sampling\OHSPER_Proposed_Sampling_DDP.mxd

ANCHOR QEA

Figure 3
Proposed Sediment Core Sampling Locations Within the -50 Feet MLLW Fill Area (South Lobe)
Long-Term Monitoring Plan
Outer Harbor Sediment Placement and Ecosystem Restoration Site

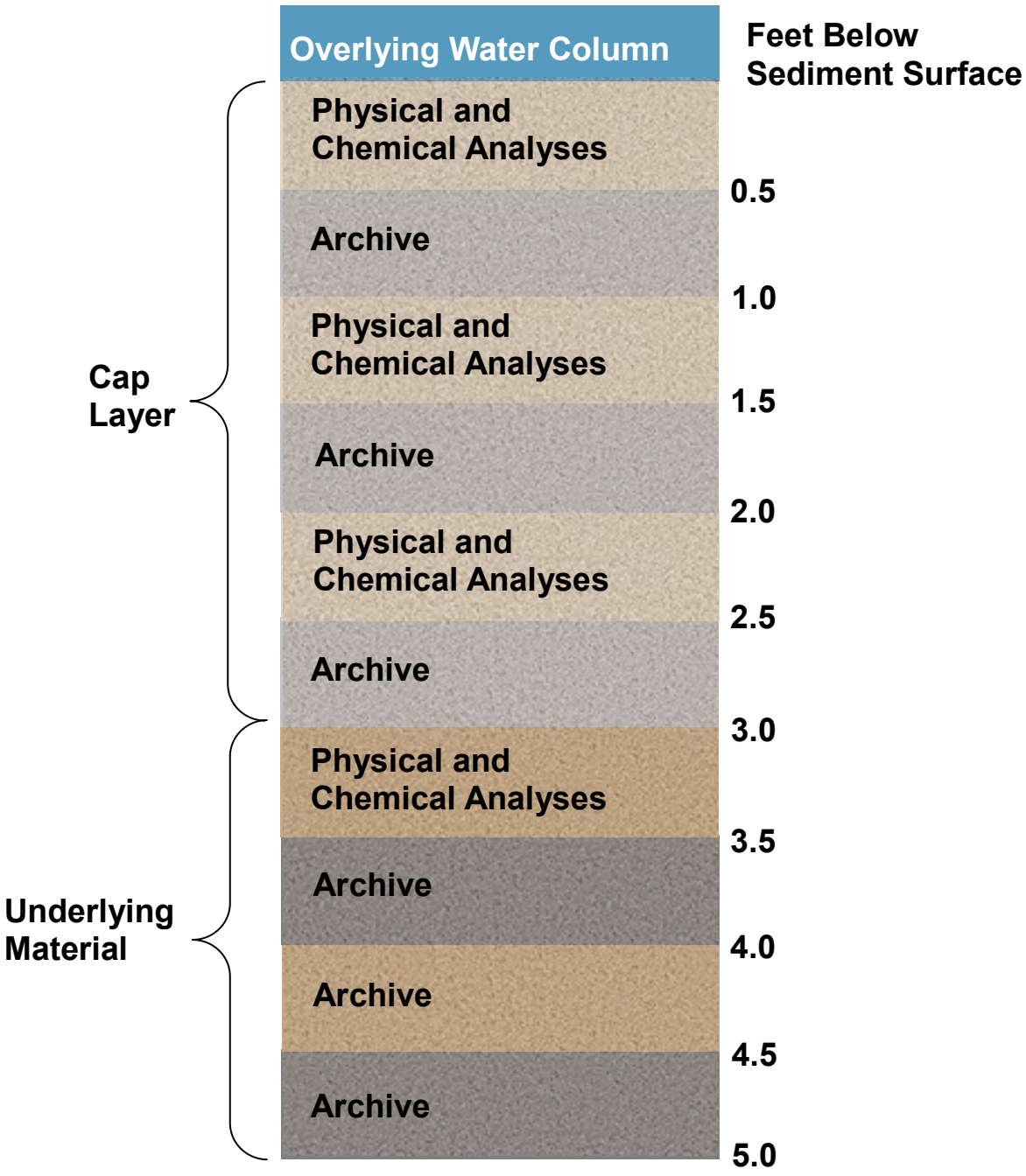


Figure 4

Sediment Core Schematic

Long-Term Monitoring Plan

Outer Harbor Sediment Placement and Ecosystem Restoration Site

ANCHOR QEA

Appendix D
Traffic Data

This page intentionally left blank.

Appendix D-1
Traffic Counts

This page intentionally left blank.

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Date:** 3/20/2018

TOTALS

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 3	NR 0	SL 1	ST 3	SR 0	EL 0	ET 0	ER 0	WL 1.3	WT 0.3	WR 1.3	TOTAL
6:00 AM	0	64	4	59	175	0	0	2	0	6	0	29	339
6:15 AM	0	54	9	35	130	0	0	5	0	9	0	25	267
6:30 AM	0	82	6	57	188	0	0	7	0	9	0	40	389
6:45 AM	0	91	8	46	154	0	0	3	0	8	0	56	366
7:00 AM	0	79	11	41	150	0	0	3	0	7	0	45	336
7:15 AM	0	97	7	54	205	0	0	9	0	10	0	56	438
7:30 AM	0	126	10	84	208	0	0	8	0	11	0	84	531
7:45 AM	0	150	18	42	219	0	0	7	0	16	0	68	520
8:00 AM	0	110	18	66	189	0	0	10	0	12	0	63	468
8:15 AM	0	120	15	37	187	0	0	13	0	8	0	54	434
8:30 AM	0	111	9	39	145	0	0	6	0	10	0	42	362
8:45 AM	0	86	10	55	155	0	0	12	0	10	0	41	369
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1170	125	615	2105	0	0	85	0	116	0	603	4819
APPROACH %'s :	0.00%	90.35%	9.65%	22.61%	77.39%	0.00%	0.00%	100.00%	0.00%	16.13%	0.00%	83.87%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	483	53	246	821	0	0	34	0	49	0	271	1957
PEAK HR FACTOR :		0.798			0.914			0.850			0.842		0.921

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Date:** 3/20/2018

TOTALS

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1.3	0.3	1.3	
2:00 PM	0	124	14	20	129	0	0	10	0	5	0	39	341
2:15 PM	0	92	13	30	147	0	0	0	0	7	0	40	329
2:30 PM	0	182	14	36	129	0	0	10	0	7	0	61	439
2:45 PM	0	144	21	35	164	0	0	9	0	12	0	60	445
3:00 PM	0	173	21	44	168	0	0	1	0	7	0	65	479
3:15 PM	0	167	26	34	197	0	0	5	0	10	0	64	503
3:30 PM	0	158	18	43	178	0	0	6	0	7	0	81	491
3:45 PM	0	170	15	49	225	0	0	4	0	4	0	59	526
4:00 PM	0	168	19	52	198	0	0	7	0	14	0	83	541
4:15 PM	0	182	14	42	222	0	0	6	0	5	0	75	546
4:30 PM	0	201	22	69	247	0	0	5	0	12	0	92	648
4:45 PM	0	213	15	65	222	0	0	4	0	4	0	72	595
5:00 PM	0	197	13	52	216	0	0	4	0	12	0	90	584
5:15 PM	0	241	20	73	239	0	0	11	0	10	0	85	679
5:30 PM	0	195	10	64	233	0	0	3	0	8	0	73	586
5:45 PM	0	167	8	38	181	0	0	8	0	7	0	55	464
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2774	263	746	3095	0	0	93	0	131	0	1094	8196
APPROACH %'s :	0.00%	91.34%	8.66%	19.42%	80.58%	0.00%	0.00%	100.00%	0.00%	10.69%	0.00%	89.31%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	852	70	259	924	0	0	24	0	38	0	339	2506
PEAK HR FACTOR :		0.883			0.936			0.545			0.906		0.923

UTURNS				
NB	SB	EB	WB	
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	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	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Alameda St Ramp and Sepulveda Blvd Ramp , Long Beach

Date: 3/20/2018
Day: Tuesday
Project #: 18-5171-035
City: Long Beach

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Alameda St Ramp)

Lanes	0	3	1		
AM	0	821	246	754	AM
NOON	0	0	0	0	NOON
PM	0	924	259	1191	PM

Eastbound Approach (Sepulveda Blvd Ramp)

Lanes	AM	NOON	PM
	0	0	0
0	0	0	0
0	34	0	24
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
1.3	271	0	339
0.3	0	0	0
1.3	49	0	38
	333	0	353

CONTROL: Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	870	0	483	53	AM
NOON	0	0	0	0	NOON
PM	962	0	852	70	PM
Lanes		0	3	0	Lanes

Total Ins & Outs

	North Leg		
AM	1067	754	AM
NOON	0	0	NOON
PM	1183	1191	PM

West Leg AM	West Leg NOON	West Leg PM	East Leg		
0	0	0	320	0	377
34	0	24	333	0	353
			AM	NOON	PM

	South Leg	
AM	870	536
NOON	0	0
PM	962	922

Total Volume Per Leg

	North Leg	
AM	1821	AM
NOON	0	NOON
PM	2374	PM

West Leg AM	West Leg NOON	West Leg PM	East Leg		
34	0	24	653	0	730
			AM	NOON	PM

	South Leg
AM	1406
NOON	0
PM	1884

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Cars** **Date:** 3/20/2018

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1.3	0.3	1.3	
6:00 AM	0	46	2	47	156	0	0	0	0	6	0	17	274
6:15 AM	0	49	1	29	117	0	0	0	0	6	0	14	216
6:30 AM	0	72	3	47	161	0	0	0	0	7	0	22	312
6:45 AM	0	80	5	41	137	0	0	0	0	5	0	34	302
7:00 AM	0	63	6	30	120	0	0	0	0	4	0	28	251
7:15 AM	0	79	4	44	175	0	0	0	0	5	0	35	342
7:30 AM	0	105	5	72	183	0	0	0	0	7	0	64	436
7:45 AM	0	122	12	34	181	0	0	0	0	13	0	52	414
8:00 AM	0	88	5	49	147	0	0	0	0	6	0	42	337
8:15 AM	0	99	7	25	137	0	0	0	0	4	0	33	305
8:30 AM	0	80	2	27	97	0	0	0	0	3	0	22	231
8:45 AM	0	61	5	36	105	0	0	0	0	5	0	16	228
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	944	57	481	1716	0	0	0	0	71	0	379	3648
APPROACH %'s :	0.00%	94.31%	5.69%	21.89%	78.11%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	15.78%	0.00%	84.22%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	394	26	199	686	0	0	0	0	31	0	193	1529
PEAK HR FACTOR :		0.784			0.868			0.000			0.789		0.877

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Cars** **Date:** 3/20/2018

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1.3	0.3	1.3	
2:00 PM	0	95	4	12	94	0	0	0	0	2	0	21	228
2:15 PM	0	75	9	18	99	0	0	0	0	2	0	25	228
2:30 PM	0	138	5	16	94	0	0	0	0	4	0	42	299
2:45 PM	0	114	9	23	120	0	0	0	0	4	0	45	315
3:00 PM	0	133	11	27	120	0	0	0	0	4	0	41	336
3:15 PM	0	123	9	25	159	0	0	0	0	6	0	46	368
3:30 PM	0	125	8	32	144	0	0	0	0	4	0	58	371
3:45 PM	0	133	6	37	194	0	0	0	0	2	0	47	419
4:00 PM	0	141	8	39	166	0	0	0	0	9	0	64	427
4:15 PM	0	145	11	26	184	0	0	0	0	3	0	63	432
4:30 PM	0	167	16	55	204	0	0	0	0	6	0	82	530
4:45 PM	0	188	9	55	180	0	0	0	0	2	0	64	498
5:00 PM	0	185	11	39	165	0	0	0	0	5	0	76	481
5:15 PM	0	221	13	57	187	0	0	0	0	6	0	74	558
5:30 PM	0	179	7	58	185	0	0	0	0	3	0	63	495
5:45 PM	0	149	1	31	136	0	0	0	0	5	0	46	368
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2311	137	550	2431	0	0	0	0	67	0	857	6353
APPROACH %'s :	0.00%	94.40%	5.60%	18.45%	81.55%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	7.25%	0.00%	92.75%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	761	49	206	736	0	0	0	0	19	0	296	2067
PEAK HR FACTOR :		0.865			0.909			0.000			0.895		0.926

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Bobtails** **Date:** 3/20/2018

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1.3	0.3	1.3	
6:00 AM	0	0	0	1	0	0	0	2	0	0	0	0	3
6:15 AM	0	0	1	1	0	0	0	5	0	0	0	0	7
6:30 AM	0	0	1	3	0	0	0	7	0	0	0	0	11
6:45 AM	0	0	0	1	0	0	0	3	0	0	0	0	4
7:00 AM	0	0	0	3	0	0	0	3	0	0	0	0	6
7:15 AM	0	0	0	1	0	0	0	9	0	0	0	0	10
7:30 AM	0	0	0	3	0	0	0	8	0	0	0	0	11
7:45 AM	0	0	0	1	0	0	0	7	0	0	0	0	8
8:00 AM	0	0	1	2	0	0	0	10	0	0	0	0	13
8:15 AM	0	0	0	2	0	0	0	13	0	0	0	0	15
8:30 AM	0	0	0	1	0	0	0	6	0	0	0	0	7
8:45 AM	0	0	0	2	0	0	0	12	0	0	0	0	14
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	3	21	0	0	0	85	0	0	0	0	109
APPROACH %'s :	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	1	7	0	0	0	34	0	0	0	0	42
PEAK HR FACTOR :		0.250			0.583			0.850			0.000		0.877

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

Bobtails

City: Long Beach **Date:** 3/20/2018

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1.3	0.3	1.3	
2:00 PM	0	0	0	2	0	0	0	10	0	0	0	0	12
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	2	0	0	0	10	0	0	0	0	12
2:45 PM	0	0	1	1	0	0	0	9	0	0	0	0	11
3:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	5	0	0	0	0	5
3:30 PM	0	0	0	2	0	0	0	6	0	0	0	0	8
3:45 PM	0	0	0	1	0	0	0	4	0	0	0	0	5
4:00 PM	0	0	0	4	0	0	0	7	0	0	0	0	11
4:15 PM	0	0	0	2	0	0	0	6	0	0	0	0	8
4:30 PM	0	0	0	3	0	0	0	5	0	0	0	0	8
4:45 PM	0	0	0	3	0	0	0	4	0	0	0	0	7
5:00 PM	0	0	0	3	0	0	0	4	0	0	0	0	7
5:15 PM	0	0	0	3	0	0	0	11	0	0	0	0	14
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
5:45 PM	0	0	1	2	0	0	0	8	0	0	0	0	11
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	2	28	0	0	0	93	0	0	0	0	123
APPROACH %'s :	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	12	0	0	0	24	0	0	0	0	36
PEAK HR FACTOR :	0.000			1.000			0.545			0.000			0.926

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Containers** **Date:** 3/20/2018

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1.3	0.3	1.3	
6:00 AM	0	7	0	0	7	0	0	0	0	0	0	6	20
6:15 AM	0	1	0	0	5	0	0	0	0	2	0	6	14
6:30 AM	0	3	0	2	15	0	0	0	0	2	0	12	34
6:45 AM	0	5	2	2	3	0	0	0	0	1	0	15	28
7:00 AM	0	6	0	3	14	0	0	0	0	3	0	14	40
7:15 AM	0	9	0	5	16	0	0	0	0	4	0	16	50
7:30 AM	0	7	1	1	12	0	0	0	0	2	0	12	35
7:45 AM	0	20	5	2	17	0	0	0	0	2	0	9	55
8:00 AM	0	8	7	7	28	0	0	0	0	6	0	16	72
8:15 AM	0	11	6	2	36	0	0	0	0	4	0	15	74
8:30 AM	0	18	4	4	31	0	0	0	0	3	0	13	73
8:45 AM	0	11	2	6	28	0	0	0	0	5	0	15	67
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	106	27	34	212	0	0	0	0	34	0	149	562
APPROACH %'s :	0.00%	79.70%	20.30%	13.82%	86.18%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	18.58%	0.00%	81.42%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	44	13	15	73	0	0	0	0	14	0	53	212
PEAK HR FACTOR :		0.570			0.629			0.000			0.761		0.877

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Containers** **Date:** 3/20/2018

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1.3	0.3	1.3	
2:00 PM	0	12	3	2	29	0	0	0	0	3	0	12	61
2:15 PM	0	6	2	6	32	0	0	0	0	3	0	9	58
2:30 PM	0	24	3	2	18	0	0	0	0	2	0	7	56
2:45 PM	0	15	4	3	33	0	0	0	0	5	0	8	68
3:00 PM	0	22	4	10	35	0	0	0	0	3	0	14	88
3:15 PM	0	21	10	2	25	0	0	0	0	2	0	11	71
3:30 PM	0	19	5	4	20	0	0	0	0	2	0	14	64
3:45 PM	0	19	2	6	23	0	0	0	0	1	0	7	58
4:00 PM	0	12	5	4	20	0	0	0	0	4	0	9	54
4:15 PM	0	11	1	5	23	0	0	0	0	0	0	5	45
4:30 PM	0	15	4	2	30	0	0	0	0	4	0	2	57
4:45 PM	0	13	3	3	25	0	0	0	0	1	0	4	49
5:00 PM	0	2	0	3	41	0	0	0	0	6	0	8	60
5:15 PM	0	9	4	3	32	0	0	0	0	4	0	6	58
5:30 PM	0	5	1	5	33	0	0	0	0	5	0	4	53
5:45 PM	0	5	2	3	35	0	0	0	0	1	0	3	49
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	210	53	63	454	0	0	0	0	46	0	123	949
APPROACH %'s :	0.00%	79.85%	20.15%	12.19%	87.81%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	27.22%	0.00%	72.78%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	39	11	11	128	0	0	0	0	15	0	20	224
PEAK HR FACTOR :		0.658			0.790			0.000			0.625		0.926

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Chassis** **Date:** 3/20/2018

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 3	NR 0	SL 1	ST 3	SR 0	EL 0	ET 0	ER 0	WL 1.3	WT 0.3	WR 1.3	TOTAL
6:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	1	2	1	0	0	0	0	1	0	0	5
6:30 AM	0	0	0	1	3	0	0	0	0	0	0	0	4
6:45 AM	0	0	0	1	3	0	0	0	0	1	0	0	5
7:00 AM	0	0	1	1	5	0	0	0	0	0	0	0	7
7:15 AM	0	1	0	0	2	0	0	0	0	1	0	0	4
7:30 AM	0	3	1	3	7	0	0	0	0	1	0	0	15
7:45 AM	0	1	1	0	6	0	0	0	0	1	0	3	12
8:00 AM	0	2	1	2	2	0	0	0	0	0	0	1	8
8:15 AM	0	2	0	1	5	0	0	0	0	0	0	0	8
8:30 AM	0	2	0	0	4	0	0	0	0	1	0	1	8
8:45 AM	0	1	1	2	8	0	0	0	0	0	0	3	15
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	12	7	13	46	0	0	0	0	6	0	8	92
APPROACH %'s :	0.00%	63.16%	36.84%	22.03%	77.97%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	42.86%	0.00%	57.14%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	7	3	5	17	0	0	0	0	3	0	4	39
PEAK HR FACTOR :		0.625			0.550			0.000			0.438		0.877

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Chassis** **Date:** 3/20/2018

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1.3	0.3	1.3	
2:00 PM	0	5	4	1	2	0	0	0	0	0	0	1	13
2:15 PM	0	1	1	1	5	0	0	0	0	2	0	1	11
2:30 PM	0	8	5	13	10	0	0	0	0	1	0	6	43
2:45 PM	0	9	7	5	4	0	0	0	0	0	0	1	26
3:00 PM	0	5	5	3	2	0	0	0	0	0	0	1	16
3:15 PM	0	10	5	4	4	0	0	0	0	1	0	4	28
3:30 PM	0	5	5	3	6	0	0	0	0	1	0	5	25
3:45 PM	0	5	6	1	0	0	0	0	0	1	0	2	15
4:00 PM	0	6	6	1	1	0	0	0	0	0	0	2	16
4:15 PM	0	12	2	2	9	0	0	0	0	2	0	2	29
4:30 PM	0	7	1	3	7	0	0	0	0	1	0	1	20
4:45 PM	0	3	2	2	5	0	0	0	0	1	0	0	13
5:00 PM	0	0	1	3	6	0	0	0	0	1	0	0	11
5:15 PM	0	1	3	5	12	0	0	0	0	0	0	0	21
5:30 PM	0	2	0	0	4	0	0	0	0	0	0	1	7
5:45 PM	0	0	1	0	2	0	0	0	0	1	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	79	54	47	79	0	0	0	0	12	0	27	298
APPROACH %'s :	0.00%	59.40%	40.60%	37.30%	62.70%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	30.77%	0.00%	69.23%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	11	7	13	30	0	0	0	0	3	0	1	65
PEAK HR FACTOR :		0.563			0.632			0.000			0.500		0.926

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Other Trucks** **Date:** 3/20/2018

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1.3	0.3	1.3	
6:00 AM	0	11	1	11	12	0	0	0	0	0	0	6	41
6:15 AM	0	4	6	3	7	0	0	0	0	0	0	5	25
6:30 AM	0	7	2	4	9	0	0	0	0	0	0	6	28
6:45 AM	0	6	1	1	11	0	0	0	0	1	0	7	27
7:00 AM	0	10	4	4	11	0	0	0	0	0	0	3	32
7:15 AM	0	8	3	4	12	0	0	0	0	0	0	5	32
7:30 AM	0	11	3	5	6	0	0	0	0	1	0	8	34
7:45 AM	0	7	0	5	15	0	0	0	0	0	0	4	31
8:00 AM	0	12	4	6	12	0	0	0	0	0	0	4	38
8:15 AM	0	8	2	7	9	0	0	0	0	0	0	6	32
8:30 AM	0	11	3	7	13	0	0	0	0	3	0	6	43
8:45 AM	0	13	2	9	14	0	0	0	0	0	0	7	45
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	108	31	66	131	0	0	0	0	5	0	67	408
APPROACH %'s :	0.00%	77.70%	22.30%	33.50%	66.50%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	6.94%	0.00%	93.06%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	38	10	20	45	0	0	0	0	1	0	21	135
PEAK HR FACTOR :		0.750			0.813			0.000			0.611		0.877

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-035 **Day:** Tuesday

City: Long Beach **Other Trucks** **Date:** 3/20/2018

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd Ramp			Sepulveda Blvd Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1.3	0.3	1.3	
2:00 PM	0	12	3	3	4	0	0	0	0	0	0	5	27
2:15 PM	0	10	1	5	11	0	0	0	0	0	0	5	32
2:30 PM	0	12	1	3	7	0	0	0	0	0	0	6	29
2:45 PM	0	6	0	3	7	0	0	0	0	3	0	6	25
3:00 PM	0	13	1	4	11	0	0	0	0	0	0	9	38
3:15 PM	0	13	2	3	9	0	0	0	0	1	0	3	31
3:30 PM	0	9	0	2	8	0	0	0	0	0	0	4	23
3:45 PM	0	13	1	4	8	0	0	0	0	0	0	3	29
4:00 PM	0	9	0	4	11	0	0	0	0	1	0	8	33
4:15 PM	0	14	0	7	6	0	0	0	0	0	0	5	32
4:30 PM	0	12	1	6	6	0	0	0	0	1	0	7	33
4:45 PM	0	9	1	2	12	0	0	0	0	0	0	4	28
5:00 PM	0	10	1	4	4	0	0	0	0	0	0	6	25
5:15 PM	0	10	0	5	8	0	0	0	0	0	0	5	28
5:30 PM	0	9	2	1	11	0	0	0	0	0	0	5	28
5:45 PM	0	13	3	2	8	0	0	0	0	0	0	6	32
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	174	17	58	131	0	0	0	0	6	0	87	473
APPROACH %'s :	0.00%	91.10%	8.90%	30.69%	69.31%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	6.45%	0.00%	93.55%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	41	3	17	30	0	0	0	0	1	0	22	114
PEAK HR FACTOR :		0.846			0.839			0.000			0.719		0.926

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
6:00 AM	1	6	0	18	8	37	9	39	0	1	106	20	245
6:15 AM	1	5	1	16	3	33	9	59	0	1	137	16	281
6:30 AM	0	3	1	34	3	36	11	86	2	2	179	19	376
6:45 AM	3	6	2	17	7	46	25	76	1	3	168	28	382
7:00 AM	1	3	1	20	4	33	26	83	3	3	173	22	372
7:15 AM	0	6	1	21	5	28	30	118	0	2	153	35	399
7:30 AM	0	6	1	28	5	57	35	146	2	0	199	43	522
7:45 AM	1	6	1	24	2	51	54	111	1	1	184	37	473
8:00 AM	0	9	2	23	5	28	40	135	1	0	159	37	439
8:15 AM	0	5	1	25	8	42	39	121	0	1	112	21	375
8:30 AM	0	3	3	24	5	28	37	129	0	4	116	33	382
8:45 AM	2	4	0	14	4	31	35	97	0	3	112	32	334
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	62	14	264	59	450	350	1200	10	21	1798	343	4580
APPROACH %'s :	10.59%	72.94%	16.47%	34.15%	7.63%	58.21%	22.44%	76.92%	0.64%	0.97%	83.16%	15.86%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	27	5	96	17	164	159	510	4	3	695	152	1833
PEAK HR FACTOR :		0.750			0.769			0.919			0.878		0.878

UTURNS	NB	SB	EB	WB
	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	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	2
	0	0	0	1
	NB	SB	EB	WB
	0	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
2:00 PM	1	2	2	23	1	31	32	97	1	2	71	23	286
2:15 PM	2	3	0	30	1	15	33	109	2	1	78	36	310
2:30 PM	1	2	0	33	3	25	33	180	0	0	95	39	411
2:45 PM	0	4	2	26	4	38	47	154	0	1	83	41	400
3:00 PM	1	1	2	22	2	26	42	163	0	0	75	39	373
3:15 PM	0	3	0	30	9	33	38	148	2	2	110	37	412
3:30 PM	0	2	2	26	3	32	55	245	0	0	87	46	498
3:45 PM	1	6	1	20	2	39	53	246	2	0	99	55	524
4:00 PM	0	2	2	29	2	33	45	174	1	0	101	47	436
4:15 PM	0	1	2	23	2	29	45	211	0	1	114	47	475
4:30 PM	1	4	0	39	4	43	46	242	3	0	105	52	539
4:45 PM	0	5	1	31	2	37	59	225	1	0	125	33	519
5:00 PM	0	4	4	20	2	45	63	226	2	0	125	37	528
5:15 PM	0	3	1	30	1	44	63	211	2	0	116	26	497
5:30 PM	3	4	1	20	0	25	55	227	1	2	98	32	468
5:45 PM	1	3	2	32	0	33	49	219	1	2	104	20	466
TOTAL VOLUMES :	NL 11	NT 49	NR 22	SL 434	ST 38	SR 528	EL 758	ET 3077	ER 18	WL 11	WT 1586	WR 610	TOTAL 7142
APPROACH %'s :	13.41%	59.76%	26.83%	43.40%	3.80%	52.80%	19.67%	79.86%	0.47%	0.50%	71.86%	27.64%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	1	16	6	120	9	169	231	904	8	0	471	148	2083
PEAK HR FACTOR :		0.719			0.866			0.982			0.955		0.966

UTURNS	NB	SB	EB	WB
	0	0	0	1
	0	0	0	1
	0	0	0	0
	0	0	1	0
	0	0	1	0
	0	0	0	1
	0	0	0	0
	0	0	1	0
	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	1
TOTAL VOLUMES :	NB 0	SB 0	EB 3	WB 5

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Alameda St Ramp and Sepulveda Blvd , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-036
City: Long Beach

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Alameda St Ramp)

	Lanes 1	0.5	1.5	
AM	164	17	96	338 AM
NOON	0	0	0	0 NOON
PM	169	9	120	395 PM

Eastbound Approach (Sepulveda Blvd)

Lanes	AM	NOON	PM
	860	0	641
1	159	0	231
2	510	0	904
0	4	0	8
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
152	0	148	1
695	0	471	1
3	0	0	1
611	0	1030	
AM	NOON	PM	

CONTROL: Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	24	1	27	5 AM
NOON	0	0	0	0 NOON
PM	17	1	16	6 PM
		0.5	1.5	0 Lanes

Total Ins & Outs

	North Leg		
	277	338	AM
	0	0	NOON
	298	395	PM

West Leg			East Leg		
AM	NOON	PM			
860	0	641	850	0	619
673	0	1143	611	0	1030
			AM	NOON	PM

	South Leg	
AM	24	33
NOON	0	0
PM	17	23

Total Volume Per Leg

	North Leg	
	615	AM
	0	NOON
	693	PM

West Leg			East Leg		
AM	NOON	PM			
1533	0	1784	1461	0	1649
			AM	NOON	PM

	South Leg
AM	57
NOON	0
PM	40

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
6:00 AM	1	0	0	12	2	33	9	33	0	1	106	11	208
6:15 AM	1	0	0	10	1	30	9	49	0	1	134	10	245
6:30 AM	0	0	0	21	1	32	10	72	2	1	172	12	323
6:45 AM	2	0	2	12	2	41	17	65	1	3	163	18	326
7:00 AM	1	1	1	14	2	27	14	71	1	3	170	11	316
7:15 AM	0	0	1	15	0	23	23	93	0	2	143	24	324
7:30 AM	0	1	1	21	0	47	29	124	1	0	189	32	445
7:45 AM	1	0	0	19	1	46	47	93	1	1	175	30	414
8:00 AM	0	3	1	11	1	25	32	105	0	0	152	27	357
8:15 AM	0	1	0	13	1	31	26	88	0	1	107	7	275
8:30 AM	0	0	2	15	0	17	26	102	0	3	107	13	285
8:45 AM	0	0	0	8	1	18	17	67	0	1	94	9	215
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	6	8	171	12	370	259	962	6	17	1712	204	3733
APPROACH %'s :	30.00%	30.00%	40.00%	30.92%	2.17%	66.91%	21.11%	78.40%	0.49%	0.88%	88.57%	10.55%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	4	3	66	2	141	131	415	2	3	659	113	1540
PEAK HR FACTOR :		0.500			0.768			0.890			0.877		0.865

UTURNS	NB	SB	EB	WB
	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	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	2
	0	0	0	1
	NB	SB	EB	WB
	0	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
2:00 PM	1	0	0	9	0	15	19	77	0	1	58	11	191
2:15 PM	0	0	0	11	0	11	18	93	0	1	64	11	209
2:30 PM	0	0	0	18	1	15	19	146	0	0	79	14	292
2:45 PM	0	1	1	12	0	22	39	123	0	0	70	14	282
3:00 PM	0	1	1	7	1	21	28	147	0	0	63	13	282
3:15 PM	0	0	0	15	0	18	19	119	1	1	96	17	286
3:30 PM	0	0	2	14	0	22	40	222	0	0	74	22	396
3:45 PM	1	3	0	12	0	31	38	220	2	0	82	33	422
4:00 PM	0	0	2	12	0	25	36	154	0	0	81	29	339
4:15 PM	0	1	1	12	0	23	31	193	0	1	112	29	403
4:30 PM	0	4	0	18	1	28	33	221	3	0	94	44	446
4:45 PM	0	0	1	13	0	27	46	206	1	0	111	25	430
5:00 PM	0	1	3	11	0	43	48	208	2	0	121	32	469
5:15 PM	0	1	1	18	0	43	52	185	2	0	113	20	435
5:30 PM	3	0	1	11	0	23	45	208	1	0	94	25	411
5:45 PM	1	0	1	15	0	28	41	180	0	2	100	17	385
TOTAL VOLUMES :	NL 6	NT 12	NR 14	SL 208	ST 3	SR 395	EL 552	ET 2702	ER 12	WL 6	WT 1412	WR 356	TOTAL 5678
APPROACH %'s :	18.75%	37.50%	43.75%	34.32%	0.50%	65.18%	16.90%	82.73%	0.37%	0.34%	79.59%	20.07%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	6	5	60	1	141	179	820	8	0	439	121	1780
PEAK HR FACTOR :		0.688			0.828			0.976			0.915		0.949

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	1
2:15 PM	0	0	0	1
2:30 PM	0	0	0	0
2:45 PM	0	0	1	0
3:00 PM	0	0	1	0
3:15 PM	0	0	0	1
3:30 PM	0	0	0	0
3:45 PM	0	0	1	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	1
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	1
TOTAL VOLUMES :	NB 0	SB 0	EB 3	WB 5

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
6:00 AM	0	0	0	1	0	0	0	2	0	0	0	0	3
6:15 AM	0	0	1	1	0	0	0	5	0	0	0	0	7
6:30 AM	0	0	1	3	0	0	0	7	0	0	0	0	11
6:45 AM	0	0	0	1	0	0	0	3	0	0	0	0	4
7:00 AM	0	0	0	3	0	0	0	3	0	0	0	0	6
7:15 AM	0	0	0	1	0	0	0	9	0	0	0	0	10
7:30 AM	0	0	0	3	0	0	0	8	0	0	0	0	11
7:45 AM	0	0	0	1	0	0	0	7	0	0	0	0	8
8:00 AM	0	0	1	2	0	0	0	10	0	0	0	0	13
8:15 AM	0	0	0	2	0	0	0	13	0	0	0	0	15
8:30 AM	0	0	0	1	0	0	0	6	0	0	0	0	7
8:45 AM	0	0	0	2	0	0	0	12	0	0	0	0	14
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	3	21	0	0	0	85	0	0	0	0	109
APPROACH %'s :	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	1	7	0	0	0	34	0	0	0	0	42
PEAK HR FACTOR :	0.250			0.583			0.850			0.000			0.865

UTURNS				
NB	SB	EB	WB
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	0	0
0	0	0	0
0	0	0	0
0	0	0	2
0	0	0	1
NB	SB	EB	WB
0	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
2:00 PM	0	0	0	2	0	0	0	10	0	0	0	0	12
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	2	0	0	0	10	0	0	0	0	12
2:45 PM	0	0	1	1	0	0	0	9	0	0	0	0	11
3:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	5	0	0	0	0	5
3:30 PM	0	0	0	2	0	0	0	6	0	0	0	0	8
3:45 PM	0	0	0	1	0	0	0	4	0	0	0	0	5
4:00 PM	0	0	0	4	0	0	0	7	0	0	0	0	11
4:15 PM	0	0	0	2	0	0	0	6	0	0	0	0	8
4:30 PM	0	0	0	3	0	0	0	5	0	0	0	0	8
4:45 PM	0	0	0	3	0	0	0	4	0	0	0	0	7
5:00 PM	0	0	0	3	0	0	0	4	0	0	0	0	7
5:15 PM	0	0	0	3	0	0	0	11	0	0	0	0	14
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
5:45 PM	0	0	1	2	0	0	0	8	0	0	0	0	11
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	2	28	0	0	0	93	0	0	0	0	123
APPROACH %'s :	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	12	0	0	0	24	0	0	0	0	36
PEAK HR FACTOR :	0.000			1.000			0.545			0.000			0.949

UTURNS	NB	SB	EB	WB
	0	0	0	1
	0	0	0	1
	0	0	0	0
	0	0	1	0
	0	0	1	0
	0	0	0	1
	0	0	0	0
	0	0	1	0
	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	1
	NB	SB	EB	WB
	0	0	3	5

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
6:00 AM	0	0	0	1	0	1	0	1	0	0	0	5	8
6:15 AM	0	0	0	0	0	0	0	2	0	0	2	5	9
6:30 AM	0	0	0	4	0	0	0	3	0	0	1	5	13
6:45 AM	0	0	0	2	0	2	6	4	0	0	0	6	20
7:00 AM	0	0	0	0	0	0	11	4	0	0	0	8	23
7:15 AM	0	0	0	1	0	1	6	11	0	0	4	8	31
7:30 AM	0	0	0	2	0	3	6	7	0	0	1	9	28
7:45 AM	0	0	0	1	0	2	4	3	0	0	1	6	17
8:00 AM	0	0	0	5	0	2	7	10	0	0	1	7	32
8:15 AM	0	0	0	5	0	6	11	13	0	0	2	9	46
8:30 AM	0	0	0	3	0	6	10	12	0	0	6	17	54
8:45 AM	0	0	0	2	0	8	15	10	0	0	10	20	65
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	26	0	31	76	80	0	0	28	105	346
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	45.61%	0.00%	54.39%	48.72%	51.28%	0.00%	0.00%	21.05%	78.95%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	9	0	8	23	31	0	0	7	30	108
PEAK HR FACTOR :	0.000			0.607			0.794			0.771			0.865

UTURNS			
NB	SB	EB	WB
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	0	0
0	0	0	0
0	0	0	0
0	0	0	2
0	0	0	1
NB	SB	EB	WB
0	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
2:00 PM	0	0	0	4	0	9	10	6	0	0	9	9	47
2:15 PM	0	0	0	8	0	2	13	12	0	0	8	19	62
2:30 PM	0	0	0	5	0	6	10	13	0	0	11	15	60
2:45 PM	0	0	0	6	0	11	8	13	0	0	6	21	65
3:00 PM	0	0	0	6	0	5	13	10	0	0	6	18	58
3:15 PM	0	0	0	9	0	11	15	18	0	0	8	12	73
3:30 PM	0	0	0	7	0	7	12	12	0	0	6	17	61
3:45 PM	0	0	0	6	0	3	11	13	0	0	7	17	57
4:00 PM	0	0	0	8	0	6	8	7	0	0	9	10	48
4:15 PM	0	0	0	2	0	4	11	5	0	0	1	12	35
4:30 PM	0	0	0	8	0	11	9	11	0	0	7	5	51
4:45 PM	0	0	0	7	0	5	9	14	0	0	8	4	47
5:00 PM	0	0	0	5	0	1	13	12	0	0	1	4	36
5:15 PM	0	0	0	4	0	1	10	11	0	0	1	4	31
5:30 PM	0	0	0	5	0	2	10	7	0	0	1	5	30
5:45 PM	0	0	0	4	0	2	4	11	0	0	3	2	26
TOTAL VOLUMES :	NL 0	NT 0	NR 0	SL 94	ST 0	SR 86	EL 166	ET 175	ER 0	WL 0	WT 92	WR 174	TOTAL 787
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	52.22%	0.00%	47.78%	48.68%	51.32%	0.00%	0.00%	34.59%	65.41%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	24	0	18	41	48	0	0	17	17	165
PEAK HR FACTOR :		0.000			0.553			0.890			0.708		0.949

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	1
2:15 PM	0	0	0	1
2:30 PM	0	0	0	0
2:45 PM	0	0	1	0
3:00 PM	0	0	1	0
3:15 PM	0	0	0	1
3:30 PM	0	0	0	0
3:45 PM	0	0	1	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	1
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	1
TOTAL VOLUMES :	NB 0	SB 0	EB 3	WB 5

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:00 AM	0	0	0	1	0	1	0	0	0	0	0	2	4
7:15 AM	0	0	0	3	0	1	0	2	0	0	1	1	8
7:30 AM	0	0	0	0	0	3	0	3	0	0	0	2	8
7:45 AM	0	0	0	2	0	0	0	4	0	0	0	0	6
8:00 AM	0	0	0	1	0	0	0	3	0	0	1	1	6
8:15 AM	0	0	0	2	0	0	0	0	0	0	1	2	5
8:30 AM	0	0	0	0	0	0	0	2	0	0	1	2	5
8:45 AM	0	0	0	0	0	1	0	0	0	0	2	2	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	9	0	6	0	14	0	0	7	12	48
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	60.00%	0.00%	40.00%	0.00%	100.00%	0.00%	0.00%	36.84%	63.16%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	6	0	4	0	12	0	0	2	4	28
PEAK HR FACTOR :	0.000			0.625			0.750			0.750			0.865

UTURNS	NB	SB	EB	WB
	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	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	2
	0	0	0	1
	NB	SB	EB	WB
	0	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
2:00 PM	0	0	0	5	0	1	2	2	0	0	2	1	13
2:15 PM	0	0	0	2	0	2	0	1	0	0	4	3	12
2:30 PM	0	0	0	4	0	2	0	4	0	0	5	6	21
2:45 PM	0	0	0	6	0	2	0	1	0	0	1	1	11
3:00 PM	0	0	0	4	0	0	1	1	0	0	4	4	14
3:15 PM	0	0	0	4	0	4	2	3	0	0	2	7	22
3:30 PM	0	0	0	2	0	0	1	3	0	0	4	4	14
3:45 PM	0	0	0	0	0	4	2	4	0	0	4	4	18
4:00 PM	0	0	0	4	0	2	1	1	0	0	7	4	19
4:15 PM	0	0	0	5	0	1	1	3	0	0	1	3	14
4:30 PM	0	0	0	9	0	1	0	2	0	0	2	3	17
4:45 PM	0	0	0	4	0	0	1	1	0	0	2	2	10
5:00 PM	0	0	0	1	0	1	0	2	0	0	1	1	6
5:15 PM	0	0	0	3	0	0	0	3	0	0	1	0	7
5:30 PM	0	0	0	4	0	0	0	9	0	0	1	1	15
5:45 PM	0	0	0	7	0	0	0	19	0	0	1	0	27
TOTAL VOLUMES :	NL 0	NT 0	NR 0	SL 64	ST 0	SR 20	EL 11	ET 59	ER 0	WL 0	WT 42	WR 44	TOTAL 240
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	76.19%	0.00%	23.81%	15.71%	84.29%	0.00%	0.00%	48.84%	51.16%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	17	0	2	1	8	0	0	6	6	40
PEAK HR FACTOR :		0.000			0.475			0.750			0.600		0.949

UTURNS	NB	SB	EB	WB
	0	0	0	5

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
6:00 AM	0	6	0	4	6	3	0	3	0	0	0	4	26
6:15 AM	0	5	0	5	2	3	0	3	0	0	1	1	20
6:30 AM	0	3	0	6	2	4	1	4	0	1	6	2	29
6:45 AM	1	6	0	2	5	3	2	4	0	0	4	4	31
7:00 AM	0	2	0	2	2	5	1	5	2	0	3	1	23
7:15 AM	0	6	0	1	5	3	1	3	0	0	5	2	26
7:30 AM	0	5	0	2	5	4	0	4	1	0	9	0	30
7:45 AM	0	6	1	1	1	3	3	4	0	0	8	1	28
8:00 AM	0	6	0	4	4	1	1	7	1	0	5	2	31
8:15 AM	0	4	1	3	7	5	2	7	0	0	2	3	34
8:30 AM	0	3	1	5	5	5	1	7	0	1	2	1	31
8:45 AM	2	4	0	2	3	4	3	8	0	2	6	1	35
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	56	3	37	47	43	15	59	4	4	51	22	344
APPROACH %'s :	4.84%	90.32%	4.84%	29.13%	37.01%	33.86%	19.23%	75.64%	5.13%	5.19%	66.23%	28.57%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	23	1	8	15	11	5	18	2	0	27	5	115
PEAK HR FACTOR :		0.857			0.773			0.694			0.889		0.865

UTURNS

NB	SB	EB	WB
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	0	0
0	0	0	0
0	0	0	0
0	0	0	2
0	0	0	1
NB	SB	EB	WB
0	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-036 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Alameda St Ramp			Alameda St Ramp			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 1.5	NR 0	SL 1.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 1	WT 1	WR 1	TOTAL
2:00 PM	0	2	2	3	1	6	1	2	1	1	2	2	23
2:15 PM	2	3	0	9	1	0	2	3	2	0	2	3	27
2:30 PM	1	2	0	4	2	2	4	7	0	0	0	4	26
2:45 PM	0	3	0	1	4	3	0	8	0	1	6	5	31
3:00 PM	1	0	1	5	1	0	0	4	0	0	2	4	18
3:15 PM	0	3	0	2	9	0	2	3	1	1	4	1	26
3:30 PM	0	2	0	1	3	3	2	2	0	0	3	3	19
3:45 PM	0	3	1	1	2	1	2	5	0	0	6	1	22
4:00 PM	0	2	0	1	2	0	0	5	1	0	4	4	19
4:15 PM	0	0	1	2	2	1	2	4	0	0	0	3	15
4:30 PM	1	0	0	1	3	3	4	3	0	0	2	0	17
4:45 PM	0	5	0	4	2	5	3	0	0	0	4	2	25
5:00 PM	0	3	1	0	2	0	2	0	0	0	2	0	10
5:15 PM	0	2	0	2	1	0	1	1	0	0	1	2	10
5:30 PM	0	4	0	0	0	0	0	0	0	2	2	1	9
5:45 PM	0	3	0	4	0	3	4	1	1	0	0	1	17
TOTAL VOLUMES :	NL 5	NT 37	NR 6	SL 40	ST 35	SR 27	EL 29	ET 48	ER 6	WL 5	WT 40	WR 36	TOTAL 314
APPROACH %'s :	10.42%	77.08%	12.50%	39.22%	34.31%	26.47%	34.94%	57.83%	7.23%	6.17%	49.38%	44.44%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	1	10	1	7	8	8	10	4	0	0	9	4	62
PEAK HR FACTOR :		0.600			0.523			0.500			0.542		0.949

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	1
2:15 PM	0	0	0	1
2:30 PM	0	0	0	0
2:45 PM	0	0	1	0
3:00 PM	0	0	1	0
3:15 PM	0	0	0	1
3:30 PM	0	0	0	0
3:45 PM	0	0	1	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	1
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	1
TOTAL VOLUMES :	NB 0	SB 0	EB 3	WB 5

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
6:00 AM	0	0	0	0	0	2	2	45	0	0	149	0	198
6:15 AM	0	0	0	1	0	0	2	63	0	0	176	1	243
6:30 AM	0	0	0	1	0	1	4	94	0	0	220	0	320
6:45 AM	0	0	0	1	0	0	0	88	0	0	208	0	297
7:00 AM	0	0	0	0	0	0	0	109	0	0	203	0	312
7:15 AM	0	0	0	2	0	1	0	139	0	0	189	0	331
7:30 AM	0	0	0	0	0	0	0	194	0	0	256	1	451
7:45 AM	0	0	0	1	0	1	0	136	0	0	238	0	376
8:00 AM	0	0	0	1	0	0	2	162	0	0	200	0	365
8:15 AM	0	0	0	0	0	2	1	128	0	0	171	0	302
8:30 AM	0	0	0	0	0	1	2	160	0	0	153	2	318
8:45 AM	0	0	0	2	0	0	0	106	0	0	152	0	260
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	9	0	8	13	1424	0	0	2315	4	3773
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	52.94%	0.00%	47.06%	0.90%	99.10%	0.00%	0.00%	99.83%	0.17%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	4	0	2	2	631	0	0	883	1	1523
PEAK HR FACTOR :		0.000			0.500			0.816			0.860		0.844

UTURNS	NB	SB	EB	WB
	0	0	1	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	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
2:00 PM	0	0	0	0	0	0	1	124	0	0	128	0	253
2:15 PM	0	0	0	0	0	2	3	151	0	0	135	1	292
2:30 PM	0	0	0	0	0	0	4	190	0	0	153	1	348
2:45 PM	0	0	0	3	0	2	0	193	0	0	150	0	348
3:00 PM	0	0	0	0	0	2	2	199	0	0	123	0	326
3:15 PM	0	0	0	0	0	1	1	198	0	0	164	0	364
3:30 PM	0	0	0	0	0	0	0	296	0	0	170	0	466
3:45 PM	0	0	0	0	0	0	2	278	0	0	168	0	448
4:00 PM	0	0	0	0	0	1	2	224	0	0	174	2	403
4:15 PM	0	0	0	0	0	1	2	259	0	0	161	0	423
4:30 PM	0	0	0	2	0	0	2	339	0	0	198	0	541
4:45 PM	0	0	0	0	0	0	1	267	0	0	154	0	422
5:00 PM	0	0	0	1	0	0	1	282	0	0	157	1	442
5:15 PM	0	0	0	1	0	3	1	223	0	0	144	0	372
5:30 PM	0	0	0	2	0	1	1	266	0	0	133	1	404
5:45 PM	0	0	0	1	0	0	0	255	0	0	131	1	388
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	10	0	13	23	3744	0	0	2443	7	6240
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	43.48%	0.00%	56.52%	0.61%	99.39%	0.00%	0.00%	99.71%	0.29%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	3	0	1	6	1147	0	0	670	1	1828
PEAK HR FACTOR :	0.000			0.500			0.845			0.847			0.845

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	2	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
	NB	SB	EB	WB
	0	0	5	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Intermodal Wy and Sepulveda Blvd , Long Beach

Date: 3/14/2018
Day: Wednesday

Project #: 18-5171-037
City: Long Beach

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach

Lanes	0	1	0		
AM	2	0	4	3	AM
NOON	0	0	0	0	NOON
PM	1	0	3	7	PM

Intermodal Wy

Sepulveda Blvd

Eastbound Approach

Lanes	AM	NOON	PM
	885	0	671
1	2	0	6
2	631	0	1147
0	0	0	0
Lanes	AM	NOON	PM

CONTROL

Signalized

Westbound Approach

AM	NOON	PM	Lanes
1	0	1	0
883	0	670	2
0	0	0	0
635	0	1150	
AM	NOON	PM	

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM
		0	0	0	Lanes

Total Ins & Outs

North Leg		
6	3	AM
0	0	NOON
4	7	PM

West Leg			East Leg		
AM	NOON	PM			
885	0	671	884	0	671
633	0	1153	635	0	1150
			AM	NOON	PM

South Leg		
0	0	AM
0	0	NOON
0	0	PM

Total Volume Per Leg

North Leg		
9		AM
0		NOON
11		PM

West Leg			East Leg		
AM	NOON	PM			
1518	0	1824	1519	0	1821
			AM	NOON	PM

South Leg	
0	AM
0	NOON
0	PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
6:00 AM	0	0	0	0	0	0	1	32	0	0	138	0	171
6:15 AM	0	0	0	1	0	0	1	43	0	0	158	1	204
6:30 AM	0	0	0	0	0	0	0	72	0	0	200	0	272
6:45 AM	0	0	0	0	0	0	0	64	0	0	180	0	244
7:00 AM	0	0	0	0	0	0	0	80	0	0	180	0	260
7:15 AM	0	0	0	0	0	0	0	98	0	0	164	0	262
7:30 AM	0	0	0	0	0	0	0	154	0	0	225	0	379
7:45 AM	0	0	0	1	0	0	0	105	0	0	204	0	310
8:00 AM	0	0	0	0	0	0	0	122	0	0	172	0	294
8:15 AM	0	0	0	0	0	1	1	84	0	0	134	0	220
8:30 AM	0	0	0	0	0	0	1	115	0	0	108	1	225
8:45 AM	0	0	0	0	0	0	0	76	0	0	104	0	180
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	2	0	1	4	1045	0	0	1967	2	3021
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	66.67%	0.00%	33.33%	0.38%	99.62%	0.00%	0.00%	99.90%	0.10%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	1	0	0	0	479	0	0	765	0	1245
PEAK HR FACTOR :		0.000			0.250			0.778			0.850		0.821

UTURNS	NB	SB	EB	WB
	0	0	1	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	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
2:00 PM	0	0	0	0	0	0	1	89	0	0	67	0	157
2:15 PM	0	0	0	0	0	1	0	109	0	0	65	0	175
2:30 PM	0	0	0	0	0	0	2	144	0	0	87	0	233
2:45 PM	0	0	0	1	0	0	0	144	0	0	84	0	229
3:00 PM	0	0	0	0	0	1	1	164	0	0	66	0	232
3:15 PM	0	0	0	0	0	0	0	149	0	0	109	0	258
3:30 PM	0	0	0	0	0	0	0	248	0	0	96	0	344
3:45 PM	0	0	0	0	0	0	1	236	0	0	97	0	334
4:00 PM	0	0	0	0	0	0	2	186	0	0	111	1	300
4:15 PM	0	0	0	0	0	0	0	227	0	0	112	0	339
4:30 PM	0	0	0	2	0	0	1	297	0	0	123	0	423
4:45 PM	0	0	0	0	0	0	0	231	0	0	102	0	333
5:00 PM	0	0	0	1	0	0	0	243	0	0	125	1	370
5:15 PM	0	0	0	0	0	0	0	199	0	0	121	0	320
5:30 PM	0	0	0	1	0	1	0	233	0	0	108	1	344
5:45 PM	0	0	0	1	0	0	0	206	0	0	109	1	317
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	6	0	3	8	3105	0	0	1582	4	4708
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	66.67%	0.00%	33.33%	0.26%	99.74%	0.00%	0.00%	99.75%	0.25%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	3	0	0	1	998	0	0	462	1	1465
PEAK HR FACTOR :		0.000			0.375			0.838			0.919		0.866

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	2	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
	NB	SB	EB	WB
	0	0	5	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
6:00 AM	0	0	0	0	0	0	0	7	0	0	5	0	12
6:15 AM	0	0	0	0	0	0	0	8	0	0	9	0	17
6:30 AM	0	0	0	0	0	0	0	9	0	0	9	0	18
6:45 AM	0	0	0	0	0	0	0	13	0	0	11	0	24
7:00 AM	0	0	0	0	0	0	0	18	0	0	7	0	25
7:15 AM	0	0	0	0	0	0	0	19	0	0	7	0	26
7:30 AM	0	0	0	0	0	0	0	19	0	0	11	0	30
7:45 AM	0	0	0	0	0	0	0	13	0	0	12	0	25
8:00 AM	0	0	0	0	0	0	0	10	0	0	9	0	19
8:15 AM	0	0	0	0	0	0	0	16	0	0	19	0	35
8:30 AM	0	0	0	0	0	1	0	16	0	0	13	1	31
8:45 AM	0	0	0	0	0	0	0	12	0	0	13	0	25
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	1	0	160	0	0	125	1	287
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	99.21%	0.79%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	61	0	0	39	0	100
PEAK HR FACTOR :		0.000			0.000			0.803			0.813		0.821

UTURNS	NB	SB	EB	WB
	0	0	1	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	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
2:00 PM	0	0	0	0	0	0	0	14	0	0	33	0	47
2:15 PM	0	0	0	0	0	0	0	9	0	0	31	0	40
2:30 PM	0	0	0	0	0	0	0	9	0	0	27	0	36
2:45 PM	0	0	0	0	0	0	0	13	0	0	28	0	41
3:00 PM	0	0	0	0	0	0	0	9	0	0	17	0	26
3:15 PM	0	0	0	0	0	0	0	10	0	0	27	0	37
3:30 PM	0	0	0	0	0	0	0	19	0	0	33	0	52
3:45 PM	0	0	0	0	0	0	0	11	0	0	36	0	47
4:00 PM	0	0	0	0	0	0	0	14	0	0	27	0	41
4:15 PM	0	0	0	0	0	0	0	12	0	0	30	0	42
4:30 PM	0	0	0	0	0	0	0	9	0	0	52	0	61
4:45 PM	0	0	0	0	0	0	0	9	0	0	30	0	39
5:00 PM	0	0	0	0	0	0	0	17	0	0	24	0	41
5:15 PM	0	0	0	0	0	0	0	4	0	0	15	0	19
5:30 PM	0	0	0	0	0	0	0	7	0	0	15	0	22
5:45 PM	0	0	0	0	0	0	0	5	0	0	15	0	20
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	171	0	0	440	0	611
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	47	0	0	136	0	183
PEAK HR FACTOR :		0.000			0.000			0.691			0.654		0.866

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	1	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	1	0
4:00 PM	0	0	2	0
4:15 PM	0	0	0	0
4:30 PM	0	0	1	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	5	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
6:00 AM	0	0	0	0	0	1	0	2	0	0	4	0	7
6:15 AM	0	0	0	0	0	0	0	3	0	0	8	0	11
6:30 AM	0	0	0	1	0	0	1	5	0	0	5	0	12
6:45 AM	0	0	0	1	0	0	0	6	0	0	7	0	14
7:00 AM	0	0	0	0	0	0	0	4	0	0	8	0	12
7:15 AM	0	0	0	2	0	1	0	10	0	0	10	0	23
7:30 AM	0	0	0	0	0	0	0	11	0	0	9	1	21
7:45 AM	0	0	0	0	0	1	0	4	0	0	8	0	13
8:00 AM	0	0	0	1	0	0	1	14	0	0	9	0	25
8:15 AM	0	0	0	0	0	0	0	17	0	0	14	0	31
8:30 AM	0	0	0	0	0	0	0	16	0	0	23	0	39
8:45 AM	0	0	0	1	0	0	0	11	0	0	25	0	37
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	6	0	3	2	103	0	0	130	1	245
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	66.67%	0.00%	33.33%	1.90%	98.10%	0.00%	0.00%	99.24%	0.76%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	3	0	2	1	39	0	0	36	1	82
PEAK HR FACTOR :		0.000			0.417			0.667			0.925		0.821

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
6:00 AM	0	0	1	0
6:15 AM	0	0	1	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	1	0
8:45 AM	0	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	3	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
2:00 PM	0	0	0	0	0	0	0	8	0	0	21	0	29
2:15 PM	0	0	0	0	0	0	0	20	0	0	27	0	47
2:30 PM	0	0	0	0	0	0	0	20	0	0	23	0	43
2:45 PM	0	0	0	0	0	0	0	19	0	0	26	0	45
3:00 PM	0	0	0	0	0	0	0	14	0	0	27	0	41
3:15 PM	0	0	0	0	0	0	0	27	0	0	16	0	43
3:30 PM	0	0	0	0	0	0	0	20	0	0	26	0	46
3:45 PM	0	0	0	0	0	0	0	19	0	0	20	0	39
4:00 PM	0	0	0	0	0	0	0	14	0	0	20	0	34
4:15 PM	0	0	0	0	0	0	0	8	0	0	12	0	20
4:30 PM	0	0	0	0	0	0	0	17	0	0	13	0	30
4:45 PM	0	0	0	0	0	0	0	20	0	0	12	0	32
5:00 PM	0	0	0	0	0	0	0	18	0	0	5	0	23
5:15 PM	0	0	0	0	0	0	0	13	0	0	5	0	18
5:30 PM	0	0	0	0	0	0	0	13	0	0	5	0	18
5:45 PM	0	0	0	0	0	0	0	15	0	0	5	0	20
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	265	0	0	263	0	528
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	63	0	0	42	0	105
PEAK HR FACTOR :		0.000			0.000			0.788			0.808		0.866

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	2	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
	NB	SB	EB	WB
	0	0	5	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:00 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
7:15 AM	0	0	0	0	0	0	0	6	0	0	3	0	9
7:30 AM	0	0	0	0	0	0	0	3	0	0	2	0	5
7:45 AM	0	0	0	0	0	0	0	6	0	0	0	0	6
8:00 AM	0	0	0	0	0	0	0	4	0	0	2	0	6
8:15 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
8:30 AM	0	0	0	0	0	0	0	3	0	0	4	0	7
8:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	25	0	0	19	0	44
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	19	0	0	7	0	26
PEAK HR FACTOR :		0.000			0.000			0.792			0.583		0.821

UTURNS	NB	SB	EB	WB
	0	0	1	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	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
2:00 PM	0	0	0	0	0	0	0	5	0	0	3	0	8
2:15 PM	0	0	0	0	0	0	0	5	0	0	8	0	13
2:30 PM	0	0	0	0	0	0	0	8	0	0	11	1	20
2:45 PM	0	0	0	0	0	0	0	7	0	0	3	0	10
3:00 PM	0	0	0	0	0	0	0	5	0	0	7	0	12
3:15 PM	0	0	0	0	0	0	0	7	0	0	9	0	16
3:30 PM	0	0	0	0	0	0	0	5	0	0	8	0	13
3:45 PM	0	0	0	0	0	0	0	4	0	0	7	0	11
4:00 PM	0	0	0	0	0	0	0	5	0	0	11	0	16
4:15 PM	0	0	0	0	0	0	0	7	0	0	4	0	11
4:30 PM	0	0	0	0	0	0	0	11	0	0	7	0	18
4:45 PM	0	0	0	0	0	0	0	5	0	0	5	0	10
5:00 PM	0	0	0	0	0	0	0	4	0	0	1	0	5
5:15 PM	0	0	0	0	0	0	0	6	0	0	1	0	7
5:30 PM	0	0	0	1	0	0	0	13	0	0	2	0	16
5:45 PM	0	0	0	0	0	0	0	26	0	0	1	0	27
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	1	0	0	0	123	0	0	88	1	213
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	98.88%	1.12%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	27	0	0	17	0	44
PEAK HR FACTOR :		0.000			0.000			0.614			0.607		0.866

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	1	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	1	0
4:00 PM	0	0	2	0
4:15 PM	0	0	0	0
4:30 PM	0	0	1	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
	NB	SB	EB	WB
	0	0	5	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
6:00 AM	0	0	0	0	0	1	1	4	0	0	2	0	8
6:15 AM	0	0	0	0	0	0	1	9	0	0	1	0	11
6:30 AM	0	0	0	0	0	1	3	7	0	0	6	0	17
6:45 AM	0	0	0	0	0	0	0	5	0	0	9	0	14
7:00 AM	0	0	0	0	0	0	0	6	0	0	6	0	12
7:15 AM	0	0	0	0	0	0	0	6	0	0	5	0	11
7:30 AM	0	0	0	0	0	0	0	7	0	0	9	0	16
7:45 AM	0	0	0	0	0	0	0	8	0	0	14	0	22
8:00 AM	0	0	0	0	0	0	1	12	0	0	8	0	21
8:15 AM	0	0	0	0	0	1	0	10	0	0	2	0	13
8:30 AM	0	0	0	0	0	0	1	10	0	0	5	0	16
8:45 AM	0	0	0	1	0	0	0	7	0	0	7	0	15
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	1	0	3	7	91	0	0	74	0	176
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	25.00%	0.00%	75.00%	7.14%	92.86%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	33	0	0	36	0	70
PEAK HR FACTOR :		0.000			0.000			0.654			0.643		0.821

UTURNS	NB	SB	EB	WB
	0	0	1	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	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-037 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Intermodal Wy			Intermodal Wy			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	1	2	0	0	2	0	
2:00 PM	0	0	0	0	0	0	0	8	0	0	4	0	12
2:15 PM	0	0	0	0	0	1	3	8	0	0	4	1	17
2:30 PM	0	0	0	0	0	0	2	9	0	0	5	0	16
2:45 PM	0	0	0	2	0	2	0	10	0	0	9	0	23
3:00 PM	0	0	0	0	0	1	1	7	0	0	6	0	15
3:15 PM	0	0	0	0	0	1	1	5	0	0	3	0	10
3:30 PM	0	0	0	0	0	0	0	4	0	0	7	0	11
3:45 PM	0	0	0	0	0	0	1	8	0	0	8	0	17
4:00 PM	0	0	0	0	0	1	0	5	0	0	5	1	12
4:15 PM	0	0	0	0	0	1	2	5	0	0	3	0	11
4:30 PM	0	0	0	0	0	0	1	5	0	0	3	0	9
4:45 PM	0	0	0	0	0	0	1	2	0	0	5	0	8
5:00 PM	0	0	0	0	0	0	1	0	0	0	2	0	3
5:15 PM	0	0	0	1	0	3	1	1	0	0	2	0	8
5:30 PM	0	0	0	0	0	0	1	0	0	0	3	0	4
5:45 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
TOTAL VOLUMES :	0	0	0	3	0	10	15	80	0	0	70	2	180
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	23.08%	0.00%	76.92%	15.79%	84.21%	0.00%	0.00%	97.22%	2.78%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	1	5	12	0	0	13	0	31
PEAK HR FACTOR :	0.000			0.250			0.607			0.650			0.866

CONTROL : Signalized

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	2	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
TOTAL VOLUMES :	0	0	5	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

City: Long Beach **Date:** 3/20/2018

TOTALS

AM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
6:00 AM	1	0	1	0	0	5	10	48	5	0	127	0	197
6:15 AM	3	0	2	3	0	3	13	56	1	3	173	0	257
6:30 AM	0	0	2	8	0	15	8	68	3	4	219	1	328
6:45 AM	4	0	1	5	0	10	7	98	5	5	233	0	368
7:00 AM	2	0	3	7	0	10	9	78	4	1	189	0	303
7:15 AM	2	0	2	4	1	11	10	127	0	2	218	1	378
7:30 AM	1	0	3	4	0	7	13	151	4	5	213	0	401
7:45 AM	4	0	3	7	0	14	9	149	6	10	223	1	426
8:00 AM	2	0	7	5	1	7	16	134	2	7	164	0	345
8:15 AM	1	0	5	4	0	9	10	105	3	7	158	1	303
8:30 AM	0	0	3	7	0	17	10	108	2	5	148	0	300
8:45 AM	4	0	7	18	0	4	7	110	2	1	140	0	293
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	24	0	39	72	2	112	122	1232	37	50	2205	4	3899
APPROACH %'s :	38.10%	0.00%	61.90%	38.71%	1.08%	60.22%	8.77%	88.57%	2.66%	2.21%	97.61%	0.18%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	9	0	15	20	2	39	48	561	12	24	818	2	1550
PEAK HR FACTOR :		0.667			0.726			0.924			0.902		0.910

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

City: Long Beach **Date:** 3/20/2018

TOTALS

PM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
2:00 PM	2	0	2	5	0	16	5	124	3	8	100	0	265
2:15 PM	2	0	2	18	0	6	7	118	2	3	99	0	257
2:30 PM	6	0	5	12	0	14	15	175	2	3	112	0	344
2:45 PM	3	0	3	10	0	12	11	156	5	5	99	0	304
3:00 PM	2	0	6	11	0	20	16	177	6	3	88	0	329
3:15 PM	5	0	0	19	0	16	19	196	6	3	119	0	383
3:30 PM	6	0	5	10	0	13	11	261	4	2	119	1	432
3:45 PM	2	0	3	17	0	10	9	225	4	3	122	1	396
4:00 PM	2	0	5	21	0	15	11	210	4	4	113	0	385
4:15 PM	6	0	3	5	0	12	7	215	2	4	145	0	399
4:30 PM	6	0	17	5	0	4	7	281	0	3	135	0	458
4:45 PM	3	0	4	6	0	13	9	219	4	2	117	0	377
5:00 PM	2	0	5	7	0	14	3	253	0	1	156	0	441
5:15 PM	1	0	5	6	0	9	14	244	2	3	119	0	403
5:30 PM	1	0	7	1	0	8	6	291	1	2	118	0	435
5:45 PM	0	0	4	7	0	5	5	283	4	0	115	0	423
TOTAL VOLUMES :	NL 49	NT 0	NR 76	SL 160	ST 0	SR 187	EL 155	ET 3428	ER 49	WL 49	WT 1876	WR 2	TOTAL 6031
APPROACH %'s :	39.20%	0.00%	60.80%	46.11%	0.00%	53.89%	4.27%	94.38%	1.35%	2.54%	97.35%	0.10%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	4	0	21	21	0	36	28	1071	7	6	508	0	1702
PEAK HR FACTOR :		0.781			0.679			0.928			0.818		0.965

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

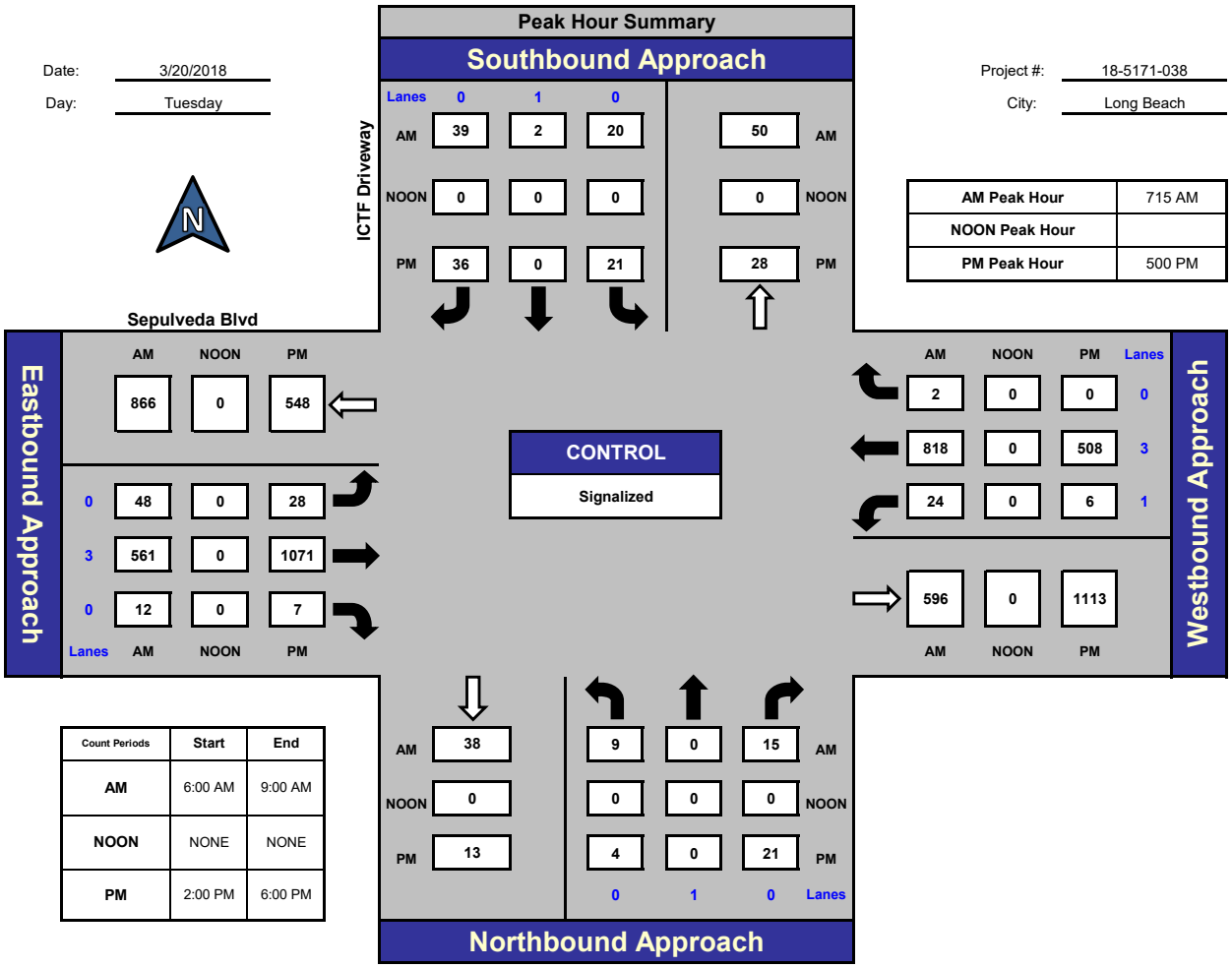
Prepared by:

National Data & Surveying Services

ICTF Driveway and Sepulveda Blvd , Long Beach

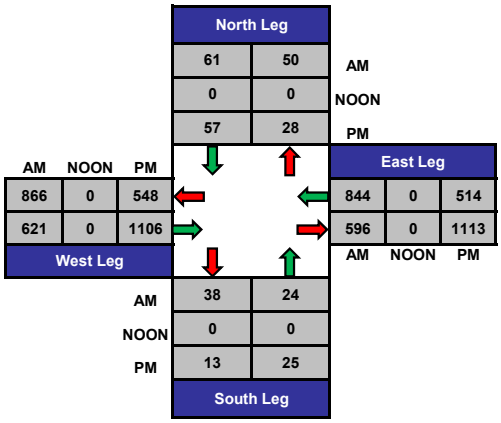
Date: 3/20/2018
Day: Tuesday
Project #: 18-5171-038
City: Long Beach

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

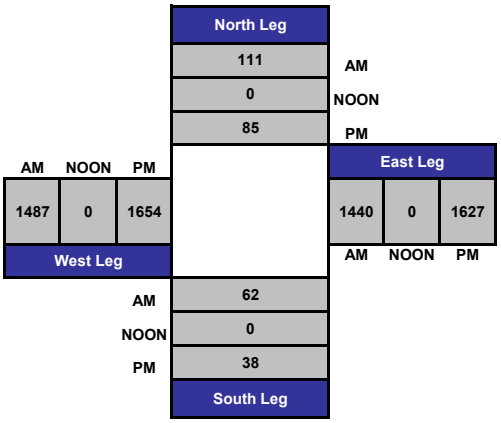


Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

City: Long Beach **Cars** **Date:** 3/20/2018

AM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	3	0	1	3	0	
6:00 AM	0	0	1	0	0	0	0	41	3	0	118	0	163
6:15 AM	0	0	1	0	0	0	0	41	0	2	170	0	214
6:30 AM	0	0	1	0	0	0	0	55	2	4	215	0	277
6:45 AM	0	0	1	0	0	0	0	84	3	4	218	0	310
7:00 AM	0	0	0	1	0	0	0	69	1	0	176	0	247
7:15 AM	0	0	0	1	0	0	0	104	0	2	210	1	318
7:30 AM	0	0	1	0	0	0	0	138	2	1	197	0	339
7:45 AM	0	0	0	1	0	0	0	130	1	7	203	1	343
8:00 AM	1	0	1	0	0	0	0	110	2	5	147	0	266
8:15 AM	0	0	2	0	0	0	0	87	2	3	135	0	229
8:30 AM	0	0	0	0	0	0	0	86	0	2	137	0	225
8:45 AM	0	0	5	0	0	0	0	81	0	1	114	0	201
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	13	3	0	0	0	1026	16	31	2040	2	3132
APPROACH %'s :	7.14%	0.00%	92.86%	100.00%	0.00%	0.00%	0.00%	98.46%	1.54%	1.50%	98.41%	0.10%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	0	2	2	0	0	0	482	5	15	757	2	1266
PEAK HR FACTOR :	0.375			0.500			0.870			0.908			0.923

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

City: Long Beach **Cars** **Date:** 3/20/2018

PM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	3	0	1	3	0	
2:00 PM	0	0	1	0	0	0	0	110	1	5	83	0	200
2:15 PM	0	0	1	0	0	0	0	101	0	0	78	0	180
2:30 PM	4	0	2	0	0	0	0	151	0	2	84	0	243
2:45 PM	0	0	2	0	0	0	0	139	2	1	79	0	223
3:00 PM	1	0	1	0	0	0	0	158	1	2	68	0	231
3:15 PM	0	0	0	0	0	0	0	171	1	3	98	0	273
3:30 PM	2	0	2	1	0	0	0	240	0	2	93	0	340
3:45 PM	0	0	1	1	0	0	0	203	0	2	107	0	314
4:00 PM	1	0	4	0	0	0	0	193	0	2	94	0	294
4:15 PM	1	0	3	0	0	0	0	200	1	2	123	0	330
4:30 PM	3	0	14	0	0	0	0	268	0	0	116	0	401
4:45 PM	1	0	1	0	0	0	0	207	0	2	101	0	312
5:00 PM	0	0	3	1	0	0	0	236	0	0	140	0	380
5:15 PM	0	0	3	0	0	0	0	212	1	2	115	0	333
5:30 PM	1	0	2	0	0	0	0	246	0	1	109	0	359
5:45 PM	0	0	1	0	0	0	0	217	2	0	107	0	327
TOTAL VOLUMES :	14	0	41	3	0	0	0	3052	9	26	1595	0	4740
APPROACH %'s :	25.45%	0.00%	74.55%	100.00%	0.00%	0.00%	0.00%	99.71%	0.29%	1.60%	98.40%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	0	9	1	0	0	0	911	3	3	471	0	1399
PEAK HR FACTOR :	0.833			0.250			0.929			0.846			0.920

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

Bobtails

City: Long Beach **Date:** 3/20/2018

AM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	3	0	1	3	0	
6:00 AM	0	0	0	0	0	0	10	2	2	0	5	0	19
6:15 AM	1	0	0	0	0	0	13	4	1	1	0	0	20
6:30 AM	0	0	0	1	0	0	7	3	1	0	3	0	15
6:45 AM	1	0	0	0	0	0	6	3	2	1	12	0	25
7:00 AM	1	0	0	0	0	0	8	1	3	1	6	0	20
7:15 AM	0	0	0	0	1	1	9	3	0	0	1	0	15
7:30 AM	0	0	0	0	0	1	13	2	2	2	9	0	29
7:45 AM	2	0	1	1	0	3	4	4	3	3	10	0	31
8:00 AM	1	0	0	0	1	3	10	6	0	2	7	0	30
8:15 AM	0	0	0	2	0	7	5	6	0	1	10	0	31
8:30 AM	0	0	1	4	0	9	8	5	2	2	6	0	37
8:45 AM	0	0	1	3	0	1	3	4	0	0	9	0	21
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	0	3	11	2	25	96	43	16	13	78	0	293
APPROACH %'s :	66.67%	0.00%	33.33%	28.95%	5.26%	65.79%	61.94%	27.74%	10.32%	14.29%	85.71%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	3	0	1	1	2	8	36	15	5	7	27	0	105
PEAK HR FACTOR :	0.333			0.688			0.824			0.654			0.923

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

Bobtails

City: Long Beach **Date:** 3/20/2018

PM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	3	0	1	3	0	
2:00 PM	0	0	1	1	0	14	2	3	0	1	9	0	31
2:15 PM	2	0	1	13	0	4	3	2	0	1	8	0	34
2:30 PM	2	0	0	7	0	7	1	1	2	0	13	0	33
2:45 PM	0	0	0	6	0	8	4	2	2	2	7	0	31
3:00 PM	0	0	1	8	0	14	5	2	0	1	9	0	40
3:15 PM	3	0	0	10	0	14	6	5	5	0	9	0	52
3:30 PM	1	0	0	5	0	10	3	3	3	0	6	0	31
3:45 PM	2	0	1	9	0	8	2	3	2	0	9	0	36
4:00 PM	1	0	0	10	0	12	5	3	1	0	9	0	41
4:15 PM	4	0	0	0	0	11	3	4	0	2	10	0	34
4:30 PM	1	0	0	1	0	4	1	1	0	1	10	0	19
4:45 PM	0	0	2	3	0	13	3	4	2	0	13	0	40
5:00 PM	0	0	0	1	0	12	1	4	0	1	9	0	28
5:15 PM	0	0	0	2	0	7	2	4	1	1	3	0	20
5:30 PM	0	0	0	0	0	8	1	10	0	0	2	0	21
5:45 PM	0	0	1	4	0	5	1	50	2	0	2	0	65
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	16	0	7	80	0	151	43	101	20	10	128	0	556
APPROACH %'s :	69.57%	0.00%	30.43%	34.63%	0.00%	65.37%	26.22%	61.59%	12.20%	7.25%	92.75%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	1	7	0	32	5	68	3	2	16	0	134
PEAK HR FACTOR :	0.250			0.750			0.358			0.450			0.920

UTURNS

NB	SB	EB	WB
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	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	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

City: Long Beach **Containers** **Date:** 3/20/2018

AM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	3	0	1	3	0	
6:00 AM	1	0	0	0	0	4	0	1	0	0	1	0	7
6:15 AM	2	0	1	3	0	2	0	5	0	0	0	0	13
6:30 AM	0	0	1	7	0	14	0	5	0	0	1	0	28
6:45 AM	3	0	0	5	0	10	1	7	0	0	1	0	27
7:00 AM	1	0	3	6	0	10	1	7	0	0	3	0	31
7:15 AM	2	0	2	3	0	10	1	10	0	0	4	0	32
7:30 AM	1	0	2	4	0	5	0	8	0	1	1	0	22
7:45 AM	2	0	2	5	0	10	4	9	2	0	5	0	39
8:00 AM	0	0	4	5	0	4	6	9	0	0	6	0	34
8:15 AM	1	0	3	2	0	2	5	6	0	2	7	1	29
8:30 AM	0	0	1	3	0	7	2	10	0	0	3	0	26
8:45 AM	2	0	1	14	0	3	3	18	2	0	8	0	51
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	15	0	20	57	0	81	23	95	4	3	40	1	339
APPROACH %'s :	42.86%	0.00%	57.14%	41.30%	0.00%	58.70%	18.85%	77.87%	3.28%	6.82%	90.91%	2.27%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	5	0	10	17	0	29	11	36	2	1	16	0	127
PEAK HR FACTOR :	0.938			0.767			0.817			0.708			0.923

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL VOLUMES :	0	0	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

Containers

City: Long Beach **Date:** 3/20/2018

PM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	3	0	1	3	0	
2:00 PM	2	0	0	3	0	2	1	4	1	1	4	0	18
2:15 PM	0	0	0	4	0	1	2	7	2	1	5	0	22
2:30 PM	0	0	2	5	0	5	6	7	0	0	4	0	29
2:45 PM	3	0	0	4	0	3	1	7	1	1	5	0	25
3:00 PM	1	0	4	3	0	6	3	11	5	0	6	0	39
3:15 PM	2	0	0	9	0	2	8	11	0	0	4	0	36
3:30 PM	3	0	3	4	0	3	4	12	1	0	6	1	37
3:45 PM	0	0	1	7	0	2	0	13	2	1	3	0	29
4:00 PM	0	0	1	9	0	3	2	10	3	2	6	0	36
4:15 PM	1	0	0	5	0	1	1	8	1	0	5	0	22
4:30 PM	0	0	2	4	0	0	3	7	0	2	5	0	23
4:45 PM	1	0	1	3	0	0	2	6	1	0	1	0	15
5:00 PM	2	0	2	4	0	2	0	3	0	0	5	0	18
5:15 PM	1	0	2	4	0	2	5	12	0	0	0	0	26
5:30 PM	0	0	5	1	0	0	5	14	1	1	3	0	30
5:45 PM	0	0	1	1	0	0	3	5	0	0	3	0	13
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	16	0	24	70	0	32	46	137	18	9	65	1	418
APPROACH %'s :	40.00%	0.00%	60.00%	68.63%	0.00%	31.37%	22.89%	68.16%	8.96%	12.00%	86.67%	1.33%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	3	0	10	10	0	4	13	34	1	1	11	0	87
PEAK HR FACTOR :	0.650			0.583			0.600			0.600			0.920

UTURNS				
NB	SB	EB	WB	
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	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	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

City: Long Beach **Chassis** **Date:** 3/20/2018

AM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	3	0	1	3	0	
6:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
6:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	2
6:30 AM	0	0	0	0	0	1	1	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:30 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
7:45 AM	0	0	0	0	0	1	1	0	0	0	1	0	3
8:00 AM	0	0	1	0	0	0	0	3	0	0	1	0	5
8:15 AM	0	0	0	0	0	0	0	2	0	1	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	2
8:45 AM	2	0	0	1	0	0	1	1	0	0	4	0	9
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	0	1	1	0	3	3	13	0	2	9	0	34
APPROACH %'s :	66.67%	0.00%	33.33%	25.00%	0.00%	75.00%	18.75%	81.25%	0.00%	18.18%	81.82%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	1	0	0	1	1	6	0	0	4	0	13
PEAK HR FACTOR :	0.250			0.250			0.583			1.000			0.923

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

City: Long Beach **Chassis** **Date:** 3/20/2018

PM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	3	0	1	3	0	
2:00 PM	0	0	0	0	0	0	2	0	0	1	1	0	4
2:15 PM	0	0	0	0	0	1	2	2	0	0	6	0	11
2:30 PM	0	0	0	0	0	2	8	8	0	1	8	0	27
2:45 PM	0	0	1	0	0	1	6	3	0	1	2	0	14
3:00 PM	0	0	0	0	0	0	8	1	0	0	2	0	11
3:15 PM	0	0	0	0	0	0	5	2	0	0	4	0	11
3:30 PM	0	0	0	0	0	0	4	1	0	0	6	0	11
3:45 PM	0	0	0	0	0	0	7	1	0	0	1	1	10
4:00 PM	0	0	0	2	0	0	4	0	0	0	2	0	8
4:15 PM	0	0	0	0	0	0	3	2	0	0	5	0	10
4:30 PM	1	0	1	0	0	0	3	3	0	0	3	0	11
4:45 PM	0	0	0	0	0	0	4	0	0	0	1	0	5
5:00 PM	0	0	0	0	0	0	2	7	0	0	0	0	9
5:15 PM	0	0	0	0	0	0	7	16	0	0	0	0	23
5:30 PM	0	0	0	0	0	0	0	19	0	0	1	0	20
5:45 PM	0	0	1	2	0	0	1	8	0	0	2	0	14
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	3	4	0	4	66	73	0	3	44	1	199
APPROACH %'s :	25.00%	0.00%	75.00%	50.00%	0.00%	50.00%	47.48%	52.52%	0.00%	6.25%	91.67%	2.08%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	1	2	0	0	10	50	0	0	3	0	66
PEAK HR FACTOR :	0.250			0.250			0.652			0.375			0.920

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

City: Long Beach **Date:** 3/20/2018

Other Trucks

AM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	3	0	1	3	0	
6:00 AM	0	0	0	0	0	1	0	3	0	0	3	0	7
6:15 AM	0	0	0	0	0	0	0	5	0	0	3	0	8
6:30 AM	0	0	0	0	0	0	0	5	0	0	0	1	6
6:45 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
7:00 AM	0	0	0	0	0	0	0	1	0	0	4	0	5
7:15 AM	0	0	0	0	0	0	0	9	0	0	2	0	11
7:30 AM	0	0	0	0	0	1	0	1	0	1	5	0	8
7:45 AM	0	0	0	0	0	0	0	6	0	0	4	0	10
8:00 AM	0	0	1	0	0	0	0	6	0	0	3	0	10
8:15 AM	0	0	0	0	0	0	0	4	1	0	6	0	11
8:30 AM	0	0	1	0	0	1	0	7	0	0	1	0	10
8:45 AM	0	0	0	0	0	0	0	6	0	0	5	0	11
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	2	0	0	3	0	55	1	1	38	1	101
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	98.21%	1.79%	2.50%	95.00%	2.50%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	1	0	0	1	0	22	0	1	14	0	39
PEAK HR FACTOR :		0.250			0.250			0.611			0.625		0.923

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-038 **Day:** Tuesday

City: Long Beach **Other Trucks** **Date:** 3/20/2018

PM

NS/EW Streets:	ICTF Driveway			ICTF Driveway			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	3	0	1	3	0	
2:00 PM	0	0	0	1	0	0	0	7	1	0	3	0	12
2:15 PM	0	0	0	1	0	0	0	6	0	1	2	0	10
2:30 PM	0	0	1	0	0	0	0	8	0	0	3	0	12
2:45 PM	0	0	0	0	0	0	0	5	0	0	6	0	11
3:00 PM	0	0	0	0	0	0	0	5	0	0	3	0	8
3:15 PM	0	0	0	0	0	0	0	7	0	0	4	0	11
3:30 PM	0	0	0	0	0	0	0	5	0	0	8	0	13
3:45 PM	0	0	0	0	0	0	0	5	0	0	2	0	7
4:00 PM	0	0	0	0	0	0	0	4	0	0	2	0	6
4:15 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
4:30 PM	1	0	0	0	0	0	0	2	0	0	1	0	4
4:45 PM	1	0	0	0	0	0	0	2	1	0	1	0	5
5:00 PM	0	0	0	1	0	0	0	3	0	0	2	0	6
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:30 PM	0	0	0	0	0	0	0	2	0	0	3	0	5
5:45 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	0	1	3	0	0	0	65	2	1	44	0	118
APPROACH %'s :	66.67%	0.00%	33.33%	100.00%	0.00%	0.00%	0.00%	97.01%	2.99%	2.22%	97.78%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	1	0	0	0	8	0	0	7	0	16
PEAK HR FACTOR :	0.000			0.250			0.667			0.583			0.920

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 1	ST 0.5	SR 0.5	EL 1	ET 2	ER 0	WL 0	WT 3	WR 0	TOTAL
6:00 AM	2	0	0	1	0	0	1	37	5	6	130	2	184
6:15 AM	8	0	2	1	0	0	0	54	2	14	162	3	246
6:30 AM	1	0	0	1	0	0	1	68	8	14	219	1	313
6:45 AM	0	0	0	1	0	0	0	86	8	25	215	4	339
7:00 AM	3	0	4	1	0	1	0	94	4	15	200	3	325
7:15 AM	1	0	5	1	0	1	0	122	2	11	186	0	329
7:30 AM	3	0	7	0	0	0	0	169	6	11	254	3	453
7:45 AM	4	0	2	1	0	0	0	139	7	15	253	4	425
8:00 AM	4	0	6	1	0	0	0	158	9	13	205	1	397
8:15 AM	1	0	10	0	0	0	0	143	1	21	205	1	382
8:30 AM	3	0	5	1	0	0	0	138	7	10	169	7	340
8:45 AM	3	0	8	1	0	0	0	120	1	10	140	1	284
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	33	0	49	10	0	2	2	1328	60	165	2338	30	4017
APPROACH %'s :	40.24%	0.00%	59.76%	83.33%	0.00%	16.67%	0.14%	95.54%	4.32%	6.51%	92.30%	1.18%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	12	0	25	2	0	0	0	609	23	60	917	9	1657
PEAK HR FACTOR :		0.841			0.500			0.903			0.906		0.914

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 1	ST 0.5	SR 0.5	EL 1	ET 2	ER 0	WL 0	WT 3	WR 0	TOTAL
2:00 PM	3	0	12	4	0	0	0	119	11	10	129	2	290
2:15 PM	8	0	17	2	0	0	0	159	3	16	130	0	335
2:30 PM	10	0	20	2	0	1	0	163	3	7	143	0	349
2:45 PM	7	0	14	1	0	0	1	207	10	10	127	5	382
3:00 PM	5	0	16	2	0	2	1	191	4	21	125	2	369
3:15 PM	4	0	14	4	0	0	0	181	7	13	148	0	371
3:30 PM	14	0	28	3	0	0	0	272	11	8	164	2	502
3:45 PM	6	0	13	3	1	0	2	274	10	16	160	4	489
4:00 PM	8	0	25	5	0	1	0	226	11	13	173	4	466
4:15 PM	7	0	13	2	0	0	0	243	9	16	161	2	453
4:30 PM	12	0	26	0	0	0	1	334	3	10	178	1	565
4:45 PM	10	0	26	1	0	1	2	263	4	9	144	0	460
5:00 PM	9	0	25	3	0	1	0	275	3	8	131	0	455
5:15 PM	10	0	20	3	0	1	0	244	4	3	133	0	418
5:30 PM	8	0	16	1	0	0	1	270	0	3	125	0	424
5:45 PM	5	0	15	0	0	0	0	245	5	5	118	0	393
TOTAL VOLUMES :	NL 126	NT 0	NR 300	SL 36	ST 1	SR 7	EL 8	ET 3666	ER 98	WL 168	WT 2289	WR 22	TOTAL 6721
APPROACH %'s :	29.58%	0.00%	70.42%	81.82%	2.27%	15.91%	0.21%	97.19%	2.60%	6.78%	92.34%	0.89%	
PEAK HR START TIME :	345 PM												TOTAL
PEAK HR VOL :	33	0	77	10	1	1	3	1077	33	55	672	11	1973
PEAK HR FACTOR :	0.724			0.500			0.823			0.971			0.873

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Middle Rd and Sepulveda Blvd , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-039
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	345 PM

Peak Hour Summary

Southbound Approach

Lanes	0.5	0.5	1		
AM	0	0	2	9	AM
NOON	0	0	0	0	NOON
PM	1	1	10	14	PM

Middle Rd

Sepulveda Blvd

Eastbound Approach

Lanes	AM	NOON	PM
	929	0	706
1	0	0	3
2	609	0	1077
0	23	0	33
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	9	0	11	0
	917	0	672	3
	60	0	55	0
	636	0	1164	
	AM	NOON	PM	

CONTROL

Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	83	12	0	25	AM
NOON	0	0	0	0	NOON
PM	89	33	0	77	PM
		0	1	0	Lanes

Total Ins & Outs

North Leg		
2	9	AM
0	0	NOON
12	14	PM

West Leg			East Leg		
AM	NOON	PM			
929	0	706	986	0	738
632	0	1113	636	0	1164
			AM	NOON	PM

South Leg		
83	37	AM
0	0	NOON
89	110	PM

Total Volume Per Leg

North Leg	
11	AM
0	NOON
26	PM

West Leg			East Leg		
AM	NOON	PM			
1561	0	1819	1622	0	1902
			AM	NOON	PM

South Leg	
120	AM
0	NOON
199	PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	0	0	3	0	
6:00 AM	0	0	0	1	0	0	1	29	5	6	127	2	171
6:15 AM	0	0	1	1	0	0	0	41	0	14	156	3	216
6:30 AM	0	0	0	1	0	0	1	53	6	13	201	1	276
6:45 AM	0	0	0	1	0	0	0	66	3	24	191	4	289
7:00 AM	1	0	1	1	0	1	0	71	4	13	181	3	276
7:15 AM	0	0	1	0	0	1	0	88	1	9	170	0	270
7:30 AM	0	0	2	0	0	0	0	141	4	7	220	3	377
7:45 AM	2	0	0	1	0	0	0	100	6	15	217	4	345
8:00 AM	0	0	1	1	0	0	0	115	6	11	173	1	308
8:15 AM	1	0	2	0	0	0	0	87	1	9	150	1	251
8:30 AM	0	0	0	1	0	0	0	100	5	3	117	7	233
8:45 AM	0	0	1	1	0	0	0	86	0	5	83	1	177
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	0	9	9	0	2	2	977	41	129	1986	30	3189
APPROACH %'s :	30.77%	0.00%	69.23%	81.82%	0.00%	18.18%	0.20%	95.78%	4.02%	6.01%	92.59%	1.40%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	3	0	5	2	0	0	0	443	17	42	760	9	1281
PEAK HR FACTOR :	0.667			0.500			0.793			0.859			0.849

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	0	0	3	0	
2:00 PM	1	0	9	4	0	0	0	82	3	2	67	2	170
2:15 PM	1	0	10	2	0	0	0	107	1	6	62	0	189
2:30 PM	4	0	13	2	0	1	0	118	2	2	82	0	224
2:45 PM	3	0	12	1	0	0	1	158	3	5	79	5	267
3:00 PM	2	0	10	2	0	1	1	151	2	7	67	2	245
3:15 PM	2	0	12	4	0	0	0	141	3	5	100	0	267
3:30 PM	4	0	18	3	0	0	0	228	7	4	92	2	358
3:45 PM	3	0	7	3	1	0	2	236	5	9	98	4	368
4:00 PM	7	0	22	5	0	1	0	188	2	11	109	4	349
4:15 PM	3	0	9	1	0	0	0	212	4	13	117	2	361
4:30 PM	10	0	22	0	0	0	1	307	3	9	109	1	462
4:45 PM	5	0	23	1	0	1	2	230	1	5	98	0	366
5:00 PM	6	0	17	3	0	1	0	236	2	5	115	0	385
5:15 PM	7	0	11	3	0	1	0	208	3	1	115	0	349
5:30 PM	5	0	13	1	0	0	1	241	0	2	106	0	369
5:45 PM	4	0	9	0	0	0	0	195	4	3	102	0	317
TOTAL VOLUMES :	67	0	217	35	1	6	8	3038	45	89	1518	22	5046
APPROACH %'s :	23.59%	0.00%	76.41%	83.33%	2.38%	14.29%	0.26%	98.29%	1.46%	5.46%	93.19%	1.35%	
PEAK HR START TIME :	345 PM												TOTAL
PEAK HR VOL :	23	0	60	9	1	1	3	943	14	42	433	11	1540
PEAK HR FACTOR :	0.648			0.458			0.772			0.920			0.833

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	0	0	3	0	
6:00 AM	2	0	0	0	0	0	0	1	0	0	2	0	5
6:15 AM	8	0	0	0	0	0	0	2	0	0	4	0	14
6:30 AM	1	0	0	0	0	0	0	4	0	0	10	0	15
6:45 AM	0	0	0	0	0	0	0	7	1	0	15	0	23
7:00 AM	1	0	1	0	0	0	0	11	0	0	11	0	24
7:15 AM	0	0	0	0	0	0	0	10	0	0	7	0	17
7:30 AM	0	0	1	0	0	0	0	7	0	2	13	0	23
7:45 AM	1	0	0	0	0	0	0	15	0	0	16	0	32
8:00 AM	0	0	0	0	0	0	0	4	0	0	11	0	15
8:15 AM	0	0	2	0	0	0	0	17	0	0	24	0	43
8:30 AM	1	0	0	0	0	0	0	6	1	0	15	0	23
8:45 AM	0	0	0	0	0	0	0	10	0	0	18	0	28
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	14	0	4	0	0	0	0	94	2	2	146	0	262
APPROACH %'s :	77.78%	0.00%	22.22%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	97.92%	2.08%	1.35%	98.65%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	0	3	0	0	0	0	43	0	2	64	0	113
PEAK HR FACTOR :	0.500			0.000			0.632			0.688			0.849

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	0	0	3	0	
2:00 PM	1	0	0	0	0	0	0	13	2	1	21	0	38
2:15 PM	3	0	1	0	0	0	0	13	0	1	17	0	35
2:30 PM	1	0	2	0	0	0	0	10	0	2	20	0	35
2:45 PM	2	0	0	0	0	0	0	15	4	0	16	0	37
3:00 PM	0	0	2	0	0	0	0	10	1	4	16	0	33
3:15 PM	1	0	0	0	0	0	0	13	0	2	19	0	35
3:30 PM	5	0	4	0	0	0	0	16	2	1	27	0	55
3:45 PM	3	0	2	0	0	0	0	12	2	1	22	0	42
4:00 PM	0	0	3	0	0	0	0	15	3	0	25	0	46
4:15 PM	1	0	0	0	0	0	0	14	2	0	23	0	40
4:30 PM	2	0	0	0	0	0	0	6	0	0	36	0	44
4:45 PM	3	0	1	0	0	0	0	13	0	2	18	0	37
5:00 PM	0	0	1	0	0	0	0	15	0	2	11	0	29
5:15 PM	1	0	1	0	0	0	0	10	1	1	10	0	24
5:30 PM	3	0	1	0	0	0	0	11	0	0	9	0	24
5:45 PM	0	0	0	0	0	0	0	7	0	0	12	0	19
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	26	0	18	0	0	0	0	193	17	17	302	0	573
APPROACH %'s :	59.09%	0.00%	40.91%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	91.90%	8.10%	5.33%	94.67%	0.00%	
PEAK HR START TIME :	345 PM												TOTAL
PEAK HR VOL :	6	0	5	0	0	0	0	47	7	1	106	0	172
PEAK HR FACTOR :	0.550			0.000			0.750			0.743			0.833

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	0	0	3	0	
6:00 AM	0	0	0	0	0	0	0	4	0	0	0	0	4
6:15 AM	0	0	0	0	0	0	0	3	0	0	1	0	4
6:30 AM	0	0	0	0	0	0	0	5	1	1	1	0	8
6:45 AM	0	0	0	0	0	0	0	8	2	1	0	0	11
7:00 AM	0	0	2	0	0	0	0	5	0	1	1	0	9
7:15 AM	0	0	1	0	0	0	0	14	1	0	0	0	16
7:30 AM	1	0	2	0	0	0	0	12	2	0	13	0	30
7:45 AM	0	0	1	0	0	0	0	12	0	0	9	0	22
8:00 AM	2	0	5	0	0	0	0	25	3	1	13	0	49
8:15 AM	0	0	4	0	0	0	0	26	0	0	27	0	57
8:30 AM	2	0	4	0	0	0	0	22	0	2	25	0	55
8:45 AM	3	0	5	0	0	0	0	17	0	4	31	0	60
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	8	0	24	0	0	0	0	153	9	10	121	0	325
APPROACH %'s :	25.00%	0.00%	75.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	94.44%	5.56%	7.63%	92.37%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	3	0	12	0	0	0	0	75	5	1	62	0	158
PEAK HR FACTOR :	0.536			0.000			0.714			0.583			0.849

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	0	0	3	0	
2:00 PM	1	0	2	0	0	0	0	9	2	1	33	0	48
2:15 PM	4	0	3	0	0	0	0	24	0	2	40	0	73
2:30 PM	1	0	2	0	0	0	0	23	1	0	28	0	55
2:45 PM	2	0	1	0	0	0	0	17	3	4	22	0	49
3:00 PM	2	0	3	0	0	0	0	16	1	6	31	0	59
3:15 PM	0	0	1	0	0	0	0	18	2	3	17	0	41
3:30 PM	4	0	4	0	0	0	0	16	2	2	28	0	56
3:45 PM	0	0	3	0	0	0	0	16	2	2	27	0	50
4:00 PM	0	0	0	0	0	0	0	14	4	0	25	0	43
4:15 PM	1	0	4	0	0	0	0	7	1	0	15	0	28
4:30 PM	0	0	2	0	0	0	0	15	0	1	23	0	41
4:45 PM	1	0	2	0	0	0	0	12	1	2	19	0	37
5:00 PM	2	0	7	0	0	0	0	18	0	1	3	0	31
5:15 PM	1	0	7	0	0	0	0	19	0	1	6	0	34
5:30 PM	0	0	2	0	0	0	0	9	0	0	4	0	15
5:45 PM	0	0	5	0	0	0	0	17	0	1	3	0	26
TOTAL VOLUMES :	19	0	48	0	0	0	0	250	19	26	324	0	686
APPROACH %'s :	28.36%	0.00%	71.64%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	92.94%	7.06%	7.43%	92.57%	0.00%	
PEAK HR START TIME :	345 PM												TOTAL
PEAK HR VOL :	1	0	9	0	0	0	0	52	7	3	90	0	162
PEAK HR FACTOR :	0.500			0.000			0.819			0.802			0.833

UTURNS	NB	SB	EB	WB
	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	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	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	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	0	0	3	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	1	0	0	0	0	0	1	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:00 AM	1	0	0	0	0	0	0	1	0	0	0	0	2
7:15 AM	1	0	2	0	0	0	0	5	0	0	1	0	9
7:30 AM	1	0	2	0	0	0	0	3	0	1	1	0	8
7:45 AM	0	0	0	0	0	0	0	4	0	0	0	0	4
8:00 AM	0	0	0	0	0	0	0	4	0	1	1	0	6
8:15 AM	0	0	1	0	0	0	0	2	0	12	1	0	16
8:30 AM	0	0	0	0	0	0	0	3	0	5	5	0	13
8:45 AM	0	0	1	0	0	0	0	0	1	0	3	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	0	7	0	0	0	0	22	2	19	13	0	66
APPROACH %'s :	30.00%	0.00%	70.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	91.67%	8.33%	59.38%	40.63%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	0	3	0	0	0	0	13	0	14	3	0	34
PEAK HR FACTOR :	0.333			0.000			0.813			0.327			0.849

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	0	0	3	0	
2:00 PM	0	0	0	0	0	0	0	8	2	4	6	0	20
2:15 PM	0	0	2	0	0	0	0	8	1	5	5	0	21
2:30 PM	2	0	2	0	0	0	0	4	0	2	9	0	19
2:45 PM	0	0	0	0	0	0	0	6	0	0	3	0	9
3:00 PM	1	0	1	0	0	0	0	5	0	2	7	0	16
3:15 PM	1	0	0	0	0	0	0	4	2	2	9	0	18
3:30 PM	0	0	1	0	0	0	0	7	0	0	11	0	19
3:45 PM	0	0	1	0	0	0	0	5	0	3	6	0	15
4:00 PM	0	0	0	0	0	0	0	4	1	2	9	0	16
4:15 PM	0	0	0	0	0	0	0	3	2	2	5	0	12
4:30 PM	0	0	1	0	0	0	0	4	0	0	8	0	13
4:45 PM	0	0	0	0	0	0	0	6	2	0	6	0	14
5:00 PM	1	0	0	0	0	0	0	6	1	0	0	0	8
5:15 PM	0	0	1	0	0	0	0	4	0	0	1	0	6
5:30 PM	0	0	0	0	0	0	0	9	0	1	5	0	15
5:45 PM	0	0	1	0	0	0	0	24	0	1	1	0	27
TOTAL VOLUMES :	5	0	10	0	0	0	0	107	11	24	91	0	248
APPROACH %'s :	33.33%	0.00%	66.67%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	90.68%	9.32%	20.87%	79.13%	0.00%	
PEAK HR START TIME :	345 PM												TOTAL
PEAK HR VOL :	0	0	2	0	0	0	0	16	3	7	28	0	56
PEAK HR FACTOR :	0.500			0.000			0.950			0.795			0.833

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	0	0	3	0	
6:00 AM	0	0	0	0	0	0	0	3	0	0	1	0	4
6:15 AM	0	0	0	0	0	0	0	8	1	0	1	0	10
6:30 AM	0	0	0	0	0	0	0	6	1	0	7	0	14
6:45 AM	0	0	0	0	0	0	0	5	2	0	8	0	15
7:00 AM	0	0	0	0	0	0	0	6	0	1	7	0	14
7:15 AM	0	0	1	1	0	0	0	5	0	2	8	0	17
7:30 AM	1	0	0	0	0	0	0	6	0	1	7	0	15
7:45 AM	1	0	1	0	0	0	0	8	1	0	11	0	22
8:00 AM	2	0	0	0	0	0	0	10	0	0	7	0	19
8:15 AM	0	0	1	0	0	0	0	11	0	0	3	0	15
8:30 AM	0	0	1	0	0	0	0	7	1	0	7	0	16
8:45 AM	0	0	1	0	0	0	0	7	0	1	5	0	14
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	0	5	1	0	0	0	82	6	5	72	0	175
APPROACH %'s :	44.44%	0.00%	55.56%	100.00%	0.00%	0.00%	0.00%	93.18%	6.82%	6.49%	93.51%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	4	0	2	0	0	0	0	35	1	1	28	0	71
PEAK HR FACTOR :	0.750			0.000			0.818			0.659			0.849

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-039 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Middle Rd			Middle Rd			Sepulveda Blvd			Sepulveda Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	0	0	3	0	
2:00 PM	0	0	1	0	0	0	0	7	2	2	2	0	14
2:15 PM	0	0	1	0	0	0	0	7	1	2	6	0	17
2:30 PM	2	0	1	0	0	0	0	8	0	1	4	0	16
2:45 PM	0	0	1	0	0	0	0	11	0	1	7	0	20
3:00 PM	0	0	0	0	0	1	0	9	0	2	4	0	16
3:15 PM	0	0	1	0	0	0	0	5	0	1	3	0	10
3:30 PM	1	0	1	0	0	0	0	5	0	1	6	0	14
3:45 PM	0	0	0	0	0	0	0	5	1	1	7	0	14
4:00 PM	1	0	0	0	0	0	0	5	1	0	5	0	12
4:15 PM	2	0	0	1	0	0	0	7	0	1	1	0	12
4:30 PM	0	0	1	0	0	0	0	2	0	0	2	0	5
4:45 PM	1	0	0	0	0	0	0	2	0	0	3	0	6
5:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
5:15 PM	1	0	0	0	0	0	0	3	0	0	1	0	5
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	1	0	0	0	0	0	0	2	1	0	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	0	7	1	0	1	0	78	6	12	54	0	168
APPROACH %'s :	56.25%	0.00%	43.75%	50.00%	0.00%	50.00%	0.00%	92.86%	7.14%	18.18%	81.82%	0.00%	
PEAK HR START TIME :	345 PM												TOTAL
PEAK HR VOL :	3	0	1	1	0	0	0	19	2	2	15	0	43
PEAK HR FACTOR :	0.500			0.250			0.750			0.531			0.833

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 2	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL
6:00 AM	8	0	8	0	0	0	0	17	10	29	115	0	187
6:15 AM	9	0	25	0	0	0	0	40	19	58	175	0	326
6:30 AM	28	0	23	1	0	0	0	54	21	59	199	0	385
6:45 AM	42	0	34	0	0	0	0	58	25	68	200	0	427
7:00 AM	30	0	25	0	0	0	0	69	28	38	184	0	374
7:15 AM	29	0	42	0	0	0	1	93	45	57	175	0	442
7:30 AM	55	0	45	0	0	0	3	129	45	52	206	0	535
7:45 AM	57	0	46	0	0	0	0	99	46	69	221	0	538
8:00 AM	49	0	45	0	0	0	0	104	59	41	153	0	451
8:15 AM	80	0	34	0	0	0	0	90	61	45	143	0	453
8:30 AM	62	0	39	0	0	0	0	95	54	40	120	0	410
8:45 AM	68	0	44	0	0	0	0	90	45	24	96	0	367
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	517	0	410	1	0	0	4	938	458	580	1987	0	4895
APPROACH %'s :	55.77%	0.00%	44.23%	100.00%	0.00%	0.00%	0.29%	67.00%	32.71%	22.59%	77.41%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	241	0	170	0	0	0	3	422	211	207	723	0	1977
PEAK HR FACTOR :		0.901			0.000			0.898			0.802		0.919

UTURNS	NB	SB	EB	WB
	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	3	0
	1	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	1	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 2	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL
2:00 PM	63	1	39	0	0	1	0	102	43	20	72	0	341
2:15 PM	87	0	41	0	0	0	0	118	60	29	67	0	402
2:30 PM	73	0	71	0	0	0	0	135	55	24	77	1	436
2:45 PM	70	0	78	0	0	1	2	158	50	22	76	2	459
3:00 PM	73	0	75	0	0	1	0	153	51	32	73	0	458
3:15 PM	79	0	73	0	1	0	0	154	49	33	92	0	481
3:30 PM	83	0	78	0	0	0	0	252	59	49	95	0	616
3:45 PM	78	0	61	0	0	0	0	233	60	41	95	1	569
4:00 PM	78	0	89	0	0	0	0	207	55	32	110	0	571
4:15 PM	74	0	85	0	0	0	0	209	51	48	110	0	577
4:30 PM	83	0	116	0	0	0	0	300	48	35	105	0	687
4:45 PM	61	0	96	1	0	1	0	256	45	39	87	0	586
5:00 PM	34	0	95	0	0	0	0	242	64	34	104	0	573
5:15 PM	43	0	94	0	0	0	0	219	52	42	92	0	542
5:30 PM	38	0	60	1	0	0	0	248	42	34	87	1	511
5:45 PM	31	0	42	0	0	0	0	188	66	33	98	1	459
TOTAL VOLUMES :	NL 1048	NT 1	NR 1193	SL 2	ST 1	SR 4	EL 2	ET 3174	ER 850	WL 547	WT 1440	WR 6	TOTAL 8268
APPROACH %'s :	46.74%	0.04%	53.21%	28.57%	14.29%	57.14%	0.05%	78.84%	21.11%	27.45%	72.25%	0.30%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	252	0	392	1	0	1	0	1007	208	156	406	0	2423
PEAK HR FACTOR :		0.809			0.250			0.873			0.889		0.882

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Terminal Island Fwy and Sepulveda Blvd Willow St , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-040
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach — Terminal Island Fwy

Lanes	0	1	0		
AM	0	0	0	3	AM
NOON	0	0	0	0	NOON
PM	1	0	1	0	PM

Eastbound Approach — Sepulveda Blvd_Willow St

Lanes	AM	NOON	PM
	964	0	659
1	3	0	0
3	422	0	1007
0	211	0	208
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	0	0	0	0
	723	0	406	2
	207	0	156	2
	592	0	1400	
	AM	NOON	PM	

CONTROL: Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	418	241	0	170	AM
NOON	0	0	0	0	NOON
PM	364	252	0	392	PM
		1.5	0.5	2	Lanes

Total Ins & Outs

North Leg		
0	3	AM
0	0	NOON
2	0	PM

West Leg			East Leg		
AM	NOON	PM			
964	0	659	930	0	562
636	0	1215	592	0	1400
			AM	NOON	PM

South Leg		
418	411	AM
0	0	NOON
364	644	PM

Total Volume Per Leg

North Leg	
3	AM
0	NOON
2	PM

West Leg			East Leg		
AM	NOON	PM			
1600	0	1874	1522	0	1962
			AM	NOON	PM

South Leg	
AM	829
NOON	0
PM	1008

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	2	0	1	0	1	3	0	2	2	0	
6:00 AM	4	0	8	0	0	0	0	17	4	29	115	0	177
6:15 AM	6	0	25	0	0	0	0	39	6	56	173	0	305
6:30 AM	11	0	22	1	0	0	0	54	7	54	196	0	345
6:45 AM	20	0	34	0	0	0	0	57	7	63	199	0	380
7:00 AM	8	0	25	0	0	0	0	68	3	38	181	0	323
7:15 AM	12	0	41	0	0	0	1	91	7	56	172	0	380
7:30 AM	20	0	42	0	0	0	3	129	11	50	204	0	459
7:45 AM	26	0	45	0	0	0	0	97	7	68	215	0	458
8:00 AM	17	0	45	0	0	0	0	99	15	39	153	0	368
8:15 AM	14	0	34	0	0	0	0	87	4	44	142	0	325
8:30 AM	6	0	37	0	0	0	0	93	10	38	116	0	300
8:45 AM	8	0	43	0	0	0	0	90	3	24	96	0	264
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	152	0	401	1	0	0	4	921	84	559	1962	0	4084
APPROACH %'s :	27.49%	0.00%	72.51%	100.00%	0.00%	0.00%	0.40%	91.28%	8.33%	22.17%	77.83%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	77	0	166	0	0	0	3	412	37	201	714	0	1610
PEAK HR FACTOR :		0.856			0.000			0.790			0.808		0.877

UTURNS

	NB	SB	EB	WB
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	3	0
7:45 AM	1	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL VOLUMES :	1	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 2	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL
2:00 PM	1	0	36	0	0	0	0	98	5	19	70	0	229
2:15 PM	10	0	39	0	0	0	0	116	6	27	63	0	261
2:30 PM	9	0	70	0	0	0	0	131	6	24	77	1	318
2:45 PM	13	0	75	0	0	1	2	153	5	20	75	2	346
3:00 PM	8	0	74	0	0	1	0	152	8	32	70	0	345
3:15 PM	17	0	68	0	1	0	0	153	8	33	92	0	372
3:30 PM	9	0	74	0	0	0	0	250	8	46	92	0	479
3:45 PM	14	0	58	0	0	0	0	231	14	38	93	1	449
4:00 PM	18	0	85	0	0	0	0	207	14	31	109	0	464
4:15 PM	23	0	80	0	0	0	0	205	19	48	109	0	484
4:30 PM	15	0	116	0	0	0	0	298	18	34	103	0	584
4:45 PM	18	0	96	1	0	1	0	253	12	39	84	0	504
5:00 PM	19	0	92	0	0	0	0	242	16	34	102	0	505
5:15 PM	22	0	94	0	0	0	0	219	7	41	92	0	475
5:30 PM	19	0	60	1	0	0	0	248	10	33	86	1	458
5:45 PM	9	0	41	0	0	0	0	187	13	33	98	1	382
TOTAL VOLUMES :	NL 224	NT 0	NR 1158	SL 2	ST 1	SR 3	EL 2	ET 3143	ER 169	WL 532	WT 1415	WR 6	TOTAL 6655
APPROACH %'s :	16.21%	0.00%	83.79%	33.33%	16.67%	50.00%	0.06%	94.84%	5.10%	27.24%	72.45%	0.31%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	75	0	384	1	0	1	0	998	65	155	398	0	2077
PEAK HR FACTOR :		0.876			0.250			0.841			0.881		0.889

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 2	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL
6:00 AM	3	0	0	0	0	0	0	0	0	0	0	0	3
6:15 AM	2	0	0	0	0	0	0	0	2	0	0	0	4
6:30 AM	11	0	0	0	0	0	0	0	4	0	0	0	15
6:45 AM	14	0	0	0	0	0	0	0	7	0	0	0	21
7:00 AM	11	0	0	0	0	0	0	0	12	0	0	0	23
7:15 AM	10	0	0	0	0	0	0	0	10	0	0	0	20
7:30 AM	14	0	0	0	0	0	0	0	8	0	0	0	22
7:45 AM	16	0	0	0	0	0	0	0	16	0	0	0	32
8:00 AM	10	0	0	0	0	0	0	0	5	0	0	0	15
8:15 AM	24	0	0	0	0	0	0	0	17	0	0	0	41
8:30 AM	16	0	0	0	0	0	0	0	7	0	0	0	23
8:45 AM	17	0	0	0	0	0	0	0	9	0	0	0	26
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	148	0	0	0	0	0	0	0	97	0	0	0	245
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	64	0	0	0	0	0	0	0	46	0	0	0	110
PEAK HR FACTOR :	0.667			0.000			0.676			0.000			0.877

UTURNS			
NB	SB	EB	WB
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	3	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
NB	SB	EB	WB
1	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 2	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL
2:00 PM	16	0	0	0	0	0	0	1	14	1	1	0	33
2:15 PM	23	0	0	0	0	0	0	0	12	0	0	0	35
2:30 PM	18	0	0	0	0	0	0	0	12	0	0	0	30
2:45 PM	15	0	0	0	0	0	0	0	15	0	0	0	30
3:00 PM	17	0	1	0	0	0	0	0	12	0	2	0	32
3:15 PM	27	0	1	0	0	0	0	0	12	0	0	0	40
3:30 PM	30	0	1	0	0	0	0	0	21	0	0	0	52
3:45 PM	19	0	0	0	0	0	0	1	13	0	0	0	33
4:00 PM	23	0	0	0	0	0	0	0	18	0	1	0	42
4:15 PM	27	0	0	0	0	0	0	0	14	0	0	0	41
4:30 PM	34	0	0	0	0	0	0	0	7	0	0	0	41
4:45 PM	17	0	0	0	0	0	0	1	12	0	1	0	31
5:00 PM	12	0	0	0	0	0	0	0	17	0	0	0	29
5:15 PM	12	0	0	0	0	0	0	0	10	0	0	0	22
5:30 PM	10	0	0	0	0	0	0	0	12	0	0	0	22
5:45 PM	14	0	0	0	0	0	0	0	7	0	0	0	21
TOTAL VOLUMES :	NL 314	NT 0	NR 3	SL 0	ST 0	SR 0	EL 0	ET 3	ER 208	WL 1	WT 5	WR 0	TOTAL 534
APPROACH %'s :	99.05%	0.00%	0.95%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	1.42%	98.58%	16.67%	83.33%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	90	0	0	0	0	0	0	1	50	0	1	0	142
PEAK HR FACTOR :	0.662			0.000			0.750			0.250			0.889

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	2	0	1	0	1	3	0	2	2	0	
6:00 AM	0	0	0	0	0	0	0	0	4	0	0	0	4
6:15 AM	1	0	0	0	0	0	0	0	3	0	1	0	5
6:30 AM	2	0	0	0	0	0	0	0	5	0	0	0	7
6:45 AM	0	0	0	0	0	0	0	0	8	0	0	0	8
7:00 AM	3	0	0	0	0	0	0	0	7	0	0	0	10
7:15 AM	0	0	0	0	0	0	0	0	15	0	0	0	15
7:30 AM	14	0	0	0	0	0	0	0	14	0	0	0	28
7:45 AM	9	0	0	0	0	0	0	0	15	0	0	0	24
8:00 AM	13	0	0	0	0	0	0	0	27	0	0	0	40
8:15 AM	28	0	0	0	0	0	0	0	29	0	0	0	57
8:30 AM	27	0	1	0	0	0	0	0	26	1	0	0	55
8:45 AM	34	0	0	0	0	0	0	0	24	0	0	0	58
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	131	0	1	0	0	0	0	0	177	1	1	0	311
APPROACH %'s :	99.24%	0.00%	0.76%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	50.00%	50.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	64	0	0	0	0	0	0	0	85	0	0	0	149
PEAK HR FACTOR :	0.571			0.000			0.733			0.000			0.877

UTURNS	NB	SB	EB	WB
	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	3	0
	1	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	1	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	2	0	1	0	1	3	0	2	2	0	
2:00 PM	35	1	0	0	0	1	0	0	11	0	0	0	48
2:15 PM	40	0	0	0	0	0	0	0	26	0	1	0	67
2:30 PM	29	0	0	0	0	0	0	0	26	0	0	0	55
2:45 PM	31	0	0	0	0	0	0	0	18	0	0	0	49
3:00 PM	35	0	0	0	0	0	0	0	18	0	0	0	53
3:15 PM	21	0	0	0	0	0	0	0	19	0	0	0	40
3:30 PM	32	0	0	0	0	0	0	0	19	0	0	0	51
3:45 PM	25	0	0	0	0	0	0	0	20	0	0	0	45
4:00 PM	20	0	0	0	0	0	0	0	14	0	0	0	34
4:15 PM	17	0	0	0	0	0	0	1	10	0	0	0	28
4:30 PM	25	0	0	0	0	0	0	0	17	0	0	0	42
4:45 PM	19	0	0	0	0	0	0	0	14	0	0	0	33
5:00 PM	3	0	0	0	0	0	0	0	25	0	0	0	28
5:15 PM	6	0	0	0	0	0	0	0	27	1	0	0	34
5:30 PM	4	0	0	0	0	0	0	0	11	0	0	0	15
5:45 PM	6	0	1	0	0	0	0	0	22	0	0	0	29
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	348	1	1	0	0	1	0	1	297	1	1	0	651
APPROACH %'s :	99.43%	0.29%	0.29%	0.00%	0.00%	100.00%	0.00%	0.34%	99.66%	50.00%	50.00%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	64	0	0	0	0	0	0	1	66	0	0	0	131
PEAK HR FACTOR :	0.640			0.000			0.670			0.000			0.889

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	1	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	1	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 2	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
7:15 AM	1	0	0	0	0	0	0	0	7	0	0	0	8
7:30 AM	2	0	0	0	0	0	0	0	5	0	0	0	7
7:45 AM	0	0	0	0	0	0	0	0	3	0	0	0	3
8:00 AM	3	0	0	0	0	0	0	0	5	0	0	0	8
8:15 AM	12	0	0	0	0	0	0	0	2	0	0	0	14
8:30 AM	10	0	0	0	0	0	0	0	4	0	0	0	14
8:45 AM	4	0	0	0	0	0	0	0	1	0	0	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	33	0	0	0	0	0	0	0	29	0	0	0	62
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	17	0	0	0	0	0	0	0	15	0	0	0	32
PEAK HR FACTOR :	0.354			0.000			0.750			0.000			0.877

UTURNS	NB	SB	EB	WB
	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	3	0
	1	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	1	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 2	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL
2:00 PM	9	0	0	0	0	0	0	0	8	0	0	0	17
2:15 PM	11	0	0	0	0	0	0	0	11	0	1	0	23
2:30 PM	11	0	0	0	0	0	0	1	5	0	0	0	17
2:45 PM	3	0	0	0	0	0	0	0	6	0	0	0	9
3:00 PM	9	0	0	0	0	0	0	0	6	0	0	0	15
3:15 PM	11	0	0	0	0	0	0	0	4	0	0	0	15
3:30 PM	8	0	0	0	0	0	0	0	8	0	0	0	16
3:45 PM	12	0	0	0	0	0	0	0	8	0	0	0	20
4:00 PM	12	0	0	0	0	0	0	0	4	0	0	0	16
4:15 PM	6	0	0	0	0	0	0	0	3	0	0	0	9
4:30 PM	8	0	0	0	0	0	0	0	4	0	0	0	12
4:45 PM	6	0	0	0	0	0	0	0	5	0	0	0	11
5:00 PM	0	0	0	0	0	0	0	0	6	0	0	0	6
5:15 PM	2	0	0	0	0	0	0	0	5	0	0	0	7
5:30 PM	5	0	0	0	0	0	0	0	9	0	0	0	14
5:45 PM	2	0	0	0	0	0	0	0	24	0	0	0	26
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	115	0	0	0	0	0	0	1	116	0	1	0	233
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.85%	99.15%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	20	0	0	0	0	0	0	0	18	0	0	0	38
PEAK HR FACTOR :	0.625			0.000			0.750			0.000			0.889

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	1	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 2	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL
6:00 AM	1	0	0	0	0	0	0	0	2	0	0	0	3
6:15 AM	0	0	0	0	0	0	0	1	7	2	1	0	11
6:30 AM	4	0	1	0	0	0	0	0	5	5	3	0	18
6:45 AM	7	0	0	0	0	0	0	1	3	5	1	0	17
7:00 AM	8	0	0	0	0	0	0	1	5	0	3	0	17
7:15 AM	6	0	1	0	0	0	0	2	6	1	3	0	19
7:30 AM	5	0	3	0	0	0	0	0	7	2	2	0	19
7:45 AM	6	0	1	0	0	0	0	2	5	1	6	0	21
8:00 AM	6	0	0	0	0	0	0	5	7	2	0	0	20
8:15 AM	2	0	0	0	0	0	0	3	9	1	1	0	16
8:30 AM	3	0	1	0	0	0	0	2	7	1	4	0	18
8:45 AM	5	0	1	0	0	0	0	0	8	0	0	0	14
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	53	0	8	0	0	0	0	17	71	20	24	0	193
APPROACH %'s :	86.89%	0.00%	13.11%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	19.32%	80.68%	45.45%	54.55%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	19	0	4	0	0	0	0	10	28	6	9	0	76
PEAK HR FACTOR :	0.719			0.000			0.792			0.536			0.877

UTURNS	NB	SB	EB	WB
	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	3	0
	1	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	1	0	3	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-040 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Terminal Island Fwy			Terminal Island Fwy			Sepulveda Blvd_Willow St			Sepulveda Blvd_Willow St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 2	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 2	WT 2	WR 0	TOTAL
2:00 PM	2	0	3	0	0	0	0	3	5	0	1	0	14
2:15 PM	3	0	2	0	0	0	0	2	5	2	2	0	16
2:30 PM	6	0	1	0	0	0	0	3	6	0	0	0	16
2:45 PM	8	0	3	0	0	0	0	5	6	2	1	0	25
3:00 PM	4	0	0	0	0	0	0	1	7	0	1	0	13
3:15 PM	3	0	4	0	0	0	0	1	6	0	0	0	14
3:30 PM	4	0	3	0	0	0	0	2	3	3	3	0	18
3:45 PM	8	0	3	0	0	0	0	1	5	3	2	0	22
4:00 PM	5	0	4	0	0	0	0	0	5	1	0	0	15
4:15 PM	1	0	5	0	0	0	0	3	5	0	1	0	15
4:30 PM	1	0	0	0	0	0	0	2	2	1	2	0	8
4:45 PM	1	0	0	0	0	0	0	2	2	0	2	0	7
5:00 PM	0	0	3	0	0	0	0	0	0	0	2	0	5
5:15 PM	1	0	0	0	0	0	0	0	3	0	0	0	4
5:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	2
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
TOTAL VOLUMES :	NL 47	NT 0	NR 31	SL 0	ST 0	SR 0	EL 0	ET 26	ER 60	WL 13	WT 18	WR 0	TOTAL 195
APPROACH %'s :	60.26%	0.00%	39.74%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	30.23%	69.77%	41.94%	58.06%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	3	0	8	0	0	0	0	7	9	1	7	0	35
PEAK HR FACTOR :	0.458			0.000			0.500			0.667			0.889

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 0	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
6:00 AM	26	23	7	5	17	17	4	93	17	3	210	10	432
6:15 AM	31	19	5	17	25	24	10	107	8	15	286	9	556
6:30 AM	43	15	8	15	25	21	4	122	9	3	291	4	560
6:45 AM	26	24	5	16	33	17	11	147	17	3	275	8	582
7:00 AM	50	36	6	30	42	29	8	120	19	10	262	16	628
7:15 AM	44	57	9	27	44	36	12	162	16	10	245	21	683
7:30 AM	40	108	11	47	70	33	23	185	17	16	246	35	831
7:45 AM	54	101	6	64	103	48	19	165	26	19	222	34	861
8:00 AM	52	98	9	42	54	28	12	168	29	5	240	11	748
8:15 AM	45	52	11	32	73	26	18	172	17	9	217	11	683
8:30 AM	38	59	7	38	45	31	21	147	15	10	260	17	688
8:45 AM	27	40	14	41	50	30	11	163	14	15	238	15	658
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	476	632	98	374	581	340	153	1751	204	118	2992	191	7910
APPROACH %'s :	39.47%	52.40%	8.13%	28.88%	44.86%	26.25%	7.26%	83.06%	9.68%	3.57%	90.64%	5.79%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	191	359	37	185	300	135	72	690	89	49	925	91	3123
PEAK HR FACTOR :		0.911			0.721			0.946			0.896		0.907

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 0	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
2:00 PM	32	59	24	29	42	15	16	205	18	17	192	23	672
2:15 PM	38	50	23	36	36	23	14	173	9	23	174	19	618
2:30 PM	47	93	15	42	38	23	26	216	21	19	172	29	741
2:45 PM	43	85	22	44	79	29	27	215	28	16	192	20	800
3:00 PM	30	65	15	45	51	17	30	178	16	11	143	31	632
3:15 PM	47	62	17	30	56	38	25	251	18	12	185	22	763
3:30 PM	57	124	31	41	68	35	28	181	15	16	170	22	788
3:45 PM	48	97	18	37	62	30	17	224	13	21	222	24	813
4:00 PM	55	126	28	32	41	31	23	269	22	13	165	22	827
4:15 PM	49	112	24	35	75	27	27	259	20	13	206	22	869
4:30 PM	60	127	27	34	54	25	31	276	10	20	221	14	899
4:45 PM	58	110	28	41	74	33	34	256	17	15	226	28	920
5:00 PM	49	124	17	40	47	24	24	267	22	7	192	22	835
5:15 PM	52	107	20	35	54	27	28	295	23	9	199	26	875
5:30 PM	37	70	14	37	52	23	22	292	16	6	183	21	773
5:45 PM	33	67	10	33	39	27	19	245	26	14	198	22	733
TOTAL VOLUMES :	NL 735	NT 1478	NR 333	SL 591	ST 868	SR 427	EL 391	ET 3802	ER 294	WL 232	WT 3040	WR 367	TOTAL 12558
APPROACH %'s :	28.87%	58.05%	13.08%	31.34%	46.02%	22.64%	8.71%	84.73%	6.55%	6.38%	83.54%	10.09%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	219	468	92	150	229	109	117	1094	72	51	838	90	3529
PEAK HR FACTOR :		0.910			0.824			0.927			0.910		0.959

UTURNS	NB	SB	EB	WB
	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	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
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Santa Fe Ave and PCH , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-041
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Santa Fe Ave)

	Lanes 0	3	0	
AM	135	300	185	522 AM
NOON	0	0	0	0 NOON
PM	109	229	150	675 PM

Eastbound Approach (PCH)

Lanes	AM	NOON	PM
	1251	0	1166
1	72	0	117
2	690	0	1094
0	89	0	72

Westbound Approach

Lanes	AM	NOON	PM
0	91	0	90
2	925	0	838
1	49	0	51
	912	0	1336

CONTROL: Signalized

Northbound Approach

	Lanes 1	2	0	
AM	438	191	359	37 AM
NOON	0	0	0	0 NOON
PM	352	219	468	92 PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	620	522	AM
NOON	0	0	NOON
PM	488	675	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg		
1251	0	1166		1065	0	979
851	0	1283		912	0	1336
				AM	NOON	PM

	South Leg	
AM	438	587
NOON	0	0
PM	352	779

Total Volume Per Leg

	North Leg	
AM	1142	AM
NOON	0	NOON
PM	1163	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg		
2102	0	2449		1977	0	2315
				AM	NOON	PM

	South Leg
AM	1025
NOON	0
PM	1131

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 0	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
6:00 AM	23	23	5	5	16	17	4	73	17	3	192	10	388
6:15 AM	27	17	1	17	23	22	10	91	8	14	266	9	505
6:30 AM	38	14	5	14	21	20	4	96	9	3	259	4	487
6:45 AM	22	22	4	16	31	15	11	108	15	1	243	8	496
7:00 AM	42	34	6	28	38	29	7	89	17	10	233	14	547
7:15 AM	33	55	4	23	41	36	12	117	14	10	220	21	586
7:30 AM	34	105	4	44	68	32	22	148	16	13	219	35	740
7:45 AM	43	99	3	61	101	44	18	133	22	17	198	33	772
8:00 AM	47	95	6	38	51	26	12	128	23	5	205	10	646
8:15 AM	35	50	8	30	71	25	15	131	12	7	190	11	585
8:30 AM	29	55	5	37	41	31	20	97	14	7	223	15	574
8:45 AM	22	39	9	38	49	28	11	113	12	13	192	15	541
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	395	608	60	351	551	325	146	1324	179	103	2640	185	6867
APPROACH %'s :	37.16%	57.20%	5.64%	28.61%	44.91%	26.49%	8.85%	80.29%	10.86%	3.52%	90.16%	6.32%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	159	349	21	173	291	127	67	540	73	42	812	89	2743
PEAK HR FACTOR :		0.894			0.717			0.914			0.883		0.888

UTURNS	NB	SB	EB	WB
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 0	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
2:00 PM	19	56	16	27	38	13	16	162	16	14	154	23	554
2:15 PM	29	47	16	34	34	23	13	134	6	17	138	16	507
2:30 PM	39	90	13	38	35	19	26	168	16	15	132	27	618
2:45 PM	29	81	15	44	76	28	25	181	23	10	152	19	683
3:00 PM	22	62	9	43	48	15	29	155	14	9	121	31	558
3:15 PM	33	61	12	30	51	37	25	225	15	11	145	22	667
3:30 PM	44	122	22	38	63	35	28	154	12	11	135	21	685
3:45 PM	39	95	15	34	62	29	16	190	12	13	201	22	728
4:00 PM	44	122	20	32	38	30	22	230	15	8	142	21	724
4:15 PM	37	106	16	31	70	26	26	226	14	11	183	21	767
4:30 PM	49	126	20	32	51	24	31	247	10	15	197	14	816
4:45 PM	48	108	19	41	68	31	32	228	14	14	202	28	833
5:00 PM	41	122	12	39	46	23	24	243	21	4	167	22	764
5:15 PM	46	106	17	32	52	25	28	262	19	6	178	26	797
5:30 PM	32	68	11	34	50	23	22	262	12	5	160	21	700
5:45 PM	31	65	8	31	36	25	19	218	24	10	176	22	665
TOTAL VOLUMES :	NL 582	NT 1437	NR 241	SL 560	ST 818	SR 406	EL 382	ET 3285	ER 243	WL 173	WT 2583	WR 356	TOTAL 11066
APPROACH %'s :	25.75%	63.58%	10.66%	31.39%	45.85%	22.76%	9.77%	84.02%	6.21%	5.56%	83.00%	11.44%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	184	462	68	144	217	103	115	980	64	39	744	90	3210
PEAK HR FACTOR :		0.915			0.829			0.938			0.894		0.963

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	0	1	2	0	1	2	0	
6:00 AM	1	0	0	0	0	0	0	0	0	0	3	0	4
6:15 AM	2	0	0	0	0	1	0	1	0	0	4	0	8
6:30 AM	0	0	0	0	3	1	0	4	0	0	2	0	10
6:45 AM	2	0	0	0	0	0	0	6	0	0	5	0	13
7:00 AM	4	0	0	0	0	0	0	2	0	0	7	0	13
7:15 AM	6	0	0	1	0	0	0	7	0	0	4	0	18
7:30 AM	6	0	2	0	0	0	0	5	1	3	8	0	25
7:45 AM	4	0	1	1	0	3	0	6	2	1	5	0	23
8:00 AM	2	0	1	0	0	0	0	4	2	0	6	0	15
8:15 AM	3	0	2	0	0	0	1	11	1	1	3	0	22
8:30 AM	2	0	0	0	1	0	0	9	0	2	3	0	17
8:45 AM	3	0	0	1	0	2	0	6	1	0	5	0	18
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	35	0	6	3	4	7	1	61	7	7	55	0	186
APPROACH %'s :	85.37%	0.00%	14.63%	21.43%	28.57%	50.00%	1.45%	88.41%	10.14%	11.29%	88.71%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	15	0	6	1	0	3	1	26	6	5	22	0	85
PEAK HR FACTOR :	0.656			0.250			0.635			0.614			0.888

UTURNS			
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	0	1	2	0	1	2	0	
2:00 PM	1	0	2	1	1	0	0	7	0	0	8	0	20
2:15 PM	1	0	2	0	0	0	0	6	0	1	5	0	15
2:30 PM	4	0	1	1	0	0	0	5	1	0	3	0	15
2:45 PM	7	0	1	0	0	0	0	3	3	1	6	0	21
3:00 PM	2	0	2	0	0	1	1	2	2	1	2	0	13
3:15 PM	6	0	3	0	0	0	0	6	2	1	4	0	22
3:30 PM	6	0	3	1	1	0	0	8	1	1	5	0	26
3:45 PM	3	0	1	1	0	1	1	9	0	2	2	0	20
4:00 PM	4	0	1	0	0	0	1	11	2	0	4	0	23
4:15 PM	6	0	4	4	0	1	0	8	2	1	4	0	30
4:30 PM	5	0	4	0	0	0	0	5	0	3	3	0	20
4:45 PM	4	0	3	0	0	1	0	9	2	0	7	0	26
5:00 PM	5	0	2	0	0	0	0	9	0	2	9	0	27
5:15 PM	4	0	0	1	1	0	0	11	1	1	4	0	23
5:30 PM	3	0	1	1	0	0	0	10	2	1	3	0	21
5:45 PM	1	0	1	1	0	1	0	6	0	1	7	0	18
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	62	0	31	11	3	5	3	115	18	16	76	0	340
APPROACH %'s :	66.67%	0.00%	33.33%	57.89%	15.79%	26.32%	2.21%	84.56%	13.24%	17.39%	82.61%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	18	0	9	1	1	1	0	34	3	6	23	0	96
PEAK HR FACTOR :	0.750			0.375			0.771			0.659			0.963

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	0	1	2	0	1	2	0	
6:00 AM	0	0	2	0	0	0	0	13	0	0	10	0	25
6:15 AM	2	0	2	0	0	0	0	13	0	0	6	0	23
6:30 AM	2	0	3	1	0	0	0	15	0	0	12	0	33
6:45 AM	0	0	1	0	0	1	0	21	1	0	9	0	33
7:00 AM	1	0	0	0	0	0	0	21	1	0	9	0	32
7:15 AM	2	0	2	3	1	0	0	24	2	0	9	0	43
7:30 AM	0	0	4	1	0	0	0	18	0	0	9	0	32
7:45 AM	0	0	1	0	0	0	0	15	0	0	7	0	23
8:00 AM	1	0	1	1	0	0	0	24	2	0	11	0	40
8:15 AM	1	0	1	0	0	0	0	13	1	0	12	0	28
8:30 AM	3	0	1	1	0	0	0	28	0	0	16	0	49
8:45 AM	1	0	3	1	0	0	0	23	1	2	22	0	53
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	13	0	21	8	1	1	0	228	8	2	132	0	414
APPROACH %'s :	38.24%	0.00%	61.76%	80.00%	10.00%	10.00%	0.00%	96.61%	3.39%	1.49%	98.51%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	2	0	7	2	0	0	0	70	3	0	39	0	123
PEAK HR FACTOR :	0.563			0.500			0.702			0.813			0.888

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	0	1	2	0	1	2	0	
2:00 PM	3	1	4	0	0	1	0	18	0	3	12	0	42
2:15 PM	3	0	3	0	0	0	0	18	2	2	21	1	50
2:30 PM	0	0	1	0	0	2	0	26	2	2	20	0	53
2:45 PM	2	0	4	0	0	0	0	18	1	3	22	0	50
3:00 PM	3	0	2	0	0	0	0	12	0	0	7	0	24
3:15 PM	5	0	0	0	1	0	0	5	0	0	23	0	34
3:30 PM	4	0	4	0	0	0	0	9	0	4	16	0	37
3:45 PM	6	0	1	1	0	0	0	13	1	4	14	1	41
4:00 PM	5	0	1	0	0	0	0	12	1	4	8	0	31
4:15 PM	3	0	1	0	1	0	0	10	2	1	9	0	27
4:30 PM	2	0	2	1	1	1	0	14	0	2	13	0	36
4:45 PM	4	0	4	0	0	1	0	9	1	1	11	0	31
5:00 PM	0	0	2	0	0	1	0	7	1	1	8	0	20
5:15 PM	1	0	2	0	0	2	0	12	0	1	9	0	27
5:30 PM	2	0	1	1	1	0	0	9	0	0	11	0	25
5:45 PM	1	0	1	0	1	1	0	7	1	2	7	0	21
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	44	1	33	3	5	9	0	199	12	30	211	2	549
APPROACH %'s :	56.41%	1.28%	42.31%	17.65%	29.41%	52.94%	0.00%	94.31%	5.69%	12.35%	86.83%	0.82%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	7	0	10	1	1	5	0	42	2	5	41	0	114
PEAK HR FACTOR :	0.531			0.583			0.786			0.767			0.963

UTURNS	NB	SB	EB	WB
	0	0	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 0	ST 3	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	1	0	0	0	0	0	0	0	1	0	2
6:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
6:45 AM	0	0	0	0	0	0	0	2	0	1	3	0	6
7:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
7:15 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
7:30 AM	0	0	0	0	0	0	0	4	0	0	0	0	4
7:45 AM	1	0	0	0	0	0	0	4	1	0	0	0	6
8:00 AM	0	0	0	0	0	1	0	2	0	0	2	0	5
8:15 AM	2	0	0	0	0	0	1	2	0	0	1	0	6
8:30 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
8:45 AM	0	0	2	0	0	0	0	1	0	0	1	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	0	3	0	0	1	1	19	1	1	14	0	43
APPROACH %'s :	50.00%	0.00%	50.00%	0.00%	0.00%	100.00%	4.76%	90.48%	4.76%	6.67%	93.33%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	3	0	0	0	0	1	1	12	1	0	3	0	21
PEAK HR FACTOR :	0.375			0.250			0.700			0.375			0.888

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	0	1	2	0	1	2	0	
2:00 PM	2	0	1	0	0	0	0	3	0	0	6	0	12
2:15 PM	3	0	1	0	0	0	0	2	1	0	3	0	10
2:30 PM	1	0	0	0	0	1	0	5	2	0	3	0	12
2:45 PM	1	0	1	0	0	0	0	4	0	1	3	0	10
3:00 PM	2	0	1	0	0	0	0	1	0	1	2	0	7
3:15 PM	2	0	1	0	0	0	0	1	1	0	3	0	8
3:30 PM	2	0	0	0	0	0	0	4	0	0	1	0	7
3:45 PM	0	0	1	0	0	0	0	3	0	1	0	0	5
4:00 PM	1	0	4	0	0	0	0	4	1	0	0	0	10
4:15 PM	0	0	2	0	0	0	0	3	0	0	0	0	5
4:30 PM	2	0	0	0	0	0	0	3	0	0	3	0	8
4:45 PM	0	0	2	0	1	0	0	3	0	0	0	0	6
5:00 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
5:15 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
5:30 PM	0	0	0	0	0	0	0	6	0	0	2	0	8
5:45 PM	0	0	0	0	0	0	0	5	0	1	1	0	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	16	0	14	0	1	1	0	52	5	4	30	0	123
APPROACH %'s :	53.33%	0.00%	46.67%	0.00%	50.00%	50.00%	0.00%	91.23%	8.77%	11.76%	88.24%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	2	0	2	0	1	0	0	11	0	0	6	0	22
PEAK HR FACTOR :	0.500			0.250			0.917			0.500			0.963

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	0	1	2	0	1	2	0	
6:00 AM	2	0	0	0	1	0	0	7	0	0	5	0	15
6:15 AM	0	2	1	0	2	1	0	2	0	1	9	0	18
6:30 AM	3	1	0	0	1	0	0	7	0	0	17	0	29
6:45 AM	2	2	0	0	2	1	0	10	1	1	15	0	34
7:00 AM	3	2	0	2	4	0	1	8	1	0	11	2	34
7:15 AM	3	2	3	0	2	0	0	12	0	0	11	0	33
7:30 AM	0	3	1	2	2	1	1	10	0	0	10	0	30
7:45 AM	6	2	1	2	2	1	1	7	1	1	12	1	37
8:00 AM	2	3	1	3	3	1	0	10	2	0	16	1	42
8:15 AM	4	2	0	2	2	1	1	15	3	1	11	0	42
8:30 AM	4	4	1	0	3	0	1	11	1	1	16	2	44
8:45 AM	1	1	0	1	1	0	0	20	0	0	18	0	42
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	30	24	8	12	25	6	5	119	9	5	151	6	400
APPROACH %'s :	48.39%	38.71%	12.90%	27.91%	58.14%	13.95%	3.76%	89.47%	6.77%	3.09%	93.21%	3.70%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	12	10	3	9	9	4	3	42	6	2	49	2	151
PEAK HR FACTOR :		0.694			0.786			0.671			0.779		0.888

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-041 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	0	1	2	0	1	2	0	
2:00 PM	7	2	1	1	3	1	0	15	2	0	12	0	44
2:15 PM	2	3	1	2	2	0	1	13	0	3	7	2	36
2:30 PM	3	3	0	3	3	1	0	12	0	2	14	2	43
2:45 PM	4	4	1	0	3	1	2	9	1	1	9	1	36
3:00 PM	1	3	1	2	3	1	0	8	0	0	11	0	30
3:15 PM	1	1	1	0	4	1	0	14	0	0	10	0	32
3:30 PM	1	2	2	2	4	0	0	6	2	0	13	1	33
3:45 PM	0	2	0	1	0	0	0	9	0	1	5	1	19
4:00 PM	1	4	2	0	3	1	0	12	3	1	11	1	39
4:15 PM	3	6	1	0	4	0	1	12	2	0	10	1	40
4:30 PM	2	1	1	1	2	0	0	7	0	0	5	0	19
4:45 PM	2	2	0	0	5	0	2	7	0	0	6	0	24
5:00 PM	3	2	1	1	1	0	0	6	0	0	7	0	21
5:15 PM	1	1	1	2	1	0	0	7	3	1	6	0	23
5:30 PM	0	2	1	1	1	0	0	5	2	0	7	0	19
5:45 PM	0	2	0	1	2	0	0	9	1	0	7	0	22
TOTAL VOLUMES :	31	40	14	17	41	6	6	151	16	9	140	9	480
APPROACH %'s :	36.47%	47.06%	16.47%	26.56%	64.06%	9.38%	3.47%	87.28%	9.25%	5.70%	88.61%	5.70%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	8	6	3	4	9	0	2	27	3	1	24	0	87
PEAK HR FACTOR :		0.708			0.650			0.800			0.893		0.963

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 3	NR 0	SL 1	ST 3	SR 0	EL 0	ET 0	ER 0	WL 1	WT 0	WR 1	TOTAL
6:00 AM	0	33	7	43	128	0	0	0	0	7	0	50	268
6:15 AM	0	36	9	51	120	0	0	0	0	15	0	41	272
6:30 AM	0	50	11	64	127	0	0	0	0	22	0	54	328
6:45 AM	0	52	12	81	124	0	0	0	0	13	0	63	345
7:00 AM	0	33	16	69	136	0	0	0	0	12	0	63	329
7:15 AM	0	37	57	78	162	0	0	0	0	18	0	77	429
7:30 AM	0	86	19	88	168	0	0	0	0	18	0	94	473
7:45 AM	0	102	21	94	186	0	0	0	0	16	0	90	509
8:00 AM	0	92	7	56	135	0	0	0	0	20	0	75	385
8:15 AM	0	73	23	72	166	0	0	0	0	22	0	88	444
8:30 AM	0	72	29	61	145	0	0	0	0	19	0	71	397
8:45 AM	0	90	22	68	121	0	0	0	0	21	0	61	383
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	756	233	825	1718	0	0	0	0	203	0	827	4562
APPROACH %'s :	0.00%	76.44%	23.56%	32.44%	67.56%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	19.71%	0.00%	80.29%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	353	70	310	655	0	0	0	0	76	0	347	1811
PEAK HR FACTOR :		0.860			0.862			0.000			0.944		0.889

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1	0	1	
2:00 PM	0	128	22	49	116	0	0	0	0	24	0	61	400
2:15 PM	0	111	32	56	132	0	0	0	0	20	0	55	406
2:30 PM	0	147	28	58	140	0	0	0	0	30	0	60	463
2:45 PM	0	140	35	72	113	0	0	0	0	22	0	78	460
3:00 PM	0	152	39	78	140	0	0	0	0	19	0	88	516
3:15 PM	0	140	30	73	150	0	0	0	0	25	0	90	508
3:30 PM	0	126	42	76	158	0	0	0	0	24	0	67	493
3:45 PM	0	127	51	89	207	0	0	0	0	19	0	83	576
4:00 PM	0	145	44	68	179	0	0	0	0	17	0	77	530
4:15 PM	0	100	29	78	189	0	0	0	0	33	0	80	509
4:30 PM	0	213	38	77	208	0	0	0	0	27	0	120	683
4:45 PM	0	140	40	90	190	0	0	0	0	15	0	98	573
5:00 PM	0	142	38	71	155	0	0	0	0	22	0	113	541
5:15 PM	0	141	28	95	187	0	0	0	0	13	0	96	560
5:30 PM	0	104	22	85	142	0	0	0	0	21	0	100	474
5:45 PM	0	88	25	78	154	0	0	0	0	13	0	65	423
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2144	543	1193	2560	0	0	0	0	344	0	1331	8115
APPROACH %'s :	0.00%	79.79%	20.21%	31.79%	68.21%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	20.54%	0.00%	79.46%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	636	144	333	740	0	0	0	0	77	0	427	2357
PEAK HR FACTOR :		0.777			0.941			0.000			0.857		0.863

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Alameda St and O St , Long Beach

Date: 3/14/2018
Day: Wednesday

Project #: 18-5171-042
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach

Lanes	0	3	1		
AM	0	655	310	700	AM
NOON	0	0	0	0	NOON
PM	0	740	333	1063	PM

Alameda St

O St

Eastbound Approach

	AM	NOON	PM
	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	347	0	427	1
	0	0	0	0
	76	0	77	1
	380	0	477	
	AM	NOON	PM	

CONTROL

Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	731	0	353	70	AM
NOON	0	0	0	0	NOON
PM	817	0	636	144	PM
		0	3	0	Lanes

Total Ins & Outs

	North Leg		
AM	965	700	AM
NOON	0	0	NOON
PM	1073	1063	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	0	423	0	504
0	0	0	380	0	477
			AM	NOON	PM

	South Leg	
AM	731	423
NOON	0	0
PM	817	780

Total Volume Per Leg

	North Leg	
AM	1665	AM
NOON	0	NOON
PM	2136	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	0	803	0	981
			AM	NOON	PM

	South Leg
AM	1154
NOON	0
PM	1597

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1	0	1	
6:00 AM	0	14	4	40	116	0	0	0	0	5	0	45	224
6:15 AM	0	13	7	46	105	0	0	0	0	12	0	38	221
6:30 AM	0	28	5	55	100	0	0	0	0	18	0	52	258
6:45 AM	0	32	6	72	90	0	0	0	0	8	0	59	267
7:00 AM	0	15	7	59	80	0	0	0	0	8	0	54	223
7:15 AM	0	23	41	65	105	0	0	0	0	15	0	69	318
7:30 AM	0	52	14	82	111	0	0	0	0	12	0	77	348
7:45 AM	0	71	13	80	136	0	0	0	0	9	0	78	387
8:00 AM	0	49	4	46	101	0	0	0	0	10	0	65	275
8:15 AM	0	42	16	58	100	0	0	0	0	18	0	71	305
8:30 AM	0	33	14	47	96	0	0	0	0	9	0	55	254
8:45 AM	0	46	12	55	67	0	0	0	0	13	0	49	242
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	418	143	705	1207	0	0	0	0	137	0	712	3322
APPROACH %'s :	0.00%	74.51%	25.49%	36.87%	63.13%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	16.14%	0.00%	83.86%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	214	47	266	448	0	0	0	0	49	0	291	1315
PEAK HR FACTOR :		0.777			0.826			0.000			0.955		0.849

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1	0	1	
2:00 PM	0	66	14	38	55	0	0	0	0	14	0	32	219
2:15 PM	0	55	19	41	69	0	0	0	0	7	0	40	231
2:30 PM	0	71	18	48	75	0	0	0	0	17	0	49	278
2:45 PM	0	60	21	64	61	0	0	0	0	15	0	64	285
3:00 PM	0	75	26	62	82	0	0	0	0	13	0	67	325
3:15 PM	0	71	22	66	78	0	0	0	0	17	0	71	325
3:30 PM	0	66	31	59	103	0	0	0	0	13	0	53	325
3:45 PM	0	71	30	80	161	0	0	0	0	8	0	71	421
4:00 PM	0	92	27	55	134	0	0	0	0	10	0	65	383
4:15 PM	0	56	24	63	106	0	0	0	0	19	0	64	332
4:30 PM	0	117	27	64	137	0	0	0	0	17	0	115	477
4:45 PM	0	97	28	79	129	0	0	0	0	13	0	84	430
5:00 PM	0	114	25	62	93	0	0	0	0	13	0	104	411
5:15 PM	0	114	23	86	119	0	0	0	0	8	0	89	439
5:30 PM	0	66	16	74	80	0	0	0	0	13	0	97	346
5:45 PM	0	54	16	67	96	0	0	0	0	7	0	55	295
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1245	367	1008	1578	0	0	0	0	204	0	1120	5522
APPROACH %'s :	0.00%	77.23%	22.77%	38.98%	61.02%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	15.41%	0.00%	84.59%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	442	103	291	478	0	0	0	0	51	0	392	1757
PEAK HR FACTOR :		0.946			0.924			0.000			0.839		0.921

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1	0	1	
6:00 AM	0	4	0	1	2	0	0	0	0	0	0	4	11
6:15 AM	0	14	1	1	5	0	0	0	0	2	0	2	25
6:30 AM	0	7	1	2	6	0	0	0	0	1	0	0	17
6:45 AM	0	6	2	3	10	0	0	0	0	0	0	0	21
7:00 AM	0	4	2	2	15	0	0	0	0	0	0	2	25
7:15 AM	0	5	2	4	16	0	0	0	0	0	0	3	30
7:30 AM	0	13	1	3	12	0	0	0	0	1	0	5	35
7:45 AM	0	10	3	8	11	0	0	0	0	3	0	1	36
8:00 AM	0	16	0	3	7	0	0	0	0	1	0	3	30
8:15 AM	0	8	1	1	14	0	0	0	0	2	0	2	28
8:30 AM	0	9	5	3	15	0	0	0	0	2	0	2	36
8:45 AM	0	10	1	0	6	0	0	0	0	1	0	1	19
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	106	19	31	119	0	0	0	0	13	0	25	313
APPROACH %'s :	0.00%	84.80%	15.20%	20.67%	79.33%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	34.21%	0.00%	65.79%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	47	5	15	44	0	0	0	0	7	0	11	129
PEAK HR FACTOR :		0.813			0.776			0.000			0.750		0.849

UTURNS			
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1	0	1	
2:00 PM	0	21	0	4	7	0	0	0	0	6	0	9	47
2:15 PM	0	20	4	5	13	0	0	0	0	2	0	2	46
2:30 PM	0	22	8	1	12	0	0	0	0	6	0	2	51
2:45 PM	0	26	6	2	8	0	0	0	0	2	0	5	49
3:00 PM	0	32	5	7	13	0	0	0	0	1	0	6	64
3:15 PM	0	17	3	2	14	0	0	0	0	1	0	5	42
3:30 PM	0	20	5	7	16	0	0	0	0	2	0	5	55
3:45 PM	0	22	7	3	9	0	0	0	0	8	0	1	50
4:00 PM	0	23	8	3	11	0	0	0	0	2	0	2	49
4:15 PM	0	15	2	2	11	0	0	0	0	3	0	4	37
4:30 PM	0	31	8	6	16	0	0	0	0	2	0	0	63
4:45 PM	0	8	5	3	19	0	0	0	0	1	0	4	40
5:00 PM	0	12	4	5	14	0	0	0	0	3	0	6	44
5:15 PM	0	10	2	3	15	0	0	0	0	1	0	3	34
5:30 PM	0	9	2	4	9	0	0	0	0	3	0	1	28
5:45 PM	0	6	2	3	17	0	0	0	0	3	0	5	36
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	294	71	60	204	0	0	0	0	46	0	60	735
APPROACH %'s :	0.00%	80.55%	19.45%	22.73%	77.27%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	43.40%	0.00%	56.60%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	61	19	17	64	0	0	0	0	7	0	13	181
PEAK HR FACTOR :		0.513			0.920			0.000			0.556		0.921

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1	0	1	
6:00 AM	0	2	3	0	4	0	0	0	0	0	0	0	9
6:15 AM	0	5	0	3	9	0	0	0	0	0	0	0	17
6:30 AM	0	8	3	3	10	0	0	0	0	2	0	2	28
6:45 AM	0	7	1	3	20	0	0	0	0	2	0	1	34
7:00 AM	0	5	3	3	28	0	0	0	0	2	0	0	41
7:15 AM	0	5	4	8	27	0	0	0	0	1	0	1	46
7:30 AM	0	12	2	2	33	0	0	0	0	4	0	6	59
7:45 AM	0	15	3	4	26	0	0	0	0	2	0	6	56
8:00 AM	0	20	0	4	15	0	0	0	0	4	0	2	45
8:15 AM	0	10	3	7	31	0	0	0	0	0	0	6	57
8:30 AM	0	17	5	6	27	0	0	0	0	3	0	6	64
8:45 AM	0	20	5	4	33	0	0	0	0	4	0	5	71
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	126	32	47	263	0	0	0	0	24	0	35	527
APPROACH %'s :	0.00%	79.75%	20.25%	15.16%	84.84%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	40.68%	0.00%	59.32%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	57	8	17	105	0	0	0	0	10	0	20	217
PEAK HR FACTOR :		0.813			0.803			0.000			0.750		0.849

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

Containers

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1	0	1	
2:00 PM	0	14	6	5	41	0	0	0	0	1	0	11	78
2:15 PM	0	16	4	6	41	0	0	0	0	9	0	6	82
2:30 PM	0	25	0	9	35	0	0	0	0	2	0	2	73
2:45 PM	0	36	4	4	31	0	0	0	0	2	0	7	84
3:00 PM	0	26	3	8	33	0	0	0	0	2	0	5	77
3:15 PM	0	28	4	2	46	0	0	0	0	3	0	8	91
3:30 PM	0	21	5	6	30	0	0	0	0	7	0	4	73
3:45 PM	0	25	7	3	20	0	0	0	0	1	0	8	64
4:00 PM	0	17	5	6	29	0	0	0	0	1	0	5	63
4:15 PM	0	13	1	6	49	0	0	0	0	7	0	6	82
4:30 PM	0	30	2	6	39	0	0	0	0	3	0	3	83
4:45 PM	0	17	7	5	34	0	0	0	0	1	0	3	67
5:00 PM	0	3	2	3	36	0	0	0	0	1	0	2	47
5:15 PM	0	7	2	6	40	0	0	0	0	2	0	2	59
5:30 PM	0	4	1	6	40	0	0	0	0	3	0	1	55
5:45 PM	0	7	5	4	32	0	0	0	0	2	0	3	53
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	289	58	85	576	0	0	0	0	47	0	76	1131
APPROACH %'s :	0.00%	83.29%	16.71%	12.86%	87.14%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	38.21%	0.00%	61.79%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	57	13	20	149	0	0	0	0	7	0	10	256
PEAK HR FACTOR :		0.547			0.918			0.000			0.708		0.921

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 3	NR 0	SL 1	ST 3	SR 0	EL 0	ET 0	ER 0	WL 1	WT 0	WR 1	TOTAL
6:00 AM	0	0	0	1	0	0	0	0	0	1	0	0	2
6:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	1	0	3	0	0	0	0	0	0	0	4
6:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	2
7:00 AM	0	0	4	0	4	0	0	0	0	0	0	2	10
7:15 AM	0	1	7	1	11	0	0	0	0	1	0	0	21
7:30 AM	0	2	0	0	6	0	0	0	0	0	0	1	9
7:45 AM	0	1	0	0	6	0	0	0	0	2	0	0	9
8:00 AM	0	3	1	1	3	0	0	0	0	2	0	2	12
8:15 AM	0	0	2	3	9	0	0	0	0	1	0	3	18
8:30 AM	0	3	0	1	4	0	0	0	0	2	0	1	11
8:45 AM	0	5	2	1	8	0	0	0	0	2	0	0	18
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	15	19	9	54	0	0	0	0	11	0	9	117
APPROACH %'s :	0.00%	44.12%	55.88%	14.29%	85.71%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	55.00%	0.00%	45.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	6	3	4	24	0	0	0	0	5	0	6	48
PEAK HR FACTOR :		0.563			0.583			0.000			0.688		0.849

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1	0	1	
2:00 PM	0	16	1	2	1	0	0	0	0	2	0	1	23
2:15 PM	0	13	2	2	6	0	0	0	0	1	0	2	26
2:30 PM	0	18	1	0	9	0	0	0	0	3	0	1	32
2:45 PM	0	7	2	1	8	0	0	0	0	2	0	1	21
3:00 PM	0	14	2	0	5	0	0	0	0	2	0	2	25
3:15 PM	0	18	1	3	6	0	0	0	0	1	0	2	31
3:30 PM	0	9	0	2	4	0	0	0	0	1	0	1	17
3:45 PM	0	7	2	0	9	0	0	0	0	2	0	2	22
4:00 PM	0	7	2	1	0	0	0	0	0	4	0	3	17
4:15 PM	0	10	2	3	11	0	0	0	0	1	0	1	28
4:30 PM	0	20	1	1	7	0	0	0	0	3	0	0	32
4:45 PM	0	4	0	1	3	0	0	0	0	0	0	2	10
5:00 PM	0	2	5	0	7	0	0	0	0	2	0	0	16
5:15 PM	0	3	0	0	3	0	0	0	0	2	0	0	8
5:30 PM	0	7	2	0	11	0	0	0	0	1	0	0	21
5:45 PM	0	3	0	3	5	0	0	0	0	0	0	0	11
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	158	23	19	95	0	0	0	0	27	0	18	340
APPROACH %'s :	0.00%	87.29%	12.71%	16.67%	83.33%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	60.00%	0.00%	40.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	29	6	2	20	0	0	0	0	7	0	2	66
PEAK HR FACTOR :		0.417			0.688			0.000			0.750		0.921

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1	0	1	
6:00 AM	0	13	0	1	6	0	0	0	0	1	0	1	22
6:15 AM	0	4	1	0	1	0	0	0	0	1	0	1	8
6:30 AM	0	7	1	4	8	0	0	0	0	1	0	0	21
6:45 AM	0	7	1	3	4	0	0	0	0	3	0	3	21
7:00 AM	0	9	0	5	9	0	0	0	0	2	0	5	30
7:15 AM	0	3	3	0	3	0	0	0	0	1	0	4	14
7:30 AM	0	7	2	1	6	0	0	0	0	1	0	5	22
7:45 AM	0	5	2	2	7	0	0	0	0	0	0	5	21
8:00 AM	0	4	2	2	9	0	0	0	0	3	0	3	23
8:15 AM	0	13	1	3	12	0	0	0	0	1	0	6	36
8:30 AM	0	10	5	4	3	0	0	0	0	3	0	7	32
8:45 AM	0	9	2	8	7	0	0	0	0	1	0	6	33
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	91	20	33	75	0	0	0	0	18	0	46	283
APPROACH %'s :	0.00%	81.98%	18.02%	30.56%	69.44%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	28.13%	0.00%	71.88%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	29	7	8	34	0	0	0	0	5	0	19	102
PEAK HR FACTOR :		0.643			0.700			0.000			0.857		0.849

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-042 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Alameda St			Alameda St			O St			O St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	0	1	3	0	0	0	0	1	0	1	
2:00 PM	0	11	1	0	12	0	0	0	0	1	0	8	33
2:15 PM	0	7	3	2	3	0	0	0	0	1	0	5	21
2:30 PM	0	11	1	0	9	0	0	0	0	2	0	6	29
2:45 PM	0	11	2	1	5	0	0	0	0	1	0	1	21
3:00 PM	0	5	3	1	7	0	0	0	0	1	0	8	25
3:15 PM	0	6	0	0	6	0	0	0	0	3	0	4	19
3:30 PM	0	10	1	2	5	0	0	0	0	1	0	4	23
3:45 PM	0	2	5	3	8	0	0	0	0	0	0	1	19
4:00 PM	0	6	2	3	5	0	0	0	0	0	0	2	18
4:15 PM	0	6	0	4	12	0	0	0	0	3	0	5	30
4:30 PM	0	15	0	0	9	0	0	0	0	2	0	2	28
4:45 PM	0	14	0	2	5	0	0	0	0	0	0	5	26
5:00 PM	0	11	2	1	5	0	0	0	0	3	0	1	23
5:15 PM	0	7	1	0	10	0	0	0	0	0	0	2	20
5:30 PM	0	18	1	1	2	0	0	0	0	1	0	1	24
5:45 PM	0	18	2	1	4	0	0	0	0	1	0	2	28
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	158	24	21	107	0	0	0	0	20	0	57	387
APPROACH %'s :	0.00%	86.81%	13.19%	16.41%	83.59%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	25.97%	0.00%	74.03%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	47	3	3	29	0	0	0	0	5	0	10	97
PEAK HR FACTOR :		0.833			0.800			0.000			0.750		0.921

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
6:00 AM	0	0	0	19	0	32	37	112	0	0	179	19	398
6:15 AM	0	0	0	23	0	40	38	139	0	0	255	19	514
6:30 AM	0	0	0	29	0	43	47	166	0	0	230	28	543
6:45 AM	0	0	0	37	0	57	52	211	0	0	288	23	668
7:00 AM	0	0	0	27	0	53	50	164	0	0	264	28	586
7:15 AM	0	0	0	48	0	89	73	216	0	0	287	19	732
7:30 AM	0	0	0	42	0	66	79	231	0	0	234	38	690
7:45 AM	0	0	0	32	0	72	70	197	0	0	293	32	696
8:00 AM	0	0	0	29	0	35	69	248	0	0	243	32	656
8:15 AM	0	0	0	34	0	61	64	187	0	0	238	43	627
8:30 AM	0	0	0	42	0	48	59	179	0	0	264	31	623
8:45 AM	0	0	0	30	0	53	44	212	0	0	224	41	604
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	392	0	649	682	2262	0	0	2999	353	7337
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	37.66%	0.00%	62.34%	23.17%	76.83%	0.00%	0.00%	89.47%	10.53%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	151	0	262	291	892	0	0	1057	121	2774
PEAK HR FACTOR :		0.000			0.754			0.933			0.906		0.947

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
2:00 PM	0	0	0	27	0	35	43	202	0	0	201	40	548
2:15 PM	0	0	0	34	0	58	52	204	0	0	180	28	556
2:30 PM	0	0	0	33	0	57	56	234	0	0	223	38	641
2:45 PM	0	0	0	37	0	66	59	224	0	0	187	39	612
3:00 PM	0	0	0	29	0	72	48	230	0	0	216	55	650
3:15 PM	0	0	0	33	0	79	64	263	0	0	212	48	699
3:30 PM	0	0	0	38	0	78	57	241	0	0	237	37	688
3:45 PM	0	0	0	54	0	85	62	251	0	0	254	42	748
4:00 PM	0	0	0	27	0	73	60	306	0	0	255	38	759
4:15 PM	0	0	0	34	0	78	58	358	0	0	228	45	801
4:30 PM	0	0	0	36	0	70	83	339	0	0	314	62	904
4:45 PM	0	0	0	30	0	111	78	266	0	0	291	37	813
5:00 PM	0	0	0	41	0	63	91	315	0	0	266	38	814
5:15 PM	0	0	0	28	0	98	65	338	0	0	255	40	824
5:30 PM	0	0	0	29	0	82	70	278	0	0	249	54	762
5:45 PM	0	0	0	21	0	75	56	282	0	0	234	24	692
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	531	0	1180	1002	4331	0	0	3802	665	11511
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	31.03%	0.00%	68.97%	18.79%	81.21%	0.00%	0.00%	85.11%	14.89%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	135	0	342	317	1258	0	0	1126	177	3355
PEAK HR FACTOR :		0.000			0.846			0.933			0.866		0.928

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

O St and PCH , Long Beach

Peak Hour Summary

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-043
City: Long Beach

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Southbound Approach (O St)

Lanes	1	0	1		
AM	262	0	151	412	AM
NOON	0	0	0	0	NOON
PM	342	0	135	494	PM

Eastbound Approach (PCH)

	AM	NOON	PM
	1319	0	1468
1	291	0	317
2	892	0	1258
0	0	0	0
Lanes	AM	NOON	PM

Westbound Approach (PCH)

	AM	NOON	PM	Lanes
	121	0	177	0
	1057	0	1126	3
	0	0	0	0
	1043	0	1393	
	AM	NOON	PM	

CONTROL: Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM
		0	0	0	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	413	412	AM
	0	0	NOON
	477	494	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
1319	0	1468		1178	0	1303
1183	0	1575		1043	0	1393

	South Leg	
AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

	North Leg	
	825	AM
	0	NOON
	971	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
2502	0	3043		2221	0	2696

	South Leg
AM	0
NOON	0
PM	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
6:00 AM	0	0	0	14	0	31	33	108	0	0	168	17	371
6:15 AM	0	0	0	16	0	40	36	129	0	0	244	15	480
6:30 AM	0	0	0	17	0	38	45	155	0	0	220	24	499
6:45 AM	0	0	0	25	0	54	47	199	0	0	258	19	602
7:00 AM	0	0	0	16	0	45	49	151	0	0	250	18	529
7:15 AM	0	0	0	22	0	86	64	191	0	0	273	15	651
7:30 AM	0	0	0	31	0	62	70	215	0	0	225	24	627
7:45 AM	0	0	0	17	0	67	60	182	0	0	272	23	621
8:00 AM	0	0	0	16	0	33	65	205	0	0	230	16	565
8:15 AM	0	0	0	20	0	54	58	157	0	0	217	27	533
8:30 AM	0	0	0	17	0	42	49	155	0	0	239	15	517
8:45 AM	0	0	0	20	0	43	36	182	0	0	198	27	506
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	231	0	595	612	2029	0	0	2794	240	6501
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	27.97%	0.00%	72.03%	23.17%	76.83%	0.00%	0.00%	92.09%	7.91%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	86	0	248	259	793	0	0	1000	78	2464
PEAK HR FACTOR :		0.000			0.773			0.923			0.914		0.946

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
2:00 PM	0	0	0	13	0	33	26	181	0	0	169	20	442
2:15 PM	0	0	0	20	0	46	43	183	0	0	151	9	452
2:30 PM	0	0	0	19	0	47	48	215	0	0	206	23	558
2:45 PM	0	0	0	27	0	55	56	201	0	0	167	21	527
3:00 PM	0	0	0	16	0	58	40	214	0	0	201	35	564
3:15 PM	0	0	0	22	0	71	60	250	0	0	186	25	614
3:30 PM	0	0	0	21	0	66	44	225	0	0	205	23	584
3:45 PM	0	0	0	34	0	76	58	231	0	0	221	22	642
4:00 PM	0	0	0	16	0	55	52	277	0	0	225	25	650
4:15 PM	0	0	0	21	0	68	50	339	0	0	214	26	718
4:30 PM	0	0	0	20	0	64	75	328	0	0	290	54	831
4:45 PM	0	0	0	16	0	98	73	252	0	0	277	25	741
5:00 PM	0	0	0	24	0	58	86	292	0	0	256	25	741
5:15 PM	0	0	0	18	0	95	61	314	0	0	245	31	764
5:30 PM	0	0	0	16	0	78	66	263	0	0	239	47	709
5:45 PM	0	0	0	8	0	70	50	265	0	0	220	14	627
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	311	0	1038	888	4030	0	0	3472	425	10164
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	23.05%	0.00%	76.95%	18.06%	81.94%	0.00%	0.00%	89.09%	10.91%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	78	0	315	295	1186	0	0	1068	135	3077
PEAK HR FACTOR :		0.000			0.862			0.919			0.874		0.926

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
6:00 AM	0	0	0	1	0	0	3	0	0	0	1	0	5
6:15 AM	0	0	0	0	0	0	2	1	0	0	1	2	6
6:30 AM	0	0	0	5	0	0	0	2	0	0	0	1	8
6:45 AM	0	0	0	4	0	0	0	2	0	0	1	0	7
7:00 AM	0	0	0	6	0	1	1	1	0	0	1	0	10
7:15 AM	0	0	0	5	0	0	3	6	0	0	2	1	17
7:30 AM	0	0	0	5	0	0	3	2	0	0	1	3	14
7:45 AM	0	0	0	7	0	2	2	5	0	0	3	2	21
8:00 AM	0	0	0	5	0	1	1	16	0	0	0	3	26
8:15 AM	0	0	0	1	0	1	3	8	0	0	0	1	14
8:30 AM	0	0	0	7	0	1	2	6	0	0	0	2	18
8:45 AM	0	0	0	0	0	0	2	10	0	0	2	0	14
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	46	0	6	22	59	0	0	12	15	160
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	88.46%	0.00%	11.54%	27.16%	72.84%	0.00%	0.00%	44.44%	55.56%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	22	0	3	9	29	0	0	6	9	78
PEAK HR FACTOR :		0.000			0.694			0.559			0.750		0.946

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
2:00 PM	0	0	0	4	0	0	8	1	0	0	7	7	27
2:15 PM	0	0	0	0	0	6	1	1	0	0	6	3	17
2:30 PM	0	0	0	5	0	5	3	1	0	0	4	3	21
2:45 PM	0	0	0	5	0	4	1	1	0	0	4	6	21
3:00 PM	0	0	0	6	0	6	2	3	0	0	2	6	25
3:15 PM	0	0	0	6	0	1	1	2	0	0	8	5	23
3:30 PM	0	0	0	9	0	4	1	2	0	0	5	5	26
3:45 PM	0	0	0	7	0	2	1	1	0	0	8	9	28
4:00 PM	0	0	0	6	0	4	1	2	0	0	8	4	25
4:15 PM	0	0	0	4	0	2	2	4	0	0	3	4	19
4:30 PM	0	0	0	9	0	5	1	1	0	0	5	1	22
4:45 PM	0	0	0	4	0	4	0	3	0	0	3	5	19
5:00 PM	0	0	0	8	0	2	3	4	0	0	3	6	26
5:15 PM	0	0	0	4	0	0	2	8	0	0	4	2	20
5:30 PM	0	0	0	6	0	1	0	5	0	0	2	4	18
5:45 PM	0	0	0	3	0	2	2	1	0	0	7	6	21
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	86	0	48	29	40	0	0	79	76	358
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	64.18%	0.00%	35.82%	42.03%	57.97%	0.00%	0.00%	50.97%	49.03%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	25	0	11	6	16	0	0	15	14	87
PEAK HR FACTOR :	0.000			0.643			0.550			0.806			0.926

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
6:00 AM	0	0	0	3	0	0	0	4	0	0	6	0	13
6:15 AM	0	0	0	4	0	0	0	7	0	0	4	0	15
6:30 AM	0	0	0	4	0	2	2	8	0	0	3	2	21
6:45 AM	0	0	0	5	0	0	2	7	0	0	4	1	19
7:00 AM	0	0	0	2	0	2	0	5	0	0	6	2	17
7:15 AM	0	0	0	10	0	2	2	14	0	0	5	0	33
7:30 AM	0	0	0	4	0	2	6	3	0	0	2	4	21
7:45 AM	0	0	0	6	0	1	7	6	0	0	4	2	26
8:00 AM	0	0	0	4	0	0	2	14	0	0	5	4	29
8:15 AM	0	0	0	5	0	4	1	6	0	0	8	6	30
8:30 AM	0	0	0	9	0	3	4	8	0	0	10	5	39
8:45 AM	0	0	0	5	0	5	2	9	0	0	12	8	41
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	61	0	21	28	91	0	0	69	34	304
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	74.39%	0.00%	25.61%	23.53%	76.47%	0.00%	0.00%	66.99%	33.01%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	24	0	5	17	37	0	0	16	10	109
PEAK HR FACTOR :		0.000			0.604			0.844			0.722		0.946

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
2:00 PM	0	0	0	9	0	2	4	6	0	0	10	6	37
2:15 PM	0	0	0	9	0	2	4	10	0	0	10	11	46
2:30 PM	0	0	0	8	0	2	2	7	0	0	3	3	25
2:45 PM	0	0	0	2	0	4	2	9	0	0	7	6	30
3:00 PM	0	0	0	5	0	5	1	5	0	0	5	6	27
3:15 PM	0	0	0	3	0	3	3	2	0	0	7	8	26
3:30 PM	0	0	0	5	0	7	8	6	0	0	13	4	43
3:45 PM	0	0	0	6	0	5	2	4	0	0	14	8	39
4:00 PM	0	0	0	2	0	6	3	4	0	0	8	4	27
4:15 PM	0	0	0	5	0	3	4	8	0	0	7	8	35
4:30 PM	0	0	0	5	0	1	3	4	0	0	9	4	26
4:45 PM	0	0	0	9	0	6	1	5	0	0	5	4	30
5:00 PM	0	0	0	4	0	0	2	11	0	0	3	1	21
5:15 PM	0	0	0	5	0	3	1	10	0	0	1	4	24
5:30 PM	0	0	0	4	0	2	3	1	0	0	2	1	13
5:45 PM	0	0	0	6	0	3	2	8	0	0	3	3	25
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	87	0	54	45	100	0	0	107	81	474
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	61.70%	0.00%	38.30%	31.03%	68.97%	0.00%	0.00%	56.91%	43.09%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	23	0	10	7	30	0	0	18	13	101
PEAK HR FACTOR :	0.000			0.550			0.712			0.596			0.926

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
6:15 AM	0	0	0	2	0	0	0	0	0	0	0	0	2
6:30 AM	0	0	0	1	0	0	0	0	0	0	1	0	2
6:45 AM	0	0	0	2	0	0	0	1	0	0	1	0	4
7:00 AM	0	0	0	2	0	1	0	1	0	0	0	2	6
7:15 AM	0	0	0	9	0	0	1	1	0	0	0	0	11
7:30 AM	0	0	0	0	0	0	0	6	0	0	1	2	9
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	2
8:00 AM	0	0	0	2	0	0	0	7	0	0	3	4	16
8:15 AM	0	0	0	4	0	1	1	4	0	0	4	3	17
8:30 AM	0	0	0	2	0	0	1	7	0	0	4	2	16
8:45 AM	0	0	0	1	0	1	2	2	0	0	2	0	8
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	25	0	3	5	30	0	0	16	15	94
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	89.29%	0.00%	10.71%	14.29%	85.71%	0.00%	0.00%	51.61%	48.39%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	11	0	0	1	15	0	0	4	7	38
PEAK HR FACTOR :		0.000			0.306			0.571			0.393		0.946

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
2:00 PM	0	0	0	1	0	0	1	5	0	0	10	3	20
2:15 PM	0	0	0	3	0	3	1	3	0	0	7	2	19
2:30 PM	0	0	0	0	0	0	2	5	0	0	3	1	11
2:45 PM	0	0	0	1	0	3	0	5	0	0	1	3	13
3:00 PM	0	0	0	0	0	2	1	1	0	0	2	3	9
3:15 PM	0	0	0	2	0	3	0	2	0	0	4	3	14
3:30 PM	0	0	0	1	0	0	2	4	0	0	5	2	14
3:45 PM	0	0	0	2	0	0	1	6	0	0	4	2	15
4:00 PM	0	0	0	0	0	4	3	7	0	0	8	3	25
4:15 PM	0	0	0	4	0	1	0	4	0	0	0	2	11
4:30 PM	0	0	0	2	0	0	3	1	0	0	5	0	11
4:45 PM	0	0	0	1	0	0	0	1	0	0	0	2	4
5:00 PM	0	0	0	4	0	1	0	1	0	0	1	2	9
5:15 PM	0	0	0	0	0	0	0	3	0	0	0	2	5
5:30 PM	0	0	0	2	0	0	0	4	0	0	2	1	9
5:45 PM	0	0	0	2	0	0	0	2	0	0	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	25	0	17	14	54	0	0	52	31	193
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	59.52%	0.00%	40.48%	20.59%	79.41%	0.00%	0.00%	62.65%	37.35%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	7	0	1	3	6	0	0	6	6	29
PEAK HR FACTOR :	0.000			0.400			0.563			0.600			0.926

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
6:00 AM	0	0	0	1	0	1	1	0	0	0	4	1	8
6:15 AM	0	0	0	1	0	0	0	2	0	0	6	2	11
6:30 AM	0	0	0	2	0	3	0	1	0	0	6	1	13
6:45 AM	0	0	0	1	0	3	3	2	0	0	24	3	36
7:00 AM	0	0	0	1	0	4	0	6	0	0	7	6	24
7:15 AM	0	0	0	2	0	1	3	4	0	0	7	3	20
7:30 AM	0	0	0	2	0	2	0	5	0	0	5	5	19
7:45 AM	0	0	0	2	0	2	1	3	0	0	14	4	26
8:00 AM	0	0	0	2	0	1	1	6	0	0	5	5	20
8:15 AM	0	0	0	4	0	1	1	12	0	0	9	6	33
8:30 AM	0	0	0	7	0	2	3	3	0	0	11	7	33
8:45 AM	0	0	0	4	0	4	2	9	0	0	10	6	35
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	29	0	24	15	53	0	0	108	49	278
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	54.72%	0.00%	45.28%	22.06%	77.94%	0.00%	0.00%	68.79%	31.21%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	8	0	6	5	18	0	0	31	17	85
PEAK HR FACTOR :		0.000			0.875			0.821			0.667		0.946

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-043 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	O St			O St			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	3	0	
2:00 PM	0	0	0	0	0	0	4	9	0	0	5	4	22
2:15 PM	0	0	0	2	0	1	3	7	0	0	6	3	22
2:30 PM	0	0	0	1	0	3	1	6	0	0	7	8	26
2:45 PM	0	0	0	2	0	0	0	8	0	0	8	3	21
3:00 PM	0	0	0	2	0	1	4	7	0	0	6	5	25
3:15 PM	0	0	0	0	0	1	0	7	0	0	7	7	22
3:30 PM	0	0	0	2	0	1	2	4	0	0	9	3	21
3:45 PM	0	0	0	5	0	2	0	9	0	0	7	1	24
4:00 PM	0	0	0	3	0	4	1	16	0	0	6	2	32
4:15 PM	0	0	0	0	0	4	2	3	0	0	4	5	18
4:30 PM	0	0	0	0	0	0	1	5	0	0	5	3	14
4:45 PM	0	0	0	0	0	3	4	5	0	0	6	1	19
5:00 PM	0	0	0	1	0	2	0	7	0	0	3	4	17
5:15 PM	0	0	0	1	0	0	1	3	0	0	5	1	11
5:30 PM	0	0	0	1	0	1	1	5	0	0	4	1	13
5:45 PM	0	0	0	2	0	0	2	6	0	0	4	1	15
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	22	0	23	26	107	0	0	92	52	322
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	48.89%	0.00%	51.11%	19.55%	80.45%	0.00%	0.00%	63.89%	36.11%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	2	0	5	6	20	0	0	19	9	61
PEAK HR FACTOR :	0.000			0.583			0.722			0.875			0.926

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
6:00 AM	3	16	2	10	12	17	5	73	1	0	193	42	374
6:15 AM	5	12	4	18	10	22	4	105	0	1	247	31	459
6:30 AM	4	24	4	18	8	14	6	99	0	1	203	35	416
6:45 AM	3	22	4	26	15	10	13	100	2	2	185	32	414
7:00 AM	2	18	0	20	20	12	13	138	1	2	186	51	463
7:15 AM	4	41	2	29	25	21	11	143	1	2	188	66	533
7:30 AM	3	98	4	35	38	25	12	128	0	4	229	75	651
7:45 AM	6	66	5	44	54	39	16	120	1	3	231	76	661
8:00 AM	7	76	3	33	34	15	17	133	0	5	206	60	589
8:15 AM	7	44	6	37	28	29	17	164	2	3	185	45	567
8:30 AM	4	49	5	27	22	21	9	136	2	6	169	56	506
8:45 AM	3	28	8	24	20	25	18	152	1	6	163	41	489
TOTAL VOLUMES :	51	494	47	321	286	250	141	1491	11	35	2385	610	6122
APPROACH %'s :	8.61%	83.45%	7.94%	37.46%	33.37%	29.17%	8.58%	90.75%	0.67%	1.16%	78.71%	20.13%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	23	284	18	149	154	108	62	545	3	15	851	256	2468
PEAK HR FACTOR :		0.774			0.750			0.833			0.905		0.933

UTURNS				
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	1
0	0	1	0
0	0	1	0
0	0	1	0
0	0	0	1
0	0	1	0
0	0	0	1
0	0	0	0
0	0	1	0
NB	SB	EB	WB
0	0	6	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
2:00 PM	9	39	6	37	36	30	23	228	3	4	165	43	623
2:15 PM	5	27	10	32	33	18	12	138	1	2	156	45	479
2:30 PM	3	52	4	32	25	24	19	194	2	7	177	64	603
2:45 PM	8	35	8	58	62	26	29	189	1	1	164	69	650
3:00 PM	3	43	5	55	42	20	24	189	4	5	148	46	584
3:15 PM	5	56	8	36	33	25	26	211	2	5	162	54	623
3:30 PM	10	77	8	54	40	28	20	200	3	2	166	56	664
3:45 PM	7	93	9	45	35	38	20	210	2	4	168	43	674
4:00 PM	6	62	12	40	41	26	39	212	7	2	172	51	670
4:15 PM	6	75	9	50	45	26	35	234	4	3	151	54	692
4:30 PM	7	91	15	55	49	21	30	264	8	1	172	56	769
4:45 PM	10	87	8	48	58	33	29	241	8	5	141	48	716
5:00 PM	9	70	10	43	54	22	41	277	3	2	138	42	711
5:15 PM	9	66	6	51	41	16	32	247	1	2	143	50	664
5:30 PM	8	47	7	35	42	23	20	229	3	3	143	33	593
5:45 PM	10	34	3	31	48	28	16	212	5	3	118	34	542
TOTAL VOLUMES :	NL 115	NT 954	NR 128	SL 702	ST 684	SR 404	EL 415	ET 3475	ER 57	WL 51	WT 2484	WR 788	TOTAL 10257
APPROACH %'s :	9.61%	79.70%	10.69%	39.22%	38.21%	22.57%	10.51%	88.04%	1.44%	1.53%	74.75%	23.71%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	32	323	42	196	206	102	135	1016	23	11	602	200	2888
PEAK HR FACTOR :		0.878			0.906			0.914			0.888		0.939

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	1	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	1	0
	0	0	0	0
	0	0	1	0
TOTAL VOLUMES :	NB 0	SB 0	EB 5	WB 1

CONTROL : Signalized

ITM Peak Hour Summary

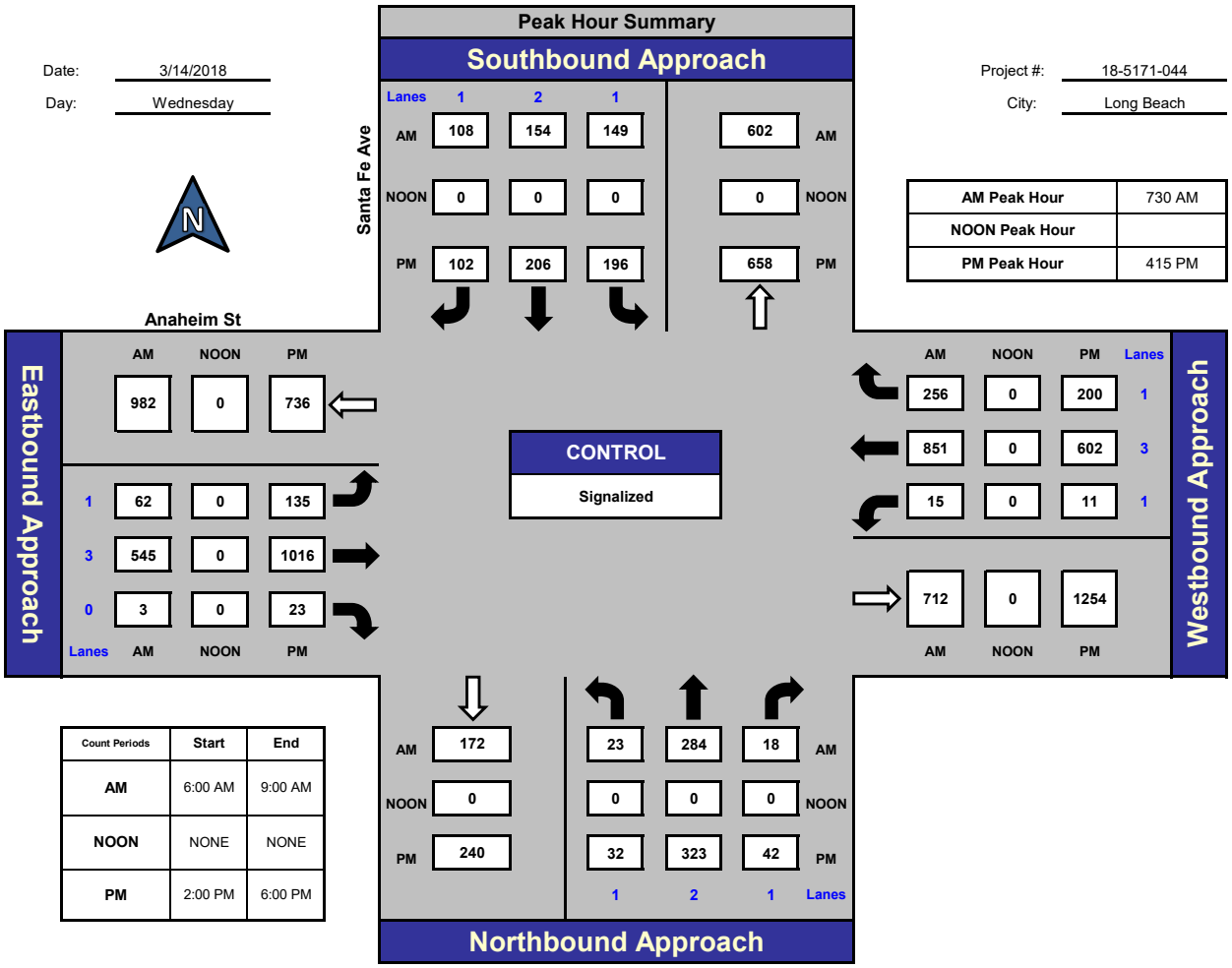
Prepared by:

National Data & Surveying Services

Santa Fe Ave and Anaheim St , Long Beach

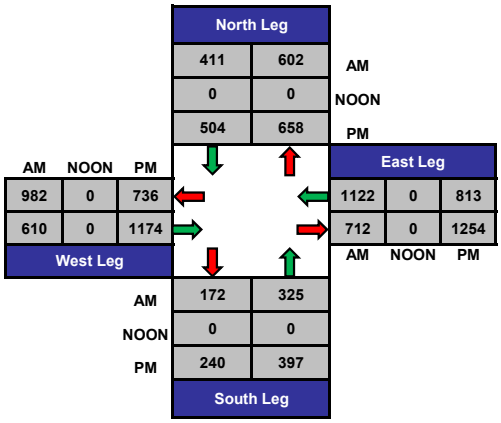
Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-044
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	415 PM

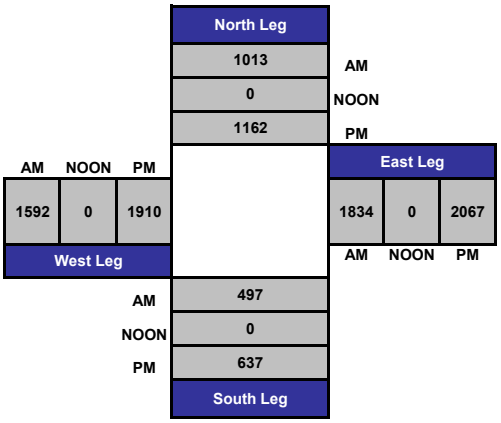


Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
6:00 AM	2	14	0	8	12	16	5	50	1	0	179	40	327
6:15 AM	3	10	2	13	10	20	3	54	0	1	231	27	374
6:30 AM	4	23	1	15	8	12	5	60	0	1	189	27	345
6:45 AM	3	20	1	21	14	8	12	62	2	2	161	29	335
7:00 AM	1	17	0	14	18	11	11	97	1	0	145	46	361
7:15 AM	4	40	0	22	23	17	9	101	1	1	154	58	430
7:30 AM	3	94	2	31	37	22	10	75	0	3	199	69	545
7:45 AM	6	62	2	37	51	35	12	63	1	1	205	70	545
8:00 AM	6	74	1	26	30	12	13	77	0	5	174	58	476
8:15 AM	6	36	1	29	23	27	17	104	2	3	144	36	428
8:30 AM	3	46	5	23	20	15	7	86	2	6	127	46	386
8:45 AM	2	23	4	17	18	22	12	100	1	5	118	39	361
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	43	459	19	256	264	217	116	929	11	28	2026	545	4913
APPROACH %'s :	8.25%	88.10%	3.65%	34.74%	35.82%	29.44%	10.98%	87.97%	1.04%	1.08%	77.95%	20.97%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	21	266	6	123	141	96	52	319	3	12	722	233	1994
PEAK HR FACTOR :		0.740			0.732			0.760			0.876		0.915

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	1
	0	0	1	0
	0	0	1	0
	0	0	1	0
	0	0	0	1
	0	0	1	0
	0	0	0	1
	0	0	0	0
	0	0	1	0
	NB	SB	EB	WB
	0	0	6	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
2:00 PM	7	27	4	30	35	25	20	174	2	4	112	34	474
2:15 PM	5	19	6	26	29	15	9	103	1	2	91	35	341
2:30 PM	3	48	3	23	22	19	17	133	1	6	119	55	449
2:45 PM	7	34	7	50	59	24	20	139	1	1	96	57	495
3:00 PM	3	38	5	46	39	17	22	139	4	5	89	33	440
3:15 PM	4	46	6	30	30	20	21	177	1	3	111	43	492
3:30 PM	9	69	4	46	38	24	16	157	0	2	114	48	527
3:45 PM	5	81	8	37	34	35	15	178	2	4	115	36	550
4:00 PM	4	56	8	30	36	19	32	175	6	2	124	42	534
4:15 PM	5	66	6	38	40	23	26	195	2	2	117	43	563
4:30 PM	6	83	14	50	46	17	25	236	6	0	127	50	660
4:45 PM	10	81	8	39	55	27	25	203	6	4	104	39	601
5:00 PM	8	68	8	38	51	17	40	247	3	1	114	37	632
5:15 PM	9	63	5	45	40	12	28	213	1	2	121	48	587
5:30 PM	8	44	6	28	40	19	16	204	3	2	122	30	522
5:45 PM	9	33	3	21	45	23	15	175	5	3	95	31	458
TOTAL VOLUMES :	NL 102	NT 856	NR 101	SL 577	ST 639	SR 336	EL 347	ET 2848	ER 44	WL 43	WT 1771	WR 661	TOTAL 8325
APPROACH %'s :	9.63%	80.83%	9.54%	37.18%	41.17%	21.65%	10.71%	87.93%	1.36%	1.74%	71.56%	26.71%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	29	298	36	165	192	84	116	881	17	7	462	169	2456
PEAK HR FACTOR :		0.881			0.911			0.874			0.901		0.930

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	1	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
TOTAL VOLUMES :	NB 0	SB 0	EB 5	WB 1

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
6:00 AM	0	1	1	0	0	1	0	2	0	0	4	0	9
6:15 AM	1	0	2	0	0	0	0	9	0	0	2	1	15
6:30 AM	0	1	3	0	0	2	0	2	0	0	1	1	10
6:45 AM	0	1	0	0	0	1	1	5	0	0	1	0	9
7:00 AM	1	1	0	1	0	1	0	6	0	0	9	0	19
7:15 AM	0	1	2	1	0	0	1	7	0	0	10	0	22
7:30 AM	0	2	1	2	1	3	0	8	0	0	6	1	24
7:45 AM	0	0	1	1	2	2	1	6	0	1	4	2	20
8:00 AM	0	0	1	1	1	2	3	10	0	0	8	0	26
8:15 AM	1	2	2	3	1	1	0	14	0	0	19	2	45
8:30 AM	1	1	0	0	0	2	0	12	0	0	9	0	25
8:45 AM	1	2	3	2	2	2	2	10	0	0	5	0	29
TOTAL VOLUMES :	5	12	16	11	7	17	8	91	0	1	78	7	253
APPROACH %'s :	15.15%	36.36%	48.48%	31.43%	20.00%	48.57%	8.08%	91.92%	0.00%	1.16%	90.70%	8.14%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	4	5	7	5	8	4	38	0	1	37	5	115
PEAK HR FACTOR :		0.500			0.833			0.750			0.512		0.915

UTURNS				
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	1
0	0	1	0
0	0	1	0
0	0	1	0
0	0	0	1
0	0	1	0
0	0	0	1
0	0	0	0
0	0	1	0
NB	SB	EB	WB
0	0	6	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
2:00 PM	2	2	1	1	1	1	3	14	1	0	10	0	36
2:15 PM	0	1	0	0	0	1	1	7	0	0	16	2	28
2:30 PM	0	1	0	2	0	2	0	16	0	0	14	2	37
2:45 PM	1	0	0	3	2	0	6	15	0	0	7	5	39
3:00 PM	0	0	0	1	0	1	1	5	0	0	12	3	23
3:15 PM	0	2	2	2	1	3	2	7	1	0	10	4	34
3:30 PM	0	1	0	2	1	1	2	10	3	0	12	2	34
3:45 PM	2	1	0	4	0	0	3	10	0	0	9	2	31
4:00 PM	1	2	1	3	2	1	2	11	0	0	13	3	39
4:15 PM	0	2	1	2	2	2	5	14	2	1	7	7	45
4:30 PM	0	3	0	1	1	2	3	13	2	0	15	0	40
4:45 PM	0	2	0	1	1	3	2	8	2	1	8	2	30
5:00 PM	1	0	1	1	1	2	1	8	0	0	6	0	21
5:15 PM	0	2	0	2	0	1	2	11	0	0	5	0	23
5:30 PM	0	0	0	3	1	1	2	5	0	1	6	0	19
5:45 PM	1	0	0	3	1	2	1	8	0	0	4	1	21
TOTAL VOLUMES :	8	19	6	31	14	23	36	162	11	3	154	33	500
APPROACH %'s :	24.24%	57.58%	18.18%	45.59%	20.59%	33.82%	17.22%	77.51%	5.26%	1.58%	81.05%	17.37%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	1	7	2	5	5	9	11	43	6	2	36	9	136
PEAK HR FACTOR :		0.833			0.792			0.714			0.783		0.930

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	1	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
TOTAL VOLUMES :	0	0	5	1

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
6:00 AM	0	0	0	0	0	0	0	15	0	0	3	0	18
6:15 AM	1	2	0	1	0	1	1	28	0	0	2	1	37
6:30 AM	0	0	0	0	0	0	1	25	0	0	6	0	32
6:45 AM	0	1	1	2	1	0	0	21	0	0	6	0	32
7:00 AM	0	0	0	1	0	0	1	24	0	0	13	0	39
7:15 AM	0	0	0	3	1	1	0	20	0	1	11	1	38
7:30 AM	0	0	1	0	0	0	0	33	0	1	8	0	43
7:45 AM	0	0	2	3	0	1	2	36	0	1	13	1	59
8:00 AM	0	0	0	2	1	0	1	30	0	0	7	1	42
8:15 AM	0	2	3	1	2	1	0	31	0	0	11	0	51
8:30 AM	0	1	0	1	1	0	1	23	0	0	15	2	44
8:45 AM	0	1	0	0	0	1	3	23	0	0	23	0	51
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	7	7	14	6	5	10	309	0	3	118	6	486
APPROACH %'s :	6.67%	46.67%	46.67%	56.00%	24.00%	20.00%	3.13%	96.87%	0.00%	2.36%	92.91%	4.72%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	2	6	6	3	2	3	130	0	2	39	2	195
PEAK HR FACTOR :		0.400			0.688			0.875			0.717		0.915

UTURNS

NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	1
0	0	1	0
0	0	1	0
0	0	1	0
0	0	0	1
0	0	1	0
0	0	0	1
0	0	0	0
0	0	1	0
NB	SB	EB	WB
0	0	6	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
2:00 PM	0	3	0	3	0	2	0	21	0	0	27	3	59
2:15 PM	0	5	1	3	1	0	1	9	0	0	33	3	56
2:30 PM	0	1	1	1	1	1	1	25	1	0	26	0	58
2:45 PM	0	0	0	2	1	1	0	11	0	0	33	2	50
3:00 PM	0	5	0	2	2	1	1	21	0	0	29	3	64
3:15 PM	1	4	0	1	1	1	0	17	0	1	27	3	56
3:30 PM	1	6	2	2	0	2	1	19	0	0	26	4	63
3:45 PM	0	4	1	0	1	0	1	8	0	0	33	1	49
4:00 PM	0	1	1	1	0	6	2	10	0	0	23	1	45
4:15 PM	1	3	1	1	1	1	0	10	0	0	15	1	34
4:30 PM	1	3	0	0	1	2	1	7	0	0	20	2	37
4:45 PM	0	2	0	3	2	0	2	13	0	0	18	5	45
5:00 PM	0	1	1	1	1	1	0	11	0	0	11	1	28
5:15 PM	0	1	1	1	1	3	1	12	0	0	13	0	33
5:30 PM	0	0	0	1	0	2	1	9	0	0	13	0	26
5:45 PM	0	1	0	5	2	1	0	8	0	0	14	1	32
TOTAL VOLUMES :	NL 4	NT 40	NR 9	SL 27	ST 15	SR 24	EL 12	ET 211	ER 1	WL 1	WT 361	WR 30	TOTAL 735
APPROACH %'s :	7.55%	75.47%	16.98%	40.91%	22.73%	36.36%	5.36%	94.20%	0.45%	0.26%	92.09%	7.65%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	2	9	2	5	5	4	3	41	0	0	64	9	144
PEAK HR FACTOR :		0.650			0.700			0.733			0.793		0.930

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	1	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
TOTAL VOLUMES :	NB 0	SB 0	EB 5	WB 1

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
6:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	1	2	0	3
7:15 AM	0	0	0	0	0	0	0	5	0	0	3	0	8
7:30 AM	0	1	0	0	0	0	0	1	0	0	2	0	4
7:45 AM	0	1	0	1	0	0	0	2	0	0	1	0	5
8:00 AM	0	0	1	0	0	0	0	8	0	0	1	0	10
8:15 AM	0	2	0	1	0	0	0	3	0	0	2	0	8
8:30 AM	0	0	0	0	0	1	0	3	0	0	3	1	8
8:45 AM	0	1	0	2	0	0	0	6	0	1	4	0	14
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	5	1	5	0	1	0	30	0	2	18	1	63
APPROACH %'s :	0.00%	83.33%	16.67%	83.33%	0.00%	16.67%	0.00%	100.00%	0.00%	9.52%	85.71%	4.76%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	4	1	2	0	0	0	14	0	0	6	0	27
PEAK HR FACTOR :		0.625			0.500			0.438			0.750		0.915

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	1
	0	0	1	0
	0	0	1	0
	0	0	1	0
	0	0	0	1
	0	0	1	0
	0	0	0	1
	0	0	0	0
	0	0	1	0
TOTAL VOLUMES :	0	0	6	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
2:00 PM	0	3	1	0	0	1	0	11	0	0	4	1	21
2:15 PM	0	1	2	1	1	0	0	8	0	0	5	2	20
2:30 PM	0	0	0	1	1	1	0	9	0	0	7	1	20
2:45 PM	0	0	0	0	0	0	1	10	0	0	10	1	22
3:00 PM	0	0	0	1	0	1	0	10	0	0	6	1	19
3:15 PM	0	1	0	0	0	0	2	2	0	0	3	0	8
3:30 PM	0	1	0	1	0	0	0	3	0	0	5	0	10
3:45 PM	0	3	0	1	0	2	0	4	0	0	3	1	14
4:00 PM	1	1	1	2	0	0	1	7	1	0	1	0	15
4:15 PM	0	2	1	2	1	0	0	7	0	0	2	0	15
4:30 PM	0	2	0	2	0	0	1	3	0	1	1	1	11
4:45 PM	0	0	0	1	0	2	0	9	0	0	2	0	14
5:00 PM	0	0	0	0	0	2	0	6	0	1	2	0	11
5:15 PM	0	0	0	0	0	0	0	8	0	0	0	0	8
5:30 PM	0	1	0	0	0	1	0	7	0	0	0	0	9
5:45 PM	0	0	0	0	0	1	0	17	0	0	4	0	22
TOTAL VOLUMES :	1	15	5	12	3	11	5	121	1	2	55	8	239
APPROACH %'s :	4.76%	71.43%	23.81%	46.15%	11.54%	42.31%	3.94%	95.28%	0.79%	3.08%	84.62%	12.31%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	4	1	5	1	4	1	25	0	2	7	1	51
PEAK HR FACTOR :		0.417			0.833			0.722			0.833		0.930

UTURNS	NB	SB	EB	WB
	0	0	5	1

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
6:00 AM	1	1	1	2	0	0	0	6	0	0	7	2	20
6:15 AM	0	0	0	4	0	1	0	14	0	0	12	2	33
6:30 AM	0	0	0	3	0	0	0	10	0	0	7	7	27
6:45 AM	0	0	2	2	0	1	0	12	0	0	17	3	37
7:00 AM	0	0	0	4	2	0	1	11	0	1	17	5	41
7:15 AM	0	0	0	3	1	3	1	10	0	0	10	7	35
7:30 AM	0	1	0	2	0	0	2	11	0	0	14	5	35
7:45 AM	0	3	0	2	1	1	1	13	0	0	8	3	32
8:00 AM	1	2	0	4	2	1	0	8	0	0	16	1	35
8:15 AM	0	2	0	3	2	0	0	12	0	0	9	7	35
8:30 AM	0	1	0	3	1	3	1	12	0	0	15	7	43
8:45 AM	0	1	1	3	0	0	1	13	0	0	13	2	34
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	11	4	35	9	10	7	132	0	1	145	51	407
APPROACH %'s :	11.76%	64.71%	23.53%	64.81%	16.67%	18.52%	5.04%	94.96%	0.00%	0.51%	73.60%	25.89%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	8	0	11	5	2	3	44	0	0	47	16	137
PEAK HR FACTOR :	0.750			0.643			0.839			0.829			0.915

UTURNS

NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	1
0	0	1	0
0	0	1	0
0	0	1	0
0	0	0	1
0	0	1	0
0	0	0	1
0	0	0	0
0	0	1	0
NB	SB	EB	WB
0	0	6	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-044 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Santa Fe Ave			Santa Fe Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
2:00 PM	0	4	0	3	0	1	0	8	0	0	12	5	33
2:15 PM	0	1	1	2	2	2	1	11	0	0	11	3	34
2:30 PM	0	2	0	5	1	1	1	11	0	1	11	6	39
2:45 PM	0	1	1	3	0	1	2	14	0	0	18	4	44
3:00 PM	0	0	0	5	1	0	0	14	0	0	12	6	38
3:15 PM	0	3	0	3	1	1	1	8	0	1	11	4	33
3:30 PM	0	0	2	3	1	1	1	11	0	0	9	2	30
3:45 PM	0	4	0	3	0	1	1	10	0	0	8	3	30
4:00 PM	0	2	1	4	3	0	2	9	0	0	11	5	37
4:15 PM	0	2	0	7	1	0	4	8	0	0	10	3	35
4:30 PM	0	0	1	2	1	0	0	5	0	0	9	3	21
4:45 PM	0	2	0	4	0	1	0	8	0	0	9	2	26
5:00 PM	0	1	0	3	1	0	0	5	0	0	5	4	19
5:15 PM	0	0	0	3	0	0	1	3	0	0	4	2	13
5:30 PM	0	2	1	3	1	0	1	4	0	0	2	3	17
5:45 PM	0	0	0	2	0	1	0	4	0	0	1	1	9
TOTAL VOLUMES :	NL 0	NT 24	NR 7	SL 55	ST 13	SR 10	EL 15	ET 133	ER 0	WL 2	WT 143	WR 56	TOTAL 458
APPROACH %'s :	0.00%	77.42%	22.58%	70.51%	16.67%	12.82%	10.14%	89.86%	0.00%	1.00%	71.14%	27.86%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	5	1	16	3	1	4	26	0	0	33	12	101
PEAK HR FACTOR :		0.750			0.625			0.625			0.865		0.930

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
	0	0	1	0
	0	0	0	0
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	1	0
TOTAL VOLUMES :	NB 0	SB 0	EB 5	WB 1

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 0.5	NR 0.5	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
6:00 AM	1	4	0	5	2	1	0	88	0	1	269	30	401
6:15 AM	1	0	14	7	2	1	0	110	1	2	293	21	452
6:30 AM	0	2	12	12	4	2	0	123	2	2	262	25	446
6:45 AM	1	2	8	6	4	1	3	116	2	7	243	42	435
7:00 AM	2	1	11	18	4	5	1	151	4	9	272	32	510
7:15 AM	3	0	7	15	3	4	4	165	1	1	262	33	498
7:30 AM	0	3	4	21	3	5	3	153	4	5	334	34	569
7:45 AM	2	9	13	13	4	8	3	147	5	13	335	48	600
8:00 AM	0	2	16	19	11	5	2	185	5	8	323	33	609
8:15 AM	3	3	12	17	4	9	5	196	3	6	256	19	533
8:30 AM	7	4	7	6	9	4	7	150	6	4	237	20	461
8:45 AM	5	5	10	19	6	4	2	177	1	7	212	22	470
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	25	35	114	158	56	49	30	1761	34	65	3298	359	5984
APPROACH %'s :	14.37%	20.11%	65.52%	60.08%	21.29%	18.63%	1.64%	96.49%	1.86%	1.75%	88.61%	9.65%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	5	17	45	70	22	27	13	681	17	32	1248	134	2311
PEAK HR FACTOR :		0.698			0.850			0.871			0.893		0.949

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	1
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	1
8:00 AM	0	0	0	1
8:15 AM	0	0	0	1
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL VOLUMES :	0	0	0	4

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 0.5	NR 0.5	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
2:00 PM	4	7	12	32	7	3	5	261	5	3	236	29	604
2:15 PM	3	8	16	28	8	9	5	170	5	4	217	28	501
2:30 PM	4	1	10	20	6	5	5	223	4	2	250	27	557
2:45 PM	1	7	12	20	1	3	8	247	3	6	250	30	588
3:00 PM	2	13	14	19	2	5	9	232	3	5	201	29	534
3:15 PM	3	8	15	29	6	9	3	246	2	5	230	45	601
3:30 PM	1	15	15	27	6	4	8	271	6	12	238	26	629
3:45 PM	5	21	11	22	3	8	12	239	5	2	210	22	560
4:00 PM	3	15	16	24	0	12	3	252	2	4	225	31	587
4:15 PM	1	15	10	26	5	7	8	269	2	8	223	29	603
4:30 PM	5	15	19	31	4	7	18	334	2	4	228	28	695
4:45 PM	3	12	14	25	6	5	6	294	3	2	197	22	589
5:00 PM	7	4	24	23	6	6	10	308	1	6	181	33	609
5:15 PM	0	4	14	19	1	7	4	313	0	0	184	17	563
5:30 PM	2	2	8	28	2	9	5	263	1	1	167	17	505
5:45 PM	1	5	5	15	1	6	3	242	0	2	156	15	451
TOTAL VOLUMES :	NL 45	NT 152	NR 215	SL 388	ST 64	SR 105	EL 112	ET 4164	ER 44	WL 66	WT 3393	WR 428	TOTAL 9176
APPROACH %'s :	10.92%	36.89%	52.18%	69.66%	11.49%	18.85%	2.59%	96.39%	1.02%	1.70%	87.29%	11.01%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	16	46	67	105	21	25	42	1205	8	20	829	112	2496
PEAK HR FACTOR :		0.827			0.899			0.886			0.924		0.898

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	1
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	1
3:00 PM	0	0	0	2
3:15 PM	0	0	0	0
3:30 PM	0	0	0	4
3:45 PM	0	0	1	0
4:00 PM	0	0	0	1
4:15 PM	0	0	0	0
4:30 PM	0	0	0	1
4:45 PM	0	0	0	0
5:00 PM	0	0	0	3
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	1
TOTAL VOLUMES :	NB 0	SB 0	EB 1	WB 14

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Harbor Ave and Anaheim St , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-045
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach (Harbor Ave)

Lanes	0	1	0		
AM	27	22	70	164	AM
NOON	0	0	0	0	NOON
PM	25	21	105	200	PM

Eastbound Approach (Anaheim St)

Lanes	AM	NOON	PM
	1280	0	870
1	13	0	42
3	681	0	1205
0	17	0	8

Westbound Approach (Anaheim St)

Lanes	AM	NOON	PM
1	134	0	112
3	1248	0	829
1	32	0	20
	796	0	1377

CONTROL: Signalized

Northbound Approach

AM	71	5	17	45	AM
NOON	0	0	0	0	NOON
PM	49	16	46	67	PM
Lanes		1	0.5	0.5	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	119	164	AM
NOON	0	0	NOON
PM	151	200	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
1280	0	870		1414	0	961
711	0	1255		796	0	1377

	South Leg	
AM	71	67
NOON	0	0
PM	49	129

Total Volume Per Leg

	North Leg	
AM	283	AM
NOON	0	NOON
PM	351	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
1991	0	2125		2210	0	2338

	South Leg	
AM	138	
NOON	0	
PM	178	

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	0.5	0	1	0	1	3	0	1	3	1	
6:00 AM	1	3	0	3	1	0	0	60	0	1	256	23	348
6:15 AM	1	0	12	6	1	1	0	59	1	2	272	15	370
6:30 AM	0	2	11	4	4	1	0	76	2	2	238	23	363
6:45 AM	1	1	6	3	3	0	2	74	1	7	218	33	349
7:00 AM	2	1	7	12	4	1	0	106	3	8	229	28	401
7:15 AM	2	0	5	8	3	2	4	114	1	1	222	32	394
7:30 AM	0	2	3	13	2	4	2	98	2	4	295	27	452
7:45 AM	1	8	6	7	4	7	2	82	5	12	305	42	481
8:00 AM	0	1	6	15	10	2	1	107	4	7	280	27	460
8:15 AM	2	2	3	13	3	7	3	126	1	6	209	17	392
8:30 AM	5	4	4	5	8	2	6	102	4	4	190	15	349
8:45 AM	4	2	4	12	5	1	2	114	1	6	160	17	328
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	19	26	67	101	48	28	22	1118	25	60	2874	299	4687
APPROACH %'s :	16.96%	23.21%	59.82%	57.06%	27.12%	15.82%	1.89%	95.97%	2.15%	1.86%	88.90%	9.25%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	3	13	18	48	19	20	8	413	12	29	1089	113	1785
PEAK HR FACTOR :		0.567			0.806			0.833			0.857		0.928

UTURNS

NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 0.5	NR 0.5	SL 0	ST 1	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1	TOTAL
2:00 PM	3	4	10	22	7	2	2	199	5	3	169	17	443
2:15 PM	3	3	14	20	6	4	1	131	4	4	149	18	357
2:30 PM	4	1	8	13	5	4	2	154	3	2	176	16	388
2:45 PM	1	7	7	13	0	2	6	189	3	6	165	19	418
3:00 PM	2	6	9	13	2	4	6	176	3	5	142	14	382
3:15 PM	3	2	13	23	6	9	2	207	2	5	158	32	462
3:30 PM	1	10	15	22	4	3	5	219	5	9	177	12	482
3:45 PM	2	12	9	14	2	5	8	204	4	2	153	16	431
4:00 PM	2	8	13	19	0	10	1	210	2	4	175	20	464
4:15 PM	1	6	8	21	3	4	7	222	0	5	175	22	474
4:30 PM	5	8	14	28	3	6	15	305	1	4	175	22	586
4:45 PM	2	8	12	18	3	2	3	247	3	1	155	15	469
5:00 PM	7	3	23	11	3	6	5	275	0	6	152	26	517
5:15 PM	0	3	12	11	0	7	4	273	0	0	162	13	485
5:30 PM	2	2	7	26	2	5	5	233	1	1	143	11	438
5:45 PM	0	4	3	10	0	5	2	200	0	2	132	4	362
TOTAL VOLUMES :	NL 38	NT 87	NR 177	SL 284	ST 46	SR 78	EL 74	ET 3444	ER 36	WL 59	WT 2558	WR 277	TOTAL 7158
APPROACH %'s :	12.58%	28.81%	58.61%	69.61%	11.27%	19.12%	2.08%	96.90%	1.01%	2.04%	88.39%	9.57%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	15	25	57	78	12	18	30	1049	4	16	657	85	2046
PEAK HR FACTOR :		0.735			0.730			0.843			0.938		0.873

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	1
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	1
3:00 PM	0	0	0	2
3:15 PM	0	0	0	0
3:30 PM	0	0	0	4
3:45 PM	0	0	1	0
4:00 PM	0	0	0	1
4:15 PM	0	0	0	0
4:30 PM	0	0	0	1
4:45 PM	0	0	0	0
5:00 PM	0	0	0	3
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	1
TOTAL VOLUMES :	NB 0	SB 0	EB 1	WB 14

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	0.5	0	1	0	1	3	0	1	3	1	
6:00 AM	0	0	0	1	0	0	0	3	0	0	2	1	7
6:15 AM	0	0	1	1	0	0	0	7	0	0	3	2	14
6:30 AM	0	0	1	3	0	0	0	8	0	0	1	1	14
6:45 AM	0	1	0	1	0	0	1	3	1	0	0	2	9
7:00 AM	0	0	0	3	0	2	0	5	1	0	7	0	18
7:15 AM	0	0	0	1	0	0	0	10	0	0	8	0	19
7:30 AM	0	0	0	3	0	1	0	11	2	0	7	0	24
7:45 AM	0	1	0	1	0	1	0	7	0	0	7	5	22
8:00 AM	0	0	1	3	0	3	1	11	1	1	12	3	36
8:15 AM	0	0	0	2	0	0	1	16	2	0	15	1	37
8:30 AM	0	0	0	1	0	1	1	7	2	0	8	1	21
8:45 AM	0	1	0	2	0	1	0	17	0	0	8	0	29
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	3	3	22	0	9	4	105	9	1	78	16	250
APPROACH %'s :	0.00%	50.00%	50.00%	70.97%	0.00%	29.03%	3.39%	88.98%	7.63%	1.05%	82.11%	16.84%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	1	1	9	0	5	2	45	5	1	41	9	119
PEAK HR FACTOR :		0.500			0.583			0.684			0.797		0.928

UTURNS				
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	0.5	0	1	0	1	3	0	1	3	1	
2:00 PM	0	0	0	2	0	1	0	16	0	0	10	6	35
2:15 PM	0	0	1	1	0	1	4	3	0	0	18	5	33
2:30 PM	0	0	0	2	0	0	1	17	0	0	17	5	42
2:45 PM	0	0	1	1	0	0	1	19	0	0	19	7	48
3:00 PM	0	2	0	1	0	0	1	5	0	0	11	3	23
3:15 PM	0	1	0	0	0	0	0	9	0	0	18	5	33
3:30 PM	0	2	0	2	0	1	1	9	1	2	15	5	38
3:45 PM	2	5	0	1	1	1	3	10	0	0	10	0	33
4:00 PM	1	2	0	4	0	2	0	12	0	0	14	7	42
4:15 PM	0	4	0	4	0	3	1	14	1	0	13	3	43
4:30 PM	0	1	2	2	0	0	1	10	0	0	11	2	29
4:45 PM	1	4	0	3	0	1	3	8	0	0	10	2	32
5:00 PM	0	1	0	3	2	0	1	8	1	0	7	2	25
5:15 PM	0	0	0	3	1	0	0	13	0	0	4	0	21
5:30 PM	0	0	0	1	0	2	0	6	0	0	7	2	18
5:45 PM	0	0	1	2	1	0	0	8	0	0	5	3	20
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	22	5	32	5	12	17	167	3	2	189	57	515
APPROACH %'s :	12.90%	70.97%	16.13%	65.31%	10.20%	24.49%	9.09%	89.30%	1.60%	0.81%	76.21%	22.98%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	1	10	2	12	2	4	6	40	2	0	41	9	129
PEAK HR FACTOR :		0.650			0.643			0.750			0.781		0.873

UTURNS	NB	SB	EB	WB
	0	0	0	1
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	0	2
	0	0	0	0
	0	0	0	4
	0	0	1	0
	0	0	0	1
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	3
	0	0	0	0
	0	0	0	0
	0	0	0	1
	NB	SB	EB	WB
	0	0	1	14

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	0.5	0	1	0	1	3	0	1	3	1	
6:00 AM	0	0	0	0	0	1	0	16	0	0	2	3	22
6:15 AM	0	0	0	0	0	0	0	27	0	0	3	1	31
6:30 AM	0	0	0	2	0	1	0	24	0	0	9	0	36
6:45 AM	0	0	0	1	0	1	0	22	0	0	4	6	34
7:00 AM	0	0	3	3	0	1	0	24	0	1	12	3	47
7:15 AM	0	0	2	3	0	2	0	23	0	0	9	0	39
7:30 AM	0	1	1	3	1	0	0	31	0	0	11	5	53
7:45 AM	1	0	4	4	0	0	1	39	0	1	12	1	63
8:00 AM	0	1	6	1	0	0	0	38	0	0	11	2	59
8:15 AM	1	0	2	2	0	0	1	32	0	0	12	0	50
8:30 AM	1	0	3	0	0	0	0	22	0	0	17	4	47
8:45 AM	1	2	3	5	0	1	0	22	0	0	22	4	60
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	4	24	24	1	7	2	320	0	2	124	29	541
APPROACH %'s :	12.50%	12.50%	75.00%	75.00%	3.13%	21.88%	0.62%	99.38%	0.00%	1.29%	80.00%	18.71%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	2	2	13	10	1	0	2	140	0	1	46	8	225
PEAK HR FACTOR :		0.607			0.688			0.888			0.859		0.928

CONTROL : Signalized

UTURNS

NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	4

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	0.5	0	1	0	1	3	0	1	3	1	
2:00 PM	0	1	0	3	0	0	1	23	0	0	37	4	69
2:15 PM	0	3	0	4	0	3	0	14	0	0	31	2	57
2:30 PM	0	0	1	3	0	1	0	25	0	0	30	6	66
2:45 PM	0	0	2	3	0	0	0	11	0	0	32	3	51
3:00 PM	0	3	2	5	0	0	1	25	0	0	28	8	72
3:15 PM	0	3	1	3	0	0	1	16	0	0	36	1	61
3:30 PM	0	2	0	1	1	0	2	23	0	0	27	8	64
3:45 PM	1	1	1	6	0	1	1	6	1	0	35	5	58
4:00 PM	0	4	3	0	0	0	1	10	0	0	21	3	42
4:15 PM	0	4	1	1	2	0	0	10	0	1	20	2	41
4:30 PM	0	4	1	1	0	1	0	6	0	0	20	3	36
4:45 PM	0	0	0	4	0	2	0	19	0	0	21	5	51
5:00 PM	0	0	0	8	1	0	2	11	0	0	14	1	37
5:15 PM	0	0	2	4	0	0	0	15	0	0	10	1	32
5:30 PM	0	0	1	0	0	2	0	10	0	0	12	3	28
5:45 PM	1	1	1	3	0	1	1	12	0	0	14	5	39
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	26	16	49	4	11	10	236	1	1	388	60	804
APPROACH %'s :	4.55%	59.09%	36.36%	76.56%	6.25%	17.19%	4.05%	95.55%	0.40%	0.22%	86.41%	13.36%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	8	2	14	3	3	2	46	0	1	75	11	165
PEAK HR FACTOR :		0.500			0.556			0.632			0.837		0.873

UTURNS	NB	SB	EB	WB
	0	0	0	1
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	0	2
	0	0	0	0
	0	0	0	4
	0	0	1	0
	0	0	0	1
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	3
	0	0	0	0
	0	0	0	0
	0	0	0	1
	NB	SB	EB	WB
	0	0	1	14

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	0.5	0	1	0	1	3	0	1	3	1	
6:00 AM	0	0	0	1	0	0	0	0	0	0	1	0	2
6:15 AM	0	0	0	0	0	0	0	0	0	0	2	1	3
6:30 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
6:45 AM	0	0	2	0	0	0	0	2	0	0	0	0	4
7:00 AM	0	0	0	0	0	1	0	2	0	0	3	0	6
7:15 AM	0	0	0	0	0	0	0	4	0	0	4	0	8
7:30 AM	0	0	0	1	0	0	0	2	0	0	1	0	4
7:45 AM	0	0	3	0	0	0	0	3	0	0	1	0	7
8:00 AM	0	0	2	0	0	0	0	14	0	0	2	0	18
8:15 AM	0	1	1	0	1	0	0	4	0	0	3	0	10
8:30 AM	0	0	0	0	0	0	0	4	0	0	4	0	8
8:45 AM	0	0	2	0	0	0	0	8	0	0	5	0	15
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	10	2	1	1	0	45	0	0	27	1	88
APPROACH %'s :	0.00%	9.09%	90.91%	50.00%	25.00%	25.00%	0.00%	100.00%	0.00%	0.00%	96.43%	3.57%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	1	6	1	1	0	0	23	0	0	7	0	39
PEAK HR FACTOR :		0.583			0.500			0.411			0.583		0.928

CONTROL : Signalized

UTURNS

NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	4

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	0.5	0	1	0	1	3	0	1	3	1	
2:00 PM	0	1	1	2	0	0	1	9	0	0	6	0	20
2:15 PM	0	1	1	1	0	0	0	9	0	0	7	0	19
2:30 PM	0	0	1	1	0	0	2	9	0	0	10	0	23
2:45 PM	0	0	2	0	1	1	1	10	0	0	10	1	26
3:00 PM	0	0	1	0	0	1	0	9	0	0	5	3	19
3:15 PM	0	1	0	1	0	0	0	2	0	0	2	1	7
3:30 PM	0	0	0	2	1	0	0	4	0	1	7	0	15
3:45 PM	0	0	1	0	0	0	0	5	0	0	4	0	10
4:00 PM	0	0	0	0	0	0	1	8	0	0	1	0	10
4:15 PM	0	0	0	0	0	0	0	9	0	0	3	0	12
4:30 PM	0	1	0	0	1	0	1	5	0	0	3	0	11
4:45 PM	0	0	0	0	0	0	0	8	0	0	2	0	10
5:00 PM	0	0	0	1	0	0	1	6	0	0	3	1	12
5:15 PM	0	0	0	1	0	0	0	8	0	0	0	0	9
5:30 PM	0	0	0	0	0	0	0	7	0	0	0	0	7
5:45 PM	0	0	0	0	0	0	0	18	0	0	4	1	23
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	4	7	9	3	2	7	126	0	1	67	7	233
APPROACH %'s :	0.00%	36.36%	63.64%	64.29%	21.43%	14.29%	5.26%	94.74%	0.00%	1.33%	89.33%	9.33%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	1	0	1	1	0	2	28	0	0	11	1	45
PEAK HR FACTOR :		0.250			0.500			0.833			0.750		0.873

UTURNS	NB	SB	EB	WB
	0	0	0	1
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	0	2
	0	0	0	0
	0	0	0	4
	0	0	1	0
	0	0	0	1
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	3
	0	0	0	0
	0	0	0	0
	0	0	0	1
	NB	SB	EB	WB
	0	0	1	14

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	0.5	0	1	0	1	3	0	1	3	1	
6:00 AM	0	1	0	0	1	0	0	9	0	0	8	3	22
6:15 AM	0	0	1	0	1	0	0	17	0	0	13	2	34
6:30 AM	0	0	0	3	0	0	0	13	0	0	13	1	30
6:45 AM	0	0	0	1	1	0	0	15	0	0	21	1	39
7:00 AM	0	0	1	0	0	0	1	14	0	0	21	1	38
7:15 AM	1	0	0	3	0	0	0	14	0	0	19	1	38
7:30 AM	0	0	0	1	0	0	1	11	0	1	20	2	36
7:45 AM	0	0	0	1	0	0	0	16	0	0	10	0	27
8:00 AM	0	0	1	0	1	0	0	15	0	0	18	1	36
8:15 AM	0	0	6	0	0	2	0	18	0	0	17	1	44
8:30 AM	1	0	0	0	1	1	0	15	0	0	18	0	36
8:45 AM	0	0	1	0	1	1	0	16	0	1	17	1	38
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	1	10	9	6	4	2	173	0	2	195	14	418
APPROACH %'s :	15.38%	7.69%	76.92%	47.37%	31.58%	21.05%	1.14%	98.86%	0.00%	0.95%	92.42%	6.64%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	7	2	1	2	1	60	0	1	65	4	143
PEAK HR FACTOR :	0.292			0.625			0.847			0.761			0.928

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	0	1
	0	0	0	1
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-045 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Ave			Harbor Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0.5	0.5	0	1	0	1	3	0	1	3	1	
2:00 PM	1	1	1	3	0	0	1	14	0	0	14	2	37
2:15 PM	0	1	0	2	2	1	0	13	1	0	12	3	35
2:30 PM	0	0	0	1	1	0	0	18	1	0	17	0	38
2:45 PM	0	0	0	3	0	0	0	18	0	0	24	0	45
3:00 PM	0	2	2	0	0	0	1	17	0	0	15	1	38
3:15 PM	0	1	1	2	0	0	0	12	0	0	16	6	38
3:30 PM	0	1	0	0	0	0	0	16	0	0	12	1	30
3:45 PM	0	3	0	1	0	1	0	14	0	0	8	1	28
4:00 PM	0	1	0	1	0	0	0	12	0	0	14	1	29
4:15 PM	0	1	1	0	0	0	0	14	1	2	12	2	33
4:30 PM	0	1	2	0	0	0	1	8	1	0	19	1	33
4:45 PM	0	0	2	0	3	0	0	12	0	1	9	0	27
5:00 PM	0	0	1	0	0	0	1	8	0	0	5	3	18
5:15 PM	0	1	0	0	0	0	0	4	0	0	8	3	16
5:30 PM	0	0	0	1	0	0	0	7	0	0	5	1	14
5:45 PM	0	0	0	0	0	0	0	4	0	0	1	2	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	13	10	14	6	2	4	191	4	3	191	27	466
APPROACH %'s :	4.17%	54.17%	41.67%	63.64%	27.27%	9.09%	2.01%	95.98%	2.01%	1.36%	86.43%	12.22%	

PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	2	6	0	3	0	2	42	2	3	45	6	111
PEAK HR FACTOR :		0.667			0.250			0.767			0.675		0.873

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	1
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	1
3:00 PM	0	0	0	2
3:15 PM	0	0	0	0
3:30 PM	0	0	0	4
3:45 PM	0	0	1	0
4:00 PM	0	0	0	1
4:15 PM	0	0	0	0
4:30 PM	0	0	0	1
4:45 PM	0	0	0	0
5:00 PM	0	0	0	3
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	1
	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	1	14

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1.5	SR 0.5	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
6:00 AM	44	1	3	7	1	2	4	78	10	1	187	9	347
6:15 AM	48	3	1	15	1	7	1	100	9	0	247	16	448
6:30 AM	42	6	1	11	0	7	3	93	25	1	187	18	394
6:45 AM	54	14	2	15	6	9	4	106	23	0	183	18	434
7:00 AM	47	3	1	13	1	6	2	143	29	0	180	22	447
7:15 AM	53	11	0	15	3	16	4	154	26	0	196	19	497
7:30 AM	116	24	2	19	5	10	11	123	44	1	224	23	602
7:45 AM	100	18	4	21	3	15	10	123	41	1	246	32	614
8:00 AM	82	26	4	25	4	5	5	133	34	3	212	20	553
8:15 AM	51	13	1	29	6	9	6	171	30	0	190	30	536
8:30 AM	49	11	2	26	0	9	7	133	32	2	169	25	465
8:45 AM	59	9	1	13	5	7	3	163	65	1	152	29	507
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	745	139	22	209	35	102	60	1520	368	10	2373	261	5844
APPROACH %'s :	82.23%	15.34%	2.43%	60.40%	10.12%	29.48%	3.08%	78.03%	18.89%	0.38%	89.75%	9.87%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	349	81	11	94	18	39	32	550	149	5	872	105	2305
PEAK HR FACTOR :		0.776			0.858			0.883			0.880		0.939

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1.5	SR 0.5	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
2:00 PM	33	6	0	21	1	4	9	228	45	1	188	30	566
2:15 PM	33	11	1	14	5	7	11	146	43	3	163	30	467
2:30 PM	24	4	1	26	10	7	16	178	39	2	161	23	491
2:45 PM	27	9	2	20	9	9	9	210	54	1	158	32	540
3:00 PM	34	16	4	20	8	3	7	203	57	2	153	29	536
3:15 PM	27	19	1	14	6	9	6	217	71	4	185	23	582
3:30 PM	53	14	1	25	7	11	12	204	67	1	187	22	604
3:45 PM	54	24	2	11	7	7	8	248	64	1	178	27	631
4:00 PM	53	19	6	13	10	13	10	241	79	3	188	35	670
4:15 PM	51	17	3	20	12	11	13	266	121	2	174	21	711
4:30 PM	46	18	4	15	16	12	9	300	99	2	177	26	724
4:45 PM	51	17	4	17	18	3	4	254	103	2	183	14	670
5:00 PM	41	7	1	21	18	7	6	302	156	2	163	12	736
5:15 PM	41	13	3	13	16	9	2	265	104	1	158	11	636
5:30 PM	39	13	2	9	15	8	6	234	109	0	168	8	611
5:45 PM	30	7	1	22	9	2	2	225	131	0	153	12	594
TOTAL VOLUMES :	NL 637	NT 214	NR 36	SL 281	ST 167	SR 122	EL 130	ET 3721	ER 1342	WL 27	WT 2737	WR 355	TOTAL 9769
APPROACH %'s :	71.82%	24.13%	4.06%	49.30%	29.30%	21.40%	2.50%	71.65%	25.84%	0.87%	87.75%	11.38%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	189	59	12	73	64	33	32	1122	479	8	697	73	2841
PEAK HR FACTOR :		0.903			0.924			0.880			0.949		0.965

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	1	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	NB 0	SB 1	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

9th St E I St and Anaheim St , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-046
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach (9th St_E I St)

Lanes	0.5	1.5	1		
AM	39	18	94	218	AM
NOON	0	0	0	0	NOON
PM	33	64	73	164	PM

Eastbound Approach (Anaheim St)

Lanes	AM	NOON	PM
	1260	0	919
1	32	0	32
3	550	0	1122
0	149	0	479
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	105	0	73	1
	872	0	697	2
	5	0	8	1
	655	0	1207	
	AM	NOON	PM	

CONTROL: Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	172	349	81	11	AM
NOON	0	0	0	0	NOON
PM	551	189	59	12	PM
		1	2	1	Lanes

Total Ins & Outs

	North Leg		
AM	151	218	AM
NOON	0	0	NOON
PM	170	164	PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
1260	0	919		982	0	778
731	0	1633		655	0	1207

	South Leg	
AM	172	441
NOON	0	0
PM	551	260

Total Volume Per Leg

	North Leg	
AM	369	AM
NOON	0	NOON
PM	334	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
1991	0	2552	1637	0	1985

	South Leg
AM	613
NOON	0
PM	811

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1.5	SR 0.5	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
6:00 AM	44	1	3	3	1	1	3	54	9	1	176	7	303
6:15 AM	46	3	1	1	0	6	1	68	6	0	233	11	376
6:30 AM	42	5	1	0	0	7	0	68	24	1	177	13	338
6:45 AM	54	10	2	1	3	9	3	82	23	0	168	3	358
7:00 AM	47	2	1	0	0	3	2	113	27	0	148	9	352
7:15 AM	51	7	0	1	1	8	3	121	24	0	167	6	389
7:30 AM	114	16	2	3	2	7	2	78	41	1	205	10	481
7:45 AM	96	12	4	2	1	7	5	77	36	1	231	13	485
8:00 AM	77	17	4	4	3	3	1	93	31	2	190	5	430
8:15 AM	46	7	1	2	2	3	2	130	28	0	162	10	393
8:30 AM	42	4	2	2	0	5	3	104	30	2	140	7	341
8:45 AM	53	3	1	1	2	2	1	113	61	0	123	3	363
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	712	87	22	20	15	61	26	1101	340	8	2120	97	4609
APPROACH %'s :	86.72%	10.60%	2.68%	20.83%	15.63%	63.54%	1.77%	75.05%	23.18%	0.36%	95.28%	4.36%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	333	52	11	11	8	20	10	378	136	4	788	38	1789
PEAK HR FACTOR :		0.750			0.813			0.819			0.847		0.922

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1.5	SR 0.5	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
2:00 PM	28	0	0	6	1	2	3	186	37	1	145	2	411
2:15 PM	23	2	1	1	3	3	4	111	42	1	118	3	312
2:30 PM	21	1	1	5	8	4	10	139	36	1	122	9	357
2:45 PM	26	6	2	2	2	6	3	162	45	1	119	3	377
3:00 PM	32	8	3	5	3	3	0	166	54	0	120	2	396
3:15 PM	24	9	1	1	4	6	2	191	69	2	138	7	454
3:30 PM	47	8	1	2	5	5	4	172	63	1	146	4	458
3:45 PM	45	7	1	3	5	4	2	214	61	1	145	7	495
4:00 PM	46	2	5	3	8	4	6	206	77	3	151	5	516
4:15 PM	42	7	2	9	11	7	5	219	119	2	142	8	573
4:30 PM	43	12	4	10	14	5	3	261	98	2	142	9	603
4:45 PM	48	10	4	9	16	2	2	214	101	1	153	4	564
5:00 PM	40	6	0	9	13	5	3	286	155	2	134	4	657
5:15 PM	39	11	3	2	10	3	1	240	101	1	139	6	556
5:30 PM	34	8	2	1	12	5	2	214	108	0	147	5	538
5:45 PM	29	4	1	6	6	2	0	200	129	0	132	2	511
TOTAL VOLUMES :	NL 567	NT 101	NR 31	SL 74	ST 121	SR 66	EL 50	ET 3181	ER 1295	WL 19	WT 2193	WR 80	TOTAL 7778
APPROACH %'s :	81.12%	14.45%	4.43%	28.35%	46.36%	25.29%	1.10%	70.28%	28.61%	0.83%	95.68%	3.49%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	173	35	10	37	54	19	13	980	473	7	571	25	2397
PEAK HR FACTOR :		0.879			0.948			0.825			0.954		0.912

UTURNS

NB	SB	EB	WB
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	0
0	0	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
NB 0	SB 1	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	1.5	0.5	1	3	0	1	2	1	
6:00 AM	0	0	0	1	0	0	1	2	0	0	5	1	10
6:15 AM	0	0	0	3	0	1	0	3	0	0	3	1	11
6:30 AM	0	0	0	0	0	0	3	1	0	0	3	0	7
6:45 AM	0	2	0	4	3	0	0	5	0	0	1	4	19
7:00 AM	0	0	0	3	0	1	0	4	0	0	8	6	22
7:15 AM	0	1	0	1	2	2	1	9	1	0	9	5	31
7:30 AM	0	1	0	3	2	2	6	8	1	0	3	5	31
7:45 AM	0	1	0	6	2	4	3	4	1	0	5	4	30
8:00 AM	0	2	0	5	1	0	2	8	0	0	9	3	30
8:15 AM	1	0	0	7	2	1	2	10	1	0	9	11	44
8:30 AM	1	2	0	7	0	2	0	6	1	0	7	6	32
8:45 AM	5	1	0	1	2	2	0	12	1	0	6	5	35
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	7	10	0	41	14	15	18	72	6	0	68	51	302
APPROACH %'s :	41.18%	58.82%	0.00%	58.57%	20.00%	21.43%	18.75%	75.00%	6.25%	0.00%	57.14%	42.86%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	4	0	21	7	7	13	30	3	0	26	23	135
PEAK HR FACTOR :	0.625			0.729			0.767			0.613			0.922

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1.5	SR 0.5	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
2:00 PM	2	2	0	4	0	1	2	14	3	0	6	7	41
2:15 PM	0	4	0	1	1	0	3	10	0	0	12	7	38
2:30 PM	0	0	0	8	1	0	0	10	0	0	9	5	33
2:45 PM	0	1	0	5	4	1	0	17	1	0	7	2	38
3:00 PM	1	2	0	4	3	0	3	6	0	0	5	8	32
3:15 PM	1	5	0	5	0	2	0	4	0	1	9	4	31
3:30 PM	1	3	0	11	0	3	3	9	1	0	13	3	47
3:45 PM	2	4	0	2	2	1	2	12	1	0	5	4	35
4:00 PM	2	7	0	2	1	1	1	12	0	0	9	7	42
4:15 PM	2	2	0	5	0	1	2	20	0	0	8	5	45
4:30 PM	2	2	0	4	1	3	3	17	1	0	10	6	49
4:45 PM	0	5	0	3	0	0	1	10	0	0	7	4	30
5:00 PM	0	0	1	4	4	0	2	5	1	0	7	5	29
5:15 PM	0	1	0	6	2	1	1	6	0	0	5	2	24
5:30 PM	1	2	0	1	1	0	1	7	0	0	9	0	22
5:45 PM	0	0	0	2	0	0	1	8	0	0	4	2	17
TOTAL VOLUMES :	14	40	1	67	20	14	25	167	8	1	125	71	553
APPROACH %'s :	25.45%	72.73%	1.82%	66.34%	19.80%	13.86%	12.50%	83.50%	4.00%	0.51%	63.45%	36.04%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	4	9	1	16	5	4	8	52	2	0	32	20	153
PEAK HR FACTOR :		0.700			0.781			0.705			0.813		0.912

UTURNS

NB	SB	EB	WB
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	0
0	0	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	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	1.5	0.5	1	3	0	1	2	1	
6:00 AM	0	0	0	2	0	0	0	15	0	0	3	0	20
6:15 AM	0	0	0	6	0	0	0	22	0	0	2	1	31
6:30 AM	0	0	0	5	0	0	0	18	1	0	5	1	30
6:45 AM	0	1	0	4	0	0	0	18	0	0	5	1	29
7:00 AM	0	1	0	7	1	0	0	18	1	0	10	1	39
7:15 AM	0	0	0	7	0	1	0	14	0	0	11	3	36
7:30 AM	0	6	0	5	0	1	0	29	1	0	6	2	50
7:45 AM	0	3	0	8	0	1	0	33	0	0	5	10	60
8:00 AM	5	6	0	11	0	0	2	23	0	1	2	5	55
8:15 AM	0	5	0	13	1	1	1	21	0	0	6	8	56
8:30 AM	4	4	0	12	0	2	1	13	0	0	9	4	49
8:45 AM	1	3	0	3	0	2	2	23	0	0	13	13	60
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	10	29	0	83	2	8	6	247	3	1	77	49	515
APPROACH %'s :	25.64%	74.36%	0.00%	89.25%	2.15%	8.60%	2.34%	96.48%	1.17%	0.79%	60.63%	38.58%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	5	20	0	37	1	3	3	106	1	1	19	25	221
PEAK HR FACTOR :		0.568			0.683			0.833			0.750		0.922

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	1.5	0.5	1	3	0	1	2	1	
2:00 PM	3	2	0	2	0	1	2	16	2	0	22	12	62
2:15 PM	6	2	0	6	0	2	1	10	1	0	22	8	58
2:30 PM	1	2	0	10	0	2	4	12	1	0	19	6	57
2:45 PM	0	1	0	3	2	2	3	10	2	0	16	12	51
3:00 PM	1	5	0	7	2	0	2	15	0	1	16	14	63
3:15 PM	1	3	0	2	1	0	1	18	1	0	26	9	62
3:30 PM	4	2	0	7	1	2	3	13	0	0	22	10	64
3:45 PM	4	6	1	3	0	1	1	8	1	0	20	12	57
4:00 PM	2	5	0	2	0	4	1	10	0	0	17	21	62
4:15 PM	3	5	0	1	1	3	4	12	0	0	14	7	50
4:30 PM	1	4	0	0	0	1	2	13	0	0	15	10	46
4:45 PM	1	2	0	1	0	1	0	16	2	1	8	4	36
5:00 PM	0	0	0	5	1	2	0	4	0	0	12	3	27
5:15 PM	1	1	0	3	4	2	0	11	2	0	11	3	38
5:30 PM	0	2	0	2	1	3	0	7	1	0	11	3	30
5:45 PM	1	1	0	2	2	0	1	5	0	0	11	7	30
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	29	43	1	56	15	26	25	180	13	2	262	141	793
APPROACH %'s :	39.73%	58.90%	1.37%	57.73%	15.46%	26.80%	11.47%	82.57%	5.96%	0.49%	64.69%	34.81%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	5	11	0	7	2	7	6	45	2	1	49	24	159
PEAK HR FACTOR :		0.500			0.500			0.736			0.740		0.912

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	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
	NB	SB	EB	WB
	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1.5	SR 0.5	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
6:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	3
7:15 AM	2	1	0	1	0	4	0	4	0	0	2	1	15
7:30 AM	2	0	0	1	0	0	0	1	0	0	1	1	6
7:45 AM	4	0	0	0	0	0	1	2	1	0	0	0	8
8:00 AM	0	1	0	1	0	0	0	6	3	0	1	1	13
8:15 AM	1	1	0	1	1	1	1	2	0	0	1	0	9
8:30 AM	2	1	0	1	0	0	0	3	0	0	2	1	10
8:45 AM	0	2	0	1	0	0	0	7	3	0	5	0	18
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	11	6	0	6	1	5	2	26	7	0	17	4	85
APPROACH %'s :	64.71%	35.29%	0.00%	50.00%	8.33%	41.67%	5.71%	74.29%	20.00%	0.00%	80.95%	19.05%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	7	2	0	3	1	1	2	11	4	0	3	2	36
PEAK HR FACTOR :	0.563			0.417			0.472			0.625			0.922

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 1.5	SR 0.5	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
2:00 PM	0	1	0	5	0	0	1	6	0	0	6	2	21
2:15 PM	4	2	0	3	1	0	1	4	0	2	3	2	22
2:30 PM	0	0	0	1	0	1	1	8	1	1	5	0	18
2:45 PM	1	1	0	3	0	0	2	11	0	0	5	6	29
3:00 PM	0	0	0	2	0	0	1	6	0	0	4	3	16
3:15 PM	1	2	0	2	0	1	1	0	1	0	2	1	11
3:30 PM	1	1	0	1	1	0	2	2	0	0	2	1	11
3:45 PM	2	3	0	1	0	1	2	4	0	0	3	1	17
4:00 PM	2	4	1	2	1	1	1	6	2	0	2	0	22
4:15 PM	1	2	0	1	0	0	1	8	2	0	2	0	17
4:30 PM	0	0	0	0	0	1	1	4	0	0	0	1	7
4:45 PM	0	0	0	4	0	0	0	6	0	0	3	2	15
5:00 PM	0	1	0	3	0	0	1	3	0	0	4	0	12
5:15 PM	1	0	0	2	0	2	0	5	0	0	0	0	10
5:30 PM	0	1	0	5	1	0	3	2	0	0	0	0	12
5:45 PM	0	1	0	12	1	0	0	8	2	0	4	1	29
TOTAL VOLUMES :	NL 13	NT 19	NR 1	SL 47	ST 5	SR 7	EL 18	ET 83	ER 8	WL 3	WT 45	WR 20	TOTAL 269
APPROACH %'s :	39.39%	57.58%	3.03%	79.66%	8.47%	11.86%	16.51%	76.15%	7.34%	4.41%	66.18%	29.41%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	1	3	0	8	0	1	3	21	2	0	9	3	51
PEAK HR FACTOR :		0.333			0.563			0.591			0.600		0.912

UTURNS	NB	SB	EB	WB
	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	0
	0	0	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
TOTAL VOLUMES :	NB 0	SB 1	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	1.5	0.5	1	3	0	1	2	1	
6:00 AM	0	0	0	1	0	1	0	7	1	0	3	1	14
6:15 AM	2	0	0	5	1	0	0	7	3	0	7	3	28
6:30 AM	0	1	0	6	0	0	0	5	0	0	2	4	18
6:45 AM	0	1	0	6	0	0	1	1	0	0	9	10	28
7:00 AM	0	0	0	3	0	2	0	8	1	0	11	6	31
7:15 AM	0	2	0	5	0	1	0	6	1	0	7	4	26
7:30 AM	0	1	0	7	1	0	3	7	1	0	9	5	34
7:45 AM	0	2	0	5	0	3	1	7	3	0	5	5	31
8:00 AM	0	0	0	4	0	2	0	3	0	0	10	6	25
8:15 AM	3	0	0	6	0	3	0	8	1	0	12	1	34
8:30 AM	0	0	0	4	0	0	3	7	1	0	11	7	33
8:45 AM	0	0	0	7	1	1	0	8	0	1	5	8	31
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	7	0	59	3	13	8	74	12	1	91	60	333
APPROACH %'s :	41.67%	58.33%	0.00%	78.67%	4.00%	17.33%	8.51%	78.72%	12.77%	0.66%	59.87%	39.47%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	3	3	0	22	1	8	4	25	5	0	36	17	124
PEAK HR FACTOR :	0.500			0.861			0.773			0.828			0.922

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-046 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	9th St_E I St			9th St_E I St			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	1.5	0.5	1	3	0	1	2	1	
2:00 PM	0	1	0	4	0	0	1	6	3	0	9	7	31
2:15 PM	0	1	0	3	0	2	2	11	0	0	8	10	37
2:30 PM	2	1	0	2	1	0	1	9	1	0	6	3	26
2:45 PM	0	0	0	7	1	0	1	10	6	0	11	9	45
3:00 PM	0	1	1	2	0	0	1	10	3	1	8	2	29
3:15 PM	0	0	0	4	1	0	2	4	0	1	10	2	24
3:30 PM	0	0	0	4	0	1	0	8	3	0	4	4	24
3:45 PM	1	4	0	2	0	0	1	10	1	0	5	3	27
4:00 PM	1	1	0	4	0	3	1	7	0	0	9	2	28
4:15 PM	3	1	1	4	0	0	1	7	0	0	8	1	26
4:30 PM	0	0	0	1	1	2	0	5	0	0	10	0	19
4:45 PM	2	0	0	0	2	0	1	8	0	0	12	0	25
5:00 PM	1	0	0	0	0	0	0	4	0	0	6	0	11
5:15 PM	0	0	0	0	0	1	0	3	1	0	3	0	8
5:30 PM	4	0	0	0	0	0	0	4	0	0	1	0	9
5:45 PM	0	1	0	0	0	0	0	4	0	0	2	0	7
TOTAL VOLUMES :	14	11	2	37	6	9	12	110	18	2	112	43	376
APPROACH %'s :	51.85%	40.74%	7.41%	71.15%	11.54%	17.31%	8.57%	78.57%	12.86%	1.27%	71.34%	27.39%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	6	1	1	5	3	2	2	24	0	0	36	1	81
PEAK HR FACTOR :		0.400			0.625			0.722			0.771		0.912

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	1	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
6:00 AM	8	2	12	5	9	8	8	77	10	18	221	7	385
6:15 AM	12	2	6	6	15	12	13	88	61	16	240	10	481
6:30 AM	9	4	6	8	34	11	7	130	71	16	228	12	536
6:45 AM	3	6	12	10	27	5	14	119	66	22	216	14	514
7:00 AM	5	2	9	12	47	9	5	160	73	11	181	18	532
7:15 AM	6	8	13	16	43	6	15	149	56	22	194	14	542
7:30 AM	9	17	17	17	44	9	12	159	46	23	303	43	699
7:45 AM	20	17	21	24	38	7	22	154	34	12	256	44	649
8:00 AM	16	13	16	16	35	15	19	141	14	16	278	31	610
8:15 AM	20	19	16	29	44	16	15	152	20	16	210	24	581
8:30 AM	11	14	9	15	31	6	16	169	33	16	190	19	529
8:45 AM	18	22	12	26	34	6	21	194	42	24	169	28	596
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	137	126	149	184	401	110	167	1692	526	212	2686	264	6654
APPROACH %'s :	33.25%	30.58%	36.17%	26.47%	57.70%	15.83%	7.00%	70.94%	22.05%	6.70%	84.95%	8.35%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	65	66	70	86	161	47	68	606	114	67	1047	142	2539
PEAK HR FACTOR :		0.866			0.826			0.908			0.851		0.908

UTURNS

	NB	SB	EB	WB
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
2:00 PM	31	41	20	13	22	15	19	213	23	22	168	26	613
2:15 PM	30	32	14	27	40	16	27	147	23	13	149	25	543
2:30 PM	48	40	21	20	37	15	22	197	23	9	148	47	627
2:45 PM	48	49	27	29	31	12	25	197	28	16	164	32	658
3:00 PM	46	49	33	34	35	15	24	209	23	20	152	29	669
3:15 PM	37	40	33	32	44	10	32	199	26	19	153	22	647
3:30 PM	52	44	28	23	30	12	23	246	22	21	195	21	717
3:45 PM	24	34	16	30	38	10	30	257	21	20	200	35	715
4:00 PM	34	37	21	22	29	10	23	289	26	19	206	33	749
4:15 PM	43	31	39	38	19	15	15	302	43	10	173	35	763
4:30 PM	36	31	27	43	50	22	22	315	69	21	218	39	893
4:45 PM	63	27	25	37	35	17	17	296	28	18	184	25	772
5:00 PM	22	4	18	38	43	15	12	378	34	19	176	29	788
5:15 PM	14	11	19	32	43	13	20	292	69	13	174	23	723
5:30 PM	15	9	15	33	45	14	27	296	33	11	189	20	707
5:45 PM	9	11	8	38	47	10	13	268	16	13	146	14	593
TOTAL VOLUMES :	NL 552	NT 490	NR 364	SL 489	ST 588	SR 221	EL 351	ET 4101	ER 507	WL 264	WT 2795	WR 455	TOTAL 11177
APPROACH %'s :	39.26%	34.85%	25.89%	37.67%	45.30%	17.03%	7.08%	82.70%	10.22%	7.51%	79.54%	12.95%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	164	93	109	156	147	69	66	1291	174	68	751	128	3216
PEAK HR FACTOR :		0.796			0.809			0.903			0.852		0.900

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Henry Ford Ave and Anaheim St , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-047
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach (Henry Ford Ave)

	Lanes 1	2	1		
AM	47	161	86	276	AM
NOON	0	0	0	0	NOON
PM	69	147	156	287	PM

Eastbound Approach (Anaheim St)

Lanes	AM	NOON	PM
	1159	0	984
1	68	0	66
2	606	0	1291
1	114	0	174
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
142	0	128	1
1047	0	751	2
67	0	68	1
762	0	1556	
AM	NOON	PM	

CONTROL: Signalized

Northbound Approach

AM	342	65	66	70	AM
NOON	0	0	0	0	NOON
PM	389	164	93	109	PM
		1.5	1.5	1	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	294	276	AM
NOON	0	0	NOON
PM	372	287	PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
1159	0	984		1256	0	947
788	0	1531		762	0	1556

	South Leg	
AM	342	201
NOON	0	0
PM	389	366

Total Volume Per Leg

	North Leg	
AM	570	AM
NOON	0	NOON
PM	659	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
1947	0	2515	2018	0	2503

	South Leg
AM	543
NOON	0
PM	755

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
6:00 AM	8	2	11	2	3	7	2	51	9	18	209	6	328
6:15 AM	11	2	5	3	7	8	4	59	55	15	226	8	403
6:30 AM	9	3	6	5	14	8	5	104	69	12	215	9	459
6:45 AM	3	6	11	8	6	4	9	93	55	20	206	10	431
7:00 AM	5	2	9	7	6	7	1	129	64	8	153	16	407
7:15 AM	4	4	10	8	12	6	7	123	39	11	176	12	412
7:30 AM	8	9	8	8	6	6	9	124	33	18	278	37	544
7:45 AM	15	3	8	16	6	5	13	114	16	9	239	40	484
8:00 AM	11	4	8	11	3	13	9	111	3	12	253	24	462
8:15 AM	13	7	12	20	5	11	9	121	6	10	182	18	414
8:30 AM	8	2	5	9	4	4	11	140	15	8	154	14	374
8:45 AM	13	4	10	15	6	4	13	154	21	16	142	23	421
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	108	48	103	112	78	83	92	1323	385	157	2433	217	5139
APPROACH %'s :	41.70%	18.53%	39.77%	41.03%	28.57%	30.40%	5.11%	73.50%	21.39%	5.59%	86.68%	7.73%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	47	23	36	55	20	35	40	470	58	49	952	119	1904
PEAK HR FACTOR :		0.828			0.764			0.855			0.841		0.875

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
2:00 PM	9	7	6	10	4	11	12	179	11	12	135	15	411
2:15 PM	13	4	11	22	6	10	12	118	10	6	114	15	341
2:30 PM	26	8	12	15	3	12	7	163	11	6	115	29	407
2:45 PM	24	2	16	18	2	8	7	154	10	4	138	17	400
3:00 PM	22	7	26	28	8	12	12	183	10	11	128	26	473
3:15 PM	11	2	23	24	8	5	17	179	13	6	128	10	426
3:30 PM	33	13	18	18	3	9	8	214	12	12	157	15	512
3:45 PM	12	6	8	25	4	8	16	225	15	10	173	22	524
4:00 PM	16	4	12	19	6	8	16	250	17	10	182	22	562
4:15 PM	28	5	13	30	2	10	3	271	31	6	154	21	574
4:30 PM	19	6	20	36	10	21	10	290	57	13	192	29	703
4:45 PM	56	13	21	24	5	13	14	271	21	9	161	19	627
5:00 PM	20	3	16	35	10	12	8	362	30	11	156	24	687
5:15 PM	10	8	18	29	8	12	15	273	60	7	156	18	614
5:30 PM	12	3	11	28	3	11	15	273	18	6	167	16	563
5:45 PM	5	4	6	28	9	7	8	255	11	8	131	11	483
TOTAL VOLUMES :	NL 316	NT 95	NR 237	SL 389	ST 91	SR 169	EL 180	ET 3660	ER 337	WL 137	WT 2387	WR 309	TOTAL 8307
APPROACH %'s :	48.77%	14.66%	36.57%	59.94%	14.02%	26.04%	4.31%	87.62%	8.07%	4.84%	84.26%	10.91%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	123	27	70	125	27	56	35	1194	139	39	663	93	2591
PEAK HR FACTOR :		0.611			0.776			0.855			0.849		0.921

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
6:00 AM	0	0	0	0	2	0	4	3	1	0	2	0	12
6:15 AM	0	0	0	0	3	1	4	1	1	0	4	2	16
6:30 AM	0	1	0	1	7	3	1	3	1	0	4	1	22
6:45 AM	0	0	0	0	8	1	4	5	5	0	1	1	25
7:00 AM	0	0	0	2	16	2	2	6	5	1	5	2	41
7:15 AM	1	3	2	2	8	0	4	6	9	3	3	0	41
7:30 AM	1	3	3	1	10	0	2	9	7	0	7	5	48
7:45 AM	2	7	1	5	11	0	3	6	7	0	7	1	50
8:00 AM	4	1	0	1	10	1	7	8	4	2	9	2	49
8:15 AM	5	5	2	5	8	2	3	6	9	2	10	1	58
8:30 AM	2	4	1	1	9	1	0	7	5	3	9	2	44
8:45 AM	1	3	1	2	3	0	2	10	8	3	5	0	38
TOTAL VOLUMES :	16	27	10	20	95	11	36	70	62	14	66	17	444
APPROACH %'s :	30.19%	50.94%	18.87%	15.87%	75.40%	8.73%	21.43%	41.67%	36.90%	14.43%	68.04%	17.53%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	12	16	6	12	39	3	15	29	27	4	33	9	205
PEAK HR FACTOR :		0.708			0.844			0.934			0.885		0.875

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
2:00 PM	11	14	9	2	3	1	2	8	4	1	7	5	67
2:15 PM	6	9	3	0	8	4	3	7	5	1	6	2	54
2:30 PM	10	14	4	3	3	2	6	5	2	0	5	6	60
2:45 PM	10	18	7	4	8	3	4	10	3	4	5	3	79
3:00 PM	9	18	4	2	7	3	6	3	5	1	3	0	61
3:15 PM	10	9	5	3	4	4	6	3	2	1	5	2	54
3:30 PM	9	14	2	2	10	1	5	8	1	2	11	2	67
3:45 PM	6	12	4	2	5	1	4	9	1	0	5	3	52
4:00 PM	8	13	2	1	7	1	2	10	4	0	6	2	56
4:15 PM	6	8	10	3	1	2	5	12	6	0	6	4	63
4:30 PM	9	9	2	3	10	1	5	11	2	3	7	5	67
4:45 PM	4	7	1	4	10	2	1	6	4	2	5	2	48
5:00 PM	1	0	0	1	9	1	2	4	0	3	4	3	28
5:15 PM	1	2	0	3	9	0	1	3	2	1	5	2	29
5:30 PM	2	2	2	1	9	1	3	8	7	1	6	2	44
5:45 PM	1	3	2	6	6	0	1	1	0	2	1	3	26
TOTAL VOLUMES :	NL 103	NT 152	NR 57	SL 40	ST 109	SR 27	EL 56	ET 108	ER 48	WL 22	WT 87	WR 46	TOTAL 855
APPROACH %'s :	33.01%	48.72%	18.27%	22.73%	61.93%	15.34%	26.42%	50.94%	22.64%	14.19%	56.13%	29.68%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	20	24	13	11	30	6	13	33	12	8	22	14	206
PEAK HR FACTOR :		0.594			0.734			0.630			0.733		0.921

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
6:00 AM	0	0	0	2	3	0	0	13	0	0	3	0	21
6:15 AM	0	0	1	0	4	1	2	18	3	1	1	0	31
6:30 AM	0	0	0	1	9	0	1	17	1	1	7	0	37
6:45 AM	0	0	0	1	11	0	0	18	3	2	4	0	39
7:00 AM	0	0	0	3	16	0	0	16	2	1	8	0	46
7:15 AM	0	0	0	3	13	0	3	12	1	3	9	0	44
7:30 AM	0	3	5	7	19	3	1	18	4	3	4	0	67
7:45 AM	3	7	7	2	14	1	6	23	10	1	5	0	79
8:00 AM	0	6	5	1	19	0	1	17	3	1	6	1	60
8:15 AM	1	2	0	2	22	2	2	14	5	0	4	2	56
8:30 AM	1	5	0	2	14	1	3	10	6	1	14	1	58
8:45 AM	2	12	0	4	17	1	1	19	10	3	14	1	84
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	7	35	18	28	161	9	20	195	48	17	79	5	622
APPROACH %'s :	11.67%	58.33%	30.00%	14.14%	81.31%	4.55%	7.60%	74.14%	18.25%	16.83%	78.22%	4.95%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	4	18	17	12	74	6	10	72	22	5	19	3	262
PEAK HR FACTOR :		0.574			0.793			0.667			0.844		0.875

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

Containers

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
2:00 PM	5	12	4	1	13	1	0	10	4	8	17	0	75
2:15 PM	7	12	0	2	18	1	3	5	5	5	16	3	77
2:30 PM	7	13	2	1	27	0	3	11	8	3	15	6	96
2:45 PM	10	22	1	4	15	0	7	8	10	5	14	5	101
3:00 PM	7	13	2	1	16	0	3	11	7	7	13	1	81
3:15 PM	9	20	3	5	29	1	3	12	8	9	14	2	115
3:30 PM	6	11	6	2	14	1	6	11	7	7	18	3	92
3:45 PM	3	12	3	1	18	1	7	5	4	6	13	4	77
4:00 PM	5	12	2	2	10	0	2	11	3	6	9	3	65
4:15 PM	3	10	9	3	9	2	3	9	6	3	6	4	67
4:30 PM	6	10	4	3	25	0	3	6	6	4	8	4	79
4:45 PM	3	7	2	4	18	1	2	9	2	4	6	0	58
5:00 PM	0	0	0	1	19	1	0	5	3	3	7	1	40
5:15 PM	2	1	0	0	22	1	2	9	5	5	8	2	57
5:30 PM	0	2	1	2	21	1	0	7	6	3	8	1	52
5:45 PM	2	2	0	2	24	1	2	1	3	2	7	0	46
TOTAL VOLUMES :	NL 75	NT 159	NR 39	SL 34	ST 298	SR 12	EL 46	ET 130	ER 87	WL 80	WT 179	WR 39	TOTAL 1178
APPROACH %'s :	27.47%	58.24%	14.29%	9.88%	86.63%	3.49%	17.49%	49.43%	33.08%	26.85%	60.07%	13.09%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	12	27	15	11	71	4	8	29	17	14	27	9	244
PEAK HR FACTOR :		0.614			0.768			0.750			0.781		0.921

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
6:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
6:30 AM	0	0	0	0	4	0	0	1	0	2	0	0	7
6:45 AM	0	0	0	0	1	0	0	0	2	0	0	0	3
7:00 AM	0	0	0	0	9	0	0	0	2	0	2	0	13
7:15 AM	1	1	0	3	9	0	1	0	6	4	2	0	27
7:30 AM	0	2	0	0	8	0	0	0	2	1	4	0	17
7:45 AM	0	0	3	1	7	0	0	3	0	0	0	1	15
8:00 AM	1	1	2	3	3	1	0	3	4	0	1	2	21
8:15 AM	1	3	0	0	7	0	0	2	0	1	1	0	15
8:30 AM	0	3	1	2	3	0	0	4	7	2	5	1	28
8:45 AM	2	2	0	2	7	0	3	5	3	0	5	0	29
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	12	6	11	59	1	4	18	27	10	20	4	177
APPROACH %'s :	21.74%	52.17%	26.09%	15.49%	83.10%	1.41%	8.16%	36.73%	55.10%	29.41%	58.82%	11.76%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	2	6	5	4	25	1	0	8	6	2	6	3	68
PEAK HR FACTOR :	0.813			0.938			0.500			0.550			0.875

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
2:00 PM	5	8	0	0	2	1	3	5	4	0	5	0	33
2:15 PM	4	7	0	2	6	0	6	5	2	1	7	2	42
2:30 PM	5	4	2	1	3	0	6	6	1	0	7	4	39
2:45 PM	3	6	1	3	6	0	3	8	4	0	1	4	39
3:00 PM	7	9	0	1	3	0	3	3	1	1	3	0	31
3:15 PM	7	9	1	0	3	0	6	0	2	1	3	3	35
3:30 PM	3	5	2	1	3	1	3	2	2	0	2	0	24
3:45 PM	3	2	1	1	9	0	3	4	0	3	4	2	32
4:00 PM	5	7	4	0	6	0	1	8	2	2	3	0	38
4:15 PM	4	7	7	2	6	0	3	1	0	0	0	2	32
4:30 PM	1	5	1	1	5	0	4	3	3	1	1	0	25
4:45 PM	0	0	0	3	2	1	0	1	0	3	0	0	10
5:00 PM	0	1	1	1	5	1	2	4	0	2	2	0	19
5:15 PM	1	0	0	0	4	0	1	4	2	0	1	1	14
5:30 PM	0	2	0	2	12	0	2	3	1	0	0	0	22
5:45 PM	1	2	0	0	7	0	0	8	2	0	4	0	24
TOTAL VOLUMES :	NL 49	NT 74	NR 20	SL 18	ST 82	SR 4	EL 46	ET 65	ER 26	WL 14	WT 43	WR 18	TOTAL 459
APPROACH %'s :	34.27%	51.75%	13.99%	17.31%	78.85%	3.85%	33.58%	47.45%	18.98%	18.67%	57.33%	24.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	5	13	9	7	18	2	9	9	3	6	3	2	86
PEAK HR FACTOR :		0.375			0.844			0.525			0.688		0.921

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
6:00 AM	0	0	1	1	0	1	2	10	0	0	7	1	23
6:15 AM	1	0	0	3	1	2	3	10	1	0	9	0	30
6:30 AM	0	0	0	1	0	0	0	5	0	1	2	2	11
6:45 AM	0	0	1	1	1	0	1	3	1	0	5	3	16
7:00 AM	0	0	0	0	0	0	2	9	0	1	13	0	25
7:15 AM	0	0	1	0	1	0	0	8	1	1	4	2	18
7:30 AM	0	0	1	1	1	0	0	8	0	1	10	1	23
7:45 AM	0	0	2	0	0	1	0	8	1	2	5	2	21
8:00 AM	0	1	1	0	0	0	2	2	0	1	9	2	18
8:15 AM	0	2	2	2	2	1	1	9	0	3	13	3	38
8:30 AM	0	0	2	1	1	0	2	8	0	2	8	1	25
8:45 AM	0	1	1	3	1	1	2	6	0	2	3	4	24
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	4	12	13	8	6	15	86	4	14	88	21	272
APPROACH %'s :	5.88%	23.53%	70.59%	48.15%	29.63%	22.22%	14.29%	81.90%	3.81%	11.38%	71.54%	17.07%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	3	6	3	3	2	3	27	1	7	37	8	100
PEAK HR FACTOR :		0.563			0.400			0.775			0.684		0.875

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-047 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	1.5	1	1	2	1	1	2	1	1	2	1	
2:00 PM	1	0	1	0	0	1	2	11	0	1	4	6	27
2:15 PM	0	0	0	1	2	1	3	12	1	0	6	3	29
2:30 PM	0	1	1	0	1	1	0	12	1	0	6	2	25
2:45 PM	1	1	2	0	0	1	4	17	1	3	6	3	39
3:00 PM	1	2	1	2	1	0	0	9	0	0	5	2	23
3:15 PM	0	0	1	0	0	0	0	5	1	2	3	5	17
3:30 PM	1	1	0	0	0	0	1	11	0	0	7	1	22
3:45 PM	0	2	0	1	2	0	0	14	1	1	5	4	30
4:00 PM	0	1	1	0	0	1	2	10	0	1	6	6	28
4:15 PM	2	1	0	0	1	1	1	9	0	1	7	4	27
4:30 PM	1	1	0	0	0	0	0	5	1	0	10	1	19
4:45 PM	0	0	1	2	0	0	0	9	1	0	12	4	29
5:00 PM	1	0	1	0	0	0	0	3	1	0	7	1	14
5:15 PM	0	0	1	0	0	0	1	3	0	0	4	0	9
5:30 PM	1	0	1	0	0	1	7	5	1	1	8	1	26
5:45 PM	0	0	0	2	1	2	2	3	0	1	3	0	14
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	10	11	8	8	9	23	138	9	11	99	43	378
APPROACH %'s :	30.00%	33.33%	36.67%	32.00%	32.00%	36.00%	13.53%	81.18%	5.29%	7.19%	64.71%	28.10%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	4	2	2	2	1	1	1	26	3	1	36	10	89
PEAK HR FACTOR :	0.667			0.500			0.750			0.734			0.921

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
6:00 AM	5	6	4	1	7	9	38	2	174	11	0	18	275
6:15 AM	7	11	0	1	5	4	78	1	245	5	0	8	365
6:30 AM	10	14	6	1	10	5	84	1	316	6	0	10	463
6:45 AM	5	14	13	6	3	8	83	1	346	22	0	19	520
7:00 AM	7	14	3	1	6	13	40	3	336	29	1	9	462
7:15 AM	8	4	10	3	9	16	21	2	330	38	0	11	452
7:30 AM	14	9	9	2	11	5	29	0	305	19	0	9	412
7:45 AM	12	14	15	11	16	13	20	2	279	22	0	9	413
8:00 AM	21	9	20	5	13	5	24	1	227	17	2	7	351
8:15 AM	32	20	27	6	14	16	28	2	221	20	0	5	391
8:30 AM	28	17	19	3	13	21	26	2	225	15	0	9	378
8:45 AM	22	14	22	9	12	28	18	2	216	12	1	9	365
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	171	146	148	49	119	143	489	19	3220	216	4	123	4847
APPROACH %'s :	36.77%	31.40%	31.83%	15.76%	38.26%	45.98%	13.12%	0.51%	86.37%	62.97%	1.17%	35.86%	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	30	46	32	11	28	42	228	7	1328	95	1	49	1897
PEAK HR FACTOR :		0.844			0.723			0.909			0.740		0.912

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
2:00 PM	24	16	30	10	14	26	32	4	188	20	0	5	369
2:15 PM	50	15	38	3	16	28	24	3	176	12	1	9	375
2:30 PM	48	34	8	0	16	53	36	0	204	9	0	3	411
2:45 PM	56	32	0	0	17	54	34	0	178	0	0	0	371
3:00 PM	45	31	32	16	17	65	29	2	202	16	1	8	464
3:15 PM	27	30	30	14	17	38	18	2	168	10	0	2	356
3:30 PM	19	11	48	58	25	98	16	2	179	18	2	6	482
3:45 PM	12	20	53	21	17	28	24	6	219	6	0	6	412
4:00 PM	22	20	56	27	8	29	19	7	209	9	1	6	413
4:15 PM	23	9	72	27	17	43	25	0	249	17	3	6	491
4:30 PM	31	16	49	43	14	88	16	3	237	13	1	2	513
4:45 PM	36	11	53	24	9	32	12	4	231	23	0	7	442
5:00 PM	28	6	36	15	8	14	16	1	232	19	0	2	377
5:15 PM	17	7	12	3	11	10	18	4	258	29	1	3	373
5:30 PM	5	7	12	13	9	18	13	7	268	12	2	5	371
5:45 PM	14	10	19	8	12	12	10	4	233	13	1	2	338
TOTAL VOLUMES :	NL 457	NT 275	NR 548	SL 282	ST 227	SR 636	EL 342	ET 49	ER 3431	WL 226	WT 13	WR 72	TOTAL 6558
APPROACH %'s :	35.70%	21.48%	42.81%	24.63%	19.83%	55.55%	8.95%	1.28%	89.77%	72.67%	4.18%	23.15%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	112	56	230	121	48	192	72	14	926	62	5	21	1859
PEAK HR FACTOR :		0.957			0.622			0.923			0.733		0.906

UTURNS	NB	SB	EB	WB
	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	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
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

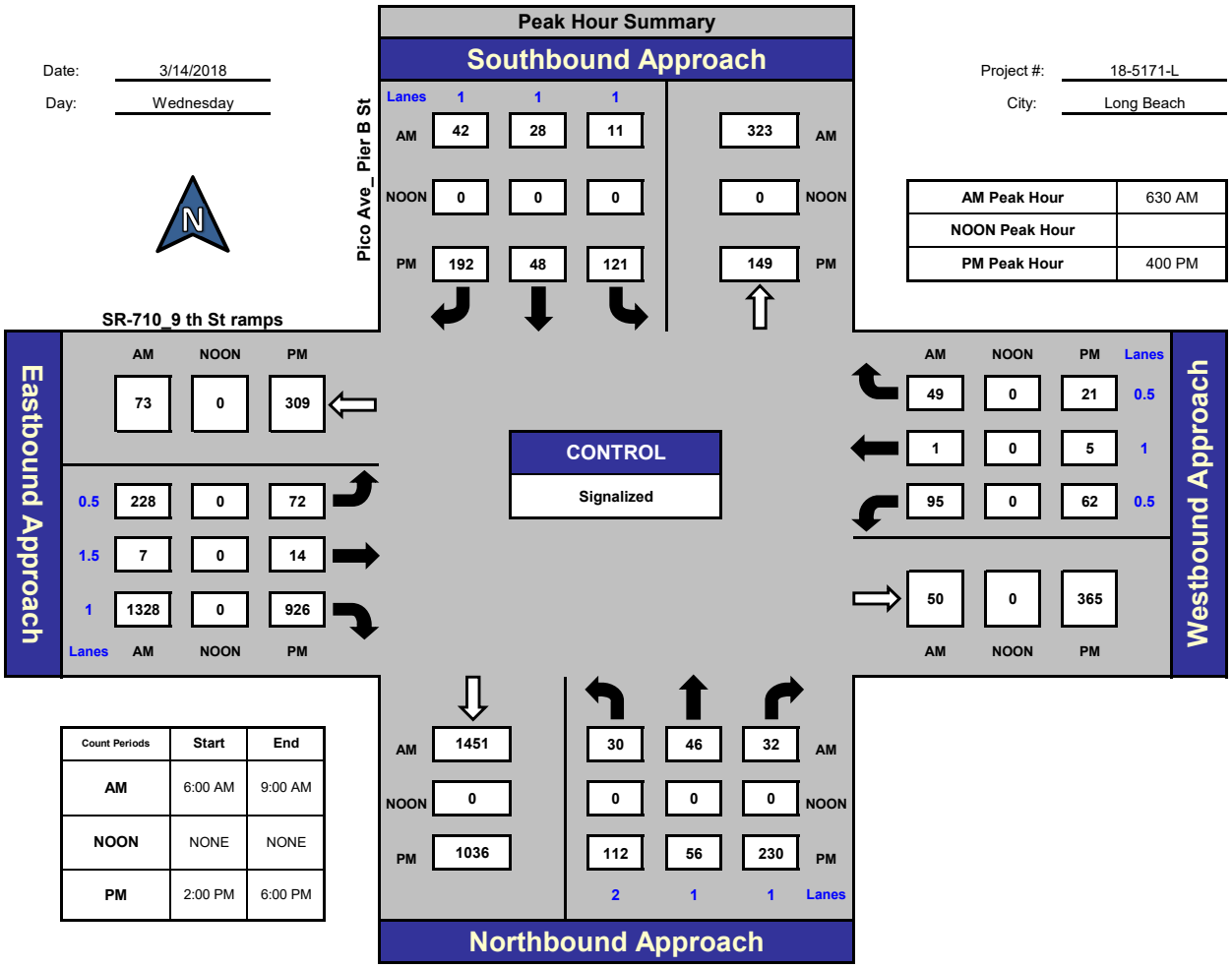
Prepared by:

National Data & Surveying Services

Pico Ave Pier B St and SR-710 9 th St ramps , Long Beach

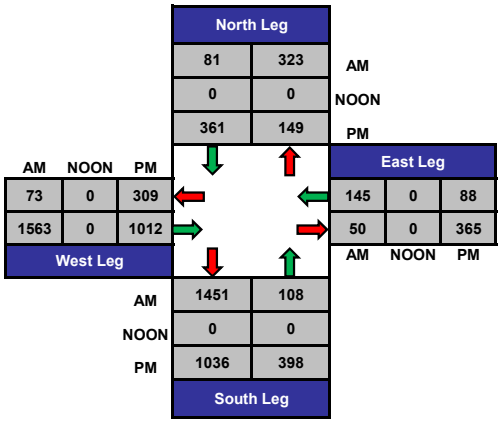
Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-L
City: Long Beach

AM Peak Hour	630 AM
NOON Peak Hour	
PM Peak Hour	400 PM

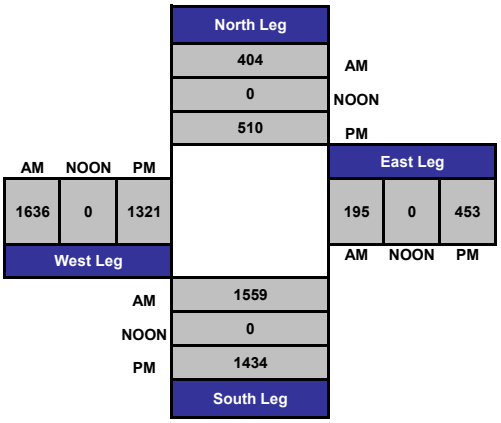


Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	1	1	1	1	1	0.5	1.5	1	0.5	1	0.5	
6:00 AM	4	5	2	1	4	7	32	2	139	7	0	18	221
6:15 AM	2	9	0	1	3	2	70	1	196	5	0	8	297
6:30 AM	6	14	4	1	6	4	74	1	263	6	0	9	388
6:45 AM	2	11	12	6	2	4	69	1	283	20	0	18	428
7:00 AM	5	7	3	1	5	4	31	3	253	28	0	6	346
7:15 AM	2	3	1	3	3	7	12	2	228	30	0	8	299
7:30 AM	6	4	2	2	7	3	14	0	224	17	0	8	287
7:45 AM	3	2	7	5	9	6	11	2	199	18	0	7	269
8:00 AM	9	4	9	5	3	2	8	1	124	12	2	6	185
8:15 AM	5	7	7	4	3	5	10	1	125	11	0	3	181
8:30 AM	5	5	8	0	1	2	7	1	121	9	0	7	166
8:45 AM	2	4	7	1	2	0	5	2	105	7	1	6	142
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	51	75	62	30	48	46	343	17	2260	170	3	104	3209
APPROACH %'s :	27.13%	39.89%	32.98%	24.19%	38.71%	37.10%	13.09%	0.65%	86.26%	61.37%	1.08%	37.55%	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	15	35	20	11	16	19	186	7	1027	84	0	41	1461
PEAK HR FACTOR :		0.700			0.885			0.864			0.822		0.853

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
2:00 PM	8	5	11	2	5	8	7	3	77	12	0	3	141
2:15 PM	33	2	11	1	6	12	7	3	68	8	1	5	157
2:30 PM	22	6	6	0	7	26	16	0	90	4	0	2	179
2:45 PM	26	11	0	0	9	36	10	0	80	0	0	0	172
3:00 PM	25	7	10	7	7	46	6	1	107	7	1	8	232
3:15 PM	14	5	13	8	10	23	6	2	97	8	0	2	188
3:30 PM	12	6	19	53	18	90	5	1	112	15	2	2	335
3:45 PM	10	11	17	15	9	22	12	6	133	4	0	4	243
4:00 PM	13	9	23	24	3	21	8	7	124	3	1	3	239
4:15 PM	16	5	39	22	10	32	16	0	191	11	2	5	349
4:30 PM	21	8	27	39	12	81	5	3	173	12	0	0	381
4:45 PM	30	7	41	20	7	25	5	4	165	19	0	3	326
5:00 PM	23	5	29	15	7	11	9	1	166	16	0	0	282
5:15 PM	16	5	11	3	6	6	7	4	177	18	1	1	255
5:30 PM	4	4	6	13	4	15	4	6	201	11	2	2	272
5:45 PM	10	1	11	5	4	7	1	4	155	8	1	1	208
TOTAL VOLUMES :	NL 283	NT 97	NR 274	SL 227	ST 124	SR 461	EL 124	ET 45	ER 2116	WL 156	WT 11	WR 41	TOTAL 3959
APPROACH %'s :	43.27%	14.83%	41.90%	27.96%	15.27%	56.77%	5.43%	1.97%	92.60%	75.00%	5.29%	19.71%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	80	29	130	105	32	159	34	14	653	45	3	11	1295
PEAK HR FACTOR :		0.766			0.561			0.847			0.670		0.850

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	2	1	0	0	3
6:15 AM	0	0	0	0	0	0	1	0	7	0	0	0	8
6:30 AM	0	0	1	0	1	0	2	0	6	0	0	1	11
6:45 AM	0	0	1	0	0	0	4	0	13	1	0	1	20
7:00 AM	0	0	0	0	0	0	2	0	15	0	0	1	18
7:15 AM	0	0	0	0	0	0	4	0	17	2	0	2	25
7:30 AM	0	0	0	0	0	0	5	0	13	1	0	1	20
7:45 AM	0	2	2	2	0	0	4	0	14	1	0	2	27
8:00 AM	0	0	1	0	1	2	3	0	17	1	0	1	26
8:15 AM	1	2	4	0	3	2	4	0	16	2	0	2	36
8:30 AM	0	1	2	0	2	0	0	0	20	3	0	1	29
8:45 AM	1	3	0	2	0	5	2	0	11	0	0	0	24
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	8	11	4	7	9	31	0	151	12	0	12	247
APPROACH %'s :	9.52%	38.10%	52.38%	20.00%	35.00%	45.00%	17.03%	0.00%	82.97%	50.00%	0.00%	50.00%	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	0	2	0	1	0	12	0	51	3	0	5	74
PEAK HR FACTOR :		0.500			0.250			0.750			0.500		0.853

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
2:00 PM	2	1	9	1	0	2	1	0	5	1	0	1	23
2:15 PM	3	2	4	0	1	4	2	0	9	1	0	2	28
2:30 PM	4	4	0	0	2	2	0	0	4	1	0	0	17
2:45 PM	6	4	0	0	0	2	1	0	9	0	0	0	22
3:00 PM	4	6	6	2	0	1	0	0	2	2	0	0	23
3:15 PM	2	4	6	2	0	4	3	0	9	0	0	0	30
3:30 PM	1	1	7	1	1	0	0	0	3	1	0	2	17
3:45 PM	0	2	11	1	1	0	1	0	6	0	0	0	22
4:00 PM	2	0	14	0	0	0	0	0	12	1	0	2	31
4:15 PM	2	0	9	1	1	1	1	0	5	0	0	1	21
4:30 PM	2	3	10	1	0	2	1	0	6	0	0	1	26
4:45 PM	0	2	7	2	1	0	1	0	8	0	0	1	22
5:00 PM	0	0	1	0	0	0	3	0	7	0	0	0	11
5:15 PM	0	1	1	0	0	0	2	0	14	0	0	2	20
5:30 PM	0	1	2	0	0	0	1	1	10	0	0	2	17
5:45 PM	0	3	1	0	0	0	6	0	14	1	0	1	26
TOTAL VOLUMES :	NL 28	NT 34	NR 88	SL 11	ST 7	SR 18	EL 23	ET 1	ER 123	WL 8	WT 0	WR 15	TOTAL 356
APPROACH %'s :	18.67%	22.67%	58.67%	30.56%	19.44%	50.00%	15.65%	0.68%	83.67%	34.78%	0.00%	65.22%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	6	5	40	4	2	3	3	0	31	1	0	5	100
PEAK HR FACTOR :	0.797			0.750			0.708			0.500			0.850

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
6:00 AM	0	0	0	0	0	1	1	0	19	1	0	0	22
6:15 AM	1	0	0	0	0	0	3	0	21	0	0	0	25
6:30 AM	0	0	0	0	0	0	6	0	30	0	0	0	36
6:45 AM	0	0	0	0	0	0	4	0	36	0	0	0	40
7:00 AM	0	0	0	0	0	2	3	0	50	0	1	2	58
7:15 AM	3	0	2	0	0	0	1	0	64	3	0	0	73
7:30 AM	4	0	6	0	0	0	6	0	52	0	0	0	68
7:45 AM	8	0	2	0	0	5	5	0	48	1	0	0	69
8:00 AM	9	1	7	0	0	0	3	0	64	2	0	0	86
8:15 AM	17	2	10	1	0	6	8	1	53	4	0	0	102
8:30 AM	18	1	6	2	1	17	14	0	69	0	0	0	128
8:45 AM	14	1	7	2	0	17	6	0	75	2	0	0	124
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	74	5	40	5	1	48	60	1	581	13	1	2	831
APPROACH %'s :	62.18%	4.20%	33.61%	9.26%	1.85%	88.89%	9.35%	0.16%	90.50%	81.25%	6.25%	12.50%	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	3	0	2	0	0	2	14	0	180	3	1	2	207
PEAK HR FACTOR :	0.250			0.250			0.746			0.500			0.853

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
2:00 PM	9	0	5	2	0	9	18	0	90	3	0	0	136
2:15 PM	11	2	11	1	0	10	11	0	85	1	0	2	134
2:30 PM	14	7	2	0	0	13	14	0	90	2	0	0	142
2:45 PM	12	4	0	0	0	6	19	0	74	0	0	0	115
3:00 PM	8	4	12	6	1	15	18	0	79	5	0	0	148
3:15 PM	4	6	4	4	0	8	7	0	52	2	0	0	87
3:30 PM	6	0	16	3	1	5	8	0	49	1	0	0	89
3:45 PM	1	2	9	1	0	5	9	0	72	0	0	2	101
4:00 PM	4	1	9	0	1	7	7	0	60	1	0	1	91
4:15 PM	4	0	14	1	1	4	4	0	44	2	1	0	75
4:30 PM	5	1	7	2	0	1	5	0	51	0	1	0	73
4:45 PM	5	0	3	1	0	6	5	0	47	4	0	3	74
5:00 PM	3	0	2	0	1	2	2	0	49	2	0	1	62
5:15 PM	0	0	0	0	0	1	7	0	59	7	0	0	74
5:30 PM	1	0	1	0	3	1	6	0	43	0	0	1	56
5:45 PM	4	1	3	2	1	3	3	0	52	2	0	0	71
TOTAL VOLUMES :	NL 91	NT 28	NR 98	SL 23	ST 9	SR 96	EL 143	ET 0	ER 996	WL 32	WT 2	WR 10	TOTAL 1528
APPROACH %'s :	41.94%	12.90%	45.16%	17.97%	7.03%	75.00%	12.55%	0.00%	87.45%	72.73%	4.55%	22.73%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	18	2	33	4	2	18	21	0	202	7	2	4	313
PEAK HR FACTOR :		0.736			0.750			0.832			0.464		0.850

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
6:00 AM	0	0	0	0	0	0	1	0	3	0	0	0	4
6:15 AM	0	0	0	0	0	0	2	0	6	0	0	0	8
6:30 AM	0	0	0	0	0	0	1	0	3	0	0	0	4
6:45 AM	0	0	0	0	0	0	0	0	3	0	0	0	3
7:00 AM	0	1	0	0	0	1	1	0	8	0	0	0	11
7:15 AM	0	1	6	0	0	0	1	0	6	0	0	1	15
7:30 AM	2	1	1	0	2	0	2	0	7	0	0	0	15
7:45 AM	0	4	3	4	5	0	0	0	4	2	0	0	22
8:00 AM	0	3	2	0	5	0	2	0	11	0	0	0	23
8:15 AM	2	3	3	0	6	0	2	0	7	3	0	0	26
8:30 AM	1	7	2	1	4	1	3	0	6	1	0	1	27
8:45 AM	1	2	5	4	6	1	1	0	5	1	0	1	27
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	22	22	9	28	3	16	0	69	7	0	3	185
APPROACH %'s :	12.00%	44.00%	44.00%	22.50%	70.00%	7.50%	18.82%	0.00%	81.18%	70.00%	0.00%	30.00%	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	2	6	0	0	1	3	0	20	0	0	1	33
PEAK HR FACTOR :	0.286			0.250			0.639			0.250			0.853

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
2:00 PM	3	6	3	4	8	1	1	0	5	1	0	0	32
2:15 PM	0	7	10	0	8	1	1	0	4	0	0	0	31
2:30 PM	5	13	0	0	5	3	2	0	8	0	0	1	37
2:45 PM	9	8	0	0	7	3	0	0	7	0	0	0	34
3:00 PM	4	12	1	1	7	1	0	0	7	0	0	0	33
3:15 PM	6	11	3	0	7	1	1	0	2	0	0	0	31
3:30 PM	0	4	3	0	1	1	1	1	5	1	0	1	18
3:45 PM	0	5	9	2	7	0	0	0	5	1	0	0	29
4:00 PM	1	9	7	1	4	0	1	0	3	2	0	0	28
4:15 PM	1	4	6	2	5	1	0	0	2	1	0	0	22
4:30 PM	1	0	2	1	2	1	1	0	3	1	0	1	13
4:45 PM	1	0	0	0	0	0	0	0	6	0	0	0	7
5:00 PM	0	1	1	0	0	0	1	0	7	1	0	1	12
5:15 PM	0	1	0	0	5	0	1	0	4	0	0	0	11
5:30 PM	0	0	1	0	2	0	0	0	6	1	0	0	10
5:45 PM	0	5	2	1	6	0	0	0	5	2	0	0	21
TOTAL VOLUMES :	NL 31	NT 86	NR 48	SL 12	ST 74	SR 13	EL 10	ET 1	ER 79	WL 11	WT 0	WR 4	TOTAL 369
APPROACH %'s :	18.79%	52.12%	29.09%	12.12%	74.75%	13.13%	11.11%	1.11%	87.78%	73.33%	0.00%	26.67%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	4	13	15	4	11	2	2	0	14	4	0	1	70
PEAK HR FACTOR :		0.471			0.531			0.667			0.625		0.850

UTURNS

NB	SB	EB	WB
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	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	0	0
0	0	0	0
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
6:00 AM	1	1	2	0	3	1	4	0	11	2	0	0	25
6:15 AM	4	2	0	0	2	2	2	0	15	0	0	0	27
6:30 AM	4	0	1	0	3	1	1	0	14	0	0	0	24
6:45 AM	3	3	0	0	1	4	6	0	11	1	0	0	29
7:00 AM	2	6	0	0	1	6	3	0	10	1	0	0	29
7:15 AM	3	0	1	0	6	9	3	0	15	3	0	0	40
7:30 AM	2	4	0	0	2	2	2	0	9	1	0	0	22
7:45 AM	1	6	1	0	2	2	0	0	14	0	0	0	26
8:00 AM	3	1	1	0	4	1	8	0	11	2	0	0	31
8:15 AM	7	6	3	1	2	3	4	0	20	0	0	0	46
8:30 AM	4	3	1	0	5	1	2	1	9	2	0	0	28
8:45 AM	4	4	3	0	4	5	4	0	20	2	0	2	48
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	38	36	13	1	35	37	39	1	159	14	0	2	375
APPROACH %'s :	43.68%	41.38%	14.94%	1.37%	47.95%	50.68%	19.60%	0.50%	79.90%	87.50%	0.00%	12.50%	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	12	9	2	0	11	20	13	0	50	5	0	0	122
PEAK HR FACTOR :	0.719			0.517			0.875			0.417			0.853

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-L **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave_ Pier B St			Pico Ave_ Pier B St			SR-710_9 th St ramps			SR-710_9 th St ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 1	NR 1	SL 1	ST 1	SR 1	EL 0.5	ET 1.5	ER 1	WL 0.5	WT 1	WR 0.5	TOTAL
2:00 PM	2	4	2	1	1	6	5	1	11	3	0	1	37
2:15 PM	3	2	2	1	1	1	3	0	10	2	0	0	25
2:30 PM	3	4	0	0	2	9	4	0	12	2	0	0	36
2:45 PM	3	5	0	0	1	7	4	0	8	0	0	0	28
3:00 PM	4	2	3	0	2	2	5	1	7	2	0	0	28
3:15 PM	1	4	4	0	0	2	1	0	8	0	0	0	20
3:30 PM	0	0	3	1	4	2	2	0	10	0	0	1	23
3:45 PM	1	0	7	2	0	1	2	0	3	1	0	0	17
4:00 PM	2	1	3	2	0	1	3	0	10	2	0	0	24
4:15 PM	0	0	4	1	0	5	4	0	7	3	0	0	24
4:30 PM	2	4	3	0	0	3	4	0	4	0	0	0	20
4:45 PM	0	2	2	1	1	1	1	0	5	0	0	0	13
5:00 PM	2	0	3	0	0	1	1	0	3	0	0	0	10
5:15 PM	1	0	0	0	0	3	1	0	4	4	0	0	13
5:30 PM	0	2	2	0	0	2	2	0	8	0	0	0	16
5:45 PM	0	0	2	0	1	2	0	0	7	0	0	0	12
TOTAL VOLUMES :	24	30	40	9	13	48	42	2	117	19	0	2	346
APPROACH %'s :	25.53%	31.91%	42.55%	12.86%	18.57%	68.57%	26.09%	1.24%	72.67%	90.48%	0.00%	9.52%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	4	7	12	4	1	10	12	0	26	5	0	0	81
PEAK HR FACTOR :		0.639			0.625			0.731			0.417		0.850

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 1.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 0	WT 1	WR 1	TOTAL
6:00 AM	2	4	5	27	13	4	9	0	2	3	1	4	74
6:15 AM	0	5	3	18	52	3	9	0	1	5	0	3	99
6:30 AM	1	9	10	27	81	3	9	0	0	8	0	1	149
6:45 AM	0	5	7	33	67	5	12	0	4	5	0	1	139
7:00 AM	1	5	7	45	89	0	8	0	3	2	0	2	162
7:15 AM	0	4	11	40	55	3	10	0	1	7	0	7	138
7:30 AM	1	6	10	28	50	7	8	0	0	6	0	14	130
7:45 AM	0	10	13	33	56	8	8	0	2	5	0	30	165
8:00 AM	2	20	10	15	40	7	10	1	1	5	0	21	132
8:15 AM	3	20	12	24	45	7	5	0	0	2	2	11	131
8:30 AM	2	21	4	23	45	8	8	1	2	3	0	13	130
8:45 AM	2	22	13	29	53	16	11	0	0	8	1	11	166
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	14	131	105	342	646	71	107	2	16	59	4	118	1615
APPROACH %'s :	5.60%	52.40%	42.00%	32.29%	61.00%	6.70%	85.60%	1.60%	12.80%	32.60%	2.21%	65.19%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	2	25	41	146	250	18	34	0	6	20	0	53	595
PEAK HR FACTOR :		0.739			0.772			0.909			0.521		0.902

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 1.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 0	WT 1	WR 1	TOTAL
2:00 PM	1	39	14	18	34	14	8	2	4	13	0	32	179
2:15 PM	1	35	20	19	49	12	11	0	1	6	0	37	191
2:30 PM	1	44	9	13	42	10	14	1	0	6	1	45	186
2:45 PM	2	49	6	25	43	4	15	1	2	10	0	43	200
3:00 PM	2	46	14	20	34	14	17	0	1	12	1	64	225
3:15 PM	3	40	9	25	52	12	10	0	2	5	1	49	208
3:30 PM	1	39	17	21	37	14	17	2	2	7	0	45	202
3:45 PM	3	40	3	16	39	12	7	0	5	11	0	39	175
4:00 PM	3	37	7	21	24	12	10	1	5	8	0	40	168
4:15 PM	1	46	6	16	54	12	11	0	3	10	0	38	197
4:30 PM	3	33	10	25	89	18	10	0	1	9	1	24	223
4:45 PM	2	40	11	14	47	8	15	0	2	8	0	54	201
5:00 PM	1	20	4	20	76	14	9	0	0	3	0	8	155
5:15 PM	1	11	4	14	94	10	11	0	0	8	0	10	163
5:30 PM	0	18	5	20	59	10	12	0	0	1	0	5	130
5:45 PM	3	17	5	19	39	10	8	0	0	1	0	4	106
TOTAL VOLUMES :	NL 28	NT 554	NR 144	SL 306	ST 812	SR 186	EL 185	ET 7	ER 28	WL 118	WT 4	WR 537	TOTAL 2909
APPROACH %'s :	3.86%	76.31%	19.83%	23.47%	62.27%	14.26%	84.09%	3.18%	12.73%	17.91%	0.61%	81.49%	
PEAK HR START TIME :	245 PM												TOTAL
PEAK HR VOL :	8	174	46	91	166	44	59	3	7	34	2	201	835
PEAK HR FACTOR :		0.919			0.846			0.821			0.769		0.928

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Henry Ford Ave and Pier A Wy Terminal Island Fwy Ramps , Long Beach

Date: 3/14/2018
Day: Wednesday

Project #: 18-5171-048
City: Long Beach

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	245 PM

Peak Hour Summary

Southbound Approach (Henry Ford Ave)

Lanes	0.5	1.5	2		
AM	18	250	146	112	AM
NOON	0	0	0	0	NOON
PM	44	166	91	434	PM

Eastbound Approach (Pier A Wy_Terminal Island Fwy Ramps)

Lanes	AM	NOON	PM
	20	0	54
1	34	0	59
0.5	0	0	3
0.5	6	0	7

Westbound Approach

Lanes	AM	NOON	PM
1	53	0	201
1	0	0	2
0	20	0	34
	187	0	140

CONTROL: Signalized

Northbound Approach

Lanes	1	2	1	
AM	276	2	25	41	AM
NOON	0	0	0	0	NOON
PM	207	8	174	46	PM

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	414	112	AM
NOON	0	0	NOON
PM	301	434	PM

West Leg				East Leg			
AM	NOON	PM		AM	NOON	PM	
20	0	54		73	0	237	
40	0	69		187	0	140	

	South Leg	
AM	276	68
NOON	0	0
PM	207	228

Total Volume Per Leg

North Leg	
526	AM
0	NOON
735	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
60	0	123	260	0	377

South Leg	
AM	344
NOON	0
PM	435

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	1	2	1.5	0.5	1	0.5	0.5	0	1	1					
6:00 AM	2	4	4	25	4	4	9	0	2	2	0	3	59	0	0	0	0
6:15 AM	0	5	3	14	44	3	9	0	1	5	0	2	86	0	0	0	0
6:30 AM	1	8	10	22	60	3	8	0	0	7	0	1	120	0	0	0	0
6:45 AM	0	5	6	27	39	4	12	0	4	3	0	1	101	0	0	0	0
7:00 AM	1	5	7	30	50	0	8	0	2	2	0	2	107	0	0	0	0
7:15 AM	0	2	8	20	27	3	8	0	1	3	0	3	75	0	0	0	0
7:30 AM	1	5	7	19	14	6	8	0	0	1	0	3	64	0	0	0	0
7:45 AM	0	4	9	16	12	8	8	0	2	0	0	7	66	0	0	0	0
8:00 AM	2	7	5	5	4	6	9	1	1	2	0	8	50	0	0	0	0
8:15 AM	3	8	3	7	3	7	5	0	0	1	2	7	46	0	0	0	0
8:30 AM	2	7	2	8	9	7	7	1	2	1	0	6	52	0	0	0	0
8:45 AM	2	8	3	14	15	15	11	0	0	5	0	2	75	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	14	68	67	207	281	66	102	2	15	32	2	45	901	0	0	0	0
APPROACH %'s :	9.40%	45.64%	44.97%	37.36%	50.72%	11.91%	85.71%	1.68%	12.61%	40.51%	2.53%	56.96%					
PEAK HR START TIME :	700 AM												TOTAL				
PEAK HR VOL :	2	16	31	85	103	17	32	0	5	6	0	15	312				
PEAK HR FACTOR :	0.942			0.641			0.925			0.750			0.729				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
LANES:	NL 1	NT 2	NR 1	SL 2	ST 1.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 0	WT 1	WR 1	TOTAL	NB	SB	EB	WB
2:00 PM	1	6	3	4	9	14	7	1	3	6	0	5	59	0	0	0	0
2:15 PM	1	7	2	1	9	12	10	0	1	1	0	4	48	0	0	0	0
2:30 PM	1	11	2	3	4	10	14	0	0	2	1	16	64	0	0	0	0
2:45 PM	1	7	4	4	4	1	15	1	2	4	0	9	52	0	0	0	0
3:00 PM	1	9	1	4	4	14	16	0	1	3	1	26	80	0	0	0	0
3:15 PM	3	9	4	1	12	12	10	0	2	1	1	9	64	0	0	0	0
3:30 PM	1	8	9	4	5	14	17	2	2	4	0	22	88	0	0	0	0
3:45 PM	3	11	0	2	9	11	7	0	4	4	0	6	57	0	0	0	0
4:00 PM	3	6	1	5	8	11	9	1	4	5	0	14	67	0	0	0	0
4:15 PM	1	12	0	3	26	12	10	0	3	5	0	15	87	0	0	0	0
4:30 PM	3	13	5	6	46	17	9	0	1	7	1	10	118	0	0	0	0
4:45 PM	2	29	7	4	20	8	14	0	2	6	0	46	138	0	0	0	0
5:00 PM	1	16	3	5	31	14	8	0	0	3	0	6	87	0	0	0	0
5:15 PM	1	7	1	3	54	9	11	0	0	6	0	8	100	0	0	0	0
5:30 PM	0	8	2	5	13	10	11	0	0	0	0	3	52	0	0	0	0
5:45 PM	3	4	0	7	4	10	8	0	0	1	0	0	37	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	26	163	44	61	258	179	176	5	25	58	4	199	1198	0	0	0	0
APPROACH %'s :	11.16%	69.96%	18.88%	12.25%	51.81%	35.94%	85.44%	2.43%	12.14%	22.22%	1.53%	76.25%					
PEAK HR START TIME :	245 PM												TOTAL				
PEAK HR VOL :	6	33	18	13	25	41	58	3	7	12	2	66	284				
PEAK HR FACTOR :		0.792			0.790			0.810			0.667		0.807				

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 1.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 0	WT 1	WR 1	TOTAL
6:00 AM	0	0	0	0	5	0	0	0	0	0	0	0	5
6:15 AM	0	0	0	2	1	0	0	0	0	0	0	0	3
6:30 AM	0	1	0	2	7	0	0	0	0	0	0	0	10
6:45 AM	0	0	0	2	9	1	0	0	0	0	0	0	12
7:00 AM	0	0	0	3	19	0	0	0	0	0	0	0	22
7:15 AM	0	2	1	5	10	0	0	0	0	3	0	1	22
7:30 AM	0	1	2	2	12	0	0	0	0	3	0	3	23
7:45 AM	0	3	1	5	13	0	0	0	0	2	0	4	28
8:00 AM	0	5	1	2	13	0	0	0	0	3	0	2	26
8:15 AM	0	6	5	5	11	0	0	0	0	1	0	4	32
8:30 AM	0	6	1	6	13	0	0	0	0	2	0	2	30
8:45 AM	0	2	1	2	9	0	0	0	0	1	0	3	18
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	26	12	36	122	1	0	0	0	15	0	19	231
APPROACH %'s :	0.00%	68.42%	31.58%	22.64%	76.73%	0.63%	#DIV/0!	#DIV/0!	#DIV/0!	44.12%	0.00%	55.88%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	6	4	15	54	0	0	0	0	8	0	8	95
PEAK HR FACTOR :		0.625			0.784			0.000			0.667		0.729

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 1.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 0	WT 1	WR 1	TOTAL
2:00 PM	0	15	3	3	5	0	1	0	0	4	0	15	46
2:15 PM	0	11	9	6	8	0	0	0	0	1	0	13	48
2:30 PM	0	13	2	3	1	0	0	0	0	0	0	12	31
2:45 PM	0	19	1	6	9	0	0	0	0	2	0	13	50
3:00 PM	0	17	5	6	7	0	0	0	0	4	0	15	54
3:15 PM	0	10	3	3	6	0	0	0	0	1	0	8	31
3:30 PM	0	15	2	2	11	0	0	0	0	2	0	10	42
3:45 PM	0	18	0	2	6	0	0	0	0	3	0	9	38
4:00 PM	0	14	3	5	6	0	0	0	0	2	0	7	37
4:15 PM	0	16	3	1	8	0	0	0	0	5	0	7	40
4:30 PM	0	7	2	8	9	0	0	0	0	1	0	4	31
4:45 PM	0	8	3	1	12	0	0	0	0	1	0	2	27
5:00 PM	0	1	1	2	15	0	0	0	0	0	0	1	20
5:15 PM	0	3	1	5	10	0	0	0	0	1	0	1	21
5:30 PM	0	4	0	3	14	0	0	0	0	0	0	2	23
5:45 PM	0	6	1	1	7	0	0	0	0	0	0	3	18
TOTAL VOLUMES :	NL 0	NT 177	NR 39	SL 57	ST 134	SR 0	EL 1	ET 0	ER 0	WL 27	WT 0	WR 122	TOTAL 557
APPROACH %'s :	0.00%	81.94%	18.06%	29.84%	70.16%	0.00%	100.00%	0.00%	0.00%	18.12%	0.00%	81.88%	
PEAK HR START TIME :	245 PM												TOTAL
PEAK HR VOL :	0	61	11	17	33	0	0	0	0	9	0	46	177
PEAK HR FACTOR :		0.818			0.833			0.000			0.724		0.807

UTURNS	NB	SB	EB	WB
	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	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	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	0	0	0
	0	0	0	0
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	1	2	1.5	0.5	1	0.5	0.5	0	1	1					
6:00 AM	0	0	1	1	3	0	0	0	0	0	0	0	5	0	0	0	0
6:15 AM	0	0	0	1	6	0	0	0	0	0	0	0	7	0	0	0	0
6:30 AM	0	0	0	1	10	0	0	0	0	0	0	0	11	0	0	0	0
6:45 AM	0	0	1	2	15	0	0	0	0	0	0	0	18	0	0	0	0
7:00 AM	0	0	0	7	13	0	0	0	0	0	0	0	20	0	0	0	0
7:15 AM	0	0	0	5	10	0	0	0	0	0	0	0	15	0	0	0	0
7:30 AM	0	0	0	4	14	0	0	0	0	0	0	7	25	0	0	0	0
7:45 AM	0	2	1	8	24	0	0	0	0	0	0	14	49	0	0	0	0
8:00 AM	0	4	0	4	19	0	0	0	0	0	0	8	35	0	0	0	0
8:15 AM	0	2	0	4	23	0	0	0	0	0	0	0	29	0	0	0	0
8:30 AM	0	5	0	4	16	0	0	0	0	0	0	4	29	0	0	0	0
8:45 AM	0	7	1	7	23	0	0	0	0	1	0	4	43	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	0	20	4	48	176	0	0	0	0	1	0	37	286	0	0	0	0
APPROACH %'s :	0.00%	83.33%	16.67%	21.43%	78.57%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	2.63%	0.00%	97.37%					

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	2	1	24	61	0	0	0	0	0	0	21	109
PEAK HR FACTOR :		0.250			0.664			0.000			0.375		0.729

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

Containers

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 1.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 0	WT 1	WR 1	TOTAL
2:00 PM	0	12	3	8	16	0	0	0	0	1	0	7	47
2:15 PM	0	11	3	9	22	0	0	0	0	1	0	13	59
2:30 PM	0	10	4	6	31	0	0	0	0	1	0	14	66
2:45 PM	0	18	0	11	20	0	0	0	0	0	0	13	62
3:00 PM	0	9	1	7	19	0	0	0	0	1	0	14	51
3:15 PM	0	10	1	17	30	0	0	0	0	0	0	22	80
3:30 PM	0	9	2	13	18	0	0	0	0	0	0	9	51
3:45 PM	0	6	1	7	15	0	0	0	0	1	0	15	45
4:00 PM	0	10	3	10	5	0	0	0	0	0	0	10	38
4:15 PM	0	14	0	11	14	0	0	0	0	0	0	6	45
4:30 PM	0	10	1	7	28	0	0	0	0	0	0	7	53
4:45 PM	0	3	0	7	12	0	0	0	0	0	0	6	28
5:00 PM	0	2	0	9	26	0	0	0	0	0	0	0	37
5:15 PM	0	1	1	6	25	1	0	0	0	1	0	1	36
5:30 PM	0	1	3	9	19	0	1	0	0	1	0	0	34
5:45 PM	0	4	0	7	21	0	0	0	0	0	0	1	33
TOTAL VOLUMES :	NL 0	NT 130	NR 23	SL 144	ST 321	SR 1	EL 1	ET 0	ER 0	WL 7	WT 0	WR 138	TOTAL 765
APPROACH %'s :	0.00%	84.97%	15.03%	30.90%	68.88%	0.21%	100.00%	0.00%	0.00%	4.83%	0.00%	95.17%	
PEAK HR START TIME :	245 PM												TOTAL
PEAK HR VOL :	0	46	4	48	87	0	0	0	0	1	0	58	244
PEAK HR FACTOR :		0.694			0.718			0.000			0.670		0.807

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 1.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 0	WT 1	WR 1	TOTAL
6:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	2
6:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	4	0	0	0	0	0	0	0	4
6:45 AM	0	0	0	1	3	0	0	0	0	0	0	0	4
7:00 AM	0	0	0	5	6	0	0	0	0	0	0	0	11
7:15 AM	0	0	2	9	8	0	0	0	0	1	0	3	23
7:30 AM	0	0	1	3	10	0	0	0	0	2	0	1	17
7:45 AM	0	0	1	1	7	0	0	0	0	3	0	3	15
8:00 AM	0	2	4	3	4	0	0	0	0	0	0	2	15
8:15 AM	0	4	3	5	6	0	0	0	0	0	0	0	18
8:30 AM	0	2	0	3	5	0	0	0	0	0	0	1	11
8:45 AM	0	4	7	6	5	0	0	0	0	0	1	1	24
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	12	18	38	59	0	0	0	0	6	1	11	145
APPROACH %'s :	0.00%	40.00%	60.00%	39.18%	60.82%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	33.33%	5.56%	61.11%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	4	18	31	0	0	0	0	6	0	7	66
PEAK HR FACTOR :		0.500			0.721			0.000			0.542		0.729

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 1.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 0	WT 1	WR 1	TOTAL
2:00 PM	0	6	5	3	3	0	0	0	0	1	0	5	23
2:15 PM	0	6	6	2	8	0	0	0	0	3	0	7	32
2:30 PM	0	7	1	0	5	0	0	0	0	2	0	3	18
2:45 PM	0	3	1	3	8	0	0	0	0	4	0	8	27
3:00 PM	0	11	6	3	2	0	0	0	0	4	0	7	33
3:15 PM	0	11	1	2	4	0	0	0	0	3	0	8	29
3:30 PM	0	6	4	2	3	0	0	0	0	1	0	3	19
3:45 PM	0	3	2	4	8	0	0	0	0	3	0	9	29
4:00 PM	0	6	0	1	5	0	0	0	0	1	0	8	21
4:15 PM	0	4	3	1	5	0	0	0	0	0	0	8	21
4:30 PM	0	2	2	4	5	0	0	0	0	1	0	2	16
4:45 PM	0	0	1	2	3	0	0	0	0	1	0	0	7
5:00 PM	0	1	0	4	4	0	0	0	0	0	0	1	10
5:15 PM	0	0	1	0	5	0	0	0	0	0	0	0	6
5:30 PM	0	3	0	2	12	0	0	0	0	0	0	0	17
5:45 PM	0	3	4	3	7	0	0	0	0	0	0	0	17
TOTAL VOLUMES :	NL 0	NT 72	NR 37	SL 36	ST 87	SR 0	EL 0	ET 0	ER 0	WL 24	WT 0	WR 69	TOTAL 325
APPROACH %'s :	0.00%	66.06%	33.94%	29.27%	70.73%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	25.81%	0.00%	74.19%	
PEAK HR START TIME :	245 PM												TOTAL
PEAK HR VOL :	0	31	12	10	17	0	0	0	0	12	0	26	108
PEAK HR FACTOR :		0.632			0.614			0.000			0.792		0.807

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 1.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 0	WT 1	WR 1	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	1	1	1	3
6:15 AM	0	0	0	0	1	0	0	0	0	0	0	1	2
6:30 AM	0	0	0	2	0	0	1	0	0	1	0	0	4
6:45 AM	0	0	0	1	1	0	0	0	0	2	0	0	4
7:00 AM	0	0	0	0	1	0	0	0	1	0	0	0	2
7:15 AM	0	0	0	1	0	0	2	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
7:45 AM	0	1	1	3	0	0	0	0	0	0	0	2	7
8:00 AM	0	2	0	1	0	1	1	0	0	0	0	1	6
8:15 AM	0	0	1	3	2	0	0	0	0	0	0	0	6
8:30 AM	0	1	1	2	2	1	1	0	0	0	0	0	8
8:45 AM	0	1	1	0	1	1	0	0	0	1	0	1	6
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	5	4	13	8	4	5	0	1	5	1	6	52
APPROACH %'s :	0.00%	55.56%	44.44%	52.00%	32.00%	16.00%	83.33%	0.00%	16.67%	41.67%	8.33%	50.00%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	1	1	4	1	1	2	0	1	0	0	2	13
PEAK HR FACTOR :		0.250			0.500			0.375			0.250		0.729

UTURNS			
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-048 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Henry Ford Ave			Henry Ford Ave			Pier A Wy_Terminal Island Fwy Ramps			Pier A Wy_Terminal Island Fwy Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 2	ST 1.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 0	WT 1	WR 1	TOTAL
2:00 PM	0	0	0	0	1	0	0	1	1	1	0	0	4
2:15 PM	0	0	0	1	2	0	1	0	0	0	0	0	4
2:30 PM	0	3	0	1	1	0	0	1	0	1	0	0	7
2:45 PM	1	2	0	1	2	3	0	0	0	0	0	0	9
3:00 PM	1	0	1	0	2	0	1	0	0	0	0	2	7
3:15 PM	0	0	0	2	0	0	0	0	0	0	0	2	4
3:30 PM	0	1	0	0	0	0	0	0	0	0	0	1	2
3:45 PM	0	2	0	1	1	1	0	0	1	0	0	0	6
4:00 PM	0	1	0	0	0	1	1	0	1	0	0	1	5
4:15 PM	0	0	0	0	1	0	1	0	0	0	0	2	4
4:30 PM	0	1	0	0	1	1	1	0	0	0	0	1	5
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	2	0	1	1	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES :	2	12	1	8	12	6	7	2	3	2	0	9	64
APPROACH %'s :	13.33%	80.00%	6.67%	30.77%	46.15%	23.08%	58.33%	16.67%	25.00%	18.18%	0.00%	81.82%	
PEAK HR START TIME :	245 PM												TOTAL
PEAK HR VOL :	2	3	1	3	4	3	1	0	0	0	0	5	22
PEAK HR FACTOR :	0.500			0.417			0.250			0.625			0.807

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 0	ST 3	SR 2	EL 2	ET 0	ER 1	WL 0	WT 0	WR 0	TOTAL
6:00 AM	2	16	0	0	185	9	1	0	1	0	0	0	214
6:15 AM	2	15	0	0	258	4	2	0	1	0	0	0	282
6:30 AM	5	26	0	0	324	11	3	0	4	0	0	0	373
6:45 AM	2	31	0	0	365	12	1	0	0	0	0	0	411
7:00 AM	2	23	0	0	362	12	0	0	0	0	0	0	399
7:15 AM	5	22	0	0	365	11	5	0	2	0	0	0	410
7:30 AM	11	29	0	0	314	20	4	0	1	0	0	0	379
7:45 AM	9	40	0	0	289	26	5	0	0	0	0	0	369
8:00 AM	4	52	0	0	237	13	3	0	2	0	0	0	311
8:15 AM	4	57	0	0	240	7	16	0	2	0	0	0	326
8:30 AM	4	47	0	0	237	8	14	0	3	0	0	0	313
8:45 AM	3	55	0	0	220	10	8	0	1	0	0	0	297
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	53	413	0	0	3396	143	62	0	17	0	0	0	4084
APPROACH %'s :	11.37%	88.63%	0.00%	0.00%	95.96%	4.04%	78.48%	0.00%	21.52%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	20	105	0	0	1406	55	10	0	3	0	0	0	1599
PEAK HR FACTOR :		0.781			0.969			0.464			0.000		0.973

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 0	ST 3	SR 2	EL 2	ET 0	ER 1	WL 0	WT 0	WR 0	TOTAL
2:00 PM	1	60	0	0	214	13	17	0	3	0	0	0	308
2:15 PM	8	78	0	0	175	20	19	0	3	0	0	0	303
2:30 PM	2	75	0	0	210	21	23	0	4	0	0	0	335
2:45 PM	1	75	0	0	173	14	20	0	6	0	0	0	289
3:00 PM	1	82	0	0	228	16	17	0	2	0	0	0	346
3:15 PM	5	74	0	0	173	14	11	0	6	0	0	0	283
3:30 PM	2	74	0	0	209	11	10	0	5	0	0	0	311
3:45 PM	6	64	0	0	227	14	19	0	6	0	0	0	336
4:00 PM	1	81	0	0	220	5	19	0	7	0	0	0	333
4:15 PM	1	79	0	0	282	11	18	0	4	0	0	0	395
4:30 PM	0	73	0	0	257	3	24	0	19	0	0	0	376
4:45 PM	1	70	0	0	267	3	30	0	5	0	0	0	376
5:00 PM	0	57	0	0	243	8	16	0	4	0	0	0	328
5:15 PM	1	24	0	0	293	6	4	0	2	0	0	0	330
5:30 PM	3	26	0	0	280	6	4	0	1	0	0	0	320
5:45 PM	2	41	0	0	260	3	2	0	0	0	0	0	308
TOTAL VOLUMES :	35	1033	0	0	3711	168	253	0	77	0	0	0	5277
APPROACH %'s :	3.28%	96.72%	0.00%	0.00%	95.67%	4.33%	76.67%	0.00%	23.33%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	3	303	0	0	1026	22	91	0	35	0	0	0	1480
PEAK HR FACTOR :		0.933			0.894			0.733			0.000		0.937

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Pico Ave and Pier C St , Long Beach

Date: 3/14/2018
Day: Wednesday

Project #: 18-5171-M
City: Long Beach

AM Peak Hour	645 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach (Pico Ave)

Lanes	2	3	0		
AM	55	1406	0	115	AM
NOON	0	0	0	0	NOON
PM	22	1026	0	394	PM

Eastbound Approach (Pier C St)

Lanes	AM	NOON	PM
	75	0	25
2	10	0	91
0	0	0	0
1	3	0	35

Westbound Approach

Lanes	AM	NOON	PM
0	0	0	0
0	0	0	0
0	0	0	0
	0	0	0

CONTROL: Signalized

Northbound Approach

AM	1409	20	105	0	AM
NOON	0	0	0	0	NOON
PM	1061	3	303	0	PM
		1	2	0	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	1461	115	AM
NOON	0	0	NOON
PM	1048	394	PM

West Leg				East Leg			
AM	NOON	PM		AM	NOON	PM	
75	0	25		0	0	0	
13	0	126		0	0	0	

	South Leg	
AM	1409	125
NOON	0	0
PM	1061	306

Total Volume Per Leg

	North Leg	
AM	1576	AM
NOON	0	NOON
PM	1442	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
88	0	151	0	0	0

	South Leg
AM	1534
NOON	0
PM	1367

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	2	2	0	1	0	0	0	
6:00 AM	2	12	0	0	140	8	1	0	1	0	0	0	164
6:15 AM	2	10	0	0	208	4	0	0	1	0	0	0	225
6:30 AM	5	21	0	0	270	8	2	0	3	0	0	0	309
6:45 AM	2	25	0	0	298	11	0	0	0	0	0	0	336
7:00 AM	2	15	0	0	284	6	0	0	0	0	0	0	307
7:15 AM	3	4	0	0	255	8	2	0	2	0	0	0	274
7:30 AM	8	9	0	0	233	16	3	0	1	0	0	0	270
7:45 AM	9	16	0	0	202	21	3	0	0	0	0	0	251
8:00 AM	2	16	0	0	127	5	2	0	2	0	0	0	154
8:15 AM	3	20	0	0	126	4	3	0	0	0	0	0	156
8:30 AM	1	14	0	0	123	2	3	0	2	0	0	0	145
8:45 AM	0	15	0	0	103	2	1	0	1	0	0	0	122
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	39	177	0	0	2369	95	20	0	13	0	0	0	2713
APPROACH %'s :	18.06%	81.94%	0.00%	0.00%	96.14%	3.86%	60.61%	0.00%	39.39%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	15	53	0	0	1070	41	5	0	3	0	0	0	1187
PEAK HR FACTOR :		0.630			0.899			0.500			0.000		0.883

UTURNS	NB	SB	EB	WB
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	2	2	0	1	0	0	0	
2:00 PM	0	20	0	0	90	4	7	0	1	0	0	0	122
2:15 PM	4	35	0	0	68	6	10	0	1	0	0	0	124
2:30 PM	2	29	0	0	95	8	9	0	3	0	0	0	146
2:45 PM	1	30	0	0	76	7	10	0	2	0	0	0	126
3:00 PM	0	31	0	0	126	5	8	0	2	0	0	0	172
3:15 PM	2	27	0	0	97	8	5	0	4	0	0	0	143
3:30 PM	1	32	0	0	142	1	7	0	5	0	0	0	188
3:45 PM	5	27	0	0	140	4	9	0	4	0	0	0	189
4:00 PM	1	43	0	0	127	1	6	0	6	0	0	0	184
4:15 PM	0	47	0	0	220	3	9	0	3	0	0	0	282
4:30 PM	0	44	0	0	194	1	10	0	18	0	0	0	267
4:45 PM	1	52	0	0	198	1	27	0	5	0	0	0	284
5:00 PM	0	50	0	0	179	5	10	0	4	0	0	0	248
5:15 PM	1	22	0	0	195	5	3	0	2	0	0	0	228
5:30 PM	2	15	0	0	211	3	4	0	1	0	0	0	236
5:45 PM	1	21	0	0	165	3	1	0	0	0	0	0	191
TOTAL VOLUMES :	21	525	0	0	2323	65	135	0	61	0	0	0	3130
APPROACH %'s :	3.85%	96.15%	0.00%	0.00%	97.28%	2.72%	68.88%	0.00%	31.12%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	2	186	0	0	739	6	52	0	32	0	0	0	1017
PEAK HR FACTOR :		0.887			0.835			0.656			0.000		0.895

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	2	2	0	1	0	0	0	
6:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	7	0	0	0	0	0	0	0	7
6:30 AM	0	1	0	0	7	1	0	0	0	0	0	0	9
6:45 AM	0	0	0	0	12	0	1	0	0	0	0	0	13
7:00 AM	0	0	0	0	14	2	0	0	0	0	0	0	16
7:15 AM	0	0	0	0	19	1	0	0	0	0	0	0	20
7:30 AM	3	1	0	0	10	1	0	0	0	0	0	0	15
7:45 AM	0	6	0	0	13	1	0	0	0	0	0	0	20
8:00 AM	0	0	0	0	19	2	0	0	0	0	0	0	21
8:15 AM	0	3	0	0	20	2	2	0	1	0	0	0	28
8:30 AM	2	2	0	0	21	1	1	0	0	0	0	0	27
8:45 AM	3	3	0	0	12	2	1	0	0	0	0	0	21
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	8	16	0	0	157	13	5	0	1	0	0	0	200
APPROACH %'s :	33.33%	66.67%	0.00%	0.00%	92.35%	7.65%	83.33%	0.00%	16.67%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	3	1	0	0	55	4	1	0	0	0	0	0	64
PEAK HR FACTOR :	0.250			0.738			0.250			0.000			0.883

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	2	2	0	1	0	0	0	
2:00 PM	0	10	0	0	2	4	3	0	1	0	0	0	20
2:15 PM	2	5	0	0	7	3	2	0	0	0	0	0	19
2:30 PM	0	4	0	0	5	1	4	0	1	0	0	0	15
2:45 PM	0	7	0	0	9	1	5	0	3	0	0	0	25
3:00 PM	1	12	0	0	5	0	2	0	0	0	0	0	20
3:15 PM	3	9	0	0	7	2	3	0	1	0	0	0	25
3:30 PM	0	11	0	0	4	1	2	0	0	0	0	0	18
3:45 PM	1	6	0	0	6	2	4	0	0	0	0	0	19
4:00 PM	0	9	0	0	12	0	6	0	1	0	0	0	28
4:15 PM	1	9	0	0	5	1	3	0	0	0	0	0	19
4:30 PM	0	13	0	0	5	0	3	0	1	0	0	0	22
4:45 PM	0	8	0	0	8	0	0	0	0	0	0	0	16
5:00 PM	0	1	0	0	6	0	0	0	0	0	0	0	7
5:15 PM	0	1	0	0	16	0	0	0	0	0	0	0	17
5:30 PM	0	4	0	0	9	0	0	0	0	0	0	0	13
5:45 PM	0	4	0	0	17	0	0	0	0	0	0	0	21
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	8	113	0	0	123	15	37	0	8	0	0	0	304
APPROACH %'s :	6.61%	93.39%	0.00%	0.00%	89.13%	10.87%	82.22%	0.00%	17.78%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	1	39	0	0	30	1	12	0	2	0	0	0	85
PEAK HR FACTOR :		0.769			0.646			0.500			0.000		0.895

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	2	2	0	1	0	0	0	
6:00 AM	0	0	0	0	22	0	0	0	0	0	0	0	22
6:15 AM	0	1	0	0	20	0	0	0	0	0	0	0	21
6:30 AM	0	0	0	0	29	1	0	0	0	0	0	0	30
6:45 AM	0	0	0	0	39	1	0	0	0	0	0	0	40
7:00 AM	0	0	0	0	43	3	0	0	0	0	0	0	46
7:15 AM	0	6	0	0	65	2	0	0	0	0	0	0	73
7:30 AM	0	9	0	0	51	1	0	0	0	0	0	0	61
7:45 AM	0	9	0	0	47	2	1	0	0	0	0	0	59
8:00 AM	0	17	0	0	59	6	1	0	0	0	0	0	83
8:15 AM	0	22	0	0	59	0	7	0	0	0	0	0	88
8:30 AM	0	18	0	0	63	4	7	0	0	0	0	0	92
8:45 AM	0	18	0	0	71	6	4	0	0	0	0	0	99
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	100	0	0	568	26	20	0	0	0	0	0	714
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	95.62%	4.38%	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	0	15	0	0	198	7	0	0	0	0	0	0	220
PEAK HR FACTOR :		0.417			0.765			0.000			0.000		0.883

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	2	2	0	1	0	0	0	
2:00 PM	0	14	0	0	93	3	2	0	0	0	0	0	112
2:15 PM	0	17	0	0	79	8	4	0	0	0	0	0	108
2:30 PM	0	21	0	0	84	10	5	0	0	0	0	0	120
2:45 PM	0	14	0	0	67	4	3	0	1	0	0	0	89
3:00 PM	0	18	0	0	76	9	3	0	0	0	0	0	106
3:15 PM	0	12	0	0	52	3	2	0	0	0	0	0	69
3:30 PM	0	20	0	0	43	6	1	0	0	0	0	0	70
3:45 PM	0	11	0	0	66	8	4	0	1	0	0	0	90
4:00 PM	0	6	0	0	60	2	5	0	0	0	0	0	73
4:15 PM	0	14	0	0	41	6	4	0	1	0	0	0	66
4:30 PM	0	7	0	0	49	1	7	0	0	0	0	0	64
4:45 PM	0	5	0	0	49	2	2	0	0	0	0	0	58
5:00 PM	0	3	0	0	49	1	2	0	0	0	0	0	55
5:15 PM	0	0	0	0	66	0	0	0	0	0	0	0	66
5:30 PM	1	2	0	0	46	0	0	0	0	0	0	0	49
5:45 PM	1	8	0	0	58	0	1	0	0	0	0	0	68
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	172	0	0	978	63	45	0	3	0	0	0	1263
APPROACH %'s :	1.15%	98.85%	0.00%	0.00%	93.95%	6.05%	93.75%	0.00%	6.25%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	32	0	0	199	11	18	0	1	0	0	0	261
PEAK HR FACTOR :		0.571			0.847			0.679			0.000		0.895

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	2	2	0	1	0	0	0	
6:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	8	0	0	0	0	0	0	0	8
6:30 AM	0	1	0	0	4	0	0	0	0	0	0	0	5
6:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
7:00 AM	0	1	0	0	8	0	0	0	0	0	0	0	9
7:15 AM	0	7	0	0	6	0	1	0	0	0	0	0	14
7:30 AM	0	6	0	0	9	0	0	0	0	0	0	0	15
7:45 AM	0	2	0	0	10	1	0	0	0	0	0	0	13
8:00 AM	0	8	0	0	15	0	0	0	0	0	0	0	23
8:15 AM	0	6	0	0	15	0	0	0	1	0	0	0	22
8:30 AM	0	8	0	0	11	1	1	0	1	0	0	0	22
8:45 AM	0	7	0	0	11	0	2	0	0	0	0	0	20
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	46	0	0	102	2	4	0	2	0	0	0	156
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	98.08%	1.92%	66.67%	0.00%	33.33%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	0	14	0	0	25	0	1	0	0	0	0	0	40
PEAK HR FACTOR :		0.500			0.694			0.250			0.000		0.883

UTURNS			
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 0	ST 3	SR 2	EL 2	ET 0	ER 1	WL 0	WT 0	WR 0	TOTAL
2:00 PM	0	13	0	0	15	1	2	0	0	0	0	0	31
2:15 PM	0	15	0	0	8	1	1	0	1	0	0	0	26
2:30 PM	0	17	0	0	13	0	0	0	0	0	0	0	30
2:45 PM	0	18	0	0	13	1	1	0	0	0	0	0	33
3:00 PM	0	15	0	0	13	0	0	0	0	0	0	0	28
3:15 PM	0	18	0	0	10	0	1	0	1	0	0	0	30
3:30 PM	1	8	0	0	6	1	0	0	0	0	0	0	16
3:45 PM	0	15	0	0	12	0	0	0	0	0	0	0	27
4:00 PM	0	18	0	0	11	0	0	0	0	0	0	0	29
4:15 PM	0	7	0	0	8	0	1	0	0	0	0	0	16
4:30 PM	0	2	0	0	6	0	1	0	0	0	0	0	9
4:45 PM	0	2	0	0	6	0	0	0	0	0	0	0	8
5:00 PM	0	1	0	0	8	0	0	0	0	0	0	0	9
5:15 PM	0	1	0	0	9	0	0	0	0	0	0	0	10
5:30 PM	0	2	0	0	9	0	0	0	0	0	0	0	11
5:45 PM	0	6	0	0	12	0	0	0	0	0	0	0	18
TOTAL VOLUMES :	NL 1	NT 158	NR 0	SL 0	ST 159	SR 4	EL 7	ET 0	ER 2	WL 0	WT 0	WR 0	TOTAL 331
APPROACH %'s :	0.63%	99.37%	0.00%	0.00%	97.55%	2.45%	77.78%	0.00%	22.22%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	29	0	0	31	0	2	0	0	0	0	0	62
PEAK HR FACTOR :		0.403			0.705			0.500			0.000		0.895

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	2	2	0	1	0	0	0	
6:00 AM	0	4	0	0	17	1	0	0	0	0	0	0	22
6:15 AM	0	4	0	0	15	0	2	0	0	0	0	0	21
6:30 AM	0	3	0	0	14	1	1	0	1	0	0	0	20
6:45 AM	0	6	0	0	14	0	0	0	0	0	0	0	20
7:00 AM	0	7	0	0	13	1	0	0	0	0	0	0	21
7:15 AM	2	5	0	0	20	0	2	0	0	0	0	0	29
7:30 AM	0	4	0	0	11	2	1	0	0	0	0	0	18
7:45 AM	0	7	0	0	17	1	1	0	0	0	0	0	26
8:00 AM	2	11	0	0	17	0	0	0	0	0	0	0	30
8:15 AM	1	6	0	0	20	1	4	0	0	0	0	0	32
8:30 AM	1	5	0	0	19	0	2	0	0	0	0	0	27
8:45 AM	0	12	0	0	23	0	0	0	0	0	0	0	35
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	74	0	0	200	7	13	0	1	0	0	0	301
APPROACH %'s :	7.50%	92.50%	0.00%	0.00%	96.62%	3.38%	92.86%	0.00%	7.14%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	2	22	0	0	58	3	3	0	0	0	0	0	88
PEAK HR FACTOR :		0.857			0.763			0.375			0.000		0.883

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-M **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier C St			Pier C St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	3	2	2	0	1	0	0	0	
2:00 PM	1	3	0	0	14	1	3	0	1	0	0	0	23
2:15 PM	2	6	0	0	13	2	2	0	1	0	0	0	26
2:30 PM	0	4	0	0	13	2	5	0	0	0	0	0	24
2:45 PM	0	6	0	0	8	1	1	0	0	0	0	0	16
3:00 PM	0	6	0	0	8	2	4	0	0	0	0	0	20
3:15 PM	0	8	0	0	7	1	0	0	0	0	0	0	16
3:30 PM	0	3	0	0	14	2	0	0	0	0	0	0	19
3:45 PM	0	5	0	0	3	0	2	0	1	0	0	0	11
4:00 PM	0	5	0	0	10	2	2	0	0	0	0	0	19
4:15 PM	0	2	0	0	8	1	1	0	0	0	0	0	12
4:30 PM	0	7	0	0	3	1	3	0	0	0	0	0	14
4:45 PM	0	3	0	0	6	0	1	0	0	0	0	0	10
5:00 PM	0	2	0	0	1	2	4	0	0	0	0	0	9
5:15 PM	0	0	0	0	7	1	1	0	0	0	0	0	9
5:30 PM	0	3	0	0	5	3	0	0	0	0	0	0	11
5:45 PM	0	2	0	0	8	0	0	0	0	0	0	0	10
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	65	0	0	128	21	29	0	3	0	0	0	249
APPROACH %'s :	4.41%	95.59%	0.00%	0.00%	85.91%	14.09%	90.63%	0.00%	9.38%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	17	0	0	27	4	7	0	0	0	0	0	55
PEAK HR FACTOR :		0.607			0.646			0.583			0.000		0.895

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 3	SR 0	EL 1.5	ET 0.5	ER 1	WL 0.5	WT 0.5	WR 1	TOTAL
6:00 AM	7	17	0	0	178	10	2	0	9	0	0	0	223
6:15 AM	6	15	0	0	244	17	5	0	8	0	0	0	295
6:30 AM	8	21	0	1	315	24	12	0	8	0	0	1	390
6:45 AM	16	25	0	0	325	37	8	0	7	0	0	0	418
7:00 AM	9	20	0	0	321	27	4	0	8	0	0	0	389
7:15 AM	19	8	0	0	345	21	18	0	15	0	0	0	426
7:30 AM	7	24	0	0	305	9	18	0	23	0	0	0	386
7:45 AM	11	29	0	0	286	11	22	0	15	0	0	0	374
8:00 AM	6	24	0	0	219	14	38	0	14	0	0	0	315
8:15 AM	4	24	0	0	231	9	33	0	18	0	0	0	319
8:30 AM	8	23	0	0	225	7	29	0	17	0	0	0	309
8:45 AM	9	24	0	0	215	10	34	0	9	0	0	0	301
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	110	254	0	1	3209	196	223	0	151	0	0	1	4145
APPROACH %'s :	30.22%	69.78%	0.00%	0.03%	94.22%	5.75%	59.63%	0.00%	40.37%	0.00%	0.00%	100.00%	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	52	74	0	1	1306	109	42	0	38	0	0	1	1623
PEAK HR FACTOR :	0.768			0.967			0.606			0.250			0.952

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	0	0	0
	0	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
	NB	SB	EB	WB
	1	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 3	SR 0	EL 1.5	ET 0.5	ER 1	WL 0.5	WT 0.5	WR 1	TOTAL
2:00 PM	3	27	0	0	196	1	35	2	17	0	0	0	281
2:15 PM	4	47	0	0	178	4	33	0	15	2	0	0	283
2:30 PM	4	38	0	0	204	2	35	0	15	0	0	1	299
2:45 PM	7	42	1	1	171	4	34	0	22	1	0	1	284
3:00 PM	4	49	0	0	212	5	34	0	22	0	0	0	326
3:15 PM	4	47	1	0	183	1	25	0	23	0	0	0	284
3:30 PM	4	45	0	0	202	5	34	0	20	0	0	1	311
3:45 PM	5	42	0	0	220	7	29	0	12	0	0	0	315
4:00 PM	3	55	0	0	230	6	25	0	19	0	0	0	338
4:15 PM	2	62	0	0	258	8	18	0	17	0	0	2	367
4:30 PM	8	42	0	0	266	10	22	0	15	0	0	0	363
4:45 PM	9	40	0	0	265	9	28	0	28	0	0	0	379
5:00 PM	9	25	0	0	238	6	26	0	17	0	0	0	321
5:15 PM	2	20	0	0	279	12	7	0	8	0	0	0	328
5:30 PM	4	21	0	0	261	6	9	0	13	0	0	0	314
5:45 PM	5	25	0	0	239	6	14	0	9	0	0	0	298
TOTAL VOLUMES :	NL 77	NT 627	NR 2	SL 1	ST 3602	SR 92	EL 408	ET 2	ER 272	WL 3	WT 0	WR 5	TOTAL 5091
APPROACH %'s :	10.91%	88.81%	0.28%	0.03%	97.48%	2.49%	59.82%	0.29%	39.88%	37.50%	0.00%	62.50%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	22	199	0	0	1019	33	93	0	79	0	0	2	1447
PEAK HR FACTOR :		0.863			0.953			0.768			0.250		0.954

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Pico Ave and Pier D St , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-N
City: Long Beach

AM Peak Hour	630 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach (Pico Ave)

Lanes	0	3	1		
AM	109	1306	1	117	AM
NOON	0	0	0	0	NOON
PM	33	1019	0	294	PM

Eastbound Approach (Pier D St)

Lanes	AM	NOON	PM
	161	0	55
1.5	42	0	93
0.5	0	0	0
1	38	0	79
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
1	0	2	1
0	0	0	0.5
0	0	0	0.5
1	0	0	
AM	NOON	PM	

CONTROL: Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	1344	52	74	0	AM
NOON	0	0	0	0	NOON
PM	1098	22	199	0	PM
		1	2	0	Lanes

Total Ins & Outs

	North Leg		
AM	1416	117	AM
NOON	0	0	NOON
PM	1052	294	PM

West Leg				East Leg			
AM	NOON	PM		AM	NOON	PM	
161	0	55		1	0	2	
80	0	172		1	0	0	
AM	NOON	PM		AM	NOON	PM	

	South Leg	
AM	1344	126
NOON	0	0
PM	1098	221

Total Volume Per Leg

North Leg		
1533		AM
0		NOON
1346		PM

West Leg			East Leg		
AM	NOON	PM			
241	0	227	2	0	2
			AM	NOON	PM

South Leg	
AM	1470
NOON	0
PM	1319

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 3	SR 0	EL 1.5	ET 0.5	ER 1	WL 0.5	WT 0.5	WR 1	TOTAL
6:00 AM	7	14	0	0	139	7	1	0	7	0	0	0	175
6:15 AM	5	13	0	0	198	12	2	0	5	0	0	0	235
6:30 AM	8	18	0	1	263	21	9	0	7	0	0	1	328
6:45 AM	16	21	0	0	264	31	5	0	7	0	0	0	344
7:00 AM	8	14	0	0	252	23	2	0	5	0	0	0	304
7:15 AM	19	7	0	0	236	18	2	0	3	0	0	0	285
7:30 AM	7	13	0	0	229	9	3	0	2	0	0	0	263
7:45 AM	9	22	0	0	199	7	6	0	5	0	0	0	248
8:00 AM	4	15	0	0	121	8	8	0	12	0	0	0	168
8:15 AM	3	14	0	0	120	4	5	0	5	0	0	0	151
8:30 AM	7	13	0	0	112	2	3	0	8	0	0	0	145
8:45 AM	9	10	0	0	104	2	4	0	3	0	0	0	132
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	102	174	0	1	2237	144	50	0	69	0	0	1	2778
APPROACH %'s :	36.96%	63.04%	0.00%	0.04%	93.91%	6.05%	42.02%	0.00%	57.98%	0.00%	0.00%	100.00%	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	51	60	0	1	1015	93	18	0	22	0	0	1	1261
PEAK HR FACTOR :		0.750			0.940			0.625			0.250		0.916

CONTROL : Signalized

UTURNS

NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	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
NB	SB	EB	WB
1	1	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 3	SR 0	EL 1.5	ET 0.5	ER 1	WL 0.5	WT 0.5	WR 1	TOTAL
2:00 PM	3	16	0	0	79	1	6	1	4	0	0	0	110
2:15 PM	3	30	0	0	65	2	8	0	6	1	0	0	115
2:30 PM	3	21	0	0	91	1	8	0	7	0	0	1	132
2:45 PM	4	23	1	1	71	2	6	0	8	1	0	1	118
3:00 PM	4	20	0	0	112	4	9	0	7	0	0	0	156
3:15 PM	3	20	1	0	104	1	5	0	10	0	0	0	144
3:30 PM	4	15	0	0	138	3	19	0	11	0	0	1	191
3:45 PM	3	22	0	0	138	3	9	0	4	0	0	0	179
4:00 PM	0	30	0	0	136	4	11	0	10	0	0	0	191
4:15 PM	1	38	0	0	203	5	8	0	13	0	0	2	270
4:30 PM	8	19	0	0	200	10	15	0	9	0	0	0	261
4:45 PM	9	30	0	0	194	9	25	0	27	0	0	0	294
5:00 PM	9	21	0	0	173	6	24	0	16	0	0	0	249
5:15 PM	2	18	0	0	183	12	5	0	4	0	0	0	224
5:30 PM	4	10	0	0	192	6	5	0	3	0	0	0	220
5:45 PM	4	19	0	0	144	6	2	0	2	0	0	0	177
TOTAL VOLUMES :	NL 64	NT 352	NR 2	SL 1	ST 2223	SR 75	EL 165	ET 1	ER 141	WL 2	WT 0	WR 5	TOTAL 3031
APPROACH %'s :	15.31%	84.21%	0.48%	0.04%	96.69%	3.26%	53.75%	0.33%	45.93%	28.57%	0.00%	71.43%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	18	117	0	0	733	28	59	0	59	0	0	2	1016
PEAK HR FACTOR :		0.865			0.906			0.567			0.250		0.864

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1.5	0.5	1	0.5	0.5	1	
6:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
6:15 AM	0	0	0	0	7	0	0	0	0	0	0	0	7
6:30 AM	0	1	0	0	7	0	0	0	0	0	0	0	8
6:45 AM	0	0	0	0	13	0	0	0	0	0	0	0	13
7:00 AM	0	0	0	0	12	0	0	0	0	0	0	0	12
7:15 AM	0	1	0	0	18	0	0	0	1	0	0	0	20
7:30 AM	0	4	0	0	12	0	0	0	0	0	0	0	16
7:45 AM	0	3	0	0	14	0	0	0	0	0	0	0	17
8:00 AM	0	1	0	0	16	0	0	0	0	0	0	0	17
8:15 AM	0	5	0	0	20	2	0	0	0	0	0	0	27
8:30 AM	0	6	0	0	23	1	0	0	0	0	0	0	30
8:45 AM	0	3	0	0	9	0	0	0	0	0	0	0	12
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	24	0	0	153	3	0	0	1	0	0	0	181
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	98.08%	1.92%	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	2	0	0	50	0	0	0	1	0	0	0	53
PEAK HR FACTOR :		0.500			0.694			0.250			0.000		0.916

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	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
NB	SB	EB	WB
1	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 3	SR 0	EL 1.5	ET 0.5	ER 1	WL 0.5	WT 0.5	WR 1	TOTAL
2:00 PM	0	9	0	0	3	0	0	0	0	0	0	0	12
2:15 PM	0	3	0	0	7	0	2	0	0	0	0	0	12
2:30 PM	0	4	0	0	6	0	0	0	1	0	0	0	11
2:45 PM	0	5	0	0	11	0	2	0	2	0	0	0	20
3:00 PM	0	13	0	0	4	0	0	0	0	0	0	0	17
3:15 PM	0	12	0	0	6	0	0	0	0	0	0	0	18
3:30 PM	0	12	0	0	3	0	0	0	0	0	0	0	15
3:45 PM	0	5	0	0	3	1	3	0	1	0	0	0	13
4:00 PM	0	12	0	0	16	0	0	0	0	0	0	0	28
4:15 PM	0	10	0	0	4	0	0	0	0	0	0	0	14
4:30 PM	0	11	0	0	7	0	2	0	0	0	0	0	20
4:45 PM	0	5	0	0	7	0	0	0	0	0	0	0	12
5:00 PM	0	1	0	0	5	0	0	0	0	0	0	0	6
5:15 PM	0	2	0	0	12	0	0	0	0	0	0	0	14
5:30 PM	0	4	0	0	10	0	0	0	0	0	0	0	14
5:45 PM	0	3	0	0	14	0	0	0	0	0	0	0	17
TOTAL VOLUMES :	0	111	0	0	118	1	9	0	4	0	0	0	243
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	99.16%	0.84%	69.23%	0.00%	30.77%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	38	0	0	34	0	2	0	0	0	0	0	74
PEAK HR FACTOR :		0.792			0.531			0.250			0.000		0.864

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	1	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	1	0	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1.5	0.5	1	0.5	0.5	1	
6:00 AM	0	0	0	0	20	0	0	0	0	0	0	0	20
6:15 AM	0	1	0	0	20	0	0	0	0	0	0	0	21
6:30 AM	0	0	0	0	29	0	0	0	0	0	0	0	29
6:45 AM	0	0	0	0	39	0	0	0	0	0	0	0	39
7:00 AM	0	0	0	0	42	0	0	0	0	0	0	0	42
7:15 AM	0	0	0	0	65	0	6	0	0	0	0	0	71
7:30 AM	0	0	0	0	48	0	9	0	0	0	0	0	57
7:45 AM	0	0	0	0	49	0	10	0	1	0	0	0	60
8:00 AM	0	0	0	0	59	0	18	0	0	0	0	0	77
8:15 AM	0	1	0	0	57	0	19	0	0	0	0	0	77
8:30 AM	0	0	0	0	66	1	18	0	1	0	0	0	86
8:45 AM	0	2	0	0	70	0	17	0	2	0	0	0	91
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	4	0	0	564	1	97	0	4	0	0	0	670
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	99.82%	0.18%	96.04%	0.00%	3.96%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	0	0	0	175	0	6	0	0	0	0	0	181
PEAK HR FACTOR :		0.000			0.673			0.250			0.000		0.916

UTURNS	NB	SB	EB	WB
	0	0	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
	1	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	1	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 3	SR 0	EL 1.5	ET 0.5	ER 1	WL 0.5	WT 0.5	WR 1	TOTAL
2:00 PM	0	0	0	0	91	0	13	0	1	0	0	0	105
2:15 PM	0	6	0	0	80	0	11	0	2	0	0	0	99
2:30 PM	0	7	0	0	80	0	13	0	0	0	0	0	100
2:45 PM	1	5	0	0	69	1	9	0	2	0	0	0	87
3:00 PM	0	9	0	0	77	0	9	0	2	0	0	0	97
3:15 PM	0	5	0	0	53	0	7	0	0	0	0	0	65
3:30 PM	0	11	0	0	44	0	10	0	0	0	0	0	65
3:45 PM	0	4	0	0	64	1	5	0	1	0	0	0	75
4:00 PM	0	5	0	0	61	0	2	0	0	0	0	0	68
4:15 PM	1	8	0	0	39	2	6	0	1	0	0	0	57
4:30 PM	0	5	0	0	50	0	4	0	1	0	0	0	60
4:45 PM	0	1	0	0	50	0	2	0	1	0	0	0	54
5:00 PM	0	1	0	0	50	0	2	0	0	0	0	0	53
5:15 PM	0	0	0	0	68	0	0	0	1	0	0	0	69
5:30 PM	0	2	0	0	45	0	2	0	2	0	0	0	51
5:45 PM	0	1	0	0	59	0	7	0	2	0	0	0	69
TOTAL VOLUMES :	NL 2	NT 70	NR 0	SL 0	ST 980	SR 4	EL 102	ET 0	ER 16	WL 0	WT 0	WR 0	TOTAL 1174
APPROACH %'s :	2.78%	97.22%	0.00%	0.00%	99.59%	0.41%	86.44%	0.00%	13.56%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	1	19	0	0	200	2	14	0	3	0	0	0	239
PEAK HR FACTOR :		0.556			0.828			0.607			0.000		0.864

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1.5	0.5	1	0.5	0.5	1	
6:00 AM	0	0	0	0	4	0	0	0	0	0	0	0	4
6:15 AM	0	0	0	0	6	0	0	0	0	0	0	0	6
6:30 AM	0	1	0	0	3	0	0	0	0	0	0	0	4
6:45 AM	0	0	0	0	2	1	0	0	0	0	0	0	3
7:00 AM	0	0	0	0	8	0	0	0	2	0	0	0	10
7:15 AM	0	0	0	0	6	1	6	0	9	0	0	0	22
7:30 AM	0	2	0	0	8	0	5	0	20	0	0	0	35
7:45 AM	0	0	0	0	10	1	5	0	9	0	0	0	25
8:00 AM	0	0	0	0	15	0	6	0	1	0	0	0	22
8:15 AM	0	1	0	0	16	0	6	0	9	0	0	0	32
8:30 AM	0	1	0	0	11	1	6	0	5	0	0	0	24
8:45 AM	0	2	0	0	10	0	5	0	4	0	0	0	21
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	7	0	0	99	4	39	0	59	0	0	0	208
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	96.12%	3.88%	39.80%	0.00%	60.20%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	1	0	0	19	2	6	0	11	0	0	0	39
PEAK HR FACTOR :		0.250			0.656			0.283			0.000		0.916

CONTROL : Signalized

UTURNS

NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	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
NB	SB	EB	WB
1	1	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1.5	0.5	1	0.5	0.5	1	
2:00 PM	0	0	0	0	13	0	16	0	9	0	0	0	38
2:15 PM	0	2	0	0	9	1	11	0	6	0	0	0	29
2:30 PM	0	2	0	0	14	1	14	0	6	0	0	0	37
2:45 PM	0	3	0	0	12	1	16	0	10	0	0	0	42
3:00 PM	0	1	0	0	12	0	16	0	12	0	0	0	41
3:15 PM	0	4	0	0	11	0	12	0	11	0	0	0	38
3:30 PM	0	4	0	0	6	0	5	0	9	0	0	0	24
3:45 PM	0	5	0	0	12	1	12	0	5	0	0	0	35
4:00 PM	0	4	0	0	10	0	12	0	8	0	0	0	34
4:15 PM	0	5	0	0	8	0	2	0	2	0	0	0	17
4:30 PM	0	0	0	0	5	0	1	0	3	0	0	0	9
4:45 PM	0	1	0	0	6	0	1	0	0	0	0	0	8
5:00 PM	0	1	0	0	8	0	0	0	0	0	0	0	9
5:15 PM	0	0	0	0	10	0	1	0	3	0	0	0	14
5:30 PM	0	2	0	0	9	0	2	0	8	0	0	0	21
5:45 PM	0	1	0	0	13	0	4	0	5	0	0	0	23
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	35	0	0	158	4	125	0	97	0	0	0	419
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	97.53%	2.47%	56.31%	0.00%	43.69%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	10	0	0	29	0	16	0	13	0	0	0	68
PEAK HR FACTOR :		0.500			0.725			0.363			0.000		0.864

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	1	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1.5	0.5	1	0.5	0.5	1	
6:00 AM	0	3	0	0	13	3	1	0	2	0	0	0	22
6:15 AM	1	1	0	0	13	5	3	0	3	0	0	0	26
6:30 AM	0	1	0	0	13	3	3	0	1	0	0	0	21
6:45 AM	0	4	0	0	7	5	3	0	0	0	0	0	19
7:00 AM	1	6	0	0	7	4	2	0	1	0	0	0	21
7:15 AM	0	0	0	0	20	2	4	0	2	0	0	0	28
7:30 AM	0	5	0	0	8	0	1	0	1	0	0	0	15
7:45 AM	2	4	0	0	14	3	1	0	0	0	0	0	24
8:00 AM	2	8	0	0	8	6	6	0	1	0	0	0	31
8:15 AM	1	3	0	0	18	3	3	0	4	0	0	0	32
8:30 AM	1	3	0	0	13	2	2	0	3	0	0	0	24
8:45 AM	0	7	0	0	22	8	8	0	0	0	0	0	45
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	8	45	0	0	156	44	37	0	18	0	0	0	308
APPROACH %'s :	15.09%	84.91%	0.00%	0.00%	78.00%	22.00%	67.27%	0.00%	32.73%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	1	11	0	0	47	14	12	0	4	0	0	0	89
PEAK HR FACTOR :		0.429			0.693			0.667			0.000		0.916

UTURNS	NB	SB	EB	WB
	0	0	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
	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	0
	NB	SB	EB	WB
	1	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-N **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier D St			Pier D St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1.5	0.5	1	0.5	0.5	1	
2:00 PM	0	2	0	0	10	0	0	1	3	0	0	0	16
2:15 PM	1	6	0	0	17	1	1	0	1	1	0	0	28
2:30 PM	1	4	0	0	13	0	0	0	1	0	0	0	19
2:45 PM	2	6	0	0	8	0	1	0	0	0	0	0	17
3:00 PM	0	6	0	0	7	1	0	0	1	0	0	0	15
3:15 PM	1	6	0	0	9	0	1	0	2	0	0	0	19
3:30 PM	0	3	0	0	11	2	0	0	0	0	0	0	16
3:45 PM	2	6	0	0	3	1	0	0	1	0	0	0	13
4:00 PM	3	4	0	0	7	2	0	0	1	0	0	0	17
4:15 PM	0	1	0	0	4	1	2	0	1	0	0	0	9
4:30 PM	0	7	0	0	4	0	0	0	2	0	0	0	13
4:45 PM	0	3	0	0	8	0	0	0	0	0	0	0	11
5:00 PM	0	1	0	0	2	0	0	0	1	0	0	0	4
5:15 PM	0	0	0	0	6	0	1	0	0	0	0	0	7
5:30 PM	0	3	0	0	5	0	0	0	0	0	0	0	8
5:45 PM	1	1	0	0	9	0	1	0	0	0	0	0	12
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	11	59	0	0	123	8	7	1	14	1	0	0	224
APPROACH %'s :	15.71%	84.29%	0.00%	0.00%	93.89%	6.11%	31.82%	4.55%	63.64%	100.00%	0.00%	0.00%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	3	15	0	0	23	3	2	0	4	0	0	0	50
PEAK HR FACTOR :		0.643			0.722			0.500			0.000		0.864

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	1	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	1	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 1	ST 3	SR 0	EL 0	ET 0	ER 1	WL 0	WT 1	WR 0	TOTAL
6:00 AM	6	19	0	3	181	2	1	0	3	2	0	1	218
6:15 AM	8	22	1	0	252	1	2	0	2	0	0	1	289
6:30 AM	7	27	0	2	316	0	2	1	1	3	0	0	359
6:45 AM	21	45	0	0	324	2	1	0	3	2	0	0	398
7:00 AM	16	28	0	0	327	0	0	0	6	0	0	1	378
7:15 AM	18	37	2	0	355	0	1	0	2	0	1	0	416
7:30 AM	6	33	1	1	338	1	1	0	4	1	0	1	387
7:45 AM	6	36	1	0	290	3	2	0	5	0	0	1	344
8:00 AM	6	26	2	0	236	4	1	1	3	0	1	3	283
8:15 AM	2	30	3	2	235	2	1	0	4	1	0	0	280
8:30 AM	2	25	3	0	244	0	3	1	8	2	1	2	291
8:45 AM	8	27	0	3	221	2	0	0	6	2	1	0	270
TOTAL VOLUMES :	NL 106	NT 355	NR 13	SL 11	ST 3319	SR 17	EL 15	ET 3	ER 47	WL 13	WT 4	WR 10	TOTAL 3913
APPROACH %'s :	22.36%	74.89%	2.74%	0.33%	99.16%	0.51%	23.08%	4.62%	72.31%	48.15%	14.81%	37.04%	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	61	143	3	1	1344	3	3	0	15	3	1	2	1579
PEAK HR FACTOR :		0.784			0.949			0.750			0.750		0.949

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 1	ST 3	SR 0	EL 0	ET 0	ER 1	WL 0	WT 1	WR 0	TOTAL
2:00 PM	15	34	0	2	194	2	0	0	4	0	1	1	253
2:15 PM	7	48	0	0	205	0	5	0	12	1	0	3	281
2:30 PM	10	43	1	1	208	0	3	0	5	0	0	1	272
2:45 PM	3	45	0	0	202	0	1	0	11	0	0	2	264
3:00 PM	6	46	1	0	224	0	0	0	0	0	0	0	277
3:15 PM	13	52	2	0	214	0	4	0	4	1	1	1	292
3:30 PM	8	42	1	0	235	0	1	2	11	4	0	2	306
3:45 PM	9	59	0	0	231	0	2	0	3	0	0	0	304
4:00 PM	3	60	0	0	238	0	1	0	4	2	0	0	308
4:15 PM	10	60	0	1	273	0	1	0	1	0	1	0	347
4:30 PM	3	54	0	1	290	0	0	1	5	0	0	2	356
4:45 PM	6	63	1	0	292	0	1	0	4	1	0	1	369
5:00 PM	6	36	0	0	255	3	2	0	5	0	0	1	308
5:15 PM	3	24	0	0	280	2	0	0	0	0	0	0	309
5:30 PM	4	23	0	1	261	0	0	0	1	0	0	0	290
5:45 PM	5	22	1	2	244	0	1	0	1	0	0	3	279
TOTAL VOLUMES :	NL 111	NT 711	NR 7	SL 8	ST 3846	SR 7	EL 22	ET 3	ER 71	WL 9	WT 3	WR 17	TOTAL 4815
APPROACH %'s :	13.39%	85.77%	0.84%	0.21%	99.61%	0.18%	22.92%	3.13%	73.96%	31.03%	10.34%	58.62%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	25	213	1	2	1110	3	4	1	15	1	1	4	1380
PEAK HR FACTOR :		0.854			0.955			0.714			0.750		0.935

UTURNS	NB	SB	EB	WB
	0	0	0	0
	1	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
	1	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	1	0	0	0
	0	0	0	0
	0	2	0	0
TOTAL VOLUMES :	NB 3	SB 3	EB 0	WB 0

CONTROL : 2-Way Stop(EB/WB)

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Pico Ave and West Broadway_WB On-Ramp , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-O
City: Long Beach

AM Peak Hour	645 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach (Pico Ave)

Lanes	0	3	1		
AM	3	1344	1	148	AM
NOON	0	0	0	0	NOON
PM	3	1110	2	221	PM

Eastbound Approach (West Broadway_WB On-Ramp)

Lanes	AM	NOON	PM
	65	0	29
0	3	0	4
0	0	0	1
1	15	0	15

Westbound Approach

Lanes	AM	NOON	PM
0	2	0	4
1	1	0	1
0	3	0	1
	4	0	4

CONTROL: 2-Way Stop(EB/WB)

Northbound Approach

AM	1362	61	143	3	AM
NOON	0	0	0	0	NOON
PM	1126	25	213	1	PM
Lanes		1	1	0	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

North Leg		
1348	148	AM
0	0	NOON
1115	221	PM

West Leg			East Leg		
AM	NOON	PM			
65	0	29	6	0	6
18	0	20	4	0	4
			AM	NOON	PM

South Leg	
1362	207 AM
0	0 NOON
1126	239 PM

Total Volume Per Leg

North Leg	
1496	AM
0	NOON
1336	PM

West Leg			East Leg		
AM	NOON	PM			
83	0	49	10	0	10
			AM	NOON	PM

South Leg	
1569	AM
0	NOON
1365	PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	3	0	0	0	1	0	1	0	
6:00 AM	6	19	0	3	135	2	1	0	3	2	0	0	171
6:15 AM	8	21	0	0	205	1	0	0	2	0	0	0	237
6:30 AM	7	27	0	1	259	0	2	1	0	1	0	0	298
6:45 AM	21	41	0	0	263	1	0	0	3	1	0	0	330
7:00 AM	16	27	0	0	254	0	0	0	6	0	0	0	303
7:15 AM	17	31	1	0	245	0	0	0	2	0	1	0	297
7:30 AM	5	25	1	0	229	1	0	0	4	0	0	1	266
7:45 AM	6	30	1	0	200	2	1	0	5	0	0	0	245
8:00 AM	6	14	0	0	136	2	0	1	3	0	1	1	164
8:15 AM	2	19	1	2	120	2	0	0	4	1	0	0	151
8:30 AM	1	16	3	0	118	0	1	1	6	0	1	1	148
8:45 AM	8	18	0	2	115	1	0	0	6	2	1	0	153
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	103	288	7	8	2279	12	5	3	44	7	4	3	2763
APPROACH %'s :	25.88%	72.36%	1.76%	0.35%	99.13%	0.52%	9.62%	5.77%	84.62%	50.00%	28.57%	21.43%	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	59	124	2	0	991	2	0	0	15	1	1	1	1196
PEAK HR FACTOR :		0.746			0.940			0.625			0.750		0.906

UTURNS			
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 1	ST 3	SR 0	EL 0	ET 0	ER 1	WL 0	WT 1	WR 0	TOTAL
2:00 PM	11	24	0	1	62	2	0	0	4	0	1	0	105
2:15 PM	7	25	0	0	71	0	5	0	12	1	0	3	124
2:30 PM	9	23	1	1	99	0	2	0	5	0	0	0	140
2:45 PM	2	19	0	0	89	0	0	0	10	0	0	1	121
3:00 PM	6	26	1	0	112	0	0	0	0	0	0	0	145
3:15 PM	10	37	2	0	120	0	3	0	4	1	1	0	178
3:30 PM	8	24	0	0	153	0	1	2	10	2	0	2	202
3:45 PM	8	30	0	0	134	0	1	0	3	0	0	0	176
4:00 PM	3	28	0	0	151	0	1	0	4	2	0	0	189
4:15 PM	9	37	0	1	201	0	1	0	1	0	1	0	251
4:30 PM	2	26	0	1	221	0	0	0	5	0	0	2	257
4:45 PM	6	44	1	0	222	0	1	0	4	1	0	1	280
5:00 PM	6	30	0	0	179	2	1	0	5	0	0	0	223
5:15 PM	3	18	0	0	187	2	0	0	0	0	0	0	210
5:30 PM	2	16	0	1	188	0	0	0	1	0	0	0	208
5:45 PM	5	14	1	2	149	0	0	0	1	0	0	3	175
TOTAL VOLUMES :	NL 97	NT 421	NR 6	SL 7	ST 2338	SR 6	EL 16	ET 2	ER 69	WL 7	WT 3	WR 12	TOTAL 2984
APPROACH %'s :	18.51%	80.34%	1.15%	0.30%	99.45%	0.26%	18.39%	2.30%	79.31%	31.82%	13.64%	54.55%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	20	135	1	2	795	0	3	0	14	3	1	3	977
PEAK HR FACTOR :		0.765			0.898			0.850			0.875		0.872

UTURNS	NB	SB	EB	WB
	0	0	0	0
	1	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
	1	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	1	0	0	0
	0	0	0	0
	0	2	0	0
	NB 3	SB 3	EB 0	WB 0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 1	ST 3	SR 0	EL 0	ET 0	ER 1	WL 0	WT 1	WR 0	TOTAL
6:00 AM	0	0	0	0	6	0	0	0	0	0	0	0	6
6:15 AM	0	1	0	0	7	0	0	0	0	0	0	0	8
6:30 AM	0	0	0	0	8	0	0	0	0	0	0	0	8
6:45 AM	0	0	0	0	8	0	0	0	0	0	0	0	8
7:00 AM	0	0	0	0	16	0	0	0	0	0	0	0	16
7:15 AM	0	0	0	0	15	0	0	0	0	0	0	0	15
7:30 AM	0	3	0	0	21	0	0	0	0	0	0	0	24
7:45 AM	0	3	0	0	10	0	0	0	0	0	0	0	13
8:00 AM	0	4	0	0	17	0	0	0	0	0	0	1	22
8:15 AM	0	5	0	0	15	0	0	0	0	0	0	0	20
8:30 AM	0	4	0	0	20	0	0	0	0	0	0	0	24
8:45 AM	0	3	0	0	10	0	0	0	0	0	0	0	13
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	23	0	0	153	0	0	0	0	0	0	1	177
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	0	3	0	0	60	0	0	0	0	0	0	0	63
PEAK HR FACTOR :		0.250			0.714			0.000			0.000		0.817

UTURNS			
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	3	0	0	0	1	0	1	0	
2:00 PM	1	0	0	0	5	0	0	0	0	0	0	0	6
2:15 PM	0	6	0	0	8	0	0	0	0	0	0	0	14
2:30 PM	0	11	0	0	6	0	0	0	0	0	0	0	17
2:45 PM	0	9	0	0	8	0	0	0	1	0	0	0	18
3:00 PM	0	6	0	0	4	0	0	0	0	0	0	0	10
3:15 PM	0	4	0	0	6	0	0	0	0	0	0	0	10
3:30 PM	0	6	0	0	7	0	0	0	1	0	0	0	14
3:45 PM	0	7	0	0	8	0	0	0	0	0	0	0	15
4:00 PM	0	13	0	0	8	0	0	0	0	0	0	0	21
4:15 PM	1	11	0	0	6	0	0	0	0	0	0	0	18
4:30 PM	1	17	0	0	7	0	0	0	0	0	0	0	25
4:45 PM	0	13	0	0	11	0	0	0	0	0	0	0	24
5:00 PM	0	1	0	0	3	0	0	0	0	0	0	0	4
5:15 PM	0	0	0	0	10	0	0	0	0	0	0	0	10
5:30 PM	0	3	0	0	10	0	0	0	0	0	0	0	13
5:45 PM	0	5	0	0	16	0	0	0	0	0	0	0	21
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	112	0	0	123	0	0	0	2	0	0	0	240
APPROACH %'s :	2.61%	97.39%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	2	54	0	0	32	0	0	0	0	0	0	0	88
PEAK HR FACTOR :		0.778			0.727			0.000			0.000		0.833

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	1	0	0	0
2:30 PM	0	1	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	1	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	1	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	2	0	0
	NB	SB	EB	WB
	3	3	0	0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	3	0	0	0	1	0	1	0	
6:00 AM	0	0	0	0	22	0	0	0	0	0	0	0	22
6:15 AM	0	0	0	0	23	0	0	0	0	0	0	0	23
6:30 AM	0	0	0	0	26	0	0	0	0	0	0	0	26
6:45 AM	0	0	0	0	36	0	0	0	0	0	0	0	36
7:00 AM	0	0	0	0	43	0	0	0	0	0	0	0	43
7:15 AM	0	0	0	0	62	0	0	0	0	0	0	0	62
7:30 AM	0	0	0	0	53	0	0	0	0	0	0	0	53
7:45 AM	0	0	0	0	49	0	0	0	0	0	0	0	49
8:00 AM	0	1	0	0	56	0	0	0	0	0	0	0	57
8:15 AM	0	1	0	0	62	0	0	0	0	0	0	0	63
8:30 AM	0	1	0	0	65	0	0	0	0	0	0	0	66
8:45 AM	0	0	0	0	67	0	0	0	0	0	0	0	67
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	3	0	0	564	0	0	0	0	0	0	0	567
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	0	0	0	0	194	0	0	0	0	0	0	0	194
PEAK HR FACTOR :	0.000			0.782			0.000			0.000			0.817

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	3	0	0	0	1	0	1	0	
2:00 PM	0	7	0	0	89	0	0	0	0	0	0	0	96
2:15 PM	0	7	0	0	86	0	0	0	0	0	0	0	93
2:30 PM	0	3	0	0	77	0	0	0	0	0	0	0	80
2:45 PM	0	10	0	0	75	0	0	0	0	0	0	0	85
3:00 PM	0	8	0	0	77	0	0	0	0	0	0	0	85
3:15 PM	0	3	0	0	56	0	0	0	0	0	0	0	59
3:30 PM	0	6	0	0	47	0	0	0	0	0	0	0	53
3:45 PM	0	11	0	0	62	0	0	0	0	0	0	0	73
4:00 PM	0	11	0	0	60	0	0	0	0	0	0	0	71
4:15 PM	0	4	0	0	44	0	0	0	0	0	0	0	48
4:30 PM	0	5	0	0	49	0	0	0	0	0	0	0	54
4:45 PM	0	0	0	0	49	0	0	0	0	0	0	0	49
5:00 PM	0	3	0	0	54	0	0	0	0	0	0	0	57
5:15 PM	0	1	0	0	67	0	0	0	0	0	0	0	68
5:30 PM	1	1	0	0	44	0	0	0	0	0	0	0	46
5:45 PM	0	2	0	0	58	0	0	0	0	0	0	0	60
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	82	0	0	994	0	0	0	0	0	0	0	1077
APPROACH %'s :	1.20%	98.80%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	20	0	0	202	0	0	0	0	0	0	0	222
PEAK HR FACTOR :		0.455			0.842			0.000			0.000		0.833

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	1	0	0	0
2:30 PM	0	1	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	1	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	1	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	2	0	0
TOTAL VOLUMES :	3	3	0	0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 1	ST 3	SR 0	EL 0	ET 0	ER 1	WL 0	WT 1	WR 0	TOTAL
6:00 AM	0	0	0	0	4	0	0	0	0	0	0	0	4
6:15 AM	0	0	0	0	3	0	0	0	0	0	0	0	3
6:30 AM	0	0	0	0	7	0	0	0	1	0	0	0	8
6:45 AM	0	0	0	0	5	0	0	0	0	1	0	0	6
7:00 AM	0	0	0	0	7	0	0	0	0	0	0	0	7
7:15 AM	0	1	0	0	18	0	0	0	0	0	0	0	19
7:30 AM	0	0	0	0	25	0	0	0	0	0	0	0	25
7:45 AM	0	1	0	0	19	0	0	0	0	0	0	0	20
8:00 AM	0	0	0	0	16	0	0	0	0	0	0	0	16
8:15 AM	0	1	0	0	21	0	0	0	0	0	0	0	22
8:30 AM	0	2	0	0	20	0	0	0	1	0	0	0	23
8:45 AM	0	1	0	0	14	0	0	0	0	0	0	0	15
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	6	0	0	159	0	0	0	2	1	0	0	168
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	0	1	0	0	55	0	0	0	0	1	0	0	57
PEAK HR FACTOR :	0.250			0.550			0.000			0.250			0.817

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	3	0	0	0	1	0	1	0	
2:00 PM	2	2	0	0	28	0	0	0	0	0	0	0	32
2:15 PM	0	3	0	0	20	0	0	0	0	0	0	0	23
2:30 PM	1	2	0	0	14	0	0	0	0	0	0	0	17
2:45 PM	0	4	0	0	21	0	0	0	0	0	0	0	25
3:00 PM	0	2	0	0	21	0	0	0	0	0	0	0	23
3:15 PM	1	2	0	0	20	0	0	0	0	0	0	0	23
3:30 PM	0	4	0	0	18	0	0	0	0	0	0	0	22
3:45 PM	0	3	0	0	19	0	0	0	0	0	0	0	22
4:00 PM	0	3	0	0	15	0	0	0	0	0	0	0	18
4:15 PM	0	4	0	0	15	0	0	0	0	0	0	0	19
4:30 PM	0	3	0	0	11	0	0	0	0	0	0	0	14
4:45 PM	0	2	0	0	5	0	0	0	0	0	0	0	7
5:00 PM	0	0	0	0	10	0	0	0	0	0	0	0	10
5:15 PM	0	0	0	0	12	0	0	0	0	0	0	0	12
5:30 PM	0	2	0	0	12	0	0	0	0	0	0	0	14
5:45 PM	0	1	0	0	15	0	0	0	0	0	0	0	16
TOTAL VOLUMES :	4	37	0	0	256	0	0	0	0	0	0	0	297
APPROACH %'s :	9.76%	90.24%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	12	0	0	46	0	0	0	0	0	0	0	58
PEAK HR FACTOR :		0.750			0.767			0.000			0.000		0.833

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	1	0	0	0
2:30 PM	0	1	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	1	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	1	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	2	0	0
TOTAL VOLUMES :	3	3	0	0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	3	0	0	0	1	0	1	0	
6:00 AM	0	0	0	0	14	0	0	0	0	0	0	1	15
6:15 AM	0	0	1	0	14	0	2	0	0	0	0	1	18
6:30 AM	0	0	0	1	16	0	0	0	0	2	0	0	19
6:45 AM	0	4	0	0	12	1	1	0	0	0	0	0	18
7:00 AM	0	1	0	0	7	0	0	0	0	0	0	1	9
7:15 AM	1	5	1	0	15	0	1	0	0	0	0	0	23
7:30 AM	1	5	0	1	10	0	1	0	0	1	0	0	19
7:45 AM	0	2	0	0	12	1	1	0	0	0	0	1	17
8:00 AM	0	7	2	0	11	2	1	0	0	0	0	1	24
8:15 AM	0	4	2	0	17	0	1	0	0	0	0	0	24
8:30 AM	1	2	0	0	21	0	2	0	1	2	0	1	30
8:45 AM	0	5	0	1	15	1	0	0	0	0	0	0	22
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	35	6	3	164	5	10	0	1	5	0	6	238
APPROACH %'s :	6.82%	79.55%	13.64%	1.74%	95.35%	2.91%	90.91%	0.00%	9.09%	45.45%	0.00%	54.55%	
PEAK HR START TIME :	645 AM												TOTAL
PEAK HR VOL :	2	15	1	1	44	1	3	0	0	1	0	1	69
PEAK HR FACTOR :	0.643			0.767			0.750			0.500			0.817

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-O **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			West Broadway_WB On-Ramp			West Broadway_WB On-Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	3	0	0	0	1	0	1	0	
2:00 PM	1	1	0	1	10	0	0	0	0	0	0	1	14
2:15 PM	0	7	0	0	20	0	0	0	0	0	0	0	27
2:30 PM	0	4	0	0	12	0	1	0	0	0	0	1	18
2:45 PM	1	3	0	0	9	0	1	0	0	0	0	1	15
3:00 PM	0	4	0	0	10	0	0	0	0	0	0	0	14
3:15 PM	2	6	0	0	12	0	1	0	0	0	0	1	22
3:30 PM	0	2	1	0	10	0	0	0	0	2	0	0	15
3:45 PM	1	8	0	0	8	0	1	0	0	0	0	0	18
4:00 PM	0	5	0	0	4	0	0	0	0	0	0	0	9
4:15 PM	0	4	0	0	7	0	0	0	0	0	0	0	11
4:30 PM	0	3	0	0	2	0	0	1	0	0	0	0	6
4:45 PM	0	4	0	0	5	0	0	0	0	0	0	0	9
5:00 PM	0	2	0	0	9	1	1	0	0	0	0	1	14
5:15 PM	0	5	0	0	4	0	0	0	0	0	0	0	9
5:30 PM	1	1	0	0	7	0	0	0	0	0	0	0	9
5:45 PM	0	0	0	0	6	0	1	0	0	0	0	0	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	59	1	1	135	1	6	1	0	2	0	5	217
APPROACH %'s :	9.09%	89.39%	1.52%	0.73%	98.54%	0.73%	85.71%	14.29%	0.00%	28.57%	0.00%	71.43%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	16	0	0	18	0	0	1	0	0	0	0	35
PEAK HR FACTOR :		0.800			0.643			0.250			0.000		0.833

UTURNS	NB	SB	EB	WB
	0	0	0	0
	1	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
	1	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	1	0	0	0
	0	0	0	0
	0	2	0	0
	NB	SB	EB	WB
	3	3	0	0

CONTROL : 2-Way Stop(EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 2	NR 0	SL 0	ST 2	SR 2	EL 0	ET 0	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
6:00 AM	4	13	0	0	13	2	0	0	0	1	132	14	179
6:15 AM	10	21	0	0	15	0	0	0	0	4	167	8	225
6:30 AM	8	23	0	0	23	1	0	0	0	9	195	13	272
6:45 AM	9	37	0	0	17	0	0	0	0	3	222	26	314
7:00 AM	10	33	0	0	23	0	0	0	0	6	196	15	283
7:15 AM	19	48	0	0	35	0	0	0	0	4	236	11	353
7:30 AM	19	23	0	0	23	1	0	0	0	1	239	14	320
7:45 AM	21	30	0	0	24	2	0	0	0	4	223	11	315
8:00 AM	31	30	0	0	23	0	0	0	0	1	195	7	287
8:15 AM	21	28	0	0	18	2	0	0	0	1	191	3	264
8:30 AM	18	30	0	0	26	0	0	0	0	1	192	4	271
8:45 AM	26	27	0	0	29	0	0	0	0	0	172	4	258
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	196	343	0	0	269	8	0	0	0	35	2360	130	3341
APPROACH %'s :	36.36%	63.64%	0.00%	0.00%	97.11%	2.89%	#DIV/0!	#DIV/0!	#DIV/0!	1.39%	93.47%	5.15%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	90	131	0	0	105	3	0	0	0	10	893	43	1275
PEAK HR FACTOR :		0.825			0.771			0.000			0.931		0.903

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 2	NR 0	SL 0	ST 2	SR 2	EL 0	ET 0	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
2:00 PM	31	34	0	0	47	1	0	0	0	4	142	16	275
2:15 PM	37	46	0	0	45	0	0	0	0	3	154	10	295
2:30 PM	34	52	0	0	41	0	0	0	0	4	128	11	270
2:45 PM	36	44	0	0	39	2	0	0	0	2	146	7	276
3:00 PM	40	51	0	0	25	1	0	0	0	4	154	11	286
3:15 PM	48	47	0	0	36	2	0	0	0	0	173	16	322
3:30 PM	44	48	0	1	49	3	0	0	0	3	171	7	326
3:45 PM	30	61	0	0	33	0	0	0	0	2	165	13	304
4:00 PM	30	56	0	0	39	0	0	0	0	3	193	9	330
4:15 PM	42	73	0	0	30	0	0	0	0	0	184	6	335
4:30 PM	42	48	0	0	63	0	0	0	0	4	212	6	375
4:45 PM	27	58	0	0	39	0	0	0	0	5	193	10	332
5:00 PM	31	35	0	0	31	0	0	0	0	1	204	7	309
5:15 PM	30	17	0	0	21	0	0	0	0	0	207	4	279
5:30 PM	18	22	0	0	36	1	0	0	0	3	204	6	290
5:45 PM	18	25	0	0	20	1	0	0	0	1	176	6	247
TOTAL VOLUMES :	NL 538	NT 717	NR 0	SL 1	ST 594	SR 11	EL 0	ET 0	ER 0	WL 39	WT 2806	WR 145	TOTAL 4851
APPROACH %'s :	42.87%	57.13%	0.00%	0.17%	98.02%	1.82%	#DIV/0!	#DIV/0!	#DIV/0!	1.30%	93.85%	4.85%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	141	235	0	0	171	0	0	0	0	12	782	31	1372
PEAK HR FACTOR :		0.817			0.679			0.000			0.929		0.915

UTURNS	NB	SB	EB	WB
	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	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
	0	0	0	0
	0	0	0	0
TOTAL VOLUMES :	NB 0	SB 1	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Pico Ave and Ocean Blvd , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-P
City: Long Beach

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach

Lanes	2	2	0		
AM	3	105	0	174	AM
NOON	0	0	0	0	NOON
PM	0	171	0	266	PM

Pico Ave

Ocean Blvd

Eastbound Approach

	AM	NOON	PM
	986	0	923
0	0	0	0
0	0	0	0
0	0	0	0
Lanes	AM	NOON	PM

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
	43	0	31	1
	893	0	782	0.5
	10	0	12	0.5
	0	0	0	
	AM	NOON	PM	

Northbound Approach

AM	115	90	131	0	AM
NOON	0	0	0	0	NOON
PM	183	141	235	0	PM
		0	2	0	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

North Leg		
108	174	AM
0	0	NOON
171	266	PM

West Leg			East Leg		
AM	NOON	PM			
986	0	923	946	0	825
0	0	0	0	0	0
			AM	NOON	PM

South Leg		
115	221	AM
0	0	NOON
183	376	PM

Total Volume Per Leg

North Leg	
282	AM
0	NOON
437	PM

West Leg			East Leg		
AM	NOON	PM			
986	0	923	946	0	825
			AM	NOON	PM

South Leg	
336	AM
0	NOON
559	PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 2	NR 0	SL 0	ST 2	SR 2	EL 0	ET 0	ER 0	WL 0.5	WT 0.5	WR 1	TOTAL
6:00 AM	4	13	0	0	9	2	0	0	0	1	131	14	174
6:15 AM	10	20	0	0	15	0	0	0	0	4	166	8	223
6:30 AM	7	23	0	0	18	1	0	0	0	9	193	13	264
6:45 AM	9	34	0	0	16	0	0	0	0	3	222	25	309
7:00 AM	5	31	0	0	21	0	0	0	0	6	193	15	271
7:15 AM	11	42	0	0	25	0	0	0	0	4	236	10	328
7:30 AM	8	14	0	0	6	1	0	0	0	1	237	13	280
7:45 AM	11	26	0	0	13	2	0	0	0	4	223	11	290
8:00 AM	13	17	0	0	15	0	0	0	0	1	194	4	244
8:15 AM	8	16	0	0	5	2	0	0	0	1	187	3	222
8:30 AM	6	19	0	0	11	0	0	0	0	1	191	4	232
8:45 AM	7	19	0	0	16	0	0	0	0	0	171	4	217
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	99	274	0	0	170	8	0	0	0	35	2344	124	3054
APPROACH %'s :	26.54%	73.46%	0.00%	0.00%	95.51%	4.49%	#DIV/0!	#DIV/0!	#DIV/0!	1.40%	93.65%	4.95%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	43	99	0	0	59	3	0	0	0	10	890	38	1142
PEAK HR FACTOR :		0.670			0.620			0.000			0.934		0.870

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	2	0	0	0	0.5	0.5	1	
2:00 PM	10	14	0	0	18	1	0	0	0	4	139	15	201
2:15 PM	17	21	0	0	21	0	0	0	0	3	151	9	222
2:30 PM	12	23	0	0	21	0	0	0	0	4	126	11	197
2:45 PM	10	17	0	0	23	2	0	0	0	2	145	6	205
3:00 PM	23	24	0	0	12	1	0	0	0	4	149	9	222
3:15 PM	18	26	0	0	18	2	0	0	0	0	172	15	251
3:30 PM	13	26	0	1	28	3	0	0	0	2	169	7	249
3:45 PM	9	23	0	0	15	0	0	0	0	2	162	13	224
4:00 PM	10	22	0	0	27	0	0	0	0	3	192	9	263
4:15 PM	19	40	0	0	16	0	0	0	0	0	182	5	262
4:30 PM	22	24	0	0	57	0	0	0	0	4	211	6	324
4:45 PM	21	38	0	0	33	0	0	0	0	5	191	10	298
5:00 PM	27	29	0	0	23	0	0	0	0	1	201	7	288
5:15 PM	24	12	0	0	9	0	0	0	0	0	205	4	254
5:30 PM	11	12	0	0	19	1	0	0	0	3	202	6	254
5:45 PM	9	17	0	0	9	1	0	0	0	1	176	6	219
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	255	368	0	1	349	11	0	0	0	38	2773	138	3933
APPROACH %'s :	40.93%	59.07%	0.00%	0.28%	96.68%	3.05%	#DIV/0!	#DIV/0!	#DIV/0!	1.29%	94.03%	4.68%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	72	124	0	0	133	0	0	0	0	12	776	30	1147
PEAK HR FACTOR :		0.831			0.583			0.000			0.925		0.885

UTURNS	NB	SB	EB	WB
	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	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
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	2	0	0	0	0.5	0.5	1	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	1	0	0	0	1	0	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:30 AM	2	2	0	0	4	0	0	0	0	0	0	0	8
7:45 AM	3	3	0	0	0	0	0	0	0	0	0	0	6
8:00 AM	6	5	0	0	1	0	0	0	0	0	0	0	12
8:15 AM	8	5	0	0	0	0	0	0	0	0	0	0	13
8:30 AM	6	4	0	0	1	0	0	0	0	0	0	0	11
8:45 AM	8	3	0	0	1	0	0	0	0	0	0	0	12
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	34	23	0	0	9	0	0	0	0	0	0	0	66
APPROACH %'s :	59.65%	40.35%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	11	10	0	0	6	0	0	0	0	0	0	0	27
PEAK HR FACTOR :		0.477			0.375			0.000			0.000		0.870

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	2	0	0	0	0.5	0.5	1	
2:00 PM	8	0	0	0	2	0	0	0	0	0	0	0	10
2:15 PM	7	5	0	0	0	0	0	0	0	0	0	0	12
2:30 PM	9	13	0	0	2	0	0	0	0	0	0	0	24
2:45 PM	18	8	0	0	0	0	0	0	0	0	0	0	26
3:00 PM	8	7	0	0	0	0	0	0	0	0	0	0	15
3:15 PM	15	2	0	0	1	0	0	0	0	0	0	0	18
3:30 PM	8	8	0	0	3	0	0	0	0	0	1	0	20
3:45 PM	8	5	0	0	3	0	0	0	0	0	0	0	16
4:00 PM	7	13	0	0	2	0	0	0	0	0	0	0	22
4:15 PM	15	16	0	0	2	0	0	0	0	0	1	0	34
4:30 PM	12	15	0	0	2	0	0	0	0	0	0	0	29
4:45 PM	3	11	0	0	0	0	0	0	0	0	0	0	14
5:00 PM	1	1	0	0	1	0	0	0	0	0	0	0	3
5:15 PM	3	0	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	4	4	0	0	0	0	0	0	0	0	0	0	8
5:45 PM	6	5	0	0	0	0	0	0	0	0	0	0	11
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	132	113	0	0	18	0	0	0	0	0	2	0	265
APPROACH %'s :	53.88%	46.12%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	37	55	0	0	6	0	0	0	0	0	1	0	99
PEAK HR FACTOR :		0.742			0.750			0.000			0.250		0.885

UTURNS	NB	SB	EB	WB
	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	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
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	2	0	0	0	0.5	0.5	1	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	3	0	0	0	0	0	0	0	3
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:00 AM	1	1	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	1	1	0	0	1	0	0	0	0	0	0	0	3
8:30 AM	1	1	0	0	1	0	0	0	0	0	0	0	3
8:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	3	0	0	6	0	0	0	0	0	0	0	14
APPROACH %'s :	62.50%	37.50%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	1	0	0	4	0	0	0	0	0	0	0	6
PEAK HR FACTOR :	0.250			0.333			0.000			0.000			0.870

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	2	0	0	0	0.5	0.5	1	
2:00 PM	4	7	0	0	5	0	0	0	0	0	0	0	16
2:15 PM	5	7	0	0	6	0	0	0	0	0	0	0	18
2:30 PM	4	3	0	0	3	0	0	0	0	0	0	0	10
2:45 PM	2	10	0	0	3	0	0	0	0	0	0	0	15
3:00 PM	1	7	0	0	1	0	0	0	0	0	0	1	10
3:15 PM	6	3	0	0	4	0	0	0	0	0	0	0	13
3:30 PM	15	6	0	0	4	0	0	0	0	0	0	0	25
3:45 PM	3	11	0	0	4	0	0	0	0	0	0	0	18
4:00 PM	3	11	0	0	2	0	0	0	0	0	0	0	16
4:15 PM	2	5	0	0	2	0	0	0	0	0	0	0	9
4:30 PM	4	4	0	0	0	0	0	0	0	0	0	0	8
4:45 PM	1	0	0	0	3	0	0	0	0	0	1	0	5
5:00 PM	0	4	0	0	3	0	0	0	0	0	0	0	7
5:15 PM	1	0	0	0	7	0	0	0	0	0	0	0	8
5:30 PM	1	2	0	0	10	0	0	0	0	0	1	0	14
5:45 PM	1	2	0	0	5	0	0	0	0	0	0	0	8
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	53	82	0	0	62	0	0	0	0	0	2	1	200
APPROACH %'s :	39.26%	60.74%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	66.67%	33.33%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	10	20	0	0	7	0	0	0	0	0	1	0	38
PEAK HR FACTOR :		0.536			0.583			0.000			0.250		0.885

UTURNS	NB	SB	EB	WB
	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	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
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	2	0	0	0	0.5	0.5	1	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	4	1	0	0	6	0	0	0	0	0	0	0	11
7:30 AM	4	1	0	0	10	0	0	0	0	0	0	0	15
7:45 AM	3	0	0	0	8	0	0	0	0	0	0	0	11
8:00 AM	7	0	0	0	6	0	0	0	0	0	0	0	13
8:15 AM	2	1	0	0	8	0	0	0	0	0	0	0	11
8:30 AM	2	3	0	0	7	0	0	0	0	0	0	0	12
8:45 AM	5	0	0	0	8	0	0	0	0	0	0	0	13
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	27	6	0	0	53	0	0	0	0	0	0	0	86
APPROACH %'s :	81.82%	18.18%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	18	2	0	0	30	0	0	0	0	0	0	0	50
PEAK HR FACTOR :		0.714			0.750			0.000			0.000		0.870

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	2	0	0	0	0.5	0.5	1	
2:00 PM	8	12	0	0	22	0	0	0	0	0	0	0	42
2:15 PM	8	7	0	0	14	0	0	0	0	0	1	0	30
2:30 PM	8	8	0	0	12	0	0	0	0	0	0	0	28
2:45 PM	6	7	0	0	12	0	0	0	0	0	0	1	26
3:00 PM	5	10	0	0	11	0	0	0	0	0	0	0	26
3:15 PM	7	8	0	0	11	0	0	0	0	0	0	0	26
3:30 PM	8	6	0	0	11	0	0	0	0	0	0	0	25
3:45 PM	10	12	0	0	10	0	0	0	0	0	0	0	32
4:00 PM	10	7	0	0	8	0	0	0	0	0	0	0	25
4:15 PM	6	8	0	0	9	0	0	0	0	0	0	0	23
4:30 PM	4	2	0	0	4	0	0	0	0	0	0	0	10
4:45 PM	2	4	0	0	1	0	0	0	0	0	0	0	7
5:00 PM	3	0	0	0	1	0	0	0	0	0	0	0	4
5:15 PM	2	0	0	0	4	0	0	0	0	0	0	0	6
5:30 PM	1	2	0	0	6	0	0	0	0	0	0	0	9
5:45 PM	1	1	0	0	6	0	0	0	0	0	0	0	8
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	89	94	0	0	142	0	0	0	0	0	1	1	327
APPROACH %'s :	48.63%	51.37%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	50.00%	50.00%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	22	21	0	0	22	0	0	0	0	0	0	0	65
PEAK HR FACTOR :		0.632			0.611			0.000			0.000		0.885

UTURNS

NB	SB	EB	WB
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	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
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	2	0	0	0	0.5	0.5	1	
6:00 AM	0	0	0	0	4	0	0	0	0	0	1	0	5
6:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
6:30 AM	0	0	0	0	4	0	0	0	0	0	2	0	6
6:45 AM	0	3	0	0	1	0	0	0	0	0	0	1	5
7:00 AM	4	2	0	0	2	0	0	0	0	0	3	0	11
7:15 AM	4	5	0	0	3	0	0	0	0	0	0	1	13
7:30 AM	5	6	0	0	0	0	0	0	0	0	2	1	14
7:45 AM	4	1	0	0	2	0	0	0	0	0	0	0	7
8:00 AM	4	7	0	0	1	0	0	0	0	0	1	3	16
8:15 AM	2	5	0	0	4	0	0	0	0	0	4	0	15
8:30 AM	3	3	0	0	6	0	0	0	0	0	1	0	13
8:45 AM	5	5	0	0	4	0	0	0	0	0	1	0	15
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	31	37	0	0	31	0	0	0	0	0	16	6	121
APPROACH %'s :	45.59%	54.41%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	72.73%	27.27%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	17	19	0	0	6	0	0	0	0	0	3	5	50
PEAK HR FACTOR :		0.818			0.500			0.000			0.500		0.870

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-P **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	2	0	0	0	0.5	0.5	1	
2:00 PM	1	1	0	0	0	0	0	0	0	0	3	1	6
2:15 PM	0	6	0	0	4	0	0	0	0	0	2	1	13
2:30 PM	1	5	0	0	3	0	0	0	0	0	2	0	11
2:45 PM	0	2	0	0	1	0	0	0	0	0	1	0	4
3:00 PM	3	3	0	0	1	0	0	0	0	0	5	1	13
3:15 PM	2	8	0	0	2	0	0	0	0	0	1	1	14
3:30 PM	0	2	0	0	3	0	0	0	0	1	1	0	7
3:45 PM	0	10	0	0	1	0	0	0	0	0	3	0	14
4:00 PM	0	3	0	0	0	0	0	0	0	0	1	0	4
4:15 PM	0	4	0	0	1	0	0	0	0	0	1	1	7
4:30 PM	0	3	0	0	0	0	0	0	0	0	1	0	4
4:45 PM	0	5	0	0	2	0	0	0	0	0	1	0	8
5:00 PM	0	1	0	0	3	0	0	0	0	0	3	0	7
5:15 PM	0	5	0	0	1	0	0	0	0	0	2	0	8
5:30 PM	1	2	0	0	1	0	0	0	0	0	1	0	5
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES :	9	60	0	0	23	0	0	0	0	1	28	5	126
APPROACH %'s :	13.04%	86.96%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	2.94%	82.35%	14.71%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	15	0	0	3	0	0	0	0	0	4	1	23
PEAK HR FACTOR :		0.750			0.375			0.000			0.625		0.885

UTURNS	NB	SB	EB	WB
	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	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
	0	0	0	0
	0	0	0	0
TOTAL VOLUMES :	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 2	ST 2	SR 0	EL 1	ET 0.5	ER 0.5	WL 0	WT 2	WR 0	TOTAL
6:00 AM	0	9	0	54	17	6	0	0	0	0	0	0	86
6:15 AM	0	5	0	63	27	12	0	0	0	0	0	1	108
6:30 AM	7	8	0	77	22	23	1	0	0	0	0	0	138
6:45 AM	10	13	1	82	41	28	3	0	0	0	0	1	179
7:00 AM	36	12	1	86	31	8	0	0	0	0	0	0	174
7:15 AM	25	20	4	116	49	7	1	0	0	0	0	0	222
7:30 AM	22	28	1	131	43	13	4	0	0	0	0	2	244
7:45 AM	26	41	1	152	64	5	0	0	0	0	1	1	291
8:00 AM	40	33	1	202	52	4	1	1	0	0	0	4	338
8:15 AM	34	37	1	200	47	2	1	0	1	1	0	2	326
8:30 AM	34	29	5	162	48	1	0	0	0	0	0	2	281
8:45 AM	34	40	0	94	47	2	3	0	0	0	0	0	220
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	268	275	15	1419	488	111	14	1	1	1	1	13	2607
APPROACH %'s :	48.03%	49.28%	2.69%	70.32%	24.18%	5.50%	87.50%	6.25%	6.25%	6.67%	6.67%	86.67%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	134	140	8	716	211	12	2	1	1	1	1	9	1236
PEAK HR FACTOR :		0.953			0.910			0.500			0.688		0.914

UTURNS

NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	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	0	0	0
NB	SB	EB	WB
0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 2	ST 2	SR 0	EL 1	ET 0.5	ER 0.5	WL 0	WT 2	WR 0	TOTAL
2:00 PM	22	63	3	127	59	2	1	0	0	0	0	1	278
2:15 PM	31	54	1	128	54	3	0	0	1	1	0	2	275
2:30 PM	37	51	3	160	54	1	1	0	2	1	0	1	311
2:45 PM	18	68	1	185	56	2	1	3	0	2	0	1	337
3:00 PM	29	52	6	195	41	1	1	0	0	1	0	0	326
3:15 PM	15	68	0	240	35	0	0	2	0	0	0	0	360
3:30 PM	17	42	1	214	47	5	1	0	1	1	0	0	329
3:45 PM	16	58	0	228	37	5	1	3	0	0	0	0	348
4:00 PM	6	67	1	266	41	7	5	2	1	0	0	0	396
4:15 PM	3	60	2	309	42	10	22	19	2	0	0	1	470
4:30 PM	6	65	2	295	35	23	10	2	0	0	0	1	439
4:45 PM	6	72	0	335	45	15	12	12	1	0	0	1	499
5:00 PM	13	60	0	332	42	8	7	12	1	1	0	0	476
5:15 PM	20	30	0	301	51	5	0	2	1	0	0	0	410
5:30 PM	28	34	0	291	45	7	1	1	1	0	1	0	409
5:45 PM	39	30	0	277	53	2	3	3	0	0	0	0	407
TOTAL VOLUMES :	NL 306	NT 874	NR 20	SL 3883	ST 737	SR 96	EL 66	ET 61	ER 11	WL 7	WT 1	WR 8	TOTAL 6070
APPROACH %'s :	25.50%	72.83%	1.67%	82.34%	15.63%	2.04%	47.83%	44.20%	7.97%	43.75%	6.25%	50.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	28	257	4	1271	164	56	51	45	4	1	0	3	1884
PEAK HR FACTOR :		0.926			0.944			0.581			1.000		0.944

UTURNS	NB	SB	EB	WB
	0	1	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	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	1	1	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
TOTAL VOLUMES :	NB 1	SB 3	EB 1	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Pico Ave and Pier E St , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-R
City: Long Beach

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach (Pico Ave)

Lanes	0	2	2		
AM	12	211	716	151	AM
NOON	0	0	0	0	NOON
PM	56	164	1271	311	PM

Eastbound Approach (Pier E St)

Lanes		AM	NOON	PM
		147	0	84
1		2	0	51
0.5		1	0	45
0.5		1	0	4
Lanes		AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	9	0	3	0
	1	0	0	2
	1	0	1	0
	725	0	1320	
	AM	NOON	PM	

CONTROL: Signalized

Northbound Approach

AM	213	134	140	8	AM
NOON	0	0	0	0	NOON
PM	169	28	257	4	PM
		1	2	0	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	939	151	AM
	0	0	NOON
	1491	311	PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
147	0	84		11	0	4
4	0	100		725	0	1320

	South Leg	
AM	213	282
NOON	0	0
PM	169	289

Total Volume Per Leg

	North Leg	
	1090	AM
	0	NOON
	1802	PM

West Leg			East Leg		
AM	NOON	PM			
151	0	184	736	0	1324
			AM	NOON	PM

	South Leg
AM	495
NOON	0
PM	458

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 2	ST 2	SR 0	EL 1	ET 0.5	ER 0.5	WL 0	WT 2	WR 0	TOTAL
6:00 AM	0	7	0	54	11	6	0	0	0	0	0	0	78
6:15 AM	0	4	0	62	23	12	0	0	0	0	0	1	102
6:30 AM	4	7	0	77	17	23	1	0	0	0	0	0	129
6:45 AM	2	9	1	81	32	28	3	0	0	0	0	1	157
7:00 AM	0	7	1	84	27	8	0	0	0	0	0	0	127
7:15 AM	1	15	3	114	29	7	1	0	0	0	0	0	170
7:30 AM	3	14	1	129	26	13	4	0	0	0	0	2	192
7:45 AM	1	22	0	149	33	5	0	0	0	0	0	1	211
8:00 AM	1	12	0	202	19	4	1	1	0	0	0	3	243
8:15 AM	0	14	1	199	18	2	1	0	1	1	0	0	237
8:30 AM	1	9	5	161	13	1	0	0	0	0	0	2	192
8:45 AM	1	18	0	90	10	2	3	0	0	0	0	0	124
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	14	138	12	1402	258	111	14	1	1	1	0	10	1962
APPROACH %'s :	8.54%	84.15%	7.32%	79.16%	14.57%	6.27%	87.50%	6.25%	6.25%	9.09%	0.00%	90.91%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	3	57	6	711	83	12	2	1	1	1	0	6	883
PEAK HR FACTOR :		0.717			0.896			0.500			0.583		0.908

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	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	0	0	0
	NB	SB	EB	WB
	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Cars

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 2	ST 2	SR 0	EL 1	ET 0.5	ER 0.5	WL 0	WT 2	WR 0	TOTAL
2:00 PM	1	19	3	124	21	2	1	0	0	0	0	1	172
2:15 PM	1	17	1	127	10	3	0	0	1	0	0	2	162
2:30 PM	0	15	3	157	19	0	1	0	2	1	0	1	199
2:45 PM	0	18	1	181	19	2	1	3	0	2	0	1	228
3:00 PM	0	19	6	194	10	0	1	0	0	1	0	0	231
3:15 PM	0	19	0	238	8	0	0	2	0	0	0	0	267
3:30 PM	0	17	1	211	18	5	1	0	1	1	0	0	255
3:45 PM	2	16	0	226	13	5	1	3	0	0	0	0	266
4:00 PM	0	18	1	262	16	7	5	2	1	0	0	0	312
4:15 PM	0	25	2	307	19	10	22	19	2	0	0	0	406
4:30 PM	2	29	2	292	23	21	10	2	0	0	0	1	382
4:45 PM	0	42	0	332	29	15	12	12	1	0	0	1	444
5:00 PM	0	47	0	332	25	7	7	12	1	1	0	0	432
5:15 PM	0	18	0	300	27	5	0	2	1	0	0	0	353
5:30 PM	1	13	0	287	23	4	1	1	1	0	0	0	331
5:45 PM	1	17	0	276	19	2	3	3	0	0	0	0	321
TOTAL VOLUMES :	NL 8	NT 349	NR 20	SL 3846	ST 299	SR 88	EL 66	ET 61	ER 11	WL 6	WT 0	WR 7	TOTAL 4761
APPROACH %'s :	2.12%	92.57%	5.31%	90.86%	7.06%	2.08%	47.83%	44.20%	7.97%	46.15%	0.00%	53.85%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	2	143	4	1263	96	53	51	45	4	1	0	2	1664
PEAK HR FACTOR :		0.793			0.939			0.581			0.750		0.937

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
2:00 PM	0	1	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	1	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	1	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	1	1	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	NB 1	SB 3	EB 1	WB 0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	2	2	0	1	0.5	0.5	0	2	0	
6:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
7:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	3	0	0	0	0	0	0	0	3
7:30 AM	0	5	0	0	3	0	0	0	0	0	0	0	8
7:45 AM	1	6	0	0	8	0	0	0	0	0	0	0	15
8:00 AM	0	5	0	0	9	0	0	0	0	0	0	0	14
8:15 AM	2	8	0	0	9	0	0	0	0	0	0	0	19
8:30 AM	2	9	0	0	11	0	0	0	0	0	0	0	22
8:45 AM	1	11	0	0	12	0	0	0	0	0	0	0	24
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	46	0	0	60	0	0	0	0	0	0	0	112
APPROACH %'s :	11.54%	88.46%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	5	28	0	0	37	0	0	0	0	0	0	0	70
PEAK HR FACTOR :		0.750			0.841			0.000			0.000		0.908

UTURNS	NB	SB	EB	WB
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	1	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
TOTAL VOLUMES :	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	2	2	0	1	0.5	0.5	0	2	0	
2:00 PM	0	19	0	0	4	0	0	0	0	0	0	0	23
2:15 PM	0	10	0	0	7	0	0	0	0	0	0	0	17
2:30 PM	0	14	0	0	11	0	0	0	0	0	0	0	25
2:45 PM	0	20	0	0	1	0	0	0	0	0	0	0	21
3:00 PM	0	11	0	0	5	0	0	0	0	0	0	0	16
3:15 PM	0	20	0	0	5	0	0	0	0	0	0	0	25
3:30 PM	0	10	0	0	9	0	0	0	0	0	0	0	19
3:45 PM	0	13	0	0	2	0	0	0	0	0	0	0	15
4:00 PM	0	16	0	0	5	0	0	0	0	0	0	0	21
4:15 PM	0	18	0	0	6	0	0	0	0	0	0	1	25
4:30 PM	0	17	0	0	2	0	0	0	0	0	0	0	19
4:45 PM	0	13	0	0	9	0	0	0	0	0	0	0	22
5:00 PM	0	7	0	0	4	0	0	0	0	0	0	0	11
5:15 PM	0	10	0	0	1	0	0	0	0	0	0	0	11
5:30 PM	0	13	0	0	1	0	0	0	0	0	0	0	14
5:45 PM	0	10	0	0	5	0	0	0	0	0	0	0	15
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	221	0	0	77	0	0	0	0	0	0	1	299
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	55	0	0	21	0	0	0	0	0	0	1	77
PEAK HR FACTOR :		0.764			0.583			0.000			0.250		0.937

UTURNS	NB	SB	EB	WB
2:00 PM	0	1	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	1	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	1	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	1	1	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	1	3	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	2	2	0	1	0.5	0.5	0	2	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	3	0	0	0	0	0	0	0	0	0	0	0	3
6:45 AM	8	0	0	0	3	0	0	0	0	0	0	0	11
7:00 AM	35	0	0	0	2	0	0	0	0	0	0	0	37
7:15 AM	19	1	0	0	3	0	0	0	0	0	0	0	23
7:30 AM	10	1	0	0	2	0	0	0	0	0	0	0	13
7:45 AM	9	2	0	0	2	0	0	0	0	0	0	0	13
8:00 AM	23	1	0	0	2	0	0	0	0	0	0	0	26
8:15 AM	14	0	0	0	5	0	0	0	0	0	0	0	19
8:30 AM	15	2	0	0	2	0	0	0	0	0	0	0	19
8:45 AM	16	0	0	0	7	0	0	0	0	0	0	0	23
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	152	7	0	0	28	0	0	0	0	0	0	0	187
APPROACH %'s :	95.60%	4.40%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	61	5	0	0	11	0	0	0	0	0	0	0	77
PEAK HR FACTOR :	0.688			0.550			0.000			0.000			0.908

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	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	0	0	0
	NB	SB	EB	WB
	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 2	ST 2	SR 0	EL 1	ET 0.5	ER 0.5	WL 0	WT 2	WR 0	TOTAL
2:00 PM	19	2	0	0	8	0	0	0	0	0	0	0	29
2:15 PM	25	4	0	0	8	0	0	0	0	0	0	0	37
2:30 PM	32	7	0	0	4	1	0	0	0	0	0	0	44
2:45 PM	15	8	0	0	6	0	0	0	0	0	0	0	29
3:00 PM	24	10	0	0	3	1	0	0	0	0	0	0	38
3:15 PM	11	8	0	0	6	0	0	0	0	0	0	0	25
3:30 PM	17	6	0	0	9	0	0	0	0	0	0	0	32
3:45 PM	14	5	0	0	1	0	0	0	0	0	0	0	20
4:00 PM	5	7	0	1	4	0	0	0	0	0	0	0	17
4:15 PM	2	9	0	0	3	0	0	0	0	0	0	0	14
4:30 PM	4	4	0	1	3	2	0	0	0	0	0	0	14
4:45 PM	5	5	0	0	3	0	0	0	0	0	0	0	13
5:00 PM	12	4	0	0	8	1	0	0	0	0	0	0	25
5:15 PM	14	2	0	0	12	0	0	0	0	0	0	0	28
5:30 PM	15	4	0	0	14	3	0	0	0	0	0	0	36
5:45 PM	25	1	0	0	13	0	0	0	0	0	0	0	39
TOTAL VOLUMES :	239	86	0	2	105	8	0	0	0	0	0	0	440
APPROACH %'s :	73.54%	26.46%	0.00%	1.74%	91.30%	6.96%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	23	22	0	1	17	3	0	0	0	0	0	0	66
PEAK HR FACTOR :	0.703			0.583			0.000			0.000			0.937

UTURNS	NB	SB	EB	WB
2:00 PM	0	1	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	1	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	1	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	1	1	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	1	3	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	2	2	0	1	0.5	0.5	0	2	0	
6:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	5	0	0	0	9	0	0	0	0	0	0	0	14
7:30 AM	8	2	0	0	5	0	0	0	0	0	0	0	15
7:45 AM	15	5	0	1	19	0	0	0	0	0	1	0	41
8:00 AM	16	7	0	0	16	0	0	0	0	0	0	0	39
8:15 AM	18	8	0	0	9	0	0	0	0	0	0	0	35
8:30 AM	16	4	0	0	12	0	0	0	0	0	0	0	32
8:45 AM	16	6	0	1	10	0	0	0	0	0	0	0	33
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	94	32	0	2	81	0	0	0	0	0	1	0	210
APPROACH %'s :	74.60%	25.40%	0.00%	2.41%	97.59%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	65	24	0	1	56	0	0	0	0	0	1	0	147
PEAK HR FACTOR :		0.856			0.713			0.000			0.250		0.908

UTURNS	NB	SB	EB	WB
	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	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
TOTAL VOLUMES :	NB	SB	EB	WB
	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	2	2	0	1	0.5	0.5	0	2	0	
2:00 PM	1	21	0	0	22	0	0	0	0	0	0	0	44
2:15 PM	5	16	0	0	24	0	0	0	0	0	0	0	45
2:30 PM	5	11	0	0	16	0	0	0	0	0	0	0	32
2:45 PM	3	16	0	0	28	0	0	0	0	0	0	0	47
3:00 PM	5	7	0	0	20	0	0	0	0	0	0	0	32
3:15 PM	4	16	0	0	14	0	0	0	0	0	0	0	34
3:30 PM	0	8	0	0	11	0	0	0	0	0	0	0	19
3:45 PM	0	16	0	0	16	0	0	0	0	0	0	0	32
4:00 PM	1	18	0	0	14	0	0	0	0	0	0	0	33
4:15 PM	1	8	0	0	14	0	0	0	0	0	0	0	23
4:30 PM	0	10	0	0	3	0	0	0	0	0	0	0	13
4:45 PM	1	8	0	0	2	0	0	0	0	0	0	0	11
5:00 PM	1	2	0	0	1	0	0	0	0	0	0	0	4
5:15 PM	6	0	0	0	9	0	0	0	0	0	0	0	15
5:30 PM	12	1	0	1	7	0	0	0	0	0	1	0	22
5:45 PM	13	1	0	0	11	0	0	0	0	0	0	0	25
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	58	159	0	1	212	0	0	0	0	0	1	0	431
APPROACH %'s :	26.73%	73.27%	0.00%	0.47%	99.53%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	3	28	0	0	20	0	0	0	0	0	0	0	51
PEAK HR FACTOR :		0.775			0.357			0.000			0.000		0.937

UTURNS	NB	SB	EB	WB
	0	1	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	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	1	1	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	1	3	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	2	2	0	1	0.5	0.5	0	2	0	
6:00 AM	0	2	0	0	3	0	0	0	0	0	0	0	5
6:15 AM	0	1	0	1	4	0	0	0	0	0	0	0	6
6:30 AM	0	1	0	0	4	0	0	0	0	0	0	0	5
6:45 AM	0	4	0	1	4	0	0	0	0	0	0	0	9
7:00 AM	1	3	0	2	2	0	0	0	0	0	0	0	8
7:15 AM	0	4	1	2	5	0	0	0	0	0	0	0	12
7:30 AM	1	6	0	2	7	0	0	0	0	0	0	0	16
7:45 AM	0	6	1	2	2	0	0	0	0	0	0	0	11
8:00 AM	0	8	1	0	6	0	0	0	0	0	0	1	16
8:15 AM	0	7	0	1	6	0	0	0	0	0	0	2	16
8:30 AM	0	5	0	1	10	0	0	0	0	0	0	0	16
8:45 AM	0	5	0	3	8	0	0	0	0	0	0	0	16
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	52	3	15	61	0	0	0	0	0	0	3	136
APPROACH %'s :	3.51%	91.23%	5.26%	19.74%	80.26%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	26	2	4	24	0	0	0	0	0	0	3	59
PEAK HR FACTOR :		0.778			0.636			0.000			0.375		0.908

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	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	0	0	0
	NB	SB	EB	WB
	0	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-R **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Pier E St			Pier E St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	2	2	0	1	0.5	0.5	0	2	0	
2:00 PM	1	2	0	3	4	0	0	0	0	0	0	0	10
2:15 PM	0	7	0	1	5	0	0	0	0	1	0	0	14
2:30 PM	0	4	0	3	4	0	0	0	0	0	0	0	11
2:45 PM	0	6	0	4	2	0	0	0	0	0	0	0	12
3:00 PM	0	5	0	1	3	0	0	0	0	0	0	0	9
3:15 PM	0	5	0	2	2	0	0	0	0	0	0	0	9
3:30 PM	0	1	0	3	0	0	0	0	0	0	0	0	4
3:45 PM	0	8	0	2	5	0	0	0	0	0	0	0	15
4:00 PM	0	8	0	3	2	0	0	0	0	0	0	0	13
4:15 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
4:30 PM	0	5	0	2	4	0	0	0	0	0	0	0	11
4:45 PM	0	4	0	3	2	0	0	0	0	0	0	0	9
5:00 PM	0	0	0	0	4	0	0	0	0	0	0	0	4
5:15 PM	0	0	0	1	2	0	0	0	0	0	0	0	3
5:30 PM	0	3	0	3	0	0	0	0	0	0	0	0	6
5:45 PM	0	1	0	1	5	0	0	0	0	0	0	0	7
TOTAL VOLUMES :	1	59	0	34	44	0	0	0	0	1	0	0	139
APPROACH %'s :	1.67%	98.33%	0.00%	43.59%	56.41%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	9	0	7	10	0	0	0	0	0	0	0	26
PEAK HR FACTOR :		0.450			0.708			0.000			0.000		0.937

UTURNS	NB	SB	EB	WB
2:00 PM	0	1	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	1	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	1	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	1	1	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	1	3	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
6:00 AM	38	9	6	0	1	2	1	0	8	1	0	0	66
6:15 AM	64	13	12	0	0	0	0	0	16	0	0	0	105
6:30 AM	100	10	7	0	1	0	2	0	7	3	0	0	130
6:45 AM	126	31	9	0	0	0	0	0	19	3	0	0	188
7:00 AM	94	29	8	0	1	0	0	0	8	0	0	0	140
7:15 AM	72	30	2	0	1	0	2	0	27	0	1	0	135
7:30 AM	64	19	4	0	9	0	5	2	41	1	0	0	145
7:45 AM	60	24	11	0	12	1	0	1	58	1	0	0	168
8:00 AM	49	31	7	0	5	0	5	4	96	1	0	0	198
8:15 AM	42	38	3	2	9	0	0	0	79	3	1	1	178
8:30 AM	49	39	3	0	6	2	2	1	107	3	0	0	212
8:45 AM	27	26	2	1	7	1	4	0	77	0	0	0	145
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	785	299	74	3	52	6	21	8	543	16	2	1	1810
APPROACH %'s :	67.79%	25.82%	6.39%	4.92%	85.25%	9.84%	3.67%	1.40%	94.93%	84.21%	10.53%	5.26%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	200	132	24	2	32	3	7	6	340	8	1	1	756
PEAK HR FACTOR :		0.937			0.712			0.802			0.500		0.892

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
2:00 PM	31	34	6	1	5	0	0	4	83	1	0	0	165
2:15 PM	32	45	5	0	9	3	2	1	63	8	0	1	169
2:30 PM	33	34	4	0	9	0	1	2	85	2	0	0	170
2:45 PM	31	38	6	0	12	2	7	1	58	0	0	1	156
3:00 PM	20	28	2	0	7	0	0	0	69	1	0	1	128
3:15 PM	22	32	2	1	5	0	1	2	73	2	0	2	142
3:30 PM	30	39	7	1	8	1	2	2	65	4	0	2	161
3:45 PM	29	19	4	0	5	0	6	4	58	4	0	0	129
4:00 PM	28	18	5	0	8	0	2	4	69	2	0	0	136
4:15 PM	43	16	10	0	8	0	1	3	58	0	2	2	143
4:30 PM	91	14	7	0	3	1	1	2	60	3	4	0	186
4:45 PM	47	15	1	0	7	0	0	5	113	1	1	0	190
5:00 PM	62	15	5	0	2	0	1	0	43	1	2	0	131
5:15 PM	31	36	2	0	0	2	1	3	49	3	3	0	130
5:30 PM	40	19	3	0	2	1	0	1	36	1	1	1	105
5:45 PM	26	23	5	0	1	2	1	0	21	2	0	0	81
TOTAL VOLUMES :	NL 596	NT 425	NR 74	SL 3	ST 91	SR 12	EL 26	ET 34	ER 1003	WL 35	WT 13	WR 10	TOTAL 2322
APPROACH %'s :	54.43%	38.81%	6.76%	2.83%	85.85%	11.32%	2.45%	3.20%	94.36%	60.34%	22.41%	17.24%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	127	151	21	1	35	5	10	8	289	11	0	2	660
PEAK HR FACTOR :		0.912			0.732			0.872			0.361		0.971

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	1	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Pier S Ave and New Dock St , Long Beach

Date: 3/14/2018
Day: Wednesday

Project #: 18-5171-049
City: Long Beach

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	200 PM

Peak Hour Summary

Southbound Approach

Lanes	0.5	0.5	1.5		
AM	3	32	2	140	AM
NOON	0	0	0	0	NOON
PM	5	35	1	163	PM

Pier S Ave

New Dock St

Eastbound Approach

	AM	NOON	PM
	204	0	132
1	7	0	10
1.5	6	0	8
0.5	340	0	289
Lanes	AM	NOON	PM

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
	1	0	2	0
	1	0	0	3
	8	0	11	1
	32	0	30	
	AM	NOON	PM	

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	380	200	132	24	AM
NOON	0	0	0	0	NOON
PM	335	127	151	21	PM
		1.5	0.5	1	Lanes

Total Ins & Outs

North Leg		
37	140	AM
0	0	NOON
41	163	PM

West Leg			East Leg		
AM	NOON	PM			
204	0	132	10	0	13
353	0	307	32	0	30
			AM	NOON	PM

South Leg		
380	356	AM
0	0	NOON
335	299	PM

Total Volume Per Leg

North Leg	
177	AM
0	NOON
204	PM

West Leg			East Leg		
AM	NOON	PM			
557	0	439	42	0	43
			AM	NOON	PM

South Leg	
736	AM
0	NOON
634	PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
6:00 AM	26	2	5	0	1	1	0	0	3	0	0	0	38
6:15 AM	49	1	11	0	0	0	0	0	9	0	0	0	70
6:30 AM	88	1	7	0	1	0	1	0	1	3	0	0	102
6:45 AM	106	5	6	0	0	0	0	0	7	3	0	0	127
7:00 AM	62	1	6	0	1	0	0	0	4	0	0	0	74
7:15 AM	42	1	2	0	0	0	1	0	7	0	0	0	53
7:30 AM	37	1	3	0	0	0	0	1	3	1	0	0	46
7:45 AM	31	2	7	0	2	0	0	0	10	1	0	0	53
8:00 AM	16	0	5	0	1	0	0	1	16	0	0	0	39
8:15 AM	13	1	2	0	1	0	0	0	21	2	1	1	42
8:30 AM	15	3	3	0	1	1	0	1	47	1	0	0	72
8:45 AM	5	2	2	1	0	1	1	0	31	0	0	0	43
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	490	20	59	1	8	3	3	3	159	11	1	1	759
APPROACH %'s :	86.12%	3.51%	10.37%	8.33%	66.67%	25.00%	1.82%	1.82%	96.36%	84.62%	7.69%	7.69%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	75	6	17	0	5	1	0	2	94	4	1	1	206
PEAK HR FACTOR :	0.613			0.750			0.500			0.375			0.715

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
2:00 PM	8	0	5	0	0	0	0	2	20	1	0	0	36
2:15 PM	7	2	2	0	3	3	1	0	16	5	0	0	39
2:30 PM	12	2	3	0	2	0	0	2	21	0	0	0	42
2:45 PM	7	1	2	0	3	2	3	1	16	0	0	0	35
3:00 PM	4	0	1	0	4	0	0	0	17	1	0	0	27
3:15 PM	8	0	2	1	4	0	0	1	18	1	0	2	37
3:30 PM	10	1	3	0	2	1	1	1	14	3	0	0	36
3:45 PM	14	0	2	0	0	0	0	2	15	4	0	0	37
4:00 PM	16	1	1	0	2	0	0	1	27	2	0	0	50
4:15 PM	30	0	1	0	3	0	0	2	34	0	1	0	71
4:30 PM	75	2	3	0	1	0	0	1	48	2	0	0	132
4:45 PM	36	0	1	0	7	0	0	3	108	1	0	0	156
5:00 PM	46	1	1	0	2	0	0	0	36	0	0	0	86
5:15 PM	19	1	1	0	0	0	0	3	36	2	0	0	62
5:30 PM	20	0	3	0	2	0	0	0	24	0	0	0	49
5:45 PM	13	1	5	0	1	2	1	0	13	1	0	0	37
TOTAL VOLUMES :	NL 325	NT 12	NR 36	SL 1	ST 36	SR 8	EL 6	ET 19	ER 463	WL 23	WT 1	WR 2	TOTAL 932
APPROACH %'s :	87.13%	3.22%	9.65%	2.22%	80.00%	17.78%	1.23%	3.89%	94.88%	88.46%	3.85%	7.69%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	34	5	12	0	8	5	4	5	73	6	0	0	152
PEAK HR FACTOR :		0.750			0.542			0.891			0.300		0.905

UTURNS	NB	SB	EB	WB
	0	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
	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	0
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	2	0	0	0	0	0	0	0	0	0	0	0	2
6:30 AM	4	1	0	0	0	0	0	0	0	0	0	0	5
6:45 AM	9	0	0	0	0	0	0	0	1	0	0	0	10
7:00 AM	12	0	0	0	0	0	0	0	0	0	0	0	12
7:15 AM	12	2	0	0	0	0	0	0	2	0	0	0	16
7:30 AM	14	2	0	0	2	0	4	0	20	0	0	0	42
7:45 AM	10	1	2	0	6	0	0	1	9	0	0	0	29
8:00 AM	8	3	0	0	2	0	0	0	18	0	0	0	31
8:15 AM	14	5	0	1	4	0	0	0	11	1	0	0	36
8:30 AM	11	4	0	0	2	0	2	0	9	1	0	0	29
8:45 AM	12	1	0	0	0	0	0	0	10	0	0	0	23
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	108	19	2	1	16	0	6	1	80	2	0	0	235
APPROACH %'s :	83.72%	14.73%	1.55%	5.88%	94.12%	0.00%	6.90%	1.15%	91.95%	100.00%	0.00%	0.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	43	13	2	1	14	0	2	1	47	2	0	0	125
PEAK HR FACTOR :	0.763			0.625			0.694			0.500			0.715

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
2:00 PM	5	0	0	0	4	0	0	0	7	0	0	0	16
2:15 PM	4	4	0	0	5	0	1	0	4	1	0	0	19
2:30 PM	7	1	0	0	4	0	0	0	4	0	0	0	16
2:45 PM	6	1	1	0	7	0	1	0	4	0	0	0	20
3:00 PM	3	2	0	0	0	0	0	0	2	0	0	1	8
3:15 PM	1	1	0	0	0	0	0	0	8	0	0	0	10
3:30 PM	4	0	0	1	3	0	1	0	7	0	0	0	16
3:45 PM	7	0	0	0	5	0	0	0	7	0	0	0	19
4:00 PM	7	0	1	0	5	0	0	1	5	0	0	0	19
4:15 PM	7	0	2	0	5	0	0	0	3	0	1	0	18
4:30 PM	9	0	1	0	2	0	0	0	3	0	0	0	15
4:45 PM	5	0	0	0	0	0	0	1	1	0	0	0	7
5:00 PM	12	1	0	0	0	0	0	0	1	1	0	0	15
5:15 PM	7	0	1	0	0	0	0	0	4	1	2	0	15
5:30 PM	7	2	0	0	0	1	0	0	1	0	1	0	12
5:45 PM	7	0	0	0	0	0	0	0	0	0	0	0	7
TOTAL VOLUMES :	NL 98	NT 12	NR 6	SL 1	ST 40	SR 1	EL 3	ET 2	ER 61	WL 3	WT 4	WR 1	TOTAL 232
APPROACH %'s :	84.48%	10.34%	5.17%	2.38%	95.24%	2.38%	4.55%	3.03%	92.42%	37.50%	50.00%	12.50%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	22	6	1	0	20	0	2	0	19	1	0	0	71
PEAK HR FACTOR :	0.906			0.714			0.750			0.250			0.905

UTURNS	NB	SB	EB	WB
	0	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
	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	0
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
6:00 AM	3	6	0	0	0	0	1	0	2	0	0	0	12
6:15 AM	3	11	0	0	0	0	0	0	0	0	0	0	14
6:30 AM	0	8	0	0	0	0	1	0	1	0	0	0	10
6:45 AM	0	24	0	0	0	0	0	0	1	0	0	0	25
7:00 AM	0	27	0	0	0	0	0	0	1	0	0	0	28
7:15 AM	1	22	0	0	0	0	0	0	6	0	0	0	29
7:30 AM	0	14	0	0	0	0	0	1	13	0	0	0	28
7:45 AM	0	19	0	0	0	0	0	0	20	0	0	0	39
8:00 AM	2	25	0	0	0	0	0	1	30	0	0	0	58
8:15 AM	0	30	0	0	0	0	0	0	25	0	0	0	55
8:30 AM	0	30	0	0	0	0	0	0	27	0	0	0	57
8:45 AM	0	19	0	0	0	0	1	0	18	0	0	0	38
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	235	0	0	0	0	3	2	144	0	0	0	393
APPROACH %'s :	3.69%	96.31%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	2.01%	1.34%	96.64%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	2	104	0	0	0	0	0	1	102	0	0	0	209
PEAK HR FACTOR :		0.883			0.000			0.831			0.000		0.715

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1	1.5	0.5	0.5	1	1.5	0.5	1	3	0	
2:00 PM	0	29	0	0	0	0	0	0	20	0	0	0	49
2:15 PM	1	30	1	0	0	0	0	0	14	0	0	0	46
2:30 PM	0	29	0	0	0	0	0	0	19	0	0	0	48
2:45 PM	1	31	0	0	0	0	0	0	14	0	0	0	46
3:00 PM	0	23	0	0	0	0	0	0	12	0	0	0	35
3:15 PM	0	25	0	0	0	0	0	0	12	0	0	0	37
3:30 PM	2	32	2	0	0	0	0	0	10	1	0	1	48
3:45 PM	0	15	0	0	0	0	0	0	15	0	0	0	30
4:00 PM	0	12	0	0	1	0	0	0	9	0	0	0	22
4:15 PM	1	12	1	0	0	0	0	0	4	0	0	0	18
4:30 PM	0	12	0	0	0	0	0	0	5	0	0	0	17
4:45 PM	1	15	0	0	0	0	0	0	0	0	0	0	16
5:00 PM	0	13	1	0	0	0	1	0	3	0	0	0	18
5:15 PM	1	31	0	0	0	0	0	0	5	0	0	0	37
5:30 PM	1	17	0	0	0	0	0	0	5	0	0	1	24
5:45 PM	1	22	0	0	0	0	0	0	2	0	0	0	25
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	348	5	0	1	0	1	0	149	1	0	2	516
APPROACH %'s :	2.49%	96.13%	1.38%	0.00%	100.00%	0.00%	0.67%	0.00%	99.33%	33.33%	0.00%	66.67%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	2	119	1	0	0	0	0	0	67	0	0	0	189
PEAK HR FACTOR :		0.953			0.000			0.838			0.000		0.905

UTURNS	NB	SB	EB	WB
	0	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
	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	0
	NB	SB	EB	WB
	1	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
6:00 AM	2	1	0	0	0	1	0	0	0	0	0	0	4
6:15 AM	2	0	0	0	0	0	0	0	0	0	0	0	2
6:30 AM	4	0	0	0	0	0	0	0	0	0	0	0	4
6:45 AM	5	1	1	0	0	0	0	0	1	0	0	0	8
7:00 AM	10	0	0	0	0	0	0	0	1	0	0	0	11
7:15 AM	12	2	0	0	0	0	1	0	5	0	1	0	21
7:30 AM	6	0	0	0	6	0	1	0	2	0	0	0	15
7:45 AM	9	2	0	0	3	1	0	0	11	0	0	0	26
8:00 AM	13	1	0	0	1	0	5	2	17	1	0	0	40
8:15 AM	9	2	0	1	3	0	0	0	10	0	0	0	25
8:30 AM	12	2	0	0	2	1	0	0	11	1	0	0	29
8:45 AM	6	4	0	0	6	0	2	0	7	0	0	0	25
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	90	15	1	1	21	3	9	2	65	2	1	0	210
APPROACH %'s :	84.91%	14.15%	0.94%	4.00%	84.00%	12.00%	11.84%	2.63%	85.53%	66.67%	33.33%	0.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	43	7	0	1	9	2	5	2	49	2	0	0	120
PEAK HR FACTOR :	0.893			0.750			0.583			0.500			0.715

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
2:00 PM	8	4	0	0	0	0	0	2	29	0	0	0	43
2:15 PM	9	8	0	0	0	0	0	1	20	2	0	0	40
2:30 PM	7	2	0	0	3	0	1	0	25	1	0	0	39
2:45 PM	5	4	1	0	1	0	3	0	19	0	0	1	34
3:00 PM	9	3	0	0	2	0	0	0	24	0	0	0	38
3:15 PM	6	4	0	0	1	0	1	1	27	0	0	0	40
3:30 PM	5	6	1	0	3	0	0	0	25	0	0	1	41
3:45 PM	3	4	2	0	0	0	6	1	13	0	0	0	29
4:00 PM	1	5	2	0	0	0	2	2	20	0	0	0	32
4:15 PM	2	4	5	0	0	0	1	1	8	0	0	2	23
4:30 PM	5	0	1	0	0	1	1	1	3	1	4	0	17
4:45 PM	2	0	0	0	0	0	0	1	1	0	1	0	5
5:00 PM	2	0	0	0	0	0	0	0	1	0	2	0	5
5:15 PM	3	4	0	0	0	2	1	0	2	0	1	0	13
5:30 PM	7	0	0	0	0	0	0	0	6	0	0	0	13
5:45 PM	2	0	0	0	0	0	0	0	1	0	0	0	3
TOTAL VOLUMES :	NL 76	NT 48	NR 12	SL 0	ST 10	SR 3	EL 16	ET 10	ER 224	WL 4	WT 8	WR 4	TOTAL 415
APPROACH %'s :	55.88%	35.29%	8.82%	0.00%	76.92%	23.08%	6.40%	4.00%	89.60%	25.00%	50.00%	25.00%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	29	18	1	0	4	0	4	3	93	3	0	1	156
PEAK HR FACTOR :	0.706			0.333			0.806			0.500			0.905

UTURNS	NB	SB	EB	WB
	0	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
	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	0
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
6:00 AM	7	0	1	0	0	0	0	0	3	1	0	0	12
6:15 AM	8	1	1	0	0	0	0	0	7	0	0	0	17
6:30 AM	4	0	0	0	0	0	0	0	5	0	0	0	9
6:45 AM	6	1	2	0	0	0	0	0	9	0	0	0	18
7:00 AM	10	1	2	0	0	0	0	0	2	0	0	0	15
7:15 AM	5	3	0	0	1	0	0	0	7	0	0	0	16
7:30 AM	7	2	1	0	1	0	0	0	3	0	0	0	14
7:45 AM	10	0	2	0	1	0	0	0	8	0	0	0	21
8:00 AM	10	2	2	0	1	0	0	0	15	0	0	0	30
8:15 AM	6	0	1	0	1	0	0	0	12	0	0	0	20
8:30 AM	11	0	0	0	1	0	0	0	13	0	0	0	25
8:45 AM	4	0	0	0	1	0	0	0	11	0	0	0	16
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	88	10	12	0	7	0	0	0	95	1	0	0	213
APPROACH %'s :	80.00%	9.09%	10.91%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	37	2	5	0	4	0	0	0	48	0	0	0	96
PEAK HR FACTOR :	0.786			1.000			0.800			0.000			0.715

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-049 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			New Dock St			New Dock St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 1	SL 1.5	ST 0.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 3	WR 0	TOTAL
2:00 PM	10	1	1	1	1	0	0	0	7	0	0	0	21
2:15 PM	11	1	2	0	1	0	0	0	9	0	0	1	25
2:30 PM	7	0	1	0	0	0	0	0	16	1	0	0	25
2:45 PM	12	1	2	0	1	0	0	0	5	0	0	0	21
3:00 PM	4	0	1	0	1	0	0	0	14	0	0	0	20
3:15 PM	7	2	0	0	0	0	0	0	8	1	0	0	18
3:30 PM	9	0	1	0	0	0	0	1	9	0	0	0	20
3:45 PM	5	0	0	0	0	0	0	1	8	0	0	0	14
4:00 PM	4	0	1	0	0	0	0	0	8	0	0	0	13
4:15 PM	3	0	1	0	0	0	0	0	9	0	0	0	13
4:30 PM	2	0	2	0	0	0	0	0	1	0	0	0	5
4:45 PM	3	0	0	0	0	0	0	0	3	0	0	0	6
5:00 PM	2	0	3	0	0	0	0	0	2	0	0	0	7
5:15 PM	1	0	0	0	0	0	0	0	2	0	0	0	3
5:30 PM	5	0	0	0	0	0	0	1	0	1	0	0	7
5:45 PM	3	0	0	0	0	0	0	0	5	1	0	0	9
TOTAL VOLUMES :	NL 88	NT 5	NR 15	SL 1	ST 4	SR 0	EL 0	ET 3	ER 106	WL 4	WT 0	WR 1	TOTAL 227
APPROACH %'s :	81.48%	4.63%	13.89%	20.00%	80.00%	0.00%	0.00%	2.75%	97.25%	80.00%	0.00%	20.00%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	40	3	6	1	3	0	0	0	37	1	0	1	92
PEAK HR FACTOR :	0.817			0.500			0.578			0.500			0.905

UTURNS	NB	SB	EB	WB
	0	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
	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	0
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
6:00 AM	0	11	0	0	16	42	0	0	0	35	27	2	133
6:15 AM	0	17	0	0	20	88	0	0	0	38	31	7	201
6:30 AM	0	17	0	0	38	94	0	0	0	43	46	6	244
6:45 AM	0	26	0	0	33	106	0	0	0	41	56	5	267
7:00 AM	0	14	0	0	44	109	0	0	0	52	48	4	271
7:15 AM	0	19	0	0	26	86	0	0	0	54	44	7	236
7:30 AM	0	56	0	0	46	77	0	0	0	36	41	1	257
7:45 AM	0	36	0	0	33	74	0	0	0	44	67	9	263
8:00 AM	0	40	0	0	30	70	0	0	0	33	52	10	235
8:15 AM	0	53	0	0	32	79	0	0	0	39	49	23	275
8:30 AM	0	51	0	0	39	82	0	0	0	35	47	15	269
8:45 AM	2	46	0	0	37	69	0	0	0	28	55	25	262
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	386	0	0	394	976	0	0	0	478	563	114	2913
APPROACH %'s :	0.52%	99.48%	0.00%	0.00%	28.76%	71.24%	#DIV/0!	#DIV/0!	#DIV/0!	41.39%	48.74%	9.87%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	180	0	0	134	305	0	0	0	151	215	57	1042
PEAK HR FACTOR :		0.849			0.907			0.000			0.881		0.947

CONTROL : Signalized

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
2:00 PM	2	73	0	0	32	68	0	0	0	38	54	38	305
2:15 PM	1	56	0	0	30	65	0	0	0	46	46	29	273
2:30 PM	0	84	0	0	30	73	0	0	0	45	48	42	322
2:45 PM	1	87	0	0	27	81	0	0	0	44	42	59	341
3:00 PM	1	83	0	0	23	68	0	0	0	45	37	44	301
3:15 PM	0	77	0	0	21	61	0	0	0	34	40	49	282
3:30 PM	0	78	0	0	26	81	0	0	0	35	58	52	330
3:45 PM	0	102	0	0	17	57	0	0	0	30	49	50	305
4:00 PM	0	77	0	0	21	82	0	0	0	12	45	53	290
4:15 PM	0	77	0	0	24	69	0	0	0	24	60	51	305
4:30 PM	2	75	0	0	37	112	0	0	0	38	49	42	355
4:45 PM	0	84	0	0	38	93	0	0	0	37	80	39	371
5:00 PM	0	54	0	0	31	100	0	0	0	22	43	17	267
5:15 PM	0	46	0	0	39	88	0	0	0	30	30	13	246
5:30 PM	0	27	0	0	30	90	0	0	0	31	30	9	217
5:45 PM	1	19	0	0	39	105	0	0	0	21	27	9	221
TOTAL VOLUMES :	NL 8	NT 1099	NR 0	SL 0	ST 465	SR 1293	EL 0	ET 0	ER 0	WL 532	WT 738	WR 596	TOTAL 4731
APPROACH %'s :	0.72%	99.28%	0.00%	0.00%	26.45%	73.55%	#DIV/0!	#DIV/0!	#DIV/0!	28.51%	39.55%	31.94%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	2	313	0	0	120	356	0	0	0	111	234	185	1321
PEAK HR FACTOR :		0.938			0.799			0.000			0.849		0.890

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

SR-47 and Ocean Blvd North Of Bridge , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-5.2
City: Long Beach

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	400 PM

Peak Hour Summary

Southbound Approach

Lanes	1	2	0		
AM	305	134	0	237	AM
NOON	0	0	0	0	NOON
PM	356	120	0	498	PM

SR-47

Ocean Blvd North Of Bridge

Eastbound Approach

	AM	NOON	PM	
	520	0	592	
0	0	0	0	
0	0	0	0	
0	0	0	0	
Lanes	AM	NOON	PM	

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
	57	0	185	1
	215	0	234	2
	151	0	111	1
	0	0	0	
	AM	NOON	PM	

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	285	0	180	0	AM
NOON	0	0	0	0	NOON
PM	231	2	313	0	PM
		1	1	0	Lanes

Total Ins & Outs

	North Leg		
AM	439	237	AM
NOON	0	0	NOON
PM	476	498	PM

West Leg				East Leg			
AM	NOON	PM		AM	NOON	PM	
520	0	592		423	0	530	
0	0	0		0	0	0	
AM	NOON	PM		AM	NOON	PM	

	South Leg		
AM	285	180	AM
NOON	0	0	NOON
PM	231	315	PM

Total Volume Per Leg

	North Leg	
AM	676	AM
NOON	0	NOON
PM	974	PM

West Leg			East Leg		
AM	NOON	PM			
520	0	592	423	0	530
			AM	NOON	PM

	South Leg	
AM	465	AM
NOON	0	NOON
PM	546	PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
6:00 AM	0	10	0	0	16	29	0	0	0	30	14	2	101
6:15 AM	0	13	0	0	14	68	0	0	0	28	21	7	151
6:30 AM	0	15	0	0	31	81	0	0	0	34	29	5	195
6:45 AM	0	23	0	0	21	72	0	0	0	34	37	5	192
7:00 AM	0	12	0	0	33	53	0	0	0	38	23	4	163
7:15 AM	0	13	0	0	11	37	0	0	0	30	20	6	117
7:30 AM	0	23	0	0	15	29	0	0	0	15	6	0	88
7:45 AM	0	14	0	0	4	24	0	0	0	28	27	4	101
8:00 AM	0	15	0	0	6	14	0	0	0	15	16	3	69
8:15 AM	0	23	0	0	4	21	0	0	0	14	10	8	80
8:30 AM	0	14	0	0	4	19	0	0	0	8	8	3	56
8:45 AM	2	10	0	0	15	25	0	0	0	7	9	3	71
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	185	0	0	174	472	0	0	0	281	220	50	1384
APPROACH %'s :	1.07%	98.93%	0.00%	0.00%	26.93%	73.07%	#DIV/0!	#DIV/0!	#DIV/0!	51.00%	39.93%	9.07%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	66	0	0	18	78	0	0	0	65	61	18	306
PEAK HR FACTOR :		0.717			0.857			0.000			0.610		0.757

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
2:00 PM	1	12	0	0	12	19	0	0	0	7	11	9	71
2:15 PM	1	10	0	0	7	17	0	0	0	13	4	6	58
2:30 PM	0	29	0	0	5	12	0	0	0	9	15	13	83
2:45 PM	0	29	0	0	4	18	0	0	0	9	10	11	81
3:00 PM	1	33	0	0	3	14	0	0	0	11	9	11	82
3:15 PM	0	33	0	0	5	17	0	0	0	9	9	12	85
3:30 PM	0	18	0	0	3	23	0	0	0	4	13	7	68
3:45 PM	0	31	0	0	7	22	0	0	0	8	11	1	80
4:00 PM	0	22	0	0	6	19	0	0	0	6	15	9	77
4:15 PM	0	32	0	0	15	32	0	0	0	6	32	11	128
4:30 PM	0	35	0	0	12	70	0	0	0	15	25	11	168
4:45 PM	0	65	0	0	16	36	0	0	0	22	67	30	236
5:00 PM	0	50	0	0	6	33	0	0	0	5	29	8	131
5:15 PM	0	30	0	0	8	14	0	0	0	9	8	6	75
5:30 PM	0	16	0	0	5	18	0	0	0	16	13	3	71
5:45 PM	0	11	0	0	10	22	0	0	0	9	9	1	62
TOTAL VOLUMES :	3	456	0	0	124	386	0	0	0	158	280	149	1556
APPROACH %'s :	0.65%	99.35%	0.00%	0.00%	24.31%	75.69%	#DIV/0!	#DIV/0!	#DIV/0!	26.92%	47.70%	25.38%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	154	0	0	49	157	0	0	0	49	139	61	609
PEAK HR FACTOR :		0.592			0.628			0.000			0.523		0.645

UTURNS	NB	SB	EB	WB
	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	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
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
6:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	3
6:15 AM	0	4	0	0	3	6	0	0	0	2	0	0	15
6:30 AM	0	1	0	0	5	5	0	0	0	2	2	1	16
6:45 AM	0	2	0	0	6	12	0	0	0	1	4	0	25
7:00 AM	0	1	0	0	3	17	0	0	0	5	3	0	29
7:15 AM	0	5	0	0	9	15	0	0	0	2	5	0	36
7:30 AM	0	16	0	0	11	21	0	0	0	3	7	0	58
7:45 AM	0	9	0	0	6	13	0	0	0	2	4	2	36
8:00 AM	0	12	0	0	8	13	0	0	0	7	9	3	52
8:15 AM	0	8	0	0	7	21	0	0	0	4	5	6	51
8:30 AM	0	11	0	0	11	19	0	0	0	6	11	3	61
8:45 AM	0	11	0	0	7	19	0	0	0	6	10	6	59
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	80	0	0	76	164	0	0	0	40	60	21	441
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	31.67%	68.33%	#DIV/0!	#DIV/0!	#DIV/0!	33.06%	49.59%	17.36%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	40	0	0	32	66	0	0	0	19	29	14	200
PEAK HR FACTOR :		0.833			0.817			0.000			0.775		0.757

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
2:00 PM	0	23	0	0	2	11	0	0	0	6	4	11	57
2:15 PM	0	14	0	0	6	9	0	0	0	3	1	7	40
2:30 PM	0	13	0	0	4	23	0	0	0	11	3	5	59
2:45 PM	1	20	0	0	4	10	0	0	0	2	4	23	64
3:00 PM	0	13	0	0	4	14	0	0	0	1	4	11	47
3:15 PM	0	12	0	0	3	4	0	0	0	1	7	17	44
3:30 PM	0	19	0	0	6	8	0	0	0	2	9	16	60
3:45 PM	0	27	0	0	2	8	0	0	0	4	8	18	67
4:00 PM	0	24	0	0	2	20	0	0	0	1	4	10	61
4:15 PM	0	19	0	0	0	12	0	0	0	4	10	14	59
4:30 PM	1	21	0	0	3	14	0	0	0	5	10	12	66
4:45 PM	0	12	0	0	8	18	0	0	0	4	5	9	56
5:00 PM	0	1	0	0	7	19	0	0	0	2	5	3	37
5:15 PM	0	8	0	0	5	22	0	0	0	3	2	1	41
5:30 PM	0	8	0	0	3	23	0	0	0	1	6	2	43
5:45 PM	1	3	0	0	6	30	0	0	0	4	9	3	56
TOTAL VOLUMES :	NL 3	NT 237	NR 0	SL 0	ST 65	SR 245	EL 0	ET 0	ER 0	WL 54	WT 91	WR 162	TOTAL 857
APPROACH %'s :	1.25%	98.75%	0.00%	0.00%	20.97%	79.03%	#DIV/0!	#DIV/0!	#DIV/0!	17.59%	29.64%	52.77%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	1	76	0	0	13	64	0	0	0	14	29	45	242
PEAK HR FACTOR :		0.802			0.740			0.000			0.786		0.645

UTURNS	NB	SB	EB	WB
	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	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
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

Containers

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
6:00 AM	0	0	0	0	0	6	0	0	0	3	7	0	16
6:15 AM	0	0	0	0	3	9	0	0	0	5	5	0	22
6:30 AM	0	0	0	0	1	3	0	0	0	6	8	0	18
6:45 AM	0	0	0	0	3	12	0	0	0	3	9	0	27
7:00 AM	0	1	0	0	7	25	0	0	0	5	15	0	53
7:15 AM	0	1	0	0	4	20	0	0	0	16	7	0	48
7:30 AM	0	8	0	0	16	15	0	0	0	10	8	0	57
7:45 AM	0	6	0	0	17	16	0	0	0	9	13	1	62
8:00 AM	0	8	0	0	13	28	0	0	0	8	9	3	69
8:15 AM	0	15	0	0	13	25	0	0	0	17	13	5	88
8:30 AM	0	18	0	0	16	31	0	0	0	19	14	8	106
8:45 AM	0	19	0	0	8	19	0	0	0	13	12	13	84
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	76	0	0	101	209	0	0	0	114	120	30	650
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	32.58%	67.42%	#DIV/0!	#DIV/0!	#DIV/0!	43.18%	45.45%	11.36%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	47	0	0	59	100	0	0	0	53	49	17	325
PEAK HR FACTOR :		0.653			0.846			0.000			0.726		0.757

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

Containers

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
2:00 PM	0	23	0	0	11	27	0	0	0	20	16	11	108
2:15 PM	0	17	0	0	13	20	0	0	0	25	21	11	107
2:30 PM	0	26	0	0	17	25	0	0	0	22	21	12	123
2:45 PM	0	22	0	0	11	38	0	0	0	29	13	15	128
3:00 PM	0	21	0	0	11	27	0	0	0	28	11	18	116
3:15 PM	0	17	0	0	7	26	0	0	0	23	11	11	95
3:30 PM	0	24	0	0	14	34	0	0	0	28	21	21	142
3:45 PM	0	25	0	0	5	18	0	0	0	15	11	19	93
4:00 PM	0	17	0	0	11	20	0	0	0	4	10	24	86
4:15 PM	0	14	0	0	4	17	0	0	0	13	9	12	69
4:30 PM	1	9	0	0	13	18	0	0	0	14	6	14	75
4:45 PM	0	3	0	0	10	30	0	0	0	9	6	0	58
5:00 PM	0	1	0	0	12	33	0	0	0	11	4	2	63
5:15 PM	0	5	0	0	20	41	0	0	0	11	16	5	98
5:30 PM	0	1	0	0	12	32	0	0	0	11	5	1	62
5:45 PM	0	3	0	0	16	41	0	0	0	7	5	3	75
TOTAL VOLUMES :	1	228	0	0	187	447	0	0	0	270	186	179	1498
APPROACH %'s :	0.44%	99.56%	0.00%	0.00%	29.50%	70.50%	#DIV/0!	#DIV/0!	#DIV/0!	42.52%	29.29%	28.19%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	1	43	0	0	38	85	0	0	0	40	31	50	288
PEAK HR FACTOR :		0.647			0.769			0.000			0.796		0.645

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	0	2	1	0	0	0	1	2	1	
6:00 AM	0	0	0	0	0	1	0	0	0	2	0	0	3
6:15 AM	0	0	0	0	0	2	0	0	0	1	2	0	5
6:30 AM	0	0	0	0	1	3	0	0	0	0	3	0	7
6:45 AM	0	1	0	0	1	6	0	0	0	1	2	0	11
7:00 AM	0	0	0	0	0	8	0	0	0	2	4	0	14
7:15 AM	0	0	0	0	2	9	0	0	0	4	6	0	21
7:30 AM	0	7	0	0	3	9	0	0	0	7	13	0	39
7:45 AM	0	2	0	0	5	16	0	0	0	4	15	0	42
8:00 AM	0	5	0	0	3	8	0	0	0	2	13	1	32
8:15 AM	0	5	0	0	8	7	0	0	0	3	11	4	38
8:30 AM	0	8	0	0	8	9	0	0	0	1	9	1	36
8:45 AM	0	2	0	0	7	6	0	0	0	0	15	2	32
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	30	0	0	38	84	0	0	0	27	93	8	280
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	31.15%	68.85%	#DIV/0!	#DIV/0!	#DIV/0!	21.09%	72.66%	6.25%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	20	0	0	24	40	0	0	0	10	48	6	148
PEAK HR FACTOR :		0.625			0.762			0.000			0.842		0.757

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
2:00 PM	1	11	0	0	5	8	0	0	0	5	10	6	46
2:15 PM	0	12	0	0	3	13	0	0	0	5	10	5	48
2:30 PM	0	13	0	0	2	9	0	0	0	2	3	9	38
2:45 PM	0	10	0	0	5	7	0	0	0	3	10	9	44
3:00 PM	0	12	0	0	3	11	0	0	0	4	8	3	41
3:15 PM	0	13	0	0	5	11	0	0	0	0	6	9	44
3:30 PM	0	16	0	0	3	13	0	0	0	1	8	7	48
3:45 PM	0	16	0	0	3	8	0	0	0	2	12	10	51
4:00 PM	0	12	0	0	2	20	0	0	0	1	12	10	57
4:15 PM	0	11	0	0	5	8	0	0	0	1	6	13	44
4:30 PM	0	8	0	0	9	8	0	0	0	2	5	4	36
4:45 PM	0	3	0	0	4	6	0	0	0	2	2	0	17
5:00 PM	0	0	0	0	6	12	0	0	0	4	2	3	27
5:15 PM	0	2	0	0	6	11	0	0	0	7	4	1	31
5:30 PM	0	2	0	0	10	17	0	0	0	2	3	3	37
5:45 PM	0	1	0	0	6	12	0	0	0	1	1	2	23
TOTAL VOLUMES :	NL 1	NT 142	NR 0	SL 0	ST 77	SR 174	EL 0	ET 0	ER 0	WL 42	WT 102	WR 94	TOTAL 632
APPROACH %'s :	0.70%	99.30%	0.00%	0.00%	30.68%	69.32%	#DIV/0!	#DIV/0!	#DIV/0!	17.65%	42.86%	39.50%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	34	0	0	20	42	0	0	0	6	25	27	154
PEAK HR FACTOR :		0.708			0.705			0.000			0.630		0.645

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
6:00 AM	0	1	0	0	0	3	0	0	0	0	6	0	10
6:15 AM	0	0	0	0	0	3	0	0	0	2	3	0	8
6:30 AM	0	1	0	0	0	2	0	0	0	1	4	0	8
6:45 AM	0	0	0	0	2	4	0	0	0	2	4	0	12
7:00 AM	0	0	0	0	1	6	0	0	0	2	3	0	12
7:15 AM	0	0	0	0	0	5	0	0	0	2	6	1	14
7:30 AM	0	2	0	0	1	3	0	0	0	1	7	1	15
7:45 AM	0	5	0	0	1	5	0	0	0	1	8	2	22
8:00 AM	0	0	0	0	0	7	0	0	0	1	5	0	13
8:15 AM	0	2	0	0	0	5	0	0	0	1	10	0	18
8:30 AM	0	0	0	0	0	4	0	0	0	1	5	0	10
8:45 AM	0	4	0	0	0	0	0	0	0	2	9	1	16
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	15	0	0	5	47	0	0	0	16	70	5	158
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	9.62%	90.38%	#DIV/0!	#DIV/0!	#DIV/0!	17.58%	76.92%	5.49%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	7	0	0	1	21	0	0	0	4	28	2	63
PEAK HR FACTOR :		0.350			0.786			0.000			0.773		0.757

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.2 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd North Of Bridge			Ocean Blvd North Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 1	WT 2	WR 1	TOTAL
2:00 PM	0	4	0	0	2	3	0	0	0	0	13	1	23
2:15 PM	0	3	0	0	1	6	0	0	0	0	10	0	20
2:30 PM	0	3	0	0	2	4	0	0	0	1	6	3	19
2:45 PM	0	6	0	0	3	8	0	0	0	1	5	1	24
3:00 PM	0	4	0	0	2	2	0	0	0	1	5	1	15
3:15 PM	0	2	0	0	1	3	0	0	0	1	7	0	14
3:30 PM	0	1	0	0	0	3	0	0	0	0	7	1	12
3:45 PM	0	3	0	0	0	1	0	0	0	1	7	2	14
4:00 PM	0	2	0	0	0	3	0	0	0	0	4	0	9
4:15 PM	0	1	0	0	0	0	0	0	0	0	3	1	5
4:30 PM	0	2	0	0	0	2	0	0	0	2	3	1	10
4:45 PM	0	1	0	0	0	3	0	0	0	0	0	0	4
5:00 PM	0	2	0	0	0	3	0	0	0	0	3	1	9
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	1	3	0	4
5:45 PM	0	1	0	0	1	0	0	0	0	0	3	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	36	0	0	12	41	0	0	0	8	79	12	188
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	22.64%	77.36%	#DIV/0!	#DIV/0!	#DIV/0!	8.08%	79.80%	12.12%	

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	6	0	0	0	8	0	0	0	2	10	2	28
PEAK HR FACTOR :		0.750			0.667			0.000			0.583		0.645

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1.5	0.5	0	1	1.5	0.5	0	0	0	
6:00 AM	0	0	0	47	0	0	10	25	0	0	0	0	82
6:15 AM	0	0	0	51	5	0	17	25	2	0	0	0	100
6:30 AM	0	0	1	79	2	0	17	34	0	0	0	0	133
6:45 AM	0	0	10	76	2	0	26	36	1	0	0	0	151
7:00 AM	0	0	7	94	7	0	14	40	0	0	0	0	162
7:15 AM	0	0	6	81	4	0	19	50	1	0	0	0	161
7:30 AM	0	0	9	72	9	0	56	70	1	0	0	0	217
7:45 AM	0	1	8	72	4	0	35	66	5	0	0	0	191
8:00 AM	0	0	9	54	9	0	42	70	2	0	0	0	186
8:15 AM	0	0	12	69	7	0	51	68	3	0	0	0	210
8:30 AM	0	0	10	68	8	0	57	65	3	0	0	0	211
8:45 AM	0	1	12	49	10	0	42	50	1	0	0	0	165
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2	84	812	67	0	386	599	19	0	0	0	1969
APPROACH %'s :	0.00%	2.33%	97.67%	92.38%	7.62%	0.00%	38.45%	59.66%	1.89%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	1	38	267	29	0	184	274	11	0	0	0	804
PEAK HR FACTOR :		0.813			0.914			0.923			0.000		0.926

UTURNS			
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1.5	ST 0.5	SR 0	EL 1	ET 1.5	ER 0.5	WL 0	WT 0	WR 0	TOTAL
2:00 PM	0	3	6	58	6	0	77	55	3	0	0	0	208
2:15 PM	0	0	7	70	3	0	63	55	6	0	0	0	204
2:30 PM	0	3	10	70	8	0	79	48	2	0	0	0	220
2:45 PM	0	3	4	65	5	0	85	56	3	0	0	0	221
3:00 PM	0	1	2	71	1	0	80	35	3	0	0	0	193
3:15 PM	0	0	8	50	6	0	78	42	2	0	0	0	186
3:30 PM	0	4	7	63	4	0	72	54	6	0	0	0	210
3:45 PM	0	3	2	41	0	0	95	58	3	0	0	0	202
4:00 PM	0	2	2	29	2	0	84	45	2	0	0	0	166
4:15 PM	0	1	5	45	2	0	68	44	8	0	0	0	173
4:30 PM	0	3	8	72	5	0	71	51	5	0	0	0	215
4:45 PM	0	0	7	77	4	0	84	59	3	0	0	0	234
5:00 PM	0	0	7	53	2	0	62	34	2	0	0	0	160
5:15 PM	0	0	6	64	7	0	40	42	1	0	0	0	160
5:30 PM	0	0	2	56	5	0	24	42	2	0	0	0	131
5:45 PM	0	1	5	56	2	0	19	27	3	0	0	0	113
TOTAL VOLUMES :	NL 0	NT 24	NR 88	SL 940	ST 62	SR 0	EL 1081	ET 747	ER 54	WL 0	WT 0	WR 0	TOTAL 2996
APPROACH %'s :	0.00%	21.43%	78.57%	93.81%	6.19%	0.00%	57.44%	39.69%	2.87%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	9	27	263	22	0	304	214	14	0	0	0	853
PEAK HR FACTOR :		0.692			0.913			0.924			0.000		0.965

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

SR-47 and Ocean Blvd South Of Bridge , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-5.1
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	200 PM

Peak Hour Summary

Southbound Approach

Lanes	0	0.5	1.5		
AM	0	29	267	185	AM
NOON	0	0	0	0	NOON
PM	0	22	263	313	PM

SR-47

Ocean Blvd South Of Bridge

Eastbound Approach

Lanes	AM	NOON	PM
	0	0	0
1	184	0	304
1.5	274	0	214
0.5	11	0	14

Westbound Approach

Lanes	AM	NOON	PM
0	0	0	0
0	0	0	0
0	0	0	0
	579	0	504

CONTROL

Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	40	0	1	38
NOON	0	0	0	0
PM	36	0	9	27
Lanes		0	1	1

Total Ins & Outs

	AM	NOON	PM
North Leg	296	0	285
	185	0	313
West Leg	0	0	0
	469	0	532
East Leg	0	0	0
	579	0	504
South Leg	40	0	36
	39	0	36

Total Volume Per Leg

	AM	NOON	PM
North Leg	481	0	598
West Leg	469	0	532
East Leg	579	0	504
South Leg	79	0	72

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1.5	ST 0.5	SR 0	EL 1	ET 1.5	ER 0.5	WL 0	WT 0	WR 0	TOTAL
6:00 AM	0	0	0	42	0	0	10	17	0	0	0	0	69
6:15 AM	0	0	0	39	0	0	13	22	0	0	0	0	74
6:30 AM	0	0	0	69	0	0	15	28	0	0	0	0	112
6:45 AM	0	0	0	58	0	0	23	29	1	0	0	0	111
7:00 AM	0	0	3	74	3	0	12	26	0	0	0	0	118
7:15 AM	0	0	1	44	0	0	13	31	0	0	0	0	89
7:30 AM	0	0	1	29	1	0	23	30	0	0	0	0	84
7:45 AM	0	0	0	31	0	0	15	22	0	0	0	0	68
8:00 AM	0	0	0	20	1	0	15	11	0	0	0	0	47
8:15 AM	0	0	0	23	0	0	22	9	0	0	0	0	54
8:30 AM	0	0	1	12	0	0	15	16	0	0	0	0	44
8:45 AM	0	0	2	14	2	0	10	9	0	0	0	0	37
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	8	455	7	0	186	250	1	0	0	0	907
APPROACH %'s :	0.00%	0.00%	100.00%	98.48%	1.52%	0.00%	42.56%	57.21%	0.23%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	1	103	2	0	75	72	0	0	0	0	253
PEAK HR FACTOR :	0.250			0.847			0.693			0.000			0.753

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1.5	ST 0.5	SR 0	EL 1	ET 1.5	ER 0.5	WL 0	WT 0	WR 0	TOTAL
2:00 PM	0	1	0	11	1	0	16	9	0	0	0	0	38
2:15 PM	0	0	0	18	0	0	11	20	0	0	0	0	49
2:30 PM	0	1	1	18	0	0	29	16	0	0	0	0	65
2:45 PM	0	0	0	11	0	0	27	18	0	0	0	0	56
3:00 PM	0	1	0	19	0	0	36	14	1	0	0	0	71
3:15 PM	0	0	0	15	0	0	32	12	0	0	0	0	59
3:30 PM	0	3	0	11	0	0	15	21	2	0	0	0	52
3:45 PM	0	0	0	11	0	0	28	21	0	0	0	0	60
4:00 PM	0	1	0	10	0	0	25	22	1	0	0	0	59
4:15 PM	0	0	0	18	0	0	28	29	0	0	0	0	75
4:30 PM	0	0	0	31	0	0	33	36	0	0	0	0	100
4:45 PM	0	0	0	44	0	0	63	51	0	0	0	0	158
5:00 PM	0	0	0	13	0	0	59	29	0	0	0	0	101
5:15 PM	0	0	0	18	1	0	24	29	0	0	0	0	72
5:30 PM	0	0	0	20	0	0	12	31	0	0	0	0	63
5:45 PM	0	0	0	17	0	0	11	17	0	0	0	0	45
TOTAL VOLUMES :	NL 0	NT 7	NR 1	SL 285	ST 2	SR 0	EL 449	ET 375	ER 4	WL 0	WT 0	WR 0	TOTAL 1123
APPROACH %'s :	0.00%	87.50%	12.50%	99.30%	0.70%	0.00%	54.23%	45.29%	0.48%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	2	1	58	1	0	83	63	0	0	0	0	208
PEAK HR FACTOR :		0.375			0.819			0.811			0.000		0.800

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1.5	ST 0.5	SR 0	EL 1	ET 1.5	ER 0.5	WL 0	WT 0	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	1	4	0	4	0	2	0	0	0	11
6:30 AM	0	0	0	2	2	0	1	0	0	0	0	0	5
6:45 AM	0	0	10	7	2	0	2	2	0	0	0	0	23
7:00 AM	0	0	4	4	4	0	1	4	0	0	0	0	17
7:15 AM	0	0	2	8	2	0	5	0	0	0	0	0	17
7:30 AM	0	0	8	7	8	0	16	6	1	0	0	0	46
7:45 AM	0	1	6	5	3	0	8	7	3	0	0	0	33
8:00 AM	0	0	6	8	8	0	12	10	0	0	0	0	44
8:15 AM	0	0	10	6	5	0	8	21	3	0	0	0	53
8:30 AM	0	0	8	9	8	0	11	12	1	0	0	0	49
8:45 AM	0	0	6	9	4	0	11	12	1	0	0	0	43
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	60	66	50	0	79	74	11	0	0	0	341
APPROACH %'s :	0.00%	1.64%	98.36%	56.90%	43.10%	0.00%	48.17%	45.12%	6.71%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	1	30	26	24	0	44	44	7	0	0	0	176
PEAK HR FACTOR :		0.775			0.781			0.742			0.000		0.753

UTURNS			
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1.5	ST 0.5	SR 0	EL 1	ET 1.5	ER 0.5	WL 0	WT 0	WR 0	TOTAL
2:00 PM	0	1	4	4	4	0	23	2	1	0	0	0	39
2:15 PM	0	0	3	7	2	0	15	4	1	0	0	0	32
2:30 PM	0	0	6	8	7	0	11	4	0	0	0	0	36
2:45 PM	0	1	2	3	3	0	19	6	0	0	0	0	34
3:00 PM	0	0	2	4	1	0	12	5	1	0	0	0	25
3:15 PM	0	0	2	3	1	0	13	4	1	0	0	0	24
3:30 PM	0	1	2	6	3	0	16	6	1	0	0	0	35
3:45 PM	0	1	2	5	0	0	27	4	1	0	0	0	40
4:00 PM	0	0	1	2	1	0	26	6	0	0	0	0	36
4:15 PM	0	1	5	2	2	0	16	1	6	0	0	0	33
4:30 PM	0	3	7	4	4	0	21	3	5	0	0	0	47
4:45 PM	0	0	4	8	4	0	12	3	1	0	0	0	32
5:00 PM	0	0	7	7	2	0	1	1	2	0	0	0	20
5:15 PM	0	0	5	5	3	0	8	2	1	0	0	0	24
5:30 PM	0	0	1	1	3	0	9	1	1	0	0	0	16
5:45 PM	0	0	3	9	1	0	3	3	2	0	0	0	21
TOTAL VOLUMES :	NL 0	NT 8	NR 56	SL 78	ST 41	SR 0	EL 232	ET 55	ER 24	WL 0	WT 0	WR 0	TOTAL 494
APPROACH %'s :	0.00%	12.50%	87.50%	65.55%	34.45%	0.00%	74.60%	17.68%	7.72%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	2	15	22	16	0	68	16	2	0	0	0	141
PEAK HR FACTOR :		0.708			0.633			0.827			0.000		0.800

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1.5	ST 0.5	SR 0	EL 1	ET 1.5	ER 0.5	WL 0	WT 0	WR 0	TOTAL
6:00 AM	0	0	0	3	0	0	0	2	0	0	0	0	5
6:15 AM	0	0	0	8	0	0	0	0	0	0	0	0	8
6:30 AM	0	0	0	7	0	0	0	0	0	0	0	0	7
6:45 AM	0	0	0	6	0	0	0	0	0	0	0	0	6
7:00 AM	0	0	0	12	0	0	1	7	0	0	0	0	20
7:15 AM	0	0	0	21	0	0	1	8	0	0	0	0	30
7:30 AM	0	0	0	25	0	0	8	20	0	0	0	0	53
7:45 AM	0	0	0	26	0	0	6	13	0	0	0	0	45
8:00 AM	0	0	0	20	0	0	10	24	0	0	0	0	54
8:15 AM	0	0	0	30	0	0	13	23	0	0	0	0	66
8:30 AM	0	0	0	36	0	0	22	14	0	0	0	0	72
8:45 AM	0	0	0	21	0	0	15	13	0	0	0	0	49
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	215	0	0	76	124	0	0	0	0	415
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	38.00%	62.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	101	0	0	37	80	0	0	0	0	218
PEAK HR FACTOR :		0.000			0.842			0.813			0.000		0.753

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1.5	0.5	0	1	1.5	0.5	0	0	0	
2:00 PM	0	0	0	31	0	0	24	23	0	0	0	0	78
2:15 PM	0	0	0	38	0	0	21	13	1	0	0	0	73
2:30 PM	0	1	0	39	0	0	22	13	0	0	0	0	75
2:45 PM	0	0	0	39	0	0	24	17	0	0	0	0	80
3:00 PM	0	0	0	39	0	0	17	5	0	0	0	0	61
3:15 PM	0	0	1	26	4	0	17	13	0	0	0	0	61
3:30 PM	0	0	3	41	1	0	24	15	1	0	0	0	85
3:45 PM	0	1	0	20	0	0	24	13	1	0	0	0	59
4:00 PM	0	0	0	15	0	0	19	8	0	0	0	0	42
4:15 PM	0	0	0	17	0	0	12	7	0	0	0	0	36
4:30 PM	0	0	0	27	0	0	9	9	0	0	0	0	45
4:45 PM	0	0	0	19	0	0	4	5	0	0	0	0	28
5:00 PM	0	0	0	23	0	0	1	3	0	0	0	0	27
5:15 PM	0	0	0	29	2	0	5	8	0	0	0	0	44
5:30 PM	0	0	0	24	0	0	1	5	0	0	0	0	30
5:45 PM	0	0	0	23	0	0	4	3	0	0	0	0	30
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2	4	450	7	0	228	160	3	0	0	0	854
APPROACH %'s :	0.00%	33.33%	66.67%	98.47%	1.53%	0.00%	58.31%	40.92%	0.77%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	1	0	147	0	0	91	66	1	0	0	0	306
PEAK HR FACTOR :		0.250			0.942			0.840			0.000		0.800

UTURNS	NB	SB	EB	WB
	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	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
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1.5	ST 0.5	SR 0	EL 1	ET 1.5	ER 0.5	WL 0	WT 0	WR 0	TOTAL
6:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	2
6:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	1	0	0	0	1	0	0	0	0	2
6:45 AM	0	0	0	2	0	0	1	1	0	0	0	0	4
7:00 AM	0	0	0	2	0	0	0	1	0	0	0	0	3
7:15 AM	0	0	3	5	2	0	0	4	1	0	0	0	15
7:30 AM	0	0	0	9	0	0	7	4	0	0	0	0	20
7:45 AM	0	0	2	8	1	0	2	12	2	0	0	0	27
8:00 AM	0	0	3	5	0	0	5	11	2	0	0	0	26
8:15 AM	0	0	2	9	2	0	6	5	0	0	0	0	24
8:30 AM	0	0	1	10	0	0	7	4	1	0	0	0	23
8:45 AM	0	0	3	3	3	0	3	7	0	0	0	0	19
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	14	57	8	0	31	50	6	0	0	0	166
APPROACH %'s :	0.00%	0.00%	100.00%	87.69%	12.31%	0.00%	35.63%	57.47%	6.90%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	7	31	3	0	20	32	4	0	0	0	97
PEAK HR FACTOR :	0.583			0.773			0.778			0.000			0.753

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1.5	ST 0.5	SR 0	EL 1	ET 1.5	ER 0.5	WL 0	WT 0	WR 0	TOTAL
2:00 PM	0	0	2	10	1	0	12	9	1	0	0	0	35
2:15 PM	0	0	4	6	1	0	13	6	4	0	0	0	34
2:30 PM	0	1	3	4	1	0	13	9	2	0	0	0	33
2:45 PM	0	1	2	5	2	0	10	9	2	0	0	0	31
3:00 PM	0	0	0	7	0	0	11	2	1	0	0	0	21
3:15 PM	0	0	3	4	1	0	14	10	1	0	0	0	33
3:30 PM	0	0	2	5	0	0	16	6	2	0	0	0	31
3:45 PM	0	1	0	4	0	0	13	6	1	0	0	0	25
4:00 PM	0	1	1	2	1	0	12	4	1	0	0	0	22
4:15 PM	0	0	0	8	0	0	10	3	2	0	0	0	23
4:30 PM	0	0	1	8	1	0	7	2	0	0	0	0	19
4:45 PM	0	0	3	6	0	0	3	0	2	0	0	0	14
5:00 PM	0	0	0	10	0	0	0	1	0	0	0	0	11
5:15 PM	0	0	1	12	1	0	2	2	0	0	0	0	18
5:30 PM	0	0	1	10	2	0	2	5	1	0	0	0	21
5:45 PM	0	0	2	7	0	0	1	2	1	0	0	0	13
TOTAL VOLUMES :	0	4	25	108	11	0	139	76	21	0	0	0	384
APPROACH %'s :	0.00%	13.79%	86.21%	90.76%	9.24%	0.00%	58.90%	32.20%	8.90%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	2	11	25	5	0	48	33	9	0	0	0	133
PEAK HR FACTOR :		0.813			0.682			0.938			0.000		0.800

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1.5	ST 0.5	SR 0	EL 1	ET 1.5	ER 0.5	WL 0	WT 0	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	6	0	0	0	0	6
6:15 AM	0	0	0	2	1	0	0	3	0	0	0	0	6
6:30 AM	0	0	1	0	0	0	1	5	0	0	0	0	7
6:45 AM	0	0	0	3	0	0	0	4	0	0	0	0	7
7:00 AM	0	0	0	2	0	0	0	2	0	0	0	0	4
7:15 AM	0	0	0	3	0	0	0	7	0	0	0	0	10
7:30 AM	0	0	0	2	0	0	2	10	0	0	0	0	14
7:45 AM	0	0	0	2	0	0	4	12	0	0	0	0	18
8:00 AM	0	0	0	1	0	0	0	14	0	0	0	0	15
8:15 AM	0	0	0	1	0	0	2	10	0	0	0	0	13
8:30 AM	0	0	0	1	0	0	2	19	1	0	0	0	23
8:45 AM	0	1	1	2	1	0	3	9	0	0	0	0	17
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	2	19	2	0	14	101	1	0	0	0	140
APPROACH %'s :	0.00%	33.33%	66.67%	90.48%	9.52%	0.00%	12.07%	87.07%	0.86%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	6	0	0	8	46	0	0	0	0	60
PEAK HR FACTOR :		0.000			0.750			0.844			0.000		0.753

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-5.1 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	SR-47			SR-47			Ocean Blvd South Of Bridge			Ocean Blvd South Of Bridge			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1.5	ST 0.5	SR 0	EL 1	ET 1.5	ER 0.5	WL 0	WT 0	WR 0	TOTAL
2:00 PM	0	1	0	2	0	0	2	12	1	0	0	0	18
2:15 PM	0	0	0	1	0	0	3	12	0	0	0	0	16
2:30 PM	0	0	0	1	0	0	4	6	0	0	0	0	11
2:45 PM	0	1	0	7	0	0	5	6	1	0	0	0	20
3:00 PM	0	0	0	2	0	0	4	9	0	0	0	0	15
3:15 PM	0	0	2	2	0	0	2	3	0	0	0	0	9
3:30 PM	0	0	0	0	0	0	1	6	0	0	0	0	7
3:45 PM	0	0	0	1	0	0	3	14	0	0	0	0	18
4:00 PM	0	0	0	0	0	0	2	5	0	0	0	0	7
4:15 PM	0	0	0	0	0	0	2	4	0	0	0	0	6
4:30 PM	0	0	0	2	0	0	1	1	0	0	0	0	4
4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	2
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
5:45 PM	0	1	0	0	1	0	0	2	0	0	0	0	4
TOTAL VOLUMES :	NL 0	NT 3	NR 2	SL 19	ST 1	SR 0	EL 33	ET 81	ER 2	WL 0	WT 0	WR 0	TOTAL 141
APPROACH %'s :	0.00%	60.00%	40.00%	95.00%	5.00%	0.00%	28.45%	69.83%	1.72%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	2	0	11	0	0	14	36	2	0	0	0	65
PEAK HR FACTOR :		0.500			0.393			0.867			0.000		0.800

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
6:00 AM	0	17	0	0	9	2	0	0	0	0	31	39	98
6:15 AM	0	26	0	0	6	6	0	0	0	0	46	66	150
6:30 AM	0	42	0	0	12	2	0	0	0	0	59	81	196
6:45 AM	0	61	0	0	15	8	0	0	0	0	61	107	252
7:00 AM	0	46	0	0	8	4	0	0	0	0	67	87	212
7:15 AM	0	34	0	0	24	10	0	0	0	0	59	76	203
7:30 AM	0	37	0	0	47	15	0	0	0	0	74	50	223
7:45 AM	0	28	0	0	59	18	0	0	0	0	69	69	243
8:00 AM	0	21	0	0	70	31	0	0	0	0	58	62	242
8:15 AM	0	21	0	0	49	42	0	0	0	0	57	73	242
8:30 AM	0	22	0	0	76	47	0	0	0	0	58	68	271
8:45 AM	0	9	0	0	60	33	0	0	0	0	65	58	225
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	364	0	0	435	218	0	0	0	0	704	836	2557
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	66.62%	33.38%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	45.71%	54.29%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	92	0	0	254	138	0	0	0	0	242	272	998
PEAK HR FACTOR :		0.821			0.797			0.000			0.931		0.921

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
2:00 PM	0	25	0	0	68	31	0	0	0	0	65	55	244
2:15 PM	0	24	0	0	62	21	0	0	0	0	53	64	224
2:30 PM	0	22	0	0	59	48	0	0	0	0	63	60	252
2:45 PM	0	11	0	0	55	26	0	0	0	0	74	54	220
3:00 PM	0	11	0	0	54	27	0	0	0	0	64	42	198
3:15 PM	0	14	0	0	40	29	0	0	0	0	59	40	182
3:30 PM	0	20	0	0	51	25	0	0	0	0	79	66	241
3:45 PM	0	13	0	0	60	18	0	0	0	0	66	40	197
4:00 PM	0	16	0	0	54	26	0	0	0	0	87	37	220
4:15 PM	0	30	0	0	51	15	0	0	0	0	91	47	234
4:30 PM	0	43	0	0	37	29	0	0	0	0	97	64	270
4:45 PM	0	19	0	0	52	74	0	0	0	0	125	49	319
5:00 PM	0	44	0	0	22	19	0	0	0	0	98	37	220
5:15 PM	0	30	0	0	31	21	0	0	0	0	73	44	199
5:30 PM	0	23	0	0	28	13	0	0	0	0	79	43	186
5:45 PM	0	12	0	0	11	13	0	0	0	0	93	41	170
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	357	0	0	735	435	0	0	0	0	1266	783	3576
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	62.82%	37.18%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	61.79%	38.21%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	136	0	0	162	137	0	0	0	0	411	197	1043
PEAK HR FACTOR :		0.773			0.593			0.000			0.874		0.817

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Pier S Ave and Ocean Blvd WB , Long Beach

Date: 3/14/2018
Day: Wednesday

Project #: 18-5171-050.1
City: Long Beach

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach (Pier S Ave)

Lanes	1	2	0		
AM	138	254	0	364	AM
NOON	0	0	0	0	NOON
PM	137	162	0	333	PM

Eastbound Approach (Ocean Blvd WB)

	AM	NOON	PM
	380	0	548
0	0	0	0
0	0	0	0
0	0	0	0
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	272	0	197	2
	242	0	411	2
	0	0	0	0
	0	0	0	
	AM	NOON	PM	

CONTROL: Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	254	0	92	0	AM
NOON	0	0	0	0	NOON
PM	162	0	136	0	PM
Lanes		0	2	0	Lanes

Total Ins & Outs

	AM	NOON	PM
North Leg	392	0	299
	364	0	333
East Leg	514	0	608
	0	0	0
West Leg	380	0	548
	0	0	0
South Leg	254	0	162
	92	0	136

Total Volume Per Leg

	AM	NOON	PM
North Leg	756	0	632
East Leg	514	0	608
West Leg	380	0	548
South Leg	346	0	298

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
6:00 AM	0	16	0	0	2	2	0	0	0	0	21	21	62
6:15 AM	0	20	0	0	3	6	0	0	0	0	36	46	111
6:30 AM	0	35	0	0	6	1	0	0	0	0	51	60	153
6:45 AM	0	53	0	0	8	3	0	0	0	0	45	68	177
7:00 AM	0	34	0	0	5	1	0	0	0	0	36	37	113
7:15 AM	0	25	0	0	6	2	0	0	0	0	35	25	93
7:30 AM	0	24	0	0	5	2	0	0	0	0	26	13	70
7:45 AM	0	11	0	0	5	7	0	0	0	0	22	29	74
8:00 AM	0	9	0	0	5	13	0	0	0	0	19	13	59
8:15 AM	0	4	0	0	7	13	0	0	0	0	21	13	58
8:30 AM	0	7	0	0	22	30	0	0	0	0	12	15	86
8:45 AM	0	0	0	0	14	19	0	0	0	0	22	13	68
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	238	0	0	88	99	0	0	0	0	346	353	1124
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	47.06%	52.94%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	49.50%	50.50%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	31	0	0	39	63	0	0	0	0	74	70	277
PEAK HR FACTOR :		0.705			0.490			0.000			0.706		0.805

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
2:00 PM	0	12	0	0	8	13	0	0	0	0	19	11	63
2:15 PM	0	4	0	0	16	10	0	0	0	0	14	8	52
2:30 PM	0	13	0	0	17	21	0	0	0	0	22	6	79
2:45 PM	0	4	0	0	12	11	0	0	0	0	27	5	59
3:00 PM	0	1	0	0	15	9	0	0	0	0	20	4	49
3:15 PM	0	3	0	0	9	12	0	0	0	0	20	8	52
3:30 PM	0	6	0	0	14	9	0	0	0	0	29	9	67
3:45 PM	0	7	0	0	15	9	0	0	0	0	19	12	62
4:00 PM	0	9	0	0	15	15	0	0	0	0	25	11	75
4:15 PM	0	20	0	0	28	10	0	0	0	0	44	21	123
4:30 PM	0	34	0	0	24	24	0	0	0	0	50	41	173
4:45 PM	0	14	0	0	50	72	0	0	0	0	78	29	243
5:00 PM	0	32	0	0	18	17	0	0	0	0	42	17	126
5:15 PM	0	15	0	0	24	15	0	0	0	0	19	6	79
5:30 PM	0	17	0	0	21	7	0	0	0	0	21	9	75
5:45 PM	0	7	0	0	6	8	0	0	0	0	23	10	54
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	198	0	0	292	262	0	0	0	0	472	207	1431
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	52.71%	47.29%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	69.51%	30.49%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	100	0	0	120	123	0	0	0	0	214	108	665
PEAK HR FACTOR :		0.735			0.498			0.000			0.752		0.684

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
6:00 AM	0	0	0	0	0	0	0	0	0	0	5	0	5
6:15 AM	0	2	0	0	0	0	0	0	0	0	5	0	7
6:30 AM	0	1	0	0	0	0	0	0	0	0	4	5	10
6:45 AM	0	1	0	0	1	0	0	0	0	0	6	11	19
7:00 AM	0	2	0	0	0	0	0	0	0	0	12	8	22
7:15 AM	0	2	0	0	1	1	0	0	0	0	7	11	22
7:30 AM	0	5	0	0	14	7	0	0	0	0	16	12	54
7:45 AM	0	3	0	0	10	4	0	0	0	0	11	9	37
8:00 AM	0	6	0	0	17	9	0	0	0	0	12	6	50
8:15 AM	0	5	0	0	6	6	0	0	0	0	12	14	43
8:30 AM	0	4	0	0	6	4	0	0	0	0	18	11	43
8:45 AM	0	4	0	0	11	2	0	0	0	0	20	9	46
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	35	0	0	66	33	0	0	0	0	128	96	358
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	66.67%	33.33%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	57.14%	42.86%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	18	0	0	39	23	0	0	0	0	53	40	173
PEAK HR FACTOR :		0.750			0.596			0.000			0.802		0.805

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
2:00 PM	0	4	0	0	7	2	0	0	0	0	12	2	27
2:15 PM	0	3	0	0	7	3	0	0	0	0	10	4	27
2:30 PM	0	3	0	0	4	3	0	0	0	0	17	6	33
2:45 PM	0	2	0	0	10	2	0	0	0	0	13	3	30
3:00 PM	0	2	0	0	3	0	0	0	0	0	14	3	22
3:15 PM	0	1	0	0	4	3	0	0	0	0	13	1	22
3:30 PM	0	1	0	0	4	4	0	0	0	0	15	5	29
3:45 PM	0	5	0	0	8	3	0	0	0	0	13	1	30
4:00 PM	0	3	0	0	8	6	0	0	0	0	18	4	39
4:15 PM	0	3	0	0	6	1	0	0	0	0	19	5	34
4:30 PM	0	2	0	0	7	0	0	0	0	0	19	8	36
4:45 PM	0	1	0	0	0	1	0	0	0	0	17	4	23
5:00 PM	0	5	0	0	2	0	0	0	0	0	14	7	28
5:15 PM	0	5	0	0	2	2	0	0	0	0	17	6	32
5:30 PM	0	2	0	0	1	1	0	0	0	0	16	11	31
5:45 PM	0	2	0	0	0	0	0	0	0	0	35	7	44
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	44	0	0	73	31	0	0	0	0	262	77	487
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	70.19%	29.81%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	77.29%	22.71%	

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	11	0	0	15	2	0	0	0	0	69	24	121
PEAK HR FACTOR :		0.550			0.607			0.000			0.861		0.684

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
6:00 AM	0	1	0	0	0	0	0	0	0	0	3	8	12
6:15 AM	0	2	0	0	2	0	0	0	0	0	3	11	18
6:30 AM	0	5	0	0	1	0	0	0	0	0	1	7	14
6:45 AM	0	3	0	0	0	3	0	0	0	0	7	16	29
7:00 AM	0	4	0	0	1	0	0	0	0	0	15	24	44
7:15 AM	0	3	0	0	4	1	0	0	0	0	11	18	37
7:30 AM	0	3	0	0	13	3	0	0	0	0	12	11	42
7:45 AM	0	8	0	0	15	4	0	0	0	0	14	12	53
8:00 AM	0	2	0	0	23	4	0	0	0	0	14	23	66
8:15 AM	0	7	0	0	21	6	0	0	0	0	12	26	72
8:30 AM	0	6	0	0	20	5	0	0	0	0	23	23	77
8:45 AM	0	2	0	0	18	5	0	0	0	0	14	15	54
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	46	0	0	118	31	0	0	0	0	129	194	518
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	79.19%	20.81%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	39.94%	60.06%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	23	0	0	79	19	0	0	0	0	63	84	268
PEAK HR FACTOR :		0.719			0.907			0.000			0.799		0.805

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
2:00 PM	0	7	0	0	17	8	0	0	0	0	20	23	75
2:15 PM	0	9	0	0	8	2	0	0	0	0	19	26	64
2:30 PM	0	3	0	0	11	11	0	0	0	0	18	29	72
2:45 PM	0	4	0	0	10	3	0	0	0	0	23	25	65
3:00 PM	0	6	0	0	9	5	0	0	0	0	18	19	57
3:15 PM	0	5	0	0	10	3	0	0	0	0	16	17	51
3:30 PM	0	7	0	0	6	5	0	0	0	0	23	35	76
3:45 PM	0	1	0	0	11	2	0	0	0	0	18	14	46
4:00 PM	0	1	0	0	10	1	0	0	0	0	19	10	41
4:15 PM	0	3	0	0	3	2	0	0	0	0	16	12	36
4:30 PM	0	4	0	0	3	1	0	0	0	0	18	7	33
4:45 PM	0	4	0	0	0	0	0	0	0	0	22	12	38
5:00 PM	0	7	0	0	1	2	0	0	0	0	30	7	47
5:15 PM	0	8	0	0	2	3	0	0	0	0	29	26	68
5:30 PM	0	2	0	0	1	4	0	0	0	0	26	14	47
5:45 PM	0	1	0	0	2	2	0	0	0	0	24	20	49
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	72	0	0	104	54	0	0	0	0	339	296	865
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	65.82%	34.18%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	53.39%	46.61%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	18	0	0	7	5	0	0	0	0	86	38	154
PEAK HR FACTOR :		0.643			0.600			0.000			0.838		0.684

UTURNS

	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 2	NR 0	SL 0	ST 2	SR 1	EL 0	ET 0	ER 0	WL 0	WT 2	WR 2	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	2
6:15 AM	0	0	0	0	0	0	0	0	0	0	1	3	4
6:30 AM	0	0	0	0	0	0	0	0	0	0	2	4	6
6:45 AM	0	0	0	0	1	0	0	0	0	0	2	6	9
7:00 AM	0	3	0	0	0	1	0	0	0	0	3	9	16
7:15 AM	0	2	0	0	3	2	0	0	0	0	5	12	24
7:30 AM	0	1	0	0	6	2	0	0	0	0	19	5	33
7:45 AM	0	3	0	0	13	2	0	0	0	0	21	8	47
8:00 AM	0	2	0	0	15	3	0	0	0	0	10	11	41
8:15 AM	0	3	0	0	5	9	0	0	0	0	11	7	35
8:30 AM	0	1	0	0	8	5	0	0	0	0	5	12	31
8:45 AM	0	1	0	0	6	6	0	0	0	0	9	11	33
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	16	0	0	57	30	0	0	0	0	88	90	281
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	65.52%	34.48%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	49.44%	50.56%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	9	0	0	41	19	0	0	0	0	47	38	154
PEAK HR FACTOR :		0.750			0.833			0.000			0.733		0.805

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

Chassis

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
2:00 PM	0	1	0	0	22	6	0	0	0	0	8	10	47
2:15 PM	0	4	0	0	15	5	0	0	0	0	9	13	46
2:30 PM	0	1	0	0	21	11	0	0	0	0	4	9	46
2:45 PM	0	1	0	0	16	5	0	0	0	0	9	10	41
3:00 PM	0	0	0	0	17	11	0	0	0	0	8	10	46
3:15 PM	0	2	0	0	15	10	0	0	0	0	8	9	44
3:30 PM	0	3	0	0	18	7	0	0	0	0	11	11	50
3:45 PM	0	0	0	0	12	4	0	0	0	0	12	7	35
4:00 PM	0	3	0	0	14	3	0	0	0	0	25	6	51
4:15 PM	0	3	0	0	10	1	0	0	0	0	10	7	31
4:30 PM	0	3	0	0	3	3	0	0	0	0	9	3	21
4:45 PM	0	0	0	0	0	0	0	0	0	0	6	2	8
5:00 PM	0	0	0	0	0	0	0	0	0	0	12	2	14
5:15 PM	0	1	0	0	2	1	0	0	0	0	6	6	16
5:30 PM	0	1	0	0	5	1	0	0	0	0	15	6	28
5:45 PM	0	0	0	0	1	0	0	0	0	0	11	3	15
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	23	0	0	171	68	0	0	0	0	163	114	539
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	71.55%	28.45%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	58.84%	41.16%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	6	0	0	13	4	0	0	0	0	37	14	74
PEAK HR FACTOR :		0.500			0.386			0.000			0.750		0.684

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
6:00 AM	0	0	0	0	7	0	0	0	0	0	2	8	17
6:15 AM	0	2	0	0	1	0	0	0	0	0	1	6	10
6:30 AM	0	1	0	0	5	1	0	0	0	0	1	5	13
6:45 AM	0	4	0	0	5	2	0	0	0	0	1	6	18
7:00 AM	0	3	0	0	2	2	0	0	0	0	1	9	17
7:15 AM	0	2	0	0	10	4	0	0	0	0	1	10	27
7:30 AM	0	4	0	0	9	1	0	0	0	0	1	9	24
7:45 AM	0	3	0	0	16	1	0	0	0	0	1	11	32
8:00 AM	0	2	0	0	10	2	0	0	0	0	3	9	26
8:15 AM	0	2	0	0	10	8	0	0	0	0	1	13	34
8:30 AM	0	4	0	0	20	3	0	0	0	0	0	7	34
8:45 AM	0	2	0	0	11	1	0	0	0	0	0	10	24
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	29	0	0	106	25	0	0	0	0	13	103	276
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	80.92%	19.08%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	11.21%	88.79%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	11	0	0	56	14	0	0	0	0	5	40	126
PEAK HR FACTOR :		0.688			0.761			0.000			0.804		0.805

UTURNS	NB	SB	EB	WB
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	0	0	0
7:30 AM	0	0	0	0
7:45 AM	0	0	0	0
8:00 AM	0	0	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	0
8:45 AM	0	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.1 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd WB			Ocean Blvd WB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	0	0	2	2	
2:00 PM	0	1	0	0	14	2	0	0	0	0	6	9	32
2:15 PM	0	4	0	0	16	1	0	0	0	0	1	13	35
2:30 PM	0	2	0	0	6	2	0	0	0	0	2	10	22
2:45 PM	0	0	0	0	7	5	0	0	0	0	2	11	25
3:00 PM	0	2	0	0	10	2	0	0	0	0	4	6	24
3:15 PM	0	3	0	0	2	1	0	0	0	0	2	5	13
3:30 PM	0	3	0	0	9	0	0	0	0	0	1	6	19
3:45 PM	0	0	0	0	14	0	0	0	0	0	4	6	24
4:00 PM	0	0	0	0	7	1	0	0	0	0	0	6	14
4:15 PM	0	1	0	0	4	1	0	0	0	0	2	2	10
4:30 PM	0	0	0	0	0	1	0	0	0	0	1	5	7
4:45 PM	0	0	0	0	2	1	0	0	0	0	2	2	7
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	4	5
5:15 PM	0	1	0	0	1	0	0	0	0	0	2	0	4
5:30 PM	0	1	0	0	0	0	0	0	0	0	1	3	5
5:45 PM	0	2	0	0	2	3	0	0	0	0	0	1	8
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	20	0	0	95	20	0	0	0	0	30	89	254
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	82.61%	17.39%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	25.21%	74.79%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	1	0	0	7	3	0	0	0	0	5	13	29
PEAK HR FACTOR :		0.250			0.500			0.000			0.750		0.684

UTURNS

NB	SB	EB	WB
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	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	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
6:00 AM	0	0	0	8	0	0	17	23	0	0	0	0	48
6:15 AM	0	0	0	6	0	0	27	40	0	0	0	0	73
6:30 AM	0	0	0	10	0	0	44	42	0	0	0	0	96
6:45 AM	0	0	0	16	0	0	64	44	0	0	0	0	124
7:00 AM	0	0	0	9	0	0	46	47	0	0	0	0	102
7:15 AM	0	0	0	24	0	0	32	51	0	0	0	0	107
7:30 AM	0	0	0	46	0	0	36	70	0	0	0	0	152
7:45 AM	0	0	0	59	0	0	25	54	0	0	0	0	138
8:00 AM	0	0	0	64	0	0	22	51	0	0	0	0	137
8:15 AM	0	0	0	57	0	0	22	53	0	0	0	0	132
8:30 AM	0	0	0	78	0	0	22	53	0	0	0	0	153
8:45 AM	0	0	0	57	0	0	9	40	0	0	0	0	106
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	434	0	0	366	568	0	0	0	0	1368
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	39.19%	60.81%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	258	0	0	91	211	0	0	0	0	560
PEAK HR FACTOR :		0.000			0.827			0.956			0.000		0.915

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
2:00 PM	0	0	0	64	0	0	19	62	0	0	0	0	145
2:15 PM	0	0	0	64	0	0	23	61	0	0	0	0	148
2:30 PM	0	0	0	62	0	0	22	69	0	0	0	0	153
2:45 PM	0	0	0	54	0	0	12	82	0	0	0	0	148
3:00 PM	0	0	0	51	0	0	12	74	0	0	0	0	137
3:15 PM	0	0	0	46	0	0	16	78	0	0	0	0	140
3:30 PM	0	0	0	52	0	0	19	83	0	0	0	0	154
3:45 PM	0	0	0	58	0	0	13	89	0	0	0	0	160
4:00 PM	0	0	0	47	0	0	18	69	0	0	0	0	134
4:15 PM	0	0	0	56	0	0	30	78	0	0	0	0	164
4:30 PM	0	0	0	40	0	0	45	81	0	0	0	0	166
4:45 PM	0	0	0	51	0	0	19	91	0	0	0	0	161
5:00 PM	0	0	0	26	0	0	43	76	0	0	0	0	145
5:15 PM	0	0	0	31	0	0	32	52	0	0	0	0	115
5:30 PM	0	0	0	29	0	0	23	50	0	0	0	0	102
5:45 PM	0	0	0	12	0	0	12	33	0	0	0	0	57
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	743	0	0	358	1128	0	0	0	0	2229
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	24.09%	75.91%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	173	0	0	137	326	0	0	0	0	636
PEAK HR FACTOR :		0.000			0.772			0.919			0.000		0.958

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Pier S Ave and Ocean Blvd EB , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-050.2
City: Long Beach

Peak Hour Summary

	AM Peak Hour	NOON Peak Hour	PM Peak Hour
	745 AM		415 PM

Southbound Approach (Pier S Ave)

	Lanes	2	0	0		
AM		0	0	258	91	AM
NOON		0	0	0	0	NOON
PM		0	0	173	137	PM

Eastbound Approach (Ocean Blvd EB)

Lanes	AM	NOON	PM
	0	0	0
1	91	0	137
2	211	0	326
0	0	0	0
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	0	0	0	0
	0	0	0	0
	0	0	0	0
	469	0	499	
	AM	NOON	PM	

CONTROL: Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM
		0	0	0	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	258	91	AM
	0	0	NOON
	173	137	PM

West Leg			East Leg		
AM	NOON	PM			
0	0	0	0	0	0
302	0	463	469	0	499
			AM	NOON	PM

	South Leg	
AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

	North Leg	
	349	AM
	0	NOON
	310	PM

West Leg			East Leg		
AM	NOON	PM			
302	0	463	469	0	499
			AM	NOON	PM

	South Leg
AM	0
NOON	0
PM	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
6:00 AM	0	0	0	2	0	0	16	21	0	0	0	0	39
6:15 AM	0	0	0	3	0	0	21	34	0	0	0	0	58
6:30 AM	0	0	0	4	0	0	37	39	0	0	0	0	80
6:45 AM	0	0	0	10	0	0	54	43	0	0	0	0	107
7:00 AM	0	0	0	5	0	0	34	34	0	0	0	0	73
7:15 AM	0	0	0	6	0	0	23	39	0	0	0	0	68
7:30 AM	0	0	0	4	0	0	24	43	0	0	0	0	71
7:45 AM	0	0	0	4	0	0	10	31	0	0	0	0	45
8:00 AM	0	0	0	3	0	0	10	25	0	0	0	0	38
8:15 AM	0	0	0	8	0	0	4	19	0	0	0	0	31
8:30 AM	0	0	0	24	0	0	7	10	0	0	0	0	41
8:45 AM	0	0	0	15	0	0	0	5	0	0	0	0	20
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	88	0	0	240	343	0	0	0	0	671
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	41.17%	58.83%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	39	0	0	31	85	0	0	0	0	155
PEAK HR FACTOR :	0.000			0.406			0.707			0.000			0.861

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Cars

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
2:00 PM	0	0	0	10	0	0	7	15	0	0	0	0	32
2:15 PM	0	0	0	16	0	0	4	13	0	0	0	0	33
2:30 PM	0	0	0	19	0	0	13	28	0	0	0	0	60
2:45 PM	0	0	0	12	0	0	6	31	0	0	0	0	49
3:00 PM	0	0	0	15	0	0	1	42	0	0	0	0	58
3:15 PM	0	0	0	12	0	0	3	28	0	0	0	0	43
3:30 PM	0	0	0	12	0	0	6	23	0	0	0	0	41
3:45 PM	0	0	0	14	0	0	7	37	0	0	0	0	58
4:00 PM	0	0	0	11	0	0	10	25	0	0	0	0	46
4:15 PM	0	0	0	32	0	0	20	32	0	0	0	0	84
4:30 PM	0	0	0	25	0	0	36	39	0	0	0	0	100
4:45 PM	0	0	0	49	0	0	14	66	0	0	0	0	129
5:00 PM	0	0	0	21	0	0	31	67	0	0	0	0	119
5:15 PM	0	0	0	24	0	0	17	29	0	0	0	0	70
5:30 PM	0	0	0	22	0	0	17	29	0	0	0	0	68
5:45 PM	0	0	0	6	0	0	7	18	0	0	0	0	31
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	300	0	0	199	522	0	0	0	0	1021
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	27.60%	72.40%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	127	0	0	101	204	0	0	0	0	432
PEAK HR FACTOR :	0.000			0.648			0.778			0.000			0.837

UTURNS

NB	SB	EB	WB
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	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	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	2	6	0	0	0	0	8
6:30 AM	0	0	0	0	0	0	1	2	0	0	0	0	3
6:45 AM	0	0	0	1	0	0	1	1	0	0	0	0	3
7:00 AM	0	0	0	0	0	0	2	6	0	0	0	0	8
7:15 AM	0	0	0	1	0	0	2	4	0	0	0	0	7
7:30 AM	0	0	0	14	0	0	5	7	0	0	0	0	26
7:45 AM	0	0	0	10	0	0	3	9	0	0	0	0	22
8:00 AM	0	0	0	14	0	0	6	11	0	0	0	0	31
8:15 AM	0	0	0	10	0	0	5	18	0	0	0	0	33
8:30 AM	0	0	0	7	0	0	4	19	0	0	0	0	30
8:45 AM	0	0	0	9	0	0	4	15	0	0	0	0	28
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	66	0	0	35	98	0	0	0	0	199
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	26.32%	73.68%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	41	0	0	18	57	0	0	0	0	116
PEAK HR FACTOR :		0.000			0.732			0.815			0.000		0.861

UTURNS			
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
2:00 PM	0	0	0	8	0	0	3	15	0	0	0	0	26
2:15 PM	0	0	0	6	0	0	4	15	0	0	0	0	25
2:30 PM	0	0	0	5	0	0	3	13	0	0	0	0	21
2:45 PM	0	0	0	8	0	0	2	15	0	0	0	0	25
3:00 PM	0	0	0	3	0	0	2	13	0	0	0	0	18
3:15 PM	0	0	0	3	0	0	1	19	0	0	0	0	23
3:30 PM	0	0	0	7	0	0	1	18	0	0	0	0	26
3:45 PM	0	0	0	8	0	0	4	21	0	0	0	0	33
4:00 PM	0	0	0	7	0	0	4	23	0	0	0	0	34
4:15 PM	0	0	0	5	0	0	3	24	0	0	0	0	32
4:30 PM	0	0	0	7	0	0	2	21	0	0	0	0	30
4:45 PM	0	0	0	0	0	0	1	14	0	0	0	0	15
5:00 PM	0	0	0	1	0	0	5	2	0	0	0	0	8
5:15 PM	0	0	0	2	0	0	5	9	0	0	0	0	16
5:30 PM	0	0	0	2	0	0	2	11	0	0	0	0	15
5:45 PM	0	0	0	1	0	0	2	5	0	0	0	0	8
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	73	0	0	44	238	0	0	0	0	355
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	15.60%	84.40%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	13	0	0	11	61	0	0	0	0	85
PEAK HR FACTOR :	0.000			0.464			0.667			0.000			0.837

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
6:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
6:15 AM	0	0	0	2	0	0	2	0	0	0	0	0	4
6:30 AM	0	0	0	2	0	0	4	0	0	0	0	0	6
6:45 AM	0	0	0	0	0	0	5	0	0	0	0	0	5
7:00 AM	0	0	0	1	0	0	4	6	0	0	0	0	11
7:15 AM	0	0	0	4	0	0	3	6	0	0	0	0	13
7:30 AM	0	0	0	12	0	0	3	15	0	0	0	0	30
7:45 AM	0	0	0	15	0	0	8	9	0	0	0	0	32
8:00 AM	0	0	0	23	0	0	1	8	0	0	0	0	32
8:15 AM	0	0	0	23	0	0	8	12	0	0	0	0	43
8:30 AM	0	0	0	20	0	0	5	17	0	0	0	0	42
8:45 AM	0	0	0	15	0	0	2	13	0	0	0	0	30
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	117	0	0	46	86	0	0	0	0	249
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	34.85%	65.15%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	81	0	0	22	46	0	0	0	0	149
PEAK HR FACTOR :		0.000			0.880			0.773			0.000		0.861

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
2:00 PM	0	0	0	16	0	0	7	25	0	0	0	0	48
2:15 PM	0	0	0	10	0	0	9	29	0	0	0	0	48
2:30 PM	0	0	0	9	0	0	3	23	0	0	0	0	35
2:45 PM	0	0	0	11	0	0	4	29	0	0	0	0	44
3:00 PM	0	0	0	7	0	0	7	18	0	0	0	0	32
3:15 PM	0	0	0	11	0	0	5	20	0	0	0	0	36
3:30 PM	0	0	0	5	0	0	6	38	0	0	0	0	49
3:45 PM	0	0	0	14	0	0	1	19	0	0	0	0	34
4:00 PM	0	0	0	8	0	0	1	18	0	0	0	0	27
4:15 PM	0	0	0	3	0	0	3	18	0	0	0	0	24
4:30 PM	0	0	0	3	0	0	4	14	0	0	0	0	21
4:45 PM	0	0	0	0	0	0	4	7	0	0	0	0	11
5:00 PM	0	0	0	1	0	0	7	5	0	0	0	0	13
5:15 PM	0	0	0	2	0	0	8	11	0	0	0	0	21
5:30 PM	0	0	0	1	0	0	2	6	0	0	0	0	9
5:45 PM	0	0	0	2	0	0	1	4	0	0	0	0	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	103	0	0	72	284	0	0	0	0	459
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	20.22%	79.78%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	7	0	0	18	44	0	0	0	0	69
PEAK HR FACTOR :	0.000			0.583			0.738			0.000			0.837

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
6:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	3	1	0	0	0	0	4
7:15 AM	0	0	0	3	0	0	2	2	0	0	0	0	7
7:30 AM	0	0	0	6	0	0	1	4	0	0	0	0	11
7:45 AM	0	0	0	14	0	0	2	3	0	0	0	0	19
8:00 AM	0	0	0	12	0	0	2	6	0	0	0	0	20
8:15 AM	0	0	0	7	0	0	3	4	0	0	0	0	14
8:30 AM	0	0	0	7	0	0	1	6	0	0	0	0	14
8:45 AM	0	0	0	6	0	0	2	5	0	0	0	0	13
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	56	0	0	16	32	0	0	0	0	104
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	33.33%	66.67%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	40	0	0	8	19	0	0	0	0	67
PEAK HR FACTOR :		0.000			0.714			0.844			0.000		0.861

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
2:00 PM	0	0	0	18	0	0	1	5	0	0	0	0	24
2:15 PM	0	0	0	19	0	0	2	2	0	0	0	0	23
2:30 PM	0	0	0	20	0	0	1	4	0	0	0	0	25
2:45 PM	0	0	0	12	0	0	0	6	0	0	0	0	18
3:00 PM	0	0	0	16	0	0	0	0	0	0	0	0	16
3:15 PM	0	0	0	16	0	0	4	8	0	0	0	0	28
3:30 PM	0	0	0	18	0	0	3	4	0	0	0	0	25
3:45 PM	0	0	0	12	0	0	1	7	0	0	0	0	20
4:00 PM	0	0	0	15	0	0	3	3	0	0	0	0	21
4:15 PM	0	0	0	10	0	0	3	3	0	0	0	0	16
4:30 PM	0	0	0	5	0	0	3	5	0	0	0	0	13
4:45 PM	0	0	0	1	0	0	0	4	0	0	0	0	5
5:00 PM	0	0	0	2	0	0	0	1	0	0	0	0	3
5:15 PM	0	0	0	2	0	0	1	2	0	0	0	0	5
5:30 PM	0	0	0	4	0	0	1	4	0	0	0	0	9
5:45 PM	0	0	0	1	0	0	0	6	0	0	0	0	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	171	0	0	23	64	0	0	0	0	258
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	26.44%	73.56%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	18	0	0	6	13	0	0	0	0	37
PEAK HR FACTOR :	0.000			0.450			0.594			0.000			0.837

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
6:00 AM	0	0	0	6	0	0	0	2	0	0	0	0	8
6:15 AM	0	0	0	1	0	0	2	0	0	0	0	0	3
6:30 AM	0	0	0	4	0	0	2	0	0	0	0	0	6
6:45 AM	0	0	0	4	0	0	4	0	0	0	0	0	8
7:00 AM	0	0	0	3	0	0	3	0	0	0	0	0	6
7:15 AM	0	0	0	10	0	0	2	0	0	0	0	0	12
7:30 AM	0	0	0	10	0	0	3	1	0	0	0	0	14
7:45 AM	0	0	0	16	0	0	2	2	0	0	0	0	20
8:00 AM	0	0	0	12	0	0	3	1	0	0	0	0	16
8:15 AM	0	0	0	9	0	0	2	0	0	0	0	0	11
8:30 AM	0	0	0	20	0	0	5	1	0	0	0	0	26
8:45 AM	0	0	0	12	0	0	1	2	0	0	0	0	15
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	107	0	0	29	9	0	0	0	0	145
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	76.32%	23.68%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	57	0	0	12	4	0	0	0	0	73
PEAK HR FACTOR :		0.000			0.713			0.667			0.000		0.861

UTURNS				
NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-050.2 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Pier S Ave			Pier S Ave			Ocean Blvd EB			Ocean Blvd EB			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	2	1	2	0	0	0	0	
2:00 PM	0	0	0	12	0	0	1	2	0	0	0	0	15
2:15 PM	0	0	0	13	0	0	4	2	0	0	0	0	19
2:30 PM	0	0	0	9	0	0	2	1	0	0	0	0	12
2:45 PM	0	0	0	11	0	0	0	1	0	0	0	0	12
3:00 PM	0	0	0	10	0	0	2	1	0	0	0	0	13
3:15 PM	0	0	0	4	0	0	3	3	0	0	0	0	10
3:30 PM	0	0	0	10	0	0	3	0	0	0	0	0	13
3:45 PM	0	0	0	10	0	0	0	5	0	0	0	0	15
4:00 PM	0	0	0	6	0	0	0	0	0	0	0	0	6
4:15 PM	0	0	0	6	0	0	1	1	0	0	0	0	8
4:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
4:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
5:15 PM	0	0	0	1	0	0	1	1	0	0	0	0	3
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:45 PM	0	0	0	2	0	0	2	0	0	0	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	96	0	0	20	20	0	0	0	0	136
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	50.00%	50.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	8	0	0	1	4	0	0	0	0	13
PEAK HR FACTOR :		0.000			0.333			0.625			0.000		0.837

UTURNS	NB	SB	EB	WB
	0	0	0	0
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
6:00 AM	0	3	1	16	19	18	2	1	0	9	3	4	76
6:15 AM	1	4	3	10	24	17	5	1	0	4	2	20	91
6:30 AM	0	5	2	12	32	23	5	3	1	14	6	24	127
6:45 AM	1	16	3	32	43	29	7	3	1	12	12	16	175
7:00 AM	0	16	3	14	18	38	12	4	0	5	11	27	148
7:15 AM	1	12	3	22	39	36	13	4	0	15	4	40	189
7:30 AM	2	17	3	25	31	31	15	4	0	11	13	53	205
7:45 AM	2	16	3	25	17	25	22	2	0	3	8	49	172
8:00 AM	0	25	7	27	22	26	20	6	1	14	6	67	221
8:15 AM	1	21	6	33	25	15	16	6	0	7	6	54	190
8:30 AM	2	22	9	26	22	21	10	9	0	4	8	60	193
8:45 AM	1	22	5	30	18	14	17	5	5	2	8	69	196
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	11	179	48	272	310	293	144	48	8	100	87	483	1983
APPROACH %'s :	4.62%	75.21%	20.17%	31.09%	35.43%	33.49%	72.00%	24.00%	4.00%	14.93%	12.99%	72.09%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	4	90	27	116	87	76	63	26	6	27	28	250	800
PEAK HR FACTOR :		0.917			0.930			0.880			0.876		0.905

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	7	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	2	0	0
	NB	SB	EB	WB
	0	11	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
2:00 PM	2	30	8	29	16	8	19	5	3	1	12	74	207
2:15 PM	1	20	8	29	12	8	21	6	1	5	3	78	192
2:30 PM	1	27	3	22	26	11	25	3	0	5	10	66	199
2:45 PM	0	14	8	43	20	5	24	13	1	4	1	79	212
3:00 PM	0	12	7	34	13	12	31	14	1	0	11	71	206
3:15 PM	0	22	7	19	17	9	14	12	1	1	5	54	161
3:30 PM	1	16	10	34	14	9	13	2	2	2	7	65	175
3:45 PM	0	17	7	20	13	14	24	9	2	3	2	65	176
4:00 PM	0	15	8	23	14	5	20	5	2	4	3	44	143
4:15 PM	0	14	5	21	22	8	25	8	1	1	4	49	158
4:30 PM	0	22	10	16	21	17	23	13	2	8	6	43	181
4:45 PM	0	38	12	19	14	18	13	9	1	6	7	42	179
5:00 PM	0	14	4	23	18	15	8	4	0	4	9	51	150
5:15 PM	3	9	4	27	10	21	12	5	0	2	4	39	136
5:30 PM	0	16	6	20	8	21	11	7	1	3	5	54	152
5:45 PM	0	11	1	23	7	16	24	6	3	3	3	51	148
TOTAL VOLUMES :	NL 8	NT 297	NR 108	SL 402	ST 245	SR 197	EL 307	ET 121	ER 21	WL 52	WT 92	WR 925	TOTAL 2775
APPROACH %'s :	1.94%	71.91%	26.15%	47.63%	29.03%	23.34%	68.37%	26.95%	4.68%	4.86%	8.61%	86.53%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	4	91	27	123	74	32	89	27	5	15	26	297	810
PEAK HR FACTOR :		0.763			0.842			0.796			0.971		0.955

UTURNS	NB	SB	EB	WB
2:00 PM	0	1	0	0
2:15 PM	0	1	0	0
2:30 PM	0	0	0	0
2:45 PM	0	1	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	1	0	0
5:30 PM	0	0	0	0
5:45 PM	0	1	0	0
TOTAL VOLUMES :	NB 0	SB 5	EB 0	WB 0

CONTROL : 4-Way Stop

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Pico Ave and Harbor Plaza , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-T
City: Long Beach

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	200 PM

Peak Hour Summary

Southbound Approach (Pico Ave)

	Lanes 0.5	1.5	1		
AM	76	87	116	403	AM
NOON	0	0	0	0	NOON
PM	32	74	123	477	PM

Eastbound Approach (Harbor Plaza)

Lanes	AM	NOON	PM
	108	0	62
1	63	0	89
1.5	26	0	27
0.5	6	0	5
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
250	0	297	0
28	0	26	2
27	0	15	1
169	0	177	
AM	NOON	PM	

CONTROL: 4-Way Stop

Northbound Approach

AM	120	4	90	27	AM
NOON	0	0	0	0	NOON
PM	94	4	91	27	PM
		1	2	0	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	279	403	AM
NOON	0	0	NOON
PM	229	477	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg		
108	0	62		305	0	338
95	0	121		169	0	177
				AM	NOON	PM

	South Leg	
AM	120	121
NOON	0	0
PM	94	122

Total Volume Per Leg

	North Leg	
AM	682	AM
NOON	0	NOON
PM	706	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg		
203	0	183		474	0	515
				AM	NOON	PM

	South Leg
AM	241
NOON	0
PM	216

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
6:00 AM	0	1	1	11	12	6	1	0	0	8	3	3	46
6:15 AM	0	1	3	10	16	9	1	1	0	4	2	12	59
6:30 AM	0	1	2	9	21	14	1	2	1	14	6	8	79
6:45 AM	1	4	3	25	31	24	0	3	0	7	9	9	116
7:00 AM	0	0	2	11	14	32	3	4	0	5	10	8	89
7:15 AM	0	4	3	13	23	30	8	4	0	14	3	11	113
7:30 AM	2	3	3	9	18	20	7	2	0	10	13	13	100
7:45 AM	2	5	3	12	7	16	10	2	0	3	8	15	83
8:00 AM	0	7	6	3	2	16	11	6	1	11	5	11	79
8:15 AM	1	4	2	14	7	8	8	5	0	5	5	7	66
8:30 AM	2	6	5	10	6	8	2	9	0	4	8	15	75
8:45 AM	1	6	3	11	4	4	5	5	4	1	6	11	61
TOTAL VOLUMES :	NL 9	NT 42	NR 36	SL 138	ST 161	SR 187	EL 57	ET 43	ER 6	WL 86	WT 78	WR 123	TOTAL 966
APPROACH %'s :	10.34%	48.28%	41.38%	28.40%	33.13%	38.48%	53.77%	40.57%	5.66%	29.97%	27.18%	42.86%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	4	23	16	38	19	36	26	25	5	21	24	44	281
PEAK HR FACTOR :		0.827			0.802			0.778			0.824		0.889

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	7	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	2	0	0
TOTAL VOLUMES :	NB 0	SB 11	EB 0	WB 0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Cars

PM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
2:00 PM	2	13	5	14	2	6	11	5	3	1	9	12	83
2:15 PM	1	7	7	4	2	3	10	6	1	3	3	16	63
2:30 PM	1	9	2	5	7	6	16	3	0	5	7	6	67
2:45 PM	0	3	7	19	11	3	16	13	1	1	0	9	83
3:00 PM	0	3	7	16	0	8	25	14	1	0	11	12	97
3:15 PM	0	8	6	4	5	2	13	11	1	1	5	13	69
3:30 PM	0	6	9	16	5	4	7	1	1	2	3	12	66
3:45 PM	0	6	5	7	2	9	17	9	2	3	2	11	73
4:00 PM	0	7	8	6	7	3	16	5	2	3	2	11	70
4:15 PM	0	13	5	7	16	3	19	8	0	1	4	11	87
4:30 PM	0	16	10	14	18	11	18	13	2	7	4	13	126
4:45 PM	0	30	12	14	12	14	8	9	1	6	5	27	138
5:00 PM	0	13	4	14	15	14	8	4	0	4	5	34	115
5:15 PM	0	7	3	17	6	19	7	5	0	2	4	10	80
5:30 PM	0	8	4	11	4	17	4	6	0	1	3	14	72
5:45 PM	0	4	1	9	4	8	12	5	0	2	2	12	59
TOTAL VOLUMES :	NL 4	NT 153	NR 95	SL 177	ST 116	SR 130	EL 207	ET 117	ER 15	WL 42	WT 69	WR 223	TOTAL 1348
APPROACH %'s :	1.59%	60.71%	37.70%	41.84%	27.42%	30.73%	61.06%	34.51%	4.42%	12.57%	20.66%	66.77%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	4	32	21	42	22	18	53	27	5	10	19	43	296
PEAK HR FACTOR :		0.713			0.621			0.708			0.818		0.892

UTURNS	NB	SB	EB	WB
	0	1	0	0
	0	1	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	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	0	0	0
	0	1	0	0
TOTAL VOLUMES :	NB 0	SB 5	EB 0	WB 0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
6:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	1	1	1	0	0	0	0	0	0	3
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	2	3
7:15 AM	0	0	0	5	0	0	0	0	0	0	0	3	8
7:30 AM	0	0	0	3	0	0	0	0	0	0	0	13	16
7:45 AM	0	0	0	6	0	0	0	0	0	0	0	5	11
8:00 AM	0	1	1	10	0	0	0	0	0	3	0	10	25
8:15 AM	0	0	3	12	1	0	0	0	0	0	0	12	28
8:30 AM	0	2	2	9	1	0	0	0	0	0	0	15	29
8:45 AM	0	1	0	6	0	0	1	0	0	1	1	13	23
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	4	7	54	3	1	1	0	0	4	1	73	148
APPROACH %'s :	0.00%	36.36%	63.64%	93.10%	5.17%	1.72%	100.00%	0.00%	0.00%	5.13%	1.28%	93.59%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	4	6	37	2	0	1	0	0	4	1	50	105
PEAK HR FACTOR :	0.625			0.750			0.250			0.917			0.889

UTURNS

NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	7	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	2	0	0
NB	SB	EB	WB
0	11	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
2:00 PM	0	0	1	2	1	0	1	0	0	0	1	17	23
2:15 PM	0	0	0	7	0	0	1	0	0	0	0	16	24
2:30 PM	0	0	0	6	0	0	0	0	0	0	0	14	20
2:45 PM	0	0	0	5	0	0	0	0	0	0	1	25	31
3:00 PM	0	0	0	4	0	0	1	0	0	0	0	17	22
3:15 PM	0	1	0	3	2	0	0	0	0	0	0	16	22
3:30 PM	0	0	1	6	1	0	0	0	0	0	1	17	26
3:45 PM	0	0	0	4	0	0	1	0	0	0	0	20	25
4:00 PM	0	0	0	5	0	0	0	0	0	0	0	16	21
4:15 PM	0	0	0	3	0	0	0	0	0	0	0	18	21
4:30 PM	0	0	0	1	0	0	0	0	0	0	0	16	17
4:45 PM	0	0	0	2	0	0	0	0	0	0	0	5	7
5:00 PM	0	0	0	4	0	0	0	0	0	0	0	1	5
5:15 PM	2	0	1	1	1	0	1	0	0	0	0	3	9
5:30 PM	0	1	0	3	0	0	0	0	0	0	0	14	18
5:45 PM	0	0	0	3	0	0	1	0	0	0	0	4	8
TOTAL VOLUMES :	NL 2	NT 2	NR 3	SL 59	ST 5	SR 0	EL 6	ET 0	ER 0	WL 0	WT 3	WR 219	TOTAL 299
APPROACH %'s :	28.57%	28.57%	42.86%	92.19%	7.81%	0.00%	100.00%	0.00%	0.00%	0.00%	1.35%	98.65%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	0	1	20	1	0	2	0	0	0	2	72	98
PEAK HR FACTOR :	0.250			0.750			0.500			0.712			0.892

UTURNS	NB	SB	EB	WB
2:00 PM	0	1	0	0
2:15 PM	0	1	0	0
2:30 PM	0	0	0	0
2:45 PM	0	1	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	1	0	0
5:30 PM	0	0	0	0
5:45 PM	0	1	0	0
TOTAL VOLUMES :	NB 0	SB 5	EB 0	WB 0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
6:15 AM	0	0	0	0	0	1	0	0	0	0	0	8	9
6:30 AM	0	0	0	1	0	0	0	0	0	0	0	15	16
6:45 AM	0	0	0	2	0	0	1	0	1	3	2	4	13
7:00 AM	0	4	0	2	0	0	1	0	0	0	0	15	22
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	17	17
7:30 AM	0	0	0	1	0	1	0	0	0	0	0	11	13
7:45 AM	0	0	0	2	0	0	2	0	0	0	0	11	15
8:00 AM	0	1	0	0	1	1	0	0	0	0	0	25	28
8:15 AM	0	3	0	2	2	0	1	0	0	0	0	12	20
8:30 AM	0	0	0	1	0	1	0	0	0	0	0	17	19
8:45 AM	0	2	0	1	1	0	0	0	0	0	0	16	20
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	10	0	12	4	4	5	0	1	3	2	152	193
APPROACH %'s :	0.00%	100.00%	0.00%	60.00%	20.00%	20.00%	83.33%	0.00%	16.67%	1.91%	1.27%	96.82%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	6	0	4	4	2	1	0	0	0	0	70	87
PEAK HR FACTOR :		0.500			0.625			0.250			0.700		0.889

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	7	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	2	0	0
	NB	SB	EB	WB
	0	11	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	1.5	0.5	1	1.5	0.5	1	2	0	
2:00 PM	0	1	0	1	1	0	0	0	0	0	0	24	27
2:15 PM	0	1	0	2	1	1	1	0	0	0	0	29	35
2:30 PM	0	4	0	1	4	0	0	0	0	0	1	33	43
2:45 PM	0	0	1	2	0	0	1	0	0	0	0	31	35
3:00 PM	0	0	0	1	1	0	0	0	0	0	0	26	28
3:15 PM	0	4	0	2	3	0	0	0	0	0	0	13	22
3:30 PM	1	0	0	3	0	0	0	0	1	0	1	23	29
3:45 PM	0	2	0	0	2	1	0	0	0	0	0	12	17
4:00 PM	0	1	0	1	1	0	1	0	0	1	0	10	15
4:15 PM	0	0	0	2	0	0	0	0	1	0	0	8	11
4:30 PM	0	1	0	0	0	1	0	0	0	1	1	10	14
4:45 PM	0	3	0	0	1	3	1	0	0	0	2	8	18
5:00 PM	0	1	0	4	1	0	0	0	0	0	4	13	23
5:15 PM	0	0	0	6	0	0	0	0	0	0	0	16	22
5:30 PM	0	1	0	2	2	2	6	1	1	2	2	12	31
5:45 PM	0	5	0	6	3	2	4	1	2	0	1	21	45
TOTAL VOLUMES :	1	24	1	33	20	10	14	2	5	4	12	289	415
APPROACH %'s :	3.85%	92.31%	3.85%	52.38%	31.75%	15.87%	66.67%	9.52%	23.81%	1.31%	3.93%	94.75%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	6	1	6	6	1	2	0	0	0	1	117	140
PEAK HR FACTOR :		0.438			0.650			0.500			0.868		0.892

UTURNS	NB	SB	EB	WB
	0	1	0	0
	0	1	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	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	0	0	0
	0	1	0	0
TOTAL	0	5	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
6:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	2	0	0	0	0	0	0	2
6:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	3
6:45 AM	0	0	0	0	1	1	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	2	0	0	0	0	1	0	3
7:15 AM	0	2	0	3	1	3	0	0	0	0	1	5	15
7:30 AM	0	1	0	3	1	0	2	1	0	0	0	14	22
7:45 AM	0	2	0	4	3	3	2	0	0	0	0	16	30
8:00 AM	0	6	0	7	6	3	3	0	0	0	1	20	46
8:15 AM	0	5	0	4	4	2	1	0	0	1	0	21	38
8:30 AM	0	3	1	4	3	2	0	0	0	0	0	11	24
8:45 AM	0	4	0	6	4	3	2	0	0	0	0	27	46
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	23	1	31	23	25	10	1	0	1	3	114	232
APPROACH %'s :	0.00%	95.83%	4.17%	39.24%	29.11%	31.65%	90.91%	9.09%	0.00%	0.85%	2.54%	96.61%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	18	1	21	17	10	6	0	0	1	1	79	154
PEAK HR FACTOR :		0.792			0.750			0.500			0.750		0.889

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	7	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	2	0	0
TOTAL VOLUMES :	0	11	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
2:00 PM	0	4	1	8	2	1	1	0	0	0	1	19	37
2:15 PM	0	0	0	11	2	1	2	0	0	0	0	15	31
2:30 PM	0	3	0	9	2	1	2	0	0	0	0	13	30
2:45 PM	0	1	0	15	1	0	0	0	0	0	0	13	30
3:00 PM	0	3	0	12	5	1	0	0	0	0	0	14	35
3:15 PM	0	3	1	10	1	0	0	0	0	0	0	12	27
3:30 PM	0	1	0	9	1	2	0	1	0	0	2	13	29
3:45 PM	0	1	0	9	3	1	0	0	0	0	0	21	35
4:00 PM	0	1	0	11	0	0	1	0	0	0	1	6	20
4:15 PM	0	0	0	9	0	0	1	0	0	0	0	11	21
4:30 PM	0	1	0	1	1	1	0	0	0	0	1	4	9
4:45 PM	0	0	0	2	1	1	1	0	0	0	0	2	7
5:00 PM	0	0	0	1	0	1	0	0	0	0	0	3	5
5:15 PM	0	1	0	3	3	2	3	0	0	0	0	10	22
5:30 PM	0	2	1	3	2	1	1	0	0	0	0	13	23
5:45 PM	0	1	0	5	0	1	4	0	1	1	0	14	27
TOTAL VOLUMES :	0	22	3	118	24	14	16	1	1	1	5	183	388
APPROACH %'s :	0.00%	88.00%	12.00%	75.64%	15.38%	8.97%	88.89%	5.56%	5.56%	0.53%	2.65%	96.83%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	8	1	43	7	3	5	0	0	0	1	60	128
PEAK HR FACTOR :	0.450			0.828			0.625			0.763			0.892

UTURNS	NB	SB	EB	WB
	0	5	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
6:00 AM	0	2	0	4	7	11	1	1	0	1	0	0	27
6:15 AM	1	3	0	0	8	5	4	0	0	0	0	0	21
6:30 AM	0	4	0	1	11	6	4	1	0	0	0	1	28
6:45 AM	0	12	0	4	10	3	6	0	0	2	1	3	41
7:00 AM	0	12	0	1	4	4	8	0	0	0	0	2	31
7:15 AM	1	6	0	1	15	3	5	0	0	1	0	4	36
7:30 AM	0	13	0	9	12	10	6	1	0	1	0	2	54
7:45 AM	0	9	0	1	7	6	8	0	0	0	0	2	33
8:00 AM	0	10	0	7	13	6	6	0	0	0	0	1	43
8:15 AM	0	9	1	1	11	5	6	1	0	1	1	2	38
8:30 AM	0	11	1	2	12	10	8	0	0	0	0	2	46
8:45 AM	0	9	2	6	9	7	9	0	1	0	1	2	46
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	100	4	37	119	76	71	4	1	6	3	21	444
APPROACH %'s :	1.89%	94.34%	3.77%	15.95%	51.29%	32.76%	93.42%	5.26%	1.32%	20.00%	10.00%	70.00%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	39	4	16	45	28	29	1	1	1	2	7	173
PEAK HR FACTOR :		0.896			0.856			0.775			0.625		0.889

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	7	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	0	0	0
	0	0	0	0
	0	1	0	0
	0	2	0	0
	NB	SB	EB	WB
	0	11	0	0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-T **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Pico Ave			Pico Ave			Harbor Plaza			Harbor Plaza			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 1.5	SR 0.5	EL 1	ET 1.5	ER 0.5	WL 1	WT 2	WR 0	TOTAL
2:00 PM	0	12	1	4	10	1	6	0	0	0	1	2	37
2:15 PM	0	12	1	5	7	3	7	0	0	2	0	2	39
2:30 PM	0	11	1	1	13	4	7	0	0	0	2	0	39
2:45 PM	0	10	0	2	8	2	7	0	0	3	0	1	33
3:00 PM	0	6	0	1	7	3	5	0	0	0	0	2	24
3:15 PM	0	6	0	0	6	7	1	1	0	0	0	0	21
3:30 PM	0	9	0	0	7	3	6	0	0	0	0	0	25
3:45 PM	0	8	2	0	6	3	6	0	0	0	0	1	26
4:00 PM	0	6	0	0	6	2	2	0	0	0	0	1	17
4:15 PM	0	1	0	0	6	5	5	0	0	0	0	1	18
4:30 PM	0	4	0	0	2	4	5	0	0	0	0	0	15
4:45 PM	0	5	0	1	0	0	3	0	0	0	0	0	9
5:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
5:15 PM	1	1	0	0	0	0	1	0	0	0	0	0	3
5:30 PM	0	4	1	1	0	1	0	0	0	0	0	1	8
5:45 PM	0	1	0	0	0	5	3	0	0	0	0	0	9
TOTAL VOLUMES :	NL 1	NT 96	NR 6	SL 15	ST 80	SR 43	EL 64	ET 1	ER 0	WL 5	WT 3	WR 11	TOTAL 325
APPROACH %'s :	0.97%	93.20%	5.83%	10.87%	57.97%	31.16%	98.46%	1.54%	0.00%	26.32%	15.79%	57.89%	
PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	45	3	12	38	10	27	0	0	5	3	5	148
PEAK HR FACTOR :		0.923			0.833			0.964			0.813		0.892

UTURNS	NB	SB	EB	WB
2:00 PM	0	1	0	0
2:15 PM	0	1	0	0
2:30 PM	0	0	0	0
2:45 PM	0	1	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	1	0	0
5:30 PM	0	0	0	0
5:45 PM	0	1	0	0
TOTAL VOLUMES :	NB 0	SB 5	EB 0	WB 0

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 0	NR 1	SL 0	ST 0	SR 0	EL 0	ET 3	ER 1	WL 2	WT 3	WR 0	TOTAL
6:00 AM	4	0	5	0	0	0	0	264	19	9	220	0	521
6:15 AM	1	0	6	0	0	0	0	308	20	16	291	0	642
6:30 AM	4	0	9	0	0	0	0	412	55	24	339	0	843
6:45 AM	6	0	11	0	0	0	0	441	55	32	363	0	908
7:00 AM	11	0	9	0	0	0	0	406	51	5	389	0	871
7:15 AM	12	0	14	0	0	0	0	474	45	14	472	0	1031
7:30 AM	24	0	30	0	0	0	0	476	43	9	474	0	1056
7:45 AM	13	0	38	0	0	0	0	510	29	17	440	0	1047
8:00 AM	11	0	46	0	0	0	0	519	16	6	394	0	992
8:15 AM	24	0	48	0	0	0	0	452	10	5	392	0	931
8:30 AM	15	0	60	0	0	0	0	395	14	7	376	0	867
8:45 AM	5	0	58	0	0	0	0	77	8	5	354	0	507
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	130	0	334	0	0	0	0	4734	365	149	4504	0	10216
APPROACH %'s :	28.02%	0.00%	71.98%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	92.84%	7.16%	3.20%	96.80%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	60	0	128	0	0	0	0	1979	133	46	1780	0	4126
PEAK HR FACTOR :		0.825			0.000			0.980			0.939		0.977

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 0	NR 1	SL 0	ST 0	SR 0	EL 0	ET 3	ER 1	WL 2	WT 3	WR 0	TOTAL
2:00 PM	17	0	70	0	0	0	0	343	23	5	296	0	754
2:15 PM	18	0	75	0	0	0	0	338	21	8	295	0	755
2:30 PM	25	0	81	0	0	0	0	392	19	7	343	0	867
2:45 PM	24	0	68	0	0	0	0	405	11	9	336	0	853
3:00 PM	21	0	72	0	0	0	0	421	16	2	354	0	886
3:15 PM	15	0	69	0	0	0	1	449	14	6	413	0	967
3:30 PM	17	0	89	0	0	0	0	477	21	5	397	0	1006
3:45 PM	30	0	78	0	0	0	0	496	29	6	359	0	998
4:00 PM	24	0	60	0	0	0	0	484	20	6	406	0	1000
4:15 PM	29	0	92	0	0	0	0	552	41	5	433	0	1152
4:30 PM	31	0	77	0	0	0	0	622	68	11	481	0	1290
4:45 PM	43	0	104	0	0	0	0	626	56	13	538	0	1380
5:00 PM	30	0	73	0	0	0	0	586	19	9	464	0	1181
5:15 PM	18	0	43	0	0	0	0	575	17	3	457	0	1113
5:30 PM	20	0	42	0	0	0	0	576	28	8	427	0	1101
5:45 PM	30	0	40	0	0	0	0	503	23	5	412	0	1013
TOTAL VOLUMES :	NL 392	NT 0	NR 1133	SL 0	ST 0	SR 0	EL 1	ET 7845	ER 426	WL 108	WT 6411	WR 0	TOTAL 16316
APPROACH %'s :	25.70%	0.00%	74.30%	#DIV/0!	#DIV/0!	#DIV/0!	0.01%	94.84%	5.15%	1.66%	98.34%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	133	0	346	0	0	0	0	2386	184	38	1916	0	5003
PEAK HR FACTOR :		0.815			0.000			0.931			0.887		0.906

UTURNS	NB	SB	EB	WB
	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	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
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Navy Wy and Seaside Fwy , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-051
City: Long Beach

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach

Lanes	0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Navy Wy

Eastbound Approach

Seaside Fwy

	AM	NOON	PM
	1840	0	2049
0	0	0	0
3	1979	0	2386
1	133	0	184
Lanes	AM	NOON	PM

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
	0	0	0	0
	1780	0	1916	3
	46	0	38	2
	2107	0	2732	
	AM	NOON	PM	

Northbound Approach

AM	179	60	0	128 AM
NOON	0	0	0	0 NOON
PM	222	133	0	346 PM
		2	0	1 Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	0	0	AM
NOON	0	0	NOON
PM	0	0	PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
1840	0	2049		1826	0	1954
2112	0	2570		2107	0	2732

	South Leg	
AM	179	188
NOON	0	0
PM	222	479

Total Volume Per Leg

	North Leg	
AM	0	AM
NOON	0	NOON
PM	0	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
3952	0	4619	3933	0	4686

	South Leg
AM	367
NOON	0
PM	701

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	1	0	0	0	0	3	1	2	3	0	
6:00 AM	4	0	5	0	0	0	0	251	19	9	215	0	503
6:15 AM	0	0	5	0	0	0	0	292	20	16	283	0	616
6:30 AM	3	0	7	0	0	0	0	392	52	22	326	0	802
6:45 AM	6	0	11	0	0	0	0	424	50	31	343	0	865
7:00 AM	11	0	6	0	0	0	0	379	42	5	360	0	803
7:15 AM	7	0	5	0	0	0	0	446	38	14	439	0	949
7:30 AM	10	0	8	0	0	0	0	411	37	9	420	0	895
7:45 AM	9	0	13	0	0	0	0	472	24	15	400	0	933
8:00 AM	5	0	15	0	0	0	0	453	8	4	338	0	823
8:15 AM	8	0	9	0	0	0	0	393	5	5	317	0	737
8:30 AM	5	0	10	0	0	0	0	328	6	7	323	0	679
8:45 AM	1	0	4	0	0	0	0	53	2	3	311	0	374
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	69	0	98	0	0	0	0	4294	303	140	4075	0	8979
APPROACH %'s :	41.32%	0.00%	58.68%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	93.41%	6.59%	3.32%	96.68%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	31	0	41	0	0	0	0	1782	107	42	1597	0	3600
PEAK HR FACTOR :		0.818			0.000			0.952			0.905		0.948

UTURNS				
NB	SB	EB	WB	
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	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
0	0	0	0	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	1	0	0	0	0	3	1	2	3	0	
2:00 PM	7	0	30	0	0	0	0	268	14	4	216	0	539
2:15 PM	6	0	25	0	0	0	0	268	14	8	234	0	555
2:30 PM	14	0	34	0	0	0	0	318	12	6	270	0	654
2:45 PM	18	0	27	0	0	0	0	353	3	6	246	0	653
3:00 PM	14	0	34	0	0	0	0	370	3	1	285	0	707
3:15 PM	7	0	27	0	0	0	0	391	4	5	340	0	774
3:30 PM	5	0	28	0	0	0	0	417	7	4	328	0	789
3:45 PM	20	0	32	0	0	0	0	433	17	4	300	0	806
4:00 PM	15	0	31	0	0	0	0	418	9	2	342	0	817
4:15 PM	13	0	53	0	0	0	0	494	27	5	383	0	975
4:30 PM	27	0	46	0	0	0	0	568	56	10	428	0	1135
4:45 PM	36	0	86	0	0	0	0	594	30	12	502	0	1260
5:00 PM	27	0	68	0	0	0	0	564	6	6	426	0	1097
5:15 PM	12	0	31	0	0	0	0	539	5	2	416	0	1005
5:30 PM	14	0	29	0	0	0	0	540	9	6	389	0	987
5:45 PM	28	0	28	0	0	0	0	469	7	4	365	0	901
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	263	0	609	0	0	0	0	7004	223	85	5470	0	13654
APPROACH %'s :	30.16%	0.00%	69.84%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	96.91%	3.09%	1.53%	98.47%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	103	0	253	0	0	0	0	2220	119	33	1739	0	4467
PEAK HR FACTOR :		0.730			0.000			0.937			0.862		0.886

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 0	NR 1	SL 0	ST 0	SR 0	EL 0	ET 3	ER 1	WL 2	WT 3	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	1	0	0	0	0	0	0	7	0	0	0	0	8
6:30 AM	0	0	1	0	0	0	0	4	0	1	1	0	7
6:45 AM	0	0	0	0	0	0	0	2	0	0	3	0	5
7:00 AM	0	0	0	0	0	0	0	9	1	0	7	0	17
7:15 AM	5	0	4	0	0	0	0	9	0	0	9	0	27
7:30 AM	13	0	5	0	0	0	0	16	0	0	19	0	53
7:45 AM	2	0	7	0	0	0	0	14	2	0	4	0	29
8:00 AM	1	0	12	0	0	0	0	18	0	1	12	0	44
8:15 AM	9	0	22	0	0	0	0	13	0	0	14	0	58
8:30 AM	8	0	20	0	0	0	0	19	0	0	18	0	65
8:45 AM	1	0	23	0	0	0	0	6	0	0	14	0	44
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	40	0	94	0	0	0	0	117	3	2	101	0	357
APPROACH %'s :	29.85%	0.00%	70.15%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	97.50%	2.50%	1.94%	98.06%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	21	0	28	0	0	0	0	57	2	1	44	0	153
PEAK HR FACTOR :	0.681			0.000			0.819			0.592			0.948

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	1	0	0	0	0	3	1	2	3	0	
2:00 PM	4	0	12	0	0	0	0	21	0	0	17	0	54
2:15 PM	4	0	14	0	0	0	0	22	2	0	15	0	57
2:30 PM	6	0	15	0	0	0	0	25	4	0	23	0	73
2:45 PM	3	0	11	0	0	0	0	14	3	0	27	0	58
3:00 PM	3	0	9	0	0	0	0	17	1	0	29	0	59
3:15 PM	2	0	18	0	0	0	0	21	2	0	26	0	69
3:30 PM	6	0	19	0	0	0	0	13	2	0	22	0	62
3:45 PM	4	0	18	0	0	0	0	27	3	1	21	0	74
4:00 PM	2	0	13	0	0	0	0	23	5	0	20	0	63
4:15 PM	7	0	14	0	0	0	0	24	1	0	24	0	70
4:30 PM	1	0	19	0	0	0	0	19	3	1	24	0	67
4:45 PM	3	0	12	0	0	0	0	8	8	0	11	0	42
5:00 PM	2	0	3	0	0	0	0	5	3	0	10	0	23
5:15 PM	5	0	5	0	0	0	0	11	1	1	15	0	38
5:30 PM	3	0	11	0	0	0	0	13	4	1	9	0	41
5:45 PM	1	0	6	0	0	0	0	7	9	0	19	0	42
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	56	0	199	0	0	0	0	270	51	4	312	0	892
APPROACH %'s :	21.96%	0.00%	78.04%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	84.11%	15.89%	1.27%	98.73%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	13	0	48	0	0	0	0	56	15	1	69	0	202
PEAK HR FACTOR :	0.726			0.000			0.710			0.700			0.886

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	1	0	0	0	0	3	1	2	3	0	
6:00 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
6:15 AM	0	0	0	0	0	0	0	2	0	0	7	0	9
6:30 AM	0	0	1	0	0	0	0	5	1	0	5	0	12
6:45 AM	0	0	0	0	0	0	0	4	3	0	6	0	13
7:00 AM	0	0	3	0	0	0	0	11	8	0	13	0	35
7:15 AM	0	0	5	0	0	0	0	11	7	0	9	0	32
7:30 AM	1	0	14	0	0	0	0	37	5	0	25	0	82
7:45 AM	2	0	15	0	0	0	0	11	3	0	18	0	49
8:00 AM	3	0	14	0	0	0	0	40	8	0	33	0	98
8:15 AM	6	0	14	0	0	0	0	33	3	0	35	0	91
8:30 AM	1	0	24	0	0	0	0	37	5	0	25	0	92
8:45 AM	2	0	23	0	0	0	0	11	5	0	18	0	59
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	15	0	113	0	0	0	0	204	48	0	195	0	575
APPROACH %'s :	11.72%	0.00%	88.28%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	80.95%	19.05%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	6	0	48	0	0	0	0	99	23	0	85	0	261
PEAK HR FACTOR :	0.794			0.000			0.635			0.644			0.948

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	1	0	0	0	0	3	1	2	3	0	
2:00 PM	3	0	23	0	0	0	0	40	6	0	33	0	105
2:15 PM	6	0	31	0	0	0	0	33	4	0	35	0	109
2:30 PM	5	0	26	0	0	0	0	33	3	0	29	0	96
2:45 PM	3	0	24	0	0	0	0	28	3	1	37	0	96
3:00 PM	3	0	23	0	0	0	0	25	9	0	22	0	82
3:15 PM	3	0	15	0	0	0	0	21	6	1	21	0	67
3:30 PM	6	0	32	0	0	0	0	38	7	0	23	0	106
3:45 PM	4	0	18	0	0	0	0	23	7	0	21	0	73
4:00 PM	3	0	11	0	0	0	0	31	4	3	16	0	68
4:15 PM	5	0	15	0	0	0	0	22	11	0	18	0	71
4:30 PM	3	0	3	0	0	0	0	26	7	0	17	0	56
4:45 PM	4	0	2	0	0	0	0	13	17	1	16	0	53
5:00 PM	0	0	1	0	0	0	0	10	10	0	17	0	38
5:15 PM	1	0	6	0	0	0	0	18	9	0	17	0	51
5:30 PM	2	0	2	0	0	0	0	12	12	0	17	0	45
5:45 PM	0	0	4	0	0	0	0	7	3	1	17	0	32
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	51	0	236	0	0	0	0	380	118	7	356	0	1148
APPROACH %'s :	17.77%	0.00%	82.23%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	76.31%	23.69%	1.93%	98.07%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	12	0	21	0	0	0	0	71	45	1	68	0	218
PEAK HR FACTOR :	0.413			0.000			0.879			0.958			0.886

UTURNS	NB	SB	EB	WB
	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	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	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 0	NR 1	SL 0	ST 0	SR 0	EL 0	ET 3	ER 1	WL 2	WT 3	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	3	0	0	1	0	4
6:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
6:30 AM	1	0	0	0	0	0	0	4	2	1	1	0	9
6:45 AM	0	0	0	0	0	0	0	1	1	0	2	0	4
7:00 AM	0	0	0	0	0	0	0	6	0	0	0	0	6
7:15 AM	0	0	0	0	0	0	0	3	0	0	6	0	9
7:30 AM	0	0	1	0	0	0	0	5	1	0	5	0	12
7:45 AM	0	0	2	0	0	0	0	7	0	1	13	0	23
8:00 AM	0	0	5	0	0	0	0	3	0	1	8	0	17
8:15 AM	1	0	3	0	0	0	0	6	2	0	10	0	22
8:30 AM	1	0	5	0	0	0	0	6	2	0	1	0	15
8:45 AM	1	0	7	0	0	0	0	1	1	0	8	0	18
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	0	23	0	0	0	0	47	9	3	55	0	141
APPROACH %'s :	14.81%	0.00%	85.19%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	83.93%	16.07%	5.17%	94.83%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	8	0	0	0	0	18	1	2	32	0	61
PEAK HR FACTOR :		0.400			0.000			0.679			0.607		0.948

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	1	0	0	0	0	3	1	2	3	0	
2:00 PM	2	0	5	0	0	0	0	7	3	1	20	0	38
2:15 PM	1	0	3	0	0	0	0	6	1	0	8	0	19
2:30 PM	0	0	6	0	0	0	0	10	0	1	11	0	28
2:45 PM	0	0	5	0	0	0	0	6	2	0	17	0	30
3:00 PM	0	0	2	0	0	0	0	2	2	0	12	0	18
3:15 PM	3	0	8	0	0	0	0	11	1	0	18	0	41
3:30 PM	0	0	10	0	0	0	0	2	4	0	21	0	37
3:45 PM	2	0	8	0	0	0	0	4	2	0	9	0	25
4:00 PM	4	0	5	0	0	0	0	4	1	0	22	0	36
4:15 PM	3	0	8	0	0	0	0	4	2	0	3	0	20
4:30 PM	0	0	7	0	0	0	0	5	2	0	5	0	19
4:45 PM	0	0	4	0	0	0	0	2	1	0	4	0	11
5:00 PM	0	0	1	0	0	0	0	2	0	2	6	0	11
5:15 PM	0	0	0	0	0	0	0	3	2	0	7	0	12
5:30 PM	1	0	0	0	0	0	0	8	3	1	8	0	21
5:45 PM	1	0	2	0	0	0	0	7	4	0	9	0	23
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	17	0	74	0	0	0	0	83	30	5	180	0	389
APPROACH %'s :	18.68%	0.00%	81.32%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	73.45%	26.55%	2.70%	97.30%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	3	0	20	0	0	0	0	13	5	2	18	0	61
PEAK HR FACTOR :	0.523			0.000			0.643			0.625			0.886

UTURNS	NB	SB	EB	WB
	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	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	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 0	NR 1	SL 0	ST 0	SR 0	EL 0	ET 3	ER 1	WL 2	WT 3	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	8	0	0	3	0	11
6:15 AM	0	0	1	0	0	0	0	5	0	0	1	0	7
6:30 AM	0	0	0	0	0	0	0	7	0	0	6	0	13
6:45 AM	0	0	0	0	0	0	0	10	1	1	9	0	21
7:00 AM	0	0	0	0	0	0	0	1	0	0	9	0	10
7:15 AM	0	0	0	0	0	0	0	5	0	0	9	0	14
7:30 AM	0	0	2	0	0	0	0	7	0	0	5	0	14
7:45 AM	0	0	1	0	0	0	0	6	0	1	5	0	13
8:00 AM	2	0	0	0	0	0	0	5	0	0	3	0	10
8:15 AM	0	0	0	0	0	0	0	7	0	0	16	0	23
8:30 AM	0	0	1	0	0	0	0	5	1	0	9	0	16
8:45 AM	0	0	1	0	0	0	0	6	0	2	3	0	12
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	0	6	0	0	0	0	72	2	4	78	0	164
APPROACH %'s :	25.00%	0.00%	75.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	97.30%	2.70%	4.88%	95.12%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	2	0	3	0	0	0	0	23	0	1	22	0	51
PEAK HR FACTOR :	0.625			0.000			0.821			0.639			0.948

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-051 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Navy Wy			Navy Wy			Seaside Fwy			Seaside Fwy			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	1	0	0	0	0	3	1	2	3	0	
2:00 PM	1	0	0	0	0	0	0	7	0	0	10	0	18
2:15 PM	1	0	2	0	0	0	0	9	0	0	3	0	15
2:30 PM	0	0	0	0	0	0	0	6	0	0	10	0	16
2:45 PM	0	0	1	0	0	0	0	4	0	2	9	0	16
3:00 PM	1	0	4	0	0	0	0	7	1	1	6	0	20
3:15 PM	0	0	1	0	0	0	1	5	1	0	8	0	16
3:30 PM	0	0	0	0	0	0	0	7	1	1	3	0	12
3:45 PM	0	0	2	0	0	0	0	9	0	1	8	0	20
4:00 PM	0	0	0	0	0	0	0	8	1	1	6	0	16
4:15 PM	1	0	2	0	0	0	0	8	0	0	5	0	16
4:30 PM	0	0	2	0	0	0	0	4	0	0	7	0	13
4:45 PM	0	0	0	0	0	0	0	9	0	0	5	0	14
5:00 PM	1	0	0	0	0	0	0	5	0	1	5	0	12
5:15 PM	0	0	1	0	0	0	0	4	0	0	2	0	7
5:30 PM	0	0	0	0	0	0	0	3	0	0	4	0	7
5:45 PM	0	0	0	0	0	0	0	13	0	0	2	0	15
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	0	15	0	0	0	1	108	4	7	93	0	233
APPROACH %'s :	25.00%	0.00%	75.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.88%	95.58%	3.54%	7.00%	93.00%	0.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	2	0	4	0	0	0	0	26	0	1	22	0	55
PEAK HR FACTOR :	0.500			0.000			0.722			0.821			0.886

UTURNS

	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
6:00 AM	10	1	0	0	0	0	0	0	0	0	1	0	12
6:15 AM	5	0	0	0	3	3	0	0	0	0	3	1	15
6:30 AM	22	2	0	0	1	4	0	0	0	0	1	1	31
6:45 AM	7	2	0	0	0	2	0	0	0	1	4	2	18
7:00 AM	5	4	0	0	1	3	0	0	0	0	3	1	17
7:15 AM	16	3	0	0	1	3	0	0	0	0	6	0	29
7:30 AM	29	7	0	0	3	2	0	0	0	2	7	1	51
7:45 AM	36	3	0	0	4	3	0	0	0	0	20	1	67
8:00 AM	49	3	0	0	0	4	0	0	0	2	16	1	75
8:15 AM	53	7	0	0	3	6	0	0	0	0	19	1	89
8:30 AM	48	2	0	0	1	5	0	0	0	3	16	1	76
8:45 AM	71	1	0	0	3	7	0	0	0	2	18	0	102
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	351	35	0	0	20	42	0	0	0	10	114	10	582
APPROACH %'s :	90.93%	9.07%	0.00%	0.00%	32.26%	67.74%	#DIV/0!	#DIV/0!	#DIV/0!	7.46%	85.07%	7.46%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	221	13	0	0	7	22	0	0	0	7	69	3	342
PEAK HR FACTOR :	0.813			0.725			0.000			0.988			0.838

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
2:00 PM	95	6	0	1	2	9	0	0	0	0	28	7	148
2:15 PM	95	4	0	0	3	10	0	0	0	2	20	2	136
2:30 PM	121	4	0	0	1	8	0	0	0	1	22	5	162
2:45 PM	82	4	0	0	1	5	0	0	0	0	35	2	129
3:00 PM	89	4	0	0	1	13	0	0	0	0	71	3	181
3:15 PM	107	2	0	0	3	5	0	0	0	3	39	1	160
3:30 PM	112	3	0	0	2	11	0	0	0	2	42	4	176
3:45 PM	93	8	0	0	3	6	0	0	0	1	24	4	139
4:00 PM	73	5	0	0	2	2	0	0	0	1	27	1	111
4:15 PM	66	9	0	0	1	5	0	0	0	0	14	4	99
4:30 PM	84	4	0	0	4	16	0	0	0	0	42	5	155
4:45 PM	92	2	0	0	2	9	0	0	0	0	26	3	134
5:00 PM	96	4	0	0	3	13	0	0	0	0	35	2	153
5:15 PM	35	3	0	0	0	8	0	0	0	1	16	2	65
5:30 PM	26	8	0	0	0	9	0	0	0	2	31	4	80
5:45 PM	30	4	0	0	0	7	0	0	0	1	23	3	68
TOTAL VOLUMES :	NL 1296	NT 74	NR 0	SL 1	ST 28	SR 136	EL 0	ET 0	ER 0	WL 14	WT 495	WR 52	TOTAL 2096
APPROACH %'s :	94.60%	5.40%	0.00%	0.61%	16.97%	82.42%	#DIV/0!	#DIV/0!	#DIV/0!	2.50%	88.24%	9.27%	
PEAK HR START TIME :	300 PM												TOTAL
PEAK HR VOL :	401	17	0	0	9	35	0	0	0	6	176	12	656
PEAK HR FACTOR :		0.909			0.786			0.000			0.655		0.906

UTURNS	NB	SB	EB	WB
	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
	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
	1	0	0	0
	NB 1	SB 1	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Harbor Plaza and Queensway Dr , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-V
City: Long Beach

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	300 PM

Peak Hour Summary

Southbound Approach (Harbor Plaza)

	Lanes 0.5	1.5	0		
AM	22	7	0	16	AM
NOON	0	0	0	0	NOON
PM	35	9	0	29	PM

Eastbound Approach (Queensway Dr)

Lanes	AM	NOON	PM
	312	0	612
0	0	0	0
0	0	0	0
0	0	0	0
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
3	0	12	0.5
69	0	176	2
7	0	6	0.5
0	0	0	
AM	NOON	PM	

CONTROL: Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	14	221	13	0 AM
NOON	0	0	0	0 NOON
PM	15	401	17	0 PM
		1.5	0.5	0 Lanes

Total Ins & Outs

North Leg		
29	16	AM
0	0	NOON
44	29	PM

West Leg			East Leg		
AM	NOON	PM			
312	0	612	79	0	194
0	0	0	0	0	0
			AM	NOON	PM

South Leg	
14	234 AM
0	0 NOON
15	418 PM

Total Volume Per Leg

North Leg	
45	AM
0	NOON
73	PM

West Leg			East Leg		
AM	NOON	PM			
312	0	612	79	0	194
			AM	NOON	PM

South Leg	
248	AM
0	NOON
433	PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Cars

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
6:00 AM	7	1	0	0	0	0	0	0	0	0	1	0	9
6:15 AM	5	0	0	0	3	3	0	0	0	0	3	1	15
6:30 AM	21	2	0	0	1	3	0	0	0	0	0	0	27
6:45 AM	3	2	0	0	0	2	0	0	0	1	4	1	13
7:00 AM	4	1	0	0	0	2	0	0	0	0	3	0	10
7:15 AM	7	3	0	0	1	3	0	0	0	0	6	0	20
7:30 AM	5	7	0	0	3	2	0	0	0	2	7	0	26
7:45 AM	14	2	0	0	4	3	0	0	0	0	19	1	43
8:00 AM	17	3	0	0	0	3	0	0	0	2	14	0	39
8:15 AM	11	6	0	0	1	6	0	0	0	0	18	1	43
8:30 AM	5	2	0	0	1	5	0	0	0	3	13	0	29
8:45 AM	10	1	0	0	3	7	0	0	0	2	18	0	41
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	109	30	0	0	17	39	0	0	0	10	106	4	315
APPROACH %'s :	78.42%	21.58%	0.00%	0.00%	30.36%	69.64%	#DIV/0!	#DIV/0!	#DIV/0!	8.33%	88.33%	3.33%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	43	12	0	0	5	21	0	0	0	7	63	1	152
PEAK HR FACTOR :		0.688			0.650			0.000			0.888		0.884

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
2:00 PM	15	6	0	1	2	9	0	0	0	0	27	5	65
2:15 PM	24	4	0	0	3	9	0	0	0	2	20	1	63
2:30 PM	45	4	0	0	1	8	0	0	0	1	21	4	84
2:45 PM	14	4	0	0	1	5	0	0	0	0	35	1	60
3:00 PM	32	4	0	0	1	13	0	0	0	0	70	1	121
3:15 PM	49	2	0	0	3	5	0	0	0	3	37	0	99
3:30 PM	40	3	0	0	2	11	0	0	0	2	39	2	99
3:45 PM	32	8	0	0	3	6	0	0	0	1	24	3	77
4:00 PM	34	5	0	0	2	2	0	0	0	1	27	0	71
4:15 PM	19	9	0	0	1	5	0	0	0	0	14	3	51
4:30 PM	50	4	0	0	4	16	0	0	0	0	42	4	120
4:45 PM	83	2	0	0	2	9	0	0	0	0	25	2	123
5:00 PM	87	4	0	0	3	13	0	0	0	0	35	1	143
5:15 PM	30	3	0	0	0	8	0	0	0	1	16	1	59
5:30 PM	18	8	0	0	0	9	0	0	0	2	31	3	71
5:45 PM	19	4	0	0	0	7	0	0	0	1	23	2	56
TOTAL VOLUMES :	NL 591	NT 74	NR 0	SL 1	ST 28	SR 135	EL 0	ET 0	ER 0	WL 14	WT 486	WR 33	TOTAL 1362
APPROACH %'s :	88.87%	11.13%	0.00%	0.61%	17.07%	82.32%	#DIV/0!	#DIV/0!	#DIV/0!	2.63%	91.18%	6.19%	
PEAK HR START TIME :	300 PM												TOTAL
PEAK HR VOL :	153	17	0	0	9	35	0	0	0	6	170	6	396
PEAK HR FACTOR :		0.833			0.786			0.000			0.641		0.818

UTURNS	NB	SB	EB	WB
2:00 PM	0	1	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	1	0	0	0
TOTAL VOLUMES :	NB 1	SB 1	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	2	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	9	0	0	0	0	0	0	0	0	0	0	0	9
7:45 AM	6	0	0	0	0	0	0	0	0	0	0	0	6
8:00 AM	7	0	0	0	0	0	0	0	0	0	0	0	7
8:15 AM	10	0	0	0	0	0	0	0	0	0	0	0	10
8:30 AM	9	0	0	0	0	0	0	0	0	0	0	0	9
8:45 AM	9	0	0	0	0	0	0	0	0	0	0	0	9
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	52	0	0	0	0	0	0	0	0	0	0	0	52
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	35	0	0	0	0	0	0	0	0	0	0	0	35
PEAK HR FACTOR :	0.875			0.000			0.000			0.000			0.884

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
2:00 PM	24	0	0	0	0	0	0	0	0	0	0	0	24
2:15 PM	15	0	0	0	0	0	0	0	0	0	0	0	15
2:30 PM	23	0	0	0	0	0	0	0	0	0	0	0	23
2:45 PM	25	0	0	0	0	0	0	0	0	0	0	0	25
3:00 PM	22	0	0	0	0	0	0	0	0	0	0	0	22
3:15 PM	18	0	0	0	0	0	0	0	0	0	0	0	18
3:30 PM	26	0	0	0	0	0	0	0	0	0	0	0	26
3:45 PM	25	0	0	0	0	0	0	0	0	0	0	0	25
4:00 PM	16	0	0	0	0	0	0	0	0	0	0	0	16
4:15 PM	24	0	0	0	0	0	0	0	0	0	0	0	24
4:30 PM	14	0	0	0	0	0	0	0	0	0	0	0	14
4:45 PM	6	0	0	0	0	0	0	0	0	0	0	0	6
5:00 PM	6	0	0	0	0	0	0	0	0	0	0	0	6
5:15 PM	4	0	0	0	0	0	0	0	0	0	0	0	4
5:30 PM	7	0	0	0	0	0	0	0	0	0	0	0	7
5:45 PM	10	0	0	0	0	0	0	0	0	0	0	0	10
TOTAL VOLUMES :	NL 265	NT 0	NR 0	SL 0	ST 0	SR 0	EL 0	ET 0	ER 0	WL 0	WT 0	WR 0	TOTAL 265
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	300 PM												TOTAL
PEAK HR VOL :	91	0	0	0	0	0	0	0	0	0	0	0	91
PEAK HR FACTOR :		0.875			0.000			0.000			0.000		0.818

UTURNS	NB	SB	EB	WB
	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
	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
	1	0	0	0
TOTAL VOLUMES :	NB 1	SB 1	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	6	0	0	0	0	0	0	0	0	0	0	0	6
7:30 AM	6	0	0	0	0	0	0	0	0	0	0	0	6
7:45 AM	12	0	0	0	0	0	0	0	0	0	0	0	12
8:00 AM	25	0	0	0	0	0	0	0	0	0	1	0	26
8:15 AM	20	0	0	0	0	0	0	0	0	0	0	0	20
8:30 AM	27	0	0	0	0	0	0	0	0	0	0	0	27
8:45 AM	42	0	0	0	0	0	0	0	0	0	0	0	42
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	139	0	0	0	0	0	0	0	0	0	1	0	140
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	114	0	0	0	0	0	0	0	0	0	1	0	115
PEAK HR FACTOR :		0.679			0.000			0.000			0.250		0.884

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
2:00 PM	50	0	0	0	0	0	0	0	0	0	0	0	50
2:15 PM	43	0	0	0	0	0	0	0	0	0	0	0	43
2:30 PM	40	0	0	0	0	0	0	0	0	0	0	0	40
2:45 PM	33	0	0	0	0	0	0	0	0	0	0	0	33
3:00 PM	26	0	0	0	0	0	0	0	0	0	0	0	26
3:15 PM	37	0	0	0	0	0	0	0	0	0	0	0	37
3:30 PM	38	0	0	0	0	0	0	0	0	0	0	0	38
3:45 PM	31	0	0	0	0	0	0	0	0	0	0	0	31
4:00 PM	20	0	0	0	0	0	0	0	0	0	0	0	20
4:15 PM	18	0	0	0	0	0	0	0	0	0	0	0	18
4:30 PM	15	0	0	0	0	0	0	0	0	0	0	0	15
4:45 PM	3	0	0	0	0	0	0	0	0	0	0	0	3
5:00 PM	2	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL 356	NT 0	NR 0	SL 0	ST 0	SR 0	EL 0	ET 0	ER 0	WL 0	WT 0	WR 0	TOTAL 356
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	300 PM												TOTAL
PEAK HR VOL :	132	0	0	0	0	0	0	0	0	0	0	0	132
PEAK HR FACTOR :		0.868			0.000			0.000			0.000		0.818

UTURNS

	NB	SB	EB	WB
2:00 PM	0	1	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	1	0	0	0
TOTAL VOLUMES :	NB 1	SB 1	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	2	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	4	1	0	0	1	0	0	0	0	0	0	0	6
8:30 AM	5	0	0	0	0	0	0	0	0	0	0	0	5
8:45 AM	6	0	0	0	0	0	0	0	0	0	0	0	6
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	18	1	0	0	1	0	0	0	0	0	0	0	20
APPROACH %'s :	94.74%	5.26%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	15	1	0	0	1	0	0	0	0	0	0	0	17
PEAK HR FACTOR :	0.667			0.250			0.000			0.000			0.884

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	0	0	1.5	0.5	0	0	0	0.5	2	0.5	
2:00 PM	5	0	0	0	0	0	0	0	0	0	0	0	5
2:15 PM	8	0	0	0	0	0	0	0	0	0	0	0	8
2:30 PM	10	0	0	0	0	0	0	0	0	0	0	0	10
2:45 PM	8	0	0	0	0	0	0	0	0	0	0	0	8
3:00 PM	6	0	0	0	0	0	0	0	0	0	0	0	6
3:15 PM	3	0	0	0	0	0	0	0	0	0	0	0	3
3:30 PM	8	0	0	0	0	0	0	0	0	0	0	0	8
3:45 PM	4	0	0	0	0	0	0	0	0	0	0	0	4
4:00 PM	3	0	0	0	0	0	0	0	0	0	0	0	3
4:15 PM	5	0	0	0	0	0	0	0	0	0	0	0	5
4:30 PM	5	0	0	0	0	0	0	0	0	0	0	0	5
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	68	0	0	0	0	0	0	0	0	0	0	0	68
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	300 PM												TOTAL
PEAK HR VOL :	21	0	0	0	0	0	0	0	0	0	0	0	21
PEAK HR FACTOR :	0.656			0.000			0.000			0.000			0.818

UTURNS

	NB	SB	EB	WB
2:00 PM	0	1	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	1	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	1	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
6:00 AM	3	0	0	0	0	0	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	1	0	0	0	0	1	0	0	0	0	1	1	4
6:45 AM	4	0	0	0	0	0	0	0	0	0	0	1	5
7:00 AM	0	3	0	0	1	1	0	0	0	0	0	1	6
7:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	8	0	0	0	0	0	0	0	0	0	0	1	9
7:45 AM	2	1	0	0	0	0	0	0	0	0	1	0	4
8:00 AM	0	0	0	0	0	1	0	0	0	0	1	1	3
8:15 AM	8	0	0	0	1	0	0	0	0	0	1	0	10
8:30 AM	2	0	0	0	0	0	0	0	0	0	3	1	6
8:45 AM	4	0	0	0	0	0	0	0	0	0	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	33	4	0	0	2	3	0	0	0	0	7	6	55
APPROACH %'s :	89.19%	10.81%	0.00%	0.00%	40.00%	60.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	53.85%	46.15%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	14	0	0	0	1	1	0	0	0	0	5	2	23
PEAK HR FACTOR :	0.438			0.500			0.000			0.438			0.884

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-V **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Queensway Dr			Queensway Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 0.5	NR 0	SL 0	ST 1.5	SR 0.5	EL 0	ET 0	ER 0	WL 0.5	WT 2	WR 0.5	TOTAL
2:00 PM	1	0	0	0	0	0	0	0	0	0	1	2	4
2:15 PM	5	0	0	0	0	1	0	0	0	0	0	1	7
2:30 PM	3	0	0	0	0	0	0	0	0	0	1	1	5
2:45 PM	2	0	0	0	0	0	0	0	0	0	0	1	3
3:00 PM	3	0	0	0	0	0	0	0	0	0	1	2	6
3:15 PM	0	0	0	0	0	0	0	0	0	0	2	1	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	3	2	5
3:45 PM	1	0	0	0	0	0	0	0	0	0	0	1	2
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	2
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
TOTAL VOLUMES :	16	0	0	0	0	1	0	0	0	0	9	19	45
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	32.14%	67.86%	
PEAK HR START TIME :	300 PM												TOTAL
PEAK HR VOL :	4	0	0	0	0	0	0	0	0	0	6	6	16
PEAK HR FACTOR :	0.333			0.000			0.000			0.600			0.818

UTURNS	NB	SB	EB	WB
	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
	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	0
	1	0	0	0
TOTAL VOLUMES :	1	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0.5	1.5	0	1	3	1	1	0	2	
6:00 AM	0	0	14	0	0	0	0	40	3	3	0	6	66
6:15 AM	0	0	16	2	1	0	0	55	12	1	0	5	92
6:30 AM	0	2	28	0	1	0	1	61	11	8	0	21	133
6:45 AM	0	7	28	1	0	0	0	52	15	7	0	2	112
7:00 AM	0	2	24	1	0	0	0	66	2	4	0	8	107
7:15 AM	1	5	25	0	1	0	1	84	3	6	0	12	138
7:30 AM	0	14	42	1	2	0	3	69	1	26	0	21	179
7:45 AM	1	6	38	1	3	0	3	94	6	15	0	34	201
8:00 AM	0	3	42	1	1	0	1	85	0	36	0	51	220
8:15 AM	0	12	30	2	1	0	4	60	3	37	0	45	194
8:30 AM	0	4	36	1	1	0	2	82	3	27	0	43	199
8:45 AM	0	7	39	4	3	0	1	89	1	38	0	65	247
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	62	362	14	14	0	16	837	60	208	0	313	1888
APPROACH %'s :	0.47%	14.55%	84.98%	50.00%	50.00%	0.00%	1.75%	91.68%	6.57%	39.92%	0.00%	60.08%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	26	147	8	6	0	8	316	7	138	0	204	860
PEAK HR FACTOR :		0.940			0.500			0.909			0.830		0.870

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	1	0	0	0
	0	0	0	0
	1	0	0	0
	0	1	0	0
	0	0	0	0
	0	0	0	2
	0	0	0	1
	NB	SB	EB	WB
	2	1	0	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0.5	1.5	0	1	3	1	1	0	2	
2:00 PM	0	8	13	3	0	0	3	85	2	32	0	90	236
2:15 PM	0	8	17	2	3	0	2	67	1	26	0	79	205
2:30 PM	0	14	21	1	1	0	3	76	1	32	0	108	257
2:45 PM	0	5	19	0	1	0	4	73	0	34	0	77	213
3:00 PM	0	11	16	0	1	0	0	72	0	35	0	83	218
3:15 PM	0	2	15	1	5	0	3	51	2	35	0	115	229
3:30 PM	0	13	18	0	2	0	2	75	0	28	0	101	239
3:45 PM	0	8	16	3	2	0	1	52	2	33	0	93	210
4:00 PM	0	7	11	2	0	0	0	50	0	31	0	74	175
4:15 PM	1	5	21	1	1	0	3	58	0	28	0	67	185
4:30 PM	0	4	19	0	4	0	1	64	0	34	0	81	207
4:45 PM	0	1	13	1	1	0	3	79	3	32	0	91	224
5:00 PM	0	5	13	1	2	0	2	83	2	26	0	96	230
5:15 PM	0	4	27	0	1	0	2	81	0	13	0	32	160
5:30 PM	0	7	26	0	2	0	0	83	0	17	0	29	164
5:45 PM	0	3	21	0	1	0	1	69	0	5	0	23	123
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	105	286	15	27	0	30	1118	13	441	0	1239	3275
APPROACH %'s :	0.26%	26.79%	72.96%	35.71%	64.29%	0.00%	2.58%	96.30%	1.12%	26.25%	0.00%	73.75%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	0	32	71	2	8	0	10	272	3	136	0	383	917
PEAK HR FACTOR :		0.736			0.417			0.891			0.865		0.892

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	1
	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	1
	NB	SB	EB	WB
	1	0	0	4

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Harbor Plaza and Harbor Scenic Dr , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-X
City: Long Beach

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	230 PM

Peak Hour Summary

Southbound Approach (Harbor Plaza)

Lanes	0	1.5	0.5		
AM	0	6	8	238	AM
NOON	0	0	0	0	NOON
PM	0	8	2	425	PM

Eastbound Approach (Harbor Scenic Dr)

Lanes	AM	NOON	PM
	0	0	0
1	8	0	10
3	316	0	272
1	7	0	3
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
204	0	383	2
0	0	0	0
138	0	136	1
471	0	345	
AM	NOON	PM	

CONTROL: Signalized

Northbound Approach

AM	151	0	26	147	AM
NOON	0	0	0	0	NOON
PM	147	0	32	71	PM
		0	2	1	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

North Leg		
14	238	AM
0	0	NOON
10	425	PM

West Leg				East Leg			
AM	NOON	PM		AM	NOON	PM	
0	0	0		342	0	519	
331	0	285		471	0	345	

South Leg		
151	173	AM
0	0	NOON
147	103	PM

Total Volume Per Leg

North Leg	
252	AM
0	NOON
435	PM

West Leg				East Leg			
AM	NOON	PM		AM	NOON	PM	
331	0	285		813	0	864	

South Leg	
324	AM
0	NOON
250	PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Cars

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0.5	1.5	0	1	3	1	1	0	2	
6:00 AM	0	0	12	0	0	0	0	17	3	3	0	4	39
6:15 AM	0	0	16	2	1	0	0	35	11	1	0	5	71
6:30 AM	0	1	28	0	1	0	1	41	11	8	0	20	111
6:45 AM	0	3	24	1	0	0	0	24	15	3	0	2	72
7:00 AM	0	1	22	0	0	0	0	23	2	2	0	4	54
7:15 AM	1	5	20	0	1	0	1	35	2	2	0	4	71
7:30 AM	0	6	41	1	2	0	3	25	1	3	0	4	86
7:45 AM	1	5	30	1	3	0	1	29	4	5	0	14	93
8:00 AM	0	3	18	1	1	0	1	18	0	5	0	19	66
8:15 AM	0	5	17	0	1	0	4	12	1	4	0	8	52
8:30 AM	0	2	20	1	1	0	1	5	3	9	0	5	47
8:45 AM	0	2	17	4	3	0	0	4	0	5	0	10	45
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	33	265	11	14	0	12	268	53	50	0	99	807
APPROACH %'s :	0.67%	11.00%	88.33%	44.00%	56.00%	0.00%	3.60%	80.48%	15.92%	33.56%	0.00%	66.44%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	12	72	6	6	0	6	39	4	23	0	42	210
PEAK HR FACTOR :		0.955			0.429			0.645			0.677		0.795

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	1	0	0	0
7:30 AM	0	0	0	0
7:45 AM	1	0	0	0
8:00 AM	0	1	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	2
8:45 AM	0	0	0	1
TOTAL VOLUMES :	2	1	0	3

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Cars

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 2	NR 1	SL 0.5	ST 1.5	SR 0	EL 1	ET 3	ER 1	WL 1	WT 0	WR 2	TOTAL
2:00 PM	0	5	7	3	0	0	3	3	2	4	0	15	42
2:15 PM	0	3	5	2	3	0	2	3	1	7	0	13	39
2:30 PM	0	10	6	1	1	0	3	0	0	7	0	38	66
2:45 PM	0	4	9	0	1	0	4	4	0	2	0	12	36
3:00 PM	0	9	5	0	1	0	0	3	0	7	0	27	52
3:15 PM	0	2	11	1	5	0	3	8	2	12	0	54	98
3:30 PM	0	11	11	0	2	0	1	6	0	3	0	34	68
3:45 PM	0	7	10	3	2	0	1	7	2	7	0	32	71
4:00 PM	0	7	4	2	0	0	0	11	0	7	0	33	64
4:15 PM	1	5	14	1	1	0	3	15	0	4	0	20	64
4:30 PM	0	2	16	0	4	0	1	32	0	10	0	50	115
4:45 PM	0	1	9	1	1	0	3	22	3	28	0	83	151
5:00 PM	0	5	8	1	2	0	2	24	0	24	0	87	153
5:15 PM	0	4	19	0	1	0	2	24	0	4	0	27	81
5:30 PM	0	7	17	0	2	0	0	22	0	8	0	21	77
5:45 PM	0	3	10	0	1	0	1	8	0	4	0	12	39
TOTAL VOLUMES :	NL 1	NT 85	NR 161	SL 15	ST 27	SR 0	EL 29	ET 192	ER 10	WL 138	WT 0	WR 558	TOTAL 1216
APPROACH %'s :	0.40%	34.41%	65.18%	35.71%	64.29%	0.00%	12.55%	83.12%	4.33%	19.83%	0.00%	80.17%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	0	25	31	2	8	0	10	15	2	28	0	131	252
PEAK HR FACTOR :		0.875			0.417			0.519			0.602		0.643

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	1
	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	1
TOTAL VOLUMES :	NB 1	SB 0	EB 0	WB 4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0.5	1.5	0	1	3	1	1	0	2	
6:00 AM	0	0	0	0	0	0	0	7	0	0	0	0	7
6:15 AM	0	0	0	0	0	0	0	11	0	0	0	0	11
6:30 AM	0	0	0	0	0	0	0	14	0	0	0	0	14
6:45 AM	0	0	2	0	0	0	0	11	0	1	0	0	14
7:00 AM	0	0	1	0	0	0	0	17	0	0	0	0	18
7:15 AM	0	0	3	0	0	0	0	20	1	2	0	2	28
7:30 AM	0	0	0	0	0	0	0	18	0	13	0	9	40
7:45 AM	0	0	3	0	0	0	0	22	0	4	0	6	35
8:00 AM	0	0	17	0	0	0	0	23	0	16	0	7	63
8:15 AM	0	0	7	0	0	0	0	16	2	17	0	10	52
8:30 AM	0	0	9	0	0	0	0	23	0	11	0	9	52
8:45 AM	0	0	11	0	0	0	0	31	1	16	0	9	68
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	53	0	0	0	0	213	4	80	0	52	402
APPROACH %'s :	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	98.16%	1.84%	60.61%	0.00%	39.39%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	0	44	0	0	0	0	93	3	60	0	35	235
PEAK HR FACTOR :		0.647			0.000			0.750			0.880		0.795

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	1	0	0	0
	0	0	0	0
	1	0	0	0
	0	1	0	0
	0	0	0	0
	0	0	0	2
	0	0	0	1
	NB	SB	EB	WB
	2	1	0	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0.5	1.5	0	1	3	1	1	0	2	
2:00 PM	0	0	3	0	0	0	0	21	0	8	0	23	55
2:15 PM	0	0	5	0	0	0	0	12	0	7	0	16	40
2:30 PM	0	1	6	0	0	0	0	15	0	8	0	20	50
2:45 PM	0	0	5	0	0	0	0	25	0	15	0	24	69
3:00 PM	0	0	4	0	0	0	0	9	0	11	0	24	48
3:15 PM	0	0	1	0	0	0	0	7	0	7	0	17	32
3:30 PM	0	0	3	0	0	0	0	15	0	10	0	26	54
3:45 PM	0	0	4	0	0	0	0	13	0	14	0	25	56
4:00 PM	0	0	3	0	0	0	0	8	0	8	0	17	36
4:15 PM	0	0	1	0	0	0	0	13	0	13	0	23	50
4:30 PM	0	1	2	0	0	0	0	7	0	14	0	14	38
4:45 PM	0	0	2	0	0	0	0	19	0	3	0	5	29
5:00 PM	0	0	1	0	0	0	0	7	0	1	0	6	15
5:15 PM	0	0	2	0	0	0	0	9	0	4	0	4	19
5:30 PM	0	0	0	0	0	0	0	17	0	7	0	7	31
5:45 PM	0	0	2	0	0	0	0	15	0	1	0	10	28
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2	44	0	0	0	0	212	0	131	0	261	650
APPROACH %'s :	0.00%	4.35%	95.65%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	33.42%	0.00%	66.58%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	0	1	16	0	0	0	0	56	0	41	0	85	199
PEAK HR FACTOR :		0.607			0.000			0.560			0.808		0.643

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	1
	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	1
	NB	SB	EB	WB
	1	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0.5	1.5	0	1	3	1	1	0	2	
6:00 AM	0	0	0	0	0	0	0	11	0	0	0	0	11
6:15 AM	0	0	0	0	0	0	0	8	0	0	0	0	8
6:30 AM	0	0	0	0	0	0	0	6	0	0	0	0	6
6:45 AM	0	0	2	0	0	0	0	15	0	0	0	0	17
7:00 AM	0	0	1	0	0	0	0	25	0	0	0	1	27
7:15 AM	0	0	1	0	0	0	0	22	0	1	0	6	30
7:30 AM	0	0	0	0	0	0	0	24	0	1	0	7	32
7:45 AM	0	0	2	0	0	0	0	35	0	1	0	11	49
8:00 AM	0	0	1	0	0	0	0	28	0	3	0	25	57
8:15 AM	0	0	2	0	0	0	0	19	0	4	0	22	47
8:30 AM	0	0	1	0	0	0	1	40	0	1	0	24	67
8:45 AM	0	0	4	0	0	0	1	35	0	3	0	41	84
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	14	0	0	0	2	268	0	14	0	137	435
APPROACH %'s :	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.74%	99.26%	0.00%	9.27%	0.00%	90.73%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	0	8	0	0	0	2	122	0	11	0	112	255
PEAK HR FACTOR :		0.500			0.000			0.756			0.699		0.795

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
6:00 AM	0	0	0	0
6:15 AM	0	0	0	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	1	0	0	0
7:30 AM	0	0	0	0
7:45 AM	1	0	0	0
8:00 AM	0	1	0	0
8:15 AM	0	0	0	0
8:30 AM	0	0	0	2
8:45 AM	0	0	0	1
	NB	SB	EB	WB
TOTAL VOLUMES :	2	1	0	3

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0.5	1.5	0	1	3	1	1	0	2	
2:00 PM	0	1	0	0	0	0	0	44	0	6	0	48	99
2:15 PM	0	0	2	0	0	0	0	42	0	3	0	42	89
2:30 PM	0	0	2	0	0	0	0	48	1	6	0	40	97
2:45 PM	0	0	2	0	0	0	0	29	0	8	0	32	71
3:00 PM	0	0	2	0	0	0	0	52	0	9	0	26	89
3:15 PM	0	0	2	0	0	0	0	34	0	6	0	39	81
3:30 PM	0	0	3	0	0	0	0	50	0	6	0	37	96
3:45 PM	0	0	0	0	0	0	0	30	0	1	0	32	63
4:00 PM	0	0	1	0	0	0	0	20	0	11	0	21	53
4:15 PM	0	0	2	0	0	0	0	19	0	6	0	19	46
4:30 PM	0	0	0	0	0	0	0	18	0	5	0	13	36
4:45 PM	0	0	1	0	0	0	0	27	0	1	0	3	32
5:00 PM	0	0	3	0	0	0	0	37	2	1	0	2	45
5:15 PM	0	0	5	0	0	0	0	40	0	3	0	0	48
5:30 PM	0	0	6	0	0	0	0	37	0	1	0	0	44
5:45 PM	0	0	7	0	0	0	0	30	0	0	0	0	37
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	38	0	0	0	0	557	3	73	0	354	1026
APPROACH %'s :	0.00%	2.56%	97.44%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	99.46%	0.54%	17.10%	0.00%	82.90%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	0	0	8	0	0	0	0	163	1	29	0	137	338
PEAK HR FACTOR :		1.000			0.000			0.788			0.902		0.643

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	1
	0	0	0	0
	0	0	0	1
	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	1
TOTAL VOLUMES :	1	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 2	NR 1	SL 0.5	ST 1.5	SR 0	EL 1	ET 3	ER 1	WL 1	WT 0	WR 2	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
7:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	2
7:15 AM	0	0	1	0	0	0	0	7	0	0	0	0	8
7:30 AM	0	0	0	0	0	0	0	2	0	8	0	1	11
7:45 AM	0	0	2	0	0	0	0	8	0	5	0	2	17
8:00 AM	0	0	6	0	0	0	0	16	0	12	0	0	34
8:15 AM	0	0	3	1	0	0	0	12	0	12	0	5	33
8:30 AM	0	0	5	0	0	0	0	14	0	6	0	5	30
8:45 AM	0	1	7	0	0	0	0	19	0	13	0	5	45
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	24	1	0	0	0	82	0	57	0	18	183
APPROACH %'s :	0.00%	4.00%	96.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	76.00%	0.00%	24.00%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	1	21	1	0	0	0	61	0	43	0	15	142
PEAK HR FACTOR :		0.688			0.250			0.803			0.806		0.795

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	1	0	0	0
	0	0	0	0
	1	0	0	0
	0	1	0	0
	0	0	0	0
	0	0	0	2
	0	0	0	1
	NB	SB	EB	WB
	2	1	0	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0.5	1.5	0	1	3	1	1	0	2	
2:00 PM	0	1	3	0	0	0	0	17	0	13	0	4	38
2:15 PM	0	0	3	0	0	0	0	10	0	9	0	8	30
2:30 PM	0	0	4	0	0	0	0	13	0	8	0	10	35
2:45 PM	0	0	3	0	0	0	0	15	0	6	0	8	32
3:00 PM	0	1	4	0	0	0	0	7	0	7	0	5	24
3:15 PM	0	0	1	0	0	0	0	2	0	10	0	5	18
3:30 PM	0	2	1	0	0	0	0	3	0	9	0	4	19
3:45 PM	0	0	2	0	0	0	0	2	0	11	0	4	19
4:00 PM	0	0	2	0	0	0	0	10	0	4	0	3	19
4:15 PM	0	0	2	0	0	0	0	11	0	5	0	5	23
4:30 PM	0	1	1	0	0	0	0	7	0	5	0	4	18
4:45 PM	0	0	1	0	0	0	0	9	0	0	0	0	10
5:00 PM	0	0	1	0	0	0	0	15	0	0	0	0	16
5:15 PM	0	0	1	0	0	0	0	8	0	2	0	1	12
5:30 PM	0	0	2	0	0	0	0	7	0	0	0	1	10
5:45 PM	0	0	2	0	0	0	0	16	0	0	0	1	19
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	5	33	0	0	0	0	152	0	89	0	63	342
APPROACH %'s :	0.00%	13.16%	86.84%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	58.55%	0.00%	41.45%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	0	1	12	0	0	0	0	37	0	31	0	28	109
PEAK HR FACTOR :		0.650			0.000			0.617			0.819		0.643

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	1
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	1
3:30 PM	0	0	0	0
3:45 PM	0	0	0	1
4:00 PM	0	0	0	0
4:15 PM	1	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	1
	NB	SB	EB	WB
TOTAL VOLUMES :	1	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0.5	1.5	0	1	3	1	1	0	2	
6:00 AM	0	0	2	0	0	0	0	5	0	0	0	2	9
6:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
6:30 AM	0	1	0	0	0	0	0	0	0	0	0	1	2
6:45 AM	0	4	0	0	0	0	0	0	0	3	0	0	7
7:00 AM	0	1	0	1	0	0	0	0	0	1	0	3	6
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
7:30 AM	0	8	1	0	0	0	0	0	0	1	0	0	10
7:45 AM	0	1	1	0	0	0	2	0	2	0	0	1	7
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	7	1	1	0	0	0	1	0	0	0	0	10
8:30 AM	0	2	1	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	4	0	0	0	0	0	0	0	1	0	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	28	6	2	0	0	2	6	3	7	0	7	61
APPROACH %'s :	0.00%	82.35%	17.65%	100.00%	0.00%	0.00%	18.18%	54.55%	27.27%	50.00%	0.00%	50.00%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	13	2	1	0	0	0	1	0	1	0	0	18
PEAK HR FACTOR :		0.469			0.250			0.250			0.250		0.795

UTURNS	NB	SB	EB	WB
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	1	0	0	0
	0	0	0	0
	1	0	0	0
	0	1	0	0
	0	0	0	0
	0	0	0	2
	0	0	0	1
	NB	SB	EB	WB
	2	1	0	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-X **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Harbor Plaza			Harbor Plaza			Harbor Scenic Dr			Harbor Scenic Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	0.5	1.5	0	1	3	1	1	0	2	
2:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	2
2:15 PM	0	5	2	0	0	0	0	0	0	0	0	0	7
2:30 PM	0	3	3	0	0	0	0	0	0	3	0	0	9
2:45 PM	0	1	0	0	0	0	0	0	0	3	0	1	5
3:00 PM	0	1	1	0	0	0	0	1	0	1	0	1	5
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	2
3:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:00 PM	0	0	1	0	0	0	0	1	0	1	0	0	3
4:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0	0	1	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	12	10	0	0	0	1	5	0	10	0	3	41
APPROACH %'s :	0.00%	54.55%	45.45%	#DIV/0!	#DIV/0!	#DIV/0!	16.67%	83.33%	0.00%	76.92%	0.00%	23.08%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	0	5	4	0	0	0	0	1	0	7	0	2	19
PEAK HR FACTOR :		0.375			0.000			0.250			0.563		0.643

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	1
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	1
3:30 PM	0	0	0	0
3:45 PM	0	0	0	1
4:00 PM	0	0	0	0
4:15 PM	1	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	1
	NB	SB	EB	WB
TOTAL VOLUMES :	1	0	0	4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
6:00 AM	0	2	0	12	5	16	3	0	0	0	0	3	41
6:15 AM	0	1	0	22	9	8	4	0	0	0	0	1	45
6:30 AM	0	5	0	37	26	13	5	1	1	1	0	2	91
6:45 AM	0	3	2	46	31	17	9	0	1	0	0	4	113
7:00 AM	0	9	0	6	39	9	5	0	0	0	0	5	73
7:15 AM	0	8	1	11	43	6	9	0	0	0	1	13	92
7:30 AM	1	19	0	11	29	9	12	0	0	0	0	22	103
7:45 AM	0	23	0	19	25	11	22	2	0	0	0	5	107
8:00 AM	1	16	0	2	10	9	34	0	0	0	0	4	76
8:15 AM	1	16	0	4	2	8	51	2	2	0	1	10	97
8:30 AM	0	16	0	5	3	14	44	2	0	0	2	10	96
8:45 AM	0	8	0	3	2	6	54	0	0	0	0	2	75
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	126	3	178	224	126	252	7	4	1	4	81	1009
APPROACH %'s :	2.27%	95.45%	2.27%	33.71%	42.42%	23.86%	95.82%	2.66%	1.52%	1.16%	4.65%	94.19%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	3	74	0	36	66	37	119	4	2	0	1	41	383
PEAK HR FACTOR :		0.837			0.632			0.568			0.477		0.895

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
2:00 PM	0	12	3	8	12	8	58	0	0	0	0	13	114
2:15 PM	1	16	0	6	12	9	62	1	0	1	1	13	122
2:30 PM	1	28	0	14	9	4	68	0	0	0	0	3	127
2:45 PM	0	36	0	9	5	3	51	1	1	0	0	6	112
3:00 PM	0	17	0	3	3	10	58	6	1	0	0	12	110
3:15 PM	1	15	0	5	5	8	61	0	0	0	0	12	107
3:30 PM	1	9	0	7	9	11	83	0	1	0	0	16	137
3:45 PM	1	16	1	14	11	8	69	0	1	0	1	16	138
4:00 PM	1	20	0	5	12	5	58	1	0	0	0	11	113
4:15 PM	1	27	0	13	16	12	83	0	1	0	0	6	159
4:30 PM	1	33	0	28	25	29	67	1	2	0	0	11	197
4:45 PM	0	57	1	23	36	18	64	3	2	0	0	29	233
5:00 PM	0	61	1	5	16	2	27	1	3	0	0	12	128
5:15 PM	0	23	0	5	10	10	23	1	0	0	0	11	83
5:30 PM	0	24	0	7	13	7	24	0	5	0	0	17	97
5:45 PM	2	42	0	9	17	6	23	1	0	0	0	6	106
TOTAL VOLUMES :	NL 10	NT 436	NR 6	SL 161	ST 211	SR 150	EL 879	ET 16	ER 17	WL 1	WT 2	WR 194	TOTAL 2083
APPROACH %'s :	2.21%	96.46%	1.33%	30.84%	40.42%	28.74%	96.38%	1.75%	1.86%	0.51%	1.02%	98.48%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	2	178	2	69	93	61	241	5	8	0	0	58	717
PEAK HR FACTOR :		0.734			0.680			0.756			0.500		0.769

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Navy Wy and Reeves Ave , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-052
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach (Navy Wy)

	Lanes 0	2	1		
AM	37	66	36	234	AM
NOON	0	0	0	0	NOON
PM	61	93	69	477	PM

Eastbound Approach (Reeves Ave)

Lanes	AM	NOON	PM
	41	0	63
2	119	0	241
0.5	4	0	5
0.5	2	0	8

Westbound Approach

Lanes	AM	NOON	PM
1	41	0	58
0.5	1	0	0
0.5	0	0	0
	40	0	76

CONTROL: Signalized

Northbound Approach

AM	68	3	74	0	AM
NOON	0	0	0	0	NOON
PM	101	2	178	2	PM
Lanes		0.5	2.5	0.5	Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	139	234	AM
NOON	0	0	NOON
PM	223	477	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
41	0	63	East Leg	42	0	58
125	0	254	West Leg	40	0	76

	South Leg	
AM	68	77
NOON	0	0
PM	101	182

Total Volume Per Leg

	North Leg	
AM	373	AM
NOON	0	NOON
PM	700	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
166	0	317	East Leg	82	0	134

	South Leg
AM	145
NOON	0
PM	283

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
6:00 AM	0	2	0	12	4	12	3	0	0	0	0	3	36
6:15 AM	0	0	0	22	9	6	4	0	0	0	0	0	41
6:30 AM	0	5	0	35	26	12	3	1	1	1	0	1	85
6:45 AM	0	3	2	45	29	13	9	0	1	0	0	4	106
7:00 AM	0	6	0	6	39	3	5	0	0	0	0	5	64
7:15 AM	0	4	1	11	41	2	4	0	0	0	1	6	70
7:30 AM	1	9	0	11	26	4	3	0	0	0	0	6	60
7:45 AM	0	9	0	19	24	4	8	2	0	0	0	4	70
8:00 AM	0	10	0	0	10	2	8	0	0	0	0	1	31
8:15 AM	0	13	0	4	2	2	4	1	1	0	0	2	29
8:30 AM	0	7	0	4	3	6	2	1	0	0	2	3	28
8:45 AM	0	2	0	2	2	2	4	0	0	0	0	0	12
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	70	3	171	215	68	57	5	3	1	3	35	632
APPROACH %'s :	1.35%	94.59%	4.05%	37.67%	47.36%	14.98%	87.69%	7.69%	4.62%	2.56%	7.69%	89.74%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	41	0	34	62	12	23	3	1	0	0	13	190
PEAK HR FACTOR :		0.808			0.574			0.675			0.542		0.679

CONTROL : Signalized

UTURNS

NB	SB	EB	WB
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	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
2:00 PM	0	8	3	6	11	0	14	0	0	0	0	11	53
2:15 PM	0	11	0	4	12	3	7	1	0	1	1	12	52
2:30 PM	1	25	0	9	8	1	13	0	0	0	0	3	60
2:45 PM	0	33	0	6	3	0	10	1	0	0	0	5	58
3:00 PM	0	17	0	1	2	1	22	0	1	0	0	6	50
3:15 PM	0	12	0	4	2	1	13	0	0	0	0	11	43
3:30 PM	0	5	0	3	4	2	18	0	0	0	0	9	41
3:45 PM	1	15	1	10	7	3	18	0	0	0	1	16	72
4:00 PM	1	20	0	2	6	2	18	0	0	0	0	10	59
4:15 PM	0	27	0	11	8	8	30	0	0	0	0	5	89
4:30 PM	1	31	0	28	19	19	33	1	0	0	0	11	143
4:45 PM	0	57	1	18	22	12	40	3	1	0	0	29	183
5:00 PM	0	59	1	4	5	1	21	1	2	0	0	12	106
5:15 PM	0	22	0	4	1	0	13	1	0	0	0	8	49
5:30 PM	0	21	0	5	5	0	12	0	1	0	0	10	54
5:45 PM	0	37	0	7	3	2	11	0	0	0	0	6	66
TOTAL VOLUMES :	NL 4	NT 400	NR 6	SL 122	ST 118	SR 55	EL 293	ET 8	ER 5	WL 1	WT 2	WR 164	TOTAL 1178
APPROACH %'s :	0.98%	97.56%	1.46%	41.36%	40.00%	18.64%	95.75%	2.61%	1.63%	0.60%	1.20%	98.20%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	1	174	2	61	54	40	124	5	3	0	0	57	521
PEAK HR FACTOR :		0.738			0.587			0.750			0.491		0.712

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
6:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
6:30 AM	0	0	0	1	0	0	0	0	0	0	0	1	2
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	2	0	0	0	0	7	9
7:30 AM	0	0	0	0	0	0	3	0	0	0	0	15	18
7:45 AM	0	3	0	0	1	1	5	0	0	0	0	1	11
8:00 AM	0	2	0	1	0	0	9	0	0	0	0	1	13
8:15 AM	0	1	0	0	0	0	23	0	0	0	0	8	32
8:30 AM	0	1	0	0	0	0	19	0	0	0	0	7	27
8:45 AM	0	2	0	0	0	0	22	0	0	0	0	1	25
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	9	0	2	2	2	83	0	0	0	0	42	140
APPROACH %'s :	0.00%	100.00%	0.00%	33.33%	33.33%	33.33%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	6	0	1	1	1	40	0	0	0	0	25	74
PEAK HR FACTOR :		0.500			0.375			0.435			0.417		0.679

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
2:00 PM	0	1	0	2	0	0	17	0	0	0	0	0	20
2:15 PM	0	0	0	2	0	1	17	0	0	0	0	0	20
2:30 PM	0	1	0	5	0	0	21	0	0	0	0	0	27
2:45 PM	0	0	0	0	1	0	13	0	0	0	0	0	14
3:00 PM	0	0	0	1	0	0	11	2	0	0	0	0	14
3:15 PM	0	0	0	1	0	1	17	0	0	0	0	1	20
3:30 PM	0	0	0	1	1	0	22	0	0	0	0	6	30
3:45 PM	0	0	0	2	1	0	20	0	0	0	0	0	23
4:00 PM	0	0	0	1	2	1	16	1	0	0	0	0	21
4:15 PM	0	0	0	1	1	0	21	0	0	0	0	0	23
4:30 PM	0	0	0	0	3	1	18	0	1	0	0	0	23
4:45 PM	0	0	0	3	4	0	16	0	0	0	0	0	23
5:00 PM	0	0	0	1	2	0	5	0	0	0	0	0	8
5:15 PM	0	1	0	1	0	1	4	0	0	0	0	2	9
5:30 PM	0	2	0	2	1	0	8	0	4	0	0	5	22
5:45 PM	2	5	0	2	8	1	5	1	0	0	0	0	24
TOTAL VOLUMES :	NL 2	NT 10	NR 0	SL 25	ST 24	SR 6	EL 231	ET 4	ER 5	WL 0	WT 0	WR 14	TOTAL 321
APPROACH %'s :	16.67%	83.33%	0.00%	45.45%	43.64%	10.91%	96.25%	1.67%	2.08%	0.00%	0.00%	100.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	5	10	1	60	0	1	0	0	0	77
PEAK HR FACTOR :		0.000			0.571			0.726			0.000		0.712

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	NB 0	SB 0	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
6:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
6:45 AM	0	0	0	0	1	3	0	0	0	0	0	0	4
7:00 AM	0	3	0	0	0	5	0	0	0	0	0	0	8
7:15 AM	0	4	0	0	2	4	3	0	0	0	0	0	13
7:30 AM	0	8	0	0	2	5	5	0	0	0	0	0	20
7:45 AM	0	9	0	0	0	5	9	0	0	0	0	0	23
8:00 AM	1	2	0	0	0	7	15	0	0	0	0	0	25
8:15 AM	0	2	0	0	0	4	16	1	1	0	1	0	25
8:30 AM	0	6	0	0	0	6	19	0	0	0	0	0	31
8:45 AM	0	3	0	0	0	2	22	0	0	0	0	0	27
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	37	0	0	5	45	90	1	1	0	1	0	181
APPROACH %'s :	2.63%	97.37%	0.00%	0.00%	10.00%	90.00%	97.83%	1.09%	1.09%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	21	0	0	2	21	45	1	1	0	1	0	93
PEAK HR FACTOR :		0.611			0.821			0.653			0.250		0.679

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
2:00 PM	0	3	0	0	0	6	22	0	0	0	0	0	31
2:15 PM	0	3	0	0	0	4	34	0	0	0	0	0	41
2:30 PM	0	1	0	0	1	2	29	0	0	0	0	0	33
2:45 PM	0	2	0	0	1	2	25	0	0	0	0	0	30
3:00 PM	0	0	0	0	1	8	22	4	0	0	0	0	35
3:15 PM	0	2	0	0	3	4	18	0	0	0	0	0	27
3:30 PM	1	4	0	0	2	6	34	0	1	0	0	1	49
3:45 PM	0	0	0	1	3	3	20	0	0	0	0	0	27
4:00 PM	0	0	0	1	4	2	16	0	0	0	0	0	23
4:15 PM	0	0	0	0	6	4	21	0	0	0	0	0	31
4:30 PM	0	1	0	0	3	7	5	0	0	0	0	0	16
4:45 PM	0	0	0	2	8	6	6	0	0	0	0	0	22
5:00 PM	0	0	0	0	8	1	1	0	0	0	0	0	10
5:15 PM	0	0	0	0	7	5	5	0	0	0	0	1	18
5:30 PM	0	1	0	0	6	4	3	0	0	0	0	2	16
5:45 PM	0	0	0	0	4	1	4	0	0	0	0	0	9
TOTAL VOLUMES :	1	17	0	4	57	65	265	4	1	0	0	4	418
APPROACH %'s :	5.56%	94.44%	0.00%	3.17%	45.24%	51.59%	98.15%	1.48%	0.37%	0.00%	0.00%	100.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	1	0	2	25	18	33	0	0	0	0	0	79
PEAK HR FACTOR :		0.250			0.703			0.393			0.000		0.712

UTURNS	NB	SB	EB	WB
2:00 PM	0	0	0	0
2:15 PM	0	0	0	0
2:30 PM	0	0	0	0
2:45 PM	0	0	0	0
3:00 PM	0	0	0	0
3:15 PM	0	0	0	0
3:30 PM	0	0	0	0
3:45 PM	0	0	0	0
4:00 PM	0	0	0	0
4:15 PM	0	0	0	0
4:30 PM	0	0	0	0
4:45 PM	0	0	0	0
5:00 PM	0	0	0	0
5:15 PM	0	0	0	0
5:30 PM	0	0	0	0
5:45 PM	0	0	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
6:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
6:30 AM	0	0	0	1	0	1	1	0	0	0	0	0	3
6:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	0	1	0	0	0	0	0	2
7:45 AM	0	1	0	0	0	1	0	0	0	0	0	0	2
8:00 AM	0	2	0	0	0	0	2	0	0	0	0	1	5
8:15 AM	0	0	0	0	0	2	8	0	0	0	0	0	10
8:30 AM	0	1	0	0	0	2	4	0	0	0	0	0	7
8:45 AM	0	1	0	0	0	1	6	0	0	0	0	0	8
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	5	0	1	1	10	22	0	0	0	0	1	40
APPROACH %'s :	0.00%	100.00%	0.00%	8.33%	8.33%	83.33%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	3	0	0	1	3	11	0	0	0	0	1	19
PEAK HR FACTOR :	0.375			0.500			0.344			0.250			0.679

UTURNS	NB	SB	EB	WB
	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	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	NB	SB	EB	WB
	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

Chassis

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	0.5	2.5	0.5	1	2	0	2	0.5	0.5	0.5	0.5	1					
2:00 PM	0	0	0	0	1	2	4	0	0	0	0	2	9	0	0	0	0
2:15 PM	1	1	0	0	0	1	3	0	0	0	0	0	6	0	0	0	0
2:30 PM	0	1	0	0	0	1	4	0	0	0	0	0	6	0	0	0	0
2:45 PM	0	1	0	0	0	1	3	0	0	0	0	1	6	0	0	0	0
3:00 PM	0	0	0	0	0	1	2	0	0	0	0	3	6	0	0	0	0
3:15 PM	0	0	0	0	0	2	12	0	0	0	0	0	14	0	0	0	0
3:30 PM	0	0	0	0	2	3	9	0	0	0	0	0	14	0	0	0	0
3:45 PM	0	0	0	0	0	2	10	0	1	0	0	0	13	0	0	0	0
4:00 PM	0	0	0	0	0	0	8	0	0	0	0	1	9	0	0	0	0
4:15 PM	0	0	0	0	1	0	10	0	0	0	0	0	11	0	0	0	0
4:30 PM	0	0	0	0	0	2	10	0	1	0	0	0	13	0	0	0	0
4:45 PM	0	0	0	0	2	0	1	0	1	0	0	0	4	0	0	0	0
5:00 PM	0	1	0	0	1	0	0	0	1	0	0	0	3	0	0	0	0
5:15 PM	0	0	0	0	2	3	0	0	0	0	0	0	5	0	0	0	0
5:30 PM	0	0	0	0	1	3	1	0	0	0	0	0	5	0	0	0	0
5:45 PM	0	0	0	0	2	2	3	0	0	0	0	0	7	0	0	0	0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	1	4	0	0	12	23	80	0	4	0	0	7	131	0	0	0	0
APPROACH %'s :	20.00%	80.00%	0.00%	0.00%	34.29%	65.71%	95.24%	0.00%	4.76%	0.00%	0.00%	100.00%					

PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	1	0	0	4	2	21	0	3	0	0	0	31
PEAK HR FACTOR :		0.250			0.750			0.545			0.000		0.712

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

AM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	0	0	0	0	0	0	0	0	0	1	3
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	1	0	0	0	0	0	0	0	1	2
8:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	1	0	1	0	0	0	1	0	0	0	0	3
8:45 AM	0	0	0	1	0	1	0	0	0	0	0	1	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	5	0	4	1	1	0	1	0	0	0	3	16
APPROACH %'s :	16.67%	83.33%	0.00%	66.67%	16.67%	16.67%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	3	0	1	0	0	0	0	0	0	0	2	7
PEAK HR FACTOR :		0.500			0.250			0.000			0.500		0.679

UTURNS	NB	SB	EB	WB
	0	0	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-052 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Navy Wy			Navy Wy			Reeves Ave			Reeves Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0.5	NT 2.5	NR 0.5	SL 1	ST 2	SR 0	EL 2	ET 0.5	ER 0.5	WL 0.5	WT 0.5	WR 1	TOTAL
2:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
2:15 PM	0	1	0	0	0	0	1	0	0	0	0	1	3
2:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
2:45 PM	0	0	0	3	0	0	0	0	1	0	0	0	4
3:00 PM	0	0	0	1	0	0	1	0	0	0	0	3	5
3:15 PM	1	1	0	0	0	0	1	0	0	0	0	0	3
3:30 PM	0	0	0	3	0	0	0	0	0	0	0	0	3
3:45 PM	0	1	0	1	0	0	1	0	0	0	0	0	3
4:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
4:15 PM	1	0	0	1	0	0	1	0	1	0	0	1	5
4:30 PM	0	1	0	0	0	0	1	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL 2	NT 5	NR 0	SL 10	ST 0	SR 1	EL 10	ET 0	ER 2	WL 0	WT 0	WR 5	TOTAL 35
APPROACH %'s :	28.57%	71.43%	0.00%	90.91%	0.00%	9.09%	83.33%	0.00%	16.67%	0.00%	0.00%	100.00%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	1	2	0	1	0	0	3	0	1	0	0	1	9
PEAK HR FACTOR :		0.750			0.250			0.500			0.250		0.712

UTURNS	NB	SB	EB	WB
	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	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	0	0
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
6:00 AM	17	39	4	7	29	10	12	85	5	12	147	12	379
6:15 AM	31	45	5	9	42	15	13	93	9	4	161	8	435
6:30 AM	37	50	5	24	48	13	13	105	8	9	231	17	560
6:45 AM	21	50	6	15	70	17	8	130	7	9	197	20	550
7:00 AM	22	80	4	25	49	11	20	141	13	16	230	13	624
7:15 AM	42	104	15	35	82	22	9	173	15	21	239	19	776
7:30 AM	54	150	11	64	124	23	29	240	25	29	281	17	1047
7:45 AM	41	173	21	40	152	24	27	247	13	39	296	20	1093
8:00 AM	42	131	14	31	83	18	25	206	16	34	295	24	919
8:15 AM	23	99	17	27	113	22	24	182	19	42	260	21	849
8:30 AM	25	116	12	36	98	21	29	195	19	32	283	26	892
8:45 AM	33	86	11	20	93	20	35	192	18	27	265	28	828
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	388	1123	125	333	983	216	244	1989	167	274	2885	225	8952
APPROACH %'s :	23.72%	68.64%	7.64%	21.74%	64.16%	14.10%	10.17%	82.88%	6.96%	8.10%	85.25%	6.65%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	160	553	63	162	472	87	105	875	73	144	1132	82	3908
PEAK HR FACTOR :		0.826			0.834			0.895			0.956		0.894

UTURNS				
	NB	SB	EB	WB
6:00 AM	2	1	0	0
6:15 AM	0	0	0	0
6:30 AM	2	1	0	0
6:45 AM	3	0	0	0
7:00 AM	1	0	0	0
7:15 AM	1	3	0	0
7:30 AM	2	2	0	0
7:45 AM	0	1	0	0
8:00 AM	3	0	0	0
8:15 AM	0	4	0	0
8:30 AM	2	4	0	0
8:45 AM	1	3	0	0
	NB	SB	EB	WB
	17	19	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
2:00 PM	31	120	9	37	102	27	24	212	19	18	176	19	794
2:15 PM	41	125	18	37	117	24	30	225	22	18	210	20	887
2:30 PM	28	130	16	46	101	27	37	237	25	25	193	20	885
2:45 PM	44	148	13	47	131	16	35	261	23	30	177	25	950
3:00 PM	44	164	18	50	109	25	49	243	27	34	191	35	989
3:15 PM	42	162	20	40	150	25	40	264	25	26	183	24	1001
3:30 PM	33	132	23	37	111	29	40	272	29	39	182	40	967
3:45 PM	46	130	21	33	123	19	40	271	30	32	214	34	993
4:00 PM	38	140	18	40	116	28	45	278	15	28	171	18	935
4:15 PM	37	129	13	35	133	24	44	308	18	34	185	18	978
4:30 PM	24	136	24	49	110	33	45	297	23	27	200	33	1001
4:45 PM	30	164	21	38	133	40	28	352	21	34	186	19	1066
5:00 PM	45	143	21	55	112	40	44	301	15	24	189	19	1008
5:15 PM	32	165	23	39	150	27	51	370	26	33	188	14	1118
5:30 PM	31	145	22	37	94	36	54	295	23	24	209	21	991
5:45 PM	32	126	18	47	156	22	28	287	25	30	160	27	958
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	578	2259	298	667	1948	442	634	4473	366	456	3014	386	15521
APPROACH %'s :	18.44%	72.06%	9.51%	21.82%	63.72%	14.46%	11.58%	81.73%	6.69%	11.83%	78.16%	10.01%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	131	608	89	181	505	140	168	1320	85	118	763	85	4193
PEAK HR FACTOR :		0.941			0.956			0.880			0.929		0.938

UTURNS	NB	SB	EB	WB
	0	6	0	0
	3	7	0	0
	5	2	0	0
	1	2	0	0
	6	4	0	0
	6	6	0	0
	4	1	0	0
	3	0	0	0
	1	4	0	0
	1	5	0	0
	1	6	0	0
	1	1	0	0
	5	9	0	0
	1	3	0	0
	3	2	0	0
	2	2	0	0
	NB	SB	EB	WB
	43	60	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Long Beach Blvd and PCH , Long Beach

Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-053
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Long Beach Blvd)

	Lanes 1	2	1		
AM	87	472	162	740	AM
NOON	0	0	0	0	NOON
PM	140	505	181	861	PM

Eastbound Approach (PCH)

Lanes	AM	NOON	PM
	1379	0	1034
1	105	0	168
3	875	0	1320
0	73	0	85
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
82	0	85	0
1132	0	763	3
144	0	118	1
1100	0	1590	
AM	NOON	PM	

CONTROL: Signalized

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Northbound Approach

AM	689	160	553	63	AM
NOON	0	0	0	0	NOON
PM	708	131	608	89	PM
		1	2	1	Lanes

Total Ins & Outs

North Leg		
721	740	AM
0	0	NOON
826	861	PM

West Leg			East Leg		
AM	NOON	PM			
1379	0	1034	1358	0	966
1053	0	1573	1100	0	1590
			AM	NOON	PM

South Leg		
689	776	AM
0	0	NOON
708	828	PM

Total Volume Per Leg

North Leg	
1461	AM
0	NOON
1687	PM

West Leg			East Leg		
AM	NOON	PM			
2432	0	2607	2458	0	2556
			AM	NOON	PM

South Leg	
1465	AM
0	NOON
1536	PM

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
6:00 AM	17	38	4	7	27	8	10	81	3	12	146	12	365
6:15 AM	28	43	5	8	36	15	13	88	8	4	155	8	411
6:30 AM	36	47	4	23	45	12	13	97	7	8	225	17	534
6:45 AM	20	48	5	14	64	12	8	122	7	8	190	20	518
7:00 AM	20	78	4	25	43	10	19	130	10	15	219	13	586
7:15 AM	41	102	14	35	79	19	8	163	14	20	228	19	742
7:30 AM	53	148	10	64	118	23	28	230	24	28	273	17	1016
7:45 AM	41	169	21	40	147	24	27	242	12	39	289	20	1071
8:00 AM	40	126	14	30	80	15	24	198	15	33	286	24	885
8:15 AM	23	97	16	27	110	21	21	176	19	42	245	20	817
8:30 AM	23	114	12	35	96	19	27	185	18	32	272	26	859
8:45 AM	33	80	11	19	91	17	33	186	17	25	257	26	795
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	375	1090	120	327	936	195	231	1898	154	266	2785	222	8599
APPROACH %'s :	23.66%	68.77%	7.57%	22.43%	64.20%	13.37%	10.12%	83.14%	6.75%	8.13%	85.09%	6.78%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	157	540	61	161	455	83	100	846	70	142	1093	81	3789
PEAK HR FACTOR :		0.820			0.828			0.901			0.945		0.884

UTURNS

NB	SB	EB	WB
2	1	0	0
0	0	0	0
2	1	0	0
3	0	0	0
1	0	0	0
1	3	0	0
2	2	0	0
0	1	0	0
3	0	0	0
0	4	0	0
2	4	0	0
1	3	0	0
NB	SB	EB	WB
17	19	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
2:00 PM	29	114	9	36	99	27	24	197	17	18	170	19	759
2:15 PM	40	123	18	37	109	24	30	218	22	18	201	20	860
2:30 PM	27	126	16	46	98	26	36	226	23	25	185	20	854
2:45 PM	43	146	13	47	129	16	33	249	23	28	169	25	921
3:00 PM	42	163	18	49	106	24	47	234	26	34	182	34	959
3:15 PM	41	157	19	40	149	25	39	251	25	25	179	23	973
3:30 PM	31	131	23	37	109	28	38	255	27	38	167	40	924
3:45 PM	45	126	21	33	122	19	37	264	30	32	205	33	967
4:00 PM	35	138	18	40	113	28	43	266	14	27	166	18	906
4:15 PM	37	124	13	33	131	23	41	301	16	33	176	18	946
4:30 PM	23	133	24	49	109	33	45	291	21	27	195	33	983
4:45 PM	29	159	21	38	132	39	28	347	20	34	181	19	1047
5:00 PM	44	141	20	55	111	40	43	295	14	24	184	19	990
5:15 PM	32	163	23	39	147	27	50	363	26	33	182	13	1098
5:30 PM	28	143	22	37	94	36	53	290	22	24	203	21	973
5:45 PM	32	125	18	45	151	21	28	280	24	30	155	27	936
TOTAL VOLUMES :	NL 558	NT 2212	NR 296	SL 661	ST 1909	SR 436	EL 615	ET 4327	ER 350	WL 450	WT 2900	WR 382	TOTAL 15096
APPROACH %'s :	18.20%	72.15%	9.65%	21.99%	63.51%	14.50%	11.62%	81.76%	6.61%	12.06%	77.71%	10.24%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	128	596	88	181	499	139	166	1296	81	118	742	84	4118
PEAK HR FACTOR :		0.931			0.961			0.879			0.925		0.938

UTURNS	NB	SB	EB	WB
	0	6	0	0
	3	7	0	0
	5	2	0	0
	1	2	0	0
	6	4	0	0
	6	6	0	0
	4	1	0	0
	3	0	0	0
	1	4	0	0
	1	5	0	0
	1	6	0	0
	1	1	0	0
	5	9	0	0
	1	3	0	0
	3	2	0	0
	2	2	0	0
TOTAL	NB 43	SB 60	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	3
8:45 AM	0	0	0	0	0	1	0	1	0	0	2	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	1	0	2	0	0	10	0	13
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	0	0	0	0	1
PEAK HR FACTOR :		0.000			0.000			0.250			0.000		0.884

UTURNS	NB	SB	EB	WB
	2	1	0	0
	0	0	0	0
	2	1	0	0
	3	0	0	0
	1	0	0	0
	1	3	0	0
	2	2	0	0
	0	1	0	0
	3	0	0	0
	0	4	0	0
	2	4	0	0
	1	3	0	0
	NB	SB	EB	WB
	17	19	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	1	3	0	1	3	0	
2:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
3:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	1	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	10	1	0	2	0	13
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	90.91%	9.09%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	1	0	0	0	2
PEAK HR FACTOR :		0.000			0.000			0.250			0.000		0.938

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
2:00 PM	0	6	0	0
2:15 PM	3	7	0	0
2:30 PM	5	2	0	0
2:45 PM	1	2	0	0
3:00 PM	6	4	0	0
3:15 PM	6	6	0	0
3:30 PM	4	1	0	0
3:45 PM	3	0	0	0
4:00 PM	1	4	0	0
4:15 PM	1	5	0	0
4:30 PM	1	6	0	0
4:45 PM	1	1	0	0
5:00 PM	5	9	0	0
5:15 PM	1	3	0	0
5:30 PM	3	2	0	0
5:45 PM	2	2	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	43	60	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Containers

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	1	2	0	3
7:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
7:15 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
8:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	1	1	0	0	1	0	0	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	0	0	3	1	1	3	1	1	8	0	19
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	75.00%	25.00%	20.00%	60.00%	20.00%	11.11%	88.89%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	1	0	1	1	0	0	2	0	5
PEAK HR FACTOR :	0.000			0.250			0.500			0.250			0.884

UTURNS	NB	SB	EB	WB
	2	1	0	0
	0	0	0	0
	2	1	0	0
	3	0	0	0
	1	0	0	0
	1	3	0	0
	2	2	0	0
	0	1	0	0
	3	0	0	0
	0	4	0	0
	2	4	0	0
	1	3	0	0
	NB	SB	EB	WB
	17	19	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Containers

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	1	3	0	1	3	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	1	1	0	0	1	0	3
2:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	1	2	0	0	0	0	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
4:00 PM	0	0	0	0	0	0	1	1	0	0	0	0	2
4:15 PM	0	0	0	0	1	0	0	1	0	0	1	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	3	10	0	0	7	0	21
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	23.08%	76.92%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	0	0	1	0	2
PEAK HR FACTOR :	0.000			0.000			0.250			0.250			0.938

UTURNS	NB	SB	EB	WB
	0	6	0	0
	3	7	0	0
	5	2	0	0
	1	2	0	0
	6	4	0	0
	6	6	0	0
	4	1	0	0
	3	0	0	0
	1	4	0	0
	1	5	0	0
	1	6	0	0
	1	1	0	0
	5	9	0	0
	1	3	0	0
	3	2	0	0
	2	2	0	0
	NB	SB	EB	WB
	43	60	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	1	3	0	1	3	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	1	0	0	0	0	1	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	1	0	0	0	0	1	0	2
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	0	1	0	2
PEAK HR FACTOR :		0.000			0.250			0.000			0.250		0.884

CONTROL : Signalized

UTURNS

NB	SB	EB	WB
2	1	0	0
0	0	0	0
2	1	0	0
3	0	0	0
1	0	0	0
1	3	0	0
2	2	0	0
0	1	0	0
3	0	0	0
0	4	0	0
2	4	0	0
1	3	0	0
NB	SB	EB	WB
17	19	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	1	3	0	1	3	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	2	0	0	1	0	3
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	1	0	1
PEAK HR FACTOR :		0.000			0.000			0.000			0.250		0.938

UTURNS	NB	SB	EB	WB
	0	6	0	0
	3	7	0	0
	5	2	0	0
	1	2	0	0
	6	4	0	0
	6	6	0	0
	4	1	0	0
	3	0	0	0
	1	4	0	0
	1	5	0	0
	1	6	0	0
	1	1	0	0
	5	9	0	0
	1	3	0	0
	3	2	0	0
	2	2	0	0
	NB	SB	EB	WB
	43	60	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Other Trucks

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	1	3	0	1	3	0	
6:00 AM	0	1	0	0	2	2	2	4	2	0	1	0	14
6:15 AM	3	2	0	1	6	0	0	5	1	0	6	0	24
6:30 AM	1	2	1	1	2	1	0	8	1	1	5	0	23
6:45 AM	1	2	1	1	6	5	0	8	0	0	5	0	29
7:00 AM	2	2	0	0	6	1	1	11	3	1	7	0	34
7:15 AM	1	2	1	0	3	3	1	9	1	1	7	0	29
7:30 AM	1	2	1	0	6	0	1	10	1	1	8	0	31
7:45 AM	0	4	0	0	4	0	0	4	1	0	7	0	20
8:00 AM	2	5	0	1	3	2	1	8	1	1	6	0	30
8:15 AM	0	2	1	0	3	1	2	5	0	0	15	1	30
8:30 AM	2	2	0	1	2	2	2	9	1	0	8	0	29
8:45 AM	0	6	0	1	1	1	2	5	0	2	6	2	26
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	13	32	5	6	44	18	12	86	12	7	81	3	319
APPROACH %'s :	26.00%	64.00%	10.00%	8.82%	64.71%	26.47%	10.91%	78.18%	10.91%	7.69%	89.01%	3.30%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	3	13	2	1	16	3	4	27	3	2	36	1	111
PEAK HR FACTOR :		0.643			0.833			0.708			0.609		0.884

UTURNS			
NB	SB	EB	WB
2	1	0	0
0	0	0	0
2	1	0	0
3	0	0	0
1	0	0	0
1	3	0	0
2	2	0	0
0	1	0	0
3	0	0	0
0	4	0	0
2	4	0	0
1	3	0	0
NB	SB	EB	WB
17	19	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-053 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Other Trucks

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			PCH			PCH			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
2:00 PM	2	6	0	1	3	0	0	14	2	0	5	0	33
2:15 PM	1	2	0	0	8	0	0	6	0	0	9	0	26
2:30 PM	1	4	0	0	3	1	0	9	2	0	7	0	27
2:45 PM	1	2	0	0	2	0	2	9	0	2	5	0	23
3:00 PM	2	1	0	1	3	1	2	8	1	0	9	1	29
3:15 PM	1	5	1	0	1	0	0	9	0	1	4	1	23
3:30 PM	2	1	0	0	2	1	2	16	2	1	15	0	42
3:45 PM	1	4	0	0	1	0	3	5	0	0	8	1	23
4:00 PM	3	2	0	0	3	0	1	9	1	1	5	0	25
4:15 PM	0	5	0	2	1	1	3	6	2	1	8	0	29
4:30 PM	1	3	0	0	1	0	0	5	1	0	5	0	16
4:45 PM	1	5	0	0	1	1	0	5	1	0	5	0	19
5:00 PM	1	2	1	0	1	0	1	5	1	0	4	0	16
5:15 PM	0	2	0	0	3	0	1	7	0	0	5	1	19
5:30 PM	3	2	0	0	0	0	1	5	1	0	6	0	18
5:45 PM	0	1	0	2	5	1	0	6	1	0	4	0	20
TOTAL VOLUMES :	NL 20	NT 47	NR 2	SL 6	ST 38	SR 6	EL 16	ET 124	ER 15	WL 6	WT 104	WR 4	TOTAL 388
APPROACH %'s :	28.99%	68.12%	2.90%	12.00%	76.00%	12.00%	10.32%	80.00%	9.68%	5.26%	91.23%	3.51%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	3	12	1	0	6	1	2	22	3	0	19	1	70
PEAK HR FACTOR :		0.667			0.583			0.844			0.833		0.938

UTURNS

	NB	SB	EB	WB
2:00 PM	0	6	0	0
2:15 PM	3	7	0	0
2:30 PM	5	2	0	0
2:45 PM	1	2	0	0
3:00 PM	6	4	0	0
3:15 PM	6	6	0	0
3:30 PM	4	1	0	0
3:45 PM	3	0	0	0
4:00 PM	1	4	0	0
4:15 PM	1	5	0	0
4:30 PM	1	6	0	0
4:45 PM	1	1	0	0
5:00 PM	5	9	0	0
5:15 PM	1	3	0	0
5:30 PM	3	2	0	0
5:45 PM	2	2	0	0
TOTAL VOLUMES :	NB 43	SB 60	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
6:00 AM	19	19	3	17	18	7	2	93	10	2	149	17	356
6:15 AM	19	40	7	13	30	10	0	101	10	2	185	13	430
6:30 AM	18	44	7	10	36	5	0	102	11	2	210	12	457
6:45 AM	17	41	9	15	68	17	8	130	7	3	202	13	530
7:00 AM	25	60	11	17	53	11	1	141	16	1	232	16	584
7:15 AM	28	80	8	17	68	11	0	185	13	3	237	21	671
7:30 AM	43	107	14	19	95	9	0	206	11	1	280	28	813
7:45 AM	31	101	10	34	126	21	0	196	20	1	297	39	876
8:00 AM	27	91	15	24	98	13	0	199	20	2	270	23	782
8:15 AM	31	102	14	26	104	15	1	213	11	1	229	20	767
8:30 AM	23	101	15	18	101	9	1	212	16	0	213	21	730
8:45 AM	20	94	21	24	102	7	0	204	18	1	194	12	697
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	301	880	134	234	899	135	13	1982	163	19	2698	235	7693
APPROACH %'s :	22.89%	66.92%	10.19%	18.45%	70.90%	10.65%	0.60%	91.84%	7.55%	0.64%	91.40%	7.96%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	132	401	53	103	423	58	1	814	62	5	1076	110	3238
PEAK HR FACTOR :		0.893			0.807			0.974			0.884		0.924

UTURNS

NB	SB	EB	WB
0	2	0	0
1	0	0	0
0	1	0	0
0	0	0	0
1	0	0	0
4	1	0	0
2	0	0	0
1	1	0	0
0	2	0	0
3	1	0	0
2	1	0	0
3	1	0	0
NB	SB	EB	WB
17	10	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
2:00 PM	47	120	17	20	88	17	0	215	24	1	197	20	766
2:15 PM	38	100	23	31	85	15	1	245	20	1	199	29	787
2:30 PM	37	111	28	28	94	23	0	242	20	2	180	25	790
2:45 PM	44	116	17	39	91	22	1	279	11	1	158	30	809
3:00 PM	30	130	21	47	117	18	0	285	31	1	157	30	867
3:15 PM	47	129	20	41	108	19	2	313	23	1	186	27	916
3:30 PM	40	115	16	35	105	26	1	323	17	0	185	25	888
3:45 PM	37	124	16	46	118	23	0	316	13	2	172	30	897
4:00 PM	41	128	18	45	100	26	0	314	22	1	174	33	902
4:15 PM	36	119	25	40	109	20	0	310	24	0	186	25	894
4:30 PM	42	136	19	31	104	15	2	316	17	1	182	26	891
4:45 PM	35	140	28	41	127	13	1	331	19	2	172	18	927
5:00 PM	51	156	29	34	95	21	1	303	28	1	167	43	929
5:15 PM	42	113	22	41	132	21	0	345	20	1	189	30	956
5:30 PM	34	137	24	24	90	16	0	319	27	1	171	24	867
5:45 PM	26	126	13	46	128	16	0	279	23	1	169	20	847
TOTAL VOLUMES :	NL 627	NT 2000	NR 336	SL 589	ST 1691	SR 311	EL 9	ET 4735	ER 339	WL 17	WT 2844	WR 435	TOTAL 13933
APPROACH %'s :	21.16%	67.50%	11.34%	22.73%	65.26%	12.00%	0.18%	93.15%	6.67%	0.52%	86.29%	13.20%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	170	545	98	147	458	70	4	1295	84	5	710	117	3703
PEAK HR FACTOR :		0.861			0.870			0.947			0.945		0.968

UTURNS	NB	SB	EB	WB
	3	0	0	0
	3	6	0	0
	7	4	0	0
	2	3	0	0
	7	6	0	0
	1	6	0	0
	5	2	0	0
	5	5	0	0
	2	3	0	0
	3	8	0	0
	4	1	0	0
	3	4	0	0
	6	6	0	0
	7	8	0	0
	3	2	0	0
	3	5	0	0
TOTAL	64	69	0	0

CONTROL : Signalized

ITM Peak Hour Summary

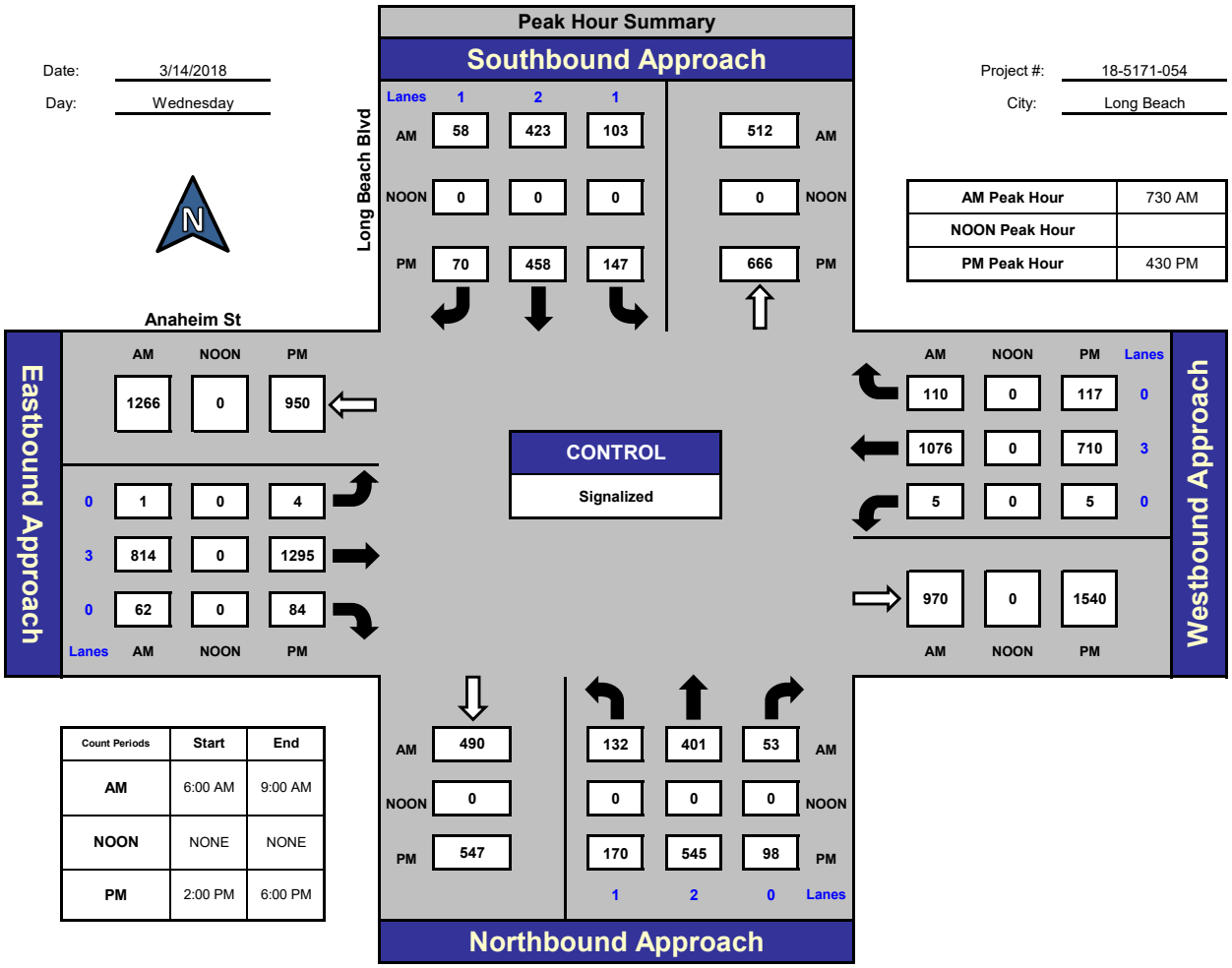
Prepared by:

National Data & Surveying Services

Long Beach Blvd and Anaheim St , Long Beach

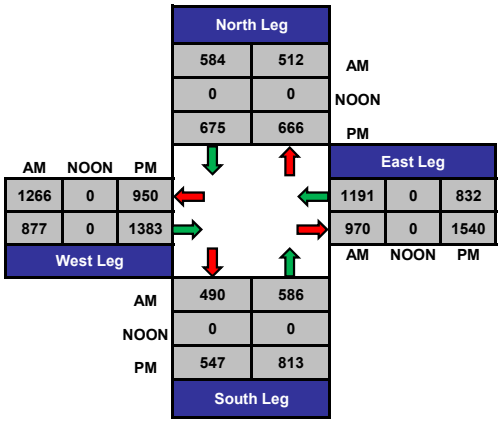
Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-054
City: Long Beach

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

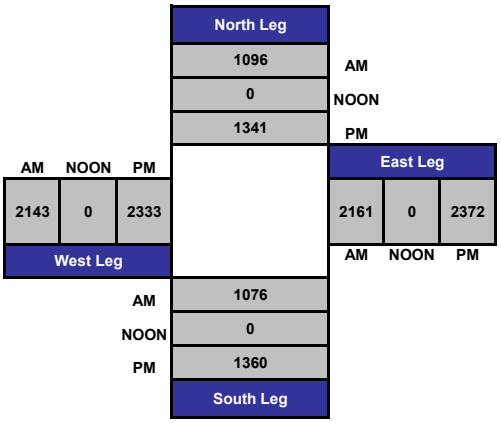


Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
6:00 AM	18	18	3	16	17	6	2	93	10	1	146	17	347
6:15 AM	17	37	7	13	27	7	0	96	8	0	176	12	400
6:30 AM	16	40	6	9	32	5	0	98	11	1	202	12	432
6:45 AM	15	38	7	14	62	12	8	123	7	1	191	12	490
7:00 AM	25	59	10	16	48	7	1	135	15	0	223	15	554
7:15 AM	27	77	7	17	66	11	0	180	11	0	229	21	646
7:30 AM	40	106	13	18	89	9	0	202	9	0	278	28	792
7:45 AM	30	96	10	34	123	18	0	190	18	0	293	39	851
8:00 AM	25	88	14	23	94	13	0	191	18	1	267	22	756
8:15 AM	29	100	13	26	102	15	1	207	8	0	220	20	741
8:30 AM	22	97	14	18	96	9	0	210	14	0	208	20	708
8:45 AM	19	88	19	24	98	7	0	196	18	0	188	11	668
TOTAL VOLUMES :	283	844	123	228	854	119	12	1921	147	4	2621	229	7385
APPROACH %'s :	22.64%	67.52%	9.84%	18.98%	71.11%	9.91%	0.58%	92.36%	7.07%	0.14%	91.84%	8.02%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	124	390	50	101	408	55	1	790	53	1	1058	109	3140
PEAK HR FACTOR :		0.887			0.806			0.977			0.880		0.922

UTURNS	NB	SB	EB	WB
	0	2	0	0
	1	0	0	0
	0	1	0	0
	0	0	0	0
	1	0	0	0
	4	1	0	0
	2	0	0	0
	1	1	0	0
	0	2	0	0
	3	1	0	0
	2	1	0	0
	3	1	0	0
TOTAL	17	10	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
2:00 PM	45	116	16	20	84	17	0	214	21	0	194	19	746
2:15 PM	37	99	21	31	83	15	1	241	20	0	195	28	771
2:30 PM	35	108	26	27	90	23	0	228	19	1	175	25	757
2:45 PM	43	114	16	37	88	22	1	271	11	1	153	29	786
3:00 PM	30	125	20	47	113	16	0	280	28	0	148	30	837
3:15 PM	45	127	19	41	105	19	2	310	21	0	181	24	894
3:30 PM	38	110	15	35	103	24	0	314	17	0	180	25	861
3:45 PM	36	121	16	46	117	23	0	310	11	1	169	28	878
4:00 PM	41	127	17	44	96	25	0	309	21	0	171	33	884
4:15 PM	34	115	24	39	106	20	0	307	20	0	183	24	872
4:30 PM	40	132	18	31	101	15	1	309	16	0	174	26	863
4:45 PM	34	136	27	41	126	13	0	324	18	1	170	18	908
5:00 PM	49	152	28	34	93	20	1	295	25	0	163	43	903
5:15 PM	41	111	22	41	130	21	0	341	20	1	188	30	946
5:30 PM	33	133	23	24	89	16	0	314	24	0	168	24	848
5:45 PM	25	125	13	45	124	16	0	276	22	0	168	20	834
TOTAL VOLUMES :	NL 606	NT 1951	NR 321	SL 583	ST 1648	SR 305	EL 6	ET 4643	ER 314	WL 5	WT 2780	WR 426	TOTAL 13588
APPROACH %'s :	21.06%	67.79%	11.15%	22.99%	64.98%	12.03%	0.12%	93.55%	6.33%	0.16%	86.58%	13.27%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	164	531	95	147	450	69	2	1269	79	2	695	117	3620
PEAK HR FACTOR :		0.862			0.867			0.935			0.929		0.957

UTURNS	NB	SB	EB	WB
	3	0	0	0
	3	6	0	0
	7	4	0	0
	2	3	0	0
	7	6	0	0
	1	6	0	0
	5	2	0	0
	5	5	0	0
	2	3	0	0
	3	8	0	0
	4	1	0	0
	3	4	0	0
	6	6	0	0
	7	8	0	0
	3	2	0	0
	3	5	0	0
	NB 64	SB 69	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	0	3	0	0	3	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	1	0	0	3	0	4
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	0	0	1	0	2
PEAK HR FACTOR :		0.000			0.000			0.250			0.250		0.922

UTURNS	NB	SB	EB	WB
	0	2	0	0
	1	0	0	0
	0	1	0	0
	0	0	0	0
	1	0	0	0
	4	1	0	0
	2	0	0	0
	1	1	0	0
	0	2	0	0
	3	1	0	0
	2	1	0	0
	3	1	0	0
	NB	SB	EB	WB
	17	10	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
3:15 PM	0	0	0	0	0	0	0	1	1	0	0	0	2
3:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
3:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
TOTAL VOLUMES :	NL 0	NT 0	NR 0	SL 0	ST 0	SR 1	EL 0	ET 7	ER 1	WL 0	WT 1	WR 0	TOTAL 10
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	0.00%	87.50%	12.50%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000			0.250			0.000			0.000			0.957

UTURNS	NB	SB	EB	WB
	3	0	0	0
	3	6	0	0
	7	4	0	0
	2	3	0	0
	7	6	0	0
	1	6	0	0
	5	2	0	0
	5	5	0	0
	2	3	0	0
	3	8	0	0
	4	1	0	0
	3	4	0	0
	6	6	0	0
	7	8	0	0
	3	2	0	0
	3	5	0	0
	NB 64	SB 69	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Containers

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
6:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	1	0	0	0	0	0	0	1	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	1	1	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	1	0	0	3	0	0	2	1	0	3	0	11
APPROACH %'s :	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	66.67%	33.33%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	2	1	0	0	0	4
PEAK HR FACTOR :	0.250			0.000			0.375			0.000			0.922

UTURNS	NB	SB	EB	WB
	0	2	0	0
	1	0	0	0
	0	1	0	0
	0	0	0	0
	1	0	0	0
	4	1	0	0
	2	0	0	0
	1	1	0	0
	0	2	0	0
	3	1	0	0
	2	1	0	0
	3	1	0	0
	NB	SB	EB	WB
	17	10	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Containers

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
3:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL 1	NT 0	NR 0	SL 0	ST 1	SR 0	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL 8
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	0	0	0	0	1
PEAK HR FACTOR :		0.000			0.000			0.250			0.000		0.957

UTURNS	NB	SB	EB	WB
	64	69	0	0

	NB	SB	EB	WB
2:00 PM	3	0	0	0
2:15 PM	3	6	0	0
2:30 PM	7	4	0	0
2:45 PM	2	3	0	0
3:00 PM	7	6	0	0
3:15 PM	1	6	0	0
3:30 PM	5	2	0	0
3:45 PM	5	5	0	0
4:00 PM	2	3	0	0
4:15 PM	3	8	0	0
4:30 PM	4	1	0	0
4:45 PM	3	4	0	0
5:00 PM	6	6	0	0
5:15 PM	7	8	0	0
5:30 PM	3	2	0	0
5:45 PM	3	5	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	0	2	0	0	0	0	3
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :		0.000			0.000			0.000			0.000		0.922

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
6:00 AM	0	2	0	0
6:15 AM	1	0	0	0
6:30 AM	0	1	0	0
6:45 AM	0	0	0	0
7:00 AM	1	0	0	0
7:15 AM	4	1	0	0
7:30 AM	2	0	0	0
7:45 AM	1	1	0	0
8:00 AM	0	2	0	0
8:15 AM	3	1	0	0
8:30 AM	2	1	0	0
8:45 AM	3	1	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	17	10	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :		0.000			0.000			0.000			0.000		0.957

UTURNS	NB	SB	EB	WB
2:00 PM	3	0	0	0
2:15 PM	3	6	0	0
2:30 PM	7	4	0	0
2:45 PM	2	3	0	0
3:00 PM	7	6	0	0
3:15 PM	1	6	0	0
3:30 PM	5	2	0	0
3:45 PM	5	5	0	0
4:00 PM	2	3	0	0
4:15 PM	3	8	0	0
4:30 PM	4	1	0	0
4:45 PM	3	4	0	0
5:00 PM	6	6	0	0
5:15 PM	7	8	0	0
5:30 PM	3	2	0	0
5:45 PM	3	5	0	0
TOTAL VOLUMES :	64	69	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Other Trucks

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
6:00 AM	1	1	0	1	1	1	0	0	0	1	2	0	8
6:15 AM	2	3	0	0	2	3	0	4	2	2	8	1	27
6:30 AM	2	3	1	1	3	0	0	4	0	1	8	0	23
6:45 AM	2	3	2	1	6	5	0	7	0	2	11	1	40
7:00 AM	0	1	1	1	4	4	0	6	1	1	9	1	29
7:15 AM	1	3	1	0	2	0	0	4	2	3	7	0	23
7:30 AM	3	1	1	1	6	0	0	4	2	1	2	0	21
7:45 AM	1	5	0	0	3	3	0	6	2	1	4	0	25
8:00 AM	1	3	1	1	4	0	0	6	2	1	3	1	23
8:15 AM	2	2	1	0	2	0	0	5	2	1	8	0	23
8:30 AM	1	4	1	0	5	0	1	2	2	0	4	1	21
8:45 AM	1	6	2	0	3	0	0	8	0	1	5	1	27
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	17	35	11	6	41	16	1	56	15	15	71	6	290
APPROACH %'s :	26.98%	55.56%	17.46%	9.52%	65.08%	25.40%	1.39%	77.78%	20.83%	16.30%	77.17%	6.52%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	7	11	3	2	15	3	0	21	8	4	17	1	92
PEAK HR FACTOR :	0.875			0.714			0.906			0.611			0.922

UTURNS

NB	SB	EB	WB
0	2	0	0
1	0	0	0
0	1	0	0
0	0	0	0
1	0	0	0
4	1	0	0
2	0	0	0
1	1	0	0
0	2	0	0
3	1	0	0
2	1	0	0
3	1	0	0
NB	SB	EB	WB
17	10	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-054 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Anaheim St			Anaheim St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 0	ET 3	ER 0	WL 0	WT 3	WR 0	TOTAL
2:00 PM	2	4	1	0	4	0	0	1	3	1	3	1	20
2:15 PM	1	1	2	0	2	0	0	4	0	1	4	1	16
2:30 PM	2	3	2	1	4	0	0	11	1	1	5	0	30
2:45 PM	1	2	1	2	3	0	0	8	0	0	5	1	23
3:00 PM	0	5	1	0	4	2	0	4	3	1	7	0	27
3:15 PM	1	2	1	0	3	0	0	2	1	1	5	3	19
3:30 PM	2	5	1	0	2	2	1	7	0	0	5	0	25
3:45 PM	1	3	0	0	1	0	0	5	2	1	2	2	17
4:00 PM	0	1	1	1	4	1	0	5	1	1	2	0	17
4:15 PM	2	4	1	1	2	0	0	3	4	0	3	1	21
4:30 PM	2	4	1	0	3	0	1	7	1	1	8	0	28
4:45 PM	1	4	1	0	1	0	1	7	1	1	2	0	19
5:00 PM	2	4	1	0	2	0	0	7	3	1	4	0	24
5:15 PM	1	2	0	0	2	0	0	4	0	0	1	0	10
5:30 PM	1	4	1	0	1	0	0	5	3	1	3	0	19
5:45 PM	1	1	0	1	4	0	0	2	1	1	1	0	12
TOTAL VOLUMES :	NL 20	NT 49	NR 15	SL 6	ST 42	SR 5	EL 3	ET 82	ER 24	WL 12	WT 60	WR 9	TOTAL 327
APPROACH %'s :	23.81%	58.33%	17.86%	11.32%	79.25%	9.43%	2.75%	75.23%	22.02%	14.81%	74.07%	11.11%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	6	14	3	0	8	0	2	25	5	3	15	0	81
PEAK HR FACTOR :		0.821			0.667			0.800			0.500		0.957

UTURNS	NB	SB	EB	WB
	3	0	0	0
	3	6	0	0
	7	4	0	0
	2	3	0	0
	7	6	0	0
	1	6	0	0
	5	2	0	0
	5	5	0	0
	2	3	0	0
	3	8	0	0
	4	1	0	0
	3	4	0	0
	6	6	0	0
	7	8	0	0
	3	2	0	0
	3	5	0	0
	NB 64	SB 69	EB 0	WB 0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
6:00 AM	0	0	0	5	0	21	11	42	1	0	254	7	341
6:15 AM	0	0	0	11	0	26	11	55	1	0	288	7	399
6:30 AM	0	0	0	12	0	27	12	74	1	0	353	11	490
6:45 AM	0	0	1	8	0	41	11	73	0	0	357	20	511
7:00 AM	0	0	1	8	0	33	17	94	1	0	431	25	610
7:15 AM	0	0	0	19	0	42	14	100	0	0	408	19	602
7:30 AM	0	0	0	14	0	37	18	110	0	0	413	28	620
7:45 AM	0	0	0	17	0	49	19	108	0	0	458	28	679
8:00 AM	0	0	1	13	0	42	19	117	2	0	441	28	663
8:15 AM	0	0	1	12	0	48	31	136	1	0	449	30	708
8:30 AM	0	0	0	14	0	49	34	123	0	0	401	43	664
8:45 AM	0	0	0	15	1	47	21	93	0	0	376	41	594
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	4	148	1	462	218	1125	7	0	4629	287	6881
APPROACH %'s :	0.00%	0.00%	100.00%	24.22%	0.16%	75.61%	16.15%	83.33%	0.52%	0.00%	94.16%	5.84%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	2	56	0	188	103	484	3	0	1749	129	2714
PEAK HR FACTOR :		0.500			0.924			0.878			0.966		0.958

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
6:00 AM	0	1	1	0
6:15 AM	0	0	1	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	2	0	0
7:30 AM	0	0	0	0
7:45 AM	0	1	0	0
8:00 AM	0	1	0	0
8:15 AM	0	1	3	0
8:30 AM	0	1	1	0
8:45 AM	0	1	2	0
TOTAL VOLUMES :	0	8	8	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

TOTALS

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
2:00 PM	0	0	2	22	0	42	28	189	4	1	205	22	515
2:15 PM	0	0	1	23	0	36	25	176	1	0	197	17	476
2:30 PM	0	0	2	30	0	32	22	276	0	0	191	21	574
2:45 PM	0	0	0	29	0	41	24	234	0	0	179	26	533
3:00 PM	0	0	0	20	0	37	38	287	0	0	189	26	597
3:15 PM	0	0	0	29	0	34	25	355	0	0	190	25	658
3:30 PM	0	0	2	26	0	36	41	363	0	0	192	24	684
3:45 PM	0	0	0	23	0	32	35	301	0	0	205	14	610
4:00 PM	0	0	0	26	0	32	35	380	0	0	201	24	698
4:15 PM	0	0	0	19	0	49	39	423	0	0	198	26	754
4:30 PM	0	0	1	31	0	53	47	426	0	0	212	25	795
4:45 PM	0	0	0	24	1	57	37	415	0	0	193	23	750
5:00 PM	0	0	0	39	0	47	26	468	0	0	226	25	831
5:15 PM	0	0	0	34	0	52	37	527	0	0	190	26	866
5:30 PM	0	0	0	29	0	45	44	349	0	0	201	17	685
5:45 PM	0	0	0	25	0	46	38	411	0	0	208	20	748
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	8	429	1	671	541	5580	5	1	3177	361	10774
APPROACH %'s :	0.00%	0.00%	100.00%	38.96%	0.09%	60.94%	8.83%	91.09%	0.08%	0.03%	89.77%	10.20%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	1	128	1	209	147	1836	0	0	821	99	3242
PEAK HR FACTOR :		0.250			0.983			0.879			0.916		0.936

UTURNS	NB	SB	EB	WB
	0	2	0	0
	0	6	2	0
	0	5	0	0
	0	3	2	0
	0	2	1	0
	0	3	1	0
	0	3	3	0
	0	4	1	0
	0	4	1	0
	0	1	1	0
	0	4	3	0
	0	0	2	0
	0	5	1	0
	0	4	0	0
	0	2	1	0
	0	1	2	0
	NB	SB	EB	WB
	0	49	21	0

CONTROL : Signalized

ITM Peak Hour Summary

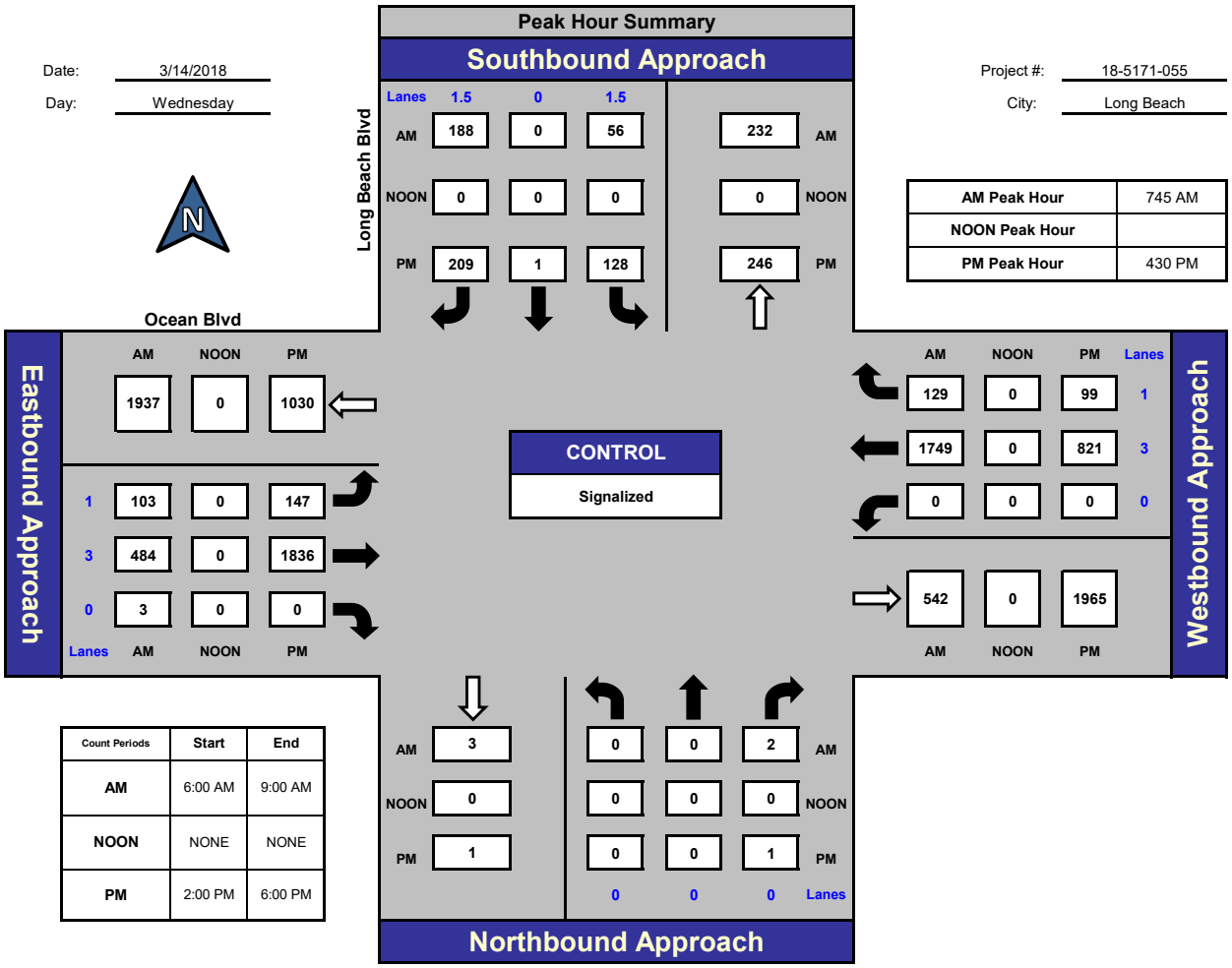
Prepared by:

National Data & Surveying Services

Long Beach Blvd and Ocean Blvd , Long Beach

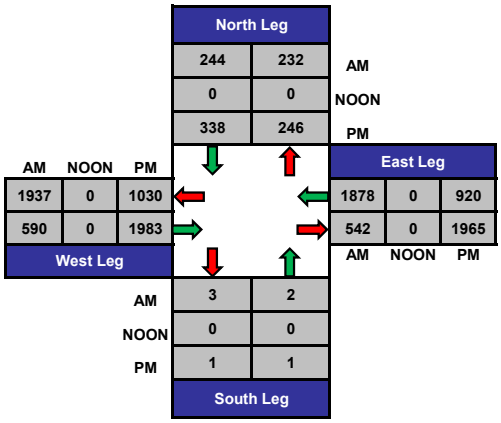
Date: 3/14/2018
Day: Wednesday
Project #: 18-5171-055
City: Long Beach

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	430 PM

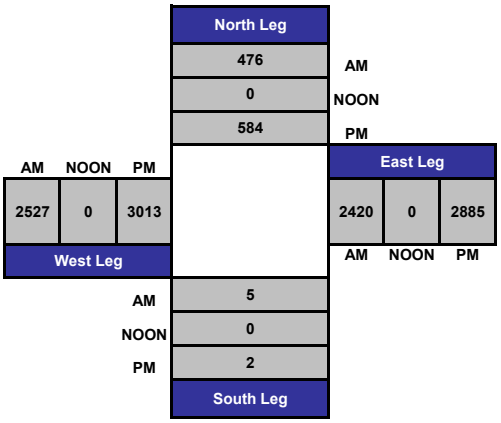


Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
6:00 AM	0	0	0	3	0	21	10	42	1	0	250	5	332
6:15 AM	0	0	0	7	0	25	10	53	1	0	287	7	390
6:30 AM	0	0	0	10	0	26	11	74	1	0	347	11	480
6:45 AM	0	0	1	5	0	40	10	71	0	0	352	20	499
7:00 AM	0	0	0	5	0	32	17	91	1	0	423	23	592
7:15 AM	0	0	0	15	0	42	13	95	0	0	403	19	587
7:30 AM	0	0	0	11	0	36	18	107	0	0	401	27	600
7:45 AM	0	0	0	14	0	49	18	105	0	0	453	27	666
8:00 AM	0	0	1	9	0	41	18	115	1	0	431	26	642
8:15 AM	0	0	1	9	0	46	29	133	1	0	444	29	692
8:30 AM	0	0	0	12	0	49	33	120	0	0	396	41	651
8:45 AM	0	0	0	11	1	46	19	87	0	0	364	40	568
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	3	111	1	453	206	1093	6	0	4551	275	6699
APPROACH %'s :	0.00%	0.00%	100.00%	19.65%	0.18%	80.18%	15.79%	83.75%	0.46%	0.00%	94.30%	5.70%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	2	44	0	185	98	473	2	0	1724	123	2651
PEAK HR FACTOR :		0.500			0.909			0.879			0.962		0.958

CONTROL : Signalized

UTURNS

NB	SB	EB	WB
0	1	1	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	1	3	0
0	1	1	0
0	1	2	0
NB	SB	EB	WB
0	8	8	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Cars** **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
2:00 PM	0	0	2	18	0	41	26	186	4	1	202	22	502
2:15 PM	0	0	1	19	0	33	23	172	1	0	191	14	454
2:30 PM	0	0	2	27	0	31	22	272	0	0	185	19	558
2:45 PM	0	0	0	26	0	41	23	231	0	0	174	26	521
3:00 PM	0	0	0	17	0	35	38	285	0	0	184	23	582
3:15 PM	0	0	0	25	0	33	25	351	0	0	184	24	642
3:30 PM	0	0	2	22	0	36	39	359	0	0	187	21	666
3:45 PM	0	0	0	20	0	31	35	295	0	0	202	14	597
4:00 PM	0	0	0	24	0	31	33	374	0	0	193	23	678
4:15 PM	0	0	0	16	0	48	37	412	0	0	192	25	730
4:30 PM	0	0	1	27	0	53	47	422	0	0	208	23	781
4:45 PM	0	0	0	21	1	56	37	410	0	0	190	20	735
5:00 PM	0	0	0	37	0	46	24	466	0	0	222	23	818
5:15 PM	0	0	0	31	0	51	37	525	0	0	183	24	851
5:30 PM	0	0	0	24	0	45	42	345	0	0	198	17	671
5:45 PM	0	0	0	22	0	46	37	409	0	0	205	20	739
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	8	376	1	657	525	5514	5	1	3100	338	10525
APPROACH %'s :	0.00%	0.00%	100.00%	36.36%	0.10%	63.54%	8.69%	91.23%	0.08%	0.03%	90.14%	9.83%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	1	116	1	206	145	1823	0	0	803	90	3185
PEAK HR FACTOR :		0.250			0.973			0.875			0.911		0.936

UTURNS	NB	SB	EB	WB
	0	2	0	0
	0	6	2	0
	0	5	0	0
	0	3	2	0
	0	2	1	0
	0	3	1	0
	0	3	3	0
	0	4	1	0
	0	4	1	0
	0	1	1	0
	0	4	3	0
	0	0	2	0
	0	5	1	0
	0	4	0	0
	0	2	1	0
	0	1	2	0
	NB	SB	EB	WB
	0	49	21	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Bobtails** **Date:** 3/14/2018

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	1	0	0	0	0	1
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :		0.000			0.000			0.000			0.000		0.958

UTURNS			
NB	SB	EB	WB
0	1	1	0
0	0	1	0
0	0	0	0
0	0	0	0
0	0	0	0
0	2	0	0
0	0	0	0
0	1	0	0
0	1	0	0
0	1	3	0
0	1	1	0
0	1	2	0
NB	SB	EB	WB
0	8	8	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

Bobtails

City: Long Beach **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	1	0	0	0	0	0	0	1
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000			0.000			0.000			0.000			0.936

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
2:00 PM	0	2	0	0
2:15 PM	0	6	2	0
2:30 PM	0	5	0	0
2:45 PM	0	3	2	0
3:00 PM	0	2	1	0
3:15 PM	0	3	1	0
3:30 PM	0	3	3	0
3:45 PM	0	4	1	0
4:00 PM	0	4	1	0
4:15 PM	0	1	1	0
4:30 PM	0	4	3	0
4:45 PM	0	0	2	0
5:00 PM	0	5	1	0
5:15 PM	0	4	0	0
5:30 PM	0	2	1	0
5:45 PM	0	1	2	0
TOTAL VOLUMES :	0	49	21	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	1	0	1	0	2	0	0	0	0	4
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	0	1	0	0	0	0	1	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	2	0	2	0	3	0	0	3	0	10
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	50.00%	0.00%	50.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	1	0	1	0	3	0	0	0	0	5
PEAK HR FACTOR :		0.000			0.250			0.375			0.000		0.958

UTURNS	NB	SB	EB	WB
	0	8	8	0

	NB	SB	EB	WB
6:00 AM	0	1	1	0
6:15 AM	0	0	1	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	2	0	0
7:30 AM	0	0	0	0
7:45 AM	0	1	0	0
8:00 AM	0	1	0	0
8:15 AM	0	1	3	0
8:30 AM	0	1	1	0
8:45 AM	0	1	2	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Containers** **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
2:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
2:15 PM	0	0	0	0	0	1	0	1	0	0	1	0	3
2:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	1	0	3	0	0	4	0	8
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	0	0	1	0	2
PEAK HR FACTOR :		0.000			0.000			0.250			0.250		0.936

UTURNS	NB	SB	EB	WB
2:00 PM	0	2	0	0
2:15 PM	0	6	2	0
2:30 PM	0	5	0	0
2:45 PM	0	3	2	0
3:00 PM	0	2	1	0
3:15 PM	0	3	1	0
3:30 PM	0	3	3	0
3:45 PM	0	4	1	0
4:00 PM	0	4	1	0
4:15 PM	0	1	1	0
4:30 PM	0	4	3	0
4:45 PM	0	0	2	0
5:00 PM	0	5	1	0
5:15 PM	0	4	0	0
5:30 PM	0	2	1	0
5:45 PM	0	1	2	0
TOTAL VOLUMES :	0	49	21	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :		0.000			0.000			0.000			0.000		0.958

CONTROL : Signalized

UTURNS

	NB	SB	EB	WB
6:00 AM	0	1	1	0
6:15 AM	0	0	1	0
6:30 AM	0	0	0	0
6:45 AM	0	0	0	0
7:00 AM	0	0	0	0
7:15 AM	0	2	0	0
7:30 AM	0	0	0	0
7:45 AM	0	1	0	0
8:00 AM	0	1	0	0
8:15 AM	0	1	3	0
8:30 AM	0	1	1	0
8:45 AM	0	1	2	0
	NB	SB	EB	WB
TOTAL VOLUMES :	0	8	8	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Chassis** **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :		0.000			0.000			0.000			0.000		0.936

UTURNS	NB	SB	EB	WB
	0	2	0	0
	0	6	2	0
	0	5	0	0
	0	3	2	0
	0	2	1	0
	0	3	1	0
	0	3	3	0
	0	4	1	0
	0	4	1	0
	0	1	1	0
	0	4	3	0
	0	0	2	0
	0	5	1	0
	0	4	0	0
	0	2	1	0
	0	1	2	0
	NB	SB	EB	WB
	0	49	21	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Date:** 3/14/2018

Other Trucks

AM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
6:00 AM	0	0	0	2	0	0	1	0	0	0	4	2	9
6:15 AM	0	0	0	4	0	1	1	2	0	0	1	0	9
6:30 AM	0	0	0	2	0	1	1	0	0	0	6	0	10
6:45 AM	0	0	0	2	0	1	1	2	0	0	5	0	11
7:00 AM	0	0	1	3	0	1	0	3	0	0	8	2	18
7:15 AM	0	0	0	4	0	0	1	4	0	0	4	0	13
7:30 AM	0	0	0	3	0	1	0	3	0	0	11	1	19
7:45 AM	0	0	0	3	0	0	1	3	0	0	5	1	13
8:00 AM	0	0	0	3	0	0	1	0	1	0	10	2	17
8:15 AM	0	0	0	3	0	2	2	3	0	0	5	1	16
8:30 AM	0	0	0	2	0	0	1	2	0	0	5	2	12
8:45 AM	0	0	0	4	0	0	2	6	0	0	11	1	24
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	1	35	0	7	12	28	1	0	75	12	171
APPROACH %'s :	0.00%	0.00%	100.00%	83.33%	0.00%	16.67%	29.27%	68.29%	2.44%	0.00%	86.21%	13.79%	
PEAK HR START TIME :	745 AM												TOTAL
PEAK HR VOL :	0	0	0	11	0	2	5	8	1	0	25	6	58
PEAK HR FACTOR :	0.000			0.650			0.700			0.646			0.958

UTURNS	NB	SB	EB	WB
	0	1	1	0
	0	0	1	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	2	0	0
	0	0	0	0
	0	1	0	0
	0	1	0	0
	0	1	3	0
	0	1	1	0
	0	1	2	0
	NB	SB	EB	WB
	0	8	8	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 18-5171-055 **Day:** Wednesday

City: Long Beach **Other Trucks** **Date:** 3/14/2018

PM

NS/EW Streets:	Long Beach Blvd			Long Beach Blvd			Ocean Blvd			Ocean Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
2:00 PM	0	0	0	4	0	1	2	2	0	0	3	0	12
2:15 PM	0	0	0	4	0	2	2	3	0	0	5	3	19
2:30 PM	0	0	0	3	0	1	0	4	0	0	5	2	15
2:45 PM	0	0	0	3	0	0	1	3	0	0	5	0	12
3:00 PM	0	0	0	3	0	1	0	2	0	0	5	3	14
3:15 PM	0	0	0	4	0	1	0	4	0	0	6	1	16
3:30 PM	0	0	0	4	0	0	2	4	0	0	5	3	18
3:45 PM	0	0	0	3	0	1	0	6	0	0	3	0	13
4:00 PM	0	0	0	2	0	1	2	6	0	0	7	1	19
4:15 PM	0	0	0	3	0	1	2	11	0	0	6	1	24
4:30 PM	0	0	0	4	0	0	0	4	0	0	4	2	14
4:45 PM	0	0	0	3	0	1	0	4	0	0	3	3	14
5:00 PM	0	0	0	2	0	1	2	2	0	0	4	2	13
5:15 PM	0	0	0	3	0	1	0	2	0	0	6	2	14
5:30 PM	0	0	0	5	0	0	2	4	0	0	3	0	14
5:45 PM	0	0	0	3	0	0	1	2	0	0	3	0	9
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	53	0	12	16	63	0	0	73	23	240
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	81.54%	0.00%	18.46%	20.25%	79.75%	0.00%	0.00%	76.04%	23.96%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	0	0	12	0	3	2	12	0	0	17	9	55
PEAK HR FACTOR :	0.000			0.938			0.875			0.813			0.936

UTURNS	NB	SB	EB	WB
	0	2	0	0
	0	6	2	0
	0	5	0	0
	0	3	2	0
	0	2	1	0
	0	3	1	0
	0	3	3	0
	0	4	1	0
	0	4	1	0
	0	1	1	0
	0	4	3	0
	0	0	2	0
	0	5	1	0
	0	4	0	0
	0	2	1	0
	0	1	2	0
	NB	SB	EB	WB
	0	49	21	0

CONTROL : Signalized

This page intentionally left blank.

Appendix D-2
Intersection Volumes

This page intentionally left blank.

			AM Peak Hour - Existing Baseline												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	916	269	330	0	66	70	538	0	0	0	0	2,189
2	Alameda St Ramp	Sepulveda Blvd	177	19	113	187	707	3	5	29	1	4	558	183	1,986
3	Intermodal Wy	Sepulveda Blvd	4	0	7	2	934	0	0	0	0	0	698	3	1,648
4	ICTF Driveway	Sepulveda Blvd	70	2	37	2	842	26	26	0	14	15	607	64	1,705
5	Middle Rd	Sepulveda Blvd	0	0	2	9	991	75	41	0	17	28	705	0	1,868
6	Terminal Island Fwy	Willow St/Sepulveda Blv	0	0	0	0	724	208	170	0	330	318	423	3	2,176
7	Santa Fe Ave	PCH	137	301	188	91	974	50	45	360	199	94	779	73	3,291
8	Alameda St	O St	0	792	333	376	0	92	82	424	0	0	0	0	2,099
9	O St	PCH	268	0	189	141	1,081	0	0	0	0	0	949	310	2,938
10	Santa Fe Ave	Anaheim St.	111	158	159	260	904	17	26	291	23	3	697	66	2,715
11	Harbor Ave	Anaheim St.	28	24	82	143	1,312	33	65	20	7	18	855	15	2,602
12	9th St/East I St	Anaheim St.	45	21	138	136	900	6	11	104	361	155	673	39	2,589
13	Henry Ford Av	Anaheim St.	55	264	104	150	1,079	75	93	92	72	145	692	80	2,901
14	Pico Ave	Pier B St	47	29	11	53	2	99	40	49	34	182	7	248	801
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	18	348	190	82	0	27	47	28	2	6	0	34	782
16	Pico Ave	Pier C St	63	280	0	0	0	0	0	136	21	3	0	11	514
17	Pico Ave	Pier D St	112	155	1	1	0	0	0	76	52	50	0	55	502
181	Pico Ave	Westbound Ocean Ave C	118	97	1	0	0	0	3	146	157	0	0	0	522
182	Pico Ave	Westbound Ocean Ave C	0	140	0	44	0	10	0	137	0	0	0	0	331
19	Pico Ave	Pier E St/Eastbound Oce	6	110	0	9	9	125	8	174	261	1	1	2	706
20	Pier S Ave	New Dock St	5	43	3	1	1	10	25	245	253	501	9	12	1,108
21	Terminal Island Fwy	*CA-47 Westbound	454	220	0	82	318	64	0	252	0	0	0	0	1,390
22	Terminal Island Fwy	*CA-47 Eastbound	0	34	231	0	0	0	48	1	0	16	395	246	971
23	Pier S Avenue	*CA-47 Westbound	180	384	0	402	358	0	0	127	0	0	0	0	1,451
24	Pier S Avenue	*CA-47 Eastbound	0	0	389	0	0	0	0	0	0	0	282	124	795
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	91	113	146	405	29	29	29	118	4	6	26	73	1,069
26	Navy Wy	*Seaside Fwy	0	0	0	0	1,904	48	187	0	68	157	2,104	0	4,468
27	Harbor Plaza Dr	Queensway Dr	22	8	0	3	71	7	0	14	355	0	0	0	480
28	Harbor Plaza Dr	Harbor Scenic Dr	0	6	9	335	0	198	181	28	0	7	508	10	1,282
29	Navy Wy	Reeves Av	61	69	36	45	2	0	0	99	4	3	5	179	503
30	Long Beach Blvd.	PCH	88	475	162	82	1,139	144	63	554	160	73	879	106	3,925
31	Long Beach Blvd.	Anaheim St.	58	425	103	110	1,078	5	53	402	134	64	818	1	3,251
32	Long Beach Blvd.	Ocean Blvd	189	0	58	130	1,752	0	2	0	0	3	488	104	2,726

			Mid-Day Peak Hour - Existing Baseline												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	705	156	247	0	47	92	626	0	0	0	0	1,873
2	Alameda St Ramp	Sepulveda Blvd	145	10	154	215	374	4	4	12	4	3	597	189	1,711
3	Intermodal Wy	Sepulveda Blvd	4	0	3	3	702	0	0	0	0	0	758	9	1,479
4	ICTF Driveway	Sepulveda Blvd	66	0	64	0	450	26	15	0	18	17	614	67	1,337
5	Middle Rd	Sepulveda Blvd	1	0	9	7	684	62	76	0	39	37	755	1	1,671
6	Terminal Island Fwy	Willow St/Sepulveda Blv	3	0	0	3	295	96	230	2	471	327	515	2	1,944
7	Santa Fe Ave	PCH	94	196	152	93	826	87	100	289	178	85	910	83	3,093
8	Alameda St	O St	0	680	266	289	0	120	140	684	0	0	0	0	2,179
9	O St	PCH	234	0	166	184	847	0	0	0	0	0	917	228	2,576
10	Santa Fe Ave	Anaheim St.	105	162	172	237	817	14	33	167	25	8	863	87	2,690
11	Harbor Ave	Anaheim St.	25	23	119	133	1,129	15	58	29	12	17	1,023	29	2,612
12	9th St/East I St	Anaheim St.	35	29	117	168	775	10	4	42	132	189	848	61	2,410
13	Henry Ford Av	Anaheim St.	62	223	104	157	716	83	95	252	207	137	820	126	2,982
14	Pico Ave	Pier B St	210	92	20	20	1	49	109	147	244	530	7	194	1,623
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	40	284	119	232	1	49	74	246	5	7	4	48	1,109
16	Pico Ave	Pier C St	98	543	0	0	0	0	0	422	13	19	0	100	1,195
17	Pico Ave	Pier D St	15	517	1	2	0	3	1	183	19	106	2	241	1,090
181	Pico Ave	Westbound Ocean Ave C	427	166	3	0	0	0	1	212	200	0	0	0	1,009
182	Pico Ave	Westbound Ocean Ave C	0	250	0	45	0	13	0	241	0	0	0	0	549
19	Pico Ave	Pier E St/Eastbound Oce	4	205	0	5	5	61	8	329	213	3	3	3	839
20	Pier S Ave	New Dock St	5	41	1	3	0	14	24	289	164	455	11	14	1,021
21	Terminal Island Fwy	*CA-47 Westbound	441	188	0	251	299	48	0	443	5	0	0	0	1,675
22	Terminal Island Fwy	*CA-47 Eastbound	0	29	191	0	0	0	40	12	0	24	318	451	1,065
23	Pier S Avenue	*CA-47 Westbound	179	371	0	384	371	0	0	114	0	0	0	0	1,419
24	Pier S Avenue	*CA-47 Eastbound	0	0	366	0	0	0	0	0	0	0	403	105	874
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	37	91	175	482	29	16	29	110	4	5	27	99	1,104
26	Navy Wy	*Seaside Fwy	0	0	0	0	1,471	32	423	0	106	97	1,652	0	3,781
27	Harbor Plaza Dr	Queensway Dr	32	7	1	17	105	3	0	18	600	0	0	0	783
28	Harbor Plaza Dr	Harbor Scenic Dr	0	5	6	554	0	188	91	38	0	5	526	12	1,425
29	Navy Wy	Reeves Av	43	41	38	38	1	1	3	104	3	1	2	370	645
30	Long Beach Blvd.	PCH	94	453	167	84	762	91	56	524	145	89	942	127	3,534
31	Long Beach Blvd.	Anaheim St.	77	359	118	104	736	5	86	448	167	75	986	2	3,163
32	Long Beach Blvd.	Ocean Blvd	152	0	105	87	776	1	5	0	0	5	878	100	2,109

			PM Peak Hour - Existing Baseline												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	1,085	286	362	0	56	88	906	0	0	0	0	2,783
2	Alameda St Ramp	Sepulveda Blvd	190	10	163	171	495	0	6	17	1	8	963	274	2,298
3	Intermodal Wy	Sepulveda Blvd	1	0	3	1	744	0	0	0	0	0	1,243	7	1,999
4	ICTF Driveway	Sepulveda Blvd	43	0	34	0	524	7	32	0	7	8	1,163	52	1,870
5	Middle Rd	Sepulveda Blvd	1	1	10	11	802	65	89	0	35	44	1,152	3	2,213
6	Terminal Island Fwy	Willow St/Sepulveda Blv	1	0	1	0	407	156	393	0	345	298	1,009	0	2,610
7	Santa Fe Ave	PCH	114	232	152	90	890	57	105	469	231	75	1,153	117	3,685
8	Alameda St	O St	0	918	357	441	0	92	165	733	0	0	0	0	2,706
9	O St	PCH	355	0	168	198	1,153	0	0	0	0	0	1,298	328	3,500
10	Santa Fe Ave	Anaheim St.	111	213	208	212	680	13	45	337	34	24	1,089	141	3,107
11	Harbor Ave	Anaheim St.	28	26	121	126	924	21	70	56	16	8	1,287	47	2,730
12	9th St/East I St	Anaheim St.	42	67	90	102	762	9	12	74	196	483	1,196	42	3,075
13	Henry Ford Av	Anaheim St.	76	239	175	141	787	89	135	136	183	196	1,335	84	3,576
14	Pico Ave	Pier B St	213	61	130	27	7	74	283	72	135	134	14	97	1,247
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	44	274	151	290	2	48	63	257	8	7	3	59	1,206
16	Pico Ave	Pier C St	34	233	0	0	0	0	0	370	3	36	0	113	789
17	Pico Ave	Pier D St	35	227	0	2	0	0	0	233	23	95	0	123	738
181	Pico Ave	Westbound Ocean Ave C	140	164	2	0	0	0	1	276	179	0	0	0	762
182	Pico Ave	Westbound Ocean Ave C	0	201	0	31	0	12	0	283	0	0	0	0	527
19	Pico Ave	Pier E St/Eastbound Oce	29	164	0	22	30	23	4	313	54	4	45	51	739
20	Pier S Ave	New Dock St	5	41	1	3	0	14	24	289	164	455	11	14	1,021
21	Terminal Island Fwy	*CA-47 Westbound	490	179	0	267	294	48	0	398	3	0	0	0	1,679
22	Terminal Island Fwy	*CA-47 Eastbound	0	29	311	0	0	0	40	12	0	24	318	451	1,185
23	Pier S Avenue	*CA-47 Westbound	147	184	0	253	541	0	0	161	0	0	0	0	1,286
24	Pier S Avenue	*CA-47 Eastbound	0	0	200	0	0	0	0	0	0	0	390	162	752
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	37	91	175	482	29	16	29	110	4	5	27	99	1,104
26	Navy Wy	*Seaside Fwy	0	0	0	0	2,011	41	392	0	150	236	2,478	0	5,308
27	Harbor Plaza Dr	Queensway Dr	35	9	0	13	177	6	0	17	564	0	0	0	821
28	Harbor Plaza Dr	Harbor Scenic Dr	0	8	2	557	0	201	93	34	0	4	478	10	1,387
29	Navy Wy	Reeves Av	81	123	72	58	0	0	2	180	2	11	5	301	835
30	Long Beach Blvd.	PCH	140	506	181	85	767	118	89	609	131	85	1,323	168	4,202
31	Long Beach Blvd.	Anaheim St.	70	459	147	117	712	5	98	546	171	85	1,299	4	3,713
32	Long Beach Blvd.	Ocean Blvd	209	1	129	100	824	0	1	0	0	0	1,838	147	3,249

			AM Peak Hour - Baseline plus Project (Alternatives 1 & 2)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	990	270	330	0	110	110	580	0	0	0	0	2,390
2	Alameda St Ramp	Sepulveda Blvd	190	30	160	210	720	10	10	30	10	10	570	190	2,140
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	1,010	0	0	0	0	0	740	10	1,790
4	ICTF Driveway	Sepulveda Blvd	70	10	40	10	930	30	30	0	20	20	640	70	1,870
5	Middle Rd	Sepulveda Blvd	0	0	10	10	1,030	80	50	0	20	30	760	0	1,990
6	Terminal Island Fwy	Willow St/Sepulveda Blv	0	0	0	0	730	220	190	0	390	340	450	10	2,330
7	Santa Fe Ave	PCH	140	330	190	100	980	50	50	370	230	130	790	80	3,440
8	Alameda St	O St	0	990	360	380	0	100	110	560	0	0	0	0	2,500
9	O St	PCH	270	0	190	160	1,130	0	0	0	0	0	1,000	320	3,070
10	Santa Fe Ave	Anaheim St.	120	170	200	280	910	20	30	300	30	10	700	70	2,840
11	Harbor Ave	Anaheim St.	30	30	90	150	1,320	40	70	20	10	20	860	20	2,660
12	9th St/East I St	Anaheim St.	50	20	160	140	900	10	20	120	380	170	680	40	2,690
13	Henry Ford Av	Anaheim St.	60	360	160	220	1,080	80	130	170	150	240	710	80	3,440
14	Pico Ave	Pier B St	50	340	20	60	10	100	40	270	80	230	10	270	1,480
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	20	440	300	180	0	30	60	120	10	10	0	40	1,210
16	Pico Ave	Pier C St	210	460	0	0	0	0	0	290	60	10	0	110	1,140
17	Pico Ave	Pier D St	160	320	10	10	0	10	0	300	70	50	0	60	990
181	Pico Ave	Westbound Ocean Ave C	120	230	10	0	0	0	10	360	240	0	0	0	970
182	Pico Ave	Westbound Ocean Ave C	0	290	0	50	0	10	0	560	0	0	0	0	910
19	Pico Ave	Pier E St/Eastbound Oce	20	270	10	80	20	210	40	330	230	10	20	30	1,270
20	Pier S Ave	New Dock St	10	40	10	10	10	146	195	250	260	500	10	20	1,461
21	Terminal Island Fwy	*CA-47 Westbound	460	350	0	390	450	70	0	260	135	0	0	0	2,115
22	Terminal Island Fwy	*CA-47 Eastbound	0	40	360	0	0	0	50	145	0	156	410	250	1,411
23	Pier S Avenue	*CA-47 Westbound	180	536	0	535	490	0	0	160	0	0	0	0	1,901
24	Pier S Avenue	*CA-47 Eastbound	0	0	526	0	0	0	0	0	0	0	290	170	986
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	420	200	160	430	100	110	40	180	10	20	50	300	2,020
26	Navy Wy	*Seaside Fwy	0	0	0	0	1,910	50	230	0	100	160	2,160	0	4,610
27	Harbor Plaza Dr	Queensway Dr	30	10	0	10	80	10	0	20	550	0	0	0	710
28	Harbor Plaza Dr	Harbor Scenic Dr	0	10	10	520	0	231	201	40	0	10	800	10	1,832
29	Navy Wy	Reeves Av	70	90	50	50	10	0	0	100	10	10	10	180	580
30	Long Beach Blvd.	PCH	100	490	162	82	1,190	150	70	560	180	73	879	110	4,046
31	Long Beach Blvd.	Anaheim St.	60	440	110	120	1,080	10	60	410	140	70	820	10	3,330
32	Long Beach Blvd.	Ocean Blvd	230	0	60	130	1,760	0	10	0	0	10	490	110	2,800

			Midday Peak Hour - Baseline plus Project (Alternatives 1 & 2)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	830	180	320	0	130	160	760	0	0	0	0	2,380
2	Alameda St Ramp	Sepulveda Blvd	150	10	160	230	430	10	10	20	10	10	620	190	1,850
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	780	0	0	0	0	0	780	10	1,600
4	ICTF Driveway	Sepulveda Blvd	70	0	70	0	690	30	20	0	20	20	690	70	1,680
5	Middle Rd	Sepulveda Blvd	10	0	10	10	810	70	80	0	40	40	810	10	1,890
6	Terminal Island Fwy	Willow St/Sepulveda Blv	10	0	0	10	300	150	320	10	570	370	530	10	2,280
7	Santa Fe Ave	PCH	100	230	160	100	830	110	100	340	250	150	920	90	3,380
8	Alameda St	O St	0	910	270	290	0	130	140	910	0	0	0	0	2,650
9	O St	PCH	240	0	180	200	950	0	0	0	0	0	940	230	2,740
10	Santa Fe Ave	Anaheim St.	110	210	210	280	820	20	40	240	40	20	880	100	2,970
11	Harbor Ave	Anaheim St.	30	30	120	140	1,160	20	60	40	20	40	1,050	30	2,740
12	9th St/East I St	Anaheim St.	40	30	130	170	780	10	10	50	200	210	850	120	2,600
13	Henry Ford Av	Anaheim St.	70	400	160	280	760	90	100	470	250	180	890	130	3,780
14	Pico Ave	Pier B St	210	240	20	20	10	50	170	430	650	640	10	200	2,650
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	40	370	200	450	10	50	90	290	10	10	10	50	1,580
16	Pico Ave	Pier C St	160	750	0	0	0	0	0	1,070	30	60	0	180	2,250
17	Pico Ave	Pier D St	110	660	10	10	0	10	10	880	30	110	10	250	2,090
181	Pico Ave	Westbound Ocean Ave C	450	310	10	0	0	0	10	890	430	0	0	0	2,100
182	Pico Ave	Westbound Ocean Ave C	0	410	0	50	0	20	0	1,310	0	0	0	0	1,790
19	Pico Ave	Pier E St/Eastbound Oce	10	370	40	110	10	130	10	1,170	260	10	20	50	2,190
20	Pier S Ave	New Dock St	10	40	10	10	0	187	286	290	160	460	20	20	1,493
21	Terminal Island Fwy	*CA-47 Westbound	450	360	0	730	550	50	0	460	176	0	0	0	2,776
22	Terminal Island Fwy	*CA-47 Eastbound	0	30	370	0	0	0	40	186	0	197	320	460	1,603
23	Pier S Avenue	*CA-47 Westbound	180	547	0	556	610	0	0	210	0	0	0	0	2,103
24	Pier S Avenue	*CA-47 Eastbound	0	0	537	0	0	0	0	0	0	0	430	210	1,177
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	480	120	190	680	80	110	100	120	10	10	90	640	2,630
26	Navy Wy	*Seaside Fwy	0	0	0	0	1,480	30	440	0	120	110	1,700	0	3,880
27	Harbor Plaza Dr	Queensway Dr	40	10	10	20	110	10	0	20	953	0	0	0	1,173
28	Harbor Plaza Dr	Harbor Scenic Dr	0	10	10	890	0	384	134	63	0	10	1,010	20	2,531
29	Navy Wy	Reeves Av	50	60	40	40	10	10	10	110	10	10	10	390	750
30	Long Beach Blvd.	PCH	100	490	190	120	770	100	80	580	150	90	950	130	3,750
31	Long Beach Blvd.	Anaheim St.	80	390	130	130	740	10	90	490	220	80	990	20	3,370
32	Long Beach Blvd.	Ocean Blvd	160	0	120	100	780	10	10	0	0	10	910	100	2,200

			PM Peak Hour - Baseline plus Project (Alternatives 1 & 2)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	1,130	290	390	0	100	110	920	0	0	0	0	2,940
2	Alameda St Ramp	Sepulveda Blvd	190	10	190	190	500	0	10	20	10	10	970	290	2,390
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	800	0	0	0	0	0	1,240	10	2,080
4	ICTF Driveway	Sepulveda Blvd	50	0	50	20	730	10	50	0	10	10	1,220	60	2,210
5	Middle Rd	Sepulveda Blvd	10	10	10	20	840	70	110	0	40	50	1,330	10	2,500
6	Terminal Island Fwy	Willow St/Sepulveda Blv	10	0	10	0	510	180	510	0	390	450	1,010	0	3,070
7	Santa Fe Ave	PCH	120	250	170	100	890	110	110	550	310	110	1,160	120	4,000
8	Alameda St	O St	0	1,040	360	450	0	100	190	940	0	0	0	0	3,080
9	O St	PCH	380	0	170	200	1,200	0	0	0	0	0	1,340	330	3,620
10	Santa Fe Ave	Anaheim St.	110	220	260	430	680	20	50	340	40	30	1,090	140	3,410
11	Harbor Ave	Anaheim St.	30	30	120	130	1,000	30	70	60	20	30	1,310	50	2,880
12	9th St/East I St	Anaheim St.	50	240	110	110	770	10	20	110	270	490	1,200	50	3,430
13	Henry Ford Av	Anaheim St.	80	370	220	210	790	90	140	340	430	270	1,340	90	4,370
14	Pico Ave	Pier B St	220	310	130	30	10	80	300	430	220	180	20	100	2,030
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	50	340	340	650	10	60	70	350	10	10	10	60	1,960
16	Pico Ave	Pier C St	130	420	0	0	0	0	0	690	30	90	0	270	1,630
17	Pico Ave	Pier D St	100	410	0	10	0	10	0	560	40	100	0	120	1,350
181	Pico Ave	Westbound Ocean Ave C	180	320	10	0	0	0	10	590	270	0	0	0	1,380
182	Pico Ave	Westbound Ocean Ave C	0	360	0	40	0	20	0	800	0	0	0	0	1,220
19	Pico Ave	Pier E St/Eastbound Oce	20	320	20	110	20	60	40	660	190	20	40	80	1,580
20	Pier S Ave	New Dock St	10	40	10	10	0	170	299	290	160	460	20	20	1,489
21	Terminal Island Fwy	*CA-47 Westbound	490	460	0	730	480	50	0	420	159	0	0	0	2,789
22	Terminal Island Fwy	*CA-47 Eastbound	0	30	460	0	0	0	40	169	0	170	320	460	1,649
23	Pier S Avenue	*CA-47 Westbound	160	350	0	399	720	0	0	290	0	0	0	0	1,919
24	Pier S Avenue	*CA-47 Eastbound	0	0	350	0	0	0	0	0	0	0	540	290	1,180
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	320	150	190	590	80	60	90	170	10	10	140	570	2,380
26	Navy Wy	*Seaside Fwy	0	0	0	0	2,020	50	400	0	160	250	2,530	0	5,410
27	Harbor Plaza Dr	Queensway Dr	50	20	0	20	180	10	0	40	871	0	0	0	1,191
28	Harbor Plaza Dr	Harbor Scenic Dr	0	20	10	850	0	312	122	51	0	10	860	10	2,245
29	Navy Wy	Reeves Av	90	130	80	60	0	0	10	180	10	20	10	310	900
30	Long Beach Blvd.	PCH	150	540	181	85	767	130	110	660	150	85	1,330	180	4,368
31	Long Beach Blvd.	Anaheim St.	110	460	160	120	720	10	110	610	180	100	1,300	20	3,900
32	Long Beach Blvd.	Ocean Blvd	210	0	130	100	850	0	10	0	0	0	1,860	190	3,350

			AM Peak Hour - Baseline plus Project (Alternative 3)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	1,010	270	330	0	110	110	590	0	0	0	0	2,420
2	Alameda St Ramp	Sepulveda Blvd	190	30	170	210	730	10	10	30	10	10	580	190	2,170
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	1,010	0	0	0	0	0	750	10	1,800
4	ICTF Driveway	Sepulveda Blvd	70	10	40	10	930	30	30	0	20	20	650	70	1,880
5	Middle Rd	Sepulveda Blvd	0	0	10	10	1,040	80	50	0	20	30	770	0	2,010
6	Terminal Island Fwy	Willow St/Sepulveda Blv	0	0	0	0	760	220	190	0	390	340	460	10	2,370
7	Santa Fe Ave	PCH	140	340	190	100	980	70	50	370	250	130	790	80	3,490
8	Alameda St	O St	0	1,020	360	380	0	100	110	580	0	0	0	0	2,550
9	O St	PCH	270	0	190	170	1,140	0	0	0	0	0	1,000	320	3,090
10	Santa Fe Ave	Anaheim St.	120	180	200	300	910	20	30	300	30	10	700	70	2,870
11	Harbor Ave	Anaheim St.	30	30	90	150	1,320	40	70	20	10	20	860	20	2,660
12	9th St/East I St	Anaheim St.	50	20	180	140	900	10	20	120	400	240	680	40	2,800
13	Henry Ford Av	Anaheim St.	60	380	170	220	1,080	80	130	190	170	270	710	80	3,540
14	Pico Ave	Pier B St	50	340	20	60	10	100	40	290	80	230	10	270	1,500
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	20	480	300	180	0	30	60	150	10	10	0	40	1,280
16	Pico Ave	Pier C St	210	460	0	0	0	0	0	300	60	10	0	110	1,150
17	Pico Ave	Pier D St	160	320	10	10	0	10	0	320	70	50	0	60	1,010
181	Pico Ave	Westbound Ocean Ave C	120	230	10	0	0	0	10	360	250	0	0	0	980
182	Pico Ave	Westbound Ocean Ave C	0	290	0	50	0	10	0	570	0	0	0	0	920
19	Pico Ave	Pier E St/Eastbound Oce	20	270	10	80	20	220	70	340	230	10	20	30	1,320
20	Pier S Ave	New Dock St	10	40	10	10	10	146	205	250	260	500	10	20	1,471
21	Terminal Island Fwy	*CA-47 Westbound	460	390	0	420	450	70	0	260	135	0	0	0	2,185
22	Terminal Island Fwy	*CA-47 Eastbound	0	40	400	0	0	0	50	145	0	156	410	250	1,451
23	Pier S Avenue	*CA-47 Westbound	180	536	0	535	490	0	0	180	0	0	0	0	1,921
24	Pier S Avenue	*CA-47 Eastbound	0	0	526	0	0	0	0	0	0	0	290	180	996
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	420	200	160	440	100	110	40	180	10	20	50	300	2,030
26	Navy Wy	*Seaside Fwy	0	0	0	0	1,910	50	230	0	100	160	2,180	0	4,630
27	Harbor Plaza Dr	Queensway Dr	30	10	0	10	80	10	0	20	630	0	0	0	790
28	Harbor Plaza Dr	Harbor Scenic Dr	0	10	10	600	0	241	201	40	0	10	930	10	2,052
29	Navy Wy	Reeves Av	70	90	50	50	10	0	0	100	10	10	10	180	580
30	Long Beach Blvd.	PCH	100	500	162	82	1,190	150	70	570	180	73	879	110	4,066
31	Long Beach Blvd.	Anaheim St.	60	450	110	120	1,080	10	60	420	140	70	820	10	3,350
32	Long Beach Blvd.	Ocean Blvd	240	0	70	130	1,770	0	10	0	0	10	490	110	2,830

			Mid-day Peak Hour - Baseline plus Project (Alternative 3)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	850	190	320	0	140	160	770	0	0	0	0	2,430
2	Alameda St Ramp	Sepulveda Blvd	150	10	160	240	440	10	10	20	10	10	620	190	1,870
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	780	0	0	0	0	0	780	10	1,600
4	ICTF Driveway	Sepulveda Blvd	70	0	70	0	690	30	20	0	20	20	690	70	1,680
5	Middle Rd	Sepulveda Blvd	10	0	10	10	810	70	80	0	40	40	810	10	1,890
6	Terminal Island Fwy	Willow St/Sepulveda Blv	10	0	0	10	300	150	340	10	580	380	530	10	2,320
7	Santa Fe Ave	PCH	100	230	160	110	830	110	100	350	250	150	930	90	3,410
8	Alameda St	O St	0	950	270	290	0	140	140	920	0	0	0	0	2,710
9	O St	PCH	240	0	180	200	970	0	0	0	0	0	960	230	2,780
10	Santa Fe Ave	Anaheim St.	110	220	210	280	820	20	40	240	40	20	910	100	3,010
11	Harbor Ave	Anaheim St.	30	30	120	140	1,180	20	80	40	20	70	1,050	30	2,810
12	9th St/East I St	Anaheim St.	40	30	150	170	780	10	10	50	230	230	850	140	2,690
13	Henry Ford Av	Anaheim St.	70	450	170	290	790	90	110	470	260	190	890	130	3,910
14	Pico Ave	Pier B St	210	250	30	20	10	50	190	440	700	710	10	200	2,820
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	40	420	200	450	10	50	90	310	10	10	10	50	1,650
16	Pico Ave	Pier C St	160	830	0	0	0	0	0	1,170	30	60	0	180	2,430
17	Pico Ave	Pier D St	110	760	10	10	0	10	10	970	30	110	10	250	2,280
181	Pico Ave	Westbound Ocean Ave C	450	390	10	0	0	0	10	990	470	0	0	0	2,320
182	Pico Ave	Westbound Ocean Ave C	0	490	0	50	0	20	0	1,440	0	0	0	0	2,000
19	Pico Ave	Pier E St/Eastbound Oce	10	460	40	110	10	130	10	1,280	270	10	30	50	2,410
20	Pier S Ave	New Dock St	10	40	10	10	0	187	296	290	170	460	20	20	1,513
21	Terminal Island Fwy	*CA-47 Westbound	450	400	0	750	550	50	0	460	176	0	0	0	2,836
22	Terminal Island Fwy	*CA-47 Eastbound	0	30	410	0	0	0	40	186	0	197	330	460	1,653
23	Pier S Avenue	*CA-47 Westbound	190	547	0	556	610	0	0	220	0	0	0	0	2,123
24	Pier S Avenue	*CA-47 Eastbound	0	0	537	0	0	0	0	0	0	0	440	220	1,197
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	490	120	190	880	80	110	110	120	10	10	90	640	2,850
26	Navy Wy	*Seaside Fwy	0	10	0	0	1,480	30	440	0	120	110	1,720	0	3,910
27	Harbor Plaza Dr	Queensway Dr	40	10	10	20	110	10	0	20	953	0	0	0	1,173
28	Harbor Plaza Dr	Harbor Scenic Dr	0	10	10	890	0	584	134	63	0	10	1,150	20	2,871
29	Navy Wy	Reeves Av	50	60	40	40	10	10	10	120	10	10	10	390	760
30	Long Beach Blvd.	PCH	100	500	190	130	770	100	80	590	160	90	950	130	3,790
31	Long Beach Blvd.	Anaheim St.	80	410	130	150	740	10	90	500	230	80	990	20	3,430
32	Long Beach Blvd.	Ocean Blvd	160	0	120	100	790	10	10	0	0	10	910	100	2,210

			PM Peak Hour - Baseline plus Project (Alternative 3)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	1,140	290	400	0	100	110	920	0	0	0	0	2,960
2	Alameda St Ramp	Sepulveda Blvd	200	10	190	190	510	0	10	20	10	10	970	290	2,410
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	800	0	0	0	0	0	1,260	10	2,100
4	ICTF Driveway	Sepulveda Blvd	50	0	50	20	730	10	50	0	10	10	1,230	60	2,220
5	Middle Rd	Sepulveda Blvd	10	10	30	20	840	70	110	0	40	50	1,350	10	2,540
6	Terminal Island Fwy	Willow St/Sepulveda Blv	10	0	10	0	510	190	540	0	390	480	1,010	0	3,140
7	Santa Fe Ave	PCH	120	250	170	110	890	130	110	580	330	110	1,160	120	4,080
8	Alameda St	O St	0	1,070	360	450	0	100	190	970	0	0	0	0	3,140
9	O St	PCH	380	0	170	210	1,220	0	0	0	0	0	1,340	330	3,650
10	Santa Fe Ave	Anaheim St.	120	220	260	480	680	20	50	340	40	30	1,120	140	3,500
11	Harbor Ave	Anaheim St.	30	30	120	130	1,010	30	70	60	20	40	1,330	50	2,920
12	9th St/East I St	Anaheim St.	50	260	140	110	770	10	20	110	270	490	1,200	80	3,510
13	Henry Ford Av	Anaheim St.	80	400	230	220	790	90	140	380	450	360	1,340	90	4,570
14	Pico Ave	Pier B St	220	320	130	30	10	80	300	490	220	200	20	100	2,120
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	50	380	370	670	10	60	70	390	10	10	10	60	2,090
16	Pico Ave	Pier C St	130	450	0	0	0	0	0	750	30	90	0	270	1,720
17	Pico Ave	Pier D St	120	420	0	10	0	10	0	690	50	100	0	120	1,520
181	Pico Ave	Westbound Ocean Ave C	180	320	10	0	0	0	10	710	310	0	0	0	1,540
182	Pico Ave	Westbound Ocean Ave C	0	360	0	40	0	20	0	1,000	0	0	0	0	1,420
19	Pico Ave	Pier E St/Eastbound Oce	20	320	20	110	20	80	50	740	190	20	40	80	1,690
20	Pier S Ave	New Dock St	10	40	10	10	0	170	329	290	160	460	20	20	1,519
21	Terminal Island Fwy	*CA-47 Westbound	490	500	0	800	540	50	0	450	159	0	0	0	2,989
22	Terminal Island Fwy	*CA-47 Eastbound	0	30	510	0	0	0	40	169	0	170	330	460	1,709
23	Pier S Avenue	*CA-47 Westbound	160	350	0	399	770	0	0	320	0	0	0	0	1,999
24	Pier S Avenue	*CA-47 Eastbound	0	0	350	0	0	0	0	0	0	0	550	320	1,220
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	320	150	190	650	80	60	90	180	10	10	140	580	2,460
26	Navy Wy	*Seaside Fwy	0	0	0	0	2,020	50	400	0	170	250	2,530	0	5,420
27	Harbor Plaza Dr	Queensway Dr	50	20	0	20	180	10	0	40	961	0	0	0	1,281
28	Harbor Plaza Dr	Harbor Scenic Dr	0	20	10	940	0	382	122	51	0	10	1,010	10	2,555
29	Navy Wy	Reeves Av	90	130	80	60	0	0	10	190	10	20	10	310	910
30	Long Beach Blvd.	PCH	160	550	181	85	767	140	110	660	150	85	1,350	180	4,418
31	Long Beach Blvd.	Anaheim St.	110	470	160	120	720	10	110	620	180	100	1,300	20	3,920
32	Long Beach Blvd.	Ocean Blvd	210	0	130	100	870	0	10	0	0	0	1,860	190	3,370

			AM Peak Hour - Baseline plus Project (Proposed Plan)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	1,050	270	330	0	110	120	610	0	0	0	0	2,490
2	Alameda St Ramp	Sepulveda Blvd	190	30	170	210	740	10	10	30	10	10	590	190	2,190
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	1,010	0	0	0	0	0	770	10	1,820
4	ICTF Driveway	Sepulveda Blvd	70	10	40	10	930	30	30	0	20	20	670	70	1,900
5	Middle Rd	Sepulveda Blvd	0	0	10	10	1,070	80	50	0	20	30	800	0	2,070
6	Terminal Island Fwy	Willow St/Sepulveda Blv	0	0	0	0	780	220	200	0	390	360	470	10	2,430
7	Santa Fe Ave	PCH	140	340	190	100	980	80	50	380	250	140	800	80	3,530
8	Alameda St	O St	0	1,090	360	380	0	100	110	620	0	0	0	0	2,660
9	O St	PCH	270	0	190	170	1,150	0	0	0	0	0	1,020	320	3,120
10	Santa Fe Ave	Anaheim St.	120	180	210	320	910	20	30	300	30	10	700	70	2,900
11	Harbor Ave	Anaheim St.	30	30	90	150	1,320	40	70	20	10	20	860	20	2,660
12	9th St/East I St	Anaheim St.	50	20	180	140	900	10	20	120	400	270	680	40	2,830
13	Henry Ford Av	Anaheim St.	60	450	170	230	1,080	80	130	230	210	310	720	80	3,750
14	Pico Ave	Pier B St	50	340	20	60	10	100	40	320	80	230	10	270	1,530
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	20	570	310	190	0	30	60	230	10	10	0	40	1,470
16	Pico Ave	Pier C St	210	460	0	0	0	0	0	350	60	10	0	110	1,200
17	Pico Ave	Pier D St	160	320	10	10	0	10	0	360	70	50	0	60	1,050
181	Pico Ave	Westbound Ocean Ave C	120	230	10	0	0	0	10	410	250	0	0	0	1,030
182	Pico Ave	Westbound Ocean Ave C	0	290	0	50	0	10	0	570	0	0	0	0	920
19	Pico Ave	Pier E St/Eastbound Oce	20	270	10	80	20	220	80	340	230	10	20	30	1,330
20	Pier S Ave	New Dock St	10	40	10	10	10	146	245	250	260	500	10	20	1,511
21	Terminal Island Fwy	*CA-47 Westbound	460	400	0	430	450	70	0	350	135	0	0	0	2,295
22	Terminal Island Fwy	*CA-47 Eastbound	0	40	410	0	0	0	50	185	0	156	410	300	1,551
23	Pier S Avenue	*CA-47 Westbound	180	536	0	545	490	0	0	210	0	0	0	0	1,961
24	Pier S Avenue	*CA-47 Eastbound	0	0	526	0	0	0	0	0	0	0	330	220	1,076
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	420	200	160	440	100	110	40	180	10	20	60	300	2,040
26	Navy Wy	*Seaside Fwy	0	0	0	0	1,910	310	440	0	180	260	2,180	0	5,280
27	Harbor Plaza Dr	Queensway Dr	30	10	0	10	80	10	0	20	670	0	0	0	830
28	Harbor Plaza Dr	Harbor Scenic Dr	0	10	10	640	0	241	201	40	0	10	990	10	2,152
29	Navy Wy	Reeves Av	80	90	400	340	10	0	0	100	10	10	10	180	1,230
30	Long Beach Blvd.	PCH	100	510	162	82	1,190	160	70	570	180	73	879	110	4,086
31	Long Beach Blvd.	Anaheim St.	60	470	110	120	1,080	10	60	420	140	70	820	10	3,370
32	Long Beach Blvd.	Ocean Blvd	260	0	70	130	1,770	0	10	0	0	10	490	110	2,850

			Mid-Day Peak Hour - Baseline plus Project (Proposed Plan)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	900	190	320	0	140	160	790	0	0	0	0	2,500
2	Alameda St Ramp	Sepulveda Blvd	150	10	160	250	460	10	10	20	10	10	630	190	1,910
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	810	0	0	0	0	0	780	10	1,630
4	ICTF Driveway	Sepulveda Blvd	70	0	70	0	720	30	20	0	20	20	700	70	1,720
5	Middle Rd	Sepulveda Blvd	10	0	10	10	920	70	80	0	40	40	850	10	2,040
6	Terminal Island Fwy	Willow St/Sepulveda Blv	10	0	0	10	370	150	350	10	620	410	530	10	2,470
7	Santa Fe Ave	PCH	110	240	160	110	830	110	100	370	250	170	940	90	3,480
8	Alameda St	O St	0	1,030	270	290	0	140	140	940	0	0	0	0	2,810
9	O St	PCH	240	0	180	200	1,010	0	0	0	0	0	960	230	2,820
10	Santa Fe Ave	Anaheim St.	110	220	220	280	820	20	40	240	40	20	930	100	3,040
11	Harbor Ave	Anaheim St.	30	30	120	140	1,200	20	130	40	20	90	1,060	30	2,910
12	9th St/East I St	Anaheim St.	40	30	160	170	780	10	10	50	260	230	850	140	2,730
13	Henry Ford Av	Anaheim St.	70	550	170	290	830	90	110	510	280	200	930	130	4,160
14	Pico Ave	Pier B St	210	250	40	20	10	50	220	440	700	760	10	200	2,910
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	40	490	200	460	10	50	90	350	10	10	10	50	1,770
16	Pico Ave	Pier C St	160	880	0	0	0	0	0	1,170	30	70	0	180	2,490
17	Pico Ave	Pier D St	110	810	10	10	0	10	10	970	30	110	10	250	2,330
181	Pico Ave	Westbound Ocean Ave C	450	440	10	0	0	0	10	990	470	0	0	0	2,370
182	Pico Ave	Westbound Ocean Ave C	0	540	0	50	0	20	0	1,440	0	0	0	0	2,050
19	Pico Ave	Pier E St/Eastbound Oce	10	500	50	110	10	130	30	1,290	270	10	30	50	2,490
20	Pier S Ave	New Dock St	10	50	10	10	0	187	326	290	170	460	40	20	1,573
21	Terminal Island Fwy	*CA-47 Westbound	450	420	0	770	550	50	0	530	176	0	0	0	2,946
22	Terminal Island Fwy	*CA-47 Eastbound	0	40	430	0	0	0	40	216	0	197	330	490	1,743
23	Pier S Avenue	*CA-47 Westbound	190	547	0	556	610	0	0	260	0	0	0	0	2,163
24	Pier S Avenue	*CA-47 Eastbound	0	0	537	0	0	0	0	0	0	0	480	250	1,267
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	490	120	190	930	80	110	110	120	10	10	90	640	2,900
26	Navy Wy	*Seaside Fwy	0	10	0	0	1,480	270	620	0	240	200	1,720	0	4,540
27	Harbor Plaza Dr	Queensway Dr	40	10	10	20	110	10	0	20	953	0	0	0	1,173
28	Harbor Plaza Dr	Harbor Scenic Dr	0	10	10	890	0	634	134	63	0	10	1,220	20	2,991
29	Navy Wy	Reeves Av	50	60	360	380	10	10	10	120	10	10	10	390	1,420
30	Long Beach Blvd.	PCH	100	520	200	130	770	100	90	590	160	90	950	130	3,830
31	Long Beach Blvd.	Anaheim St.	80	420	130	150	740	10	90	510	230	80	990	30	3,460
32	Long Beach Blvd.	Ocean Blvd	160	0	120	100	790	10	10	0	0	10	910	100	2,210

			PM Peak Hour - Baseline plus Project (Proposed Plan)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	1,160	290	410	0	100	110	930	0	0	0	0	3,000
2	Alameda St Ramp	Sepulveda Blvd	200	10	210	190	510	0	10	20	10	10	970	300	2,440
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	800	0	0	0	0	0	1,260	10	2,100
4	ICTF Driveway	Sepulveda Blvd	50	0	50	20	730	10	50	0	10	10	1,230	60	2,220
5	Middle Rd	Sepulveda Blvd	10	10	30	20	860	70	110	0	40	50	1,370	10	2,580
6	Terminal Island Fwy	Willow St/Sepulveda Blv	10	0	10	0	510	200	550	0	410	500	1,010	0	3,200
7	Santa Fe Ave	PCH	120	260	170	120	890	140	110	580	360	110	1,160	120	4,140
8	Alameda St	O St	0	1,080	360	450	0	100	190	980	0	0	0	0	3,160
9	O St	PCH	380	0	170	210	1,230	0	0	0	0	0	1,360	330	3,680
10	Santa Fe Ave	Anaheim St.	120	220	280	480	680	20	50	340	40	30	1,120	140	3,520
11	Harbor Ave	Anaheim St.	30	30	120	130	1,030	30	70	60	20	40	1,350	50	2,960
12	9th St/East I St	Anaheim St.	50	280	140	110	770	10	20	110	270	500	1,200	80	3,540
13	Henry Ford Av	Anaheim St.	80	430	240	260	790	90	140	400	480	380	1,340	90	4,720
14	Pico Ave	Pier B St	220	330	130	30	10	80	300	500	230	200	20	100	2,150
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	50	420	380	690	10	60	70	420	10	10	10	60	2,190
16	Pico Ave	Pier C St	130	460	0	0	0	0	0	760	30	90	0	270	1,740
17	Pico Ave	Pier D St	120	420	0	10	0	10	0	710	50	100	0	120	1,540
181	Pico Ave	Westbound Ocean Ave C	180	320	10	0	0	0	10	720	310	0	0	0	1,550
182	Pico Ave	Westbound Ocean Ave C	0	370	0	40	0	20	0	1,000	0	0	0	0	1,430
19	Pico Ave	Pier E St/Eastbound Oce	20	340	20	110	20	80	60	760	190	20	40	80	1,740
20	Pier S Ave	New Dock St	10	40	10	10	0	170	369	290	160	470	20	20	1,569
21	Terminal Island Fwy	*CA-47 Westbound	490	540	0	820	540	50	0	460	159	0	0	0	3,059
22	Terminal Island Fwy	*CA-47 Eastbound	0	60	520	0	0	0	40	169	0	170	330	460	1,749
23	Pier S Avenue	*CA-47 Westbound	160	350	0	409	770	0	0	360	0	0	0	0	2,049
24	Pier S Avenue	*CA-47 Eastbound	0	0	350	0	0	0	0	0	0	0	550	360	1,260
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	320	150	190	680	80	60	90	180	10	10	140	580	2,490
26	Navy Wy	*Seaside Fwy	0	0	0	0	2,020	200	560	0	300	330	2,530	0	5,940
27	Harbor Plaza Dr	Queensway Dr	50	20	0	20	180	10	0	50	1,001	0	0	0	1,331
28	Harbor Plaza Dr	Harbor Scenic Dr	0	20	10	980	0	402	122	51	0	10	1,070	10	2,675
29	Navy Wy	Reeves Av	90	130	300	350	0	0	10	190	10	20	10	310	1,420
30	Long Beach Blvd.	PCH	160	550	181	85	767	140	110	660	150	85	1,350	180	4,418
31	Long Beach Blvd.	Anaheim St.	110	470	160	120	720	10	120	620	180	110	1,300	20	3,940
32	Long Beach Blvd.	Ocean Blvd	210	0	130	100	870	0	10	0	0	0	1,860	200	3,380

			AM Peak Hour - Cumulative Conditions (Alternative 1)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	950	270	360	0	70	70	620	0	0	0	0	2,340
2	Alameda St Ramp	Sepulveda Blvd	210	20	120	220	850	10	10	30	10	10	490	190	2,170
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	1,100	0	0	0	0	0	710	10	1,850
4	ICTF Driveway	Sepulveda Blvd	70	10	40	10	1,030	30	30	0	20	20	610	70	1,940
5	Middle Rd	Sepulveda Blvd	0	0	10	10	1,120	80	50	0	20	30	630	0	1,950
6	Terminal Island Fwy	Willow St/Sepulveda Blv	0	0	0	0	850	210	260	0	360	320	350	10	2,360
7	Santa Fe Ave	PCH	170	310	190	100	1,710	250	50	360	140	240	1,350	90	4,960
8	Alameda St	O St	0	1,010	410	410	0	120	160	580	0	0	0	0	2,690
9	O St	PCH	350	0	230	290	950	0	0	0	0	0	1,010	250	3,080
10	Santa Fe Ave	Anaheim St.	200	0	460	350	1,190	0	0	0	0	0	950	130	3,280
11	Harbor Ave	Anaheim St.	30	0	90	150	2,240	0	0	0	0	0	1,660	20	4,190
12	9th St/East I St	Anaheim St.	50	0	140	150	1,380	0	0	0	0	0	940	40	2,700
13	Henry Ford Av	Anaheim St.	60	450	110	350	1,110	300	300	260	220	490	630	80	4,360
14	Pico Ave	Pier B St	60	360	0	0	0	0	0	600	490	320	0	250	2,080
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	50	890	470	370	0	40	50	330	10	10	0	50	2,270
16	Pico Ave	Pier C St	220	570	0	0	0	0	0	950	50	20	0	190	2,000
17	Pico Ave	Pier D St	50	540	10	10	0	10	0	930	60	50	0	80	1,740
181	Pico Ave	Westbound Ocean Ave C	130	440	10	0	0	0	10	960	220	20	0	10	1,800
182	Pico Ave	Westbound Ocean Ave C	0	500	0	80	0	60	0	1,110	0	0	0	0	1,750
19	Pico Ave	Pier E St/Eastbound Oce	140	330	0	70	20	220	40	590	280	10	20	20	1,740
20	Pier S Ave	New Dock St	10	40	10	20	380	326	165	250	270	960	240	20	2,691
21	Terminal Island Fwy	*CA-47 Westbound	460	560	0	300	380	240	0	750	135	0	0	0	2,825
22	Terminal Island Fwy	*CA-47 Eastbound	0	510	270	0	0	0	280	405	0	156	490	480	2,591
23	Pier S Avenue	*CA-47 Westbound	790	546	0	325	640	0	0	130	0	0	0	0	2,431
24	Pier S Avenue	*CA-47 Eastbound	0	0	556	0	0	0	0	0	0	0	580	130	1,266
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	610	190	160	570	120	60	70	210	10	20	50	320	2,390
26	Navy Wy	*Seaside Fwy	0	0	0	0	2,640	50	1,570	0	10	1,600	1,810	0	7,680
27	Harbor Plaza Dr	Queensway Dr	30	10	0	10	550	10	0	20	790	0	0	0	1,420
28	Harbor Plaza Dr	Harbor Scenic Dr	0	10	10	430	0	221	201	370	0	400	600	10	2,252
29	Navy Wy	Reeves Av	500	1,070	70	70	10	0	0	1,130	10	10	10	400	3,280
30	Long Beach Blvd.	PCH	140	540	260	90	1,060	150	70	620	200	80	660	110	3,980
31	Long Beach Blvd.	Anaheim St.	60	450	190	160	1,010	10	60	460	300	120	820	10	3,650
32	Long Beach Blvd.	Ocean Blvd	100	0	90	160	1,760	0	10	0	0	10	270	110	2,510

			Mid-Day Peak Hour - Cumulative Conditions (Alternative 1)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	710	180	320	0	100	150	650	0	0	0	0	2,110
2	Alameda St Ramp	Sepulveda Blvd	150	10	160	220	480	10	10	20	10	10	370	200	1,650
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	830	0	0	0	0	0	700	10	1,570
4	ICTF Driveway	Sepulveda Blvd	70	0	70	0	750	30	20	0	20	20	620	70	1,670
5	Middle Rd	Sepulveda Blvd	10	0	10	10	750	70	80	0	40	40	460	10	1,480
6	Terminal Island Fwy	Willow St/Sepulveda Blv	10	0	0	10	310	120	300	10	520	220	330	10	1,840
7	Santa Fe Ave	PCH	100	200	160	100	1,520	140	100	160	90	100	1,480	110	4,260
8	Alameda St	O St	0	720	290	290	0	150	160	770	0	0	0	0	2,380
9	O St	PCH	260	0	180	200	580	0	0	0	0	0	740	230	2,190
10	Santa Fe Ave	Anaheim St.	160	0	270	270	1,200	0	0	0	0	0	1,210	90	3,200
11	Harbor Ave	Anaheim St.	30	0	120	140	1,940	0	0	0	0	0	1,560	30	3,820
12	9th St/East I St	Anaheim St.	40	0	50	180	1,130	0	0	0	0	0	1,190	70	2,660
13	Henry Ford Av	Anaheim St.	70	390	110	230	900	180	230	370	260	310	840	130	4,020
14	Pico Ave	Pier B St	220	270	0	0	0	0	0	560	640	640	0	200	2,530
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	60	630	230	400	10	60	80	420	10	10	10	60	1,980
16	Pico Ave	Pier C St	100	830	0	0	0	0	0	1,180	20	30	0	140	2,300
17	Pico Ave	Pier D St	20	860	10	10	0	10	10	940	30	110	10	270	2,280
181	Pico Ave	Westbound Ocean Ave C	430	500	10	0	0	0	10	950	410	40	0	10	2,360
182	Pico Ave	Westbound Ocean Ave C	0	600	0	80	0	50	0	1,320	0	0	0	0	2,050
19	Pico Ave	Pier E St/Eastbound Oce	190	400	0	60	20	110	70	710	260	10	10	20	1,860
20	Pier S Ave	New Dock St	10	50	10	20	340	337	196	290	60	470	210	20	2,013
21	Terminal Island Fwy	*CA-47 Westbound	450	570	0	420	330	230	0	930	176	0	0	0	3,106
22	Terminal Island Fwy	*CA-47 Eastbound	0	590	210	0	0	0	270	416	0	197	600	690	2,973
23	Pier S Avenue	*CA-47 Westbound	490	397	0	256	710	0	0	120	0	0	0	0	1,973
24	Pier S Avenue	*CA-47 Eastbound	0	0	387	0	0	0	0	0	0	0	1,080	110	1,577
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	470	110	190	610	100	30	50	140	10	10	50	340	2,110
26	Navy Wy	*Seaside Fwy	0	0	0	0	2,040	20	1,270	0	110	1,110	1,530	0	6,080
27	Harbor Plaza Dr	Queensway Dr	40	10	10	20	690	520	0	20	813	0	0	0	2,123
28	Harbor Plaza Dr	Harbor Scenic Dr	0	520	10	390	0	204	114	443	0	480	410	20	2,591
29	Navy Wy	Reeves Av	410	670	60	60	10	10	10	880	10	10	10	450	2,590
30	Long Beach Blvd.	PCH	100	480	240	210	770	100	70	550	150	90	740	130	3,630
31	Long Beach Blvd.	Anaheim St.	90	360	120	150	800	10	90	450	270	130	1,030	0	3,500
32	Long Beach Blvd.	Ocean Blvd	90	0	110	130	710	10	10	0	0	10	1,170	100	2,340

			PM Peak Hour - Cumulative Conditions (Alternative 1)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	890	290	380	0	80	90	770	0	0	0	0	2,500
2	Alameda St Ramp	Sepulveda Blvd	200	10	170	180	740	0	10	20	10	10	970	280	2,600
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	990	0	0	0	0	0	1,250	10	2,280
4	ICTF Driveway	Sepulveda Blvd	50	0	40	0	930	10	40	0	10	10	1,220	60	2,370
5	Middle Rd	Sepulveda Blvd	10	10	10	20	1,020	70	90	0	40	50	1,220	10	2,550
6	Terminal Island Fwy	Willow St/Sepulveda Blv	10	0	10	0	740	160	400	0	350	300	1,010	0	2,980
7	Santa Fe Ave	PCH	120	150	100	90	1,600	180	180	360	240	80	1,780	160	5,040
8	Alameda St	O St	0	480	520	440	0	140	180	740	0	0	0	0	2,500
9	O St	PCH	520	0	190	250	990	0	0	0	0	0	1,310	340	3,600
10	Santa Fe Ave	Anaheim St.	150	0	270	280	770	0	0	0	0	0	1,280	190	2,940
11	Harbor Ave	Anaheim St.	30	0	130	130	1,400	0	0	0	0	0	1,820	50	3,560
12	9th St/East I St	Anaheim St.	50	0	90	110	1,010	0	0	0	0	0	1,460	50	2,770
13	Henry Ford Av	Anaheim St.	80	270	180	220	910	220	320	340	70	250	1,340	90	4,290
14	Pico Ave	Pier B St	260	440	0	0	0	0	0	560	500	150	0	120	2,030
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	70	410	260	480	10	60	70	370	10	10	10	90	1,850
16	Pico Ave	Pier C St	40	610	0	0	0	0	0	1,160	10	70	0	200	2,090
17	Pico Ave	Pier D St	40	700	0	10	0	10	0	1,000	30	100	0	150	2,040
181	Pico Ave	Westbound Ocean Ave C	150	630	10	0	0	0	10	1,010	60	20	0	10	1,900
182	Pico Ave	Westbound Ocean Ave C	0	670	0	40	0	70	0	1,050	0	0	0	0	1,830
19	Pico Ave	Pier E St/Eastbound Oce	110	300	220	40	30	50	20	620	170	10	30	50	1,650
20	Pier S Ave	New Dock St	10	40	10	10	210	350	179	290	170	480	110	20	1,879
21	Terminal Island Fwy	*CA-47 Westbound	490	600	0	270	300	190	0	680	159	0	0	0	2,689
22	Terminal Island Fwy	*CA-47 Eastbound	0	560	210	0	0	0	210	279	0	180	320	570	2,329
23	Pier S Avenue	*CA-47 Westbound	430	270	0	169	430	0	0	170	0	0	0	0	1,469
24	Pier S Avenue	*CA-47 Eastbound	0	0	280	0	0	0	0	0	0	0	730	170	1,180
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	300	100	190	600	100	20	90	120	10	10	90	260	1,890
26	Navy Wy	*Seaside Fwy	0	0	0	0	2,130	50	690	0	150	430	2,340	0	5,790
27	Harbor Plaza Dr	Queensway Dr	40	20	0	20	1,260	120	0	20	581	0	0	0	2,061
28	Harbor Plaza Dr	Harbor Scenic Dr	0	130	10	310	0	152	112	281	0	320	240	10	1,565
29	Navy Wy	Reeves Av	100	270	90	80	0	0	10	1,020	10	20	10	150	1,760
30	Long Beach Blvd.	PCH	140	530	250	150	560	120	90	680	290	90	910	170	3,980
31	Long Beach Blvd.	Anaheim St.	70	460	170	170	740	10	100	570	280	90	1,300	10	3,970
32	Long Beach Blvd.	Ocean Blvd	90	0	150	100	830	0	10	0	0	0	2,020	200	3,400

			AM Peak Hour - Cumulative plus Project (Proposed Plan)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	980	270	360	0	70	70	630	0	0	0	0	2,380
2	Alameda St Ramp	Sepulveda Blvd	210	20	140	220	900	10	10	30	10	10	560	190	2,310
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	1,150	0	0	0	0	0	710	10	1,900
4	ICTF Driveway	Sepulveda Blvd	70	10	40	10	1,080	30	30	0	20	20	610	70	1,990
5	Middle Rd	Sepulveda Blvd	0	0	10	10	1,170	80	50	0	20	30	710	0	2,080
6	Terminal Island Fwy	Willow St/Sepulveda Blv	0	0	0	0	850	210	260	0	430	320	430	10	2,510
7	Santa Fe Ave	PCH	170	310	190	100	1,710	300	50	360	150	240	1,350	90	5,020
8	Alameda St	O St	0	1,090	410	420	0	130	160	580	0	0	0	0	2,790
9	O St	PCH	350	0	230	290	1,020	0	0	0	0	0	1,030	310	3,230
10	Santa Fe Ave	Anaheim St.	200	0	460	350	1,190	0	0	0	0	0	1,060	130	3,390
11	Harbor Ave	Anaheim St.	30	0	90	150	2,240	0	0	0	0	0	1,670	20	4,200
12	9th St/East I St	Anaheim St.	50	0	140	180	1,380	0	0	0	0	0	970	40	2,760
13	Henry Ford Av	Anaheim St.	60	500	200	350	1,180	300	320	260	220	540	630	80	4,640
14	Pico Ave	Pier B St	60	390	0	0	0	0	0	690	490	320	0	250	2,200
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	50	1,020	470	430	0	40	50	330	10	10	0	50	2,460
16	Pico Ave	Pier C St	220	590	0	0	0	0	0	1,040	50	20	0	190	2,110
17	Pico Ave	Pier D St	120	570	10	10	0	10	0	990	60	50	0	80	1,900
181	Pico Ave	Westbound Ocean Ave C	130	460	10	0	0	0	10	1,040	220	20	0	10	1,900
182	Pico Ave	Westbound Ocean Ave C	0	520	0	80	0	60	0	1,200	0	0	0	0	1,860
19	Pico Ave	Pier E St/Eastbound Oce	150	330	10	70	30	230	40	610	300	10	20	30	1,830
20	Pier S Ave	New Dock St	10	40	10	20	400	326	165	250	270	960	270	20	2,741
21	Terminal Island Fwy	*CA-47 Westbound	460	720	0	340	380	240	0	750	135	0	0	0	3,025
22	Terminal Island Fwy	*CA-47 Eastbound	0	600	330	0	0	0	330	405	0	156	490	500	2,811
23	Pier S Avenue	*CA-47 Westbound	810	546	0	325	680	0	0	130	0	0	0	0	2,491
24	Pier S Avenue	*CA-47 Eastbound	0	0	556	0	0	0	0	0	0	0	600	130	1,286
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	610	190	160	630	120	60	80	210	10	20	60	320	2,470
26	Navy Wy	*Seaside Fwy	0	0	0	0	2,650	50	1,740	0	70	1,800	1,810	0	8,120
27	Harbor Plaza Dr	Queensway Dr	30	10	0	10	550	10	0	20	930	0	0	0	1,560
28	Harbor Plaza Dr	Harbor Scenic Dr	0	10	10	560	0	221	201	380	0	510	710	10	2,612
29	Navy Wy	Reeves Av	500	1,070	390	360	10	0	0	1,130	10	10	10	400	3,890
30	Long Beach Blvd.	PCH	140	540	260	90	1,070	150	70	630	200	80	740	110	4,080
31	Long Beach Blvd.	Anaheim St.	70	450	190	160	1,080	10	60	460	300	120	870	10	3,780
32	Long Beach Blvd.	Ocean Blvd	100	0	90	160	1,760	0	10	0	0	10	370	110	2,610

			Mid-Day Peak Hour - Cumulative plus Project (Proposed Plan)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	740	180	330	0	100	150	670	0	0	0	0	2,170
2	Alameda St Ramp	Sepulveda Blvd	150	10	160	220	520	10	10	20	10	10	600	200	1,920
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	880	0	0	0	0	0	700	10	1,620
4	ICTF Driveway	Sepulveda Blvd	70	0	70	0	790	30	20	0	20	20	620	70	1,710
5	Middle Rd	Sepulveda Blvd	10	0	10	10	800	70	80	0	40	40	490	10	1,560
6	Terminal Island Fwy	Willow St/Sepulveda Blv	10	0	0	10	370	120	310	10	520	220	360	10	1,940
7	Santa Fe Ave	PCH	100	200	160	100	1,560	180	100	160	90	100	1,520	120	4,390
8	Alameda St	O St	0	780	300	330	0	150	160	770	0	0	0	0	2,490
9	O St	PCH	280	0	180	230	580	0	0	0	0	0	750	230	2,250
10	Santa Fe Ave	Anaheim St.	220	0	280	270	1,200	0	0	0	0	0	1,240	90	3,300
11	Harbor Ave	Anaheim St.	30	0	120	140	1,940	0	0	0	0	0	1,600	30	3,860
12	9th St/East I St	Anaheim St.	40	0	50	240	1,150	0	0	0	0	0	1,220	70	2,770
13	Henry Ford Av	Anaheim St.	70	440	110	260	900	190	230	370	300	330	890	130	4,220
14	Pico Ave	Pier B St	230	310	0	0	0	0	0	600	670	660	0	200	2,670
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	60	710	230	400	10	60	80	440	10	10	10	60	2,080
16	Pico Ave	Pier C St	100	900	0	0	0	0	0	1,240	20	40	0	140	2,440
17	Pico Ave	Pier D St	20	920	10	10	0	10	10	1,000	30	110	10	270	2,400
181	Pico Ave	Westbound Ocean Ave C	430	570	10	0	0	0	10	1,020	440	40	0	10	2,530
182	Pico Ave	Westbound Ocean Ave C	0	670	0	80	0	50	0	1,420	0	0	0	0	2,220
19	Pico Ave	Pier E St/Eastbound Oce	210	430	10	60	20	120	110	800	260	10	10	20	2,060
20	Pier S Ave	New Dock St	10	50	10	20	340	447	196	290	160	480	210	20	2,233
21	Terminal Island Fwy	*CA-47 Westbound	450	620	0	440	390	260	0	960	176	0	0	0	3,296
22	Terminal Island Fwy	*CA-47 Eastbound	0	690	210	0	0	0	300	426	0	197	680	700	3,203
23	Pier S Avenue	*CA-47 Westbound	590	417	0	376	710	0	0	120	0	0	0	0	2,213
24	Pier S Avenue	*CA-47 Eastbound	0	0	407	0	0	0	0	0	0	0	1,160	110	1,677
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	470	110	190	640	100	40	50	150	10	10	50	350	2,170
26	Navy Wy	*Seaside Fwy	0	0	0	0	2,060	40	1,500	0	110	1,340	1,530	0	6,580
27	Harbor Plaza Dr	Queensway Dr	40	10	10	20	690	560	0	20	973	0	0	0	2,323
28	Harbor Plaza Dr	Harbor Scenic Dr	0	560	10	470	0	254	114	513	0	480	600	20	3,021
29	Navy Wy	Reeves Av	410	670	340	370	10	10	10	880	10	10	10	450	3,180
30	Long Beach Blvd.	PCH	100	480	250	210	770	110	90	570	160	90	740	130	3,700
31	Long Beach Blvd.	Anaheim St.	90	360	130	160	800	10	90	490	280	140	1,030	10	3,590
32	Long Beach Blvd.	Ocean Blvd	160	0	120	150	710	10	10	0	0	10	1,180	100	2,450

			PM Peak Hour - Cumulative plus Project (Proposed Plan)												
			1	2	3	4	5	6	7	8	9	10	11	12	
Int	North/South	East/West	SR	ST	SL	WR	WT	WL	NR	NT	NL	ER	ET	EL	TOTAL
1	Alameda St	Sepulveda Blvd Ramp	0	900	300	410	0	80	90	790	0	0	0	0	2,570
2	Alameda St Ramp	Sepulveda Blvd	220	10	170	180	740	0	10	20	10	10	970	280	2,620
3	Intermodal Wy	Sepulveda Blvd	10	0	10	10	990	0	0	0	0	0	1,250	10	2,280
4	ICTF Driveway	Sepulveda Blvd	50	0	40	0	930	10	40	0	10	10	1,220	60	2,370
5	Middle Rd	Sepulveda Blvd	10	10	10	20	1,030	70	90	0	40	50	1,220	10	2,560
6	Terminal Island Fwy	Willow St/Sepulveda Blv	10	0	10	0	740	160	400	0	360	300	1,010	0	2,990
7	Santa Fe Ave	PCH	120	150	100	90	1,670	180	190	360	240	80	1,810	170	5,160
8	Alameda St	O St	0	550	520	450	0	140	180	740	0	0	0	0	2,580
9	O St	PCH	520	0	190	250	1,160	0	0	0	0	0	1,310	350	3,780
10	Santa Fe Ave	Anaheim St.	150	0	300	280	920	0	0	0	0	0	1,300	190	3,140
11	Harbor Ave	Anaheim St.	30	0	130	130	1,500	0	0	0	0	0	1,870	50	3,710
12	9th St/East I St	Anaheim St.	50	0	90	110	1,040	0	0	0	0	0	1,480	50	2,820
13	Henry Ford Av	Anaheim St.	80	330	210	260	960	220	320	350	70	270	1,340	90	4,500
14	Pico Ave	Pier B St	260	500	0	0	0	0	0	580	520	150	0	140	2,150
15	Henry Ford Av/Terminal Isl Ramps	Pier A Way	70	500	260	480	10	60	70	410	10	10	10	90	1,980
16	Pico Ave	Pier C St	40	670	0	0	0	0	0	1,200	10	70	0	200	2,190
17	Pico Ave	Pier D St	40	750	0	10	0	10	0	1,050	30	100	0	150	2,140
181	Pico Ave	Westbound Ocean Ave C	150	680	10	0	0	0	10	1,050	90	20	0	10	2,020
182	Pico Ave	Westbound Ocean Ave C	0	730	0	40	0	70	0	1,120	0	0	0	0	1,960
19	Pico Ave	Pier E St/Eastbound Oce	120	350	220	40	30	60	20	720	170	10	30	50	1,820
20	Pier S Ave	New Dock St	10	40	10	10	210	350	179	290	170	480	120	20	1,889
21	Terminal Island Fwy	*CA-47 Westbound	490	690	0	440	300	210	0	820	159	0	0	0	3,109
22	Terminal Island Fwy	*CA-47 Eastbound	0	560	380	0	0	0	270	349	0	180	390	640	2,769
23	Pier S Avenue	*CA-47 Westbound	430	270	0	269	670	0	0	170	0	0	0	0	1,809
24	Pier S Avenue	*CA-47 Eastbound	0	0	280	0	0	0	0	0	0	0	880	170	1,330
25	Pico Ave/Pier G Ave	Harbor Plaza Dr	300	100	190	680	100	30	90	120	10	10	90	260	1,980
26	Navy Wy	*Seaside Fwy	0	0	0	0	2,230	50	1,080	0	150	660	2,340	0	6,510
27	Harbor Plaza Dr	Queensway Dr	40	20	0	20	1,260	210	0	20	661	0	0	0	2,231
28	Harbor Plaza Dr	Harbor Scenic Dr	0	220	10	410	0	192	112	281	0	320	360	10	1,915
29	Navy Wy	Reeves Av	140	290	270	330	0	0	10	1,020	10	20	10	150	2,250
30	Long Beach Blvd.	PCH	140	530	250	160	610	120	90	690	290	160	940	170	4,150
31	Long Beach Blvd.	Anaheim St.	70	460	170	170	750	10	100	570	280	90	1,300	10	3,980
32	Long Beach Blvd.	Ocean Blvd	210	0	150	100	830	0	10	0	0	0	2,020	200	3,520

Appendix D-3
Level of Service Worksheets

This page intentionally left blank.

Project Title: **PoLB Master Plan EIR**
Intersection: **1 - Alameda St & Sepulveda Blvd Ramp**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.295 *
	TH	3.00	916	4,800	0.191		N-S(2):	0.191
	LT	1.00	269	1,600	0.168	*	E-W(1):	0.041 *
Westbound	RT	2.00	330	3,200	0.019		E-W(2):	0.019
	TH	0.00	0	0	0.000			
	LT	1.00	66	1,600	0.041	*	V/C:	0.336
Northbound	RT	0.00	70	0	0.000		Lost Time:	0.100
	TH	3.00	538	4,800	0.127	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.436
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.248 *
	TH	3.00	705	4,800	0.147		N-S(2):	0.147
	LT	1.00	156	1,600	0.098	*	E-W(1):	0.029 *
Westbound	RT	2.00	247	3,200	0.028		E-W(2):	0.028
	TH	0.00	0	0	0.000			
	LT	1.00	47	1,600	0.029	*	V/C:	0.277
Northbound	RT	0.00	92	0	0.000		Lost Time:	0.100
	TH	3.00	626	4,800	0.150	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.377
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.386 *
	TH	3.00	1,085	4,800	0.226		N-S(2):	0.226
	LT	1.00	286	1,600	0.179	*	E-W(1):	0.035 *
Westbound	RT	2.00	362	3,200	0.024		E-W(2):	0.024
	TH	0.00	0	0	0.000			
	LT	1.00	56	1,600	0.035	*	V/C:	0.421
Northbound	RT	0.00	88	0	0.000		Lost Time:	0.100
	TH	3.00	906	4,800	0.207	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.521
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **2 - Alameda St Ramp & Sepulveda Blvd**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	177	1,600	0.053		N-S(1):	0.057 *
	TH	0.29	19	461	0.041		N-S(2):	0.054
	LT	1.71	113	2,465	0.046	*	E-W(1):	0.178
Westbound	RT	1.00	187	1,600	0.071		E-W(2):	0.556 *
	TH	1.00	707	1,600	0.442	*		
	LT	1.00	3	1,600	0.002		V/C:	0.613
Northbound	RT	0.00	5	0	0.000		Lost Time:	0.100
	TH	2.00	29	1,600	0.011	*	ITS:	0.000
	LT	0.00	1	1,600	0.001			
Eastbound	RT	0.00	4	0	0.000		ICU:	0.713
	TH	2.00	558	3,200	0.176			
	LT	1.00	183	1,600	0.114	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	145	1,600	0.032		N-S(1):	0.063 *
	TH	0.12	10	195	0.051		N-S(2):	0.054
	LT	1.88	154	2,704	0.057	*	E-W(1):	0.191
Westbound	RT	1.00	215	1,600	0.077		E-W(2):	0.352 *
	TH	1.00	374	1,600	0.234	*		
	LT	1.00	4	1,600	0.003		V/C:	0.415
Northbound	RT	0.00	4	0	0.000		Lost Time:	0.100
	TH	2.00	12	1,600	0.006	*	ITS:	0.000
	LT	0.00	4	1,600	0.003			
Eastbound	RT	0.00	3	0	0.000		ICU:	0.515
	TH	2.00	597	3,200	0.188			
	LT	1.00	189	1,600	0.118	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	190	1,600	0.033		N-S(1):	0.068 *
	TH	0.12	10	185	0.054		N-S(2):	0.055
	LT	1.88	163	2,714	0.060	*	E-W(1):	0.303
Westbound	RT	1.00	171	1,600	0.107		E-W(2):	0.480 *
	TH	1.00	495	1,600	0.309	*		
	LT	1.00	0	1,600	0.000		V/C:	0.548
Northbound	RT	0.00	6	0	0.000		Lost Time:	0.100
	TH	2.00	17	1,600	0.008	*	ITS:	0.000
	LT	0.00	1	1,600	0.001			
Eastbound	RT	0.00	8	0	0.000		ICU:	0.648
	TH	2.00	963	3,200	0.303			
	LT	1.00	274	1,600	0.171	*	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **3 - Intermodal Wy & Sepulveda Blvd**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	4	1,600	0.002	N-S(1):	0.004 *
	TH	0.00	0	0	0.000	N-S(2):	0.002
	LT	1.00	7	1,600	0.004 *	E-W(1):	0.218
Westbound	RT	0.00	2	0	0.000	E-W(2):	0.295 *
	TH	2.00	934	3,200	0.293 *		
	LT	0.00	0	0	0.000	V/C:	0.299
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.399
	TH	2.00	698	3,200	0.218		
	LT	1.00	3	1,600	0.002 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	4	1,600	0.000	N-S(1):	0.002 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	3	1,600	0.002 *	E-W(1):	0.237 *
Westbound	RT	0.00	3	0	0.000	E-W(2):	0.226
	TH	2.00	702	3,200	0.220		
	LT	0.00	0	0	0.000 *	V/C:	0.239
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.339
	TH	2.00	758	3,200	0.237 *		
	LT	1.00	9	1,600	0.006	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	1	1,600	0.000	N-S(1):	0.002 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	3	1,600	0.002 *	E-W(1):	0.388 *
Westbound	RT	0.00	1	0	0.000	E-W(2):	0.237
	TH	2.00	744	3,200	0.233		
	LT	0.00	0	0	0.000 *	V/C:	0.390
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.490
	TH	2.00	1,243	3,200	0.388 *		
	LT	1.00	7	1,600	0.004	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **6 - Terminal Island Fwy & Willow St/Sepulveda Blvd**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, EBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.000
	TH	0.00	0	0	0.000	*	N-S(2):	0.115 *
	LT	0.00	0	0	0.000		E-W(1):	0.204
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.228 *
	TH	2.00	724	3,200	0.226	*		
	LT	2.00	208	2,880	0.072		V/C:	0.343
Northbound	RT	2.00	170	3,200	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	330	2,880	0.115	*		
Eastbound	RT	1.00	318	1,600	0.084		ICU:	0.443
	TH	2.00	423	3,200	0.132			
	LT	1.00	3	1,600	0.002	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	3	0	0.000		N-S(1):	0.148
	TH	0.00	0	0	0.000	*	N-S(2):	0.164 *
	LT	0.00	0	0	0.000		E-W(1):	0.194 *
Westbound	RT	0.00	3	0	0.000		E-W(2):	0.094
	TH	2.00	295	3,200	0.093			
	LT	2.00	96	2,880	0.033	*	V/C:	0.358
Northbound	RT	2.00	230	3,200	0.039		Lost Time:	0.100
	TH	0.01	2	14	0.148		ITS:	0.000
	LT	1.99	471	2,868	0.164	*		
Eastbound	RT	1.00	327	1,600	0.040		ICU:	0.458
	TH	2.00	515	3,200	0.161	*		
	LT	1.00	2	1,600	0.001		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	1	0	0.000		N-S(1):	0.070
	TH	0.00	0	0	0.000	*	N-S(2):	0.120 *
	LT	0.00	1	1,600	0.001		E-W(1):	0.369 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.127
	TH	2.00	407	3,200	0.127			
	LT	2.00	156	2,880	0.054	*	V/C:	0.489
Northbound	RT	2.00	393	3,200	0.069		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	345	2,880	0.120	*		
Eastbound	RT	1.00	298	1,600	0.186		ICU:	0.589
	TH	2.00	1,009	3,200	0.315	*		
	LT	1.00	0	1,600	0.000		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **7 - Santa Fe Ave & PCH**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	137	1,600	0.063		N-S(1):	0.231 *
	TH	2.00	301	3,200	0.094		N-S(2):	0.218
	LT	1.00	188	1,600	0.118	*	E-W(1):	0.274
Westbound	RT	0.00	91	0	0.000		E-W(2):	0.379 *
	TH	2.00	974	3,200	0.333	*		
	LT	1.00	50	1,600	0.031		V/C:	0.610
Northbound	RT	1.00	45	1,600	0.013		Lost Time:	0.100
	TH	2.00	360	3,200	0.113	*	ITS:	0.000
	LT	1.00	199	1,600	0.124			
Eastbound	RT	1.00	94	1,600	0.000		ICU:	0.710
	TH	2.00	779	3,200	0.243			
	LT	1.00	73	1,600	0.046	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	94	1,600	0.033		N-S(1):	0.185 *
	TH	2.00	196	3,200	0.061		N-S(2):	0.172
	LT	1.00	152	1,600	0.095	*	E-W(1):	0.338
Westbound	RT	0.00	93	0	0.000		E-W(2):	0.339 *
	TH	2.00	826	3,200	0.287	*		
	LT	1.00	87	1,600	0.054		V/C:	0.524
Northbound	RT	1.00	100	1,600	0.035		Lost Time:	0.100
	TH	2.00	289	3,200	0.090	*	ITS:	0.000
	LT	1.00	178	1,600	0.111			
Eastbound	RT	1.00	85	1,600	0.000		ICU:	0.624
	TH	2.00	910	3,200	0.284			
	LT	1.00	83	1,600	0.052	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	114	1,600	0.035		N-S(1):	0.242 *
	TH	2.00	232	3,200	0.073		N-S(2):	0.217
	LT	1.00	152	1,600	0.095	*	E-W(1):	0.396 *
Westbound	RT	0.00	90	0	0.000		E-W(2):	0.379
	TH	2.00	890	3,200	0.306	*		
	LT	1.00	57	1,600	0.036		V/C:	0.638
Northbound	RT	1.00	105	1,600	0.048		Lost Time:	0.100
	TH	2.00	469	3,200	0.147	*	ITS:	0.000
	LT	1.00	231	1,600	0.144			
Eastbound	RT	1.00	75	1,600	0.000		ICU:	0.738
	TH	2.00	1,153	3,200	0.360			
	LT	1.00	117	1,600	0.073	*	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **10 - Santa Fe Ave & Anaheim St.**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	111	1,600	0.049	N-S(1):	0.190 *
	TH	2.00	158	3,200	0.049	N-S(2):	0.063
	LT	1.00	159	1,600	0.099 *	E-W(1):	0.157
Westbound	RT	1.00	260	1,600	0.113	E-W(2):	0.229 *
	TH	3.00	904	4,800	0.188 *		
	LT	1.00	17	1,600	0.011	V/C:	0.419
Northbound	RT	1.00	26	1,600	0.011	Lost Time:	0.100
	TH	2.00	291	3,200	0.091 *	ITS:	0.000
	LT	1.00	23	1,600	0.014		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.519
	TH	3.00	697	4,800	0.146		
	LT	1.00	66	1,600	0.041 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	105	1,600	0.038	N-S(1):	0.160 *
	TH	2.00	162	3,200	0.051	N-S(2):	0.067
	LT	1.00	172	1,600	0.108 *	E-W(1):	0.190
Westbound	RT	1.00	237	1,600	0.094	E-W(2):	0.224 *
	TH	3.00	817	4,800	0.170 *		
	LT	1.00	14	1,600	0.009	V/C:	0.384
Northbound	RT	1.00	33	1,600	0.016	Lost Time:	0.100
	TH	2.00	167	3,200	0.052 *	ITS:	0.000
	LT	1.00	25	1,600	0.016		
Eastbound	RT	0.00	8	0	0.000	ICU:	0.484
	TH	3.00	863	4,800	0.181		
	LT	1.00	87	1,600	0.054 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	111	1,600	0.025	N-S(1):	0.235 *
	TH	2.00	213	3,200	0.067	N-S(2):	0.088
	LT	1.00	208	1,600	0.130 *	E-W(1):	0.240 *
Westbound	RT	1.00	212	1,600	0.068	E-W(2):	0.230
	TH	3.00	680	4,800	0.142 *		
	LT	1.00	13	1,600	0.008	V/C:	0.475
Northbound	RT	1.00	45	1,600	0.024	Lost Time:	0.100
	TH	2.00	337	3,200	0.105 *	ITS:	0.000
	LT	1.00	34	1,600	0.021		
Eastbound	RT	0.00	24	0	0.000	ICU:	0.575
	TH	3.00	1,089	4,800	0.232		
	LT	1.00	141	1,600	0.088 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **11 - Harbor Ave & Anaheim St.**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	28	0	0.000		N-S(1):	0.104 *
	TH	1.00	24	1,600	0.084		N-S(2):	0.088
	LT	0.00	82	1,600	0.051	*	E-W(1):	0.203
Westbound	RT	1.00	143	1,600	0.064		E-W(2):	0.214 *
	TH	4.00	1,312	6,400	0.205	*		
	LT	1.00	33	1,600	0.021		V/C:	0.318
Northbound	RT	0.76	65	1,224	0.043		Lost Time:	0.100
	TH	0.24	20	376	0.053	*	ITS:	0.000
	LT	1.00	7	1,600	0.004			
Eastbound	RT	0.00	18	0	0.000		ICU:	0.418
	TH	3.00	855	4,800	0.182			
	LT	1.00	15	1,600	0.009	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	25	0	0.000		N-S(1):	0.128 *
	TH	1.00	23	1,600	0.104		N-S(2):	0.112
	LT	0.00	119	1,600	0.074	*	E-W(1):	0.226 *
Westbound	RT	1.00	133	1,600	0.046		E-W(2):	0.194
	TH	4.00	1,129	6,400	0.176			
	LT	1.00	15	1,600	0.009	*	V/C:	0.354
Northbound	RT	0.67	58	1,067	0.050		Lost Time:	0.100
	TH	0.33	29	533	0.054	*	ITS:	0.000
	LT	1.00	12	1,600	0.008			
Eastbound	RT	0.00	17	0	0.000		ICU:	0.454
	TH	3.00	1,023	4,800	0.217	*		
	LT	1.00	29	1,600	0.018		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	28	0	0.000		N-S(1):	0.155 *
	TH	1.00	26	1,600	0.109		N-S(2):	0.119
	LT	0.00	121	1,600	0.076	*	E-W(1):	0.283 *
Westbound	RT	1.00	126	1,600	0.041		E-W(2):	0.173
	TH	4.00	924	6,400	0.144			
	LT	1.00	21	1,600	0.013	*	V/C:	0.438
Northbound	RT	0.56	70	889	0.072		Lost Time:	0.100
	TH	0.44	56	711	0.079	*	ITS:	0.000
	LT	1.00	16	1,600	0.010			
Eastbound	RT	0.00	8	0	0.000		ICU:	0.538
	TH	3.00	1,287	4,800	0.270	*		
	LT	1.00	47	1,600	0.029		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **12 - 9th St/East I St & Anaheim St.**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	45	1,600	0.000		N-S(1):	0.119
	TH	2.00	21	3,200	0.007	*	N-S(2):	0.233 *
	LT	1.00	138	1,600	0.086		E-W(1):	0.177
Westbound	RT	1.00	136	1,600	0.042		E-W(2):	0.305 *
	TH	2.00	900	3,200	0.281	*		
	LT	1.00	6	1,600	0.004		V/C:	0.538
Northbound	RT	1.00	11	1,600	0.005		Lost Time:	0.100
	TH	2.00	104	3,200	0.033		ITS:	0.000
	LT	1.00	361	1,600	0.226	*		
Eastbound	RT	0.00	155	0	0.000		ICU:	0.638
	TH	3.00	673	4,800	0.173			
	LT	1.00	39	1,600	0.024	*	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	35	1,600	0.000		N-S(1):	0.086
	TH	2.00	29	3,200	0.009	*	N-S(2):	0.092 *
	LT	1.00	117	1,600	0.073		E-W(1):	0.222
Westbound	RT	1.00	168	1,600	0.068		E-W(2):	0.280 *
	TH	2.00	775	3,200	0.242	*		
	LT	1.00	10	1,600	0.006		V/C:	0.372
Northbound	RT	1.00	4	1,600	0.000		Lost Time:	0.100
	TH	2.00	42	3,200	0.013		ITS:	0.000
	LT	1.00	132	1,600	0.083	*		
Eastbound	RT	0.00	189	0	0.000		ICU:	0.472
	TH	3.00	848	4,800	0.216			
	LT	1.00	61	1,600	0.038	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	42	1,600	0.000		N-S(1):	0.079
	TH	2.00	67	3,200	0.021	*	N-S(2):	0.144 *
	LT	1.00	90	1,600	0.056		E-W(1):	0.356 *
Westbound	RT	1.00	102	1,600	0.036		E-W(2):	0.264
	TH	2.00	762	3,200	0.238	*		
	LT	1.00	9	1,600	0.006		V/C:	0.500
Northbound	RT	1.00	12	1,600	0.005		Lost Time:	0.100
	TH	2.00	74	3,200	0.023		ITS:	0.000
	LT	1.00	196	1,600	0.123	*		
Eastbound	RT	0.00	483	0	0.000		ICU:	0.600
	TH	3.00	1,196	4,800	0.350			
	LT	1.00	42	1,600	0.026	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **14 - Pico Ave & Pier B St**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	47	1,600	0.000	N-S(1):	0.038 *
	TH	1.00	29	1,600	0.018	N-S(2):	0.030
	LT	1.00	11	1,600	0.007 *	E-W(1):	0.064
Westbound	RT	0.00	53	0	0.000	E-W(2):	0.189 *
	TH	2.00	2	1,600	0.034 *		
	LT	0.00	99	1,600	0.062	V/C:	0.227
Northbound	RT	1.00	40	1,600	0.000	Lost Time:	0.100
	TH	1.00	49	1,600	0.031 *	ITS:	0.000
	LT	2.00	34	2,880	0.012		
Eastbound	RT	1.00	182	1,600	0.000	ICU:	0.327
	TH	2.00	7	3,200	0.002		
	LT	0.00	248	1,600	0.155 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	210	1,600	0.071 *	N-S(1):	0.105
	TH	1.00	92	1,600	0.058	N-S(2):	0.156 *
	LT	1.00	20	1,600	0.013	E-W(1):	0.033
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.134 *
	TH	2.00	1	1,600	0.013 *		
	LT	0.00	49	1,600	0.031	V/C:	0.290
Northbound	RT	1.00	109	1,600	0.053	Lost Time:	0.100
	TH	1.00	147	1,600	0.092	ITS:	0.000
	LT	2.00	244	2,880	0.085 *		
Eastbound	RT	1.00	530	1,600	0.000	ICU:	0.390
	TH	2.00	7	3,200	0.002		
	LT	0.00	194	1,600	0.121 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	213	1,600	0.103 *	N-S(1):	0.235 *
	TH	1.00	61	1,600	0.038	N-S(2):	0.150
	LT	1.00	130	1,600	0.081	E-W(1):	0.050
Westbound	RT	0.00	27	0	0.000	E-W(2):	0.082 *
	TH	2.00	7	1,600	0.021 *		
	LT	0.00	74	1,600	0.046	V/C:	0.317
Northbound	RT	1.00	283	1,600	0.154	Lost Time:	0.100
	TH	1.00	72	1,600	0.045	ITS:	0.000
	LT	2.00	135	2,880	0.047 *		
Eastbound	RT	1.00	134	1,600	0.000	ICU:	0.417
	TH	2.00	14	3,200	0.004		
	LT	0.00	97	1,600	0.061 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **15 - Henry Ford Av/Terminal Isl Ramps & Pier A Way**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	NBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	18	0	0.000		N-S(1):	0.075
	TH	2.00	348	3,200	0.114	*	N-S(2):	0.115 *
	LT	2.00	190	2,880	0.066		E-W(1):	0.020
Westbound	RT	1.00	82	1,600	0.018	*	E-W(2):	0.039 *
	TH	0.00	0	0	0.000			
	LT	1.00	27	1,600	0.017		V/C:	0.154
Northbound	RT	1.00	47	1,600	0.000		Lost Time:	0.100
	TH	2.00	28	3,200	0.009		ITS:	0.000
	LT	1.00	2	1,600	0.001	*		
Eastbound	RT	1.00	6	1,600	0.003		ICU:	0.254
	TH	0.00	0	0	0.000			
	LT	1.00	34	1,600	0.021	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	40	0	0.000		N-S(1):	0.118 *
	TH	2.00	284	3,200	0.101		N-S(2):	0.104
	LT	2.00	119	2,880	0.041	*	E-W(1):	0.038
Westbound	RT	1.00	232	1,600	0.124	*	E-W(2):	0.154 *
	TH	0.02	1	32	0.031			
	LT	0.98	49	1,568	0.031		V/C:	0.272
Northbound	RT	1.00	74	1,600	0.000		Lost Time:	0.100
	TH	2.00	246	3,200	0.077	*	ITS:	0.000
	LT	1.00	5	1,600	0.003			
Eastbound	RT	0.64	7	1,018	0.005		ICU:	0.372
	TH	0.36	4	582	0.007			
	LT	1.00	48	1,600	0.030	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	44	0	0.000		N-S(1):	0.132 *
	TH	2.00	274	3,200	0.099		N-S(2):	0.104
	LT	2.00	151	2,880	0.052	*	E-W(1):	0.037
Westbound	RT	1.00	290	1,600	0.155	*	E-W(2):	0.192 *
	TH	0.04	2	64	0.031			
	LT	0.96	48	1,536	0.031		V/C:	0.324
Northbound	RT	1.00	63	1,600	0.000		Lost Time:	0.100
	TH	2.00	257	3,200	0.080	*	ITS:	0.000
	LT	1.00	8	1,600	0.005			
Eastbound	RT	0.70	7	1,120	0.004		ICU:	0.424
	TH	0.30	3	480	0.006			
	LT	1.00	59	1,600	0.037	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **16 - Pico Ave & Pier C St**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	63	3,200	0.000		N-S(1):	0.043
	TH	3.00	280	4,800	0.058	*	N-S(2):	0.071 *
	LT	0.00	0	0	0.000		E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.007 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.078
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	136	3,200	0.043		ITS:	0.000
	LT	1.00	21	1,600	0.013	*		
Eastbound	RT	0.00	3	0	0.000		ICU:	0.178
	TH	0.00	0	0	0.000			
	LT	0.00	11	1,600	0.007	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	98	3,200	0.000		N-S(1):	0.132 *
	TH	3.00	543	4,800	0.113		N-S(2):	0.121
	LT	0.00	0	0	0.000	*	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.063 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.195
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	422	3,200	0.132	*	ITS:	0.000
	LT	1.00	13	1,600	0.008			
Eastbound	RT	0.00	19	0	0.000		ICU:	0.295
	TH	0.00	0	0	0.000			
	LT	0.00	100	1,600	0.063	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	34	3,200	0.000		N-S(1):	0.116 *
	TH	3.00	233	4,800	0.049		N-S(2):	0.051
	LT	0.00	0	0	0.000	*	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.071 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.187
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	370	3,200	0.116	*	ITS:	0.000
	LT	1.00	3	1,600	0.002			
Eastbound	RT	0.00	36	0	0.000		ICU:	0.287
	TH	0.00	0	0	0.000			
	LT	0.00	113	1,600	0.071	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **17 - Pico Ave & Pier D St**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR, WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	112	0	0.000		N-S(1):	0.025
	TH	2.00	155	3,200	0.083	*	N-S(2):	0.116 *
	LT	1.00	1	1,600	0.001		E-W(1):	0.000
Westbound	RT	1.00	1	1,600	0.000		E-W(2):	0.019 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	0	1,600	0.000		V/C:	0.135
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	76	3,200	0.024		ITS:	0.000
	LT	1.00	52	1,600	0.033	*		
Eastbound	RT	1.00	50	1,600	0.000		ICU:	0.235
	TH	0.00	0	0	0.000			
	LT	2.00	55	2,880	0.019	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	15	0	0.000		N-S(1):	0.059
	TH	2.00	517	3,200	0.166	*	N-S(2):	0.178 *
	LT	1.00	1	1,600	0.001		E-W(1):	0.078
Westbound	RT	1.00	2	1,600	0.001	*	E-W(2):	0.085 *
	TH	0.00	0	0	0.000			
	LT	1.00	3	1,600	0.002		V/C:	0.263
Northbound	RT	0.00	1	0	0.000		Lost Time:	0.100
	TH	2.00	183	3,200	0.058		ITS:	0.000
	LT	1.00	19	1,600	0.012	*		
Eastbound	RT	1.00	106	1,600	0.054		ICU:	0.363
	TH	0.02	2	26	0.076			
	LT	1.98	241	2,856	0.084	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	35	0	0.000		N-S(1):	0.073
	TH	2.00	227	3,200	0.082	*	N-S(2):	0.096 *
	LT	1.00	0	1,600	0.000		E-W(1):	0.045 *
Westbound	RT	1.00	2	1,600	0.001	*	E-W(2):	0.044
	TH	0.00	0	0	0.000			
	LT	1.00	0	1,600	0.000		V/C:	0.141
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	233	3,200	0.073		ITS:	0.000
	LT	1.00	23	1,600	0.014	*		
Eastbound	RT	1.00	95	1,600	0.045		ICU:	0.241
	TH	0.00	0	0	0.000			
	LT	2.00	123	2,880	0.043	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **181 - Pico Ave & Westbound Ocean Ave On Ramp**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	118	1,600	0.074 *	N-S(1):	0.048
	TH	2.00	97	1,600	0.061	N-S(2):	0.172 *
	LT	0.00	1	1,600	0.001	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.172
Northbound	RT	0.00	3	0	0.000	Lost Time:	0.100
	TH	2.00	146	3,200	0.047	ITS:	0.000
	LT	1.00	157	1,600	0.098 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.272
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	427	1,600	0.267 *	N-S(1):	0.069
	TH	2.00	166	1,600	0.104	N-S(2):	0.392 *
	LT	0.00	3	1,600	0.002	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.392
Northbound	RT	0.00	1	0	0.000	Lost Time:	0.100
	TH	2.00	212	3,200	0.067	ITS:	0.000
	LT	1.00	200	1,600	0.125 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.492
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	140	0	0.000 *	N-S(1):	0.088
	TH	2.00	164	1,600	0.096	N-S(2):	0.208 *
	LT	0.00	2	1,600	0.001	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.208
Northbound	RT	0.00	1	0	0.000	Lost Time:	0.100
	TH	2.00	276	3,200	0.087	ITS:	0.000
	LT	1.00	179	1,600	0.112 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.308
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **182 - Pico Ave & Westbound Ocean Ave Off Ramp**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.043
	TH	2.00	140	3,200	0.044	*	N-S(2):	0.044 *
	LT	0.00	0	0	0.000		E-W(1):	0.006
Westbound	RT	0.00	44	1,600	0.028	*	E-W(2):	0.028 *
	TH	2.00	0	1,600	0.000			
	LT	1.00	10	1,600	0.006		V/C:	0.072
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	137	3,200	0.043		ITS:	0.000
	LT	1.00	0	1,600	0.000	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.172
	TH	1.00	0	1,600	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.075
	TH	2.00	250	3,200	0.078	*	N-S(2):	0.078 *
	LT	0.00	0	0	0.000		E-W(1):	0.008
Westbound	RT	0.00	45	1,600	0.028	*	E-W(2):	0.028 *
	TH	2.00	0	1,600	0.000			
	LT	1.00	13	1,600	0.008		V/C:	0.106
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	241	3,200	0.075		ITS:	0.000
	LT	1.00	0	1,600	0.000	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.206
	TH	1.00	0	1,600	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.088 *
	TH	2.00	201	3,200	0.063	*	N-S(2):	0.063
	LT	0.00	0	0	0.000		E-W(1):	0.008
Westbound	RT	0.00	31	1,600	0.019	*	E-W(2):	0.019 *
	TH	2.00	0	1,600	0.000			
	LT	1.00	12	1,600	0.008		V/C:	0.107
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	283	3,200	0.088		ITS:	0.000
	LT	1.00	0	1,600	0.000	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.207
	TH	1.00	0	1,600	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **19 - Pico Ave & Pier E St/Eastbound Ocean Ave Ramp**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	6	0	0.000		N-S(1):	0.199 *
	TH	2.00	110	3,200	0.036	*	N-S(2):	0.000
	LT	1.00	0	1,600	0.000		E-W(1):	0.079 *
Westbound	RT	0.00	9	0	0.000		E-W(2):	0.012
	TH	2.00	9	1,600	0.011			
	LT	0.00	125	1,600	0.078	*	V/C:	0.278
Northbound	RT	0.00	8	0	0.000		Lost Time:	0.100
	TH	2.00	174	3,200	0.057		ITS:	0.000
	LT	1.00	261	1,600	0.163	*		
Eastbound	RT	0.50	1	800	0.000		ICU:	0.378
	TH	0.50	1	800	0.001	*		
	LT	1.00	2	1,600	0.001		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	4	0	0.000		N-S(1):	0.198 *
	TH	2.00	205	3,200	0.065	*	N-S(2):	0.000
	LT	1.00	0	1,600	0.000		E-W(1):	0.042 *
Westbound	RT	0.00	5	0	0.000		E-W(2):	0.008
	TH	2.00	5	1,600	0.006			
	LT	0.00	61	1,600	0.038	*	V/C:	0.240
Northbound	RT	0.00	8	0	0.000		Lost Time:	0.100
	TH	2.00	329	3,200	0.105		ITS:	0.000
	LT	1.00	213	1,600	0.133	*		
Eastbound	RT	0.50	3	800	0.000		ICU:	0.340
	TH	0.50	3	800	0.004	*		
	LT	1.00	3	1,600	0.002		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	29	0	0.000		N-S(1):	0.159 *
	TH	2.00	164	3,200	0.060	*	N-S(2):	0.000
	LT	1.00	0	1,600	0.000		E-W(1):	0.045
Westbound	RT	0.00	22	0	0.000		E-W(2):	0.055 *
	TH	2.00	30	1,600	0.023			
	LT	0.00	23	1,600	0.014	*	V/C:	0.214
Northbound	RT	0.00	4	0	0.000		Lost Time:	0.100
	TH	2.00	313	3,200	0.099		ITS:	0.000
	LT	1.00	54	1,600	0.034	*		
Eastbound	RT	0.08	4	131	0.014		ICU:	0.314
	TH	0.92	45	1,469	0.031	*		
	LT	1.00	51	1,600	0.032		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **20 - Pier S Ave & New Dock St**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.10	5	167	0.026		N-S(1):	0.225 *
	TH	0.90	43	1,433	0.030	*	N-S(2):	0.000
	LT	1.00	3	1,600	0.002		E-W(1):	0.014 *
Westbound	RT	0.00	1	1,600	0.001		E-W(2):	0.000
	TH	3.00	1	3,200	0.000			
	LT	1.00	10	1,600	0.006	*	V/C:	0.239
Northbound	RT	1.00	25	1,600	0.013		Lost Time:	0.100
	TH	0.98	245	1,574	0.156		ITS:	0.000
	LT	1.02	253	1,301	0.195	*		
Eastbound	RT	1.00	501	1,600	0.000		ICU:	0.339
	TH	2.00	9	3,200	0.003			
	LT	1.00	12	1,600	0.008	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.11	5	174	0.024		N-S(1):	0.210 *
	TH	0.89	41	1,426	0.029	*	N-S(2):	0.000
	LT	1.00	1	1,600	0.001		E-W(1):	0.018 *
Westbound	RT	0.00	3	1,600	0.002		E-W(2):	0.000
	TH	3.00	0	3,200	0.000			
	LT	1.00	14	1,600	0.009	*	V/C:	0.228
Northbound	RT	1.00	24	1,600	0.011		Lost Time:	0.100
	TH	1.00	289	1,600	0.181	*	ITS:	0.000
	LT	1.00	164	1,600	0.103			
Eastbound	RT	1.00	455	1,600	0.000		ICU:	0.328
	TH	2.00	11	3,200	0.003			
	LT	1.00	14	1,600	0.009	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.11	5	174	0.024		N-S(1):	0.210 *
	TH	0.89	41	1,426	0.029	*	N-S(2):	0.000
	LT	1.00	1	1,600	0.001		E-W(1):	0.018 *
Westbound	RT	0.00	3	1,600	0.002		E-W(2):	0.000
	TH	3.00	0	3,200	0.000			
	LT	1.00	14	1,600	0.009	*	V/C:	0.228
Northbound	RT	1.00	24	1,600	0.011		Lost Time:	0.100
	TH	1.00	289	1,600	0.181	*	ITS:	0.000
	LT	1.00	164	1,600	0.103			
Eastbound	RT	1.00	455	1,600	0.000		ICU:	0.328
	TH	2.00	11	3,200	0.003			
	LT	1.00	14	1,600	0.009	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **21 - Terminal Island Fwy & *CA-47 Westbound**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	WBR		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	454	3,200	0.142 *	N-S(1):	0.221 *
	TH	2.00	220	3,200	0.069	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.040
Westbound	RT	1.00	82	1,600	0.000	E-W(2):	0.099 *
	TH	2.00	318	3,200	0.099 *		
	LT	1.00	64	1,600	0.040	V/C:	0.320
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	252	3,200	0.079 *	ITS:	0.000
	LT	1.00	0	1,600	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.420
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	441	3,200	0.138 *	N-S(1):	0.276 *
	TH	2.00	188	3,200	0.059	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.030
Westbound	RT	1.00	251	1,600	0.000	E-W(2):	0.093 *
	TH	2.00	299	3,200	0.093 *		
	LT	1.00	48	1,600	0.030	V/C:	0.369
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	443	3,200	0.138 *	ITS:	0.000
	LT	1.00	5	1,600	0.003		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.469
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	490	3,200	0.153 *	N-S(1):	0.277 *
	TH	2.00	179	3,200	0.056	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.030
Westbound	RT	1.00	267	1,600	0.000	E-W(2):	0.092 *
	TH	2.00	294	3,200	0.092 *		
	LT	1.00	48	1,600	0.030	V/C:	0.369
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	398	3,200	0.124 *	ITS:	0.000
	LT	1.00	3	1,600	0.002		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.469
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **22 - Terminal Island Fwy & *CA-47 Eastbound**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.134 *
	TH	0.26	34	411	0.083		N-S(2):	0.083
	LT	1.74	231	2,232	0.104	*	E-W(1):	0.128 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.096
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.262
Northbound	RT	1.00	48	1,600	0.030	*	Lost Time:	0.100
	TH	2.00	1	3,200	0.000		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	16	0	0.000		ICU:	0.362
	TH	2.00	395	3,200	0.128	*		
	LT	2.00	246	2,560	0.096		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.111 *
	TH	0.26	29	422	0.069		N-S(2):	0.069
	LT	1.74	191	2,223	0.086	*	E-W(1):	0.107
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.176 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.287
Northbound	RT	1.00	40	1,600	0.025	*	Lost Time:	0.100
	TH	2.00	12	3,200	0.004		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	24	0	0.000		ICU:	0.387
	TH	2.00	318	3,200	0.107			
	LT	2.00	451	2,560	0.176	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.158 *
	TH	0.17	29	273	0.106		N-S(2):	0.106
	LT	1.83	311	2,342	0.133	*	E-W(1):	0.107
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.176 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.334
Northbound	RT	1.00	40	1,600	0.025	*	Lost Time:	0.100
	TH	2.00	12	3,200	0.004		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	24	0	0.000		ICU:	0.434
	TH	2.00	318	3,200	0.107			
	LT	2.00	451	2,560	0.176	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **23 - Pier S Avenue & *CA-47 Westbound**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	180	1,600	0.113		N-S(1):	0.040
	TH	2.00	384	3,200	0.120	*	N-S(2):	0.120 *
	LT	0.00	0	0	0.000		E-W(1):	0.126 *
Westbound	RT	2.00	402	3,200	0.126	*	E-W(2):	0.000
	TH	2.00	358	3,200	0.112			
	LT	0.00	0	0	0.000		V/C:	0.246
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	127	3,200	0.040		ITS:	0.000
	LT	0.00	0	0	0.000	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.346
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	179	1,600	0.112		N-S(1):	0.036
	TH	2.00	371	3,200	0.116	*	N-S(2):	0.116 *
	LT	0.00	0	0	0.000		E-W(1):	0.120 *
Westbound	RT	2.00	384	3,200	0.120	*	E-W(2):	0.000
	TH	2.00	371	3,200	0.116			
	LT	0.00	0	0	0.000		V/C:	0.236
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	114	3,200	0.036		ITS:	0.000
	LT	0.00	0	0	0.000	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.336
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	147	1,600	0.092		N-S(1):	0.050
	TH	2.00	184	3,200	0.058	*	N-S(2):	0.092 *
	LT	0.00	0	0	0.000		E-W(1):	0.169 *
Westbound	RT	2.00	253	3,200	0.079	*	E-W(2):	0.000
	TH	2.00	541	3,200	0.169			
	LT	0.00	0	0	0.000		V/C:	0.261
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	161	3,200	0.050		ITS:	0.000
	LT	0.00	0	0	0.000	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.361
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **24 - Pier S Avenue & *CA-47 Eastbound**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.152 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	389	2,560	0.152	*	E-W(1):	0.088 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.078
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.240
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.340
	TH	2.00	282	3,200	0.088	*		
	LT	1.00	124	1,600	0.078		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.143 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	366	2,560	0.143	*	E-W(1):	0.126 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.066
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.269
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.369
	TH	2.00	403	3,200	0.126	*		
	LT	1.00	105	1,600	0.066		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.078 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	200	2,560	0.078	*	E-W(1):	0.122 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.101
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.200
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.300
	TH	2.00	390	3,200	0.122	*		
	LT	1.00	162	1,600	0.101		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **25 - Pico Ave/Pier G Ave & Harbor Plaza Dr**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	SBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	91	1,600	0.028		N-S(1):	0.137 *
	TH	1.00	113	1,600	0.071		N-S(2):	0.074
	LT	1.00	146	1,600	0.091	*	E-W(1):	0.282 *
Westbound	RT	0.00	405	1,600	0.253	*	E-W(2):	0.000
	TH	2.00	29	1,600	0.018			
	LT	1.00	29	1,600	0.018		V/C:	0.419
Northbound	RT	0.00	29	0	0.000		Lost Time:	0.100
	TH	2.00	118	3,200	0.046	*	ITS:	0.000
	LT	1.00	4	1,600	0.003			
Eastbound	RT	0.19	6	300	0.019		ICU:	0.519
	TH	0.81	26	1,300	0.020			
	LT	2.00	73	2,560	0.029	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	37	1,600	0.000		N-S(1):	0.152 *
	TH	1.00	91	1,600	0.057		N-S(2):	0.060
	LT	1.00	175	1,600	0.109	*	E-W(1):	0.340 *
Westbound	RT	0.00	482	1,600	0.301	*	E-W(2):	0.000
	TH	2.00	29	1,600	0.018			
	LT	1.00	16	1,600	0.010		V/C:	0.492
Northbound	RT	0.00	29	0	0.000		Lost Time:	0.100
	TH	2.00	110	3,200	0.043	*	ITS:	0.000
	LT	1.00	4	1,600	0.003			
Eastbound	RT	0.16	5	250	0.019		ICU:	0.592
	TH	0.84	27	1,350	0.020			
	LT	2.00	99	2,560	0.039	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	37	1,600	0.000		N-S(1):	0.152 *
	TH	1.00	91	1,600	0.057		N-S(2):	0.060
	LT	1.00	175	1,600	0.109	*	E-W(1):	0.340 *
Westbound	RT	0.00	482	1,600	0.301	*	E-W(2):	0.000
	TH	2.00	29	1,600	0.018			
	LT	1.00	16	1,600	0.010		V/C:	0.492
Northbound	RT	0.00	29	0	0.000		Lost Time:	0.100
	TH	2.00	110	3,200	0.043	*	ITS:	0.000
	LT	1.00	4	1,600	0.003			
Eastbound	RT	0.16	5	250	0.019		ICU:	0.592
	TH	0.84	27	1,350	0.020			
	LT	2.00	99	2,560	0.039	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **27 - Harbor Plaza Dr & Queensway Dr**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	22	1,600	0.014 *	N-S(1):	0.158 *
	TH	2.00	8	3,200	0.003	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.004
Westbound	RT	0.00	3	0	0.000	E-W(2):	0.017 *
	TH	3.00	71	4,800	0.017 *		
	LT	0.00	7	1,600	0.004	V/C:	0.175
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.08	14	121	0.115	ITS:	0.000
	LT	1.92	355	2,463	0.144 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.275
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	32	1,600	0.020 *	N-S(1):	0.261 *
	TH	2.00	7	3,200	0.002	N-S(2):	0.000
	LT	0.00	1	1,600	0.001	E-W(1):	0.002
Westbound	RT	0.00	17	0	0.000	E-W(2):	0.026 *
	TH	3.00	105	4,800	0.026 *		
	LT	0.00	3	1,600	0.002	V/C:	0.287
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.06	18	93	0.193	ITS:	0.000
	LT	1.94	600	2,485	0.241 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.387
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	35	1,600	0.022 *	N-S(1):	0.249 *
	TH	2.00	9	3,200	0.003	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.004
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.041 *
	TH	3.00	177	4,800	0.041 *		
	LT	0.00	6	1,600	0.004	V/C:	0.290
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.06	17	94	0.182	ITS:	0.000
	LT	1.94	564	2,485	0.227 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.390
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **28 - Harbor Plaza Dr & Harbor Scenic Dr**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.119 *
	TH	2.00	6	1,600	0.004		N-S(2):	0.000
	LT	0.00	9	1,600	0.006	*	E-W(1):	0.230 *
Westbound	RT	2.00	335	3,200	0.102		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	198	1,600	0.124	*	V/C:	0.349
Northbound	RT	1.00	181	1,600	0.113	*	Lost Time:	0.100
	TH	2.00	28	3,200	0.009		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	7	1,600	0.004		ICU:	0.449
	TH	3.00	508	4,800	0.106	*		
	LT	1.00	10	1,600	0.006		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.061 *
	TH	2.00	5	1,600	0.003		N-S(2):	0.000
	LT	0.00	6	1,600	0.004	*	E-W(1):	0.281 *
Westbound	RT	2.00	554	3,200	0.171	*	E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	188	1,600	0.118		V/C:	0.342
Northbound	RT	1.00	91	1,600	0.057	*	Lost Time:	0.100
	TH	2.00	38	3,200	0.012		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	5	1,600	0.003		ICU:	0.442
	TH	3.00	526	4,800	0.110	*		
	LT	1.00	12	1,600	0.008		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.061 *
	TH	2.00	8	1,600	0.003		N-S(2):	0.000
	LT	0.00	2	1,600	0.001	*	E-W(1):	0.273 *
Westbound	RT	2.00	557	3,200	0.173	*	E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	201	1,600	0.126		V/C:	0.334
Northbound	RT	1.00	93	1,600	0.058	*	Lost Time:	0.100
	TH	2.00	34	3,200	0.011		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	4	1,600	0.003		ICU:	0.434
	TH	3.00	478	4,800	0.100	*		
	LT	1.00	10	1,600	0.006		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **30 - Long Beach Blvd. & PCH**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	88	1,600	0.022	N-S(1):	0.274 *
	TH	2.00	475	3,200	0.148	N-S(2):	0.248
	LT	1.00	162	1,600	0.101 *	E-W(1):	0.288
Westbound	RT	0.00	82	0	0.000	E-W(2):	0.320 *
	TH	3.00	1,139	4,800	0.254 *		
	LT	1.00	144	1,600	0.090	V/C:	0.594
Northbound	RT	1.00	63	1,600	0.000	Lost Time:	0.100
	TH	2.00	554	3,200	0.173 *	ITS:	0.000
	LT	1.00	160	1,600	0.100		
Eastbound	RT	0.00	73	0	0.000	ICU:	0.694
	TH	3.00	879	4,800	0.198		
	LT	1.00	106	1,600	0.066 *	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	94	1,600	0.019	N-S(1):	0.268 *
	TH	2.00	453	3,200	0.142	N-S(2):	0.233
	LT	1.00	167	1,600	0.104 *	E-W(1):	0.272 *
Westbound	RT	0.00	84	0	0.000	E-W(2):	0.255
	TH	3.00	762	4,800	0.176		
	LT	1.00	91	1,600	0.057 *	V/C:	0.540
Northbound	RT	1.00	56	1,600	0.007	Lost Time:	0.100
	TH	2.00	524	3,200	0.164 *	ITS:	0.000
	LT	1.00	145	1,600	0.091		
Eastbound	RT	0.00	89	0	0.000	ICU:	0.640
	TH	3.00	942	4,800	0.215 *		
	LT	1.00	127	1,600	0.079	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	140	1,600	0.035	N-S(1):	0.303 *
	TH	2.00	506	3,200	0.158	N-S(2):	0.240
	LT	1.00	181	1,600	0.113 *	E-W(1):	0.367 *
Westbound	RT	0.00	85	0	0.000	E-W(2):	0.283
	TH	3.00	767	4,800	0.178		
	LT	1.00	118	1,600	0.074 *	V/C:	0.670
Northbound	RT	1.00	89	1,600	0.019	Lost Time:	0.100
	TH	2.00	609	3,200	0.190 *	ITS:	0.000
	LT	1.00	131	1,600	0.082		
Eastbound	RT	0.00	85	0	0.000	ICU:	0.770
	TH	3.00	1,323	4,800	0.293 *		
	LT	1.00	168	1,600	0.105	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **31 - Long Beach Blvd. & Anaheim St.**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	58	1,600	0.036		N-S(1):	0.206
	TH	2.00	425	3,200	0.133	*	N-S(2):	0.217 *
	LT	1.00	103	1,600	0.064		E-W(1):	0.187
Westbound	RT	0.00	110	0	0.000		E-W(2):	0.250 *
	TH	3.00	1,078	4,800	0.249	*		
	LT	0.00	5	1,600	0.003		V/C:	0.467
Northbound	RT	0.00	53	0	0.000		Lost Time:	0.100
	TH	2.00	402	3,200	0.142		ITS:	0.000
	LT	1.00	134	1,600	0.084	*		
Eastbound	RT	0.00	64	0	0.000		ICU:	0.567
	TH	3.00	818	4,800	0.184			
	LT	0.00	1	1,600	0.001	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	77	1,600	0.048		N-S(1):	0.241 *
	TH	2.00	359	3,200	0.112		N-S(2):	0.216
	LT	1.00	118	1,600	0.074	*	E-W(1):	0.224 *
Westbound	RT	0.00	104	0	0.000		E-W(2):	0.177
	TH	3.00	736	4,800	0.176			
	LT	0.00	5	1,600	0.003	*	V/C:	0.465
Northbound	RT	0.00	86	0	0.000		Lost Time:	0.100
	TH	2.00	448	3,200	0.167	*	ITS:	0.000
	LT	1.00	167	1,600	0.104			
Eastbound	RT	0.00	75	0	0.000		ICU:	0.565
	TH	3.00	986	4,800	0.221	*		
	LT	0.00	2	1,600	0.001		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	70	1,600	0.043		N-S(1):	0.293 *
	TH	2.00	459	3,200	0.143		N-S(2):	0.250
	LT	1.00	147	1,600	0.092	*	E-W(1):	0.292 *
Westbound	RT	0.00	117	0	0.000		E-W(2):	0.177
	TH	3.00	712	4,800	0.174			
	LT	0.00	5	1,600	0.003	*	V/C:	0.585
Northbound	RT	0.00	98	0	0.000		Lost Time:	0.100
	TH	2.00	546	3,200	0.201	*	ITS:	0.000
	LT	1.00	171	1,600	0.107			
Eastbound	RT	0.00	85	0	0.000		ICU:	0.685
	TH	3.00	1,299	4,800	0.289	*		
	LT	0.00	4	1,600	0.003		LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **32 - Long Beach Blvd. & Ocean Blvd**
Description: **Existing Baseline**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	189	3,200	0.027	N-S(1):	0.036 *
	TH	0.00	0	0	0.000	N-S(2):	0.027
	LT	1.00	58	1,600	0.036 *	E-W(1):	0.102
Westbound	RT	1.00	130	1,600	0.081	E-W(2):	0.430 *
	TH	3.00	1,752	4,800	0.365 *		
	LT	0.00	0	0	0.000	V/C:	0.466
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	3	0	0.000	ICU:	0.566
	TH	3.00	488	4,800	0.102		
	LT	1.00	104	1,600	0.065 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.77	152	2,839	0.022	N-S(1):	0.067 *
	TH	0.00	0	0	0.000	N-S(2):	0.022
	LT	1.23	105	1,569	0.067 *	E-W(1):	0.185
Westbound	RT	1.00	87	1,600	0.021	E-W(2):	0.225 *
	TH	3.00	776	4,800	0.162 *		
	LT	0.00	1	1,600	0.001	V/C:	0.292
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.392
	TH	3.00	878	4,800	0.184		
	LT	1.00	100	1,600	0.063 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.86	209	2,968	0.024	N-S(1):	0.088 *
	TH	0.00	0	0	0.000	N-S(2):	0.024
	LT	1.14	129	1,466	0.088 *	E-W(1):	0.383 *
Westbound	RT	1.00	100	1,600	0.063	E-W(2):	0.264
	TH	3.00	824	4,800	0.172 *		
	LT	0.00	0	0	0.000	V/C:	0.471
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.571
	TH	3.00	1,838	4,800	0.383		
	LT	1.00	147	1,600	0.092 *	LOS:	A

* - Denotes critical movement

Level of Service Workheet
(Circular 212 Method)

I/S #:
4

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Existing Baseline (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			1			1
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	14	0	14	18	0	18
	Left-Through		0			0	
	Through	0	0	**40**	0	0	**33**
	Through-Right		0			0	
	Right	26	0	0	15	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	37	0	37	64	0	64
	Left-Through		0			0	
	Through	2	0	**109**	0	0	**130**
	Through-Right		0			0	
	Right	70	0	0	66	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	64	1	**64**	67	1	67
	Left-Through		0			0	
	Through	607	1	311	614	1	**316**
	Through-Right		1			1	
	Right	15	0	15	17	0	17
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	26	1	26	26	1	**26**
	Left-Through		0			0	
	Through	842	2	**421**	450	2	225
	Through-Right		0			0	
	Right	2	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	149		*North-South:*	163
			East-West:	485		*East-West:*	342
			SUM:	634		*SUM:*	505
VOLUME/CAPACITY *(V/C)* RATIO:				0.461			0.367
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.361**			**0.267**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Existing Baseline (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	17	0	17	39	0	39
	Left-Through		0			0	
	Through	0	0	**58**	0	0	**115**
	Through-Right		0			0	
	Right	41	0	0	76	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	2	1	**2**	9	1	**9**
	Left-Through		0			0	
	Through	0	0	0	0	0	1
	Through-Right		1			1	
	Right	0	0	0	1	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	1	**0**	1	1	1
	Left-Through		0			0	
	Through	705	1	367	755	1	**396**
	Through-Right		1			1	
	Right	28	0	28	37	0	37
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	75	1	75	62	1	**62**
	Left-Through		0			0	
	Through	991	1	**500**	684	1	346
	Through-Right		1			1	
	Right	9	0	9	7	0	7
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	60		*North-South:*	124
			East-West:	500		*East-West:*	458
			SUM:	560		*SUM:*	582
VOLUME/CAPACITY *(V/C)* RATIO:				0.393			0.408
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.293**			**0.308**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
8	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Existing Baseline (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	424	2	**169**	684	2	**275**
	Through-Right		1			1	
	Right	82	0	82	140	0	140
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	333	1	**333**	266	1	**266**
	Left-Through		0			0	
	Through	792	3	264	680	3	227
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	92	1	**92**	120	1	**120**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	376	1	43	289	1	23
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	502		*North-South:*	541
			East-West:	92		*East-West:*	120
			SUM:	594		*SUM:*	661
VOLUME/CAPACITY *(V/C)* RATIO:				0.417			0.464
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.317**			**0.364**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
9	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Existing Baseline (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	189	1	**189**	166	1	**166**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	268	1	113	234	1	120
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	310	1	**310**	228	1	**228**
	Left-Through		0			0	
	Through	949	2	475	917	2	459
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1081	2	**407**	847	2	**344**
	Through-Right		1			1	
	Right	141	0	141	184	0	184
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	189		*North-South:*	166
			East-West:	717		*East-West:*	572
			SUM:	906		*SUM:*	738
VOLUME/CAPACITY *(V/C)* RATIO:				0.636			0.518
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.536**			**0.418**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
13

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Henry Ford Av **East-West Street:** Anaheim St.
Scenario: Existing Baseline (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 3	SB--		3	NB-- 3	SB--	3
	EB-- 1	WB--		3	EB-- 1	WB--	3
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	72	1	**55**	207	1	**153**
	Left-Through		1			1	
	Through	92	1	55	252	1	153
	Through-Right		0			0	
	Right	93	1	18	95	1	12
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	104	1	104	104	1	104
	Left-Through		0			0	
	Through	264	2	**132**	223	2	**112**
	Through-Right		0			0	
	Right	55	1	0	62	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	80	1	**80**	126	1	126
	Left-Through		0			0	
	Through	692	2	346	820	2	**410**
	Through-Right		0			0	
	Right	145	1	0	137	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	75	1	75	83	1	**83**
	Left-Through		0			0	
	Through	1079	2	**540**	716	2	358
	Through-Right		0			0	
	Right	150	1	46	157	1	53
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	187		*North-South:*	265
			East-West:	620		*East-West:*	493
			SUM:	807		*SUM:*	758
VOLUME/CAPACITY *(V/C)* RATIO:				0.587			0.551
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.487**			**0.451**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
26	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** *Seaside Fwy
Scenario: Existing Baseline (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 1	SB--	0	NB-- 1	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	68	2	**37**	106	2	**58**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	187	1	0	423	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	2104	3	**701**	1652	3	**551**
	Through-Right		0			0	
	Right	157	1	139	97	1	68
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	48	2	**26**	32	2	**18**
	Left-Through		0			0	
	Through	1904	3	635	1471	3	490
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	37		*North-South:*	58
			East-West:	727		*East-West:*	569
			SUM:	764		*SUM:*	627
VOLUME/CAPACITY *(V/C)* RATIO:				0.536			0.440
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.436**			**0.340**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
29	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Existing Baseline (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			2			2
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	4	1	**4**	3	1	3
	Left-Through		0			0	
	Through	99	2	33	104	2	**36**
	Through-Right		1			1	
	Right	0	0	0	3	0	3
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	36	1	36	38	1	**38**
	Left-Through		0			0	
	Through	69	1	**65**	41	1	41
	Through-Right		1			1	
	Right	61	0	61	43	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	179	2	**98**	370	2	**204**
	Left-Through		0			0	
	Through	5	0	8	2	0	3
	Through-Right		1			1	
	Right	3	0	0	1	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	1	0	1
	Left-Through		1			1	
	Through	2	0	2	1	0	**2**
	Through-Right		0			0	
	Right	45	1	**9**	38	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	69		*North-South:*	74
			East-West:	107		*East-West:*	206
			SUM:	176		*SUM:*	280
VOLUME/CAPACITY *(V/C)* RATIO:				0.128			0.204
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.064**			**0.104**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
4	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Existing Baseline (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			1			1
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	7	0	7	7	0	7
	Left-Through		0			0	
	Through	0	0	**39**	0	0	**39**
	Through-Right		0			0	
	Right	32	0	0	32	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	34	0	34	34	0	34
	Left-Through		0			0	
	Through	0	0	**77**	0	0	**77**
	Through-Right		0			0	
	Right	43	0	0	43	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	52	1	52	52	1	52
	Left-Through		0			0	
	Through	1163	1	**586**	1163	1	**586**
	Through-Right		1			1	
	Right	8	0	8	8	0	8
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	7	1	**7**	7	1	**7**
	Left-Through		0			0	
	Through	524	2	262	524	2	262
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	116		*North-South:*	116
			East-West:	593		*East-West:*	593
			SUM:	709		*SUM:*	709
VOLUME/CAPACITY *(V/C)* RATIO:				0.516			0.516
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.416**			**0.416**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Existing Baseline (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	35	0	35	35	0	35
	Left-Through		0			0	
	Through	0	0	**124**	0	0	**124**
	Through-Right		0			0	
	Right	89	0	0	89	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	1	0	2	1	0	2
	Through-Right		1			1	
	Right	1	0	0	1	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	3	1	3	3	1	3
	Left-Through		0			0	
	Through	1152	1	**598**	1152	1	**598**
	Through-Right		1			1	
	Right	44	0	44	44	0	44
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	65	1	**65**	65	1	**65**
	Left-Through		0			0	
	Through	802	1	407	802	1	407
	Through-Right		1			1	
	Right	11	0	11	11	0	11
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	134		*North-South:*	134
			East-West:	663		*East-West:*	663
			SUM:	797		*SUM:*	797
VOLUME/CAPACITY *(V/C)* RATIO:				0.559			0.559
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.459**			**0.459**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Port of Long Beach Master Plan Update				
8	North-South Street:	Alameda St	East-West Street:	O St		
	Scenario:	Existing Baseline (PM Only)				
	Count Date:	6/28/2018	Analyst:	Fehr & Peers	Date:	1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	3	EB-- 0	WB--	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	733	2	**299**	733	2	**299**
	Through-Right		1			1	
	Right	165	0	165	165	0	165
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	357	1	**357**	357	1	**357**
	Left-Through		0			0	
	Through	918	3	306	918	3	306
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	92	1	**92**	92	1	**92**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	441	1	84	441	1	84
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			North-South:	656		North-South:	656
			East-West:	92		East-West:	92
			SUM:	748		SUM:	748
VOLUME/CAPACITY (V/C) RATIO:				0.525			0.525
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.425**			**0.425**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Port of Long Beach Master Plan Update		
9	North-South Street:	O St	East-West Street:	PCH
	Scenario:	Existing Baseline (PM Only)		
	Count Date:	6/28/2018	Analyst: Fehr & Peers	Date: 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	168	1	168	168	1	168
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	355	1	**191**	355	1	**191**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	328	1	**328**	328	1	**328**
	Left-Through		0			0	
	Through	1298	2	649	1298	2	649
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1153	2	**450**	1153	2	**450**
	Through-Right		1			1	
	Right	198	0	198	198	0	198
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			North-South:	191		North-South:	191
			East-West:	778		East-West:	778
			SUM:	969		SUM:	969
VOLUME/CAPACITY (V/C) RATIO:				0.680			0.680
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.580**			**0.580**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Port of Long Beach Master Plan Update		
13	North-South Street:	Henry Ford Av	East-West Street:	Anaheim St.
	Scenario:	Existing Baseline (PM Only)		
	Count Date:	6/28/2018	Analyst: Fehr & Peers	Date: 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 3	SB--	3	NB-- 3	SB--	3
		EB-- 1	WB--	3	EB-- 1	WB--	3
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	183	1	106	183	1	106
	Left-Through		1			1	
	Through	136	1	**106**	136	1	**106**
	Through-Right		0			0	
	Right	135	1	46	135	1	46
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	175	1	**175**	175	1	**175**
	Left-Through		0			0	
	Through	239	2	120	239	2	120
	Through-Right		0			0	
	Right	76	1	0	76	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	84	1	84	84	1	84
	Left-Through		0			0	
	Through	1335	2	**668**	1335	2	**668**
	Through-Right		0			0	
	Right	196	1	0	196	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	89	1	**89**	89	1	**89**
	Left-Through		0			0	
	Through	787	2	394	787	2	394
	Through-Right		0			0	
	Right	141	1	0	141	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			North-South:	281		North-South:	281
			East-West:	757		East-West:	757
			SUM:	1038		SUM:	1038
VOLUME/CAPACITY (V/C) RATIO:				0.755			0.755
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.655**			**0.655**
LEVEL OF SERVICE (LOS):				**B**			**B**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
26	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** *Seaside Fwy
Scenario: Existing Baseline (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 1	SB--	0	NB-- 1	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	150	2	**83**	150	2	**83**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	392	1	0	392	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	2478	3	**826**	2478	3	**826**
	Through-Right		0			0	
	Right	236	1	195	236	1	195
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	41	2	**23**	41	2	**23**
	Left-Through		0			0	
	Through	2011	3	670	2011	3	670
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	83		*North-South:*	83
			East-West:	849		*East-West:*	849
			SUM:	932		*SUM:*	932
VOLUME/CAPACITY *(V/C)* RATIO:				0.654			0.654
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.554**			**0.554**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
29	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Existing Baseline (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM				PM			
No. of Phases					4				4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					2				2
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--		0	NB-- 0	SB--		0
		EB-- 0	WB--		3	EB-- 0	WB--		3
ATSAC-1 or ATSAC+ATCS-2?					2				2
Override Capacity					0				0
MOVEMENT		Volume	No. of Lanes	Lane Volume		Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	2	1	2		2	1	2	
	Left-Through		0				0		
	Through	180	2	**61**		180	2	**61**	
	Through-Right		1				1		
	Right	2	0	2		2	0	2	
	Left-Through-Right		0				0		
	Left-Right		0				0		
SOUTHBOUND	Left	72	1	**72**		72	1	**72**	
	Left-Through		0				0		
	Through	123	1	102		123	1	102	
	Through-Right		1				1		
	Right	81	0	81		81	0	81	
	Left-Through-Right		0				0		
	Left-Right		0				0		
EASTBOUND	Left	301	2	**166**		301	2	**166**	
	Left-Through		0				0		
	Through	5	0	16		5	0	16	
	Through-Right		1				1		
	Right	11	0	0		11	0	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
WESTBOUND	Left	0	0	0		0	0	0	
	Left-Through		1				1		
	Through	0	0	**0**		0	0	**0**	
	Through-Right		0				0		
	Right	58	1	0		58	1	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
CRITICAL VOLUMES			North-South:	133			North-South:	133	
			East-West:	166			East-West:	166	
			SUM:	299			SUM:	299	
VOLUME/CAPACITY (V/C) RATIO:				0.217				0.217	
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.117**				**0.117**	
LEVEL OF SERVICE (LOS):				**A**				**A**	

Version: 1i Beta; 8/4/2011

Project Title: **PoLB Master Plan EIR**
Intersection: **1 - Alameda St & Sepulveda Blvd Ramp**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.313 *
	TH	3.00	990	4,800	0.206		N-S(2):	0.206
	LT	1.00	270	1,600	0.169	*	E-W(1):	0.069 *
Westbound	RT	2.00	330	3,200	0.019		E-W(2):	0.019
	TH	0.00	0	0	0.000			
	LT	1.00	110	1,600	0.069	*	V/C:	0.382
Northbound	RT	0.00	110	0	0.000		Lost Time:	0.100
	TH	3.00	580	4,800	0.144	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.482
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.305 *
	TH	3.00	830	4,800	0.173		N-S(2):	0.173
	LT	1.00	180	1,600	0.113	*	E-W(1):	0.081 *
Westbound	RT	2.00	320	3,200	0.044		E-W(2):	0.044
	TH	0.00	0	0	0.000			
	LT	1.00	130	1,600	0.081	*	V/C:	0.386
Northbound	RT	0.00	160	0	0.000		Lost Time:	0.100
	TH	3.00	760	4,800	0.192	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.486
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.396 *
	TH	3.00	1,130	4,800	0.235		N-S(2):	0.235
	LT	1.00	290	1,600	0.181	*	E-W(1):	0.063 *
Westbound	RT	2.00	390	3,200	0.031		E-W(2):	0.031
	TH	0.00	0	0	0.000			
	LT	1.00	100	1,600	0.063	*	V/C:	0.459
Northbound	RT	0.00	110	0	0.000		Lost Time:	0.100
	TH	3.00	920	4,800	0.215	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.559
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **2 - Alameda St Ramp & Sepulveda Blvd**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	190	1,600	0.059		N-S(1):	0.082 *
	TH	0.32	30	505	0.059		N-S(2):	0.065
	LT	1.68	160	2,425	0.066	*	E-W(1):	0.187
Westbound	RT	1.00	210	1,600	0.065		E-W(2):	0.569 *
	TH	1.00	720	1,600	0.450	*		
	LT	1.00	10	1,600	0.006		V/C:	0.651
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	30	1,600	0.016	*	ITS:	0.000
	LT	0.00	10	1,600	0.006			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.751
	TH	2.00	570	3,200	0.181			
	LT	1.00	190	1,600	0.119	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	150	1,600	0.034		N-S(1):	0.072 *
	TH	0.12	10	188	0.053		N-S(2):	0.059
	LT	1.88	160	2,711	0.059	*	E-W(1):	0.203
Westbound	RT	1.00	230	1,600	0.085		E-W(2):	0.388 *
	TH	1.00	430	1,600	0.269	*		
	LT	1.00	10	1,600	0.006		V/C:	0.460
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	20	1,600	0.013	*	ITS:	0.000
	LT	0.00	10	1,600	0.006			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.560
	TH	2.00	620	3,200	0.197			
	LT	1.00	190	1,600	0.119	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	190	1,600	0.028		N-S(1):	0.082 *
	TH	0.10	10	160	0.062		N-S(2):	0.068
	LT	1.90	190	2,736	0.069	*	E-W(1):	0.306
Westbound	RT	1.00	190	1,600	0.119		E-W(2):	0.494 *
	TH	1.00	500	1,600	0.313	*		
	LT	1.00	0	1,600	0.000		V/C:	0.576
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	20	1,600	0.013	*	ITS:	0.000
	LT	0.00	10	1,600	0.006			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.676
	TH	2.00	970	3,200	0.306			
	LT	1.00	290	1,600	0.181	*	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **3 - Intermodal Wy & Sepulveda Blvd**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.231
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.325 *
	TH	2.00	1,010	3,200	0.319 *		
	LT	0.00	0	0	0.000	V/C:	0.331
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.431
	TH	2.00	740	3,200	0.231		
	LT	1.00	10	1,600	0.006 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.244
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.253 *
	TH	2.00	780	3,200	0.247 *		
	LT	0.00	0	0	0.000	V/C:	0.259
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.359
	TH	2.00	780	3,200	0.244		
	LT	1.00	10	1,600	0.006 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.388 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.259
	TH	2.00	800	3,200	0.253 *		
	LT	0.00	0	0	0.000	V/C:	0.394
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.494
	TH	2.00	1,240	3,200	0.388		
	LT	1.00	10	1,600	0.006 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **6 - Terminal Island Fwy & Willow St/Sepulveda Blvd**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, EBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.000
	TH	0.00	0	0	0.000	*	N-S(2):	0.135 *
	LT	0.00	0	0	0.000		E-W(1):	0.217
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.234 *
	TH	2.00	730	3,200	0.228	*		
	LT	2.00	220	2,880	0.076		V/C:	0.369
Northbound	RT	2.00	190	3,200	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	390	2,880	0.135	*		
Eastbound	RT	1.00	340	1,600	0.077		ICU:	0.469
	TH	2.00	450	3,200	0.141			
	LT	1.00	10	1,600	0.006	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.181
	TH	0.00	0	0	0.000	*	N-S(2):	0.201 *
	LT	0.00	0	0	0.000		E-W(1):	0.218 *
Westbound	RT	0.00	10	0	0.000		E-W(2):	0.103
	TH	2.00	300	3,200	0.097			
	LT	2.00	150	2,880	0.052	*	V/C:	0.419
Northbound	RT	2.00	320	3,200	0.048		Lost Time:	0.100
	TH	0.03	10	55	0.181		ITS:	0.000
	LT	1.97	570	2,830	0.201	*		
Eastbound	RT	1.00	370	1,600	0.030		ICU:	0.519
	TH	2.00	530	3,200	0.166	*		
	LT	1.00	10	1,600	0.006		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.103
	TH	0.00	0	0	0.000	*	N-S(2):	0.135 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.379 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.159
	TH	2.00	510	3,200	0.159			
	LT	2.00	180	2,880	0.063	*	V/C:	0.514
Northbound	RT	2.00	510	3,200	0.097		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	390	2,880	0.135	*		
Eastbound	RT	1.00	450	1,600	0.281		ICU:	0.614
	TH	2.00	1,010	3,200	0.316	*		
	LT	1.00	0	1,600	0.000		LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **7 - Santa Fe Ave & PCH**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	140	1,600	0.063		N-S(1):	0.235
	TH	2.00	330	3,200	0.103	*	N-S(2):	0.247 *
	LT	1.00	190	1,600	0.119		E-W(1):	0.278
Westbound	RT	0.00	100	0	0.000		E-W(2):	0.388 *
	TH	2.00	980	3,200	0.338	*		
	LT	1.00	50	1,600	0.031		V/C:	0.635
Northbound	RT	1.00	50	1,600	0.016		Lost Time:	0.100
	TH	2.00	370	3,200	0.116		ITS:	0.000
	LT	1.00	230	1,600	0.144	*		
Eastbound	RT	1.00	130	1,600	0.009		ICU:	0.735
	TH	2.00	790	3,200	0.247			
	LT	1.00	80	1,600	0.050	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.034		N-S(1):	0.206
	TH	2.00	230	3,200	0.072	*	N-S(2):	0.228 *
	LT	1.00	160	1,600	0.100		E-W(1):	0.357 *
Westbound	RT	0.00	100	0	0.000		E-W(2):	0.347
	TH	2.00	830	3,200	0.291			
	LT	1.00	110	1,600	0.069	*	V/C:	0.585
Northbound	RT	1.00	100	1,600	0.028		Lost Time:	0.100
	TH	2.00	340	3,200	0.106		ITS:	0.000
	LT	1.00	250	1,600	0.156	*		
Eastbound	RT	1.00	150	1,600	0.016		ICU:	0.685
	TH	2.00	920	3,200	0.288	*		
	LT	1.00	90	1,600	0.056		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	120	1,600	0.038		N-S(1):	0.278 *
	TH	2.00	250	3,200	0.078	*	N-S(2):	0.272
	LT	1.00	170	1,600	0.106		E-W(1):	0.432 *
Westbound	RT	0.00	100	0	0.000		E-W(2):	0.384
	TH	2.00	890	3,200	0.309			
	LT	1.00	110	1,600	0.069	*	V/C:	0.710
Northbound	RT	1.00	110	1,600	0.034		Lost Time:	0.100
	TH	2.00	550	3,200	0.172		ITS:	0.000
	LT	1.00	310	1,600	0.194	*		
Eastbound	RT	1.00	110	1,600	0.000		ICU:	0.810
	TH	2.00	1,160	3,200	0.363	*		
	LT	1.00	120	1,600	0.075		LOS:	D

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **10 - Santa Fe Ave & Anaheim St.**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	120	1,600	0.053	N-S(1):	0.219 *
	TH	2.00	170	3,200	0.053	N-S(2):	0.072
	LT	1.00	200	1,600	0.125 *	E-W(1):	0.161
Westbound	RT	1.00	280	1,600	0.113	E-W(2):	0.234 *
	TH	3.00	910	4,800	0.190 *		
	LT	1.00	20	1,600	0.013	V/C:	0.453
Northbound	RT	1.00	30	1,600	0.013	Lost Time:	0.100
	TH	2.00	300	3,200	0.094 *	ITS:	0.000
	LT	1.00	30	1,600	0.019		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.553
	TH	3.00	700	4,800	0.148		
	LT	1.00	70	1,600	0.044 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	110	1,600	0.038	N-S(1):	0.206 *
	TH	2.00	210	3,200	0.066	N-S(2):	0.091
	LT	1.00	210	1,600	0.131 *	E-W(1):	0.201
Westbound	RT	1.00	280	1,600	0.109	E-W(2):	0.234 *
	TH	3.00	820	4,800	0.171 *		
	LT	1.00	20	1,600	0.013	V/C:	0.440
Northbound	RT	1.00	40	1,600	0.019	Lost Time:	0.100
	TH	2.00	240	3,200	0.075 *	ITS:	0.000
	LT	1.00	40	1,600	0.025		
Eastbound	RT	0.00	20	0	0.000	ICU:	0.540
	TH	3.00	880	4,800	0.188		
	LT	1.00	100	1,600	0.063 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	110	1,600	0.025	N-S(1):	0.269 *
	TH	2.00	220	3,200	0.069	N-S(2):	0.094
	LT	1.00	260	1,600	0.163 *	E-W(1):	0.246
Westbound	RT	1.00	430	1,600	0.188	E-W(2):	0.276 *
	TH	3.00	680	4,800	0.142 *		
	LT	1.00	20	1,600	0.013	V/C:	0.545
Northbound	RT	1.00	50	1,600	0.025	Lost Time:	0.100
	TH	2.00	340	3,200	0.106 *	ITS:	0.000
	LT	1.00	40	1,600	0.025		
Eastbound	RT	0.00	30	0	0.000	ICU:	0.645
	TH	3.00	1,090	4,800	0.233		
	LT	1.00	140	1,600	0.088 *	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **11 - Harbor Ave & Anaheim St.**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000		N-S(1):	0.112 *
	TH	1.00	30	1,600	0.094		N-S(2):	0.100
	LT	0.00	90	1,600	0.056	*	E-W(1):	0.208
Westbound	RT	1.00	150	1,600	0.066		E-W(2):	0.219 *
	TH	4.00	1,320	6,400	0.206	*		
	LT	1.00	40	1,600	0.025		V/C:	0.331
Northbound	RT	0.78	70	1,244	0.044		Lost Time:	0.100
	TH	0.22	20	356	0.056	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.00	20	0	0.000		ICU:	0.431
	TH	3.00	860	4,800	0.183			
	LT	1.00	20	1,600	0.013	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000		N-S(1):	0.138 *
	TH	1.00	30	1,600	0.113		N-S(2):	0.126
	LT	0.00	120	1,600	0.075	*	E-W(1):	0.240 *
Westbound	RT	1.00	140	1,600	0.050		E-W(2):	0.200
	TH	4.00	1,160	6,400	0.181			
	LT	1.00	20	1,600	0.013	*	V/C:	0.378
Northbound	RT	0.60	60	960	0.056		Lost Time:	0.100
	TH	0.40	40	640	0.063	*	ITS:	0.000
	LT	1.00	20	1,600	0.013			
Eastbound	RT	0.00	40	0	0.000		ICU:	0.478
	TH	3.00	1,050	4,800	0.227	*		
	LT	1.00	30	1,600	0.019		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000		N-S(1):	0.156 *
	TH	1.00	30	1,600	0.113		N-S(2):	0.126
	LT	0.00	120	1,600	0.075	*	E-W(1):	0.298 *
Westbound	RT	1.00	130	1,600	0.044		E-W(2):	0.187
	TH	4.00	1,000	6,400	0.156			
	LT	1.00	30	1,600	0.019	*	V/C:	0.454
Northbound	RT	0.54	70	862	0.072		Lost Time:	0.100
	TH	0.46	60	738	0.081	*	ITS:	0.000
	LT	1.00	20	1,600	0.013			
Eastbound	RT	0.00	30	0	0.000		ICU:	0.554
	TH	3.00	1,310	4,800	0.279	*		
	LT	1.00	50	1,600	0.031		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **12 - 9th St/East I St & Anaheim St.**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.138
	TH	2.00	20	3,200	0.006 *	N-S(2):	0.244 *
	LT	1.00	160	1,600	0.100	E-W(1):	0.183
Westbound	RT	1.00	140	1,600	0.038	E-W(2):	0.306 *
	TH	2.00	900	3,200	0.281 *		
	LT	1.00	10	1,600	0.006	V/C:	0.550
Northbound	RT	1.00	20	1,600	0.009	Lost Time:	0.100
	TH	2.00	120	3,200	0.038	ITS:	0.000
	LT	1.00	380	1,600	0.238 *		
Eastbound	RT	0.00	170	0	0.000	ICU:	0.650
	TH	3.00	680	4,800	0.177		
	LT	1.00	40	1,600	0.025 *	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.000	N-S(1):	0.097
	TH	2.00	30	3,200	0.009 *	N-S(2):	0.134 *
	LT	1.00	130	1,600	0.081	E-W(1):	0.227
Westbound	RT	1.00	170	1,600	0.066	E-W(2):	0.319 *
	TH	2.00	780	3,200	0.244 *		
	LT	1.00	10	1,600	0.006	V/C:	0.453
Northbound	RT	1.00	10	1,600	0.003	Lost Time:	0.100
	TH	2.00	50	3,200	0.016	ITS:	0.000
	LT	1.00	200	1,600	0.125 *		
Eastbound	RT	0.00	210	0	0.000	ICU:	0.553
	TH	3.00	850	4,800	0.221		
	LT	1.00	120	1,600	0.075 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.103
	TH	2.00	240	3,200	0.075 *	N-S(2):	0.244 *
	LT	1.00	110	1,600	0.069	E-W(1):	0.358 *
Westbound	RT	1.00	110	1,600	0.034	E-W(2):	0.272
	TH	2.00	770	3,200	0.241 *		
	LT	1.00	10	1,600	0.006	V/C:	0.602
Northbound	RT	1.00	20	1,600	0.009	Lost Time:	0.100
	TH	2.00	110	3,200	0.034	ITS:	0.000
	LT	1.00	270	1,600	0.169 *		
Eastbound	RT	0.00	490	0	0.000	ICU:	0.702
	TH	3.00	1,200	4,800	0.352		
	LT	1.00	50	1,600	0.031 *	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **14 - Pico Ave & Pier B St**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.182
	TH	1.00	340	1,600	0.213 *	N-S(2):	0.241 *
	LT	1.00	20	1,600	0.013	E-W(1):	0.066
Westbound	RT	0.00	60	0	0.000	E-W(2):	0.213 *
	TH	2.00	10	1,600	0.044 *		
	LT	0.00	100	1,600	0.063	V/C:	0.454
Northbound	RT	1.00	40	1,600	0.000	Lost Time:	0.100
	TH	1.00	270	1,600	0.169	ITS:	0.000
	LT	2.00	80	2,880	0.028 *		
Eastbound	RT	1.00	230	1,600	0.000	ICU:	0.554
	TH	2.00	10	3,200	0.003		
	LT	0.00	270	1,600	0.169 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	210	1,600	0.069	N-S(1):	0.282
	TH	1.00	240	1,600	0.150 *	N-S(2):	0.376 *
	LT	1.00	20	1,600	0.013	E-W(1):	0.034
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.144 *
	TH	2.00	10	1,600	0.019 *		
	LT	0.00	50	1,600	0.031	V/C:	0.520
Northbound	RT	1.00	170	1,600	0.091	Lost Time:	0.100
	TH	1.00	430	1,600	0.269	ITS:	0.000
	LT	2.00	650	2,880	0.226 *		
Eastbound	RT	1.00	640	1,600	0.000	ICU:	0.620
	TH	2.00	10	3,200	0.003		
	LT	0.00	200	1,600	0.125 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	220	1,600	0.106	N-S(1):	0.350 *
	TH	1.00	310	1,600	0.194 *	N-S(2):	0.270
	LT	1.00	130	1,600	0.081	E-W(1):	0.056
Westbound	RT	0.00	30	0	0.000	E-W(2):	0.088 *
	TH	2.00	10	1,600	0.025 *		
	LT	0.00	80	1,600	0.050	V/C:	0.438
Northbound	RT	1.00	300	1,600	0.163	Lost Time:	0.100
	TH	1.00	430	1,600	0.269	ITS:	0.000
	LT	2.00	220	2,880	0.076 *		
Eastbound	RT	1.00	180	1,600	0.000	ICU:	0.538
	TH	2.00	20	3,200	0.006		
	LT	0.00	100	1,600	0.063 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **15 - Henry Ford Av/Terminal Isl Ramps & Pier A Way**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	NBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.142
	TH	2.00	440	3,200	0.144	*	N-S(2):	0.150 *
	LT	2.00	300	2,880	0.104		E-W(1):	0.022
Westbound	RT	1.00	180	1,600	0.060	*	E-W(2):	0.085 *
	TH	0.00	0	0	0.000			
	LT	1.00	30	1,600	0.019		V/C:	0.235
Northbound	RT	1.00	60	1,600	0.000		Lost Time:	0.100
	TH	2.00	120	3,200	0.038		ITS:	0.000
	LT	1.00	10	1,600	0.006	*		
Eastbound	RT	1.00	10	1,600	0.003		ICU:	0.335
	TH	0.00	0	0	0.000			
	LT	1.00	40	1,600	0.025	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	40	0	0.000		N-S(1):	0.160 *
	TH	2.00	370	3,200	0.128		N-S(2):	0.134
	LT	2.00	200	2,880	0.069	*	E-W(1):	0.051
Westbound	RT	1.00	450	1,600	0.247	*	E-W(2):	0.278 *
	TH	0.17	10	267	0.038			
	LT	0.83	50	1,333	0.038		V/C:	0.438
Northbound	RT	1.00	90	1,600	0.000		Lost Time:	0.100
	TH	2.00	290	3,200	0.091	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.50	10	800	0.009		ICU:	0.538
	TH	0.50	10	800	0.013			
	LT	1.00	50	1,600	0.031	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	50	0	0.000		N-S(1):	0.227 *
	TH	2.00	340	3,200	0.122		N-S(2):	0.128
	LT	2.00	340	2,880	0.118	*	E-W(1):	0.057
Westbound	RT	1.00	650	1,600	0.347	*	E-W(2):	0.385 *
	TH	0.14	10	229	0.044			
	LT	0.86	60	1,371	0.044		V/C:	0.612
Northbound	RT	1.00	70	1,600	0.000		Lost Time:	0.100
	TH	2.00	350	3,200	0.109	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.50	10	800	0.009		ICU:	0.712
	TH	0.50	10	800	0.013			
	LT	1.00	60	1,600	0.038	*	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **16 - Pico Ave & Pier C St**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	210	3,200	0.000		N-S(1):	0.091
	TH	3.00	460	4,800	0.096	*	N-S(2):	0.134 *
	LT	0.00	0	0	0.000		E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.069 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.203
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	290	3,200	0.091		ITS:	0.000
	LT	1.00	60	1,600	0.038	*		
Eastbound	RT	0.00	10	0	0.000		ICU:	0.303
	TH	0.00	0	0	0.000			
	LT	0.00	110	1,600	0.069	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	160	3,200	0.000		N-S(1):	0.334 *
	TH	3.00	750	4,800	0.156		N-S(2):	0.175
	LT	0.00	0	0	0.000	*	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.113 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.447
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	1,070	3,200	0.334	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	0.00	60	0	0.000		ICU:	0.547
	TH	0.00	0	0	0.000			
	LT	0.00	180	1,600	0.113	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	130	3,200	0.000		N-S(1):	0.216 *
	TH	3.00	420	4,800	0.088		N-S(2):	0.107
	LT	0.00	0	0	0.000	*	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.169 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.385
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	690	3,200	0.216	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	0.00	90	0	0.000		ICU:	0.485
	TH	0.00	0	0	0.000			
	LT	0.00	270	1,600	0.169	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **17 - Pico Ave & Pier D St**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR, WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	160	0	0.000		N-S(1):	0.100
	TH	2.00	320	3,200	0.150	*	N-S(2):	0.194 *
	LT	1.00	10	1,600	0.006		E-W(1):	0.006
Westbound	RT	1.00	10	1,600	0.000		E-W(2):	0.021 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.215
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	300	3,200	0.094		ITS:	0.000
	LT	1.00	70	1,600	0.044	*		
Eastbound	RT	1.00	50	1,600	0.000		ICU:	0.315
	TH	0.00	0	0	0.000			
	LT	2.00	60	2,880	0.021	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	110	0	0.000		N-S(1):	0.284 *
	TH	2.00	660	3,200	0.241		N-S(2):	0.260
	LT	1.00	10	1,600	0.006	*	E-W(1):	0.087
Westbound	RT	1.00	10	1,600	0.000		E-W(2):	0.090 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.374
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	880	3,200	0.278	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	1.00	110	1,600	0.050		ICU:	0.474
	TH	0.08	10	123	0.081			
	LT	1.92	250	2,769	0.090	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	100	0	0.000		N-S(1):	0.175
	TH	2.00	410	3,200	0.159		N-S(2):	0.184 *
	LT	1.00	0	1,600	0.000	*	E-W(1):	0.044
Westbound	RT	1.00	10	1,600	0.006		E-W(2):	0.048 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.232
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	560	3,200	0.175	*	ITS:	0.000
	LT	1.00	40	1,600	0.025			
Eastbound	RT	1.00	100	1,600	0.038		ICU:	0.332
	TH	0.00	0	0	0.000			
	LT	2.00	120	2,880	0.042	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **181 - Pico Ave & Westbound Ocean Ave On Ramp**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	120	0	0.000		N-S(1):	0.122
	TH	2.00	230	1,600	0.113	*	N-S(2):	0.263 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000 *
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.263
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	360	3,200	0.116		ITS:	0.000
	LT	1.00	240	1,600	0.150	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.363
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	450	1,600	0.281	*	N-S(1):	0.287
	TH	2.00	310	1,600	0.194		N-S(2):	0.550 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000 *
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.550
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	890	3,200	0.281		ITS:	0.000
	LT	1.00	430	1,600	0.269	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.650
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	180	0	0.000	*	N-S(1):	0.194
	TH	2.00	320	1,600	0.159		N-S(2):	0.328 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000 *
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.328
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	590	3,200	0.188		ITS:	0.000
	LT	1.00	270	1,600	0.169	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.428
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **182 - Pico Ave & Westbound Ocean Ave Off Ramp**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.175 *
	TH	2.00	290	3,200	0.091	N-S(2):	0.091
	LT	0.00	0	0	0.000 *	E-W(1):	0.006
Westbound	RT	0.00	50	1,600	0.031 *	E-W(2):	0.031 *
	TH	2.00	0	1,600	0.000		
	LT	1.00	10	1,600	0.006	V/C:	0.206
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	560	3,200	0.175 *	ITS:	0.000
	LT	1.00	0	1,600	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.306
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.409 *
	TH	2.00	410	3,200	0.128	N-S(2):	0.128
	LT	0.00	0	0	0.000 *	E-W(1):	0.013
Westbound	RT	0.00	50	1,600	0.031 *	E-W(2):	0.031 *
	TH	2.00	0	1,600	0.000		
	LT	1.00	20	1,600	0.013	V/C:	0.440
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,310	3,200	0.409 *	ITS:	0.000
	LT	1.00	0	1,600	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.540
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.250 *
	TH	2.00	360	3,200	0.113	N-S(2):	0.113
	LT	0.00	0	0	0.000 *	E-W(1):	0.008
Westbound	RT	0.00	40	0	0.000 *	E-W(2):	0.025 *
	TH	1.00	0	1,600	0.025		
	LT	2.00	20	2,560	0.008	V/C:	0.275
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	800	3,200	0.250 *	ITS:	0.000
	LT	1.00	0	1,600	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.375
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **19 - Pico Ave & Pier E St/Eastbound Ocean Ave Ramp**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.235 *
	TH	2.00	270	3,200	0.091	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.150 *
Westbound	RT	0.00	80	0	0.000		E-W(2):	0.082
	TH	2.00	20	1,600	0.063			
	LT	0.00	210	1,600	0.131	*	V/C:	0.385
Northbound	RT	0.00	40	0	0.000		Lost Time:	0.100
	TH	2.00	330	3,200	0.116		ITS:	0.000
	LT	1.00	230	1,600	0.144	*		
Eastbound	RT	0.33	10	533	0.000		ICU:	0.485
	TH	0.67	20	1,067	0.019	*		
	LT	1.00	30	1,600	0.019		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.488 *
	TH	2.00	370	3,200	0.119	*	N-S(2):	0.000
	LT	1.00	40	1,600	0.025		E-W(1):	0.100
Westbound	RT	0.00	110	0	0.000		E-W(2):	0.106 *
	TH	2.00	10	1,600	0.075	*		
	LT	0.00	130	1,600	0.081		V/C:	0.594
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	1,170	3,200	0.369	*	ITS:	0.000
	LT	1.00	260	1,600	0.163			
Eastbound	RT	0.33	10	533	0.000		ICU:	0.694
	TH	0.67	20	1,067	0.019			
	LT	1.00	50	1,600	0.031	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.325 *
	TH	2.00	320	3,200	0.106	*	N-S(2):	0.000
	LT	1.00	20	1,600	0.013		E-W(1):	0.076
Westbound	RT	0.00	110	1,600	0.069		E-W(2):	0.119 *
	TH	2.00	20	1,600	0.013	*		
	LT	0.00	60	1,600	0.038		V/C:	0.444
Northbound	RT	0.00	40	0	0.000		Lost Time:	0.100
	TH	2.00	660	3,200	0.219	*	ITS:	0.000
	LT	1.00	190	1,600	0.119			
Eastbound	RT	0.33	20	533	0.000		ICU:	0.544
	TH	0.67	40	1,067	0.038			
	LT	1.00	80	1,600	0.050	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **20 - Pier S Ave & New Dock St**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.230 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.104 *
Westbound	RT	0.00	10	1,600	0.006		E-W(2):	0.000
	TH	3.00	10	3,200	0.003			
	LT	1.00	146	1,600	0.091	*	V/C:	0.334
Northbound	RT	1.00	195	1,600	0.076		Lost Time:	0.100
	TH	0.98	250	1,569	0.159		ITS:	0.000
	LT	1.02	260	1,305	0.199	*		
Eastbound	RT	1.00	500	1,600	0.000		ICU:	0.434
	TH	2.00	10	3,200	0.003			
	LT	1.00	20	1,600	0.013	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.212 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.130 *
Westbound	RT	0.00	10	1,600	0.006		E-W(2):	0.000
	TH	3.00	0	3,200	0.000			
	LT	1.00	187	1,600	0.117	*	V/C:	0.342
Northbound	RT	1.00	286	1,600	0.120		Lost Time:	0.100
	TH	1.00	290	1,600	0.181	*	ITS:	0.000
	LT	1.00	160	1,600	0.100			
Eastbound	RT	1.00	460	1,600	0.000		ICU:	0.442
	TH	2.00	20	3,200	0.006			
	LT	1.00	20	1,600	0.013	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.212 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.119 *
Westbound	RT	0.00	10	1,600	0.006		E-W(2):	0.000
	TH	3.00	0	3,200	0.000			
	LT	1.00	170	1,600	0.106	*	V/C:	0.331
Northbound	RT	1.00	299	1,600	0.134		Lost Time:	0.100
	TH	1.00	290	1,600	0.181	*	ITS:	0.000
	LT	1.00	160	1,600	0.100			
Eastbound	RT	1.00	460	1,600	0.000		ICU:	0.431
	TH	2.00	20	3,200	0.006			
	LT	1.00	20	1,600	0.013	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **21 - Terminal Island Fwy & *CA-47 Westbound**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	WBR		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	460	3,200	0.144 *	N-S(1):	0.228 *
	TH	2.00	350	3,200	0.109	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.044
Westbound	RT	1.00	390	1,600	0.000	E-W(2):	0.141 *
	TH	2.00	450	3,200	0.141 *		
	LT	1.00	70	1,600	0.044	V/C:	0.369
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	260	3,200	0.081	ITS:	0.000
	LT	1.00	135	1,600	0.084 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.469
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	450	3,200	0.141 *	N-S(1):	0.285 *
	TH	2.00	360	3,200	0.113	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.031
Westbound	RT	1.00	730	1,600	0.000	E-W(2):	0.172 *
	TH	2.00	550	3,200	0.172 *		
	LT	1.00	50	1,600	0.031	V/C:	0.457
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	460	3,200	0.144 *	ITS:	0.000
	LT	1.00	176	1,600	0.110		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.557
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	490	3,200	0.153 *	N-S(1):	0.284 *
	TH	2.00	460	3,200	0.144	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.031
Westbound	RT	1.00	730	1,600	0.000	E-W(2):	0.150 *
	TH	2.00	480	3,200	0.150 *		
	LT	1.00	50	1,600	0.031	V/C:	0.434
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	420	3,200	0.131 *	ITS:	0.000
	LT	1.00	159	1,600	0.099		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.534
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **22 - Terminal Island Fwy & *CA-47 Eastbound**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.201 *
	TH	0.20	40	320	0.125		N-S(2):	0.125
	LT	1.80	360	2,304	0.156	*	E-W(1):	0.177 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.098
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.378
Northbound	RT	1.00	50	1,600	0.031		Lost Time:	0.100
	TH	2.00	145	3,200	0.045	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	156	0	0.000		ICU:	0.478
	TH	2.00	410	3,200	0.177	*		
	LT	2.00	250	2,560	0.098		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.214 *
	TH	0.15	30	240	0.125		N-S(2):	0.125
	LT	1.85	370	2,368	0.156	*	E-W(1):	0.162
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.180 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.394
Northbound	RT	1.00	40	1,600	0.025		Lost Time:	0.100
	TH	2.00	186	3,200	0.058	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	197	0	0.000		ICU:	0.494
	TH	2.00	320	3,200	0.162			
	LT	2.00	460	2,560	0.180	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.244 *
	TH	0.12	30	196	0.153		N-S(2):	0.153
	LT	1.88	460	2,403	0.191	*	E-W(1):	0.153
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.180 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.424
Northbound	RT	1.00	40	1,600	0.025		Lost Time:	0.100
	TH	2.00	169	3,200	0.053	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	170	0	0.000		ICU:	0.524
	TH	2.00	320	3,200	0.153			
	LT	2.00	460	2,560	0.180	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **23 - Pier S Avenue & *CA-47 Westbound**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	180	1,600	0.113	N-S(1):	0.050
	TH	2.00	536	3,200	0.168 *	N-S(2):	0.168 *
	LT	0.00	0	0	0.000	E-W(1):	0.167 *
Westbound	RT	2.00	535	3,200	0.167 *	E-W(2):	0.000
	TH	2.00	490	3,200	0.153		
	LT	0.00	0	0	0.000	V/C:	0.335
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	160	3,200	0.050	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.435
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	180	1,600	0.113	N-S(1):	0.066
	TH	2.00	547	3,200	0.171 *	N-S(2):	0.171 *
	LT	0.00	0	0	0.000	E-W(1):	0.191 *
Westbound	RT	2.00	556	3,200	0.174	E-W(2):	0.000
	TH	2.00	610	3,200	0.191 *		
	LT	0.00	0	0	0.000	V/C:	0.362
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	210	3,200	0.066	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.462
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	160	1,600	0.100	N-S(1):	0.091
	TH	2.00	350	3,200	0.109 *	N-S(2):	0.109 *
	LT	0.00	0	0	0.000	E-W(1):	0.225 *
Westbound	RT	2.00	399	3,200	0.125	E-W(2):	0.000
	TH	2.00	720	3,200	0.225 *		
	LT	0.00	0	0	0.000	V/C:	0.334
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	290	3,200	0.091	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.434
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **24 - Pier S Avenue & *CA-47 Eastbound**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.205 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	2.00	526	2,560	0.205 *	E-W(1):	0.091
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.106 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.311
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.411
	TH	2.00	290	3,200	0.091		
	LT	1.00	170	1,600	0.106 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.210 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	2.00	537	2,560	0.210 *	E-W(1):	0.134 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.131
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.344
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.444
	TH	2.00	430	3,200	0.134 *		
	LT	1.00	210	1,600	0.131	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.137 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	2.00	350	2,560	0.137 *	E-W(1):	0.169
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.181 *
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.318
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.418
	TH	2.00	540	3,200	0.169 *		
	LT	1.00	290	1,600	0.181	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **25 - Pico Ave/Pier G Ave & Harbor Plaza Dr**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	SBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	420	1,600	0.145	N-S(1):	0.169 *
	TH	1.00	200	1,600	0.125	N-S(2):	0.151
	LT	1.00	160	1,600	0.100 *	E-W(1):	0.386 *
Westbound	RT	0.00	430	1,600	0.269 *	E-W(2):	0.000
	TH	2.00	100	1,600	0.063		
	LT	1.00	110	1,600	0.069	V/C:	0.555
Northbound	RT	0.00	40	0	0.000	Lost Time:	0.100
	TH	2.00	180	3,200	0.069 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.29	20	457	0.041	ICU:	0.655
	TH	0.71	50	1,143	0.044		
	LT	2.00	300	2,560	0.117 *	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	480	1,600	0.050	N-S(1):	0.188 *
	TH	1.00	120	1,600	0.075	N-S(2):	0.081
	LT	1.00	190	1,600	0.119 *	E-W(1):	0.675 *
Westbound	RT	0.00	680	1,600	0.425 *	E-W(2):	0.000
	TH	2.00	80	1,600	0.050		
	LT	1.00	110	1,600	0.069	V/C:	0.863
Northbound	RT	0.00	100	0	0.000	Lost Time:	0.100
	TH	2.00	120	3,200	0.069 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.10	10	160	0.059	ICU:	0.963
	TH	0.90	90	1,440	0.063		
	LT	2.00	640	2,560	0.250 *	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	320	1,600	0.000	N-S(1):	0.200 *
	TH	1.00	150	1,600	0.094	N-S(2):	0.100
	LT	1.00	190	1,600	0.119 *	E-W(1):	0.592 *
Westbound	RT	0.00	590	1,600	0.369 *	E-W(2):	0.000
	TH	2.00	80	1,600	0.050		
	LT	1.00	60	1,600	0.038	V/C:	0.792
Northbound	RT	0.00	90	0	0.000	Lost Time:	0.100
	TH	2.00	170	3,200	0.081 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.07	10	107	0.091	ICU:	0.892
	TH	0.93	140	1,493	0.094		
	LT	2.00	570	2,560	0.223 *	LOS:	D

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **27 - Harbor Plaza Dr & Queensway Dr**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	30	1,600	0.019 *	N-S(1):	0.242 *
	TH	2.00	10	3,200	0.003	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.006
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.021 *
	TH	3.00	80	4,800	0.021 *		
	LT	0.00	10	1,600	0.006	V/C:	0.263
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.07	20	112	0.178	ITS:	0.000
	LT	1.93	550	2,470	0.223 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.363
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.025 *	N-S(1):	0.405 *
	TH	2.00	10	3,200	0.003	N-S(2):	0.000
	LT	0.00	10	1,600	0.006	E-W(1):	0.006
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.029 *
	TH	3.00	110	4,800	0.029 *		
	LT	0.00	10	1,600	0.006	V/C:	0.434
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.04	20	66	0.304	ITS:	0.000
	LT	1.96	953	2,507	0.380 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.534
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.031 *	N-S(1):	0.387 *
	TH	2.00	20	3,200	0.006	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.006
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.044 *
	TH	3.00	180	4,800	0.044 *		
	LT	0.00	10	1,600	0.006	V/C:	0.431
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.09	40	141	0.285	ITS:	0.000
	LT	1.91	871	2,448	0.356 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.531
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **28 - Harbor Plaza Dr & Harbor Scenic Dr**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.132 *
	TH	2.00	10	1,600	0.006		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.326 *
Westbound	RT	2.00	520	3,200	0.159	*	E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	231	1,600	0.144		V/C:	0.458
Northbound	RT	1.00	201	1,600	0.126	*	Lost Time:	0.100
	TH	2.00	40	3,200	0.013		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	10	1,600	0.006		ICU:	0.558
	TH	3.00	800	4,800	0.167	*		
	LT	1.00	10	1,600	0.006		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.090 *
	TH	2.00	10	1,600	0.006		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.485 *
Westbound	RT	2.00	890	3,200	0.275	*	E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	384	1,600	0.240		V/C:	0.575
Northbound	RT	1.00	134	1,600	0.084	*	Lost Time:	0.100
	TH	2.00	63	3,200	0.020		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	10	1,600	0.006		ICU:	0.675
	TH	3.00	1,010	4,800	0.210	*		
	LT	1.00	20	1,600	0.013		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.085 *
	TH	2.00	20	1,600	0.009		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.442 *
Westbound	RT	2.00	850	3,200	0.263	*	E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	312	1,600	0.195		V/C:	0.527
Northbound	RT	1.00	122	1,600	0.076	*	Lost Time:	0.100
	TH	2.00	51	3,200	0.016		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	10	1,600	0.006		ICU:	0.627
	TH	3.00	860	4,800	0.179	*		
	LT	1.00	10	1,600	0.006		LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **30 - Long Beach Blvd. & PCH**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.028		N-S(1):	0.276 *
	TH	2.00	490	3,200	0.153		N-S(2):	0.266
	LT	1.00	162	1,600	0.101	*	E-W(1):	0.292
Westbound	RT	0.00	82	0	0.000		E-W(2):	0.334 *
	TH	3.00	1,190	4,800	0.265	*		
	LT	1.00	150	1,600	0.094		V/C:	0.610
Northbound	RT	1.00	70	1,600	0.000		Lost Time:	0.100
	TH	2.00	560	3,200	0.175	*	ITS:	0.000
	LT	1.00	180	1,600	0.113			
Eastbound	RT	0.00	73	0	0.000		ICU:	0.710
	TH	3.00	879	4,800	0.198			
	LT	1.00	110	1,600	0.069	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.022		N-S(1):	0.300 *
	TH	2.00	490	3,200	0.153		N-S(2):	0.247
	LT	1.00	190	1,600	0.119	*	E-W(1):	0.280 *
Westbound	RT	0.00	120	0	0.000		E-W(2):	0.266
	TH	3.00	770	4,800	0.185			
	LT	1.00	100	1,600	0.063	*	V/C:	0.580
Northbound	RT	1.00	80	1,600	0.019		Lost Time:	0.100
	TH	2.00	580	3,200	0.181	*	ITS:	0.000
	LT	1.00	150	1,600	0.094			
Eastbound	RT	0.00	90	0	0.000		ICU:	0.680
	TH	3.00	950	4,800	0.217	*		
	LT	1.00	130	1,600	0.081		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	150	1,600	0.038		N-S(1):	0.319 *
	TH	2.00	540	3,200	0.169		N-S(2):	0.263
	LT	1.00	181	1,600	0.113	*	E-W(1):	0.376 *
Westbound	RT	0.00	85	0	0.000		E-W(2):	0.291
	TH	3.00	767	4,800	0.178			
	LT	1.00	130	1,600	0.081	*	V/C:	0.695
Northbound	RT	1.00	110	1,600	0.028		Lost Time:	0.100
	TH	2.00	660	3,200	0.206	*	ITS:	0.000
	LT	1.00	150	1,600	0.094			
Eastbound	RT	0.00	85	0	0.000		ICU:	0.795
	TH	3.00	1,330	4,800	0.295	*		
	LT	1.00	180	1,600	0.113		LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **31 - Long Beach Blvd. & Anaheim St.**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	60	1,600	0.034		N-S(1):	0.216
	TH	2.00	440	3,200	0.138	*	N-S(2):	0.226 *
	LT	1.00	110	1,600	0.069		E-W(1):	0.194
Westbound	RT	0.00	120	0	0.000		E-W(2):	0.258 *
	TH	3.00	1,080	4,800	0.252	*		
	LT	0.00	10	1,600	0.006		V/C:	0.484
Northbound	RT	0.00	60	0	0.000		Lost Time:	0.100
	TH	2.00	410	3,200	0.147		ITS:	0.000
	LT	1.00	140	1,600	0.088	*		
Eastbound	RT	0.00	70	0	0.000		ICU:	0.584
	TH	3.00	820	4,800	0.188			
	LT	0.00	10	1,600	0.006	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	80	1,600	0.044		N-S(1):	0.262 *
	TH	2.00	390	3,200	0.122		N-S(2):	0.260
	LT	1.00	130	1,600	0.081	*	E-W(1):	0.233 *
Westbound	RT	0.00	130	0	0.000		E-W(2):	0.196
	TH	3.00	740	4,800	0.183			
	LT	0.00	10	1,600	0.006	*	V/C:	0.495
Northbound	RT	0.00	90	0	0.000		Lost Time:	0.100
	TH	2.00	490	3,200	0.181	*	ITS:	0.000
	LT	1.00	220	1,600	0.138			
Eastbound	RT	0.00	80	0	0.000		ICU:	0.595
	TH	3.00	990	4,800	0.227	*		
	LT	0.00	20	1,600	0.013		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	110	1,600	0.063		N-S(1):	0.325 *
	TH	2.00	460	3,200	0.144		N-S(2):	0.257
	LT	1.00	160	1,600	0.100	*	E-W(1):	0.302 *
Westbound	RT	0.00	120	0	0.000		E-W(2):	0.190
	TH	3.00	720	4,800	0.177			
	LT	0.00	10	1,600	0.006	*	V/C:	0.627
Northbound	RT	0.00	110	0	0.000		Lost Time:	0.100
	TH	2.00	610	3,200	0.225	*	ITS:	0.000
	LT	1.00	180	1,600	0.113			
Eastbound	RT	0.00	100	0	0.000		ICU:	0.727
	TH	3.00	1,300	4,800	0.296	*		
	LT	0.00	20	1,600	0.013		LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **32 - Long Beach Blvd. & Ocean Blvd**
Description: **Baseline Plus Project Conditions (Alternatives 1 or 2)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	230	3,200	0.038 *	N-S(1):	0.038 *
	TH	0.00	0	0	0.000	N-S(2):	0.038 *
	LT	1.00	60	1,600	0.038 *	E-W(1):	0.104
Westbound	RT	1.00	130	1,600	0.081	E-W(2):	0.436 *
	TH	3.00	1,760	4,800	0.367 *		
	LT	0.00	0	0	0.000	V/C:	0.474
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.574
	TH	3.00	490	4,800	0.104		
	LT	1.00	110	1,600	0.069 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.71	160	2,743	0.027	N-S(1):	0.073 *
	TH	0.00	0	0	0.000	N-S(2):	0.027
	LT	1.29	120	1,646	0.073 *	E-W(1):	0.198
Westbound	RT	1.00	100	1,600	0.026	E-W(2):	0.226 *
	TH	3.00	780	4,800	0.163 *		
	LT	0.00	10	1,600	0.006	V/C:	0.299
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.399
	TH	3.00	910	4,800	0.192		
	LT	1.00	100	1,600	0.063 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.85	210	2,965	0.011	N-S(1):	0.089 *
	TH	0.00	0	0	0.000	N-S(2):	0.011
	LT	1.15	130	1,468	0.089 *	E-W(1):	0.388 *
Westbound	RT	1.00	100	1,600	0.063	E-W(2):	0.296
	TH	3.00	850	4,800	0.177 *		
	LT	0.00	0	0	0.000	V/C:	0.477
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.577
	TH	3.00	1,860	4,800	0.388		
	LT	1.00	190	1,600	0.119 *	LOS:	A

* - Denotes critical movement

Level of Service Workheet
(Circular 212 Method)

I/S #:	
4	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project - Alternative 1 & 2 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM				PM			
No. of Phases					4				4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					1				1
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0		NB-- 0	SB--	0	
		EB-- 0	WB--	0		EB-- 0	WB--	0	
ATSAC-1 or ATSAC+ATCS-2?				2				2	
Override Capacity				0				0	
	MOVEMENT	Volume	No. of Lanes	Lane Volume		Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	20	0	20		20	0	20	
	Left-Through		0				0		
	Through	0	0	**50**		0	0	**40**	
	Through-Right		0				0		
	Right	30	0	0		20	0	0	
	Left-Through-Right		1				1		
	Left-Right		0				0		
SOUTHBOUND	Left	40	0	40		70	0	70	
	Left-Through		0				0		
	Through	10	0	**120**		0	0	**140**	
	Through-Right		0				0		
	Right	70	0	0		70	0	0	
	Left-Through-Right		1				1		
	Left-Right		0				0		
EASTBOUND	Left	70	1	**70**		70	1	**70**	
	Left-Through		0				0		
	Through	640	1	330		690	1	355	
	Through-Right		1				1		
	Right	20	0	20		20	0	20	
	Left-Through-Right		0				0		
	Left-Right		0				0		
WESTBOUND	Left	30	1	30		30	1	30	
	Left-Through		0				0		
	Through	930	2	**465**		690	2	**345**	
	Through-Right		0				0		
	Right	10	1	0		0	1	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
CRITICAL VOLUMES			*North-South:*	170			*North-South:*	180	
			East-West:	535			*East-West:*	415	
			SUM:	705			*SUM:*	595	
VOLUME/CAPACITY *(V/C)* RATIO:				0.513				0.433	
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.413**				**0.333**	
LEVEL OF SERVICE (LOS):				**A**				**A**	

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project - Alternative 1 & 2 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	20	0	20	40	0	40
	Left-Through		0			0	
	Through	0	0	**70**	0	0	**120**
	Through-Right		0			0	
	Right	50	0	0	80	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	0	0	0	0	0	10
	Through-Right		1			1	
	Right	0	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	1	**0**	10	1	10
	Left-Through		0			0	
	Through	760	1	395	810	1	**425**
	Through-Right		1			1	
	Right	30	0	30	40	0	40
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	80	1	80	70	1	**70**
	Left-Through		0			0	
	Through	1030	1	**520**	810	1	410
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	80		*North-South:*	130
			East-West:	520		*East-West:*	495
			SUM:	600		*SUM:*	625
VOLUME/CAPACITY *(V/C)* RATIO:				0.421			0.439
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.321**			**0.339**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
8	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Baseline plus Project - Alternative 1 & 2 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	560	2	**223**	910	2	**350**
	Through-Right		1			1	
	Right	110	0	110	140	0	140
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	360	1	**360**	270	1	**270**
	Left-Through		0			0	
	Through	990	3	330	910	3	303
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	100	1	**100**	130	1	**130**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	380	1	20	290	1	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	583		*North-South:*	620
			East-West:	100		*East-West:*	130
			SUM:	683		*SUM:*	750
VOLUME/CAPACITY *(V/C)* RATIO:				0.479			0.526
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.379**			**0.426**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
9	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Baseline plus Project - Alternative 1 & 2 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	190	1	**190**	180	1	**180**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	270	1	110	240	1	125
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	320	1	**320**	230	1	**230**
	Left-Through		0			0	
	Through	1000	2	500	940	2	470
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1130	2	**430**	950	2	**383**
	Through-Right		1			1	
	Right	160	0	160	200	0	200
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	190		*North-South:*	180
			East-West:	750		*East-West:*	613
			SUM:	940		*SUM:*	793
VOLUME/CAPACITY *(V/C)* RATIO:				0.660			0.556
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.560**			**0.456**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
13	

PROJECT TITLE: Port of Long Beach Master Plan Update

North-South Street: Henry Ford Av **East-West Street:** Anaheim St.

Scenario: Baseline plus Project - Alternative 1 & 2 (AM & MD Only)

Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM				PM			
No. of Phases					4				4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0				0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 3	SB--	3		NB-- 3	SB--	3	
		EB-- 1	WB--	3		EB-- 1	WB--	3	
ATSAC-1 or ATSAC+ATCS-2?				2				2	
Override Capacity				0				0	
	MOVEMENT	Volume	No. of Lanes	Lane Volume		Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	150	1	**107**		250	1	**240**	
	Left-Through		1				1		
	Through	170	1	107		470	1	240	
	Through-Right		0				0		
	Right	130	1	50		100	1	10	
	Left-Through-Right		0				0		
	Left-Right		0				0		
SOUTHBOUND	Left	160	1	160		160	1	160	
	Left-Through		0				0		
	Through	360	2	**180**		400	2	**200**	
	Through-Right		0				0		
	Right	60	1	0		70	1	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
EASTBOUND	Left	80	1	**80**		130	1	130	
	Left-Through		0				0		
	Through	710	2	355		890	2	**445**	
	Through-Right		0				0		
	Right	240	1	0		180	1	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
WESTBOUND	Left	80	1	80		90	1	**90**	
	Left-Through		0				0		
	Through	1080	2	**540**		760	2	380	
	Through-Right		0				0		
	Right	220	1	60		280	1	120	
	Left-Through-Right		0				0		
	Left-Right		0				0		
CRITICAL VOLUMES			North-South:	287			North-South:	440	
			East-West:	620			East-West:	535	
			SUM:	907			SUM:	975	
VOLUME/CAPACITY (V/C) RATIO:				0.660				0.709	
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.560**				**0.609**	
LEVEL OF SERVICE (LOS):				**A**				**B**	

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Port of Long Beach Master Plan Update			
26	North-South Street:	Navy Wy	East-West Street:	*Seaside Fwy	
	Scenario:	Baseline plus Project - Alternative 1 & 2 (AM & MD Only)			
	Count Date:	6/28/2018	Analyst: Fehr & Peers	Date:	1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 1	SB--	0	NB-- 1	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	100	2	**55**	120	2	**66**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	230	1	0	440	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	2160	3	**720**	1700	3	**567**
	Through-Right		0			0	
	Right	160	1	133	110	1	77
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	50	2	**28**	30	2	**17**
	Left-Through		0			0	
	Through	1910	3	637	1480	3	493
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			North-South:	55		North-South:	66
			East-West:	748		East-West:	584
			SUM:	803		SUM:	650
VOLUME/CAPACITY (V/C) RATIO:				0.564			0.456
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.464**			**0.356**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
29	

PROJECT TITLE: Port of Long Beach Master Plan Update

North-South Street: Navy Wy **East-West Street:** Reeves Av

Scenario: Baseline plus Project - Alternative 1 & 2 (AM & MD Only)

Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			2			2
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	10	1	**10**	10	1	10
	Left-Through		0			0	
	Through	100	2	33	110	2	**40**
	Through-Right		1			1	
	Right	0	0	0	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	50	1	50	40	1	**40**
	Left-Through		0			0	
	Through	90	1	**80**	60	1	55
	Through-Right		1			1	
	Right	70	0	70	50	0	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	180	2	**99**	390	2	**215**
	Left-Through		0			0	
	Through	10	0	20	10	0	20
	Through-Right		1			1	
	Right	10	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	10	0	10
	Left-Through		1			1	
	Through	10	0	**10**	10	0	**20**
	Through-Right		0			0	
	Right	50	1	0	40	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	90		*North-South:*	80
			East-West:	109		*East-West:*	235
			SUM:	199		*SUM:*	315
VOLUME/CAPACITY *(V/C)* RATIO:				0.145			0.229
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.072**			**0.129**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
4

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project - Alternative 1 & 2 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				1			1
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	10	0	10	10	0	10
	Left-Through		0			0	
	Through	0	0	**60**	0	0	**60**
	Through-Right		0			0	
	Right	50	0	0	50	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	50	0	50	50	0	50
	Left-Through		0			0	
	Through	0	0	**100**	0	0	**100**
	Through-Right		0			0	
	Right	50	0	0	50	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	60	1	60	60	1	60
	Left-Through		0			0	
	Through	1220	1	**615**	1220	1	**615**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	730	2	365	730	2	365
	Through-Right		0			0	
	Right	20	1	0	20	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	160		*North-South:*	160
			East-West:	625		*East-West:*	625
			SUM:	785		*SUM:*	785
VOLUME/CAPACITY *(V/C)* RATIO:				0.571			0.571
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.471**			**0.471**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project - Alternative 1 & 2 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	40	0	40	40	0	40
	Left-Through		0			0	
	Through	0	0	**150**	0	0	**150**
	Through-Right		0			0	
	Right	110	0	0	110	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	10	0	20	10	0	20
	Through-Right		1			1	
	Right	10	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	10	1	10	10	1	10
	Left-Through		0			0	
	Through	1330	1	**690**	1330	1	**690**
	Through-Right		1			1	
	Right	50	0	50	50	0	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	70	1	**70**	70	1	**70**
	Left-Through		0			0	
	Through	840	1	430	840	1	430
	Through-Right		1			1	
	Right	20	0	20	20	0	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	160		*North-South:*	160
			East-West:	760		*East-West:*	760
			SUM:	920		*SUM:*	920
VOLUME/CAPACITY *(V/C)* RATIO:				0.646			0.646
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.546**			**0.546**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
8	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Baseline plus Project - Alternative 1 & 2 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	940	2	**377**	940	2	**377**
	Through-Right		1			1	
	Right	190	0	190	190	0	190
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	360	1	**360**	360	1	**360**
	Left-Through		0			0	
	Through	1040	3	347	1040	3	347
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	100	1	**100**	100	1	**100**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	450	1	90	450	1	90
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES		*North-South:*		737	*North-South:*		737
		East-West:		100	*East-West:*		100
		SUM:		837	*SUM:*		837
VOLUME/CAPACITY *(V/C)* RATIO:				0.587			0.587
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.487**			**0.487**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
9

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Baseline plus Project - Alternative 1 & 2 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	170	1	170	170	1	170
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	380	1	**215**	380	1	**215**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	330	1	**330**	330	1	**330**
	Left-Through		0			0	
	Through	1340	2	670	1340	2	670
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1200	2	**467**	1200	2	**467**
	Through-Right		1			1	
	Right	200	0	200	200	0	200
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES		*North-South:*		215	*North-South:*		215
		East-West:		797	*East-West:*		797
		SUM:		1012	*SUM:*		1012
VOLUME/CAPACITY *(V/C)* RATIO:				0.710			0.710
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.610**			**0.610**
LEVEL OF SERVICE (LOS):				**B**			**B**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
13

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Henry Ford Av **East-West Street:** Anaheim St.
Scenario: Baseline plus Project - Alternative 1 & 2 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 3	SB--	3	NB-- 3	SB--	3
		EB-- 1	WB--	3	EB-- 1	WB--	3
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
MOVEMENT		**Volume**	**No. of Lanes**	**Lane Volume**	**Volume**	**No. of Lanes**	**Lane Volume**
NORTHBOUND	Left	430	1	257	430	1	257
	Left-Through		1			1	
	Through	340	1	**257**	340	1	**257**
	Through-Right		0			0	
	Right	140	1	50	140	1	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	220	1	**220**	220	1	**220**
	Left-Through		0			0	
	Through	370	2	185	370	2	185
	Through-Right		0			0	
	Right	80	1	0	80	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	90	1	90	90	1	90
	Left-Through		0			0	
	Through	1340	2	**670**	1340	2	**670**
	Through-Right		0			0	
	Right	270	1	0	270	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	90	1	**90**	90	1	**90**
	Left-Through		0			0	
	Through	790	2	395	790	2	395
	Through-Right		0			0	
	Right	210	1	0	210	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	477		*North-South:*	477
			East-West:	760		*East-West:*	760
			SUM:	1237		*SUM:*	1237
VOLUME/CAPACITY *(V/C)* RATIO:				0.900			0.900
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.800**			**0.800**
LEVEL OF SERVICE (LOS):				**C**			**C**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Port of Long Beach Master Plan Update			
26	North-South Street:	Navy Wy	East-West Street:	*Seaside Fwy	
	Scenario:	Baseline plus Project - Alternative 1 & 2 (PM Only)			
	Count Date:	6/28/2018	Analyst:	Fehr & Peers	Date: 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 1	SB--	0	NB-- 1	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	160	2	**88**	160	2	**88**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	400	1	0	400	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	2530	3	**843**	2530	3	**843**
	Through-Right		0			0	
	Right	250	1	206	250	1	206
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	50	2	**28**	50	2	**28**
	Left-Through		0			0	
	Through	2020	3	673	2020	3	673
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			North-South:	88		North-South:	88
			East-West:	871		East-West:	871
			SUM:	959		SUM:	959
VOLUME/CAPACITY (V/C) RATIO:				0.673			0.673
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.573**			**0.573**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
29	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Baseline plus Project - Alternative 1 & 2 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			2			2
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	10	1	10	10	1	10
	Left-Through		0			0	
	Through	180	2	**63**	180	2	**63**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	80	1	**80**	80	1	**80**
	Left-Through		0			0	
	Through	130	1	110	130	1	110
	Through-Right		1			1	
	Right	90	0	90	90	0	90
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	310	2	**171**	310	2	**171**
	Left-Through		0			0	
	Through	10	0	30	10	0	30
	Through-Right		1			1	
	Right	20	0	0	20	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		1			1	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	60	1	0	60	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	143		*North-South:*	143
			East-West:	171		*East-West:*	171
			SUM:	314		*SUM:*	314
VOLUME/CAPACITY *(V/C)* RATIO:				0.228			0.228
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.128**			**0.128**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Project Title: **PoLB Master Plan EIR**
Intersection: **1 - Alameda St & Sepulveda Blvd Ramp**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.315 *
	TH	3.00	1,010	4,800	0.210		N-S(2):	0.210
	LT	1.00	270	1,600	0.169	*	E-W(1):	0.069 *
Westbound	RT	2.00	330	3,200	0.019		E-W(2):	0.019
	TH	0.00	0	0	0.000			
	LT	1.00	110	1,600	0.069	*	V/C:	0.384
Northbound	RT	0.00	110	0	0.000		Lost Time:	0.100
	TH	3.00	590	4,800	0.146	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.484
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.313 *
	TH	3.00	850	4,800	0.177		N-S(2):	0.177
	LT	1.00	190	1,600	0.119	*	E-W(1):	0.088 *
Westbound	RT	2.00	320	3,200	0.041		E-W(2):	0.041
	TH	0.00	0	0	0.000			
	LT	1.00	140	1,600	0.088	*	V/C:	0.401
Northbound	RT	0.00	160	0	0.000		Lost Time:	0.100
	TH	3.00	770	4,800	0.194	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.501
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.396 *
	TH	3.00	1,140	4,800	0.238		N-S(2):	0.238
	LT	1.00	290	1,600	0.181	*	E-W(1):	0.063 *
Westbound	RT	2.00	400	3,200	0.034		E-W(2):	0.034
	TH	0.00	0	0	0.000			
	LT	1.00	100	1,600	0.063	*	V/C:	0.459
Northbound	RT	0.00	110	0	0.000		Lost Time:	0.100
	TH	3.00	920	4,800	0.215	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.559
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **2 - Alameda St Ramp & Sepulveda Blvd**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	190	1,600	0.059	N-S(1):	0.085 *
	TH	0.30	30	480	0.063	N-S(2):	0.069
	LT	1.70	170	2,448	0.069 *	E-W(1):	0.190
Westbound	RT	1.00	210	1,600	0.062	E-W(2):	0.575 *
	TH	1.00	730	1,600	0.456 *		
	LT	1.00	10	1,600	0.006	V/C:	0.660
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	30	1,600	0.016 *	ITS:	0.000
	LT	0.00	10	1,600	0.006		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.760
	TH	2.00	580	3,200	0.184		
	LT	1.00	190	1,600	0.119 *	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	150	1,600	0.034	N-S(1):	0.072 *
	TH	0.12	10	188	0.053	N-S(2):	0.059
	LT	1.88	160	2,711	0.059 *	E-W(1):	0.203
Westbound	RT	1.00	240	1,600	0.091	E-W(2):	0.394 *
	TH	1.00	440	1,600	0.275 *		
	LT	1.00	10	1,600	0.006	V/C:	0.466
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	20	1,600	0.013 *	ITS:	0.000
	LT	0.00	10	1,600	0.006		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.566
	TH	2.00	620	3,200	0.197		
	LT	1.00	190	1,600	0.119 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	200	1,600	0.034	N-S(1):	0.082 *
	TH	0.10	10	160	0.062	N-S(2):	0.068
	LT	1.90	190	2,736	0.069 *	E-W(1):	0.306
Westbound	RT	1.00	190	1,600	0.119	E-W(2):	0.500 *
	TH	1.00	510	1,600	0.319 *		
	LT	1.00	0	1,600	0.000	V/C:	0.582
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	20	1,600	0.013 *	ITS:	0.000
	LT	0.00	10	1,600	0.006		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.682
	TH	2.00	970	3,200	0.306		
	LT	1.00	290	1,600	0.181 *	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **3 - Intermodal Wy & Sepulveda Blvd**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.234
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.325 *
	TH	2.00	1,010	3,200	0.319 *		
	LT	0.00	0	0	0.000	V/C:	0.331
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.431
	TH	2.00	750	3,200	0.234		
	LT	1.00	10	1,600	0.006 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.244
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.253 *
	TH	2.00	780	3,200	0.247 *		
	LT	0.00	0	0	0.000	V/C:	0.259
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.359
	TH	2.00	780	3,200	0.244		
	LT	1.00	10	1,600	0.006 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.394 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.259
	TH	2.00	800	3,200	0.253 *		
	LT	0.00	0	0	0.000	V/C:	0.400
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.500
	TH	2.00	1,260	3,200	0.394		
	LT	1.00	10	1,600	0.006 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **6 - Terminal Island Fwy & Willow St/Sepulveda Blvd**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, EBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.000
	TH	0.00	0	0	0.000	*	N-S(2):	0.135 *
	LT	0.00	0	0	0.000		E-W(1):	0.220
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.244 *
	TH	2.00	760	3,200	0.238	*		
	LT	2.00	220	2,880	0.076		V/C:	0.379
Northbound	RT	2.00	190	3,200	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	390	2,880	0.135	*		
Eastbound	RT	1.00	340	1,600	0.077		ICU:	0.479
	TH	2.00	460	3,200	0.144			
	LT	1.00	10	1,600	0.006	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.184
	TH	0.00	0	0	0.000	*	N-S(2):	0.205 *
	LT	0.00	0	0	0.000		E-W(1):	0.218 *
Westbound	RT	0.00	10	0	0.000		E-W(2):	0.103
	TH	2.00	300	3,200	0.097			
	LT	2.00	150	2,880	0.052	*	V/C:	0.423
Northbound	RT	2.00	340	3,200	0.054		Lost Time:	0.100
	TH	0.03	10	54	0.184		ITS:	0.000
	LT	1.97	580	2,831	0.205	*		
Eastbound	RT	1.00	380	1,600	0.033		ICU:	0.523
	TH	2.00	530	3,200	0.166	*		
	LT	1.00	10	1,600	0.006		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.109
	TH	0.00	0	0	0.000	*	N-S(2):	0.135 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.382 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.159
	TH	2.00	510	3,200	0.159			
	LT	2.00	190	2,880	0.066	*	V/C:	0.517
Northbound	RT	2.00	540	3,200	0.103		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	390	2,880	0.135	*		
Eastbound	RT	1.00	480	1,600	0.300		ICU:	0.617
	TH	2.00	1,010	3,200	0.316	*		
	LT	1.00	0	1,600	0.000		LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **7 - Santa Fe Ave & PCH**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	140	1,600	0.063		N-S(1):	0.235
	TH	2.00	340	3,200	0.106	*	N-S(2):	0.262 *
	LT	1.00	190	1,600	0.119		E-W(1):	0.291
Westbound	RT	0.00	100	0	0.000		E-W(2):	0.388 *
	TH	2.00	980	3,200	0.338	*		
	LT	1.00	70	1,600	0.044		V/C:	0.650
Northbound	RT	1.00	50	1,600	0.009		Lost Time:	0.100
	TH	2.00	370	3,200	0.116		ITS:	0.000
	LT	1.00	250	1,600	0.156	*		
Eastbound	RT	1.00	130	1,600	0.003		ICU:	0.750
	TH	2.00	790	3,200	0.247			
	LT	1.00	80	1,600	0.050	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.034		N-S(1):	0.209
	TH	2.00	230	3,200	0.072	*	N-S(2):	0.228 *
	LT	1.00	160	1,600	0.100		E-W(1):	0.360 *
Westbound	RT	0.00	110	0	0.000		E-W(2):	0.350
	TH	2.00	830	3,200	0.294			
	LT	1.00	110	1,600	0.069	*	V/C:	0.588
Northbound	RT	1.00	100	1,600	0.028		Lost Time:	0.100
	TH	2.00	350	3,200	0.109		ITS:	0.000
	LT	1.00	250	1,600	0.156	*		
Eastbound	RT	1.00	150	1,600	0.016		ICU:	0.688
	TH	2.00	930	3,200	0.291	*		
	LT	1.00	90	1,600	0.056		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	120	1,600	0.038		N-S(1):	0.287 *
	TH	2.00	250	3,200	0.078	*	N-S(2):	0.284
	LT	1.00	170	1,600	0.106		E-W(1):	0.444 *
Westbound	RT	0.00	110	0	0.000		E-W(2):	0.388
	TH	2.00	890	3,200	0.313			
	LT	1.00	130	1,600	0.081	*	V/C:	0.731
Northbound	RT	1.00	110	1,600	0.028		Lost Time:	0.100
	TH	2.00	580	3,200	0.181		ITS:	0.000
	LT	1.00	330	1,600	0.206	*		
Eastbound	RT	1.00	110	1,600	0.000		ICU:	0.831
	TH	2.00	1,160	3,200	0.363	*		
	LT	1.00	120	1,600	0.075		LOS:	D

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **10 - Santa Fe Ave & Anaheim St.**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	120	1,600	0.053	N-S(1):	0.219 *
	TH	2.00	180	3,200	0.056	N-S(2):	0.075
	LT	1.00	200	1,600	0.125 *	E-W(1):	0.161
Westbound	RT	1.00	300	1,600	0.125	E-W(2):	0.234 *
	TH	3.00	910	4,800	0.190 *		
	LT	1.00	20	1,600	0.013	V/C:	0.453
Northbound	RT	1.00	30	1,600	0.013	Lost Time:	0.100
	TH	2.00	300	3,200	0.094 *	ITS:	0.000
	LT	1.00	30	1,600	0.019		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.553
	TH	3.00	700	4,800	0.148		
	LT	1.00	70	1,600	0.044 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	110	1,600	0.038	N-S(1):	0.206 *
	TH	2.00	220	3,200	0.069	N-S(2):	0.094
	LT	1.00	210	1,600	0.131 *	E-W(1):	0.207
Westbound	RT	1.00	280	1,600	0.109	E-W(2):	0.234 *
	TH	3.00	820	4,800	0.171 *		
	LT	1.00	20	1,600	0.013	V/C:	0.440
Northbound	RT	1.00	40	1,600	0.019	Lost Time:	0.100
	TH	2.00	240	3,200	0.075 *	ITS:	0.000
	LT	1.00	40	1,600	0.025		
Eastbound	RT	0.00	20	0	0.000	ICU:	0.540
	TH	3.00	910	4,800	0.194		
	LT	1.00	100	1,600	0.063 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	120	1,600	0.031	N-S(1):	0.269 *
	TH	2.00	220	3,200	0.069	N-S(2):	0.094
	LT	1.00	260	1,600	0.163 *	E-W(1):	0.253
Westbound	RT	1.00	480	1,600	0.219	E-W(2):	0.307 *
	TH	3.00	680	4,800	0.142 *		
	LT	1.00	20	1,600	0.013	V/C:	0.576
Northbound	RT	1.00	50	1,600	0.025	Lost Time:	0.100
	TH	2.00	340	3,200	0.106 *	ITS:	0.000
	LT	1.00	40	1,600	0.025		
Eastbound	RT	0.00	30	0	0.000	ICU:	0.676
	TH	3.00	1,120	4,800	0.240		
	LT	1.00	140	1,600	0.088 *	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **11 - Harbor Ave & Anaheim St.**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000		N-S(1):	0.112 *
	TH	1.00	30	1,600	0.094		N-S(2):	0.100
	LT	0.00	90	1,600	0.056	*	E-W(1):	0.208
Westbound	RT	1.00	150	1,600	0.066		E-W(2):	0.219 *
	TH	4.00	1,320	6,400	0.206	*		
	LT	1.00	40	1,600	0.025		V/C:	0.331
Northbound	RT	0.78	70	1,244	0.044		Lost Time:	0.100
	TH	0.22	20	356	0.056	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.00	20	0	0.000		ICU:	0.431
	TH	3.00	860	4,800	0.183			
	LT	1.00	20	1,600	0.013	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000		N-S(1):	0.150 *
	TH	1.00	30	1,600	0.113		N-S(2):	0.126
	LT	0.00	120	1,600	0.075	*	E-W(1):	0.246 *
Westbound	RT	1.00	140	1,600	0.050		E-W(2):	0.203
	TH	4.00	1,180	6,400	0.184			
	LT	1.00	20	1,600	0.013	*	V/C:	0.396
Northbound	RT	0.67	80	1,067	0.069		Lost Time:	0.100
	TH	0.33	40	533	0.075	*	ITS:	0.000
	LT	1.00	20	1,600	0.013			
Eastbound	RT	0.00	70	0	0.000		ICU:	0.496
	TH	3.00	1,050	4,800	0.233	*		
	LT	1.00	30	1,600	0.019		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000		N-S(1):	0.156 *
	TH	1.00	30	1,600	0.113		N-S(2):	0.126
	LT	0.00	120	1,600	0.075	*	E-W(1):	0.304 *
Westbound	RT	1.00	130	1,600	0.044		E-W(2):	0.189
	TH	4.00	1,010	6,400	0.158			
	LT	1.00	30	1,600	0.019	*	V/C:	0.460
Northbound	RT	0.54	70	862	0.072		Lost Time:	0.100
	TH	0.46	60	738	0.081	*	ITS:	0.000
	LT	1.00	20	1,600	0.013			
Eastbound	RT	0.00	40	0	0.000		ICU:	0.560
	TH	3.00	1,330	4,800	0.285	*		
	LT	1.00	50	1,600	0.031		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **12 - 9th St/East I St & Anaheim St.**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.151
	TH	2.00	20	3,200	0.006 *	N-S(2):	0.256 *
	LT	1.00	180	1,600	0.113	E-W(1):	0.198
Westbound	RT	1.00	140	1,600	0.031	E-W(2):	0.306 *
	TH	2.00	900	3,200	0.281 *		
	LT	1.00	10	1,600	0.006	V/C:	0.562
Northbound	RT	1.00	20	1,600	0.009	Lost Time:	0.100
	TH	2.00	120	3,200	0.038	ITS:	0.000
	LT	1.00	400	1,600	0.250 *		
Eastbound	RT	0.00	240	0	0.000	ICU:	0.662
	TH	3.00	680	4,800	0.192		
	LT	1.00	40	1,600	0.025 *	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.000	N-S(1):	0.110
	TH	2.00	30	3,200	0.009 *	N-S(2):	0.153 *
	LT	1.00	150	1,600	0.094	E-W(1):	0.231
Westbound	RT	1.00	170	1,600	0.059	E-W(2):	0.332 *
	TH	2.00	780	3,200	0.244 *		
	LT	1.00	10	1,600	0.006	V/C:	0.485
Northbound	RT	1.00	10	1,600	0.003	Lost Time:	0.100
	TH	2.00	50	3,200	0.016	ITS:	0.000
	LT	1.00	230	1,600	0.144 *		
Eastbound	RT	0.00	230	0	0.000	ICU:	0.585
	TH	3.00	850	4,800	0.225		
	LT	1.00	140	1,600	0.088 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.122
	TH	2.00	260	3,200	0.081 *	N-S(2):	0.250 *
	LT	1.00	140	1,600	0.088	E-W(1):	0.358 *
Westbound	RT	1.00	110	1,600	0.025	E-W(2):	0.291
	TH	2.00	770	3,200	0.241 *		
	LT	1.00	10	1,600	0.006	V/C:	0.608
Northbound	RT	1.00	20	1,600	0.009	Lost Time:	0.100
	TH	2.00	110	3,200	0.034	ITS:	0.000
	LT	1.00	270	1,600	0.169 *		
Eastbound	RT	0.00	490	0	0.000	ICU:	0.708
	TH	3.00	1,200	4,800	0.352		
	LT	1.00	80	1,600	0.050 *	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **14 - Pico Ave & Pier B St**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000		N-S(1):	0.194
	TH	1.00	340	1,600	0.213	*	N-S(2):	0.241 *
	LT	1.00	20	1,600	0.013		E-W(1):	0.066
Westbound	RT	0.00	60	0	0.000		E-W(2):	0.213 *
	TH	2.00	10	1,600	0.044	*		
	LT	0.00	100	1,600	0.063		V/C:	0.454
Northbound	RT	1.00	40	1,600	0.000		Lost Time:	0.100
	TH	1.00	290	1,600	0.181		ITS:	0.000
	LT	2.00	80	2,880	0.028	*		
Eastbound	RT	1.00	230	1,600	0.000		ICU:	0.554
	TH	2.00	10	3,200	0.003			
	LT	0.00	270	1,600	0.169	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	210	1,600	0.069		N-S(1):	0.294
	TH	1.00	250	1,600	0.156	*	N-S(2):	0.399 *
	LT	1.00	30	1,600	0.019		E-W(1):	0.034
Westbound	RT	0.00	20	0	0.000		E-W(2):	0.144 *
	TH	2.00	10	1,600	0.019	*		
	LT	0.00	50	1,600	0.031		V/C:	0.543
Northbound	RT	1.00	190	1,600	0.103		Lost Time:	0.100
	TH	1.00	440	1,600	0.275		ITS:	0.000
	LT	2.00	700	2,880	0.243	*		
Eastbound	RT	1.00	710	1,600	0.000		ICU:	0.643
	TH	2.00	10	3,200	0.003			
	LT	0.00	200	1,600	0.125	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	220	1,600	0.106		N-S(1):	0.387 *
	TH	1.00	320	1,600	0.200	*	N-S(2):	0.276
	LT	1.00	130	1,600	0.081		E-W(1):	0.056
Westbound	RT	0.00	30	0	0.000		E-W(2):	0.088 *
	TH	2.00	10	1,600	0.025	*		
	LT	0.00	80	1,600	0.050		V/C:	0.475
Northbound	RT	1.00	300	1,600	0.163		Lost Time:	0.100
	TH	1.00	490	1,600	0.306		ITS:	0.000
	LT	2.00	220	2,880	0.076	*		
Eastbound	RT	1.00	200	1,600	0.000		ICU:	0.575
	TH	2.00	20	3,200	0.006			
	LT	0.00	100	1,600	0.063	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **15 - Henry Ford Av/Terminal Isl Ramps & Pier A Way**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	NBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.151
	TH	2.00	480	3,200	0.156	*	N-S(2):	0.162 *
	LT	2.00	300	2,880	0.104		E-W(1):	0.022
Westbound	RT	1.00	180	1,600	0.060	*	E-W(2):	0.085 *
	TH	0.00	0	0	0.000			
	LT	1.00	30	1,600	0.019		V/C:	0.247
Northbound	RT	1.00	60	1,600	0.000		Lost Time:	0.100
	TH	2.00	150	3,200	0.047		ITS:	0.000
	LT	1.00	10	1,600	0.006	*		
Eastbound	RT	1.00	10	1,600	0.003		ICU:	0.347
	TH	0.00	0	0	0.000			
	LT	1.00	40	1,600	0.025	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	40	0	0.000		N-S(1):	0.166 *
	TH	2.00	420	3,200	0.144		N-S(2):	0.150
	LT	2.00	200	2,880	0.069	*	E-W(1):	0.051
Westbound	RT	1.00	450	1,600	0.247	*	E-W(2):	0.278 *
	TH	0.17	10	267	0.038			
	LT	0.83	50	1,333	0.038		V/C:	0.444
Northbound	RT	1.00	90	1,600	0.000		Lost Time:	0.100
	TH	2.00	310	3,200	0.097	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.50	10	800	0.009		ICU:	0.544
	TH	0.50	10	800	0.013			
	LT	1.00	50	1,600	0.031	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	50	0	0.000		N-S(1):	0.250 *
	TH	2.00	380	3,200	0.134		N-S(2):	0.140
	LT	2.00	370	2,880	0.128	*	E-W(1):	0.057
Westbound	RT	1.00	670	1,600	0.355	*	E-W(2):	0.393 *
	TH	0.14	10	229	0.044			
	LT	0.86	60	1,371	0.044		V/C:	0.643
Northbound	RT	1.00	70	1,600	0.000		Lost Time:	0.100
	TH	2.00	390	3,200	0.122	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.50	10	800	0.009		ICU:	0.743
	TH	0.50	10	800	0.013			
	LT	1.00	60	1,600	0.038	*	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **16 - Pico Ave & Pier C St**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	210	3,200	0.000		N-S(1):	0.094
	TH	3.00	460	4,800	0.096	*	N-S(2):	0.134 *
	LT	0.00	0	0	0.000		E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.069 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.203
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	300	3,200	0.094		ITS:	0.000
	LT	1.00	60	1,600	0.038	*		
Eastbound	RT	0.00	10	0	0.000		ICU:	0.303
	TH	0.00	0	0	0.000			
	LT	0.00	110	1,600	0.069	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	160	3,200	0.000		N-S(1):	0.366 *
	TH	3.00	830	4,800	0.173		N-S(2):	0.192
	LT	0.00	0	0	0.000	*	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.113 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.479
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	1,170	3,200	0.366	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	0.00	60	0	0.000		ICU:	0.579
	TH	0.00	0	0	0.000			
	LT	0.00	180	1,600	0.113	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	130	3,200	0.000		N-S(1):	0.234 *
	TH	3.00	450	4,800	0.094		N-S(2):	0.113
	LT	0.00	0	0	0.000	*	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.169 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.403
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	750	3,200	0.234	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	0.00	90	0	0.000		ICU:	0.503
	TH	0.00	0	0	0.000			
	LT	0.00	270	1,600	0.169	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **17 - Pico Ave & Pier D St**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR, WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	160	0	0.000		N-S(1):	0.106
	TH	2.00	320	3,200	0.150	*	N-S(2):	0.194 *
	LT	1.00	10	1,600	0.006		E-W(1):	0.006
Westbound	RT	1.00	10	1,600	0.000		E-W(2):	0.021 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.215
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	320	3,200	0.100		ITS:	0.000
	LT	1.00	70	1,600	0.044	*		
Eastbound	RT	1.00	50	1,600	0.000		ICU:	0.315
	TH	0.00	0	0	0.000			
	LT	2.00	60	2,880	0.021	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	110	0	0.000		N-S(1):	0.312 *
	TH	2.00	760	3,200	0.272		N-S(2):	0.291
	LT	1.00	10	1,600	0.006	*	E-W(1):	0.087
Westbound	RT	1.00	10	1,600	0.000		E-W(2):	0.090 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.402
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	970	3,200	0.306	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	1.00	110	1,600	0.050		ICU:	0.502
	TH	0.08	10	123	0.081			
	LT	1.92	250	2,769	0.090	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	120	0	0.000		N-S(1):	0.216 *
	TH	2.00	420	3,200	0.169		N-S(2):	0.200
	LT	1.00	0	1,600	0.000	*	E-W(1):	0.037
Westbound	RT	1.00	10	1,600	0.006		E-W(2):	0.048 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.264
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	690	3,200	0.216	*	ITS:	0.000
	LT	1.00	50	1,600	0.031			
Eastbound	RT	1.00	100	1,600	0.031		ICU:	0.364
	TH	0.00	0	0	0.000			
	LT	2.00	120	2,880	0.042	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **181 - Pico Ave & Westbound Ocean Ave On Ramp**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	120	0	0.000		N-S(1):	0.122
	TH	2.00	230	1,600	0.113	*	N-S(2):	0.269 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000 *
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.269
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	360	3,200	0.116		ITS:	0.000
	LT	1.00	250	1,600	0.156	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.369
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	450	1,600	0.281	*	N-S(1):	0.319
	TH	2.00	390	1,600	0.244		N-S(2):	0.575 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000 *
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.575
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	990	3,200	0.313		ITS:	0.000
	LT	1.00	470	1,600	0.294	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.675
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	180	0	0.000	*	N-S(1):	0.231
	TH	2.00	320	1,600	0.159		N-S(2):	0.353 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000 *
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.353
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	710	3,200	0.225		ITS:	0.000
	LT	1.00	310	1,600	0.194	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.453
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **182 - Pico Ave & Westbound Ocean Ave Off Ramp**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.178 *
	TH	2.00	290	3,200	0.091		N-S(2):	0.091
	LT	0.00	0	0	0.000	*	E-W(1):	0.006
Westbound	RT	0.00	50	1,600	0.031	*	E-W(2):	0.031 *
	TH	2.00	0	1,600	0.000			
	LT	1.00	10	1,600	0.006		V/C:	0.209
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	570	3,200	0.178	*	ITS:	0.000
	LT	1.00	0	1,600	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.309
	TH	1.00	0	1,600	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.450 *
	TH	2.00	490	3,200	0.153		N-S(2):	0.153
	LT	0.00	0	0	0.000	*	E-W(1):	0.013
Westbound	RT	0.00	50	1,600	0.031	*	E-W(2):	0.031 *
	TH	2.00	0	1,600	0.000			
	LT	1.00	20	1,600	0.013		V/C:	0.481
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	1,440	3,200	0.450	*	ITS:	0.000
	LT	1.00	0	1,600	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.581
	TH	1.00	0	1,600	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.313 *
	TH	2.00	360	3,200	0.113		N-S(2):	0.113
	LT	0.00	0	0	0.000	*	E-W(1):	0.008
Westbound	RT	0.00	40	0	0.000	*	E-W(2):	0.025 *
	TH	1.00	0	1,600	0.025			
	LT	2.00	20	2,560	0.008		V/C:	0.338
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	1,000	3,200	0.313	*	ITS:	0.000
	LT	1.00	0	1,600	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.438
	TH	1.00	0	1,600	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **19 - Pico Ave & Pier E St/Eastbound Ocean Ave Ramp**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.235 *
	TH	2.00	270	3,200	0.091	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.157 *
Westbound	RT	0.00	80	0	0.000		E-W(2):	0.082
	TH	2.00	20	1,600	0.063			
	LT	0.00	220	1,600	0.138	*	V/C:	0.392
Northbound	RT	0.00	70	0	0.000		Lost Time:	0.100
	TH	2.00	340	3,200	0.128		ITS:	0.000
	LT	1.00	230	1,600	0.144	*		
Eastbound	RT	0.33	10	533	0.000		ICU:	0.492
	TH	0.67	20	1,067	0.019	*		
	LT	1.00	30	1,600	0.019		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.550 *
	TH	2.00	460	3,200	0.147	*	N-S(2):	0.000
	LT	1.00	40	1,600	0.025		E-W(1):	0.106 *
Westbound	RT	0.00	110	0	0.000		E-W(2):	0.106 *
	TH	2.00	10	1,600	0.075			
	LT	0.00	130	1,600	0.081	*	V/C:	0.656
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	1,280	3,200	0.403	*	ITS:	0.000
	LT	1.00	270	1,600	0.169			
Eastbound	RT	0.25	10	400	0.000		ICU:	0.756
	TH	0.75	30	1,200	0.025	*		
	LT	1.00	50	1,600	0.031		LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.353 *
	TH	2.00	320	3,200	0.106	*	N-S(2):	0.000
	LT	1.00	20	1,600	0.013		E-W(1):	0.088
Westbound	RT	0.00	110	1,600	0.069		E-W(2):	0.119 *
	TH	2.00	20	1,600	0.013			
	LT	0.00	80	1,600	0.050	*	V/C:	0.472
Northbound	RT	0.00	50	0	0.000		Lost Time:	0.100
	TH	2.00	740	3,200	0.247	*	ITS:	0.000
	LT	1.00	190	1,600	0.119			
Eastbound	RT	0.33	20	533	0.000		ICU:	0.572
	TH	0.67	40	1,067	0.038	*		
	LT	1.00	80	1,600	0.050		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **20 - Pier S Ave & New Dock St**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.230 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.104 *
Westbound	RT	0.00	10	1,600	0.006		E-W(2):	0.000
	TH	3.00	10	3,200	0.003			
	LT	1.00	146	1,600	0.091	*	V/C:	0.334
Northbound	RT	1.00	205	1,600	0.083		Lost Time:	0.100
	TH	0.98	250	1,569	0.159		ITS:	0.000
	LT	1.02	260	1,305	0.199	*		
Eastbound	RT	1.00	500	1,600	0.000		ICU:	0.434
	TH	2.00	10	3,200	0.003			
	LT	1.00	20	1,600	0.013	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.212 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.130 *
Westbound	RT	0.00	10	1,600	0.006		E-W(2):	0.000
	TH	3.00	0	3,200	0.000			
	LT	1.00	187	1,600	0.117	*	V/C:	0.342
Northbound	RT	1.00	296	1,600	0.127		Lost Time:	0.100
	TH	1.00	290	1,600	0.181	*	ITS:	0.000
	LT	1.00	170	1,600	0.106			
Eastbound	RT	1.00	460	1,600	0.000		ICU:	0.442
	TH	2.00	20	3,200	0.006			
	LT	1.00	20	1,600	0.013	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.212 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.119 *
Westbound	RT	0.00	10	1,600	0.006		E-W(2):	0.000
	TH	3.00	0	3,200	0.000			
	LT	1.00	170	1,600	0.106	*	V/C:	0.331
Northbound	RT	1.00	329	1,600	0.153		Lost Time:	0.100
	TH	1.00	290	1,600	0.181	*	ITS:	0.000
	LT	1.00	160	1,600	0.100			
Eastbound	RT	1.00	460	1,600	0.000		ICU:	0.431
	TH	2.00	20	3,200	0.006			
	LT	1.00	20	1,600	0.013	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **21 - Terminal Island Fwy & *CA-47 Westbound**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	WBR		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	460	3,200	0.144 *	N-S(1):	0.228 *
	TH	2.00	390	3,200	0.122	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.044
Westbound	RT	1.00	420	1,600	0.000	E-W(2):	0.141 *
	TH	2.00	450	3,200	0.141 *		
	LT	1.00	70	1,600	0.044	V/C:	0.369
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	260	3,200	0.081	ITS:	0.000
	LT	1.00	135	1,600	0.084 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.469
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	450	3,200	0.141 *	N-S(1):	0.285 *
	TH	2.00	400	3,200	0.125	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.031
Westbound	RT	1.00	750	1,600	0.000	E-W(2):	0.172 *
	TH	2.00	550	3,200	0.172 *		
	LT	1.00	50	1,600	0.031	V/C:	0.457
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	460	3,200	0.144 *	ITS:	0.000
	LT	1.00	176	1,600	0.110		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.557
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	490	3,200	0.153 *	N-S(1):	0.297 *
	TH	2.00	500	3,200	0.156	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.031
Westbound	RT	1.00	800	1,600	0.000	E-W(2):	0.169 *
	TH	2.00	540	3,200	0.169 *		
	LT	1.00	50	1,600	0.031	V/C:	0.466
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	450	3,200	0.141 *	ITS:	0.000
	LT	1.00	159	1,600	0.099		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.566
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **22 - Terminal Island Fwy & *CA-47 Eastbound**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.217 *
	TH	0.18	40	291	0.138		N-S(2):	0.138
	LT	1.82	400	2,327	0.172	*	E-W(1):	0.177 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.098
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.394
Northbound	RT	1.00	50	1,600	0.031		Lost Time:	0.100
	TH	2.00	145	3,200	0.045	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	156	0	0.000		ICU:	0.494
	TH	2.00	410	3,200	0.177	*		
	LT	2.00	250	2,560	0.098		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.230 *
	TH	0.14	30	218	0.138		N-S(2):	0.138
	LT	1.86	410	2,385	0.172	*	E-W(1):	0.165
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.180 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.410
Northbound	RT	1.00	40	1,600	0.025		Lost Time:	0.100
	TH	2.00	186	3,200	0.058	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	197	0	0.000		ICU:	0.510
	TH	2.00	330	3,200	0.165			
	LT	2.00	460	2,560	0.180	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.264 *
	TH	0.11	30	178	0.169		N-S(2):	0.169
	LT	1.89	510	2,418	0.211	*	E-W(1):	0.156
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.180 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.444
Northbound	RT	1.00	40	1,600	0.025		Lost Time:	0.100
	TH	2.00	169	3,200	0.053	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	170	0	0.000		ICU:	0.544
	TH	2.00	330	3,200	0.156			
	LT	2.00	460	2,560	0.180	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **23 - Pier S Avenue & *CA-47 Westbound**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	180	1,600	0.113		N-S(1):	0.056
	TH	2.00	536	3,200	0.168	*	N-S(2):	0.168 *
	LT	0.00	0	0	0.000		E-W(1):	0.167 *
Westbound	RT	2.00	535	3,200	0.167	*	E-W(2):	0.000
	TH	2.00	490	3,200	0.153			
	LT	0.00	0	0	0.000		V/C:	0.335
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	180	3,200	0.056		ITS:	0.000
	LT	0.00	0	0	0.000	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.435
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	190	1,600	0.119		N-S(1):	0.069
	TH	2.00	547	3,200	0.171	*	N-S(2):	0.171 *
	LT	0.00	0	0	0.000		E-W(1):	0.191 *
Westbound	RT	2.00	556	3,200	0.174		E-W(2):	0.000
	TH	2.00	610	3,200	0.191	*		
	LT	0.00	0	0	0.000		V/C:	0.362
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	220	3,200	0.069		ITS:	0.000
	LT	0.00	0	0	0.000	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.462
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	160	1,600	0.100		N-S(1):	0.100
	TH	2.00	350	3,200	0.109	*	N-S(2):	0.109 *
	LT	0.00	0	0	0.000		E-W(1):	0.241 *
Westbound	RT	2.00	399	3,200	0.125		E-W(2):	0.000
	TH	2.00	770	3,200	0.241	*		
	LT	0.00	0	0	0.000		V/C:	0.350
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	320	3,200	0.100		ITS:	0.000
	LT	0.00	0	0	0.000	*		
Eastbound	RT	0.00	0	0	0.000		ICU:	0.450
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **24 - Pier S Avenue & *CA-47 Eastbound**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.205 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	2.00	526	2,560	0.205 *	E-W(1):	0.091
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.113 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.318
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.418
	TH	2.00	290	3,200	0.091		
	LT	1.00	180	1,600	0.113 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.210 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	2.00	537	2,560	0.210 *	E-W(1):	0.138 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.138 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	V/C:	0.348
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.448
	TH	2.00	440	3,200	0.138 *		
	LT	1.00	220	1,600	0.138 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.137 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	2.00	350	2,560	0.137 *	E-W(1):	0.172
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.200 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	V/C:	0.337
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.437
	TH	2.00	550	3,200	0.172 *		
	LT	1.00	320	1,600	0.200 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **25 - Pico Ave/Pier G Ave & Harbor Plaza Dr**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	SBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	420	1,600	0.145	N-S(1):	0.169 *
	TH	1.00	200	1,600	0.125	N-S(2):	0.151
	LT	1.00	160	1,600	0.100 *	E-W(1):	0.392 *
Westbound	RT	0.00	440	1,600	0.275 *	E-W(2):	0.000
	TH	2.00	100	1,600	0.063		
	LT	1.00	110	1,600	0.069	V/C:	0.561
Northbound	RT	0.00	40	0	0.000	Lost Time:	0.100
	TH	2.00	180	3,200	0.069 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.29	20	457	0.041	ICU:	0.661
	TH	0.71	50	1,143	0.044		
	LT	2.00	300	2,560	0.117 *	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	490	1,600	0.056	N-S(1):	0.191 *
	TH	1.00	120	1,600	0.075	N-S(2):	0.081
	LT	1.00	190	1,600	0.119 *	E-W(1):	0.800 *
Westbound	RT	0.00	880	1,600	0.550 *	E-W(2):	0.000
	TH	2.00	80	1,600	0.050		
	LT	1.00	110	1,600	0.069	V/C:	0.991
Northbound	RT	0.00	110	0	0.000	Lost Time:	0.100
	TH	2.00	120	3,200	0.072 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.10	10	160	0.059	ICU:	1.091
	TH	0.90	90	1,440	0.063		
	LT	2.00	640	2,560	0.250 *	LOS:	F

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	320	1,600	0.000	N-S(1):	0.203 *
	TH	1.00	150	1,600	0.094	N-S(2):	0.100
	LT	1.00	190	1,600	0.119 *	E-W(1):	0.633 *
Westbound	RT	0.00	650	1,600	0.406 *	E-W(2):	0.000
	TH	2.00	80	1,600	0.050		
	LT	1.00	60	1,600	0.038	V/C:	0.836
Northbound	RT	0.00	90	0	0.000	Lost Time:	0.100
	TH	2.00	180	3,200	0.084 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.07	10	107	0.091	ICU:	0.936
	TH	0.93	140	1,493	0.094		
	LT	2.00	580	2,560	0.227 *	LOS:	E

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **27 - Harbor Plaza Dr & Queensway Dr**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	30	1,600	0.019 *	N-S(1):	0.273 *
	TH	2.00	10	3,200	0.003	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.006
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.021 *
	TH	3.00	80	4,800	0.021 *		
	LT	0.00	10	1,600	0.006	V/C:	0.294
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.06	20	98	0.203	ITS:	0.000
	LT	1.94	630	2,481	0.254 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.394
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.025 *	N-S(1):	0.405 *
	TH	2.00	10	3,200	0.003	N-S(2):	0.000
	LT	0.00	10	1,600	0.006	E-W(1):	0.006
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.029 *
	TH	3.00	110	4,800	0.029 *		
	LT	0.00	10	1,600	0.006	V/C:	0.434
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.04	20	66	0.304	ITS:	0.000
	LT	1.96	953	2,507	0.380 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.534
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.031 *	N-S(1):	0.422 *
	TH	2.00	20	3,200	0.006	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.006
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.044 *
	TH	3.00	180	4,800	0.044 *		
	LT	0.00	10	1,600	0.006	V/C:	0.466
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.08	40	128	0.313	ITS:	0.000
	LT	1.92	961	2,458	0.391 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.566
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **28 - Harbor Plaza Dr & Harbor Scenic Dr**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.132 *
	TH	2.00	10	1,600	0.006		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.378 *
Westbound	RT	2.00	600	3,200	0.184	*	E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	241	1,600	0.151		V/C:	0.510
Northbound	RT	1.00	201	1,600	0.126	*	Lost Time:	0.100
	TH	2.00	40	3,200	0.013		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	10	1,600	0.006		ICU:	0.610
	TH	3.00	930	4,800	0.194	*		
	LT	1.00	10	1,600	0.006		LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.090 *
	TH	2.00	10	1,600	0.006		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.605 *
Westbound	RT	2.00	890	3,200	0.275		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	584	1,600	0.365	*	V/C:	0.695
Northbound	RT	1.00	134	1,600	0.084	*	Lost Time:	0.100
	TH	2.00	63	3,200	0.020		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	10	1,600	0.006		ICU:	0.795
	TH	3.00	1,150	4,800	0.240	*		
	LT	1.00	20	1,600	0.013		LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.085 *
	TH	2.00	20	1,600	0.009		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.501 *
Westbound	RT	2.00	940	3,200	0.291		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	382	1,600	0.239	*	V/C:	0.586
Northbound	RT	1.00	122	1,600	0.076	*	Lost Time:	0.100
	TH	2.00	51	3,200	0.016		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	10	1,600	0.006		ICU:	0.686
	TH	3.00	1,010	4,800	0.210	*		
	LT	1.00	10	1,600	0.006		LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **30 - Long Beach Blvd. & PCH**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.028		N-S(1):	0.279 *
	TH	2.00	500	3,200	0.156		N-S(2):	0.269
	LT	1.00	162	1,600	0.101	*	E-W(1):	0.292
Westbound	RT	0.00	82	0	0.000		E-W(2):	0.334 *
	TH	3.00	1,190	4,800	0.265	*		
	LT	1.00	150	1,600	0.094		V/C:	0.613
Northbound	RT	1.00	70	1,600	0.000		Lost Time:	0.100
	TH	2.00	570	3,200	0.178	*	ITS:	0.000
	LT	1.00	180	1,600	0.113			
Eastbound	RT	0.00	73	0	0.000		ICU:	0.713
	TH	3.00	879	4,800	0.198			
	LT	1.00	110	1,600	0.069	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.022		N-S(1):	0.303 *
	TH	2.00	500	3,200	0.156		N-S(2):	0.256
	LT	1.00	190	1,600	0.119	*	E-W(1):	0.280 *
Westbound	RT	0.00	130	0	0.000		E-W(2):	0.269
	TH	3.00	770	4,800	0.188			
	LT	1.00	100	1,600	0.063	*	V/C:	0.583
Northbound	RT	1.00	80	1,600	0.019		Lost Time:	0.100
	TH	2.00	590	3,200	0.184	*	ITS:	0.000
	LT	1.00	160	1,600	0.100			
Eastbound	RT	0.00	90	0	0.000		ICU:	0.683
	TH	3.00	950	4,800	0.217	*		
	LT	1.00	130	1,600	0.081		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	160	1,600	0.044		N-S(1):	0.319 *
	TH	2.00	550	3,200	0.172		N-S(2):	0.266
	LT	1.00	181	1,600	0.113	*	E-W(1):	0.387 *
Westbound	RT	0.00	85	0	0.000		E-W(2):	0.291
	TH	3.00	767	4,800	0.178			
	LT	1.00	140	1,600	0.088	*	V/C:	0.706
Northbound	RT	1.00	110	1,600	0.025		Lost Time:	0.100
	TH	2.00	660	3,200	0.206	*	ITS:	0.000
	LT	1.00	150	1,600	0.094			
Eastbound	RT	0.00	85	0	0.000		ICU:	0.806
	TH	3.00	1,350	4,800	0.299	*		
	LT	1.00	180	1,600	0.113		LOS:	D

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **31 - Long Beach Blvd. & Anaheim St.**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	60	1,600	0.034		N-S(1):	0.219
	TH	2.00	450	3,200	0.141	*	N-S(2):	0.229 *
	LT	1.00	110	1,600	0.069		E-W(1):	0.194
Westbound	RT	0.00	120	0	0.000		E-W(2):	0.258 *
	TH	3.00	1,080	4,800	0.252	*		
	LT	0.00	10	1,600	0.006		V/C:	0.487
Northbound	RT	0.00	60	0	0.000		Lost Time:	0.100
	TH	2.00	420	3,200	0.150		ITS:	0.000
	LT	1.00	140	1,600	0.088	*		
Eastbound	RT	0.00	70	0	0.000		ICU:	0.587
	TH	3.00	820	4,800	0.188			
	LT	0.00	10	1,600	0.006	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	80	1,600	0.044		N-S(1):	0.265
	TH	2.00	410	3,200	0.128	*	N-S(2):	0.272 *
	LT	1.00	130	1,600	0.081		E-W(1):	0.233 *
Westbound	RT	0.00	150	0	0.000		E-W(2):	0.201
	TH	3.00	740	4,800	0.188			
	LT	0.00	10	1,600	0.006	*	V/C:	0.505
Northbound	RT	0.00	90	0	0.000		Lost Time:	0.100
	TH	2.00	500	3,200	0.184		ITS:	0.000
	LT	1.00	230	1,600	0.144	*		
Eastbound	RT	0.00	80	0	0.000		ICU:	0.605
	TH	3.00	990	4,800	0.227	*		
	LT	0.00	20	1,600	0.013		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	110	1,600	0.063		N-S(1):	0.328 *
	TH	2.00	470	3,200	0.147	*	N-S(2):	0.260
	LT	1.00	160	1,600	0.100		E-W(1):	0.302 *
Westbound	RT	0.00	120	0	0.000		E-W(2):	0.190
	TH	3.00	720	4,800	0.177			
	LT	0.00	10	1,600	0.006	*	V/C:	0.630
Northbound	RT	0.00	110	0	0.000		Lost Time:	0.100
	TH	2.00	620	3,200	0.228		ITS:	0.000
	LT	1.00	180	1,600	0.113	*		
Eastbound	RT	0.00	100	0	0.000		ICU:	0.730
	TH	3.00	1,300	4,800	0.296	*		
	LT	0.00	20	1,600	0.013		LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **32 - Long Beach Blvd. & Ocean Blvd**
Description: **Baseline Plus Project Conditions (Alternative 3)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	240	3,200	0.041		N-S(1):	0.044 *
	TH	0.00	0	0	0.000		N-S(2):	0.041
	LT	1.00	70	1,600	0.044	*	E-W(1):	0.104
Westbound	RT	1.00	130	1,600	0.081		E-W(2):	0.438 *
	TH	3.00	1,770	4,800	0.369	*		
	LT	0.00	0	0	0.000		V/C:	0.482
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.582
	TH	3.00	490	4,800	0.104			
	LT	1.00	110	1,600	0.069	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.71	160	2,743	0.027		N-S(1):	0.073 *
	TH	0.00	0	0	0.000		N-S(2):	0.027
	LT	1.29	120	1,646	0.073	*	E-W(1):	0.198
Westbound	RT	1.00	100	1,600	0.026		E-W(2):	0.228 *
	TH	3.00	790	4,800	0.165	*		
	LT	0.00	10	1,600	0.006		V/C:	0.301
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.401
	TH	3.00	910	4,800	0.192			
	LT	1.00	100	1,600	0.063	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.85	210	2,965	0.011		N-S(1):	0.089 *
	TH	0.00	0	0	0.000		N-S(2):	0.011
	LT	1.15	130	1,468	0.089	*	E-W(1):	0.388 *
Westbound	RT	1.00	100	1,600	0.063		E-W(2):	0.300
	TH	3.00	870	4,800	0.181	*		
	LT	0.00	0	0	0.000		V/C:	0.477
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.577
	TH	3.00	1,860	4,800	0.388			
	LT	1.00	190	1,600	0.119	*	LOS:	A

* - Denotes critical movement

Level of Service Workheet
(Circular 212 Method)

I/S #:
4

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project - Alternative 3 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			1			1
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	20	0	20	20	0	20
	Left-Through		0			0	
	Through	0	0	**50**	0	0	**40**
	Through-Right		0			0	
	Right	30	0	0	20	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	40	0	40	70	0	70
	Left-Through		0			0	
	Through	10	0	**120**	0	0	**140**
	Through-Right		0			0	
	Right	70	0	0	70	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	70	1	**70**	70	1	**70**
	Left-Through		0			0	
	Through	650	1	335	690	1	355
	Through-Right		1			1	
	Right	20	0	20	20	0	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	30	1	30	30	1	30
	Left-Through		0			0	
	Through	930	2	**465**	690	2	**345**
	Through-Right		0			0	
	Right	10	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	170		*North-South:*	180
			East-West:	535		*East-West:*	415
			SUM:	705		*SUM:*	595
VOLUME/CAPACITY *(V/C)* RATIO:				0.513			0.433
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.413**			**0.333**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project - Alternative 3 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	20	0	20	40	0	40
	Left-Through		0			0	
	Through	0	0	**70**	0	0	**120**
	Through-Right		0			0	
	Right	50	0	0	80	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	0	0	0	0	0	10
	Through-Right		1			1	
	Right	0	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	1	**0**	10	1	10
	Left-Through		0			0	
	Through	770	1	400	810	1	**425**
	Through-Right		1			1	
	Right	30	0	30	40	0	40
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	80	1	80	70	1	**70**
	Left-Through		0			0	
	Through	1040	1	**525**	810	1	410
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	80		*North-South:*	130
			East-West:	525		*East-West:*	495
			SUM:	605		*SUM:*	625
VOLUME/CAPACITY *(V/C)* RATIO:				0.425			0.439
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.325**			**0.339**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
8

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Baseline plus Project - Alternative 3 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	580	2	**230**	920	2	**353**
	Through-Right		1			1	
	Right	110	0	110	140	0	140
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	360	1	**360**	270	1	**270**
	Left-Through		0			0	
	Through	1020	3	340	950	3	317
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	100	1	**100**	140	1	**140**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	380	1	20	290	1	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	590		*North-South:*	623
			East-West:	100		*East-West:*	140
			SUM:	690		*SUM:*	763
VOLUME/CAPACITY *(V/C)* RATIO:				0.484			0.535
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.384**			**0.435**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
9	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Baseline plus Project - Alternative 3 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	190	1	**190**	180	1	**180**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	270	1	110	240	1	125
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	320	1	**320**	230	1	**230**
	Left-Through		0			0	
	Through	1000	2	500	960	2	480
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1140	2	**437**	970	2	**390**
	Through-Right		1			1	
	Right	170	0	170	200	0	200
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	190		*North-South:*	180
			East-West:	757		*East-West:*	620
			SUM:	947		*SUM:*	800
VOLUME/CAPACITY *(V/C)* RATIO:				0.665			0.561
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.565**			**0.461**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
13	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Henry Ford Av **East-West Street:** Anaheim St.
Scenario: Baseline plus Project - Alternative 3 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 3	*SB--*	3	*NB--* 3	*SB--*	3
	EB-- 1	*WB--*	3	*EB--* 1	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	170	1	**120**	260	1	**243**
	Left-Through		1			1	
	Through	190	1	120	470	1	243
	Through-Right		0			0	
	Right	130	1	50	110	1	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	170	1	170	170	1	170
	Left-Through		0			0	
	Through	380	2	**190**	450	2	**225**
	Through-Right		0			0	
	Right	60	1	0	70	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	80	1	**80**	130	1	130
	Left-Through		0			0	
	Through	710	2	355	890	2	**445**
	Through-Right		0			0	
	Right	270	1	0	190	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	80	1	80	90	1	**90**
	Left-Through		0			0	
	Through	1080	2	**540**	790	2	395
	Through-Right		0			0	
	Right	220	1	50	290	1	120
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	310		*North-South:*	468
			East-West:	620		*East-West:*	535
			SUM:	930		*SUM:*	1003
VOLUME/CAPACITY *(V/C)* RATIO:				0.676			0.729
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.576**			**0.629**
LEVEL OF SERVICE (LOS):				**A**			**B**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
26	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** *Seaside Fwy
Scenario: Baseline plus Project - Alternative 3 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 1	SB--	0	NB-- 1	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	100	2	**55**	120	2	**66**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	230	1	0	440	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	10	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	2180	3	**727**	1720	3	**573**
	Through-Right		0			0	
	Right	160	1	133	110	1	77
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	50	2	**28**	30	2	**17**
	Left-Through		0			0	
	Through	1910	3	637	1480	3	493
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	55		*North-South:*	66
			East-West:	755		*East-West:*	590
			SUM:	810		*SUM:*	656
VOLUME/CAPACITY *(V/C)* RATIO:				0.568			0.460
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.468**			**0.360**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
29	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Baseline plus Project - Alternative 3 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM				PM			
No. of Phases					4				4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					2				2
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--		0	NB-- 0	SB--		0
		EB-- 0	WB--		3	EB-- 0	WB--		3
ATSAC-1 or ATSAC+ATCS-2?					2				2
Override Capacity					0				0
MOVEMENT		Volume	No. of Lanes	Lane Volume		Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	10	1	**10**		10	1	10	
	Left-Through		0				0		
	Through	100	2	33		120	2	**43**	
	Through-Right		1				1		
	Right	0	0	0		10	0	10	
	Left-Through-Right		0				0		
	Left-Right		0				0		
SOUTHBOUND	Left	50	1	50		40	1	**40**	
	Left-Through		0				0		
	Through	90	1	**80**		60	1	55	
	Through-Right		1				1		
	Right	70	0	70		50	0	50	
	Left-Through-Right		0				0		
	Left-Right		0				0		
EASTBOUND	Left	180	2	**99**		390	2	**215**	
	Left-Through		0				0		
	Through	10	0	20		10	0	20	
	Through-Right		1				1		
	Right	10	0	0		10	0	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
WESTBOUND	Left	0	0	0		10	0	10	
	Left-Through		1				1		
	Through	10	0	**10**		10	0	**20**	
	Through-Right		0				0		
	Right	50	1	0		40	1	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
CRITICAL VOLUMES			North-South:	90			North-South:	83	
			East-West:	109			East-West:	235	
			SUM:	199			SUM:	318	
VOLUME/CAPACITY (V/C) RATIO:				0.145				0.231	
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.072**				**0.131**	
LEVEL OF SERVICE (LOS):				**A**				**A**	

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
4

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project - Alternative 3 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				1			1
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	10	0	10	10	0	10
	Left-Through		0			0	
	Through	0	0	**60**	0	0	**60**
	Through-Right		0			0	
	Right	50	0	0	50	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	50	0	50	50	0	50
	Left-Through		0			0	
	Through	0	0	**100**	0	0	**100**
	Through-Right		0			0	
	Right	50	0	0	50	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	60	1	60	60	1	60
	Left-Through		0			0	
	Through	1230	1	**620**	1230	1	**620**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	730	2	365	730	2	365
	Through-Right		0			0	
	Right	20	1	0	20	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	160		*North-South:*	160
			East-West:	630		*East-West:*	630
			SUM:	790		*SUM:*	790
VOLUME/CAPACITY *(V/C)* RATIO:				0.575			0.575
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.475**			**0.475**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project - Alternative 3 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	40	0	40	40	0	40
	Left-Through		0			0	
	Through	0	0	**150**	0	0	**150**
	Through-Right		0			0	
	Right	110	0	0	110	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	30	1	**30**	30	1	**30**
	Left-Through		0			0	
	Through	10	0	20	10	0	20
	Through-Right		1			1	
	Right	10	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	10	1	10	10	1	10
	Left-Through		0			0	
	Through	1350	1	**700**	1350	1	**700**
	Through-Right		1			1	
	Right	50	0	50	50	0	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	70	1	**70**	70	1	**70**
	Left-Through		0			0	
	Through	840	1	430	840	1	430
	Through-Right		1			1	
	Right	20	0	20	20	0	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	180		*North-South:*	180
			East-West:	770		*East-West:*	770
			SUM:	950		*SUM:*	950
VOLUME/CAPACITY *(V/C)* RATIO:				0.667			0.667
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.567**			**0.567**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
8	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Baseline plus Project - Alternative 3 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	970	2	**387**	970	2	**387**
	Through-Right		1			1	
	Right	190	0	190	190	0	190
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	360	1	**360**	360	1	**360**
	Left-Through		0			0	
	Through	1070	3	357	1070	3	357
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	100	1	**100**	100	1	**100**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	450	1	90	450	1	90
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	747		*North-South:*	747
			East-West:	100		*East-West:*	100
			SUM:	847		*SUM:*	847
VOLUME/CAPACITY *(V/C)* RATIO:				0.594			0.594
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.494**			**0.494**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
9

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Baseline plus Project - Alternative 3 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	170	1	170	170	1	170
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	380	1	**215**	380	1	**215**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	330	1	**330**	330	1	**330**
	Left-Through		0			0	
	Through	1340	2	670	1340	2	670
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1220	2	**477**	1220	2	**477**
	Through-Right		1			1	
	Right	210	0	210	210	0	210
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	215		*North-South:*	215
			East-West:	807		*East-West:*	807
			SUM:	1022		*SUM:*	1022
VOLUME/CAPACITY *(V/C)* RATIO:				0.717			0.717
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.617**			**0.617**
LEVEL OF SERVICE (LOS):				**B**			**B**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
13

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Henry Ford Av **East-West Street:** Anaheim St.
Scenario: Baseline plus Project - Alternative 3 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 3	SB--	3	NB-- 3	SB--	3
		EB-- 1	WB--	3	EB-- 1	WB--	3
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	450	1	277	450	1	277
	Left-Through		1			1	
	Through	380	1	**277**	380	1	**277**
	Through-Right		0			0	
	Right	140	1	50	140	1	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	230	1	**230**	230	1	**230**
	Left-Through		0			0	
	Through	400	2	200	400	2	200
	Through-Right		0			0	
	Right	80	1	0	80	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	90	1	90	90	1	90
	Left-Through		0			0	
	Through	1340	2	**670**	1340	2	**670**
	Through-Right		0			0	
	Right	360	1	0	360	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	90	1	**90**	90	1	**90**
	Left-Through		0			0	
	Through	790	2	395	790	2	395
	Through-Right		0			0	
	Right	220	1	0	220	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	507		*North-South:*	507
			East-West:	760		*East-West:*	760
			SUM:	1267		*SUM:*	1267
VOLUME/CAPACITY *(V/C)* RATIO:				0.921			0.921
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.821**			**0.821**
LEVEL OF SERVICE (LOS):				**D**			**D**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
26	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** *Seaside Fwy
Scenario: Baseline plus Project - Alternative 3 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 1	SB--	0	NB-- 1	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	170	2	**94**	170	2	**94**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	400	1	0	400	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	2530	3	**843**	2530	3	**843**
	Through-Right		0			0	
	Right	250	1	203	250	1	203
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	50	2	**28**	50	2	**28**
	Left-Through		0			0	
	Through	2020	3	673	2020	3	673
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	94		*North-South:*	94
			East-West:	871		*East-West:*	871
			SUM:	965		*SUM:*	965
VOLUME/CAPACITY *(V/C)* RATIO:				0.677			0.677
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.577**			**0.577**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
29

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Baseline plus Project - Alternative 3 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			2			2
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	10	1	10	10	1	10
	Left-Through		0			0	
	Through	190	2	**67**	190	2	**67**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	80	1	**80**	80	1	**80**
	Left-Through		0			0	
	Through	130	1	110	130	1	110
	Through-Right		1			1	
	Right	90	0	90	90	0	90
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	310	2	**171**	310	2	**171**
	Left-Through		0			0	
	Through	10	0	30	10	0	30
	Through-Right		1			1	
	Right	20	0	0	20	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		1			1	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	60	1	0	60	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	147		*North-South:*	147
			East-West:	171		*East-West:*	171
			SUM:	318		*SUM:*	318
VOLUME/CAPACITY *(V/C)* RATIO:				0.231			0.231
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.131**			**0.131**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Project Title: **PoLB Master Plan EIR**
Intersection: **1 - Alameda St & Sepulveda Blvd Ramp**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.321 *
	TH	3.00	1,050	4,800	0.219		N-S(2):	0.219
	LT	1.00	270	1,600	0.169	*	E-W(1):	0.069 *
Westbound	RT	2.00	330	3,200	0.019		E-W(2):	0.019
	TH	0.00	0	0	0.000			
	LT	1.00	110	1,600	0.069	*	V/C:	0.390
Northbound	RT	0.00	120	0	0.000		Lost Time:	0.100
	TH	3.00	610	4,800	0.152	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.490
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.317 *
	TH	3.00	900	4,800	0.188		N-S(2):	0.188
	LT	1.00	190	1,600	0.119	*	E-W(1):	0.088 *
Westbound	RT	2.00	320	3,200	0.041		E-W(2):	0.041
	TH	0.00	0	0	0.000			
	LT	1.00	140	1,600	0.088	*	V/C:	0.405
Northbound	RT	0.00	160	0	0.000		Lost Time:	0.100
	TH	3.00	790	4,800	0.198	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.505
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.398 *
	TH	3.00	1,160	4,800	0.242		N-S(2):	0.242
	LT	1.00	290	1,600	0.181	*	E-W(1):	0.063 *
Westbound	RT	2.00	410	3,200	0.038		E-W(2):	0.038
	TH	0.00	0	0	0.000			
	LT	1.00	100	1,600	0.063	*	V/C:	0.461
Northbound	RT	0.00	110	0	0.000		Lost Time:	0.100
	TH	3.00	930	4,800	0.217	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.561
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **2 - Alameda St Ramp & Sepulveda Blvd**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	190	1,600	0.059	N-S(1):	0.085 *
	TH	0.30	30	480	0.063	N-S(2):	0.069
	LT	1.70	170	2,448	0.069 *	E-W(1):	0.194
Westbound	RT	1.00	210	1,600	0.062	E-W(2):	0.582 *
	TH	1.00	740	1,600	0.463 *		
	LT	1.00	10	1,600	0.006	V/C:	0.667
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	30	1,600	0.016 *	ITS:	0.000
	LT	0.00	10	1,600	0.006		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.767
	TH	2.00	590	3,200	0.188		
	LT	1.00	190	1,600	0.119 *	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	150	1,600	0.034	N-S(1):	0.072 *
	TH	0.12	10	188	0.053	N-S(2):	0.059
	LT	1.88	160	2,711	0.059 *	E-W(1):	0.206
Westbound	RT	1.00	250	1,600	0.097	E-W(2):	0.407 *
	TH	1.00	460	1,600	0.288 *		
	LT	1.00	10	1,600	0.006	V/C:	0.479
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	20	1,600	0.013 *	ITS:	0.000
	LT	0.00	10	1,600	0.006		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.579
	TH	2.00	630	3,200	0.200		
	LT	1.00	190	1,600	0.119 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	200	1,600	0.031	N-S(1):	0.089 *
	TH	0.09	10	145	0.069	N-S(2):	0.075
	LT	1.91	210	2,749	0.076 *	E-W(1):	0.306
Westbound	RT	1.00	190	1,600	0.119	E-W(2):	0.507 *
	TH	1.00	510	1,600	0.319 *		
	LT	1.00	0	1,600	0.000	V/C:	0.596
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	20	1,600	0.013 *	ITS:	0.000
	LT	0.00	10	1,600	0.006		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.696
	TH	2.00	970	3,200	0.306		
	LT	1.00	300	1,600	0.188 *	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **3 - Intermodal Wy & Sepulveda Blvd**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.241
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.325 *
	TH	2.00	1,010	3,200	0.319 *		
	LT	0.00	0	0	0.000	V/C:	0.331
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.431
	TH	2.00	770	3,200	0.241		
	LT	1.00	10	1,600	0.006 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.244
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.262 *
	TH	2.00	810	3,200	0.256 *		
	LT	0.00	0	0	0.000	V/C:	0.268
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.368
	TH	2.00	780	3,200	0.244		
	LT	1.00	10	1,600	0.006 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.394 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.259
	TH	2.00	800	3,200	0.253 *		
	LT	0.00	0	0	0.000	V/C:	0.400
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.500
	TH	2.00	1,260	3,200	0.394		
	LT	1.00	10	1,600	0.006 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **6 - Terminal Island Fwy & Willow St/Sepulveda Blvd**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, EBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.000
	TH	0.00	0	0	0.000	*	N-S(2):	0.135 *
	LT	0.00	0	0	0.000		E-W(1):	0.223
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.250 *
	TH	2.00	780	3,200	0.244	*		
	LT	2.00	220	2,880	0.076		V/C:	0.385
Northbound	RT	2.00	200	3,200	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	390	2,880	0.135	*		
Eastbound	RT	1.00	360	1,600	0.090		ICU:	0.485
	TH	2.00	470	3,200	0.147			
	LT	1.00	10	1,600	0.006	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.197
	TH	0.00	0	0	0.000	*	N-S(2):	0.219 *
	LT	0.00	0	0	0.000		E-W(1):	0.218 *
Westbound	RT	0.00	10	0	0.000		E-W(2):	0.125
	TH	2.00	370	3,200	0.119			
	LT	2.00	150	2,880	0.052	*	V/C:	0.437
Northbound	RT	2.00	350	3,200	0.057		Lost Time:	0.100
	TH	0.03	10	51	0.197		ITS:	0.000
	LT	1.97	620	2,834	0.219	*		
Eastbound	RT	1.00	410	1,600	0.038		ICU:	0.537
	TH	2.00	530	3,200	0.166	*		
	LT	1.00	10	1,600	0.006		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.108
	TH	0.00	0	0	0.000	*	N-S(2):	0.142 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.385 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.159
	TH	2.00	510	3,200	0.159			
	LT	2.00	200	2,880	0.069	*	V/C:	0.527
Northbound	RT	2.00	550	3,200	0.102		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	410	2,880	0.142	*		
Eastbound	RT	1.00	500	1,600	0.313		ICU:	0.627
	TH	2.00	1,010	3,200	0.316	*		
	LT	1.00	0	1,600	0.000		LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **7 - Santa Fe Ave & PCH**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	140	1,600	0.063		N-S(1):	0.238
	TH	2.00	340	3,200	0.106	*	N-S(2):	0.262 *
	LT	1.00	190	1,600	0.119		E-W(1):	0.300
Westbound	RT	0.00	100	0	0.000		E-W(2):	0.388 *
	TH	2.00	980	3,200	0.338	*		
	LT	1.00	80	1,600	0.050		V/C:	0.650
Northbound	RT	1.00	50	1,600	0.006		Lost Time:	0.100
	TH	2.00	380	3,200	0.119		ITS:	0.000
	LT	1.00	250	1,600	0.156	*		
Eastbound	RT	1.00	140	1,600	0.009		ICU:	0.750
	TH	2.00	800	3,200	0.250			
	LT	1.00	80	1,600	0.050	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	110	1,600	0.041		N-S(1):	0.216
	TH	2.00	240	3,200	0.075	*	N-S(2):	0.231 *
	LT	1.00	160	1,600	0.100		E-W(1):	0.363 *
Westbound	RT	0.00	110	0	0.000		E-W(2):	0.350
	TH	2.00	830	3,200	0.294			
	LT	1.00	110	1,600	0.069	*	V/C:	0.594
Northbound	RT	1.00	100	1,600	0.028		Lost Time:	0.100
	TH	2.00	370	3,200	0.116		ITS:	0.000
	LT	1.00	250	1,600	0.156	*		
Eastbound	RT	1.00	170	1,600	0.028		ICU:	0.694
	TH	2.00	940	3,200	0.294	*		
	LT	1.00	90	1,600	0.056		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	120	1,600	0.038		N-S(1):	0.287
	TH	2.00	260	3,200	0.081	*	N-S(2):	0.306 *
	LT	1.00	170	1,600	0.106		E-W(1):	0.451 *
Westbound	RT	0.00	120	0	0.000		E-W(2):	0.391
	TH	2.00	890	3,200	0.316			
	LT	1.00	140	1,600	0.088	*	V/C:	0.757
Northbound	RT	1.00	110	1,600	0.025		Lost Time:	0.100
	TH	2.00	580	3,200	0.181		ITS:	0.000
	LT	1.00	360	1,600	0.225	*		
Eastbound	RT	1.00	110	1,600	0.000		ICU:	0.857
	TH	2.00	1,160	3,200	0.363	*		
	LT	1.00	120	1,600	0.075		LOS:	D

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **10 - Santa Fe Ave & Anaheim St.**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	120	1,600	0.053		N-S(1):	0.225 *
	TH	2.00	180	3,200	0.056		N-S(2):	0.075
	LT	1.00	210	1,600	0.131	*	E-W(1):	0.161
Westbound	RT	1.00	320	1,600	0.134		E-W(2):	0.234 *
	TH	3.00	910	4,800	0.190	*		
	LT	1.00	20	1,600	0.013		V/C:	0.459
Northbound	RT	1.00	30	1,600	0.013		Lost Time:	0.100
	TH	2.00	300	3,200	0.094	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.559
	TH	3.00	700	4,800	0.148			
	LT	1.00	70	1,600	0.044	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	110	1,600	0.038		N-S(1):	0.213 *
	TH	2.00	220	3,200	0.069		N-S(2):	0.094
	LT	1.00	220	1,600	0.138	*	E-W(1):	0.211
Westbound	RT	1.00	280	1,600	0.106		E-W(2):	0.234 *
	TH	3.00	820	4,800	0.171	*		
	LT	1.00	20	1,600	0.013		V/C:	0.447
Northbound	RT	1.00	40	1,600	0.019		Lost Time:	0.100
	TH	2.00	240	3,200	0.075	*	ITS:	0.000
	LT	1.00	40	1,600	0.025			
Eastbound	RT	0.00	20	0	0.000		ICU:	0.547
	TH	3.00	930	4,800	0.198			
	LT	1.00	100	1,600	0.063	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	120	1,600	0.031		N-S(1):	0.281 *
	TH	2.00	220	3,200	0.069		N-S(2):	0.094
	LT	1.00	280	1,600	0.175	*	E-W(1):	0.253
Westbound	RT	1.00	480	1,600	0.213		E-W(2):	0.301 *
	TH	3.00	680	4,800	0.142	*		
	LT	1.00	20	1,600	0.013		V/C:	0.582
Northbound	RT	1.00	50	1,600	0.025		Lost Time:	0.100
	TH	2.00	340	3,200	0.106	*	ITS:	0.000
	LT	1.00	40	1,600	0.025			
Eastbound	RT	0.00	30	0	0.000		ICU:	0.682
	TH	3.00	1,120	4,800	0.240			
	LT	1.00	140	1,600	0.088	*	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **11 - Harbor Ave & Anaheim St.**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000		N-S(1):	0.112 *
	TH	1.00	30	1,600	0.094		N-S(2):	0.100
	LT	0.00	90	1,600	0.056	*	E-W(1):	0.208
Westbound	RT	1.00	150	1,600	0.066		E-W(2):	0.219 *
	TH	4.00	1,320	6,400	0.206	*		
	LT	1.00	40	1,600	0.025		V/C:	0.331
Northbound	RT	0.78	70	1,244	0.044		Lost Time:	0.100
	TH	0.22	20	356	0.056	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.00	20	0	0.000		ICU:	0.431
	TH	3.00	860	4,800	0.183			
	LT	1.00	20	1,600	0.013	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000		N-S(1):	0.181 *
	TH	1.00	30	1,600	0.113		N-S(2):	0.126
	LT	0.00	120	1,600	0.075	*	E-W(1):	0.253 *
Westbound	RT	1.00	140	1,600	0.050		E-W(2):	0.207
	TH	4.00	1,200	6,400	0.188			
	LT	1.00	20	1,600	0.013	*	V/C:	0.434
Northbound	RT	0.76	130	1,224	0.100		Lost Time:	0.100
	TH	0.24	40	376	0.106	*	ITS:	0.000
	LT	1.00	20	1,600	0.013			
Eastbound	RT	0.00	90	0	0.000		ICU:	0.534
	TH	3.00	1,060	4,800	0.240	*		
	LT	1.00	30	1,600	0.019		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	30	0	0.000		N-S(1):	0.156 *
	TH	1.00	30	1,600	0.113		N-S(2):	0.126
	LT	0.00	120	1,600	0.075	*	E-W(1):	0.309 *
Westbound	RT	1.00	130	1,600	0.044		E-W(2):	0.192
	TH	4.00	1,030	6,400	0.161			
	LT	1.00	30	1,600	0.019	*	V/C:	0.465
Northbound	RT	0.54	70	862	0.072		Lost Time:	0.100
	TH	0.46	60	738	0.081	*	ITS:	0.000
	LT	1.00	20	1,600	0.013			
Eastbound	RT	0.00	40	0	0.000		ICU:	0.565
	TH	3.00	1,350	4,800	0.290	*		
	LT	1.00	50	1,600	0.031		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **12 - 9th St/East I St & Anaheim St.**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.151
	TH	2.00	20	3,200	0.006 *	N-S(2):	0.256 *
	LT	1.00	180	1,600	0.113	E-W(1):	0.204
Westbound	RT	1.00	140	1,600	0.031	E-W(2):	0.306 *
	TH	2.00	900	3,200	0.281 *		
	LT	1.00	10	1,600	0.006	V/C:	0.562
Northbound	RT	1.00	20	1,600	0.009	Lost Time:	0.100
	TH	2.00	120	3,200	0.038	ITS:	0.000
	LT	1.00	400	1,600	0.250 *		
Eastbound	RT	0.00	270	0	0.000	ICU:	0.662
	TH	3.00	680	4,800	0.198		
	LT	1.00	40	1,600	0.025 *	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.000	N-S(1):	0.116
	TH	2.00	30	3,200	0.009 *	N-S(2):	0.172 *
	LT	1.00	160	1,600	0.100	E-W(1):	0.231
Westbound	RT	1.00	170	1,600	0.056	E-W(2):	0.332 *
	TH	2.00	780	3,200	0.244 *		
	LT	1.00	10	1,600	0.006	V/C:	0.504
Northbound	RT	1.00	10	1,600	0.003	Lost Time:	0.100
	TH	2.00	50	3,200	0.016	ITS:	0.000
	LT	1.00	260	1,600	0.163 *		
Eastbound	RT	0.00	230	0	0.000	ICU:	0.604
	TH	3.00	850	4,800	0.225		
	LT	1.00	140	1,600	0.088 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.122
	TH	2.00	280	3,200	0.088 *	N-S(2):	0.257 *
	LT	1.00	140	1,600	0.088	E-W(1):	0.360 *
Westbound	RT	1.00	110	1,600	0.025	E-W(2):	0.291
	TH	2.00	770	3,200	0.241 *		
	LT	1.00	10	1,600	0.006	V/C:	0.617
Northbound	RT	1.00	20	1,600	0.009	Lost Time:	0.100
	TH	2.00	110	3,200	0.034	ITS:	0.000
	LT	1.00	270	1,600	0.169 *		
Eastbound	RT	0.00	500	0	0.000	ICU:	0.717
	TH	3.00	1,200	4,800	0.354		
	LT	1.00	80	1,600	0.050 *	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **14 - Pico Ave & Pier B St**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.213
	TH	1.00	340	1,600	0.213 *	N-S(2):	0.241 *
	LT	1.00	20	1,600	0.013	E-W(1):	0.066
Westbound	RT	0.00	60	0	0.000	E-W(2):	0.213 *
	TH	2.00	10	1,600	0.044 *		
	LT	0.00	100	1,600	0.063	V/C:	0.454
Northbound	RT	1.00	40	1,600	0.000	Lost Time:	0.100
	TH	1.00	320	1,600	0.200	ITS:	0.000
	LT	2.00	80	2,880	0.028 *		
Eastbound	RT	1.00	230	1,600	0.000	ICU:	0.554
	TH	2.00	10	3,200	0.003		
	LT	0.00	270	1,600	0.169 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	210	1,600	0.069	N-S(1):	0.300
	TH	1.00	250	1,600	0.156 *	N-S(2):	0.399 *
	LT	1.00	40	1,600	0.025	E-W(1):	0.034
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.144 *
	TH	2.00	10	1,600	0.019 *		
	LT	0.00	50	1,600	0.031	V/C:	0.543
Northbound	RT	1.00	220	1,600	0.122	Lost Time:	0.100
	TH	1.00	440	1,600	0.275	ITS:	0.000
	LT	2.00	700	2,880	0.243 *		
Eastbound	RT	1.00	760	1,600	0.000	ICU:	0.643
	TH	2.00	10	3,200	0.003		
	LT	0.00	200	1,600	0.125 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	220	1,600	0.106	N-S(1):	0.394 *
	TH	1.00	330	1,600	0.206 *	N-S(2):	0.286
	LT	1.00	130	1,600	0.081	E-W(1):	0.056
Westbound	RT	0.00	30	0	0.000	E-W(2):	0.088 *
	TH	2.00	10	1,600	0.025 *		
	LT	0.00	80	1,600	0.050	V/C:	0.482
Northbound	RT	1.00	300	1,600	0.163	Lost Time:	0.100
	TH	1.00	500	1,600	0.313	ITS:	0.000
	LT	2.00	230	2,880	0.080 *		
Eastbound	RT	1.00	200	1,600	0.000	ICU:	0.582
	TH	2.00	20	3,200	0.006		
	LT	0.00	100	1,600	0.063 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **15 - Henry Ford Av/Terminal Isl Ramps & Pier A Way**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	NBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.180
	TH	2.00	570	3,200	0.184	*	N-S(2):	0.190 *
	LT	2.00	310	2,880	0.108		E-W(1):	0.022
Westbound	RT	1.00	190	1,600	0.065	*	E-W(2):	0.090 *
	TH	0.00	0	0	0.000			
	LT	1.00	30	1,600	0.019		V/C:	0.280
Northbound	RT	1.00	60	1,600	0.000		Lost Time:	0.100
	TH	2.00	230	3,200	0.072		ITS:	0.000
	LT	1.00	10	1,600	0.006	*		
Eastbound	RT	1.00	10	1,600	0.003		ICU:	0.380
	TH	0.00	0	0	0.000			
	LT	1.00	40	1,600	0.025	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	40	0	0.000		N-S(1):	0.178 *
	TH	2.00	490	3,200	0.166		N-S(2):	0.172
	LT	2.00	200	2,880	0.069	*	E-W(1):	0.051
Westbound	RT	1.00	460	1,600	0.253	*	E-W(2):	0.284 *
	TH	0.17	10	267	0.038			
	LT	0.83	50	1,333	0.038		V/C:	0.462
Northbound	RT	1.00	90	1,600	0.000		Lost Time:	0.100
	TH	2.00	350	3,200	0.109	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.50	10	800	0.009		ICU:	0.562
	TH	0.50	10	800	0.013			
	LT	1.00	50	1,600	0.031	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	50	0	0.000		N-S(1):	0.263 *
	TH	2.00	420	3,200	0.147		N-S(2):	0.153
	LT	2.00	380	2,880	0.132	*	E-W(1):	0.057
Westbound	RT	1.00	690	1,600	0.365	*	E-W(2):	0.403 *
	TH	0.14	10	229	0.044			
	LT	0.86	60	1,371	0.044		V/C:	0.666
Northbound	RT	1.00	70	1,600	0.000		Lost Time:	0.100
	TH	2.00	420	3,200	0.131	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.50	10	800	0.009		ICU:	0.766
	TH	0.50	10	800	0.013			
	LT	1.00	60	1,600	0.038	*	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **16 - Pico Ave & Pier C St**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	210	3,200	0.000		N-S(1):	0.109
	TH	3.00	460	4,800	0.096	*	N-S(2):	0.134 *
	LT	0.00	0	0	0.000		E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.069 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.203
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	350	3,200	0.109		ITS:	0.000
	LT	1.00	60	1,600	0.038	*		
Eastbound	RT	0.00	10	0	0.000		ICU:	0.303
	TH	0.00	0	0	0.000			
	LT	0.00	110	1,600	0.069	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	160	3,200	0.000		N-S(1):	0.366 *
	TH	3.00	880	4,800	0.183		N-S(2):	0.202
	LT	0.00	0	0	0.000	*	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.113 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.479
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	1,170	3,200	0.366	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	0.00	70	0	0.000		ICU:	0.579
	TH	0.00	0	0	0.000			
	LT	0.00	180	1,600	0.113	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	130	3,200	0.000		N-S(1):	0.238 *
	TH	3.00	460	4,800	0.096		N-S(2):	0.115
	LT	0.00	0	0	0.000	*	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000		E-W(2):	0.169 *
	TH	0.00	0	0	0.000	*		
	LT	2.00	0	2,880	0.000		V/C:	0.407
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	760	3,200	0.238	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	0.00	90	0	0.000		ICU:	0.507
	TH	0.00	0	0	0.000			
	LT	0.00	270	1,600	0.169	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **17 - Pico Ave & Pier D St**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR, WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	160	0	0.000		N-S(1):	0.119
	TH	2.00	320	3,200	0.150	*	N-S(2):	0.194 *
	LT	1.00	10	1,600	0.006		E-W(1):	0.006
Westbound	RT	1.00	10	1,600	0.000		E-W(2):	0.021 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.215
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	360	3,200	0.113		ITS:	0.000
	LT	1.00	70	1,600	0.044	*		
Eastbound	RT	1.00	50	1,600	0.000		ICU:	0.315
	TH	0.00	0	0	0.000			
	LT	2.00	60	2,880	0.021	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	110	0	0.000		N-S(1):	0.312 *
	TH	2.00	810	3,200	0.288		N-S(2):	0.307
	LT	1.00	10	1,600	0.006	*	E-W(1):	0.087
Westbound	RT	1.00	10	1,600	0.000		E-W(2):	0.090 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.402
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	970	3,200	0.306	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	1.00	110	1,600	0.050		ICU:	0.502
	TH	0.08	10	123	0.081			
	LT	1.92	250	2,769	0.090	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	120	0	0.000		N-S(1):	0.222 *
	TH	2.00	420	3,200	0.169		N-S(2):	0.200
	LT	1.00	0	1,600	0.000	*	E-W(1):	0.037
Westbound	RT	1.00	10	1,600	0.006		E-W(2):	0.048 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.270
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	710	3,200	0.222	*	ITS:	0.000
	LT	1.00	50	1,600	0.031			
Eastbound	RT	1.00	100	1,600	0.031		ICU:	0.370
	TH	0.00	0	0	0.000			
	LT	2.00	120	2,880	0.042	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **181 - Pico Ave & Westbound Ocean Ave On Ramp**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	120	0	0.000	N-S(1):	0.137
	TH	2.00	230	1,600	0.113 *	N-S(2):	0.269 *
	LT	0.00	10	1,600	0.006	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.269
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	410	3,200	0.131	ITS:	0.000
	LT	1.00	250	1,600	0.156 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.369
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	450	0	0.000	N-S(1):	0.319
	TH	2.00	440	1,600	0.281 *	N-S(2):	0.575 *
	LT	0.00	10	1,600	0.006	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.575
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	990	3,200	0.313	ITS:	0.000
	LT	1.00	470	1,600	0.294 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.675
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	180	0	0.000	N-S(1):	0.234
	TH	2.00	320	1,600	0.159 *	N-S(2):	0.353 *
	LT	0.00	10	1,600	0.006	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.353
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	2.00	720	3,200	0.228	ITS:	0.000
	LT	1.00	310	1,600	0.194 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.453
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **182 - Pico Ave & Westbound Ocean Ave Off Ramp**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.178 *
	TH	2.00	290	3,200	0.091	N-S(2):	0.091
	LT	0.00	0	0	0.000 *	E-W(1):	0.006
Westbound	RT	0.00	50	1,600	0.031 *	E-W(2):	0.031 *
	TH	2.00	0	1,600	0.000		
	LT	1.00	10	1,600	0.006	V/C:	0.209
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	570	3,200	0.178 *	ITS:	0.000
	LT	1.00	0	1,600	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.309
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.450 *
	TH	2.00	540	3,200	0.169	N-S(2):	0.169
	LT	0.00	0	0	0.000 *	E-W(1):	0.013
Westbound	RT	0.00	50	1,600	0.031 *	E-W(2):	0.031 *
	TH	2.00	0	1,600	0.000		
	LT	1.00	20	1,600	0.013	V/C:	0.481
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,440	3,200	0.450 *	ITS:	0.000
	LT	1.00	0	1,600	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.581
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.313 *
	TH	2.00	370	3,200	0.116	N-S(2):	0.116
	LT	0.00	0	0	0.000 *	E-W(1):	0.008
Westbound	RT	0.00	40	0	0.000 *	E-W(2):	0.025 *
	TH	1.00	0	1,600	0.025		
	LT	2.00	20	2,560	0.008	V/C:	0.338
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,000	3,200	0.313 *	ITS:	0.000
	LT	1.00	0	1,600	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.438
	TH	1.00	0	1,600	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **19 - Pico Ave & Pier E St/Eastbound Ocean Ave Ramp**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.235 *
	TH	2.00	270	3,200	0.091	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.157 *
Westbound	RT	0.00	80	0	0.000		E-W(2):	0.082
	TH	2.00	20	1,600	0.063			
	LT	0.00	220	1,600	0.138	*	V/C:	0.392
Northbound	RT	0.00	80	0	0.000		Lost Time:	0.100
	TH	2.00	340	3,200	0.131		ITS:	0.000
	LT	1.00	230	1,600	0.144	*		
Eastbound	RT	0.33	10	533	0.000		ICU:	0.492
	TH	0.67	20	1,067	0.019	*		
	LT	1.00	30	1,600	0.019		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.572 *
	TH	2.00	500	3,200	0.159	*	N-S(2):	0.000
	LT	1.00	50	1,600	0.031		E-W(1):	0.106 *
Westbound	RT	0.00	110	0	0.000		E-W(2):	0.106 *
	TH	2.00	10	1,600	0.075			
	LT	0.00	130	1,600	0.081	*	V/C:	0.678
Northbound	RT	0.00	30	0	0.000		Lost Time:	0.100
	TH	2.00	1,290	3,200	0.413	*	ITS:	0.000
	LT	1.00	270	1,600	0.169			
Eastbound	RT	0.25	10	400	0.000		ICU:	0.778
	TH	0.75	30	1,200	0.025	*		
	LT	1.00	50	1,600	0.031		LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.369 *
	TH	2.00	340	3,200	0.113	*	N-S(2):	0.000
	LT	1.00	20	1,600	0.013		E-W(1):	0.088
Westbound	RT	0.00	110	1,600	0.069		E-W(2):	0.119 *
	TH	2.00	20	1,600	0.013			
	LT	0.00	80	1,600	0.050	*	V/C:	0.488
Northbound	RT	0.00	60	0	0.000		Lost Time:	0.100
	TH	2.00	760	3,200	0.256	*	ITS:	0.000
	LT	1.00	190	1,600	0.119			
Eastbound	RT	0.33	20	533	0.000		ICU:	0.588
	TH	0.67	40	1,067	0.038	*		
	LT	1.00	80	1,600	0.050		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **20 - Pier S Ave & New Dock St**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.230 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.104 *
Westbound	RT	0.00	10	1,600	0.006		E-W(2):	0.000
	TH	3.00	10	3,200	0.003			
	LT	1.00	146	1,600	0.091	*	V/C:	0.334
Northbound	RT	1.00	245	1,600	0.108		Lost Time:	0.100
	TH	0.98	250	1,569	0.159		ITS:	0.000
	LT	1.02	260	1,305	0.199	*		
Eastbound	RT	1.00	500	1,600	0.000		ICU:	0.434
	TH	2.00	10	3,200	0.003			
	LT	1.00	20	1,600	0.013	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.17	10	267	0.031		N-S(1):	0.219 *
	TH	0.83	50	1,333	0.038	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.130 *
Westbound	RT	0.00	10	1,600	0.006		E-W(2):	0.000
	TH	3.00	0	3,200	0.000			
	LT	1.00	187	1,600	0.117	*	V/C:	0.349
Northbound	RT	1.00	326	1,600	0.145		Lost Time:	0.100
	TH	1.00	290	1,600	0.181	*	ITS:	0.000
	LT	1.00	170	1,600	0.106			
Eastbound	RT	1.00	460	1,600	0.000		ICU:	0.449
	TH	2.00	40	3,200	0.013			
	LT	1.00	20	1,600	0.013	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.212 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.119 *
Westbound	RT	0.00	10	1,600	0.006		E-W(2):	0.000
	TH	3.00	0	3,200	0.000			
	LT	1.00	170	1,600	0.106	*	V/C:	0.331
Northbound	RT	1.00	369	1,600	0.178		Lost Time:	0.100
	TH	1.00	290	1,600	0.181	*	ITS:	0.000
	LT	1.00	160	1,600	0.100			
Eastbound	RT	1.00	470	1,600	0.000		ICU:	0.431
	TH	2.00	20	3,200	0.006			
	LT	1.00	20	1,600	0.013	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **21 - Terminal Island Fwy & *CA-47 Westbound**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	WBR		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	460	3,200	0.144 *	N-S(1):	0.253 *
	TH	2.00	400	3,200	0.125	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.044
Westbound	RT	1.00	430	1,600	0.000	E-W(2):	0.141 *
	TH	2.00	450	3,200	0.141 *		
	LT	1.00	70	1,600	0.044	V/C:	0.394
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	350	3,200	0.109 *	ITS:	0.000
	LT	1.00	135	1,600	0.084		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.494
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	450	3,200	0.141 *	N-S(1):	0.307 *
	TH	2.00	420	3,200	0.131	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.031
Westbound	RT	1.00	770	1,600	0.000	E-W(2):	0.172 *
	TH	2.00	550	3,200	0.172 *		
	LT	1.00	50	1,600	0.031	V/C:	0.479
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	530	3,200	0.166 *	ITS:	0.000
	LT	1.00	176	1,600	0.110		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.579
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	490	3,200	0.153 *	N-S(1):	0.313 *
	TH	2.00	540	3,200	0.169	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.031
Westbound	RT	1.00	820	1,600	0.000	E-W(2):	0.169 *
	TH	2.00	540	3,200	0.169 *		
	LT	1.00	50	1,600	0.031	V/C:	0.482
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	460	3,200	0.144 *	ITS:	0.000
	LT	1.00	159	1,600	0.099		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.582
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **22 - Terminal Island Fwy & *CA-47 Eastbound**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.234 *
	TH	0.18	40	284	0.141		N-S(2):	0.141
	LT	1.82	410	2,332	0.176	*	E-W(1):	0.177 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.117
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.411
Northbound	RT	1.00	50	1,600	0.031		Lost Time:	0.100
	TH	2.00	185	3,200	0.058	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	156	0	0.000		ICU:	0.511
	TH	2.00	410	3,200	0.177	*		
	LT	2.00	300	2,560	0.117		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.252 *
	TH	0.17	40	272	0.147		N-S(2):	0.147
	LT	1.83	430	2,342	0.184	*	E-W(1):	0.165
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.191 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.443
Northbound	RT	1.00	40	1,600	0.025		Lost Time:	0.100
	TH	2.00	216	3,200	0.068	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	197	0	0.000		ICU:	0.543
	TH	2.00	330	3,200	0.165			
	LT	2.00	490	2,560	0.191	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.280 *
	TH	0.21	60	331	0.181		N-S(2):	0.181
	LT	1.79	520	2,295	0.227	*	E-W(1):	0.156
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.180 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.460
Northbound	RT	1.00	40	1,600	0.025		Lost Time:	0.100
	TH	2.00	169	3,200	0.053	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	170	0	0.000		ICU:	0.560
	TH	2.00	330	3,200	0.156			
	LT	2.00	460	2,560	0.180	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **23 - Pier S Avenue & *CA-47 Westbound**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	180	1,600	0.113	N-S(1):	0.066
	TH	2.00	536	3,200	0.168 *	N-S(2):	0.168 *
	LT	0.00	0	0	0.000	E-W(1):	0.170 *
Westbound	RT	2.00	545	3,200	0.170 *	E-W(2):	0.000
	TH	2.00	490	3,200	0.153		
	LT	0.00	0	0	0.000	V/C:	0.338
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	210	3,200	0.066	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.438
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	190	1,600	0.119	N-S(1):	0.081
	TH	2.00	547	3,200	0.171 *	N-S(2):	0.171 *
	LT	0.00	0	0	0.000	E-W(1):	0.191 *
Westbound	RT	2.00	556	3,200	0.174	E-W(2):	0.000
	TH	2.00	610	3,200	0.191 *		
	LT	0.00	0	0	0.000	V/C:	0.362
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	260	3,200	0.081	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.462
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	160	1,600	0.100	N-S(1):	0.113 *
	TH	2.00	350	3,200	0.109 *	N-S(2):	0.109
	LT	0.00	0	0	0.000	E-W(1):	0.241 *
Westbound	RT	2.00	409	3,200	0.128	E-W(2):	0.000
	TH	2.00	770	3,200	0.241 *		
	LT	0.00	0	0	0.000	V/C:	0.354
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	360	3,200	0.113	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.454
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **24 - Pier S Avenue & *CA-47 Eastbound**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.205 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	526	2,560	0.205	*	E-W(1):	0.103
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.138 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.343
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.443
	TH	2.00	330	3,200	0.103			
	LT	1.00	220	1,600	0.138	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.210 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	537	2,560	0.210	*	E-W(1):	0.150
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.156 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.366
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.466
	TH	2.00	480	3,200	0.150			
	LT	1.00	250	1,600	0.156	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.137 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	350	2,560	0.137	*	E-W(1):	0.172
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.225 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.362
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.462
	TH	2.00	550	3,200	0.172			
	LT	1.00	360	1,600	0.225	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **25 - Pico Ave/Pier G Ave & Harbor Plaza Dr**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	SBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	420	1,600	0.145		N-S(1):	0.169 *
	TH	1.00	200	1,600	0.125		N-S(2):	0.151
	LT	1.00	160	1,600	0.100	*	E-W(1):	0.392 *
Westbound	RT	0.00	440	1,600	0.275	*	E-W(2):	0.000
	TH	2.00	100	1,600	0.063			
	LT	1.00	110	1,600	0.069		V/C:	0.561
Northbound	RT	0.00	40	0	0.000		Lost Time:	0.100
	TH	2.00	180	3,200	0.069	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.25	20	400	0.047		ICU:	0.661
	TH	0.75	60	1,200	0.050			
	LT	2.00	300	2,560	0.117	*	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	490	1,600	0.056		N-S(1):	0.191 *
	TH	1.00	120	1,600	0.075		N-S(2):	0.081
	LT	1.00	190	1,600	0.119	*	E-W(1):	0.831 *
Westbound	RT	0.00	930	1,600	0.581	*	E-W(2):	0.000
	TH	2.00	80	1,600	0.050			
	LT	1.00	110	1,600	0.069		V/C:	1.022
Northbound	RT	0.00	110	0	0.000		Lost Time:	0.100
	TH	2.00	120	3,200	0.072	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.10	10	160	0.059		ICU:	1.122
	TH	0.90	90	1,440	0.063			
	LT	2.00	640	2,560	0.250	*	LOS:	F

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	320	1,600	0.000		N-S(1):	0.203 *
	TH	1.00	150	1,600	0.094		N-S(2):	0.100
	LT	1.00	190	1,600	0.119	*	E-W(1):	0.652 *
Westbound	RT	0.00	680	1,600	0.425	*	E-W(2):	0.000
	TH	2.00	80	1,600	0.050			
	LT	1.00	60	1,600	0.038		V/C:	0.855
Northbound	RT	0.00	90	0	0.000		Lost Time:	0.100
	TH	2.00	180	3,200	0.084	*	ITS:	0.000
	LT	1.00	10	1,600	0.006			
Eastbound	RT	0.07	10	107	0.091		ICU:	0.955
	TH	0.93	140	1,493	0.094			
	LT	2.00	580	2,560	0.227	*	LOS:	E

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **27 - Harbor Plaza Dr & Queensway Dr**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	30	1,600	0.019 *	N-S(1):	0.289 *
	TH	2.00	10	3,200	0.003	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.006
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.021 *
	TH	3.00	80	4,800	0.021 *		
	LT	0.00	10	1,600	0.006	V/C:	0.310
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.06	20	93	0.216	ITS:	0.000
	LT	1.94	670	2,486	0.270 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.410
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.025 *	N-S(1):	0.405 *
	TH	2.00	10	3,200	0.003	N-S(2):	0.000
	LT	0.00	10	1,600	0.006	E-W(1):	0.006
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.029 *
	TH	3.00	110	4,800	0.029 *		
	LT	0.00	10	1,600	0.006	V/C:	0.434
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.04	20	66	0.304	ITS:	0.000
	LT	1.96	953	2,507	0.380 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.534
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.031 *	N-S(1):	0.442 *
	TH	2.00	20	3,200	0.006	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.006
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.044 *
	TH	3.00	180	4,800	0.044 *		
	LT	0.00	10	1,600	0.006	V/C:	0.486
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.10	50	152	0.328	ITS:	0.000
	LT	1.90	1,001	2,438	0.411 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.586
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **28 - Harbor Plaza Dr & Harbor Scenic Dr**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.132 *
	TH	2.00	10	1,600	0.006		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.403 *
Westbound	RT	2.00	640	3,200	0.197	*	E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	241	1,600	0.151		V/C:	0.535
Northbound	RT	1.00	201	1,600	0.126	*	Lost Time:	0.100
	TH	2.00	40	3,200	0.013		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	10	1,600	0.006		ICU:	0.635
	TH	3.00	990	4,800	0.206	*		
	LT	1.00	10	1,600	0.006		LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.090 *
	TH	2.00	10	1,600	0.006		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.650 *
Westbound	RT	2.00	890	3,200	0.275		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	634	1,600	0.396	*	V/C:	0.740
Northbound	RT	1.00	134	1,600	0.084	*	Lost Time:	0.100
	TH	2.00	63	3,200	0.020		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	10	1,600	0.006		ICU:	0.840
	TH	3.00	1,220	4,800	0.254	*		
	LT	1.00	20	1,600	0.013		LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.085 *
	TH	2.00	20	1,600	0.009		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.526 *
Westbound	RT	2.00	980	3,200	0.303		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	402	1,600	0.251	*	V/C:	0.611
Northbound	RT	1.00	122	1,600	0.076	*	Lost Time:	0.100
	TH	2.00	51	3,200	0.016		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	10	1,600	0.006		ICU:	0.711
	TH	3.00	1,070	4,800	0.223	*		
	LT	1.00	10	1,600	0.006		LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **30 - Long Beach Blvd. & PCH**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.028	N-S(1):	0.279 *
	TH	2.00	510	3,200	0.159	N-S(2):	0.272
	LT	1.00	162	1,600	0.101 *	E-W(1):	0.298
Westbound	RT	0.00	82	0	0.000	E-W(2):	0.334 *
	TH	3.00	1,190	4,800	0.265 *		
	LT	1.00	160	1,600	0.100	V/C:	0.613
Northbound	RT	1.00	70	1,600	0.000	Lost Time:	0.100
	TH	2.00	570	3,200	0.178 *	ITS:	0.000
	LT	1.00	180	1,600	0.113		
Eastbound	RT	0.00	73	0	0.000	ICU:	0.713
	TH	3.00	879	4,800	0.198		
	LT	1.00	110	1,600	0.069 *	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.022	N-S(1):	0.309 *
	TH	2.00	520	3,200	0.163	N-S(2):	0.263
	LT	1.00	200	1,600	0.125 *	E-W(1):	0.280 *
Westbound	RT	0.00	130	0	0.000	E-W(2):	0.269
	TH	3.00	770	4,800	0.188		
	LT	1.00	100	1,600	0.063 *	V/C:	0.589
Northbound	RT	1.00	90	1,600	0.025	Lost Time:	0.100
	TH	2.00	590	3,200	0.184 *	ITS:	0.000
	LT	1.00	160	1,600	0.100		
Eastbound	RT	0.00	90	0	0.000	ICU:	0.689
	TH	3.00	950	4,800	0.217 *		
	LT	1.00	130	1,600	0.081	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	160	1,600	0.044	N-S(1):	0.319 *
	TH	2.00	550	3,200	0.172	N-S(2):	0.266
	LT	1.00	181	1,600	0.113 *	E-W(1):	0.387 *
Westbound	RT	0.00	85	0	0.000	E-W(2):	0.291
	TH	3.00	767	4,800	0.178		
	LT	1.00	140	1,600	0.088 *	V/C:	0.706
Northbound	RT	1.00	110	1,600	0.025	Lost Time:	0.100
	TH	2.00	660	3,200	0.206 *	ITS:	0.000
	LT	1.00	150	1,600	0.094		
Eastbound	RT	0.00	85	0	0.000	ICU:	0.806
	TH	3.00	1,350	4,800	0.299 *		
	LT	1.00	180	1,600	0.113	LOS:	D

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **31 - Long Beach Blvd. & Anaheim St.**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	60	1,600	0.034		N-S(1):	0.219
	TH	2.00	470	3,200	0.147	*	N-S(2):	0.235 *
	LT	1.00	110	1,600	0.069		E-W(1):	0.194
Westbound	RT	0.00	120	0	0.000		E-W(2):	0.258 *
	TH	3.00	1,080	4,800	0.252	*		
	LT	0.00	10	1,600	0.006		V/C:	0.493
Northbound	RT	0.00	60	0	0.000		Lost Time:	0.100
	TH	2.00	420	3,200	0.150		ITS:	0.000
	LT	1.00	140	1,600	0.088	*		
Eastbound	RT	0.00	70	0	0.000		ICU:	0.593
	TH	3.00	820	4,800	0.188			
	LT	0.00	10	1,600	0.006	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	80	1,600	0.041		N-S(1):	0.269
	TH	2.00	420	3,200	0.131	*	N-S(2):	0.275 *
	LT	1.00	130	1,600	0.081		E-W(1):	0.235 *
Westbound	RT	0.00	150	0	0.000		E-W(2):	0.207
	TH	3.00	740	4,800	0.188			
	LT	0.00	10	1,600	0.006	*	V/C:	0.510
Northbound	RT	0.00	90	0	0.000		Lost Time:	0.100
	TH	2.00	510	3,200	0.188		ITS:	0.000
	LT	1.00	230	1,600	0.144	*		
Eastbound	RT	0.00	80	0	0.000		ICU:	0.610
	TH	3.00	990	4,800	0.229	*		
	LT	0.00	30	1,600	0.019		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	110	1,600	0.063		N-S(1):	0.331 *
	TH	2.00	470	3,200	0.147	*	N-S(2):	0.260
	LT	1.00	160	1,600	0.100		E-W(1):	0.304 *
Westbound	RT	0.00	120	0	0.000		E-W(2):	0.190
	TH	3.00	720	4,800	0.177			
	LT	0.00	10	1,600	0.006	*	V/C:	0.635
Northbound	RT	0.00	120	0	0.000		Lost Time:	0.100
	TH	2.00	620	3,200	0.231		ITS:	0.000
	LT	1.00	180	1,600	0.113	*		
Eastbound	RT	0.00	110	0	0.000		ICU:	0.735
	TH	3.00	1,300	4,800	0.298	*		
	LT	0.00	20	1,600	0.013		LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **32 - Long Beach Blvd. & Ocean Blvd**
Description: **Baseline Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	260	3,200	0.047 *	N-S(1):	0.044
	TH	0.00	0	0	0.000	N-S(2):	0.047 *
	LT	1.00	70	1,600	0.044	E-W(1):	0.104
Westbound	RT	1.00	130	1,600	0.081	E-W(2):	0.438 *
	TH	3.00	1,770	4,800	0.369 *		
	LT	0.00	0	0	0.000	V/C:	0.485
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.585
	TH	3.00	490	4,800	0.104		
	LT	1.00	110	1,600	0.069 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.71	160	2,743	0.027	N-S(1):	0.073 *
	TH	0.00	0	0	0.000	N-S(2):	0.027
	LT	1.29	120	1,646	0.073 *	E-W(1):	0.198
Westbound	RT	1.00	100	1,600	0.026	E-W(2):	0.228 *
	TH	3.00	790	4,800	0.165 *		
	LT	0.00	10	1,600	0.006	V/C:	0.301
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	10	0	0.000	ICU:	0.401
	TH	3.00	910	4,800	0.192		
	LT	1.00	100	1,600	0.063 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.85	210	2,965	0.008	N-S(1):	0.089 *
	TH	0.00	0	0	0.000	N-S(2):	0.008
	LT	1.15	130	1,468	0.089 *	E-W(1):	0.388 *
Westbound	RT	1.00	100	1,600	0.063	E-W(2):	0.306
	TH	3.00	870	4,800	0.181 *		
	LT	0.00	0	0	0.000	V/C:	0.477
Northbound	RT	0.00	10	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.577
	TH	3.00	1,860	4,800	0.388		
	LT	1.00	200	1,600	0.125 *	LOS:	A

* - Denotes critical movement

Level of Service Workheet
(Circular 212 Method)

I/S #:
4

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				1			1
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	20	0	20	20	0	20
	Left-Through		0			0	
	Through	0	0	**50**	0	0	**40**
	Through-Right		0			0	
	Right	30	0	0	20	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	40	0	40	70	0	70
	Left-Through		0			0	
	Through	10	0	**120**	0	0	**140**
	Through-Right		0			0	
	Right	70	0	0	70	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	70	1	**70**	70	1	**70**
	Left-Through		0			0	
	Through	670	1	345	700	1	360
	Through-Right		1			1	
	Right	20	0	20	20	0	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	30	1	30	30	1	30
	Left-Through		0			0	
	Through	930	2	**465**	720	2	**360**
	Through-Right		0			0	
	Right	10	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			North-South:	170		North-South:	180
			East-West:	535		East-West:	430
			SUM:	705		SUM:	610
VOLUME/CAPACITY (V/C) RATIO:				0.513			0.444
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.413**			**0.344**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	20	0	20	40	0	40
	Left-Through		0			0	
	Through	0	0	**70**	0	0	**120**
	Through-Right		0			0	
	Right	50	0	0	80	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	0	0	0	0	0	10
	Through-Right		1			1	
	Right	0	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	1	**0**	10	1	10
	Left-Through		0			0	
	Through	800	1	415	850	1	**445**
	Through-Right		1			1	
	Right	30	0	30	40	0	40
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	80	1	80	70	1	**70**
	Left-Through		0			0	
	Through	1070	1	**540**	920	1	465
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	80		*North-South:*	130
			East-West:	540		*East-West:*	515
			SUM:	620		*SUM:*	645
VOLUME/CAPACITY *(V/C)* RATIO:				0.435			0.453
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.335**			**0.353**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
8	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Baseline plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	3	EB-- 0	WB--	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	620	2	**243**	940	2	**360**
	Through-Right		1			1	
	Right	110	0	110	140	0	140
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	360	1	**360**	270	1	**270**
	Left-Through		0			0	
	Through	1090	3	363	1030	3	343
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	100	1	**100**	140	1	**140**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	380	1	20	290	1	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	603		*North-South:*	630
			East-West:	100		*East-West:*	140
			SUM:	703		*SUM:*	770
VOLUME/CAPACITY *(V/C)* RATIO:				0.493			0.540
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.393**			**0.440**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
9

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Baseline plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	190	1	**190**	180	1	**180**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	270	1	110	240	1	125
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	320	1	**320**	230	1	**230**
	Left-Through		0			0	
	Through	1020	2	510	960	2	480
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1150	2	**440**	1010	2	**403**
	Through-Right		1			1	
	Right	170	0	170	200	0	200
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	190		*North-South:*	180
			East-West:	760		*East-West:*	633
			SUM:	950		*SUM:*	813
VOLUME/CAPACITY *(V/C)* RATIO:				0.667			0.571
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.567**			**0.471**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
13

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Henry Ford Av **East-West Street:** Anaheim St.
Scenario: Baseline plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM				PM			
No. of Phases					4				4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0				0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 3	SB--		3	NB-- 3	SB--		3
		EB-- 1	WB--		3	EB-- 1	WB--		3
ATSAC-1 or ATSAC+ATCS-2?					2				2
Override Capacity					0				0
MOVEMENT		Volume	No. of Lanes	Lane Volume		Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	210	1	**147**		280	1	**263**	
	Left-Through		1				1		
	Through	230	1	147		510	1	263	
	Through-Right		0				0		
	Right	130	1	50		110	1	20	
	Left-Through-Right		0				0		
	Left-Right		0				0		
SOUTHBOUND	Left	170	1	170		170	1	170	
	Left-Through		0				0		
	Through	450	2	**225**		550	2	**275**	
	Through-Right		0				0		
	Right	60	1	0		70	1	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
EASTBOUND	Left	80	1	**80**		130	1	130	
	Left-Through		0				0		
	Through	720	2	360		930	2	**465**	
	Through-Right		0				0		
	Right	310	1	0		200	1	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
WESTBOUND	Left	80	1	80		90	1	**90**	
	Left-Through		0				0		
	Through	1080	2	**540**		830	2	415	
	Through-Right		0				0		
	Right	230	1	60		290	1	120	
	Left-Through-Right		0				0		
	Left-Right		0				0		
CRITICAL VOLUMES			*North-South:*	372			*North-South:*	538	
			East-West:	620			*East-West:*	555	
			SUM:	992			*SUM:*	1093	
VOLUME/CAPACITY *(V/C)* RATIO:				0.721				0.795	
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.621**				**0.695**	
LEVEL OF SERVICE (LOS):				**B**				**B**	

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
26	

PROJECT TITLE: Port of Long Beach Master Plan Update

North-South Street: Navy Wy **East-West Street:** *Seaside Fwy

Scenario: Baseline plus Project Conditions - Proposed Plan (AM & MD Only)

Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 1	SB--	0	NB-- 1	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	180	2	**99**	240	2	**132**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	440	1	0	620	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	10	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	2180	3	**727**	1720	3	**573**
	Through-Right		0			0	
	Right	260	1	211	200	1	134
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	310	2	**171**	270	2	**149**
	Left-Through		0			0	
	Through	1910	3	637	1480	3	493
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	99		*North-South:*	132
			East-West:	898		*East-West:*	722
			SUM:	997		*SUM:*	854
VOLUME/CAPACITY *(V/C)* RATIO:				0.700			0.599
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.600**			**0.499**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
29

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Baseline plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			2			2
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	10	1	10	10	1	10
	Left-Through		0			0	
	Through	100	2	**33**	120	2	**43**
	Through-Right		1			1	
	Right	0	0	0	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	400	1	**400**	360	1	**360**
	Left-Through		0			0	
	Through	90	1	85	60	1	55
	Through-Right		1			1	
	Right	80	0	80	50	0	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	180	2	**99**	390	2	**215**
	Left-Through		0			0	
	Through	10	0	20	10	0	20
	Through-Right		1			1	
	Right	10	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	10	0	10
	Left-Through		1			1	
	Through	10	0	**10**	10	0	**20**
	Through-Right		0			0	
	Right	340	1	0	380	1	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	433		*North-South:*	403
			East-West:	109		*East-West:*	235
			SUM:	542		*SUM:*	638
VOLUME/CAPACITY *(V/C)* RATIO:				0.394			0.464
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.294**			**0.364**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
4

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				1			1
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	10	0	10	10	0	10
	Left-Through		0			0	
	Through	0	0	**60**	0	0	**60**
	Through-Right		0			0	
	Right	50	0	0	50	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	50	0	50	50	0	50
	Left-Through		0			0	
	Through	0	0	**100**	0	0	**100**
	Through-Right		0			0	
	Right	50	0	0	50	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	60	1	60	60	1	60
	Left-Through		0			0	
	Through	1230	1	**620**	1230	1	**620**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	730	2	365	730	2	365
	Through-Right		0			0	
	Right	20	1	0	20	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	160		*North-South:*	160
			East-West:	630		*East-West:*	630
			SUM:	790		*SUM:*	790
VOLUME/CAPACITY *(V/C)* RATIO:				0.575			0.575
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.475**			**0.475**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Baseline plus Project - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	40	0	40	40	0	40
	Left-Through		0			0	
	Through	0	0	**150**	0	0	**150**
	Through-Right		0			0	
	Right	110	0	0	110	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	30	1	**30**	30	1	**30**
	Left-Through		0			0	
	Through	10	0	20	10	0	20
	Through-Right		1			1	
	Right	10	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	10	1	10	10	1	10
	Left-Through		0			0	
	Through	1370	1	**710**	1370	1	**710**
	Through-Right		1			1	
	Right	50	0	50	50	0	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	70	1	**70**	70	1	**70**
	Left-Through		0			0	
	Through	860	1	440	860	1	440
	Through-Right		1			1	
	Right	20	0	20	20	0	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	180		*North-South:*	180
			East-West:	780		*East-West:*	780
			SUM:	960		*SUM:*	960
VOLUME/CAPACITY *(V/C)* RATIO:				0.674			0.674
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.574**			**0.574**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
8

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Baseline plus Project - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	3		EB-- 0	WB--	3
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	980	2	**390**	980	2	**390**
	Through-Right		1			1	
	Right	190	0	190	190	0	190
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	360	1	**360**	360	1	**360**
	Left-Through		0			0	
	Through	1080	3	360	1080	3	360
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	100	1	**100**	100	1	**100**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	450	1	90	450	1	90
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	750		*North-South:*	750
			East-West:	100		*East-West:*	100
			SUM:	850		*SUM:*	850
VOLUME/CAPACITY *(V/C)* RATIO:				0.596			0.596
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.496**			**0.496**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
9

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Baseline plus Project - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	170	1	170	170	1	170
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	380	1	**215**	380	1	**215**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	330	1	**330**	330	1	**330**
	Left-Through		0			0	
	Through	1360	2	680	1360	2	680
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1230	2	**480**	1230	2	**480**
	Through-Right		1			1	
	Right	210	0	210	210	0	210
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	215		*North-South:*	215
			East-West:	810		*East-West:*	810
			SUM:	1025		*SUM:*	1025
VOLUME/CAPACITY *(V/C)* RATIO:				0.719			0.719
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.619**			**0.619**
LEVEL OF SERVICE (LOS):				**B**			**B**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
13

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Henry Ford Av **East-West Street:** Anaheim St.
Scenario: Baseline plus Project - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 3	SB--	3	NB-- 3	SB--	3
		EB-- 1	WB--	3	EB-- 1	WB--	3
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	480	1	293	480	1	293
	Left-Through		1			1	
	Through	400	1	**293**	400	1	**293**
	Through-Right		0			0	
	Right	140	1	50	140	1	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	240	1	**240**	240	1	**240**
	Left-Through		0			0	
	Through	430	2	215	430	2	215
	Through-Right		0			0	
	Right	80	1	0	80	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	90	1	90	90	1	90
	Left-Through		0			0	
	Through	1340	2	**670**	1340	2	**670**
	Through-Right		0			0	
	Right	380	1	0	380	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	90	1	**90**	90	1	**90**
	Left-Through		0			0	
	Through	790	2	395	790	2	395
	Through-Right		0			0	
	Right	260	1	20	260	1	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	533		*North-South:*	533
			East-West:	760		*East-West:*	760
			SUM:	1293		*SUM:*	1293
VOLUME/CAPACITY *(V/C)* RATIO:				0.940			0.940
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.840**			**0.840**
LEVEL OF SERVICE (LOS):				**D**			**D**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
26	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** *Seaside Fwy
Scenario: Baseline plus Project - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 1	SB--	0	NB-- 1	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	300	2	**165**	300	2	**165**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	560	1	0	560	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	2530	3	**843**	2530	3	**843**
	Through-Right		0			0	
	Right	330	1	248	330	1	248
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	200	2	**110**	200	2	**110**
	Left-Through		0			0	
	Through	2020	3	673	2020	3	673
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	165		*North-South:*	165
			East-West:	953		*East-West:*	953
			SUM:	1118		*SUM:*	1118
VOLUME/CAPACITY *(V/C)* RATIO:				0.785			0.785
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.685**			**0.685**
LEVEL OF SERVICE (LOS):				**B**			**B**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
29	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Baseline plus Project - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM				PM			
No. of Phases					4				4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					2				2
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--		0	NB-- 0	SB--		0
		EB-- 0	WB--		3	EB-- 0	WB--		3
ATSAC-1 or ATSAC+ATCS-2?					2				2
Override Capacity					0				0
MOVEMENT		Volume	No. of Lanes	Lane Volume		Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	10	1	10		10	1	10	
	Left-Through		0				0		
	Through	190	2	**67**		190	2	**67**	
	Through-Right		1				1		
	Right	10	0	10		10	0	10	
	Left-Through-Right		0				0		
	Left-Right		0				0		
SOUTHBOUND	Left	300	1	**300**		300	1	**300**	
	Left-Through		0				0		
	Through	130	1	110		130	1	110	
	Through-Right		1				1		
	Right	90	0	90		90	0	90	
	Left-Through-Right		0				0		
	Left-Right		0				0		
EASTBOUND	Left	310	2	**171**		310	2	**171**	
	Left-Through		0				0		
	Through	10	0	30		10	0	30	
	Through-Right		1				1		
	Right	20	0	0		20	0	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
WESTBOUND	Left	0	0	0		0	0	0	
	Left-Through		1				1		
	Through	0	0	0		0	0	0	
	Through-Right		0				0		
	Right	350	1	**50**		350	1	**50**	
	Left-Through-Right		0				0		
	Left-Right		0				0		
CRITICAL VOLUMES			North-South:	367			North-South:	367	
			East-West:	221			East-West:	221	
			SUM:	588			SUM:	588	
VOLUME/CAPACITY (V/C) RATIO:				0.428				0.428	
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.328**				**0.328**	
LEVEL OF SERVICE (LOS):				**A**				**A**	

Version: 1i Beta; 8/4/2011

Project Title: **PoLB Master Plan EIR**
Intersection: **1 - Alameda St & Sepulveda Blvd Ramp**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.313 *
	TH	3.00	950	4,800	0.198		N-S(2):	0.198
	LT	1.00	270	1,600	0.169	*	E-W(1):	0.044 *
Westbound	RT	2.00	360	3,200	0.028		E-W(2):	0.028
	TH	0.00	0	0	0.000			
	LT	1.00	70	1,600	0.044	*	V/C:	0.357
Northbound	RT	0.00	70	0	0.000		Lost Time:	0.100
	TH	3.00	620	4,800	0.144	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.457
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.280 *
	TH	3.00	710	4,800	0.148		N-S(2):	0.148
	LT	1.00	180	1,600	0.113	*	E-W(1):	0.063 *
Westbound	RT	2.00	320	3,200	0.044		E-W(2):	0.044
	TH	0.00	0	0	0.000			
	LT	1.00	100	1,600	0.063	*	V/C:	0.343
Northbound	RT	0.00	150	0	0.000		Lost Time:	0.100
	TH	3.00	650	4,800	0.167	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.443
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.360 *
	TH	3.00	890	4,800	0.185		N-S(2):	0.185
	LT	1.00	290	1,600	0.181	*	E-W(1):	0.050 *
Westbound	RT	2.00	380	3,200	0.028		E-W(2):	0.028
	TH	0.00	0	0	0.000			
	LT	1.00	80	1,600	0.050	*	V/C:	0.410
Northbound	RT	0.00	90	0	0.000		Lost Time:	0.100
	TH	3.00	770	4,800	0.179	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.510
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **2 - Alameda St Ramp & Sepulveda Blvd**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	210	1,600	0.072	*	N-S(1):	0.065
	TH	0.29	20	457	0.044		N-S(2):	0.078 *
	LT	1.71	120	2,469	0.049		E-W(1):	0.162
Westbound	RT	1.00	220	1,600	0.089		E-W(2):	0.650 *
	TH	1.00	850	1,600	0.531	*		
	LT	1.00	10	1,600	0.006		V/C:	0.728
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	30	1,600	0.016		ITS:	0.000
	LT	0.00	10	1,600	0.006	*		
Eastbound	RT	0.00	10	0	0.000		ICU:	0.828
	TH	2.00	490	3,200	0.156			
	LT	1.00	190	1,600	0.119	*	LOS:	D

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	150	1,600	0.031		N-S(1):	0.072 *
	TH	0.12	10	188	0.053		N-S(2):	0.059
	LT	1.88	160	2,711	0.059	*	E-W(1):	0.125
Westbound	RT	1.00	220	1,600	0.078		E-W(2):	0.425 *
	TH	1.00	480	1,600	0.300	*		
	LT	1.00	10	1,600	0.006		V/C:	0.497
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	20	1,600	0.013	*	ITS:	0.000
	LT	0.00	10	1,600	0.006			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.597
	TH	2.00	370	3,200	0.119			
	LT	1.00	200	1,600	0.125	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	200	1,600	0.038		N-S(1):	0.076 *
	TH	0.11	10	178	0.056		N-S(2):	0.062
	LT	1.89	170	2,720	0.063	*	E-W(1):	0.306
Westbound	RT	1.00	180	1,600	0.113		E-W(2):	0.638 *
	TH	1.00	740	1,600	0.463	*		
	LT	1.00	0	1,600	0.000		V/C:	0.714
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	20	1,600	0.013	*	ITS:	0.000
	LT	0.00	10	1,600	0.006			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.814
	TH	2.00	970	3,200	0.306			
	LT	1.00	280	1,600	0.175	*	LOS:	D

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **3 - Intermodal Wy & Sepulveda Blvd**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.222
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.353 *
	TH	2.00	1,100	3,200	0.347 *		
	LT	0.00	0	0	0.000	V/C:	0.359
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.459
	TH	2.00	710	3,200	0.222		
	LT	1.00	10	1,600	0.006 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.219
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.269 *
	TH	2.00	830	3,200	0.263 *		
	LT	0.00	0	0	0.000	V/C:	0.275
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.375
	TH	2.00	700	3,200	0.219		
	LT	1.00	10	1,600	0.006 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.391 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.319
	TH	2.00	990	3,200	0.313 *		
	LT	0.00	0	0	0.000	V/C:	0.397
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.497
	TH	2.00	1,250	3,200	0.391		
	LT	1.00	10	1,600	0.006 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **6 - Terminal Island Fwy & Willow St/Sepulveda Blvd**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, EBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.008
	TH	0.00	0	0	0.000	*	N-S(2):	0.125 *
	LT	0.00	0	0	0.000		E-W(1):	0.182
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.272 *
	TH	2.00	850	3,200	0.266	*		
	LT	2.00	210	2,880	0.073		V/C:	0.397
Northbound	RT	2.00	260	3,200	0.008		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	360	2,880	0.125	*		
Eastbound	RT	1.00	320	1,600	0.075		ICU:	0.497
	TH	2.00	350	3,200	0.109			
	LT	1.00	10	1,600	0.006	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.166
	TH	0.00	0	0	0.000	*	N-S(2):	0.184 *
	LT	0.00	0	0	0.000		E-W(1):	0.145 *
Westbound	RT	0.00	10	0	0.000		E-W(2):	0.106
	TH	2.00	310	3,200	0.100			
	LT	2.00	120	2,880	0.042	*	V/C:	0.329
Northbound	RT	2.00	300	3,200	0.052		Lost Time:	0.100
	TH	0.04	10	60	0.166		ITS:	0.000
	LT	1.96	520	2,826	0.184	*		
Eastbound	RT	1.00	220	1,600	0.000		ICU:	0.429
	TH	2.00	330	3,200	0.103	*		
	LT	1.00	10	1,600	0.006		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.075
	TH	0.00	0	0	0.000	*	N-S(2):	0.122 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.372 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.231
	TH	2.00	740	3,200	0.231			
	LT	2.00	160	2,880	0.056	*	V/C:	0.494
Northbound	RT	2.00	400	3,200	0.069		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	350	2,880	0.122	*		
Eastbound	RT	1.00	300	1,600	0.188		ICU:	0.594
	TH	2.00	1,010	3,200	0.316	*		
	LT	1.00	0	1,600	0.000		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **7 - Santa Fe Ave & PCH**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	170	1,600	0.078		N-S(1):	0.232 *
	TH	2.00	310	3,200	0.097		N-S(2):	0.185
	LT	1.00	190	1,600	0.119	*	E-W(1):	0.578
Westbound	RT	0.00	100	0	0.000		E-W(2):	0.622 *
	TH	2.00	1,710	3,200	0.566	*		
	LT	1.00	250	1,600	0.156		V/C:	0.854
Northbound	RT	1.00	50	1,600	0.000		Lost Time:	0.100
	TH	2.00	360	3,200	0.113	*	ITS:	0.000
	LT	1.00	140	1,600	0.088			
Eastbound	RT	1.00	240	1,600	0.106		ICU:	0.954
	TH	2.00	1,350	3,200	0.422			
	LT	1.00	90	1,600	0.056	*	LOS:	E

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.028		N-S(1):	0.150 *
	TH	2.00	200	3,200	0.063		N-S(2):	0.119
	LT	1.00	160	1,600	0.100	*	E-W(1):	0.551
Westbound	RT	0.00	100	0	0.000		E-W(2):	0.575 *
	TH	2.00	1,520	3,200	0.506	*		
	LT	1.00	140	1,600	0.088		V/C:	0.725
Northbound	RT	1.00	100	1,600	0.019		Lost Time:	0.100
	TH	2.00	160	3,200	0.050	*	ITS:	0.000
	LT	1.00	90	1,600	0.056			
Eastbound	RT	1.00	100	1,600	0.034		ICU:	0.825
	TH	2.00	1,480	3,200	0.463			
	LT	1.00	110	1,600	0.069	*	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	120	1,600	0.025		N-S(1):	0.176
	TH	2.00	150	3,200	0.047		N-S(2):	0.197 *
	LT	1.00	100	1,600	0.063	*	E-W(1):	0.669 *
Westbound	RT	0.00	90	0	0.000		E-W(2):	0.628
	TH	2.00	1,600	3,200	0.528	*		
	LT	1.00	180	1,600	0.113		V/C:	0.866
Northbound	RT	1.00	180	1,600	0.056		Lost Time:	0.100
	TH	2.00	360	3,200	0.113	*	ITS:	0.000
	LT	1.00	240	1,600	0.150			
Eastbound	RT	1.00	80	1,600	0.000		ICU:	0.966
	TH	2.00	1,780	3,200	0.556			
	LT	1.00	160	1,600	0.100	*	LOS:	E

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **10 - Santa Fe Ave & Anaheim St.**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	200	1,600	0.084		N-S(1):	0.288 *
	TH	0.00	0	0	0.000		N-S(2):	0.084
	LT	1.00	460	1,600	0.288	*	E-W(1):	0.198
Westbound	RT	1.00	350	1,600	0.219		E-W(2):	0.329 *
	TH	3.00	1,190	4,800	0.248	*		
	LT	0.00	0	0	0.000		V/C:	0.617
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.717
	TH	3.00	950	4,800	0.198			
	LT	1.00	130	1,600	0.081	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	160	1,600	0.072		N-S(1):	0.169 *
	TH	0.00	0	0	0.000		N-S(2):	0.072
	LT	1.00	270	1,600	0.169	*	E-W(1):	0.252
Westbound	RT	1.00	270	1,600	0.169		E-W(2):	0.306 *
	TH	3.00	1,200	4,800	0.250	*		
	LT	0.00	0	0	0.000		V/C:	0.475
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.575
	TH	3.00	1,210	4,800	0.252			
	LT	1.00	90	1,600	0.056	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	150	1,600	0.034		N-S(1):	0.169 *
	TH	0.00	0	0	0.000		N-S(2):	0.034
	LT	1.00	270	1,600	0.169	*	E-W(1):	0.267
Westbound	RT	1.00	280	1,600	0.175		E-W(2):	0.294 *
	TH	3.00	770	4,800	0.160	*		
	LT	0.00	0	0	0.000		V/C:	0.463
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.563
	TH	3.00	1,280	4,800	0.267			
	LT	1.00	190	1,600	0.119	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **11 - Harbor Ave & Anaheim St.**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.25	30	400	0.000		N-S(1):	0.075 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	0.75	90	1,200	0.075	*	E-W(1):	0.346
Westbound	RT	1.00	150	1,600	0.094		E-W(2):	0.480 *
	TH	3.00	2,240	4,800	0.467	*		
	LT	0.00	0	0	0.000		V/C:	0.555
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.655
	TH	3.00	1,660	4,800	0.346			
	LT	1.00	20	1,600	0.013	*	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	30	320	0.000		N-S(1):	0.094 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	0.80	120	1,280	0.094	*	E-W(1):	0.325
Westbound	RT	1.00	140	1,600	0.088		E-W(2):	0.423 *
	TH	3.00	1,940	4,800	0.404	*		
	LT	0.00	0	0	0.000		V/C:	0.517
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.617
	TH	3.00	1,560	4,800	0.325			
	LT	1.00	30	1,600	0.019	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.19	30	300	0.000		N-S(1):	0.100 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	0.81	130	1,300	0.100	*	E-W(1):	0.379 *
Westbound	RT	1.00	130	1,600	0.081		E-W(2):	0.323
	TH	3.00	1,400	4,800	0.292	*		
	LT	0.00	0	0	0.000		V/C:	0.479
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.579
	TH	3.00	1,820	4,800	0.379			
	LT	1.00	50	1,600	0.031	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **12 - 9th St/East I St & Anaheim St.**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	NBR, SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.088 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	140	1,600	0.088 *	E-W(1):	0.196
Westbound	RT	1.00	150	1,600	0.094	E-W(2):	0.456 *
	TH	2.00	1,380	3,200	0.431 *		
	LT	0.00	0	0	0.000	V/C:	0.544
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.644
	TH	3.00	940	4,800	0.196		
	LT	1.00	40	1,600	0.025 *	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.000	N-S(1):	0.031 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	50	1,600	0.031 *	E-W(1):	0.248
Westbound	RT	1.00	180	1,600	0.113	E-W(2):	0.397 *
	TH	2.00	1,130	3,200	0.353 *		
	LT	0.00	0	0	0.000	V/C:	0.428
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.528
	TH	3.00	1,190	4,800	0.248		
	LT	1.00	70	1,600	0.044 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.056 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	90	1,600	0.056 *	E-W(1):	0.304
Westbound	RT	1.00	110	1,600	0.069	E-W(2):	0.347 *
	TH	2.00	1,010	3,200	0.316 *		
	LT	0.00	0	0	0.000	V/C:	0.403
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.503
	TH	3.00	1,460	4,800	0.304		
	LT	1.00	50	1,600	0.031 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **14 - Pico Ave & Pier B St**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	60	1,600	0.038	N-S(1):	0.188
	TH	2.00	360	3,200	0.113 *	N-S(2):	0.283 *
	LT	0.00	0	0	0.000	E-W(1):	0.000
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.087 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.370
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	600	3,200	0.188	ITS:	0.000
	LT	2.00	490	2,880	0.170 *		
Eastbound	RT	1.00	320	1,600	0.000	ICU:	0.470
	TH	0.00	0	0	0.000		
	LT	2.00	250	2,880	0.087 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	220	1,600	0.138 *	N-S(1):	0.175
	TH	2.00	270	3,200	0.084	N-S(2):	0.360 *
	LT	0.00	0	0	0.000	E-W(1):	0.000
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.069 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.429
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	560	3,200	0.175	ITS:	0.000
	LT	2.00	640	2,880	0.222 *		
Eastbound	RT	1.00	640	1,600	0.000	ICU:	0.529
	TH	0.00	0	0	0.000		
	LT	2.00	200	2,880	0.069 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	260	1,600	0.163 *	N-S(1):	0.175
	TH	2.00	440	3,200	0.138	N-S(2):	0.337 *
	LT	0.00	0	0	0.000	E-W(1):	0.000
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.042 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.379
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	560	3,200	0.175	ITS:	0.000
	LT	2.00	500	2,880	0.174 *		
Eastbound	RT	1.00	150	1,600	0.000	ICU:	0.479
	TH	0.00	0	0	0.000		
	LT	2.00	120	2,880	0.042 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **15 - Henry Ford Av/Terminal Isl Ramps & Pier A Way**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	NBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	50	0	0.000	N-S(1):	0.266
	TH	2.00	890	3,200	0.294 *	N-S(2):	0.300 *
	LT	2.00	470	2,880	0.163	E-W(1):	0.028
Westbound	RT	1.00	370	1,600	0.150 *	E-W(2):	0.181 *
	TH	0.00	0	0	0.000		
	LT	1.00	40	1,600	0.025	V/C:	0.481
Northbound	RT	1.00	50	1,600	0.000	Lost Time:	0.100
	TH	2.00	330	3,200	0.103	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	1.00	10	1,600	0.003	ICU:	0.581
	TH	0.00	0	0	0.000		
	LT	1.00	50	1,600	0.031 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	60	0	0.000	N-S(1):	0.211
	TH	2.00	630	3,200	0.216 *	N-S(2):	0.222 *
	LT	2.00	230	2,880	0.080	E-W(1):	0.057
Westbound	RT	1.00	400	1,600	0.210 *	E-W(2):	0.248 *
	TH	0.14	10	229	0.044		
	LT	0.86	60	1,371	0.044	V/C:	0.470
Northbound	RT	1.00	80	1,600	0.000	Lost Time:	0.100
	TH	2.00	420	3,200	0.131	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.50	10	800	0.009	ICU:	0.570
	TH	0.50	10	800	0.013		
	LT	1.00	60	1,600	0.038 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	70	0	0.000	N-S(1):	0.206 *
	TH	2.00	410	3,200	0.150 *	N-S(2):	0.156
	LT	2.00	260	2,880	0.090	E-W(1):	0.057
Westbound	RT	1.00	480	1,600	0.255 *	E-W(2):	0.311 *
	TH	0.14	10	229	0.044		
	LT	0.86	60	1,371	0.044	V/C:	0.517
Northbound	RT	1.00	70	1,600	0.000	Lost Time:	0.100
	TH	2.00	370	3,200	0.116	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.50	10	800	0.009	ICU:	0.617
	TH	0.50	10	800	0.013		
	LT	1.00	90	1,600	0.056 *	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **16 - Pico Ave & Pier C St**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	220	3,200	0.000	N-S(1):	0.297 *
	TH	3.00	570	4,800	0.119	N-S(2):	0.150
	LT	0.00	0	0	0.000 *	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000	E-W(2):	0.119 *
	TH	0.00	0	0	0.000 *		
	LT	2.00	0	2,880	0.000	V/C:	0.416
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	950	3,200	0.297 *	ITS:	0.000
	LT	1.00	50	1,600	0.031		
Eastbound	RT	0.00	20	0	0.000	ICU:	0.516
	TH	0.00	0	0	0.000		
	LT	0.00	190	1,600	0.119 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	100	3,200	0.000	N-S(1):	0.369 *
	TH	3.00	830	4,800	0.173	N-S(2):	0.186
	LT	0.00	0	0	0.000 *	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000	E-W(2):	0.088 *
	TH	0.00	0	0	0.000 *		
	LT	2.00	0	2,880	0.000	V/C:	0.457
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,180	3,200	0.369 *	ITS:	0.000
	LT	1.00	20	1,600	0.013		
Eastbound	RT	0.00	30	0	0.000	ICU:	0.557
	TH	0.00	0	0	0.000		
	LT	0.00	140	1,600	0.088 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	40	3,200	0.000	N-S(1):	0.363 *
	TH	3.00	610	4,800	0.127	N-S(2):	0.133
	LT	0.00	0	0	0.000 *	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000	E-W(2):	0.125 *
	TH	0.00	0	0	0.000 *		
	LT	2.00	0	2,880	0.000	V/C:	0.488
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,160	3,200	0.363 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.00	70	0	0.000	ICU:	0.588
	TH	0.00	0	0	0.000		
	LT	0.00	200	1,600	0.125 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **17 - Pico Ave & Pier D St**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR, WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	50	0	0.000		N-S(1):	0.297 *
	TH	2.00	540	3,200	0.184		N-S(2):	0.222
	LT	1.00	10	1,600	0.006	*	E-W(1):	0.006
Westbound	RT	1.00	10	1,600	0.000		E-W(2):	0.028 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.325
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	930	3,200	0.291	*	ITS:	0.000
	LT	1.00	60	1,600	0.038			
Eastbound	RT	1.00	50	1,600	0.000		ICU:	0.425
	TH	0.00	0	0	0.000			
	LT	2.00	80	2,880	0.028	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.303 *
	TH	2.00	860	3,200	0.275		N-S(2):	0.294
	LT	1.00	10	1,600	0.006	*	E-W(1):	0.094
Westbound	RT	1.00	10	1,600	0.000		E-W(2):	0.097 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.400
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	940	3,200	0.297	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	1.00	110	1,600	0.050		ICU:	0.500
	TH	0.07	10	114	0.088			
	LT	1.93	270	2,777	0.097	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	40	0	0.000		N-S(1):	0.313 *
	TH	2.00	700	3,200	0.231		N-S(2):	0.250
	LT	1.00	0	1,600	0.000	*	E-W(1):	0.050
Westbound	RT	1.00	10	1,600	0.006		E-W(2):	0.058 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.371
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	1,000	3,200	0.313	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	1.00	100	1,600	0.044		ICU:	0.471
	TH	0.00	0	0	0.000			
	LT	2.00	150	2,880	0.052	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **181 - Pico Ave & Westbound Ocean Ave On Ramp**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	130	0	0.000		N-S(1):	0.309
	TH	2.00	440	1,600	0.181	*	N-S(2):	0.319 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.006 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.325
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	960	3,200	0.303		ITS:	0.000
	LT	1.00	220	1,600	0.138	*		
Eastbound	RT	0.00	20	0	0.000		ICU:	0.425
	TH	0.00	0	0	0.000			
	LT	0.00	10	1,600	0.006	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	430	0	0.000		N-S(1):	0.306
	TH	2.00	500	1,600	0.294	*	N-S(2):	0.550 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.006 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.556
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	950	3,200	0.300		ITS:	0.000
	LT	1.00	410	1,600	0.256	*		
Eastbound	RT	0.00	40	0	0.000		ICU:	0.656
	TH	0.00	0	0	0.000			
	LT	0.00	10	1,600	0.006	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	150	0	0.000		N-S(1):	0.325 *
	TH	2.00	630	1,600	0.247	*	N-S(2):	0.285
	LT	0.00	10	1,600	0.006		E-W(1):	0.006 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.331
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	1,010	3,200	0.319		ITS:	0.000
	LT	1.00	60	1,600	0.038	*		
Eastbound	RT	0.00	20	0	0.000		ICU:	0.431
	TH	0.00	0	0	0.000			
	LT	0.00	10	1,600	0.006	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **182 - Pico Ave & Westbound Ocean Ave Off Ramp**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.347 *
	TH	2.00	500	3,200	0.156		N-S(2):	0.156
	LT	0.00	0	0	0.000	*	E-W(1):	0.038
Westbound	RT	1.00	80	1,600	0.050	*	E-W(2):	0.050 *
	TH	0.00	0	0	0.000			
	LT	1.00	60	1,600	0.038		V/C:	0.397
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	1,110	3,200	0.347	*	ITS:	0.000
	LT	1.00	0	1,600	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.497
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.413 *
	TH	2.00	600	3,200	0.188		N-S(2):	0.188
	LT	0.00	0	0	0.000	*	E-W(1):	0.031
Westbound	RT	1.00	80	1,600	0.050	*	E-W(2):	0.050 *
	TH	0.00	0	0	0.000			
	LT	1.00	50	1,600	0.031		V/C:	0.463
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	1,320	3,200	0.413	*	ITS:	0.000
	LT	1.00	0	1,600	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.563
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.328 *
	TH	2.00	670	3,200	0.209		N-S(2):	0.209
	LT	0.00	0	0	0.000	*	E-W(1):	0.044 *
Westbound	RT	1.00	40	1,600	0.025	*	E-W(2):	0.025
	TH	0.00	0	0	0.000			
	LT	1.00	70	1,600	0.044		V/C:	0.372
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	1,050	3,200	0.328	*	ITS:	0.000
	LT	1.00	0	1,600	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.472
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **19 - Pico Ave & Pier E St/Eastbound Ocean Ave Ramp**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	140	0	0.000		N-S(1):	0.344 *
	TH	2.00	330	3,200	0.147	*	N-S(2):	0.000
	LT	1.00	0	1,600	0.000		E-W(1):	0.157 *
Westbound	RT	0.00	70	0	0.000		E-W(2):	0.069
	TH	2.00	20	1,600	0.056			
	LT	0.00	220	1,600	0.138	*	V/C:	0.501
Northbound	RT	0.00	40	0	0.000		Lost Time:	0.100
	TH	2.00	590	3,200	0.197	*	ITS:	0.000
	LT	1.00	280	1,600	0.175			
Eastbound	RT	0.33	10	533	0.000		ICU:	0.601
	TH	0.67	20	1,067	0.019	*		
	LT	1.00	20	1,600	0.013		LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	190	0	0.000		N-S(1):	0.428 *
	TH	2.00	400	3,200	0.184	*	N-S(2):	0.000
	LT	1.00	0	1,600	0.000		E-W(1):	0.082 *
Westbound	RT	0.00	60	0	0.000		E-W(2):	0.063
	TH	2.00	20	1,600	0.050			
	LT	0.00	110	1,600	0.069	*	V/C:	0.510
Northbound	RT	0.00	70	0	0.000		Lost Time:	0.100
	TH	2.00	710	3,200	0.244	*	ITS:	0.000
	LT	1.00	260	1,600	0.163			
Eastbound	RT	0.50	10	800	0.000		ICU:	0.610
	TH	0.50	10	800	0.013	*		
	LT	1.00	20	1,600	0.013		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	110	0	0.000		N-S(1):	0.338 *
	TH	2.00	300	3,200	0.128	*	N-S(2):	0.000
	LT	1.00	220	1,600	0.138		E-W(1):	0.056
Westbound	RT	0.00	40	0	0.000		E-W(2):	0.069 *
	TH	2.00	30	1,600	0.038			
	LT	0.00	50	1,600	0.031	*	V/C:	0.407
Northbound	RT	0.00	20	0	0.000		Lost Time:	0.100
	TH	2.00	620	3,200	0.200	*	ITS:	0.000
	LT	1.00	170	1,600	0.106			
Eastbound	RT	0.25	10	400	0.000		ICU:	0.507
	TH	0.75	30	1,200	0.025	*		
	LT	1.00	50	1,600	0.031		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **20 - Pier S Ave & New Dock St**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.234 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.279 *
Westbound	RT	0.00	20	0	0.000		E-W(2):	0.000
	TH	3.00	380	4,800	0.083			
	LT	1.00	326	1,600	0.204	*	V/C:	0.513
Northbound	RT	1.00	165	1,600	0.001		Lost Time:	0.100
	TH	0.96	250	1,538	0.163		ITS:	0.000
	LT	1.04	270	1,329	0.203	*		
Eastbound	RT	1.00	960	1,600	0.000		ICU:	0.613
	TH	2.00	240	3,200	0.075	*		
	LT	1.00	20	1,600	0.013		LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.17	10	267	0.031		N-S(1):	0.219 *
	TH	0.83	50	1,333	0.038	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.277 *
Westbound	RT	0.00	20	0	0.000		E-W(2):	0.000
	TH	3.00	340	4,800	0.075			
	LT	1.00	337	1,600	0.211	*	V/C:	0.496
Northbound	RT	1.00	196	1,600	0.017		Lost Time:	0.100
	TH	1.00	290	1,600	0.181	*	ITS:	0.000
	LT	1.00	60	1,600	0.038			
Eastbound	RT	1.00	470	1,600	0.000		ICU:	0.596
	TH	2.00	210	3,200	0.066	*		
	LT	1.00	20	1,600	0.013		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.212 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.253 *
Westbound	RT	0.00	10	0	0.000		E-W(2):	0.000
	TH	3.00	210	4,800	0.046			
	LT	1.00	350	1,600	0.219	*	V/C:	0.465
Northbound	RT	1.00	179	1,600	0.003		Lost Time:	0.100
	TH	1.00	290	1,600	0.181	*	ITS:	0.000
	LT	1.00	170	1,600	0.106			
Eastbound	RT	1.00	480	1,600	0.000		ICU:	0.565
	TH	2.00	110	3,200	0.034	*		
	LT	1.00	20	1,600	0.013		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **21 - Terminal Island Fwy & *CA-47 Westbound**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	WBR		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	460	3,200	0.144		N-S(1):	0.409 *
	TH	2.00	560	3,200	0.175	*	N-S(2):	0.000
	LT	0.00	0	0	0.000		E-W(1):	0.150 *
Westbound	RT	1.00	300	1,600	0.000		E-W(2):	0.119
	TH	2.00	380	3,200	0.119			
	LT	1.00	240	1,600	0.150	*	V/C:	0.559
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	750	3,200	0.234	*	ITS:	0.000
	LT	1.00	135	1,600	0.084			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.659
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	450	3,200	0.141		N-S(1):	0.469 *
	TH	2.00	570	3,200	0.178	*	N-S(2):	0.000
	LT	0.00	0	0	0.000		E-W(1):	0.144 *
Westbound	RT	1.00	420	1,600	0.000		E-W(2):	0.103
	TH	2.00	330	3,200	0.103			
	LT	1.00	230	1,600	0.144	*	V/C:	0.613
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	930	3,200	0.291	*	ITS:	0.000
	LT	1.00	176	1,600	0.110			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.713
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	490	3,200	0.153		N-S(1):	0.401 *
	TH	2.00	600	3,200	0.188	*	N-S(2):	0.000
	LT	0.00	0	0	0.000		E-W(1):	0.119 *
Westbound	RT	1.00	270	1,600	0.000		E-W(2):	0.094
	TH	2.00	300	3,200	0.094			
	LT	1.00	190	1,600	0.119	*	V/C:	0.520
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	680	3,200	0.213	*	ITS:	0.000
	LT	1.00	159	1,600	0.099			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.620
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **22 - Terminal Island Fwy & *CA-47 Eastbound**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.344 *
	TH	1.00	510	1,600	0.319		N-S(2):	0.319
	LT	1.00	270	1,600	0.169	*	E-W(1):	0.202 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.188
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.546
Northbound	RT	1.00	280	1,600	0.175	*	Lost Time:	0.100
	TH	2.00	405	3,200	0.127		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	156	0	0.000		ICU:	0.646
	TH	2.00	490	3,200	0.202	*		
	LT	2.00	480	2,560	0.188		LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.300
	TH	1.00	590	1,600	0.369	*	N-S(2):	0.369 *
	LT	1.00	210	1,600	0.131		E-W(1):	0.249
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.270 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.639
Northbound	RT	1.00	270	1,600	0.169		Lost Time:	0.100
	TH	2.00	416	3,200	0.130		ITS:	0.000
	LT	0.00	0	0	0.000	*		
Eastbound	RT	0.00	197	0	0.000		ICU:	0.739
	TH	2.00	600	3,200	0.249			
	LT	2.00	690	2,560	0.270	*	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.262
	TH	1.00	560	1,600	0.350	*	N-S(2):	0.350 *
	LT	1.00	210	1,600	0.131		E-W(1):	0.156
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.223 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.573
Northbound	RT	1.00	210	1,600	0.131		Lost Time:	0.100
	TH	2.00	279	3,200	0.087		ITS:	0.000
	LT	0.00	0	0	0.000	*		
Eastbound	RT	0.00	180	0	0.000		ICU:	0.673
	TH	2.00	320	3,200	0.156			
	LT	2.00	570	2,560	0.223	*	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **23 - Pier S Avenue & *CA-47 Westbound**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	790	1,600	0.494 *	N-S(1):	0.041
	TH	2.00	546	3,200	0.171	N-S(2):	0.494 *
	LT	0.00	0	0	0.000	E-W(1):	0.200 *
Westbound	RT	2.00	325	3,200	0.102	E-W(2):	0.000
	TH	2.00	640	3,200	0.200 *		
	LT	0.00	0	0	0.000	V/C:	0.694
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	130	3,200	0.041	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.794
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	490	1,600	0.306 *	N-S(1):	0.038
	TH	2.00	397	3,200	0.124	N-S(2):	0.306 *
	LT	0.00	0	0	0.000	E-W(1):	0.222 *
Westbound	RT	2.00	256	3,200	0.080	E-W(2):	0.000
	TH	2.00	710	3,200	0.222 *		
	LT	0.00	0	0	0.000	V/C:	0.528
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	120	3,200	0.038	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.628
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	430	1,600	0.269 *	N-S(1):	0.053
	TH	2.00	270	3,200	0.084	N-S(2):	0.269 *
	LT	0.00	0	0	0.000	E-W(1):	0.134 *
Westbound	RT	2.00	169	3,200	0.053	E-W(2):	0.000
	TH	2.00	430	3,200	0.134 *		
	LT	0.00	0	0	0.000	V/C:	0.403
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	170	3,200	0.053	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.503
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **24 - Pier S Avenue & *CA-47 Eastbound**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.217 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	556	2,560	0.217	*	E-W(1):	0.181 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.081
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.398
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.498
	TH	2.00	580	3,200	0.181	*		
	LT	1.00	130	1,600	0.081		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.151 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	387	2,560	0.151	*	E-W(1):	0.338 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.069
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.489
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.589
	TH	2.00	1,080	3,200	0.338	*		
	LT	1.00	110	1,600	0.069		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.109 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	280	2,560	0.109	*	E-W(1):	0.228 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.106
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.337
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.437
	TH	2.00	730	3,200	0.228	*		
	LT	1.00	170	1,600	0.106		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **25 - Pico Ave/Pier G Ave & Harbor Plaza Dr**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	SBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	610	1,600	0.256 *	N-S(1):	0.188
	TH	1.00	190	1,600	0.119	N-S(2):	0.262 *
	LT	1.00	160	1,600	0.100	E-W(1):	0.481 *
Westbound	RT	0.00	570	1,600	0.356 *	E-W(2):	0.000
	TH	2.00	120	1,600	0.075		
	LT	1.00	60	1,600	0.038	V/C:	0.743
Northbound	RT	0.00	70	0	0.000	Lost Time:	0.100
	TH	2.00	210	3,200	0.088	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.29	20	457	0.041	ICU:	0.843
	TH	0.71	50	1,143	0.044		
	LT	2.00	320	2,560	0.125 *	LOS:	D

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	470	1,600	0.161	N-S(1):	0.178 *
	TH	1.00	110	1,600	0.069	N-S(2):	0.167
	LT	1.00	190	1,600	0.119 *	E-W(1):	0.514 *
Westbound	RT	0.00	610	1,600	0.381 *	E-W(2):	0.000
	TH	2.00	100	1,600	0.063		
	LT	1.00	30	1,600	0.019	V/C:	0.692
Northbound	RT	0.00	50	0	0.000	Lost Time:	0.100
	TH	2.00	140	3,200	0.059 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.17	10	267	0.034	ICU:	0.792
	TH	0.83	50	1,333	0.038		
	LT	2.00	340	2,560	0.133 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	300	1,600	0.086	N-S(1):	0.185 *
	TH	1.00	100	1,600	0.063	N-S(2):	0.092
	LT	1.00	190	1,600	0.119 *	E-W(1):	0.477 *
Westbound	RT	0.00	600	1,600	0.375 *	E-W(2):	0.000
	TH	2.00	100	1,600	0.063		
	LT	1.00	20	1,600	0.013	V/C:	0.662
Northbound	RT	0.00	90	0	0.000	Lost Time:	0.100
	TH	2.00	120	3,200	0.066 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.10	10	160	0.059	ICU:	0.762
	TH	0.90	90	1,440	0.063		
	LT	2.00	260	2,560	0.102 *	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **27 - Harbor Plaza Dr & Queensway Dr**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	30	1,600	0.019 *	N-S(1):	0.335 *
	TH	2.00	10	3,200	0.003	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.006
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.119 *
	TH	3.00	550	4,800	0.119 *		
	LT	0.00	10	1,600	0.006	V/C:	0.454
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.05	20	79	0.253	ITS:	0.000
	LT	1.95	790	2,497	0.316 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.554
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.025 *	N-S(1):	0.350 *
	TH	2.00	10	3,200	0.003	N-S(2):	0.000
	LT	0.00	10	1,600	0.006	E-W(1):	0.325 *
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.222
	TH	3.00	690	3,200	0.222		
	LT	0.00	520	1,600	0.325 *	V/C:	0.675
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.05	20	77	0.260	ITS:	0.000
	LT	1.95	813	2,499	0.325 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.775
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.025 *	N-S(1):	0.260 *
	TH	2.00	20	3,200	0.006	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.075
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.292 *
	TH	3.00	1,260	4,800	0.292		
	LT	0.00	120	1,600	0.075 *	V/C:	0.552
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.07	20	106	0.188	ITS:	0.000
	LT	1.93	581	2,475	0.235 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.652
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **28 - Harbor Plaza Dr & Harbor Scenic Dr**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.132 *
	TH	2.00	10	1,600	0.006		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.388 *
Westbound	RT	2.00	430	3,200	0.131		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	221	1,600	0.138	*	V/C:	0.520
Northbound	RT	1.00	201	1,600	0.126	*	Lost Time:	0.100
	TH	2.00	370	3,200	0.116		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	400	1,600	0.250	*	ICU:	0.620
	TH	3.00	600	4,800	0.125			
	LT	1.00	10	1,600	0.006		LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.304 *
	TH	2.00	520	1,600	0.166	*	N-S(2):	0.000
	LT	0.00	10	1,600	0.006		E-W(1):	0.428 *
Westbound	RT	2.00	390	3,200	0.119		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	204	1,600	0.128	*	V/C:	0.732
Northbound	RT	1.00	114	1,600	0.071		Lost Time:	0.100
	TH	2.00	443	3,200	0.138	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	480	1,600	0.300	*	ICU:	0.832
	TH	3.00	410	4,800	0.085			
	LT	1.00	20	1,600	0.013		LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.132 *
	TH	2.00	130	1,600	0.044	*	N-S(2):	0.000
	LT	0.00	10	1,600	0.006		E-W(1):	0.295 *
Westbound	RT	2.00	310	3,200	0.094		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	152	1,600	0.095	*	V/C:	0.427
Northbound	RT	1.00	112	1,600	0.070		Lost Time:	0.100
	TH	2.00	281	3,200	0.088	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	320	1,600	0.200	*	ICU:	0.527
	TH	3.00	240	4,800	0.050			
	LT	1.00	10	1,600	0.006		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **30 - Long Beach Blvd. & PCH**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	140	1,600	0.053		N-S(1):	0.357 *
	TH	2.00	540	3,200	0.169		N-S(2):	0.294
	LT	1.00	260	1,600	0.163	*	E-W(1):	0.248
Westbound	RT	0.00	90	0	0.000		E-W(2):	0.309 *
	TH	3.00	1,060	4,800	0.240	*		
	LT	1.00	150	1,600	0.094		V/C:	0.666
Northbound	RT	1.00	70	1,600	0.000		Lost Time:	0.100
	TH	2.00	620	3,200	0.194	*	ITS:	0.000
	LT	1.00	200	1,600	0.125			
Eastbound	RT	0.00	80	0	0.000		ICU:	0.766
	TH	3.00	660	4,800	0.154			
	LT	1.00	110	1,600	0.069	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.022		N-S(1):	0.322 *
	TH	2.00	480	3,200	0.150		N-S(2):	0.244
	LT	1.00	240	1,600	0.150	*	E-W(1):	0.236
Westbound	RT	0.00	210	0	0.000		E-W(2):	0.285 *
	TH	3.00	770	4,800	0.204	*		
	LT	1.00	100	1,600	0.063		V/C:	0.607
Northbound	RT	1.00	70	1,600	0.013		Lost Time:	0.100
	TH	2.00	550	3,200	0.172	*	ITS:	0.000
	LT	1.00	150	1,600	0.094			
Eastbound	RT	0.00	90	0	0.000		ICU:	0.707
	TH	3.00	740	4,800	0.173			
	LT	1.00	130	1,600	0.081	*	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	140	1,600	0.034		N-S(1):	0.369 *
	TH	2.00	530	3,200	0.166		N-S(2):	0.347
	LT	1.00	250	1,600	0.156	*	E-W(1):	0.283 *
Westbound	RT	0.00	150	0	0.000		E-W(2):	0.254
	TH	3.00	560	4,800	0.148	*		
	LT	1.00	120	1,600	0.075		V/C:	0.652
Northbound	RT	1.00	90	1,600	0.019		Lost Time:	0.100
	TH	2.00	680	3,200	0.213	*	ITS:	0.000
	LT	1.00	290	1,600	0.181			
Eastbound	RT	0.00	90	0	0.000		ICU:	0.752
	TH	3.00	910	4,800	0.208			
	LT	1.00	170	1,600	0.106	*	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **31 - Long Beach Blvd. & Anaheim St.**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	60	1,600	0.034		N-S(1):	0.282
	TH	2.00	450	3,200	0.141	*	N-S(2):	0.329 *
	LT	1.00	190	1,600	0.119		E-W(1):	0.204
Westbound	RT	0.00	160	0	0.000		E-W(2):	0.252 *
	TH	3.00	1,010	4,800	0.246	*		
	LT	0.00	10	1,600	0.006		V/C:	0.581
Northbound	RT	0.00	60	0	0.000		Lost Time:	0.100
	TH	2.00	460	3,200	0.163		ITS:	0.000
	LT	1.00	300	1,600	0.188	*		
Eastbound	RT	0.00	120	0	0.000		ICU:	0.681
	TH	3.00	820	4,800	0.198			
	LT	0.00	10	1,600	0.006	*	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	90	1,600	0.056		N-S(1):	0.244
	TH	2.00	360	3,200	0.113	*	N-S(2):	0.282 *
	LT	1.00	120	1,600	0.075		E-W(1):	0.248 *
Westbound	RT	0.00	150	0	0.000		E-W(2):	0.200
	TH	3.00	800	4,800	0.200			
	LT	0.00	10	1,600	0.006	*	V/C:	0.530
Northbound	RT	0.00	90	0	0.000		Lost Time:	0.100
	TH	2.00	450	3,200	0.169		ITS:	0.000
	LT	1.00	270	1,600	0.169	*		
Eastbound	RT	0.00	130	0	0.000		ICU:	0.630
	TH	3.00	1,030	4,800	0.242	*		
	LT	0.00	0	0	0.000		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	70	1,600	0.041		N-S(1):	0.315
	TH	2.00	460	3,200	0.144	*	N-S(2):	0.319 *
	LT	1.00	170	1,600	0.106		E-W(1):	0.298 *
Westbound	RT	0.00	170	0	0.000		E-W(2):	0.198
	TH	3.00	740	4,800	0.192			
	LT	0.00	10	1,600	0.006	*	V/C:	0.617
Northbound	RT	0.00	100	0	0.000		Lost Time:	0.100
	TH	2.00	570	3,200	0.209		ITS:	0.000
	LT	1.00	280	1,600	0.175	*		
Eastbound	RT	0.00	90	0	0.000		ICU:	0.717
	TH	3.00	1,300	4,800	0.292	*		
	LT	0.00	10	1,600	0.006		LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **32 - Long Beach Blvd. & Ocean Blvd**
Description: **Cumulative plus Project - Alternative 1**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.58	100	2,526	0.005		N-S(1):	0.049 *
	TH	0.00	0	0	0.000		N-S(2):	0.005
	LT	1.42	90	1,819	0.049	*	E-W(1):	0.058
Westbound	RT	1.00	160	1,600	0.100		E-W(2):	0.436 *
	TH	3.00	1,760	4,800	0.367	*		
	LT	0.00	0	0	0.000		V/C:	0.485
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.585
	TH	3.00	270	4,800	0.058			
	LT	1.00	110	1,600	0.069	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.35	90	2,160	0.010		N-S(1):	0.052 *
	TH	0.00	0	0	0.000		N-S(2):	0.010
	LT	1.65	110	2,112	0.052	*	E-W(1):	0.252 *
Westbound	RT	1.00	130	1,600	0.055		E-W(2):	0.211
	TH	3.00	710	4,800	0.148			
	LT	0.00	10	1,600	0.006	*	V/C:	0.304
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.404
	TH	3.00	1,170	4,800	0.246	*		
	LT	1.00	100	1,600	0.063		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.13	90	1,800	0.000		N-S(1):	0.063 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	1.88	150	2,400	0.063	*	E-W(1):	0.421 *
Westbound	RT	1.00	100	1,600	0.063		E-W(2):	0.298
	TH	3.00	830	4,800	0.173			
	LT	0.00	0	0	0.000	*	V/C:	0.484
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.584
	TH	3.00	2,020	4,800	0.421	*		
	LT	1.00	200	1,600	0.125		LOS:	A

* - Denotes critical movement

Level of Service Workheet
(Circular 212 Method)

I/S #:
4

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Cumulative plus Project - Alternative 1 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				1			1
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	20	0	20	20	0	20
	Left-Through		0			0	
	Through	0	0	**50**	0	0	**40**
	Through-Right		0			0	
	Right	30	0	0	20	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	40	0	40	70	0	70
	Left-Through		0			0	
	Through	10	0	**120**	0	0	**140**
	Through-Right		0			0	
	Right	70	0	0	70	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	70	1	**70**	70	1	**70**
	Left-Through		0			0	
	Through	610	1	315	620	1	320
	Through-Right		1			1	
	Right	20	0	20	20	0	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	30	1	30	30	1	30
	Left-Through		0			0	
	Through	1030	2	**515**	750	2	**375**
	Through-Right		0			0	
	Right	10	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			North-South:	170		North-South:	180
			East-West:	585		East-West:	445
			SUM:	755		SUM:	625
VOLUME/CAPACITY (V/C) RATIO:				0.549			0.455
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.449**			**0.355**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Cumulative plus Project - Alternative 1 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	20	0	20	40	0	40
	Left-Through		0			0	
	Through	0	0	**70**	0	0	**120**
	Through-Right		0			0	
	Right	50	0	0	80	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	0	0	0	0	0	10
	Through-Right		1			1	
	Right	0	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	1	**0**	10	1	**10**
	Left-Through		0			0	
	Through	630	1	330	460	1	250
	Through-Right		1			1	
	Right	30	0	30	40	0	40
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	80	1	80	70	1	70
	Left-Through		0			0	
	Through	1120	1	**565**	750	1	**380**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	80		*North-South:*	130
			East-West:	565		*East-West:*	390
			SUM:	645		*SUM:*	520
VOLUME/CAPACITY *(V/C)* RATIO:				0.453			0.365
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.353**			**0.265**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
8	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Cumulative plus Project - Alternative 1 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	580	2	**247**	770	2	**310**
	Through-Right		1			1	
	Right	160	0	160	160	0	160
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	410	1	**410**	290	1	**290**
	Left-Through		0			0	
	Through	1010	3	337	720	3	240
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	120	1	**120**	150	1	**150**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	410	1	0	290	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	657		*North-South:*	600
			East-West:	120		*East-West:*	150
			SUM:	777		*SUM:*	750
VOLUME/CAPACITY *(V/C)* RATIO:				0.545			0.526
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.445**			**0.426**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
9	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Cumulative plus Project - Alternative 1 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	0		EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	230	1	**230**	180	1	**180**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	350	1	225	260	1	145
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	250	1	**250**	230	1	**230**
	Left-Through		0			0	
	Through	1010	2	505	740	2	370
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	950	2	**413**	580	2	**260**
	Through-Right		1			1	
	Right	290	0	290	200	0	200
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	230		*North-South:*	180
			East-West:	663		*East-West:*	490
			SUM:	893		*SUM:*	670
VOLUME/CAPACITY *(V/C)* RATIO:				0.627			0.470
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.527**			**0.370**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
13

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Henry Ford Av **East-West Street:** Anaheim St.
Scenario: Cumulative plus Project - Alternative 1 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 3	SB--	3	NB-- 3	SB--	3
		EB-- 1	WB--	3	EB-- 1	WB--	3
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	220	1	**160**	260	1	**210**
	Left-Through		1			1	
	Through	260	1	160	370	1	210
	Through-Right		0			0	
	Right	300	1	0	230	1	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	110	1	110	110	1	110
	Left-Through		0			0	
	Through	450	2	**225**	390	2	**195**
	Through-Right		0			0	
	Right	60	1	0	70	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	80	1	**80**	130	1	130
	Left-Through		0			0	
	Through	630	2	315	840	2	**420**
	Through-Right		0			0	
	Right	490	1	0	310	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	300	1	300	180	1	**180**
	Left-Through		0			0	
	Through	1110	2	**555**	900	2	450
	Through-Right		0			0	
	Right	350	1	240	230	1	120
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	385		*North-South:*	405
			East-West:	635		*East-West:*	600
			SUM:	1020		*SUM:*	1005
VOLUME/CAPACITY *(V/C)* RATIO:				0.742			0.731
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.642**			**0.631**
LEVEL OF SERVICE (LOS):				**B**			**B**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Port of Long Beach Master Plan Update			
26	North-South Street:	Navy Wy	East-West Street:	*Seaside Fwy	
	Scenario:	Cumulative plus Project - Alternative 1 (AM & MD Only)			
	Count Date:	6/28/2018	Analyst:	Fehr & Peers	Date: 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 1	SB--	0	NB-- 1	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	10	2	**6**	110	2	**61**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	1570	1	0	1270	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1810	3	603	1530	3	510
	Through-Right		0			0	
	Right	1600	1	**1597**	1110	1	**1080**
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	50	2	**28**	20	2	**11**
	Left-Through		0			0	
	Through	2640	3	880	2040	3	680
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			North-South:	6		North-South:	61
			East-West:	1625		East-West:	1091
			SUM:	1631		SUM:	1152
VOLUME/CAPACITY (V/C) RATIO:				1.145			0.808
V/C LESS ATSAC/ATCS ADJUSTMENT:				**1.045**			**0.708**
LEVEL OF SERVICE (LOS):				**F**			**C**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
29	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Cumulative plus Project - Alternative 1 (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			2			2
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	3	EB-- 0	WB--	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	1130	2	377	880	2	297
	Through-Right		1			1	
	Right	0	0	0	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	70	1	70	60	1	60
	Left-Through		0			0	
	Through	1070	1	**785**	670	1	**540**
	Through-Right		1			1	
	Right	500	0	500	410	0	410
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	400	2	**220**	450	2	**248**
	Left-Through		0			0	
	Through	10	0	20	10	0	20
	Through-Right		1			1	
	Right	10	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	10	0	10
	Left-Through		1			1	
	Through	10	0	**10**	10	0	**20**
	Through-Right		0			0	
	Right	70	1	0	60	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	795		*North-South:*	550
			East-West:	230		*East-West:*	268
			SUM:	1025		*SUM:*	818
VOLUME/CAPACITY *(V/C)* RATIO:				0.745			0.595
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.645**			**0.495**
LEVEL OF SERVICE (LOS):				**B**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
4

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Cumulative plus Project - Alternative 1 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				1			1
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	10	0	10	10	0	10
	Left-Through		0			0	
	Through	0	0	**50**	0	0	**50**
	Through-Right		0			0	
	Right	40	0	0	40	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	40	0	40	40	0	40
	Left-Through		0			0	
	Through	0	0	**90**	0	0	**90**
	Through-Right		0			0	
	Right	50	0	0	50	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	60	1	60	60	1	60
	Left-Through		0			0	
	Through	1220	1	**615**	1220	1	**615**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	930	2	465	930	2	465
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	140		*North-South:*	140
			East-West:	625		*East-West:*	625
			SUM:	765		*SUM:*	765
VOLUME/CAPACITY *(V/C)* RATIO:				0.556			0.556
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.456**			**0.456**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Cumulative plus Project - Alternative 1 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	40	0	40	40	0	40
	Left-Through		0			0	
	Through	0	0	**130**	0	0	**130**
	Through-Right		0			0	
	Right	90	0	0	90	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	10	0	20	10	0	20
	Through-Right		1			1	
	Right	10	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	10	1	10	10	1	10
	Left-Through		0			0	
	Through	1220	1	**635**	1220	1	**635**
	Through-Right		1			1	
	Right	50	0	50	50	0	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	70	1	**70**	70	1	**70**
	Left-Through		0			0	
	Through	1020	1	520	1020	1	520
	Through-Right		1			1	
	Right	20	0	20	20	0	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES		*North-South:*		140	*North-South:*		140
		East-West:		705	*East-West:*		705
		SUM:		845	*SUM:*		845
VOLUME/CAPACITY *(V/C)* RATIO:				0.593			0.593
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.493**			**0.493**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
8

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Cumulative plus Project - Alternative 1 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0		NB-- 0	SB--	0
	EB-- 0	WB--	3		EB-- 0	WB--	3
ATSAC-1 or ATSAC+ATCS-2?			2				2
Override Capacity			0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	740	2	**307**	740	2	**307**
	Through-Right		1			1	
	Right	180	0	180	180	0	180
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	520	1	**520**	520	1	**520**
	Left-Through		0			0	
	Through	480	3	160	480	3	160
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	140	1	**140**	140	1	**140**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	440	1	0	440	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	827		*North-South:*	827
			East-West:	140		*East-West:*	140
			SUM:	967		*SUM:*	967
VOLUME/CAPACITY *(V/C)* RATIO:				0.679			0.679
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.579**			**0.579**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
9

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Cumulative plus Project - Alternative 1 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	0	NB-- 0	SB--	0	0
	EB-- 0	WB--	0	0	EB-- 0	WB--	0	0
ATSAC-1 or ATSAC+ATCS-2?				2				2
Override Capacity				0				0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	190	1	190	190	1	190
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	520	1	**350**	520	1	**350**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	340	1	**340**	340	1	**340**
	Left-Through		0			0	
	Through	1310	2	655	1310	2	655
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	990	2	**413**	990	2	**413**
	Through-Right		1			1	
	Right	250	0	250	250	0	250
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	350		*North-South:*	350
			East-West:	753		*East-West:*	753
			SUM:	1103		*SUM:*	1103
VOLUME/CAPACITY *(V/C)* RATIO:				0.774			0.774
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.674**			**0.674**
LEVEL OF SERVICE (LOS):				**B**			**B**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
13

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Henry Ford Av **East-West Street:** Anaheim St.
Scenario: Cumulative plus Project - Alternative 1 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 3	SB--	3	NB-- 3	SB--	3
		EB-- 1	WB--	3	EB-- 1	WB--	3
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	70	1	70	70	1	70
	Left-Through		1			1	
	Through	340	1	**170**	340	1	**170**
	Through-Right		0			0	
	Right	320	1	100	320	1	100
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	180	1	**180**	180	1	**180**
	Left-Through		0			0	
	Through	270	2	135	270	2	135
	Through-Right		0			0	
	Right	80	1	0	80	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	90	1	90	90	1	90
	Left-Through		0			0	
	Through	1340	2	**670**	1340	2	**670**
	Through-Right		0			0	
	Right	250	1	0	250	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	220	1	**220**	220	1	**220**
	Left-Through		0			0	
	Through	910	2	455	910	2	455
	Through-Right		0			0	
	Right	220	1	40	220	1	40
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	350		*North-South:*	350
			East-West:	890		*East-West:*	890
			SUM:	1240		*SUM:*	1240
VOLUME/CAPACITY *(V/C)* RATIO:				0.902			0.902
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.802**			**0.802**
LEVEL OF SERVICE (LOS):				**D**			**D**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	PROJECT TITLE:	Port of Long Beach Master Plan Update		
26	North-South Street:	Navy Wy	East-West Street:	*Seaside Fwy
	Scenario:	Cumulative plus Project - Alternative 1 (PM Only)		
	Count Date:	6/28/2018	Analyst: Fehr & Peers	Date: 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 1	SB--	0	NB-- 1	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	150	2	**83**	150	2	**83**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	690	1	0	690	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	2340	3	**780**	2340	3	**780**
	Through-Right		0			0	
	Right	430	1	389	430	1	389
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	50	2	**28**	50	2	**28**
	Left-Through		0			0	
	Through	2130	3	710	2130	3	710
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			North-South:	83		North-South:	83
			East-West:	808		East-West:	808
			SUM:	891		SUM:	891
VOLUME/CAPACITY (V/C) RATIO:				0.625			0.625
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.525**			**0.525**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
29

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Cumulative plus Project - Alternative 1 (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				2			2
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	3	EB-- 0	WB--	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	10	1	10	10	1	10
	Left-Through		0			0	
	Through	1020	2	**343**	1020	2	**343**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	90	1	**90**	90	1	**90**
	Left-Through		0			0	
	Through	270	1	185	270	1	185
	Through-Right		1			1	
	Right	100	0	100	100	0	100
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	150	2	**83**	150	2	**83**
	Left-Through		0			0	
	Through	10	0	30	10	0	30
	Through-Right		1			1	
	Right	20	0	0	20	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		1			1	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	80	1	0	80	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	433		*North-South:*	433
			East-West:	83		*East-West:*	83
			SUM:	516		*SUM:*	516
VOLUME/CAPACITY *(V/C)* RATIO:				0.375			0.375
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.275**			**0.275**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Project Title: **PoLB Master Plan EIR**
Intersection: **1 - Alameda St & Sepulveda Blvd Ramp**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.315 *
	TH	3.00	980	4,800	0.204		N-S(2):	0.204
	LT	1.00	270	1,600	0.169	*	E-W(1):	0.044 *
Westbound	RT	2.00	360	3,200	0.028		E-W(2):	0.028
	TH	0.00	0	0	0.000			
	LT	1.00	70	1,600	0.044	*	V/C:	0.359
Northbound	RT	0.00	70	0	0.000		Lost Time:	0.100
	TH	3.00	630	4,800	0.146	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.459
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.284 *
	TH	3.00	740	4,800	0.154		N-S(2):	0.154
	LT	1.00	180	1,600	0.113	*	E-W(1):	0.063 *
Westbound	RT	2.00	330	3,200	0.047		E-W(2):	0.047
	TH	0.00	0	0	0.000			
	LT	1.00	100	1,600	0.063	*	V/C:	0.347
Northbound	RT	0.00	150	0	0.000		Lost Time:	0.100
	TH	3.00	670	4,800	0.171	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.447
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.371 *
	TH	3.00	900	4,800	0.188		N-S(2):	0.188
	LT	1.00	300	1,600	0.188	*	E-W(1):	0.050 *
Westbound	RT	2.00	410	3,200	0.034		E-W(2):	0.034
	TH	0.00	0	0	0.000			
	LT	1.00	80	1,600	0.050	*	V/C:	0.421
Northbound	RT	0.00	90	0	0.000		Lost Time:	0.100
	TH	3.00	790	4,800	0.183	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.521
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **2 - Alameda St Ramp & Sepulveda Blvd**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	210	1,600	0.072	*	N-S(1):	0.072
	TH	0.25	20	400	0.050		N-S(2):	0.078 *
	LT	1.75	140	2,520	0.056		E-W(1):	0.184
Westbound	RT	1.00	220	1,600	0.082		E-W(2):	0.682 *
	TH	1.00	900	1,600	0.563	*		
	LT	1.00	10	1,600	0.006		V/C:	0.760
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	30	1,600	0.016		ITS:	0.000
	LT	0.00	10	1,600	0.006	*		
Eastbound	RT	0.00	10	0	0.000		ICU:	0.860
	TH	2.00	560	3,200	0.178			
	LT	1.00	190	1,600	0.119	*	LOS:	D

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	150	1,600	0.031		N-S(1):	0.072 *
	TH	0.12	10	188	0.053		N-S(2):	0.059
	LT	1.88	160	2,711	0.059	*	E-W(1):	0.197
Westbound	RT	1.00	220	1,600	0.078		E-W(2):	0.450 *
	TH	1.00	520	1,600	0.325	*		
	LT	1.00	10	1,600	0.006		V/C:	0.522
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	20	1,600	0.013	*	ITS:	0.000
	LT	0.00	10	1,600	0.006			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.622
	TH	2.00	600	3,200	0.191			
	LT	1.00	200	1,600	0.125	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	220	1,600	0.050		N-S(1):	0.076 *
	TH	0.11	10	178	0.056		N-S(2):	0.062
	LT	1.89	170	2,720	0.063	*	E-W(1):	0.306
Westbound	RT	1.00	180	1,600	0.113		E-W(2):	0.638 *
	TH	1.00	740	1,600	0.463	*		
	LT	1.00	0	1,600	0.000		V/C:	0.714
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	20	1,600	0.013	*	ITS:	0.000
	LT	0.00	10	1,600	0.006			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.814
	TH	2.00	970	3,200	0.306			
	LT	1.00	280	1,600	0.175	*	LOS:	D

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **3 - Intermodal Wy & Sepulveda Blvd**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.222
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.369 *
	TH	2.00	1,150	3,200	0.363 *		
	LT	0.00	0	0	0.000	V/C:	0.375
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.475
	TH	2.00	710	3,200	0.222		
	LT	1.00	10	1,600	0.006 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.219
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.284 *
	TH	2.00	880	3,200	0.278 *		
	LT	0.00	0	0	0.000	V/C:	0.290
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.390
	TH	2.00	700	3,200	0.219		
	LT	1.00	10	1,600	0.006 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	10	1,600	0.003	N-S(1):	0.006 *
	TH	0.00	0	0	0.000	N-S(2):	0.003
	LT	1.00	10	1,600	0.006 *	E-W(1):	0.391 *
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.319
	TH	2.00	990	3,200	0.313 *		
	LT	0.00	0	0	0.000	V/C:	0.397
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.497
	TH	2.00	1,250	3,200	0.391		
	LT	1.00	10	1,600	0.006 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **6 - Terminal Island Fwy & Willow St/Sepulveda Blvd**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	NBR, EBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.008
	TH	0.00	0	0	0.000	*	N-S(2):	0.149 *
	LT	0.00	0	0	0.000		E-W(1):	0.207
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.272 *
	TH	2.00	850	3,200	0.266	*		
	LT	2.00	210	2,880	0.073		V/C:	0.421
Northbound	RT	2.00	260	3,200	0.008		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	430	2,880	0.149	*		
Eastbound	RT	1.00	320	1,600	0.051		ICU:	0.521
	TH	2.00	430	3,200	0.134			
	LT	1.00	10	1,600	0.006	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.166
	TH	0.00	0	0	0.000	*	N-S(2):	0.184 *
	LT	0.00	0	0	0.000		E-W(1):	0.155 *
Westbound	RT	0.00	10	0	0.000		E-W(2):	0.125
	TH	2.00	370	3,200	0.119			
	LT	2.00	120	2,880	0.042	*	V/C:	0.339
Northbound	RT	2.00	310	3,200	0.055		Lost Time:	0.100
	TH	0.04	10	60	0.166		ITS:	0.000
	LT	1.96	520	2,826	0.184	*		
Eastbound	RT	1.00	220	1,600	0.000		ICU:	0.439
	TH	2.00	360	3,200	0.113	*		
	LT	1.00	10	1,600	0.006		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	10	0	0.000		N-S(1):	0.075
	TH	0.00	0	0	0.000	*	N-S(2):	0.125 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.372 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.231
	TH	2.00	740	3,200	0.231			
	LT	2.00	160	2,880	0.056	*	V/C:	0.497
Northbound	RT	2.00	400	3,200	0.069		Lost Time:	0.100
	TH	0.00	0	0	0.000		ITS:	0.000
	LT	2.00	360	2,880	0.125	*		
Eastbound	RT	1.00	300	1,600	0.188		ICU:	0.597
	TH	2.00	1,010	3,200	0.316	*		
	LT	1.00	0	1,600	0.000		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **7 - Santa Fe Ave & PCH**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	170	1,600	0.078		N-S(1):	0.232 *
	TH	2.00	310	3,200	0.097		N-S(2):	0.191
	LT	1.00	190	1,600	0.119	*	E-W(1):	0.610
Westbound	RT	0.00	100	0	0.000		E-W(2):	0.622 *
	TH	2.00	1,710	3,200	0.566	*		
	LT	1.00	300	1,600	0.188		V/C:	0.854
Northbound	RT	1.00	50	1,600	0.000		Lost Time:	0.100
	TH	2.00	360	3,200	0.113	*	ITS:	0.000
	LT	1.00	150	1,600	0.094			
Eastbound	RT	1.00	240	1,600	0.103		ICU:	0.954
	TH	2.00	1,350	3,200	0.422			
	LT	1.00	90	1,600	0.056	*	LOS:	E

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.025		N-S(1):	0.150 *
	TH	2.00	200	3,200	0.063		N-S(2):	0.119
	LT	1.00	160	1,600	0.100	*	E-W(1):	0.588
Westbound	RT	0.00	100	0	0.000		E-W(2):	0.594 *
	TH	2.00	1,560	3,200	0.519	*		
	LT	1.00	180	1,600	0.113		V/C:	0.744
Northbound	RT	1.00	100	1,600	0.006		Lost Time:	0.100
	TH	2.00	160	3,200	0.050	*	ITS:	0.000
	LT	1.00	90	1,600	0.056			
Eastbound	RT	1.00	100	1,600	0.034		ICU:	0.844
	TH	2.00	1,520	3,200	0.475			
	LT	1.00	120	1,600	0.075	*	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	120	1,600	0.022		N-S(1):	0.176
	TH	2.00	150	3,200	0.047		N-S(2):	0.197 *
	LT	1.00	100	1,600	0.063	*	E-W(1):	0.679 *
Westbound	RT	0.00	90	0	0.000		E-W(2):	0.656
	TH	2.00	1,670	3,200	0.550	*		
	LT	1.00	180	1,600	0.113		V/C:	0.876
Northbound	RT	1.00	190	1,600	0.063		Lost Time:	0.100
	TH	2.00	360	3,200	0.113	*	ITS:	0.000
	LT	1.00	240	1,600	0.150			
Eastbound	RT	1.00	80	1,600	0.000		ICU:	0.976
	TH	2.00	1,810	3,200	0.566			
	LT	1.00	170	1,600	0.106	*	LOS:	E

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **10 - Santa Fe Ave & Anaheim St.**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	200	1,600	0.084	N-S(1):	0.288 *
	TH	0.00	0	0	0.000	N-S(2):	0.084
	LT	1.00	460	1,600	0.288 *	E-W(1):	0.221
Westbound	RT	1.00	350	1,600	0.219	E-W(2):	0.329 *
	TH	3.00	1,190	4,800	0.248 *		
	LT	0.00	0	0	0.000	V/C:	0.617
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.717
	TH	3.00	1,060	4,800	0.221		
	LT	1.00	130	1,600	0.081 *	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	220	1,600	0.109	N-S(1):	0.175 *
	TH	0.00	0	0	0.000	N-S(2):	0.109
	LT	1.00	280	1,600	0.175 *	E-W(1):	0.258
Westbound	RT	1.00	270	1,600	0.169	E-W(2):	0.306 *
	TH	3.00	1,200	4,800	0.250 *		
	LT	0.00	0	0	0.000	V/C:	0.481
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.581
	TH	3.00	1,240	4,800	0.258		
	LT	1.00	90	1,600	0.056 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	150	1,600	0.034	N-S(1):	0.188 *
	TH	0.00	0	0	0.000	N-S(2):	0.034
	LT	1.00	300	1,600	0.188 *	E-W(1):	0.271
Westbound	RT	1.00	280	1,600	0.175	E-W(2):	0.311 *
	TH	3.00	920	4,800	0.192 *		
	LT	0.00	0	0	0.000	V/C:	0.499
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.599
	TH	3.00	1,300	4,800	0.271		
	LT	1.00	190	1,600	0.119 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **11 - Harbor Ave & Anaheim St.**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.25	30	400	0.000		N-S(1):	0.075 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	0.75	90	1,200	0.075	*	E-W(1):	0.348
Westbound	RT	1.00	150	1,600	0.094		E-W(2):	0.480 *
	TH	3.00	2,240	4,800	0.467	*		
	LT	0.00	0	0	0.000		V/C:	0.555
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.655
	TH	3.00	1,670	4,800	0.348			
	LT	1.00	20	1,600	0.013	*	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	30	320	0.000		N-S(1):	0.094 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	0.80	120	1,280	0.094	*	E-W(1):	0.333
Westbound	RT	1.00	140	1,600	0.088		E-W(2):	0.423 *
	TH	3.00	1,940	4,800	0.404	*		
	LT	0.00	0	0	0.000		V/C:	0.517
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.617
	TH	3.00	1,600	4,800	0.333			
	LT	1.00	30	1,600	0.019	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.19	30	300	0.000		N-S(1):	0.100 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	0.81	130	1,300	0.100	*	E-W(1):	0.390 *
Westbound	RT	1.00	130	1,600	0.081		E-W(2):	0.344
	TH	3.00	1,500	4,800	0.313	*		
	LT	0.00	0	0	0.000		V/C:	0.490
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.590
	TH	3.00	1,870	4,800	0.390			
	LT	1.00	50	1,600	0.031	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **12 - 9th St/East I St & Anaheim St.**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	NBR, SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.088 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	140	1,600	0.088 *	E-W(1):	0.202
Westbound	RT	1.00	180	1,600	0.113	E-W(2):	0.456 *
	TH	2.00	1,380	3,200	0.431 *		
	LT	0.00	0	0	0.000	V/C:	0.544
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.644
	TH	3.00	970	4,800	0.202		
	LT	1.00	40	1,600	0.025 *	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.000	N-S(1):	0.031 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	50	1,600	0.031 *	E-W(1):	0.254
Westbound	RT	1.00	240	1,600	0.150	E-W(2):	0.403 *
	TH	2.00	1,150	3,200	0.359 *		
	LT	0.00	0	0	0.000	V/C:	0.434
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.534
	TH	3.00	1,220	4,800	0.254		
	LT	1.00	70	1,600	0.044 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	50	1,600	0.000	N-S(1):	0.056 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	90	1,600	0.056 *	E-W(1):	0.308
Westbound	RT	1.00	110	1,600	0.069	E-W(2):	0.356 *
	TH	2.00	1,040	3,200	0.325 *		
	LT	0.00	0	0	0.000	V/C:	0.412
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.512
	TH	3.00	1,480	4,800	0.308		
	LT	1.00	50	1,600	0.031 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **14 - Pico Ave & Pier B St**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	60	1,600	0.038		N-S(1):	0.216
	TH	2.00	390	3,200	0.122	*	N-S(2):	0.292 *
	LT	0.00	0	0	0.000		E-W(1):	0.000
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.087 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.379
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	690	3,200	0.216		ITS:	0.000
	LT	2.00	490	2,880	0.170	*		
Eastbound	RT	1.00	320	1,600	0.000		ICU:	0.479
	TH	0.00	0	0	0.000			
	LT	2.00	250	2,880	0.087	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	230	1,600	0.144	*	N-S(1):	0.188
	TH	2.00	310	3,200	0.097		N-S(2):	0.377 *
	LT	0.00	0	0	0.000		E-W(1):	0.000
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.069 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.446
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	600	3,200	0.188		ITS:	0.000
	LT	2.00	670	2,880	0.233	*		
Eastbound	RT	1.00	660	1,600	0.000		ICU:	0.546
	TH	0.00	0	0	0.000			
	LT	2.00	200	2,880	0.069	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	260	1,600	0.163	*	N-S(1):	0.181
	TH	2.00	500	3,200	0.156		N-S(2):	0.344 *
	LT	0.00	0	0	0.000		E-W(1):	0.000
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.049 *
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		V/C:	0.393
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	580	3,200	0.181		ITS:	0.000
	LT	2.00	520	2,880	0.181	*		
Eastbound	RT	1.00	150	1,600	0.000		ICU:	0.493
	TH	0.00	0	0	0.000			
	LT	2.00	140	2,880	0.049	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **15 - Henry Ford Av/Terminal Isl Ramps & Pier A Way**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	NBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	50	0	0.000		N-S(1):	0.266
	TH	2.00	1,020	3,200	0.334	*	N-S(2):	0.340 *
	LT	2.00	470	2,880	0.163		E-W(1):	0.028
Westbound	RT	1.00	430	1,600	0.187	*	E-W(2):	0.218 *
	TH	0.00	0	0	0.000			
	LT	1.00	40	1,600	0.025		V/C:	0.558
Northbound	RT	1.00	50	1,600	0.000		Lost Time:	0.100
	TH	2.00	330	3,200	0.103		ITS:	0.000
	LT	1.00	10	1,600	0.006	*		
Eastbound	RT	1.00	10	1,600	0.003		ICU:	0.658
	TH	0.00	0	0	0.000			
	LT	1.00	50	1,600	0.031	*	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	60	0	0.000		N-S(1):	0.218
	TH	2.00	710	3,200	0.241	*	N-S(2):	0.247 *
	LT	2.00	230	2,880	0.080		E-W(1):	0.057
Westbound	RT	1.00	400	1,600	0.210	*	E-W(2):	0.248 *
	TH	0.14	10	229	0.044			
	LT	0.86	60	1,371	0.044		V/C:	0.495
Northbound	RT	1.00	80	1,600	0.000		Lost Time:	0.100
	TH	2.00	440	3,200	0.138		ITS:	0.000
	LT	1.00	10	1,600	0.006	*		
Eastbound	RT	0.50	10	800	0.009		ICU:	0.595
	TH	0.50	10	800	0.013			
	LT	1.00	60	1,600	0.038	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	70	0	0.000		N-S(1):	0.218 *
	TH	2.00	500	3,200	0.178	*	N-S(2):	0.184
	LT	2.00	260	2,880	0.090		E-W(1):	0.057
Westbound	RT	1.00	480	1,600	0.255	*	E-W(2):	0.311 *
	TH	0.14	10	229	0.044			
	LT	0.86	60	1,371	0.044		V/C:	0.529
Northbound	RT	1.00	70	1,600	0.000		Lost Time:	0.100
	TH	2.00	410	3,200	0.128		ITS:	0.000
	LT	1.00	10	1,600	0.006	*		
Eastbound	RT	0.50	10	800	0.009		ICU:	0.629
	TH	0.50	10	800	0.013			
	LT	1.00	90	1,600	0.056	*	LOS:	B

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **16 - Pico Ave & Pier C St**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:	SBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	220	3,200	0.000	N-S(1):	0.325 *
	TH	3.00	590	4,800	0.123	N-S(2):	0.154
	LT	0.00	0	0	0.000 *	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000	E-W(2):	0.119 *
	TH	0.00	0	0	0.000 *		
	LT	2.00	0	2,880	0.000	V/C:	0.444
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,040	3,200	0.325 *	ITS:	0.000
	LT	1.00	50	1,600	0.031		
Eastbound	RT	0.00	20	0	0.000	ICU:	0.544
	TH	0.00	0	0	0.000		
	LT	0.00	190	1,600	0.119 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	100	3,200	0.000	N-S(1):	0.388 *
	TH	3.00	900	4,800	0.188	N-S(2):	0.201
	LT	0.00	0	0	0.000 *	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000	E-W(2):	0.088 *
	TH	0.00	0	0	0.000 *		
	LT	2.00	0	2,880	0.000	V/C:	0.476
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,240	3,200	0.388 *	ITS:	0.000
	LT	1.00	20	1,600	0.013		
Eastbound	RT	0.00	40	0	0.000	ICU:	0.576
	TH	0.00	0	0	0.000		
	LT	0.00	140	1,600	0.088 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	2.00	40	3,200	0.000	N-S(1):	0.375 *
	TH	3.00	670	4,800	0.140	N-S(2):	0.146
	LT	0.00	0	0	0.000 *	E-W(1):	0.000
Westbound	RT	1.00	0	1,600	0.000	E-W(2):	0.125 *
	TH	0.00	0	0	0.000 *		
	LT	2.00	0	2,880	0.000	V/C:	0.500
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,200	3,200	0.375 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.00	70	0	0.000	ICU:	0.600
	TH	0.00	0	0	0.000		
	LT	0.00	200	1,600	0.125 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **17 - Pico Ave & Pier D St**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	EBR, WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	120	0	0.000		N-S(1):	0.315 *
	TH	2.00	570	3,200	0.216		N-S(2):	0.254
	LT	1.00	10	1,600	0.006	*	E-W(1):	0.006
Westbound	RT	1.00	10	1,600	0.000		E-W(2):	0.028 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.343
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	990	3,200	0.309	*	ITS:	0.000
	LT	1.00	60	1,600	0.038			
Eastbound	RT	1.00	50	1,600	0.000		ICU:	0.443
	TH	0.00	0	0	0.000			
	LT	2.00	80	2,880	0.028	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.322 *
	TH	2.00	920	3,200	0.294		N-S(2):	0.313
	LT	1.00	10	1,600	0.006	*	E-W(1):	0.094
Westbound	RT	1.00	10	1,600	0.000		E-W(2):	0.097 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.419
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	1,000	3,200	0.316	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	1.00	110	1,600	0.050		ICU:	0.519
	TH	0.07	10	114	0.088			
	LT	1.93	270	2,777	0.097	*	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	40	0	0.000		N-S(1):	0.328 *
	TH	2.00	750	3,200	0.247		N-S(2):	0.266
	LT	1.00	0	1,600	0.000	*	E-W(1):	0.050
Westbound	RT	1.00	10	1,600	0.006		E-W(2):	0.058 *
	TH	0.00	0	0	0.000	*		
	LT	1.00	10	1,600	0.006		V/C:	0.386
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	1,050	3,200	0.328	*	ITS:	0.000
	LT	1.00	30	1,600	0.019			
Eastbound	RT	1.00	100	1,600	0.044		ICU:	0.486
	TH	0.00	0	0	0.000			
	LT	2.00	150	2,880	0.052	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **181 - Pico Ave & Westbound Ocean Ave On Ramp**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	130	0	0.000		N-S(1):	0.334 *
	TH	2.00	460	1,600	0.188		N-S(2):	0.326
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.006 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.340
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	1,040	3,200	0.328	*	ITS:	0.000
	LT	1.00	220	1,600	0.138			
Eastbound	RT	0.00	20	0	0.000		ICU:	0.440
	TH	0.00	0	0	0.000			
	LT	0.00	10	1,600	0.006	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	430	0	0.000		N-S(1):	0.328
	TH	2.00	570	1,600	0.316	*	N-S(2):	0.591 *
	LT	0.00	10	1,600	0.006		E-W(1):	0.006 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.597
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	1,020	3,200	0.322		ITS:	0.000
	LT	1.00	440	1,600	0.275	*		
Eastbound	RT	0.00	40	0	0.000		ICU:	0.697
	TH	0.00	0	0	0.000			
	LT	0.00	10	1,600	0.006	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	150	0	0.000		N-S(1):	0.337 *
	TH	2.00	680	1,600	0.263	*	N-S(2):	0.319
	LT	0.00	10	1,600	0.006		E-W(1):	0.006 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.343
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	2.00	1,050	3,200	0.331		ITS:	0.000
	LT	1.00	90	1,600	0.056	*		
Eastbound	RT	0.00	20	0	0.000		ICU:	0.443
	TH	0.00	0	0	0.000			
	LT	0.00	10	1,600	0.006	*	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **182 - Pico Ave & Westbound Ocean Ave Off Ramp**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.375 *
	TH	2.00	520	3,200	0.163	N-S(2):	0.163
	LT	0.00	0	0	0.000 *	E-W(1):	0.038
Westbound	RT	1.00	80	1,600	0.050 *	E-W(2):	0.050 *
	TH	0.00	0	0	0.000		
	LT	1.00	60	1,600	0.038	V/C:	0.425
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,200	3,200	0.375 *	ITS:	0.000
	LT	1.00	0	1,600	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.525
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.444 *
	TH	2.00	670	3,200	0.209	N-S(2):	0.209
	LT	0.00	0	0	0.000 *	E-W(1):	0.031
Westbound	RT	1.00	80	1,600	0.050 *	E-W(2):	0.050 *
	TH	0.00	0	0	0.000		
	LT	1.00	50	1,600	0.031	V/C:	0.494
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,420	3,200	0.444 *	ITS:	0.000
	LT	1.00	0	1,600	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.594
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.350 *
	TH	2.00	730	3,200	0.228	N-S(2):	0.228
	LT	0.00	0	0	0.000 *	E-W(1):	0.044 *
Westbound	RT	1.00	40	1,600	0.025 *	E-W(2):	0.025
	TH	0.00	0	0	0.000		
	LT	1.00	70	1,600	0.044	V/C:	0.394
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	1,120	3,200	0.350 *	ITS:	0.000
	LT	1.00	0	1,600	0.000		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.494
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **19 - Pico Ave & Pier E St/Eastbound Ocean Ave Ramp**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	150	0	0.000		N-S(1):	0.353 *
	TH	2.00	330	3,200	0.150	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.163 *
Westbound	RT	0.00	70	0	0.000		E-W(2):	0.082
	TH	2.00	30	1,600	0.063			
	LT	0.00	230	1,600	0.144	*	V/C:	0.516
Northbound	RT	0.00	40	0	0.000		Lost Time:	0.100
	TH	2.00	610	3,200	0.203	*	ITS:	0.000
	LT	1.00	300	1,600	0.188			
Eastbound	RT	0.33	10	533	0.000		ICU:	0.616
	TH	0.67	20	1,067	0.019	*		
	LT	1.00	30	1,600	0.019		LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	210	0	0.000		N-S(1):	0.484 *
	TH	2.00	430	3,200	0.200	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.088 *
Westbound	RT	0.00	60	0	0.000		E-W(2):	0.063
	TH	2.00	20	1,600	0.050			
	LT	0.00	120	1,600	0.075	*	V/C:	0.572
Northbound	RT	0.00	110	0	0.000		Lost Time:	0.100
	TH	2.00	800	3,200	0.284	*	ITS:	0.000
	LT	1.00	260	1,600	0.163			
Eastbound	RT	0.50	10	800	0.000		ICU:	0.672
	TH	0.50	10	800	0.013	*		
	LT	1.00	20	1,600	0.013		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	120	0	0.000		N-S(1):	0.378 *
	TH	2.00	350	3,200	0.147	*	N-S(2):	0.000
	LT	1.00	220	1,600	0.138		E-W(1):	0.063
Westbound	RT	0.00	40	0	0.000		E-W(2):	0.072 *
	TH	2.00	30	1,600	0.041			
	LT	0.00	60	1,600	0.038	*	V/C:	0.450
Northbound	RT	0.00	20	0	0.000		Lost Time:	0.100
	TH	2.00	720	3,200	0.231	*	ITS:	0.000
	LT	1.00	170	1,600	0.106			
Eastbound	RT	0.25	10	400	0.000		ICU:	0.550
	TH	0.75	30	1,200	0.025	*		
	LT	1.00	50	1,600	0.031		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **20 - Pier S Ave & New Dock St**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	EBR,		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.234 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.288 *
Westbound	RT	0.00	20	0	0.000		E-W(2):	0.000
	TH	3.00	400	4,800	0.088			
	LT	1.00	326	1,600	0.204	*	V/C:	0.522
Northbound	RT	1.00	165	1,600	0.001		Lost Time:	0.100
	TH	0.96	250	1,538	0.163		ITS:	0.000
	LT	1.04	270	1,329	0.203	*		
Eastbound	RT	1.00	960	1,600	0.000		ICU:	0.622
	TH	2.00	270	3,200	0.084	*		
	LT	1.00	20	1,600	0.013		LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.17	10	267	0.031		N-S(1):	0.219 *
	TH	0.83	50	1,333	0.038	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.345 *
Westbound	RT	0.00	20	0	0.000		E-W(2):	0.000
	TH	3.00	340	4,800	0.075			
	LT	1.00	447	1,600	0.279	*	V/C:	0.564
Northbound	RT	1.00	196	1,600	0.000		Lost Time:	0.100
	TH	1.00	290	1,600	0.181	*	ITS:	0.000
	LT	1.00	160	1,600	0.100			
Eastbound	RT	1.00	480	1,600	0.000		ICU:	0.664
	TH	2.00	210	3,200	0.066	*		
	LT	1.00	20	1,600	0.013		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.20	10	320	0.025		N-S(1):	0.212 *
	TH	0.80	40	1,280	0.031	*	N-S(2):	0.000
	LT	1.00	10	1,600	0.006		E-W(1):	0.257 *
Westbound	RT	0.00	10	0	0.000		E-W(2):	0.000
	TH	3.00	210	4,800	0.046			
	LT	1.00	350	1,600	0.219	*	V/C:	0.469
Northbound	RT	1.00	179	1,600	0.003		Lost Time:	0.100
	TH	1.00	290	1,600	0.181	*	ITS:	0.000
	LT	1.00	170	1,600	0.106			
Eastbound	RT	1.00	480	1,600	0.000		ICU:	0.569
	TH	2.00	120	3,200	0.038	*		
	LT	1.00	20	1,600	0.013		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **21 - Terminal Island Fwy & *CA-47 Westbound**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	WBR		

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	460	3,200	0.144		N-S(1):	0.459 *
	TH	2.00	720	3,200	0.225	*	N-S(2):	0.000
	LT	0.00	0	0	0.000		E-W(1):	0.150 *
Westbound	RT	1.00	340	1,600	0.000		E-W(2):	0.119
	TH	2.00	380	3,200	0.119			
	LT	1.00	240	1,600	0.150	*	V/C:	0.609
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	750	3,200	0.234	*	ITS:	0.000
	LT	1.00	135	1,600	0.084			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.709
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	450	3,200	0.141		N-S(1):	0.494 *
	TH	2.00	620	3,200	0.194	*	N-S(2):	0.000
	LT	0.00	0	0	0.000		E-W(1):	0.163 *
Westbound	RT	1.00	440	1,600	0.000		E-W(2):	0.122
	TH	2.00	390	3,200	0.122			
	LT	1.00	260	1,600	0.163	*	V/C:	0.657
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	960	3,200	0.300	*	ITS:	0.000
	LT	1.00	176	1,600	0.110			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.757
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	2.00	490	3,200	0.153		N-S(1):	0.472 *
	TH	2.00	690	3,200	0.216	*	N-S(2):	0.000
	LT	0.00	0	0	0.000		E-W(1):	0.131 *
Westbound	RT	1.00	440	1,600	0.000		E-W(2):	0.094
	TH	2.00	300	3,200	0.094			
	LT	1.00	210	1,600	0.131	*	V/C:	0.603
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	2.00	820	3,200	0.256	*	ITS:	0.000
	LT	1.00	159	1,600	0.099			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.703
	TH	0.00	0	0	0.000	*		
	LT	0.00	0	0	0.000		LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **22 - Terminal Island Fwy & *CA-47 Eastbound**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.412 *
	TH	1.00	600	1,600	0.375		N-S(2):	0.375
	LT	1.00	330	1,600	0.206	*	E-W(1):	0.202 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.195
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.614
Northbound	RT	1.00	330	1,600	0.206	*	Lost Time:	0.100
	TH	2.00	405	3,200	0.127		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	156	0	0.000		ICU:	0.714
	TH	2.00	490	3,200	0.202	*		
	LT	2.00	500	2,560	0.195		LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.319
	TH	1.00	690	1,600	0.431	*	N-S(2):	0.431 *
	LT	1.00	210	1,600	0.131		E-W(1):	0.274 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.273
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.705
Northbound	RT	1.00	300	1,600	0.188		Lost Time:	0.100
	TH	2.00	426	3,200	0.133		ITS:	0.000
	LT	0.00	0	0	0.000	*		
Eastbound	RT	0.00	197	0	0.000		ICU:	0.805
	TH	2.00	680	3,200	0.274	*		
	LT	2.00	700	2,560	0.273		LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.407 *
	TH	1.00	560	1,600	0.350	*	N-S(2):	0.350
	LT	1.00	380	1,600	0.238		E-W(1):	0.178
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.250 *
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.657
Northbound	RT	1.00	270	1,600	0.169		Lost Time:	0.100
	TH	2.00	349	3,200	0.109		ITS:	0.000
	LT	0.00	0	0	0.000	*		
Eastbound	RT	0.00	180	0	0.000		ICU:	0.757
	TH	2.00	390	3,200	0.178	*		
	LT	2.00	640	2,560	0.250		LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **23 - Pier S Avenue & *CA-47 Westbound**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	WBR		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	810	1,600	0.506 *	N-S(1):	0.041
	TH	2.00	546	3,200	0.171	N-S(2):	0.506 *
	LT	0.00	0	0	0.000	E-W(1):	0.213 *
Westbound	RT	2.00	325	3,200	0.102	E-W(2):	0.000
	TH	2.00	680	3,200	0.213 *		
	LT	0.00	0	0	0.000	V/C:	0.719
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	130	3,200	0.041	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.819
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	D

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	590	1,600	0.369 *	N-S(1):	0.038
	TH	2.00	417	3,200	0.130	N-S(2):	0.369 *
	LT	0.00	0	0	0.000	E-W(1):	0.222 *
Westbound	RT	2.00	376	3,200	0.118	E-W(2):	0.000
	TH	2.00	710	3,200	0.222 *		
	LT	0.00	0	0	0.000	V/C:	0.591
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	120	3,200	0.038	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.691
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	430	1,600	0.269 *	N-S(1):	0.053
	TH	2.00	270	3,200	0.084	N-S(2):	0.269 *
	LT	0.00	0	0	0.000	E-W(1):	0.209 *
Westbound	RT	2.00	269	3,200	0.084	E-W(2):	0.000
	TH	2.00	670	3,200	0.209 *		
	LT	0.00	0	0	0.000	V/C:	0.478
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	170	3,200	0.053	ITS:	0.000
	LT	0.00	0	0	0.000 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.578
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **24 - Pier S Avenue & *CA-47 Eastbound**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.217 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	556	2,560	0.217	*	E-W(1):	0.188 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.081
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.405
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.505
	TH	2.00	600	3,200	0.188	*		
	LT	1.00	130	1,600	0.081		LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.159 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	407	2,560	0.159	*	E-W(1):	0.363 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.069
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.522
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.622
	TH	2.00	1,160	3,200	0.363	*		
	LT	1.00	110	1,600	0.069		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.109 *
	TH	0.00	0	0	0.000		N-S(2):	0.000
	LT	2.00	280	2,560	0.109	*	E-W(1):	0.275 *
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.106
	TH	0.00	0	0	0.000			
	LT	0.00	0	0	0.000	*	V/C:	0.384
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.484
	TH	2.00	880	3,200	0.275	*		
	LT	1.00	170	1,600	0.106		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **25 - Pico Ave/Pier G Ave & Harbor Plaza Dr**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :	SBR,		
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	610	1,600	0.256 *	N-S(1):	0.191
	TH	1.00	190	1,600	0.119	N-S(2):	0.262 *
	LT	1.00	160	1,600	0.100	E-W(1):	0.519 *
Westbound	RT	0.00	630	1,600	0.394 *	E-W(2):	0.000
	TH	2.00	120	1,600	0.075		
	LT	1.00	60	1,600	0.038	V/C:	0.781
Northbound	RT	0.00	80	0	0.000	Lost Time:	0.100
	TH	2.00	210	3,200	0.091	ITS:	0.000
	LT	1.00	10	1,600	0.006 *		
Eastbound	RT	0.25	20	400	0.047	ICU:	0.881
	TH	0.75	60	1,200	0.050		
	LT	2.00	320	2,560	0.125 *	LOS:	D

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	470	1,600	0.157	N-S(1):	0.182 *
	TH	1.00	110	1,600	0.069	N-S(2):	0.163
	LT	1.00	190	1,600	0.119 *	E-W(1):	0.537 *
Westbound	RT	0.00	640	1,600	0.400 *	E-W(2):	0.000
	TH	2.00	100	1,600	0.063		
	LT	1.00	40	1,600	0.025	V/C:	0.719
Northbound	RT	0.00	50	0	0.000	Lost Time:	0.100
	TH	2.00	150	3,200	0.063 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.17	10	267	0.034	ICU:	0.819
	TH	0.83	50	1,333	0.038		
	LT	2.00	350	2,560	0.137 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	300	1,600	0.086	N-S(1):	0.185 *
	TH	1.00	100	1,600	0.063	N-S(2):	0.092
	LT	1.00	190	1,600	0.119 *	E-W(1):	0.527 *
Westbound	RT	0.00	680	1,600	0.425 *	E-W(2):	0.000
	TH	2.00	100	1,600	0.063		
	LT	1.00	30	1,600	0.019	V/C:	0.712
Northbound	RT	0.00	90	0	0.000	Lost Time:	0.100
	TH	2.00	120	3,200	0.066 *	ITS:	0.000
	LT	1.00	10	1,600	0.006		
Eastbound	RT	0.10	10	160	0.059	ICU:	0.812
	TH	0.90	90	1,440	0.063		
	LT	2.00	260	2,560	0.102 *	LOS:	D

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **27 - Harbor Plaza Dr & Queensway Dr**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	30	1,600	0.019 *	N-S(1):	0.390 *
	TH	2.00	10	3,200	0.003	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.006
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.119 *
	TH	3.00	550	4,800	0.119 *		
	LT	0.00	10	1,600	0.006	V/C:	0.509
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.04	20	67	0.297	ITS:	0.000
	LT	1.96	930	2,506	0.371 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.609
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.025 *	N-S(1):	0.413 *
	TH	2.00	10	3,200	0.003	N-S(2):	0.000
	LT	0.00	10	1,600	0.006	E-W(1):	0.350 *
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.222
	TH	3.00	690	3,200	0.222		
	LT	0.00	560	1,600	0.350 *	V/C:	0.763
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.04	20	64	0.310	ITS:	0.000
	LT	1.96	973	2,508	0.388 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.863
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	40	1,600	0.025 *	N-S(1):	0.291 *
	TH	2.00	20	3,200	0.006	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.131
Westbound	RT	0.00	20	0	0.000	E-W(2):	0.310 *
	TH	3.00	1,260	4,800	0.310		
	LT	0.00	210	1,600	0.131 *	V/C:	0.601
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	0.06	20	94	0.213	ITS:	0.000
	LT	1.94	661	2,485	0.266 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.701
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **28 - Harbor Plaza Dr & Harbor Scenic Dr**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.132 *
	TH	2.00	10	1,600	0.006		N-S(2):	0.000
	LT	0.00	10	1,600	0.006	*	E-W(1):	0.491 *
Westbound	RT	2.00	560	3,200	0.172	*	E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	221	1,600	0.138		V/C:	0.623
Northbound	RT	1.00	201	1,600	0.126	*	Lost Time:	0.100
	TH	2.00	380	3,200	0.119		ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	510	1,600	0.319	*	ICU:	0.723
	TH	3.00	710	4,800	0.148			
	LT	1.00	10	1,600	0.006		LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.338 *
	TH	2.00	560	1,600	0.178	*	N-S(2):	0.000
	LT	0.00	10	1,600	0.006		E-W(1):	0.459 *
Westbound	RT	2.00	470	3,200	0.144		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	254	1,600	0.159	*	V/C:	0.797
Northbound	RT	1.00	114	1,600	0.071		Lost Time:	0.100
	TH	2.00	513	3,200	0.160	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	480	1,600	0.300	*	ICU:	0.897
	TH	3.00	600	4,800	0.125			
	LT	1.00	20	1,600	0.013		LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.160 *
	TH	2.00	220	1,600	0.072	*	N-S(2):	0.000
	LT	0.00	10	1,600	0.006		E-W(1):	0.325 *
Westbound	RT	2.00	410	3,200	0.125		E-W(2):	0.000
	TH	0.00	0	0	0.000			
	LT	1.00	192	1,600	0.120	*	V/C:	0.485
Northbound	RT	1.00	112	1,600	0.070		Lost Time:	0.100
	TH	2.00	281	3,200	0.088	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	1.00	320	1,600	0.200	*	ICU:	0.585
	TH	3.00	360	4,800	0.075			
	LT	1.00	10	1,600	0.006		LOS:	A

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **30 - Long Beach Blvd. & PCH**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	140	1,600	0.053		N-S(1):	0.360 *
	TH	2.00	540	3,200	0.169		N-S(2):	0.294
	LT	1.00	260	1,600	0.163	*	E-W(1):	0.265
Westbound	RT	0.00	90	0	0.000		E-W(2):	0.311 *
	TH	3.00	1,070	4,800	0.242	*		
	LT	1.00	150	1,600	0.094		V/C:	0.671
Northbound	RT	1.00	70	1,600	0.000		Lost Time:	0.100
	TH	2.00	630	3,200	0.197	*	ITS:	0.000
	LT	1.00	200	1,600	0.125			
Eastbound	RT	0.00	80	0	0.000		ICU:	0.771
	TH	3.00	740	4,800	0.171			
	LT	1.00	110	1,600	0.069	*	LOS:	C

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	100	1,600	0.022		N-S(1):	0.334 *
	TH	2.00	480	3,200	0.150		N-S(2):	0.250
	LT	1.00	250	1,600	0.156	*	E-W(1):	0.242
Westbound	RT	0.00	210	0	0.000		E-W(2):	0.285 *
	TH	3.00	770	4,800	0.204	*		
	LT	1.00	110	1,600	0.069		V/C:	0.619
Northbound	RT	1.00	90	1,600	0.022		Lost Time:	0.100
	TH	2.00	570	3,200	0.178	*	ITS:	0.000
	LT	1.00	160	1,600	0.100			
Eastbound	RT	0.00	90	0	0.000		ICU:	0.719
	TH	3.00	740	4,800	0.173			
	LT	1.00	130	1,600	0.081	*	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	140	1,600	0.034		N-S(1):	0.372 *
	TH	2.00	530	3,200	0.166		N-S(2):	0.347
	LT	1.00	250	1,600	0.156	*	E-W(1):	0.304 *
Westbound	RT	0.00	160	0	0.000		E-W(2):	0.266
	TH	3.00	610	4,800	0.160	*		
	LT	1.00	120	1,600	0.075		V/C:	0.676
Northbound	RT	1.00	90	1,600	0.019		Lost Time:	0.100
	TH	2.00	690	3,200	0.216	*	ITS:	0.000
	LT	1.00	290	1,600	0.181			
Eastbound	RT	0.00	160	0	0.000		ICU:	0.776
	TH	3.00	940	4,800	0.229			
	LT	1.00	170	1,600	0.106	*	LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **31 - Long Beach Blvd. & Anaheim St.**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	70	1,600	0.041		N-S(1):	0.282
	TH	2.00	450	3,200	0.141	*	N-S(2):	0.329 *
	LT	1.00	190	1,600	0.119		E-W(1):	0.214
Westbound	RT	0.00	160	0	0.000		E-W(2):	0.266 *
	TH	3.00	1,080	4,800	0.260	*		
	LT	0.00	10	1,600	0.006		V/C:	0.595
Northbound	RT	0.00	60	0	0.000		Lost Time:	0.100
	TH	2.00	460	3,200	0.163		ITS:	0.000
	LT	1.00	300	1,600	0.188	*		
Eastbound	RT	0.00	120	0	0.000		ICU:	0.695
	TH	3.00	870	4,800	0.208			
	LT	0.00	10	1,600	0.006	*	LOS:	B

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	90	1,600	0.053		N-S(1):	0.262
	TH	2.00	360	3,200	0.113	*	N-S(2):	0.288 *
	LT	1.00	130	1,600	0.081		E-W(1):	0.252 *
Westbound	RT	0.00	160	0	0.000		E-W(2):	0.208
	TH	3.00	800	4,800	0.202			
	LT	0.00	10	1,600	0.006	*	V/C:	0.540
Northbound	RT	0.00	90	0	0.000		Lost Time:	0.100
	TH	2.00	490	3,200	0.181		ITS:	0.000
	LT	1.00	280	1,600	0.175	*		
Eastbound	RT	0.00	140	0	0.000		ICU:	0.640
	TH	3.00	1,030	4,800	0.246	*		
	LT	0.00	10	1,600	0.006		LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	70	1,600	0.041		N-S(1):	0.315
	TH	2.00	460	3,200	0.144	*	N-S(2):	0.319 *
	LT	1.00	170	1,600	0.106		E-W(1):	0.298 *
Westbound	RT	0.00	170	0	0.000		E-W(2):	0.200
	TH	3.00	750	4,800	0.194			
	LT	0.00	10	1,600	0.006	*	V/C:	0.617
Northbound	RT	0.00	100	0	0.000		Lost Time:	0.100
	TH	2.00	570	3,200	0.209		ITS:	0.000
	LT	1.00	280	1,600	0.175	*		
Eastbound	RT	0.00	90	0	0.000		ICU:	0.717
	TH	3.00	1,300	4,800	0.292	*		
	LT	0.00	10	1,600	0.006		LOS:	C

* - Denotes critical movement

Project Title: **PoLB Master Plan EIR**
Intersection: **32 - Long Beach Blvd. & Ocean Blvd**
Description: **Cumulative Plus Project Conditions (Proposed Plan)**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.58	100	2,526	0.005		N-S(1):	0.049 *
	TH	0.00	0	0	0.000		N-S(2):	0.005
	LT	1.42	90	1,819	0.049	*	E-W(1):	0.079
Westbound	RT	1.00	160	1,600	0.100		E-W(2):	0.436 *
	TH	3.00	1,760	4,800	0.367	*		
	LT	0.00	0	0	0.000		V/C:	0.485
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.585
	TH	3.00	370	4,800	0.079			
	LT	1.00	110	1,600	0.069	*	LOS:	A

Date/Time: **Mid-Day PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.71	160	2,743	0.027		N-S(1):	0.073 *
	TH	0.00	0	0	0.000		N-S(2):	0.027
	LT	1.29	120	1,646	0.073	*	E-W(1):	0.254 *
Westbound	RT	1.00	150	1,600	0.057		E-W(2):	0.211
	TH	3.00	710	4,800	0.148			
	LT	0.00	10	1,600	0.006	*	V/C:	0.327
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	10	0	0.000		ICU:	0.427
	TH	3.00	1,180	4,800	0.248	*		
	LT	1.00	100	1,600	0.063		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.75	210	2,800	0.013		N-S(1):	0.094 *
	TH	0.00	0	0	0.000		N-S(2):	0.013
	LT	1.25	150	1,600	0.094	*	E-W(1):	0.421 *
Westbound	RT	1.00	100	1,600	0.063		E-W(2):	0.298
	TH	3.00	830	4,800	0.173			
	LT	0.00	0	0	0.000	*	V/C:	0.515
Northbound	RT	0.00	10	0	0.000		Lost Time:	0.100
	TH	0.00	0	0	0.000	*	ITS:	0.000
	LT	0.00	0	0	0.000			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.615
	TH	3.00	2,020	4,800	0.421	*		
	LT	1.00	200	1,600	0.125		LOS:	B

* - Denotes critical movement

Level of Service Workheet
(Circular 212 Method)

I/S #:
4

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Cumulative Plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM				PM			
No. of Phases					4				4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					1				1
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0		NB-- 0	SB--		0
	EB-- 0	WB--		0		EB-- 0	WB--		0
ATSAC-1 or ATSAC+ATCS-2?				2					2
Override Capacity				0					0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	20	0	20	20	0	20
	Left-Through		0			0	
	Through	0	0	**50**	0	0	**40**
	Through-Right		0			0	
	Right	30	0	0	20	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	40	0	40	70	0	70
	Left-Through		0			0	
	Through	10	0	**120**	0	0	**140**
	Through-Right		0			0	
	Right	70	0	0	70	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	70	1	**70**	70	1	**70**
	Left-Through		0			0	
	Through	610	1	315	620	1	320
	Through-Right		1			1	
	Right	20	0	20	20	0	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	30	1	30	30	1	30
	Left-Through		0			0	
	Through	1080	2	**540**	790	2	**395**
	Through-Right		0			0	
	Right	10	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	170		*North-South:*	180
			East-West:	610		*East-West:*	465
			SUM:	780		*SUM:*	645
VOLUME/CAPACITY *(V/C)* RATIO:				0.567			0.469
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.467**			**0.369**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Cumulative Plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	20	0	20	40	0	40
	Left-Through		0			0	
	Through	0	0	**70**	0	0	**120**
	Through-Right		0			0	
	Right	50	0	0	80	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	0	0	0	0	0	10
	Through-Right		1			1	
	Right	0	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	1	**0**	10	1	**10**
	Left-Through		0			0	
	Through	710	1	370	490	1	265
	Through-Right		1			1	
	Right	30	0	30	40	0	40
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	80	1	80	70	1	70
	Left-Through		0			0	
	Through	1170	1	**590**	800	1	**405**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	80		*North-South:*	130
			East-West:	590		*East-West:*	415
			SUM:	670		*SUM:*	545
VOLUME/CAPACITY *(V/C)* RATIO:				0.470			0.382
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.370**			**0.282**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
8	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Cumulative Plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	3	EB-- 0	WB--	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	580	2	**247**	770	2	**310**
	Through-Right		1			1	
	Right	160	0	160	160	0	160
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	410	1	**410**	300	1	**300**
	Left-Through		0			0	
	Through	1090	3	363	780	3	260
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	130	1	**130**	150	1	**150**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	420	1	10	330	1	30
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	657		*North-South:*	610
			East-West:	130		*East-West:*	150
			SUM:	787		*SUM:*	760
VOLUME/CAPACITY *(V/C)* RATIO:				0.552			0.533
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.452**			**0.433**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
9

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Cumulative Plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--	0	NB-- 0	SB--	0
	EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	230	1	**230**	180	1	**180**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	350	1	195	280	1	165
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	310	1	**310**	230	1	**230**
	Left-Through		0			0	
	Through	1030	2	515	750	2	375
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1020	2	**437**	580	2	**270**
	Through-Right		1			1	
	Right	290	0	290	230	0	230
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	230		*North-South:*	180
			East-West:	747		*East-West:*	500
			SUM:	977		*SUM:*	680
VOLUME/CAPACITY *(V/C)* RATIO:				0.686			0.477
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.586**			**0.377**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
13

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Henry Ford Av **East-West Street:** Anaheim St.
Scenario: Cumulative Plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 3	SB--	3	NB-- 3	SB--	3
		EB-- 1	WB--	3	EB-- 1	WB--	3
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	220	1	**160**	300	1	**223**
	Left-Through		1			1	
	Through	260	1	160	370	1	223
	Through-Right		0			0	
	Right	320	1	20	230	1	40
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	200	1	200	110	1	110
	Left-Through		0			0	
	Through	500	2	**250**	440	2	**220**
	Through-Right		0			0	
	Right	60	1	0	70	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	80	1	**80**	130	1	130
	Left-Through		0			0	
	Through	630	2	315	890	2	**445**
	Through-Right		0			0	
	Right	540	1	0	330	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	300	1	300	190	1	**190**
	Left-Through		0			0	
	Through	1180	2	**590**	900	2	450
	Through-Right		0			0	
	Right	350	1	150	260	1	150
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	410		*North-South:*	443
			East-West:	670		*East-West:*	635
			SUM:	1080		*SUM:*	1078
VOLUME/CAPACITY *(V/C)* RATIO:				0.785			0.784
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.685**			**0.684**
LEVEL OF SERVICE (LOS):				**B**			**B**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
26	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** *Seaside Fwy
Scenario: Cumulative Plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM				PM			
No. of Phases					3				3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?					0				0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 1	SB--	0		NB-- 1	SB--	0	
		EB-- 0	WB--	0		EB-- 0	WB--	0	
ATSAC-1 or ATSAC+ATCS-2?				2				2	
Override Capacity				0				0	
MOVEMENT		**Volume**	**No. of Lanes**	**Lane Volume**		**Volume**	**No. of Lanes**	**Lane Volume**	
NORTHBOUND	Left	70	2	**39**		110	2	**61**	
	Left-Through		0				0		
	Through	0	0	0		0	0	0	
	Through-Right		0				0		
	Right	1740	1	0		1500	1	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
SOUTHBOUND	Left	0	0	0		0	0	0	
	Left-Through		0				0		
	Through	0	0	**0**		0	0	**0**	
	Through-Right		0				0		
	Right	0	0	0		0	0	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
EASTBOUND	Left	0	0	0		0	0	0	
	Left-Through		0				0		
	Through	1810	3	603		1530	3	510	
	Through-Right		0				0		
	Right	1800	1	**1781**		1340	1	**1310**	
	Left-Through-Right		0				0		
	Left-Right		0				0		
WESTBOUND	Left	50	2	**28**		40	2	**22**	
	Left-Through		0				0		
	Through	2650	3	883		2060	3	687	
	Through-Right		0				0		
	Right	0	0	0		0	0	0	
	Left-Through-Right		0				0		
	Left-Right		0				0		
CRITICAL VOLUMES			***North-South:***	39			***North-South:***	61	
			East-West:	1809			***East-West:***	1332	
			SUM:	1848			***SUM:***	1393	
VOLUME/CAPACITY *(V/C)* RATIO:				1.297				0.978	
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**				**1.197**				**0.878**	
LEVEL OF SERVICE (LOS):				**F**				**D**	

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
29

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Cumulative Plus Project Conditions - Proposed Plan (AM & MD Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			2			2
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	10	1	**10**	10	1	10
	Left-Through		0			0	
	Through	1130	2	377	880	2	**297**
	Through-Right		1			1	
	Right	0	0	0	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	390	1	390	340	1	**340**
	Left-Through		0			0	
	Through	1070	1	**785**	670	1	540
	Through-Right		1			1	
	Right	500	0	500	410	0	410
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	400	2	**220**	450	2	**248**
	Left-Through		0			0	
	Through	10	0	20	10	0	20
	Through-Right		1			1	
	Right	10	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	10	0	10
	Left-Through		1			1	
	Through	10	0	**10**	10	0	20
	Through-Right		0			0	
	Right	360	1	0	370	1	**30**
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	795		*North-South:*	637
			East-West:	230		*East-West:*	278
			SUM:	1025		*SUM:*	915
VOLUME/CAPACITY *(V/C)* RATIO:				0.745			0.665
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.645**			**0.565**
LEVEL OF SERVICE (LOS):				**B**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
4

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: ICTF Driveway **East-West Street:** Sepulveda Blvd
Scenario: Cumulative Plus Project Conditions - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				1			1
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	10	0	10	10	0	10
	Left-Through		0			0	
	Through	0	0	**50**	0	0	**50**
	Through-Right		0			0	
	Right	40	0	0	40	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	40	0	40	40	0	40
	Left-Through		0			0	
	Through	0	0	**90**	0	0	**90**
	Through-Right		0			0	
	Right	50	0	0	50	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
EASTBOUND	Left	60	1	60	60	1	60
	Left-Through		0			0	
	Through	1220	1	**615**	1220	1	**615**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	930	2	465	930	2	465
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			North-South:	140		North-South:	140
			East-West:	625		East-West:	625
			SUM:	765		SUM:	765
VOLUME/CAPACITY (V/C) RATIO:				0.556			0.556
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.456**			**0.456**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
5

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Middle Rd **East-West Street:** Sepulveda Blvd
Scenario: Cumulative Plus Project Conditions - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	NB-- 0	SB--		0	NB-- 0	SB--	0
	EB-- 0	WB--		0	EB-- 0	WB--	0
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0

	MOVEMENT	Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	40	0	40	40	0	40
	Left-Through		0			0	
	Through	0	0	**130**	0	0	**130**
	Through-Right		0			0	
	Right	90	0	0	90	0	0
	Left-Through-Right		1			1	
	Left-Right		0			0	
SOUTHBOUND	Left	10	1	**10**	10	1	**10**
	Left-Through		0			0	
	Through	10	0	20	10	0	20
	Through-Right		1			1	
	Right	10	0	0	10	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	10	1	10	10	1	10
	Left-Through		0			0	
	Through	1220	1	**635**	1220	1	**635**
	Through-Right		1			1	
	Right	50	0	50	50	0	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	70	1	**70**	70	1	**70**
	Left-Through		0			0	
	Through	1030	1	525	1030	1	525
	Through-Right		1			1	
	Right	20	0	20	20	0	20
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	140		*North-South:*	140
			East-West:	705		*East-West:*	705
			SUM:	845		*SUM:*	845
VOLUME/CAPACITY *(V/C)* RATIO:				0.593			0.593
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.493**			**0.493**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
8	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Alameda St **East-West Street:** O St
Scenario: Cumulative Plus Project Conditions - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	3	*EB--* 0	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	740	2	**307**	740	2	**307**
	Through-Right		1			1	
	Right	180	0	180	180	0	180
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	520	1	**520**	520	1	**520**
	Left-Through		0			0	
	Through	550	3	183	550	3	183
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	140	1	**140**	140	1	**140**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	450	1	0	450	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	827		*North-South:*	827
			East-West:	140		*East-West:*	140
			SUM:	967		*SUM:*	967
VOLUME/CAPACITY *(V/C)* RATIO:				0.679			0.679
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.579**			**0.579**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
9

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: O St **East-West Street:** PCH
Scenario: Cumulative Plus Project Conditions - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 0	*SB--*	0	*NB--* 0	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	0	0	**0**	0	0	**0**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	190	1	190	190	1	190
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	520	1	**345**	520	1	**345**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	350	1	**350**	350	1	**350**
	Left-Through		0			0	
	Through	1310	2	655	1310	2	655
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	1160	2	**470**	1160	2	**470**
	Through-Right		1			1	
	Right	250	0	250	250	0	250
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	345		*North-South:*	345
			East-West:	820		*East-West:*	820
			SUM:	1165		*SUM:*	1165
VOLUME/CAPACITY *(V/C)* RATIO:				0.818			0.818
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.718**			**0.718**
LEVEL OF SERVICE (LOS):				**C**			**C**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
13

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Henry Ford Av **East-West Street:** Anaheim St.
Scenario: Cumulative Plus Project Conditions - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 3	*SB--*	3	*NB--* 3	*SB--*	3
	EB-- 1	*WB--*	3	*EB--* 1	*WB--*	3
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	70	1	70	70	1	70
	Left-Through		1			1	
	Through	350	1	**175**	350	1	**175**
	Through-Right		0			0	
	Right	320	1	100	320	1	100
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	210	1	**210**	210	1	**210**
	Left-Through		0			0	
	Through	330	2	165	330	2	165
	Through-Right		0			0	
	Right	80	1	0	80	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	90	1	90	90	1	90
	Left-Through		0			0	
	Through	1340	2	**670**	1340	2	**670**
	Through-Right		0			0	
	Right	270	1	0	270	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	220	1	**220**	220	1	**220**
	Left-Through		0			0	
	Through	960	2	480	960	2	480
	Through-Right		0			0	
	Right	260	1	50	260	1	50
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	385		*North-South:*	385
			East-West:	890		*East-West:*	890
			SUM:	1275		*SUM:*	1275
VOLUME/CAPACITY *(V/C)* RATIO:				0.927			0.927
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.827**			**0.827**
LEVEL OF SERVICE (LOS):				**D**			**D**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:	
26	

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** *Seaside Fwy
Scenario: Cumulative Plus Project Conditions - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

	AM			PM		
No. of Phases			3			3
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?			0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?	*NB--* 1	*SB--*	0	*NB--* 1	*SB--*	0
	EB-- 0	*WB--*	0	*EB--* 0	*WB--*	0
ATSAC-1 or ATSAC+ATCS-2?			2			2
Override Capacity			0			0

	MOVEMENT	AM Volume	AM No. of Lanes	AM Lane Volume	PM Volume	PM No. of Lanes	PM Lane Volume
NORTHBOUND	Left	150	2	**83**	150	2	**83**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	1080	1	0	1080	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	**0**	0	0	**0**
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	0	0	0	0	0	0
	Left-Through		0			0	
	Through	2340	3	**780**	2340	3	**780**
	Through-Right		0			0	
	Right	660	1	619	660	1	619
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	50	2	**28**	50	2	**28**
	Left-Through		0			0	
	Through	2230	3	743	2230	3	743
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES		*North-South:*		83	*North-South:*		83
		East-West:		808	*East-West:*		808
		SUM:		891	*SUM:*		891
VOLUME/CAPACITY *(V/C)* RATIO:				0.625			0.625
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.525**			**0.525**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #:
29

PROJECT TITLE: Port of Long Beach Master Plan Update
North-South Street: Navy Wy **East-West Street:** Reeves Av
Scenario: Cumulative Plus Project Conditions - Proposed Plan (PM Only)
Count Date: 6/28/2018 **Analyst:** Fehr & Peers **Date:** 1/9/2019

		AM			PM		
No. of Phases				4			4
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				2			2
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB--	0	NB-- 0	SB--	0
		EB-- 0	WB--	3	EB-- 0	WB--	3
ATSAC-1 or ATSAC+ATCS-2?				2			2
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	10	1	10	10	1	10
	Left-Through		0			0	
	Through	1020	2	**343**	1020	2	**343**
	Through-Right		1			1	
	Right	10	0	10	10	0	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	270	1	**270**	270	1	**270**
	Left-Through		0			0	
	Through	290	1	215	290	1	215
	Through-Right		1			1	
	Right	140	0	140	140	0	140
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	150	2	**83**	150	2	**83**
	Left-Through		0			0	
	Through	10	0	30	10	0	30
	Through-Right		1			1	
	Right	20	0	0	20	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	0	0	0	0	0
	Left-Through		1			1	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	330	1	**60**	330	1	**60**
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	613		*North-South:*	613
			East-West:	143		*East-West:*	143
			SUM:	756		*SUM:*	756
VOLUME/CAPACITY *(V/C)* RATIO:				0.550			0.550
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.450**			**0.450**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Appendix E
Air Emission Calculations

This page intentionally left blank.

Appendix E
Air Emission Calculations

This appendix describes the methodology for estimating the operational emissions of criteria pollutants, diesel particulate matter (DPM), and greenhouse gases (GHGs) associated with the California Environmental Quality Act (CEQA) Baseline, Proposed Plan, Alternative 1 (No Plan Alternative), Alternative 2 (No Terminal Development), and Alternative 3 (Reduced Terminal Development). The calculation tables for construction and operational emissions follow the same methodology and appear at the end of this appendix.

E.1 CALCULATION METHODOLOGY FOR OPERATIONAL EMISSIONS

In general, the 2017 emissions associated with the 2017 Baseline were obtained from the *Port of Long Beach 2017 Air Emissions Inventory* (2017 EI) (POLB 2018a). The 2040 operational emissions associated with the Proposed Plan and alternatives were obtained from the Port of Long Beach's (POLB's or Port's) Integrated Land Use Tool (ILUT). The ILUT estimated 2040 Port activity levels under the Proposed Plan and alternatives and applied 2040 emission factors that were developed using a methodology consistent with the 2017 EI. For this Program Environmental Impact Report (PEIR), additional calculations were necessary for sources not quantified by the 2017 EI or the ILUT, and for GHGs, to extend the source domain to the California border.

For PEIR reporting purposes, GHG emissions are expressed as a carbon dioxide equivalent (CO_2e). CO_2e is calculated by multiplying each GHG emission by its global warming potential (GWP) and adding the results together to produce a single, combined emission rate representing all GHG emissions. By convention, this PEIR uses GWPs from the Intergovernmental Panel on Climate Change *Fourth Assessment Report* (IPCC 2007), which is consistent with the 2017 EI and the United States Environmental Protection Agency's (USEPA's) *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2017* (USEPA 2019).

Some portions of the Port would either not be affected by the Proposed Plan or would be modified in accordance with prior certified project-level CEQA documents. However, the Port determined that it would be very difficult, if not impossible, to exclude the operational emissions associated with those projects from the Port-wide emission calculations prepared for this PEIR because of the interrelated nature of Port operations. Therefore, all Port operations were conservatively included in the emission calculations for this PEIR except for several stationary industrial sources not related to the Port's goods movement activities. Sources excluded from the emission calculations include Harbor Cogeneration, South East Resource Recovery Facility, Tidelands Oil Production Company, THUMS Oil Operations, and Long Beach Generation.

Tables E-1 through E-15 contain the emission summaries for the 2017 Baseline, 2040 Proposed Plan, and 2040 alternatives. Tables E-16 through E-63 show the additional calculations made for sources not quantified by the 2017 EI or the ILUT. Tables E-64 through E-67 contain the ILUT output files for the 2040 Proposed Plan and alternatives and the associated 2040 emission factors.

The emission calculations in this appendix account for Proposed Plan elements, existing regulations, and assumptions for equipment fleet turnover that would affect future emissions. However, the emission calculations do not account for any operational mitigation measures prescribed in this PEIR. Because of the programmatic nature of the Proposed Plan and alternatives, the potential beneficial effects of mitigation are discussed qualitatively in this PEIR.

The following emission calculation methodologies are organized by source category. The methodologies for the additional calculations for sources not quantified by the 2017 EI or ILUT are described in the greatest detail. The calculation methodologies for emissions obtained directly from the 2017 EI or ILUT can be found in those respective documents. The ILUT description is included in PEIR Appendix B (ILUT).

All emissions in the 2017 EI, ILUT, and additional calculation tables were originally calculated as annual emissions. To compare to the South Coast Air Quality Management District daily emission significance thresholds, it was necessary to convert the annual criteria pollutant emissions to peak daily emissions. Development of the annual-to-peak day factors is also discussed below.

E.2 HEAVY-DUTY TRUCKS

Heavy-duty vehicles (HDVs) or trucks are used to move cargo, particularly containerized cargo, to and from the marine terminals. Trucks also transfer containers between terminals and off-Port railcar loading facilities. The local activity is often referred to as drayage. In the course of their daily operations, trucks are driven onto and through the terminals, where they deliver and/or pick up cargo. They are also driven on the public roads within the Port boundaries and on the public roads outside the Port. Most trucks that service the Port's terminals are diesel-fueled vehicles. Alternative fuel trucks, primarily those fueled by liquefied natural gas, made approximately 4 percent of the terminal calls in 2017 (POLB 2018a).

This PEIR quantified emissions from trucks operating both on-terminal and off-terminal. On-terminal operations include queuing at terminal entry gates, travel and idling within the terminals, and queuing at the terminal exit gates. Off-terminal operations include the trip between the Port and the cargo's first point of rest or emissions domain boundary, whichever comes first. The emissions domain for criteria pollutants and DPM is the South Coast Air Basin (SCAB). The emissions domain for GHGs is the California border. Truck emissions include criteria pollutants, DPM, and GHGs from engine exhaust. They also include particulate matter (PM) from tire wear, brake wear, and the re-entrainment of paved road dust.

E.2.1 Baseline

Truck exhaust emissions from on-terminal activities and travel within the SCAB associated with the 2017 Baseline were obtained from Tables 6.2 and 6.3 of the 2017 EI.

GHG emissions from truck travel between the SCAB and California border were not included in the 2017 EI. Therefore, they were calculated in Table E-29. Truck vehicle miles traveled (VMT) and average speeds by time of day were provided by the traffic study (Fehr and Peers 2019a). Emission factors by speed were generated by Starcrest (2019a) using the EMFAC2017 emission factor model (CARB 2018a). The emission factors are presented in Table E-32. They reflect HDV model year information specific to the San Pedro Bay Ports and are consistent with the 2017 EI.

PM emissions from truck-related tire wear, brake wear, and paved road dust were not included in the 2017 EI. Therefore, they were calculated in Table E-23. Truck VMT data were obtained from Tables 6.2 and 6.3 of the 2017 EI. Emission factors for tire and brake wear were generated by EMFAC2017 for "T7 POLA" diesel trucks in the SCAB. Emission factors for paved road dust were developed using the methodology in Chapter 7.9 of California Air Resources Board's (CARB's) Emission Inventory Documentation (CARB 2018b). Tables E-20 through E-22 show the development of the paved road dust emission factors.

Peak day criteria pollutant emissions from truck exhaust, tire wear, brake wear, and paved road dust were estimated by applying a factor of 0.00397 to the annual emissions. This factor was provided by the Port and represents a factor of 1/275 to convert from annual activity to an average weekday of an average month, and an additional adjustment factor of 12/11 to convert from an average weekday of an average month to an average weekday of a peak month (POLB 2019a; POLB 2019b). Use of this factor results in peak day emissions that are 45 percent higher than average emissions. Peak day emissions associated with the 2017 Baseline are shown in Table E-3.

E.2.2 Proposed Plan and Alternatives

On-terminal truck exhaust emissions associated with the 2040 Proposed Plan and alternatives were not quantified by the ILUT. Therefore, they were calculated based on estimates of 2040 on-terminal VMT and idling times. The VMT and idling times were calculated in Table E-16 for container terminals and Table E-17 for non-container terminals. For container terminals, the Port estimated the number of truck calls in 2040 using the QuickTrip model (POLB 2019a). For non-container terminals, the number of truck calls in 2040 was scaled from the 2017 EI value (2017 EI, page 33) using a growth factor of 1.27, which was derived from the non-container forecast demand data for the Port and does not depend on the alternative (Fehr and Peers 2019b). Next, on-terminal VMT was determined by multiplying the number of truck calls by the average on-terminal driving distances of 0.74 mile per truck call for container terminals and 0.147 mile per truck call for non-container terminals (Starcrest 2019b). These distances are weighted averages, are consistent with the 2017 EI, and are more precise than the straight averages reported in Tables 6.4 and 6.5 of the 2017 EI. On-terminal idling times were determined by multiplying the number of truck calls by the average on-terminal idling times of 0.68 hour per call for container terminals and 0.08 hour per call for non-container terminals. These per-call idling times were obtained from Tables 6.4 and 6.5 of the 2017 EI and represent the sum of the gate in, unload/load, and gate out durations. The resulting estimates of 2040 VMT and idling times assume that the average on-terminal driving distances and idling times per truck call remain unchanged from 2017 values.

Table E-18 shows the calculation of the 2040 on-terminal truck driving exhaust emissions. The calculation multiplies the on-terminal VMT, described in the preceding paragraph, by truck emission factors for an average speed of 10 mph, which is consistent with the 2017 EI (Starcrest 2019c). Table E-19 shows the calculation of the 2040 on-terminal truck idling emissions. The calculation multiplies the on-terminal idling hours by the truck idling emission factors. The 2040 truck driving and idling emission factors were generated by Starcrest (2019a) using the EMFAC2017 emission factor model (CARB 2018a). The emission factors are presented in Table E-32. They reflect the 2040-projected HDV fleet mix specific to the San Pedro Bay Ports. Starcrest projected the 2040 fleet mix using CARB truck survival rates and assuming compliance with the CARB Drayage Truck Regulation, the Ports' Clean Trucks Program as described in the 2010 Clean Air Action Plan (CAAP), and the 2017 CAAP measure that will require any new trucks entering port drayage service starting in mid-2018 to meet the state's 2010 emissions standard (Starcrest 2019i). The emission factors also assume that the Port truck fleet will remain 4 percent liquefied natural gas in 2040.

Off-terminal exhaust emissions from trucks traveling within the SCAB were quantified by the ILUT for the 2040 Proposed Plan and alternatives. However, the Port elected to recalculate the emissions manually using updated data from the traffic study. The emission calculations are shown in Table E-28 for truck travel within the SCAB and Table E-29 for truck travel between the SCAB and California border. Truck VMT and average speeds by time of day were provided by

the traffic study (Fehr and Peers 2019a). Emission factors by speed were generated by Starcrest using EMFAC2017, as described in the preceding paragraph.

PM emissions from truck-related tire wear, brake wear, and paved road dust were not quantified by the ILUT. Therefore, they were calculated in Tables E-23 through E-27. On-terminal and off-terminal truck VMT data were determined as described previously for the truck exhaust emissions. Emission factors for tire and brake wear were generated by EMFAC2017 for "T7 POLA" diesel trucks in the SCAB. Emission factors for paved road dust were developed using the methodology in Chapter 7.9 of CARB's Emission Inventory Documentation (CARB 2018b). Tables E-20 through E-22 show the development of the paved road dust emission factors.

Peak day criteria pollutant emissions from truck exhaust, tire wear, brake wear, and paved road dust were estimated by applying a factor of 0.00364 to the annual emissions. This factor was provided by the Port and represents a factor of 1/275 to convert from annual activity to an average weekday of a peak month (POLB 2019a). The peak day conversion factors for trucks in 2017 and 2040 are slightly different because the 2017 EI used annual truck data that was converted from an average weekday of an average month while the 2040 emission calculations used truck data that was converted from an average weekday of a peak month (POLB 2019b). Use of this factor results in peak day emissions that are 33 percent higher than average emissions. Peak day emissions associated with the Proposed Plan, Alternative 1, Alternative 2, and Alternative 3 are shown in Tables E-6, E-9, E-12, and E-15, respectively.

E.3 AUTOMOBILES

Automobile trips to and from the Port are made by Port employees, delivery vehicles, and visitors. For the emission calculations, automobiles are broadly defined as non-trucks. In EMFAC2017, non-trucks include vehicles such as passenger cars, light-duty trucks with a gross vehicle weight rating less than 6,000 pounds, medium-duty trucks with a gross vehicle weight rating between 6,000 and 8,500 pounds, motorcycles, buses, and motor homes (CARB 2017). Most automobiles are gasoline- and diesel-fueled.

Automobile emissions include criteria pollutants, DPM, and GHGs from engine exhaust. They also include PM from tire wear, brake wear, and the re-entrainment of paved road dust. All Port-related automobile emissions were assumed to occur within the SCAB.

Emissions from Port-related automobile trips were not quantified by the ILUT. Therefore, they were calculated in Table E-30 for exhaust and Table E-31 for tire wear, brake wear, and road dust. VMT and average speeds by time of day were provided by the traffic study (Fehr and Peers 2019a). Emission factors for running exhaust, tire wear, and brake wear were generated using EMFAC2017 for non-trucks within the SCAB. The exhaust emission factors are presented in Table E-33 for 2017 and Table E-34 for 2040. Emission factors for paved road dust were developed using the methodology in Chapter 7.9 of CARB's Emission Inventory Documentation (CARB 2018b). Tables E-20 through E-22 show the development of the paved road dust emission factors.

Peak day criteria pollutant emissions from automobile exhaust, tire wear, brake wear, and paved road dust were estimated by applying a factor of 0.00364 to the annual emissions. This factor was provided by the Port and represents a factor of 1/275 to convert from annual activity to an average weekday of a peak month (POLB 2019a). Use of this factor results in peak day emissions that are 33 percent higher than average emissions. Peak day emissions associated with the 2017 Baseline, Proposed Plan, Alternative 1, Alternative 2, and Alternative 3 are shown in Tables E-3, E-6, E-9, E-12, and E-15, respectively.

E.4 LOCOMOTIVES

Railroad locomotives are used to move trains transporting intermodal (containerized) freight and lesser amounts of dry bulk, liquid bulk, and car-load (box car freight) to, from, and within the Port. Railroad locomotive activities at the Port consist of two different types of operations: the initiation or termination of long-distance cargo movements, known as line haul, and the short-distance movement of railcars, such as the assembling and disassembling of trains in and around the Port, known as switching. Rail operators Burlington Northern Santa Fe (BNSF) and Union Pacific (UP) provide line haul service to and from the Port and operate switching services at their off-Port locations. Pacific Harbor Line performs most of the switching operations within the Port (POLB 2018a). Line haul and switcher locomotives serving the Port are diesel-fueled.

This PEIR quantified line haul locomotive emissions associated with both on-dock and off-dock trains. On-dock trains originate and terminate at the various on-dock railyards at the Port. Off-dock trains originate and terminate at BNSF and UP railyards outside the Port, such as the nearby Intermodal Container Transfer Facility (ICTF) (sometimes referred to as a near-dock railyard) and several other intermodal yards in central Los Angeles and beyond. Because off-dock trains carry more than only POLB-related containers, off-dock trains were evaluated in this PEIR as the equivalent number of unit trains needed to carry only POLB-related containers.

Emissions associated with on-dock and off-dock trains were calculated for train travel between the aforementioned railyards and the emissions domain boundary. The emissions domain for criteria pollutants and DPM is the SCAB. The emissions domain for GHGs is the California border. Emissions were also quantified for line haul locomotives and switchers operating on-Port. Locomotive emissions include criteria pollutants, DPM, and GHGs from engine exhaust.

E.4.1 Baseline

On-Port line haul locomotive emissions associated with the 2017 Baseline were obtained from Table 5.1 of the 2017 EI. However, the 2017 EI also includes emissions from line haul locomotives operating at the ICTF as part of the on-Port emissions. In this PEIR, emissions from line haul locomotives operating at the ICTF are not treated as on-Port emissions. Therefore, the 2017 EI emissions were scaled by a factor of 0.877 to determine the on-Port emissions as defined in this PEIR. This scaling factor is proportional to the 2017 number of railyard lifts: 994,535 on-dock lifts (Starcrest 2018) and 139,204 Port-related ICTF lifts (POLB 2019c).

Off-Port line haul locomotive emissions from on-dock and ICTF (near-dock) trains traveling within the SCAB were obtained from Table 5.1 of the 2017 EI. To present emissions by train origin (on-dock, near-dock, and off-dock) in Tables E-1 through E-3, the emissions from the on-dock and ICTF trains were separated by applying scaling factors of 0.877 for on-dock trains and 0.123 for ICTF trains. The scaling factors are proportional to the number of railyard lifts, as described in the preceding paragraph. In this PEIR, ICTF trains are grouped into the off-dock train category. GHG emissions from on-dock and ICTF trains traveling between the SCAB and California border were calculated by applying a scaling factor of 2.0 to the SCAB emissions. This factor represents 210 miles of travel between the SCAB and California border divided by 105 miles of travel within the SCAB. The distance within the SCAB was provided by Starcrest (2018) and is consistent with the 2017 EI. The distance between the SCAB and California border was determined from train routes by destination provided by Starcrest (2018) and measured using Google Earth.

Line haul locomotive emissions from off-dock trains (excluding ICTF trains, which are addressed in the preceding paragraph) were not included in the 2017 EI. Therefore, they were calculated in Tables E-36 and E-37 using a methodology consistent with the 2017 EI. The off-dock locomotive

usage data were developed in Table E-35. First, usage is expressed in terms of annual gross ton-miles (GTM) based on the number of container lifts in 2017 at the various off-dock yards (POLB 2019c) and assumptions for physical train characteristics consistent with the 2017 EI, which is consistent with Table 5.9 of the 2013 EI (POLB 2014). The average transit distance for off-dock trains in 2017 was 83 miles within the SCAB and 239 miles between the SCAB and California border. Distances were determined from train routes by origin provided by the POLB (2019c) and train routes by destination provided by Starcrest (2018), and measured using Google Earth. The locomotive usage data were then converted to annual horsepower-hours (hp-hr) by applying a fuel consumption factor of 0.99 gallon per thousand GTM (POLB 2018) and a fuel consumption conversion factor of 20.8 hp-hr per gallon (USEPA 2009). Finally, locomotive emissions were calculated using emission factors from the 2017 EI, which were developed from CARB Memorandum of Understanding compliance information submitted annually by BNSF and UP, and from USEPA national fleet average emission factors (USEPA 2009). The 2017 fleet consisted of 3 percent Tier 4, 28 percent Tier 3, 34 percent Tier 2, 26 percent Tier 1, and 9 percent Tier 0 locomotives (POLB 2018a). The emission factors are presented in Table E-41.

On-Port switcher locomotive emissions were obtained from Table 5.1 of the 2017 EI. The 2017 switcher locomotive fleet consisted of 2 percent Tier 4 locomotives, 80 percent Tier 3+ locomotives (Tier 3+ locomotives meet Tier 3 standards and are less-polluting than Tier 3 for PM), 14 percent generation set (genset) locomotives (genset locomotives are powered by a set of three relatively small diesel engines rather than one large engine, and are less-polluting than Tier 3 locomotives for all criteria pollutants), and 5 percent Tier 3 locomotives (Starcrest 2019h). Fleet mix percentages are expressed by relative usage.

Peak day criteria pollutant emissions from locomotives were estimated by applying a factor of 0.00304 to the annual emissions. This factor was obtained from Table A1.2-48 of Appendix A of the *Pier B On-Dock Rail Support Facility Project Draft Environmental Impact Report (EIR)* (POLB 2016). It represents the peak day per week factor divided by 52 weeks per year. Use of this factor results in peak day emissions that are 11 percent higher than average emissions. Peak day emissions associated with the 2017 Baseline are shown in Table E-3.

E.4.2 Proposed Plan and Alternatives

Line haul locomotive emissions associated with on-dock trains within the SCAB were quantified by the ILUT (Tables E-64 through E-67) for the 2040 Proposed Plan and alternatives. The 2040 ILUT emission factors were developed by Starcrest using a methodology similar to the methodology used in the 2017 EI. They are based on USEPA national fleet average emission factors (USEPA 2009). By 2040, the line haul locomotive fleet is assumed to consist entirely of Tier 4 locomotives due to normal fleet turnover and compliance with the federal standards for new and rebuilt locomotives. For PEIR reporting purposes, the emissions were separated into on-Port and off-Port emissions by applying scaling factors of 0.31 and 0.69, respectively. The scaling factors were derived from locomotive usage data developed by Starcrest for use in the ILUT (Starcrest 2016). On-Port line haul locomotive emissions assume locomotives operate 1 hour on-Port for train arrivals, and 2.5 hours on-Port for train departures. The USEPA duty cycle for line haul locomotives (28 percent load) is assumed. These assumptions are consistent with the 2017 EI. GHG emissions from on-dock trains traveling between the SCAB and California border were calculated by applying a scaling factor of 2.0 to the SCAB emissions. This factor represents 210 miles of travel between the SCAB and California border divided by 105 miles of travel within the SCAB. The distance within the SCAB was provided by Starcrest (2018) and is consistent with the 2017 EI. The distance between the SCAB and California border was determined from train routes by destination provided by Starcrest (2018) and measured using Google Earth.

Line haul locomotive emissions from off-dock trains (including trains originating/terminating at the ICTF and other intermodal railyards in central Los Angeles) were not quantified by the ILUT. Therefore, they were calculated in Tables E-39 and E-40 using a methodology consistent with the 2017 EI. The off-dock locomotive usage data were developed in Table E-38. First, usage is expressed in terms of annual GTM based on the Port's projected number of container lifts in 2040 at the various off-dock yards (Cambridge Systematics 2019) and assumptions for physical train characteristics consistent with the 2017 EI, which is consistent with Table 5.9 of the 2013 EI (POLB 2014). The average transit distance for off-dock trains in 2040 is 92 miles within the SCAB and 209 miles between the SCAB and California border. Distances were determined from train routes by origin provided by POLB (Cambridge Systematics 2019) and train routes by destination provided by Starcrest (2018), and measured using Google Earth. The locomotive usage data were then converted to annual hp-hr by applying a fuel consumption factor of 0.99 gallon per thousand GTM (POLB 2018a) and a fuel consumption conversion factor of 20.8 hp-hr per gallon (USEPA 2009). Finally, locomotive emissions were calculated using emission factors from the ILUT, which are described in the preceding paragraph. The emission factors are presented in Table E-41.

On-Port switcher locomotive emissions were quantified by the ILUT (Tables E-64 through E-67). Consistent with the 2017 EI, the 2040 switcher emission factors used in the ILUT were derived from Tier 3+ locomotive emission factors published in the 2013 EI and from Tier 4 locomotive emission factors published by USEPA (2009). The emission factors assume a 2040 Pacific Harbor Line locomotive fleet mix of 96 percent Tier 4 locomotives and 4 percent Tier 3+ locomotives, which is the same used in the *Pier B On-Dock Rail Support Facility Project Draft EIR* (POLB 2016).

Peak day criteria pollutant emissions from locomotives were estimated by applying a factor of 0.00304 to the annual emissions. This factor was obtained from Table A1.2-48 of Appendix A of the *Pier B On-Dock Rail Support Facility Project Draft EIR* (POLB 2016). It represents the peak day per week factor divided by 52 weeks per year. Use of this factor results in peak day emissions that are 11 percent higher than average emissions. Peak day emissions associated with the Proposed Plan, Alternative 1, Alternative 2, and Alternative 3 are shown in Tables E-6, E-9, E-12, and E-15, respectively.

E.5 CARGO HANDLING EQUIPMENT

Cargo handling equipment (CHE) operates at Port terminals to move cargo such as containers, general cargo, and bulk cargo to and from marine vessels, railcars, and on-road trucks. The majority of CHE is composed of off-road equipment not designed to operate on public roadways. CHE is powered by engines fueled by diesel, gasoline, propane, or electricity. This section addresses diesel, gasoline, and propane engine exhaust emissions, which include criteria pollutants, DPM, and GHGs. The section on Electricity Consumption addresses emissions associated with electric CHE.

CHE emissions associated with the 2017 Baseline were obtained from Table 4.1 of the 2017 EI. CHE emissions associated with the 2040 Proposed Plan and alternatives were quantified by the ILUT (Tables E-64 through E-67) for the main equipment types (rubber tired gantry cranes, top picks, side picks, and yard tractors). The 2040 ILUT emission factors were developed by Starcrest using a methodology similar to the methodology used in the 2017 EI. The emission factors incorporate fleet turnover projections based on CARB information on CHE useful life and survival rates, and assume compliance with the CARB Regulation for Mobile Cargo Handling Equipment at Ports and Intermodal Rail Yards (Starcrest 2019i).

Emissions from all other types of CHE associated with the 2040 Proposed Plan and alternatives and not evaluated by the ILUT were calculated manually in Tables E-42 through E-45. The 2040 equipment usages were determined by scaling up 2017 usages in proportion to the increase in twenty-foot equivalent units (TEUs). The emission calculations used 2040 ILUT emission factors, as shown in Table E-67.

Peak day criteria pollutant emissions from CHE were estimated by applying a factor of 0.00386 to the annual emissions. Because on-terminal CHE activity is tied to the loading and unloading of trucks, trains, and ocean-going vessels (OGVs), this factor is the average of the peak day factors for trucks, trains, and OGVs at berth, weighted by the number of 2017 TEUs handled by each type. Use of this factor results in peak day emissions that are 41 percent higher than average emissions. Peak day emissions associated with the 2017 Baseline, Proposed Plan, Alternative 1, Alternative 2, and Alternative 3 are shown in Tables E-3, E-6, E-9, E-12, and E-15, respectively.

E.6 OCEAN-GOING VESSELS

OGVs calling at the Port can be broadly divided into two groups: containerships, the predominant ship category for the Port, and non-containerships. Containerships are primarily used by shipping lines to transport retail goods and other containerized cargo in twenty- and forty-plus foot containers. The TEU is a standard unit of measure for describing a containership's cargo-carrying capacity and is based on the size of a twenty-foot shipping container. Non-containerships include auto carriers, general cargo vessels, ocean-going tugboats, bulk carriers, cruise vessels, refrigerated container (reefer) vessels, roll-on/roll-off vessels, petroleum tankers, and other miscellaneous vessels. During transit and maneuvering, OGVs typically use main engines (propulsion), auxiliary engines, and auxiliary boilers. When at berth or at anchorage, vessels typically turn off their main engines and only use auxiliary engines and boilers. When connected to shore power, at-berth vessels typically use only their boilers (POLB 2014). The marine fuel used in OGVs is a type of diesel fuel.

Emissions associated with OGVs were calculated for vessels at berth and at anchorage within the Port breakwater, and vessels transiting and maneuvering between the Port and the emissions domain boundary. The emissions domain for criteria pollutants and DPM is the SCAB over-water boundary, which is roughly 40 nautical miles (nm) from the Port. The emissions domain for GHGs is the California over-water boundary, which delineates the Regulated California Waters as defined by CARB (2008). In general, the boundary is 24 nm from any part of the coastline including Catalina and the Channel Islands.

This section addresses diesel exhaust emissions from OGVs, which include criteria pollutants, DPM, and GHGs. The section on Electricity Consumption addresses emissions associated with at-berth shore power.

E.6.1 Baseline

Emissions from OGVs transiting, maneuvering, at berth, and at anchorage within the SCAB in 2017 were obtained from Table 2.7 of the 2017 EI. The transit emissions reflect a Vessel Speed Reduction (VSR) (maximum 12 knots) compliance rate of 97 percent inside of 20 nm from Point Fermin and 91 percent between 20 and 40 nm of Point Fermin. The at-berth emissions reflect 39 percent of all calls using shore power (72 percent of container vessels, 95 percent of cruise vessels, 4 percent of tankers, 100 percent of roll on/roll off vessels, and 0 percent of all other vessels) and 1 percent of all calls using an Advanced Maritime Emission Control System.

GHG emissions from OGV transit between the SCAB and California over-water boundaries were not included in the 2017 EI. Therefore, they were calculated in Table E-53. The annual number

of one-way transits per vessel type was obtained from Table 2.8 of the 2017 EI. Emission factors associated with vessel transits at cruise speed (VSR is not observed beyond the SCAB over-water boundary) were provided by Starcrest (2019d). The emission factors were developed using a methodology similar to that used in the 2017 EI. The emission calculations assume an average one-way transit distance of 51.5 nm between the SCAB and California over-water boundaries. Table E-54 shows the derivation of the average transit distance.

Peak day criteria pollutant emissions from OGVs at berth were estimated by applying a factor of 0.00399 to the annual emissions. This factor was developed from actual 2017 vessel data collected for the 2017 EI (Starcrest 2019d). The data showed 32 vessels at berth on a peak day and 22 vessels at berth on an average day. Therefore, the peak day factor equals 32/(22 x 365). Use of this factor results in peak day emissions that are 46 percent higher than average emissions.

Peak day criteria pollutant emissions from OGVs at anchorage, maneuvering, and in transit were estimated by applying a factor of 0.0045 to the annual emissions. This factor was developed from actual 2017 vessel data collected for the 2017 EI (Starcrest 2019d). The data showed 23 vessels in transit on a peak day and 14 vessels in transit on an average day. Therefore, the peak day factor equals 23/(14 x 365). Use of this factor results in peak day emissions that are 64 percent higher than average emissions. Peak day emissions associated with the 2017 Baseline are shown in Table E-3.

E.6.2 Proposed Plan and Alternatives

Emissions from OGVs transiting, maneuvering, at berth, and at anchorage within the SCAB were quantified by the ILUT (Tables E-64 through E-67) for the 2040 Proposed Plan and alternatives for all vessels except cruise and reefer vessels. The transit emissions assume 95 percent of all inbound vessels will use VSR inside of 40 nm from Point Fermin, 95 percent of all outbound vessels will use VSR inside of 20 nm of Point Fermin, and 90 percent of all outbound vessels will use VSR between 20 and 40 nm of Point Fermin (Starcrest 2019e). The at-berth emissions assume 80 percent of container, cruise, and reefer vessels would use shore power in accordance with the California Port Regulations for At-Berth Ocean-Going Vessels. All other vessels were conservatively assumed not to use shore power in 2040. The 2040 ILUT emission factors were developed by Starcrest using a methodology similar to the methodology used in the 2017 EI. The 2040 OGV engine tier distribution was based on the 2017 CAAP document, *Bay Wide Ocean-Going Vessel International Maritime Organization Tier Forecast 2015–2050* (San Pedro Bay Ports 2017).

Emissions from cruise and reefer vessels operating within the SCAB were calculated in Table E-49 for vessels transiting, maneuvering, and at anchorage, and Table E-50 for vessels at berth. The number of vessel calls and at-berth hours in 2040 were obtained from Table 2.8 of the 2017 EI, with the assumption that the 2017 usage data would be representative of 2040 conditions. The Port expects little to no growth in activity for cruise and reefer vessels between 2017 and 2040. The 2040 emission factors were obtained from the ILUT and are presented in Table E-67.

GHG emissions from OGV transit between the SCAB and California over-water boundaries were not quantified by the ILUT. Therefore, they were calculated in Table E-53. The annual number of one-way transits per vessel type were obtained from the ILUT except for cruise and reefer vessels, which were obtained from Table 2.8 of the 2017 EI. Emission factors associated with vessel transits at cruise speed (generally greater than 12 knots, as VSR is not observed beyond the SCAB over-water boundary) were provided by Starcrest (2019d). The emission factors were developed using a methodology similar to that used in the 2017 EI. The emission calculations

assume an average one-way transit distance of 51.5 nm between the SCAB and California over-water boundaries. Table E-54 shows the derivation of the average transit distance.

Peak day criteria pollutant emissions from OGVs at berth were estimated by applying a factor of 0.00399 to the annual emissions. This factor was developed from actual 2017 vessel data collected for the 2017 EI (Starcrest 2019d). The data showed 32 vessels at berth on a peak day and 22 vessels at berth on an average day. Therefore, the peak day factor equals 32/(22 x 365). This factor is assumed to be representative of 2040 conditions. Use of this factor results in peak day emissions that are 46 percent higher than average emissions.

Peak day criteria pollutant emissions from OGVs at anchorage, maneuvering, and in transit were estimated by applying a factor of 0.0045 to the annual emissions. This factor was developed from actual 2017 vessel data collected for the 2017 EI (Starcrest 2019d). The data showed 23 vessels in transit on a peak day and 14 vessels in transit on an average day. Therefore, the peak day factor equals 23/(14 x 365). This factor is assumed to be representative of 2040 conditions. Use of this factor results in peak day emissions that are 64 percent higher than average emissions. Peak day emissions associated with the Proposed Plan, Alternative 1, Alternative 2, and Alternative 3 are shown in Tables E-6, E-9, E-12, and E-15, respectively.

E.7 HARBOR CRAFT

Harbor craft consist of a variety of marine vessels such as tugboats; crew, supply, and work boats; ferry vessels; excursion vessels; and government vessels. This PEIR only quantifies emissions from assist tugboats, which escort and guide OGVs between the breakwater and berth upon arrival and departure. Other harbor craft activity is not directly tied to cargo throughput and, therefore, is not expected to increase substantially from 2017 to 2040. Assist tugboats typically have diesel-fueled main and auxiliary engines. Virtually all emissions from assist tugboats occur within the SCAB. Emissions include criteria pollutants, DPM, and GHGs.

Assist tugboat emissions associated with the 2017 Baseline were obtained from Table 3.1 of the 2017 EI. Assist tugboat emissions associated with the 2040 Proposed Plan and alternatives were quantified by the ILUT (Tables E-64 through E-67). The 2040 ILUT emission factors were developed by Starcrest using a methodology similar to the methodology used in the 2017 EI. The 2040 emission factors incorporate fleet turnover projections based on CARB information on useful life of vessels and survival rates, and assume compliance with the CARB Regulation to Reduce Emissions from Diesel Engines on Commercial Harbor Craft (Starcrest 2019i).

Peak day criteria pollutant emissions from assist tugboats were estimated by applying a factor of 0.0045 to the annual emissions. This is the same factor used for OGVs in transit, maneuvering, and at anchorage. Use of this factor results in peak day emissions that are 64 percent higher than average emissions. Peak day emissions associated with the 2017 Baseline, Proposed Plan, Alternative 1, Alternative 2, and Alternative 3 are shown in Tables E-3, E-6, E-9, E-12, and E-15, respectively.

E.8 REFRIGERATED CONTAINERS

Reefers are used to transport products that require temperature and/or humidity control. When on containerships, reefers are plugged into ship auxiliary power. When stored at the Port, reefers are plugged into grid power at designated locations. When placed on drayage trucks and railcars, reefers are typically equipped with transport refrigeration unit (TRU) generation sets (gensets) that provide electric power to the reefers during ground transport. TRU gensets are normally diesel-fueled.

Emissions associated with reefers were quantified in this PEIR for the time they spend on-Port. The emissions include criteria pollutants, DPM, and GHGs from TRU genset exhaust while the containers are mounted on drayage trucks and railcars. The emissions also include GHGs from normal reefer refrigerant leakage. The section on Electricity Consumption addresses emissions associated with reefers connected to grid power while being stored at the Port.

TRU genset emissions were not quantified by either the 2017 EI or the ILUT. Therefore, emissions were calculated in Table E-57. The genset runtimes used in the emission calculations were based on assumptions for the average dwell times of reefers while mounted on trucks and railcars at the Port. The average reefer dwell time of 0.65 hour on a truck is based on data from Table 6.4 of the 2017 EI (one-half the roundtrip drive time + unload/load time + gate out time). The average reefer dwell time of 8.9 hours on a train is based on data from Table A1.2-30 of Appendix A1 of the *Pier B On-Dock Rail Support Facility EIR* (POLB 2016). The percent of reefers using a genset was determined from 2017 POLB reefer counts (POLB 2018b). Table E-55 shows that approximately 3.0 percent of total TEUs at the Port are reefers. Because imported reefers returning empty to the Port for export are uncooled and do not use gensets (POLB 2019d), Table E-56 shows that approximately 2.6 percent of total TEUs at the Port are cooled reefers requiring a genset. TRU genset emission factors for criteria pollutants and carbon dioxide are presented in Table E-61. They were obtained from CARB's OFFROAD2017 program for in-state and out-of-state genset TRUs in the SCAB (CARB 2019). Emission factors for nitrous oxide and methane are presented in Table E-62. They were obtained from Table 13.7 of *The Climate Registry 2018 Default Emission Factors* (TCR 2018). The emission factors were converted from units of grams per gallon to pounds per hour using horsepower and load factor data from CARB's TRU Regulation (CARB 2012).

Peak day criteria pollutant emissions from TRU gensets were estimated by applying a factor of 0.00386 to the annual emissions. This is the same factor used for CHE. Use of this factor results in peak day emissions that are 41 percent higher than average emissions. Peak day emissions associated with the 2017 Baseline, Proposed Plan, Alternative 1, Alternative 2, and Alternative 3 are shown in Tables E-3, E-6, E-9, E-12, and E-15, respectively.

GHG emissions from reefer refrigerant loss were not quantified by either the 2017 EI or the ILUT. Therefore, emissions were calculated in Table E-59. As estimated in Table E-55, the volume of reefers at the Port was assumed to be 3.0 percent of total TEUs. The Port estimates that the average on-Port dwell time is 2-3 days for import reefers and 2 days for export reefers (POLB 2019e). Therefore, the emission calculations assumed an average dwell time of 2.5 days per reefer. The Port also estimates that, on average, reefer refrigerant is composed of 80 percent Refrigerant-404a and 20 percent Hydrofluorocarbon-134a (POLB 2019d). Table E-58 shows the derivation of the composite GWP for this refrigerant blend. The emission calculations assumed an annual refrigerant loss rate of 50 percent (TCR 2018). The Los Angeles Harbor Department reported that the average reefer refrigerant capacity is 6.35 kilograms (LAHD 2007).

E.9 ELECTRICITY CONSUMPTION

On-Port electrical consumption results in GHG emissions from regional power plants producing the electricity. The major sources of electrical consumption at the Port include OGV shore power, electric CHE (such as the shoreside gantry cranes, automated guided vehicles [AGVs], and automatic stacking cranes [ASCs]), Port lighting, and refrigerated containers (reefers) while plugged into grid power. All emissions associated with on-Port electrical consumption are conservatively assumed to occur within California.

GHG emissions associated with on-Port electrical consumption were not quantified by either the 2017 EI or the ILUT. Therefore, they were calculated manually using the methodologies described

below for each source category. Table E-48 presents the GHG emission factors that were used for all source categories. The emission factors correspond to electricity supplied by Southern California Edison. The 2017 emission factors account for 46 percent carbon-free delivered electricity, as reported by Edison International (2018). The 2040 emission factors assume 50 percent carbon-free delivered electricity. California statutes mandate that retail sellers of electricity in California, including investor-owned utilities, electricity service providers, community choice aggregators, and publicly owned utilities must serve at least 33 percent of their load with eligible renewables by 2020 and at least 50 percent by 2030.

E.9.1 OGV Shore Power

Table E-51 presents the GHG emissions associated with the use of OGV at-berth shore power for the 2017 Baseline. The electricity consumption is assumed to be equal to the equivalent diesel auxiliary engine power that the shore power replaces. The equivalent diesel auxiliary engine power was determined using data for ship calls, at-berth durations, and average auxiliary engine loads from Tables 2.8, 2.9, and 2.1 of the 2017 EI, respectively. Additional information from the 2017 EI that was needed for cruise vessels was provided by Starcrest (2019f); specifically, 257 calls were made by vessels with a passenger range of 2,500 to 2,999 and 4 calls were made by vessels with a passenger range of 3,000 to 3,499. Starcrest (2019g) also provided the actual percentages of vessels using shore power in 2017 by vessel type.

Table E-52 presents the GHG emissions associated with the use of OGV at-berth shore power for the 2040 Proposed Plan and alternatives. The electricity consumption is assumed to be equal to the equivalent diesel auxiliary engine power that the shore power would replace. The at-berth durations for containerships were estimated by the ILUT. The at-berth durations for cruise and reefer vessels were assumed to be unchanged from the 2017 Baseline. The shore power usage rates in 2040 were assumed to be 80 percent for container, cruise, and reefer vessels in accordance with the California Port Regulations for At-Berth Ocean-Going Vessels. All other vessels were assumed not to use shore power in 2040. Average auxiliary engine loads by vessel size category were obtained from Table 2.1 of the 2017 EI. The average auxiliary engine load for cruise vessels was provided separately by Starcrest (2019f).

E.9.2 Electric CHE

Table E-46 presents the GHG emissions associated with the use of electric CHE for the 2017 Baseline. The equipment counts were obtained from Table 4.3 of the 2017 EI. The methodology for estimating electricity use varied by equipment type. For ship-to-shore cranes, which accounted for 91 percent of the total CHE electricity consumption, usage was assumed to be 6 kilowatt hours (kWh) per lift, as reported by Van Duin and Geerlings (2011). For AGVs, which accounted for 5 percent of the total CHE electricity consumption, usage was based on an in-use battery output of 15 kWh per hour and a battery system efficiency of 75 percent, as reported by Terex Port Solutions (2013). For ASCs, which accounted for 2 percent of the total CHE electricity consumption, usage was assumed to be 5 kWh per lift, as reported by Van Duin and Geerlings (2011), and the ASCs performed 117,685 lifts in 2017 (POLB 2019f). For all other equipment, which together accounted for only 2 percent of the total CHE electricity consumption, electricity usage was estimated by determining the power that equivalent diesel equipment would need to produce to perform the same amount of work, adjusted upward to account for an assumed battery system efficiency of 75 percent (similar to the AGV). These estimates were made using CHE data from Table 4.3 and Appendix B of the 2017 EI, and load factors consistent with the 2017 EI and presented in Table 4.11 of the 2013 EI.

Table E-47 presents the GHG emissions associated with use of electric CHE for the 2040 Proposed Plan and alternatives. To estimate 2040 electricity use, the 2017 usages were scaled up in proportion to annual TEU throughput.

E.9.3 Port Lighting

Table E-63 presents the GHG emissions associated with Port lighting. The lighted land areas for the 2017 Baseline and each Proposed Plan alternative were estimated using Google Earth. A rough estimate of electricity consumption was made using data from Table A1.2-45 of Appendix A1 of the *Pier B On-Dock Rail Support Facility Draft EIR* (POLB 2016). The calculation assumes 32 10-kilowatt (kW) towers and 122 0.4-kW poles per 99 acres.

E.9.4 Refrigerated Containers on Grid Power

Table E-60 presents the GHG emissions associated with reefers while connected to grid power at the Port. The percent of reefers requiring grid power was determined from 2017 POLB reefer counts (POLB 2018b). Table E-55 shows that approximately 3.0 percent of total TEUs at the Port are reefers. Because imported reefers returning empty to the Port for export are uncooled (POLB 2019d), Table E-56 shows that approximately 2.6 percent of total TEUs at the Port are cooled reefers requiring grid power. The Port estimates that the average on-Port dwell time is 2 to 3 days for import reefers and 2 days for export reefers (POLB 2019e). Therefore, the emission calculations assumed that, on average, each reefer is connected to grid power for 2.5 days while at the Port. The calculations also used an average reefer electricity consumption rate of 7.8 kW. This estimate assumes that reefer electricity use would be equivalent to the average diesel TRU genset output. The genset output was calculated assuming 31.5 rated horsepower and a load factor of 0.33 (CARB 2012), and a unit-of-measure conversion factor of 0.746 kW per hp.

E.10 REFERENCES

Cambridge Systematics. 2019. Personal communication from Ramesh Thammiraju to Shashank Patil/POLB and Jonathan Raspa/POLB. March 25.

CARB. 2019. OFFROAD2017 - ORION (v1.0.1). California Air Resources Board. Accessed February 13, 2019. https://www.arb.ca.gov/orion/.

—. 2018a. EMFAC2017. https://www.arb.ca.gov/emfac/. California Air Resources Board. March 1.

—. 2018b. Emission Inventory Documentation. *Chapter 7.9: Miscellaneous Process Methodology. Entrained Road Travel, Paved Road Dust.* California Air Resources Board. https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2016.pdf. March.

—. 2017. *EMFAC2017 User's Guide, v1.0.1.* Appendix 4. California Air Resources Board. December 22.

—. 2012. Mobile Source Emission Inventory, 2011 Transport Refrigeration Unit (TRU) Regulation - Background Materials on Air Emissions, 2011 Emissions Inventory (zip file). California Air Resources Board. March 27.

—. 2008. *Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels within California Waters and 24 Nautical Miles of the California Baseline.* 13 California Code of Regulations, Section 2299.2. California Air Resources Board. July 24.

Edison International. 2018. *2017 Sustainability Report*. June.

Fehr and Peers. 2019a. Personal communication with Netai Basu. May 10.

—. 2019b. Personal communication with Netai Basu. March 29.

IPCC. 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Avery, M. Tignor, and H.L. Miller (eds.)]. Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press. 996 pp. Table 2.14.

LAHD. 2007. *Berths 136–147 (TraPac) Container Terminal Project, Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR).* Los Angeles Harbor Department. June 29.

POLB. 2019a. Personal communication with Shashank Patil. Port of Long Beach. March 29.

—. 2019b. Personal communication with Shashank Patil. Port of Long Beach. April 24.

—. 2019c. Personal communication with Shashank Patil. Port of Long Beach. January 17.

—. 2019d. Personal communication with Tom Becker. Port of Long Beach. April 22.

—. 2019e. Personal communication with Janna Morimoto. Port of Long Beach. February 1.

—. 2019f. Personal communication with Janna Morimoto. Port of Long Beach. February 5.

—. 2018a. *Port of Long Beach 2017 Air Emissions Inventory*. Port of Long Beach. July.

—. 2018b. Personal communication from Russell Mahakian to Janna Morimoto. Port of Long Beach. September 14.

—. 2016. *Pier B On-Dock Rail Support Facility Project Draft EIR*. Port of Long Beach. December.

—. 2014. *Port of Long Beach 2013 Air Emissions Inventory*. Port of Long Beach. July.

San Pedro Bay Ports. 2017. *Bay Wide Ocean-Going Vessel International Maritime Organization Tier Forecast 2015–2050*. Clean Air Action Plan 2017. https://www.portoflosangeles.org/pola/pdf/caap_vessel_tier_forecasts_2015-2050-final.pdf. July.

Starcrest. 2019a. Personal communication from Joe Ray to Janna Morimoto/Port of Long Beach. April 10.

—. 2019b. Personal communication with Joe Ray. April 11.

—. 2019c. Personal communication with Archana Agrawal. March 11.

—. 2019d. Personal communication with Archana Agrawal. January 18.

—. 2019e. Personal communication with Archana Agrawal. April 18.

—. 2019f. Personal communication with Archana Agrawal. February 13.

—. 2019g. Personal communication with Archana Agrawal. February 11.

—. 2019h. Personal communication with Joe Ray. March 4.

—. 2019i. Draft Summary of Data and Assumptions for 2040 ILUT EFs. July 17.

—. 2018. Personal communication from Archana Agrawal. August 23.

—. 2016. Locomotive Emissions Estimates – Model Train Characteristics. Port of Long Beach Land Use Study. Draft. July 25.

TCR. 2018. The Climate Registry 2018 Default Emission Factors. https://www.theclimateregistry.org/wp-content/uploads/2018/06/The-Climate-Registry-2018-Default-Emission-Factor-Document.pdf. May 1.

Terex Port Solutions. 2013. “Battery-Electric AGVs.” Presentation for “Clean Air in Ports” Conference, Antwerp. October 8.

USEPA. 2019. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2017*. EPA 430-R-19-001. U.S. Environmental Protection Agency. April 11.

—. 2009. *Technical Highlights: Emission Factors for Locomotives*. EPA-420-F-09-025. U.S. Environmental Protection Agency. April.

Van Duin, J.H.R. and H. Geerlings, 2011. “Estimating CO_2 Footprints of Container Terminal Port-Operations.” *International Journal of Sustainable Development and Planning* 6 (4): 459–473.

E.11 EMISSIONS TABLES

The operational emissions tables (Tables E-1 through E-67) and the construction emissions tables (Tables E-68 through E-81) begin on the next page.

List of Tables - Operational Emissions

Table E-1 Summary of Annual Operational Emissions within the SCAB; CEQA Baseline, 2017
Table E-2 Summary of Annual Operational GHG Emissions between the SCAB and CA Border; CEQA Baseline, 2017
Table E-3 Peak Day Operational Emissions within the SCAB; CEQA Baseline, 2017
Table E-4 Summary of Annual Operational Emissions within the SCAB; Unmitigated Proposed Plan 2040
Table E-5 Summary of Annual Operational GHG Emissions between the SCAB and CA Border; Unmitigated Proposed Plan 2040
Table E-6 Peak Day Operational Emissions within the SCAB; Unmitigated Proposed Plan 2040
Table E-7 Summary of Annual Operational Emissions within the SCAB; Unmitigated Alternative 1, 2040
Table E-8 Summary of Annual Operational GHG Emissions between the SCAB and CA Border; Unmitigated Alternative 1, 2040
Table E-9 Peak Day Operational Emissions within the SCAB; Unmitigated Alternative 1, 2040
Table E-10 Summary of Annual Operational Emissions within the SCAB; Unmitigated Alternative 2, 2040
Table E-11 Summary of Annual Operational GHG Emissions between the SCAB and CA Border; Unmitigated Alternative 2, 2040
Table E-12 Peak Day Operational Emissions within the SCAB; Unmitigated Alternative 2, 2040
Table E-13 Summary of Annual Operational Emissions within the SCAB; Unmitigated Alternative 3, 2040
Table E-14 Summary of Annual Operational GHG Emissions between the SCAB and CA Border; Unmitigated Alternative 3, 2040
Table E-15 Peak Day Operational Emissions within the SCAB; Unmitigated Alternative 3, 2040
Table E-16 On-Terminal Truck VMT and Idling Time at Container Terminals, 2040
Table E-17 On-Terminal Truck VMT and Idling Time at Non-Container Terminals, 2040
Table E-18 Annual On-Terminal Truck Driving Exhaust Emissions, Unmitigated 2040
Table E-19 Annual On-Terminal Truck Idling Emissions, Unmitigated 2040
Table E-20 Paved Road Dust Emission Factor Derivation
Table E-21 Summary of Daily VMT by Roadway Type; All Vehicles in the Los Angeles - Long Beach - Anaheim Metro Area
Table E-22 Composite Paved Road Dust Emission Factors for Off-Terminal Vehicle Travel
Table E-23 Annual Truck Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB; CEQA Baseline, 2017
Table E-24 Annual Truck Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB; Unmitigated Proposed Plan, 2040
Table E-25 Annual Truck Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB; Unmitigated Alternative 1, 2040
Table E-26 Annual Truck Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB; Unmitigated Alternative 2, 2040
Table E-27 Annual Truck Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB; Unmitigated Alternative 3, 2040
Table E-28 Annual Truck Off-Terminal Exhaust Emissions within the SCAB, Unmitigated 2040
Table E-29 Annual Truck GHG Emissions Between the SCAB and CA Border
Table E-30 Annual Automobile Exhaust Emissions within the SCAB
Table E-31 Annual Automobile Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB
Table E-32 Heavy Duty Truck Exhaust Emission Factors for 2017 and 2040
Table E-33 Automobile Exhaust Emission Factors for 2017
Table E-34 Automobile Exhaust Emission Factors for 2040
Table E-35 Off-Dock Train Activity, 2017
Table E-36 Annual Off-Dock Train Emissions within the SCAB; CEQA Baseline, 2017
Table E-37 Annual Off-Dock Train GHG Emissions between the SCAB and CA Border; CEQA Baseline, 2017
Table E-38 Near-Dock and Off-Dock Train Activity, 2040
Table E-39 Annual Near-Dock and Off-Dock Train Emissions within the SCAB, Unmitigated 2040
Table E-40 Annual Near-Dock and Off-Dock Train GHG Emissions between the SCAB and CA Border, Unmitigated 2040
Table E-41 Emission Factors for Line Haul Locomotives
Table E-42 Annual Emissions from Fossil-Fueled CHE Not Included in the ILUT; Unmitigated Proposed Plan, 2040
Table E-43 Annual Emissions from Fossil-Fueled CHE Not Included in the ILUT; Unmitigated Alternative 1, 2040
Table E-44 Annual Emissions from Fossil-Fueled CHE Not Included in the ILUT; Unmitigated Alternative 2, 2040
Table E-45 Annual Emissions from Fossil-Fueled CHE Not Included in the ILUT; Unmitigated Alternative 3, 2040
Table E-46 Annual GHG Emissions from CHE Electricity Consumption, CEQA Baseline, 2017
Table E-47 Annual GHG Emissions from CHE Electricity Consumption, Unmitigated Proposed Plan and Alternatives, 2040
Table E-48 Electricity Consumption GHG Emission Factors for Southern California Edison
Table E-49 Annual Transit, Maneuvering, and Anchorage Emissions from Cruise and Reefer Vessels, All Unmitigated Plan Alternatives, 2040
Table E-50 Annual At-Berth Emissions from Cruise and Reefer Vessels, All Unmitigated Plan Alternatives, 2040
Table E-51 Annual GHG Emissions from OGV At-Berth Shore Power, CEQA Baseline, 2017
Table E-52 Annual GHG Emissions from OGV At-Berth Shore Power, Unmitigated Proposed Plan and Alternatives, 2040
Table E-53 Annual GHG Emissions for OGVs Transiting between the SCAB and CA Over-Water Boundaries
Table E-54 OGV Transit Distance Between the SCAB and CA Over-Water Boundaries
Table E-55 POLB Loaded Volumes of Reefers and Dry Fulls, 2017
Table E-56 Estimated Percent Cooled v. Uncooled Reefers
Table E-57 Annual TRU Genset On-Port Emissions
Table E-58 Reefer Refrigerant Composition
Table E-59 Annual GHG Emissions from On-Port Reefer Refrigerant Loss; CEQA Baseline and Unmitigated Proposed Plan and Alternatives
Table E-60 Annual GHG Emissions from On-Port Reefer Electricity Consumption; CEQA Baseline and Unmitigated Proposed Plan and Alternatives
Table E-61 OFFROAD2017 Emission Factors for Diesel TRU Gensets
Table E-62 N2O and CH4 Emission Factors for Diesel TRU GenSets
Table E-63 Annual GHG Emissions from Yard Lighting Electricity Consumption; CEQA Baseline and Unmitigated Proposed Plan and Alternatives
Table E-64 ILUT Output; Unmitigated Proposed Plan, 2040
Table E-65 ILUT Output; Unmitigated Alternatives 1 and 2, 2040
Table E-66 ILUT Output; Unmitigated Alternative 3, 2040
Table E-67 ILUT 2040 Emission Factors

List of Tables - Construction Emissions

Table E-68. Example Unmitigated Peak Daily Emissions for Construction Activities from the Proposed Plan Alternatives
Table E-69. Example Mitigated Peak Daily Emissions for Construction Activities from the Proposed Plan Alternatives
Table E-70. Example Unmitigated GHGs for Construction Activities from the Proposed Plan Alternatives
Table E-71. Example Mitigated GHGs for Construction Activities from the Proposed Plan Alternatives
Table E-72. Potential Unmitigated GHGs for Construction Activities under the Proposed Plan
Table E-73. Potential Mitigated GHGs for Construction Activities under the Proposed Plan
Table E-74. Potential Unmitigated GHGs for Construction Activities under Alternative 1
Table E-75. Potential Mitigated GHGs for Construction Activities under Alternative 1
Table E-76. Potential Unmitigated GHGs for Construction Activities under Alternative 2
Table E-77. Potential Mitigated GHGs for Construction Activities under Alternative 2
Table E-78. Potential Unmitigated GHGs for Construction Activities under Alternative 3
Table E-79. Potential Mitigated GHGs for Construction Activities under Alternative 3
Table E-80. Prior Projects and Facility Metrics for use in Factoring Construction GHGs
Table E-81. Proposed Plan Project Facility Metrics for use in Factoring Construction GHGs

Table E-1. Summary of Annual Operational Emissions within the SCAB; CEQA Baseline, 2017

Source	Annual Emissions (ton/yr)								Annual Emissions (MT/yr)[l]			
	PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC	CO2	N2O	CH4	CO2e
Heavy Duty Trucks												
Container Trucks On-Terminal Exhaust[a]	0.2	0.2	0.2	114.7	0.2	68.6	7.6	8.0	no calc	no calc	no calc	23,904
Container Trucks On-Terminal Tire and Brake Wear	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	0
Container Trucks On-Terminal Road Dust	9.1	1.4	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	0
Container Trucks On-Road Exhaust[b]	6.6	6.3	6.3	962.3	2.9	65.8	17.6	18.6	no calc	no calc	no calc	259,124
Container Trucks On-Road Tire and Brake Wear	17.1	6.2	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	0
Container Trucks On-Road Road Dust	12.6	1.9	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	0
Non-Container Trucks On-Terminal Exhaust[a]	0.0	0.0	0.0	1.6	0.0	0.9	0.1	0.1	no calc	no calc	no calc	329
Non-Container Trucks On-Terminal Tire and Brake Wear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	0
Non-Container Trucks On-Terminal Road Dust	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	0
Non-Container Trucks On-Road Exhaust[b]	0.3	0.3	0.3	50.4	0.2	3.4	0.9	1.0	no calc	no calc	no calc	13,474
Non-Container Trucks On-Road Tire and Brake Wear	0.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	0
Non-Container Trucks On-Road Road Dust	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	0
Locomotives												
On-Dock Trains: Line Haul Locomotives On-Port (Arrivals/Departures)[c,n]	5.3	4.8	5.3	143.6	0.1	34.0	7.7	8.1	no calc	no calc	no calc	12,037
On-Dock Trains: Line Haul Locomotives Off-Port (Train Transport)[d,n]	13.9	12.5	13.9	375.3	0.3	89.0	20.2	21.2	no calc	no calc	no calc	31,451
Near-Dock (ICTF) Trains: Line Haul Locomotives Off-Site (Train Transport)[d,e,n]	1.9	1.8	1.9	52.5	0.0	12.5	2.8	3.0	no calc	no calc	no calc	4,402
Off-Dock Trains: Line Haul Locomotives Off-Site (Train Transport)[f]	1.6	1.5	1.6	43.8	0.0	10.4	2.4	2.5	3,638	0.1	0.3	3,674
Switching by PHL On-Port[m]	0.2	0.2	0.2	21.2	0.0	8.9	1.1	1.1	no calc	no calc	no calc	3,020
Cargo Handling Equipment[o]	4.2	3.8	3.5	345.2	1.4	539.7	35.0	36.9	no calc	no calc	no calc	115,792
Harbor Craft[g]	6.7	6.2	6.7	188.3	0.2	132.4	19.9	20.9	no calc	no calc	no calc	15,260
Ocean-Going Vessels[p]												
OGVs in Transit[h]	28.0	26.4	27.4	2,161.1	56.7	143.9	65.1	68.6	no calc	no calc	no calc	79,131
OGVs Maneuvering[i]	5.7	5.4	5.5	334.5	10.1	29.1	18.1	19.0	no calc	no calc	no calc	14,038
OGVs at Berth[j]	38.8	36.5	21.2	1,266.5	118.0	123.0	47.4	50.0	no calc	no calc	no calc	165,352
OGVs at Anchorage	13.2	12.4	9.6	490.5	33.0	46.8	17.7	18.6	no calc	no calc	no calc	46,036
Automobiles[k]												
Automobile Exhaust	0.2	0.2	0.0	15.0	0.3	161.8	no calc	4.3	32,093	1.0	0.8	32,413
Automobile Tire and Brake Wear	5.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Automobile Road Dust	7.5	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Refrigerated Containers On-Port												
TRU Gensets	0.2	0.2	0.2	11.7	0.0	12.3	no calc	0.7	249	0.1	0.1	270
Refrigerant Leakage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	9,281
Electricity Consumption On-Port												
OGVs at Berth	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	15,073
Cargo Handling Equipment	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	6,896
Lighting	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	9,845
Refrigerated Containers	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	12,692

Notes:

a. On-terminal truck operations include queuing at entry and exit gates, and travel and idling within the terminals. Exhaust emissions are from Tables 6.2 and 6.3 of the POLB 2017 Air Emissions Inventory.

b. On-road truck operations consist of travel on public roads within the SCAB, including public roads within port boundaries. Emissions reflect travel from the Port to the cargo's first point of rest within the SCAB or up to the basin boundary, whichever comes first. Exhaust emissions are from Tables 6.2 and 6.3 of the POLB 2017 Air Emissions Inventory.

c. On-Port line haul locomotive emissions assume locomotives operate 1 hour on-Port for train arrivals, and 2.5 hours on-Port for train departures. The EPA duty cycle for line haul locomotives (28% load) is assumed.

d. Off-Port line haul locomotive emissions from on-dock and near-dock (ICTF) trains assume an average one-way travel distance of 105 miles within the SCAB.

e. The ICTF is operated by Union Pacific (UP) as a joint powers authority of the Port of Long Beach and the Port of Los Angeles. ICTF train and switcher emissions associated with POLB cargo are included in the POLB 2017 Emission Inventory; however, the ILUT model does not calculate train and switcher emissions from the ICTF because they are considered off-port sources. To make a proper comparison of 2040 to 2017 emissions, ICTF switcher and ICTF on-site line haul locomotive emissions were excluded from the EIR 2017 emissions.

f. Off-dock trains refer to trains that originate and terminate at UP and BNSF intermodal rail yards outside the Port (other than the ICTF), such as the rail yards near downtown Los Angeles. The emissions reflect the equivalent number of trains needed to transport the off-dock Port containers between the intermodal rail yards and the SCAB boundary. The average one-way travel distance is 83 miles within the SCAB.

g. Harbor craft emissions are from Table 3.1 of the POLB 2017 Air Emissions Inventory. Only the emissions from assist tugboats are included to align with the ILUT which also calculates only assist tugboats. Other harbor craft activity is not directly tied to cargo throughput and therefore is not expected to increase substantially over baseline.

h. The emissions from OGVs in transit reflect 97 percent of all calls using VSR (maximum 12 knots) inside of 20 nm from Pt. Fermin, and 91 percent of all calls using VSR between 20 and 40 nm of Pt. Fermin. Source: POLB 2017 Emissions Inventory, Table 8.5. Emissions reflect transit between the breakwater and SCAB overwater boundary. Total transit distance depends on the route, but is roughly 50 nm one-way.

i. Maneuvering is OGV movement inside the breakwater.

j. OGV at-berth emissions reflect that 72% of container vessels, 95% of cruise vessels, 4% of tankers, and 100% of RoRo vessels used shore power; and 1% of all vessels used an Advanced Maritime Emission Control System (AMECS).

k. Automobile emissions are calculated within the SCAB. There are be no appreciable Port-related automobile emissions outside the SCAB.

l. CO2e emissions assume global warming potentials of 1 for CO2, 25 for CH4, and 298 for N2O, in accordance with the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015* (EPA, 2017) and consistent with the *POLB 2017 Air Emissions Inventory* and IPCC Fourth Assessment Report.

m. Switcher locomotive emissions are from Table 5.1 of the POLB 2017 Air Emissions Inventory.

n. Emissions are from Table 5.1 of the POLB 2017 Air Emissions Inventory. The emissions were apportioned 0.877 to on-dock trains and 0.123 to near-dock (ICTF) trains, which the POLB 2017 Air Emissions Inventory combined together in Table 5.1. These scaling factors are proportional to the 2017 number of rail yard lifts: 994,535 on-dock lifts (Starcrest Consulting Group, personal communication from Archana Agrawal, August 23, 2018) and 139,204 ICTF lifts (POLB, personal communication from Shashank Patil, January 17, 2019).

o. CHE emissions are from Table 4.1 of the POLB 2017 Air Emissions Inventory.

p. OGV emissions are from Table 2.7 of the POLB 2017 Air Emissions Inventory.

Table E-2. Summary of Annual Operational GHG Emissions between the SCAB and CA Border; CEQA Baseline, 2017

Source	Annual Emissions (MT/yr) [d]			
	CO2	N2O	CH4	CO2e
Heavy Duty Trucks	31,611.7	5.0	0.0	33,091
Locomotives				
On-Dock Trains [e]	no calc	no calc	no calc	62,883
Near-Dock Trains [a,e]	no calc	no calc	no calc	8,802
Off-Dock Trains [b]	10,422	0.3	0.8	10,525
Ocean-Going Vessels [c]	no calc	no calc	no calc	168,046

Notes:

a. Near-dock trains refer to trains originating and terminating at the ICTF, which is operated by Union Pacific (UP) as a joint powers authority of the Port of Long Beach and the Port of Los Angeles. The emissions reflect the equivalent number of trains needed to transport the POLB containers 210 miles between the ICTF and the CA border.

b. Off-dock trains refer to trains originating and terminating at UP and BNSF intermodal rail yards not operated by the Port, such as those near downtown Los Angeles. The emissions reflect the equivalent number of trains needed to transport POLB containers 239 miles between the intermodal rail yards and the CA border.

c. OGV Emissions assume an avg. one-way transit distance of 51.5 nautical miles (nm) between the SCAB and CA over-water boundaries.

d. CO2e emissions assume global warming potentials of 1 for CO2, 25 for CH4, and 298 for N2O, in accordance with the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015* (EPA, 2017) and consistent with the *POLB 2017 Air Emissions Inventory* and IPCC Fourth Assessment Report.

e. Emissions from on-dock and near-dock trains transiting between the SCAB and CA border equal the emissions within the SCAB times a scaling factor of 2.00, which represents 210 miles between the SCAB and CA border divided by 105 miles within the SCAB.

Table E-3. Peak Day Operational Emissions within the SCAB; CEQA Baseline, 2017

Source	Peak Day/ Annual Factor	Peak Day Emissions (lb/day)							
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC
Heavy Duty Trucks [a,b]									
Container Trucks On-Terminal Exhaust	0.00397	1.5	1.4	1.4	910.3	1.5	544.3	60.6	63.8
Container Trucks On-Terminal Tire and Brake Wear	0.00397	2.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Container Trucks On-Terminal Road Dust	0.00397	72.5	10.9	0.0	0.0	0.0	0.0	0.0	0.0
Container Trucks On-Road Exhaust	0.00397	52.5	50.2	50.4	7,634.7	23.3	522.2	139.9	147.3
Container Trucks On-Road Tire and Brake Wear	0.00397	135.7	49.2	0.0	0.0	0.0	0.0	0.0	0.0
Container Trucks On-Road Road Dust	0.00397	99.7	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Container Trucks On-Terminal Exhaust	0.00397	0.0	0.0	0.0	12.4	0.0	6.9	0.8	0.9
Non-Container Trucks On-Terminal Tire and Brake Wear	0.00397	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Container Trucks On-Terminal Road Dust	0.00397	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Non-Container Trucks On-Road Exhaust	0.00397	2.7	2.6	2.6	400.0	1.2	27.2	7.3	7.7
Non-Container Trucks On-Road Tire and Brake Wear	0.00397	7.1	2.6	0.0	0.0	0.0	0.0	0.0	0.0
Non-Container Trucks On-Road Road Dust	0.00397	5.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Locomotives [c]									
On-Dock Trains: Line Haul Locomotives On-Port (Arrivals/Departures)	0.00304	32.3	29.1	32.3	872.5	0.8	206.8	46.9	49.3
On-Dock Trains: Line Haul Locomotives Off-Port (Train Transport)	0.00304	84.4	76.0	84.4	2,279.7	2.1	540.4	122.4	128.9
Near-Dock (ICTF) Trains: Line Haul Locomotives Off-Site (Train Transport)	0.00304	11.8	10.6	11.8	319.1	0.3	75.6	17.1	18.0
Off-Dock Trains: Line Haul Locomotives Off-Site (Train Transport)	0.00304	9.9	8.9	9.9	266.3	0.2	63.1	14.3	15.1
Switching by PHL On-Port	0.00304	1.2	1.1	1.2	128.7	0.2	53.8	6.6	7.0
Cargo Handling Equipment [d]	0.00386	32.5	29.5	27.1	2,667.8	10.6	4,171.3	270.8	285.1
Harbor Craft [e]	0.00450	60.3	55.7	60.3	1,694.8	1.6	1,192.2	178.8	188.2
Ocean-Going Vessels [f]									
OGVs in Transit	0.00450	252.3	237.5	247.1	19,454.5	510.0	1,295.0	586.0	617.1
OGVs Maneuvering	0.00450	51.5	48.4	49.1	3,010.7	90.7	261.8	162.8	171.4
OGVs at Berth	0.00399	309.0	290.9	169.0	10,094.1	940.5	980.3	378.1	398.1
OGVs at Anchorage [g]	0.00450	118.5	111.5	86.7	4,415.6	297.4	420.9	159.4	167.9
Automobiles [a]									
Automobile Exhaust	0.00364	1.4	1.3	0.2	109.0	2.5	1,176.4	no calc	31.1
Automobile Tire and Brake Wear	0.00364	36.4	14.5	0.0	0.0	0.0	0.0	0.0	0.0
Automobile Road Dust	0.00364	54.6	8.2	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerated Containers On-Port [h]									
TRU Gensets	0.00386	1.7	1.5	1.7	90.5	0.0	95.1	no calc	5.5

Notes:

a. The peak day factor for trucks and autos was provided by POLB (Personal communication with Shashank Patil, March 29, 2019).

b. An additional adjustment of 12/11 was applied to the peak day factor for trucks (in 2017 only) to produce the average weekday during a peak month instead of the average weekday during an average month (POLB, personal communication with Shashank Patil. April 24, 2019).

c. Peak day factors for locomotives were obtained from the *Pier B On-Dock Rail Support Facility Project EIR* (POLB, December 2016), Table A1.2-48 of Appendix A (peak day per week factor divided by 52 weeks/yr).

d. The peak day factor for CHE is the average of the peak day factors for trucks, trains, and OGVs at berth, weighted by the number of TEUs handled by each type.

e. Assume the harbor craft peak day factor is equal to the OGV maneuvering factor.

f. The peak day factors for OGVs were developed from actual 2017 vessel data collected for the *Port of Long Beach 2017 Air Emissions Inventory* . Source: Starcrest, personal communication with A. Agrawal, 1/18/2019. For OGVs in transit: 23 peak day / 14 avg. day / 365. For OGVs at berth: 32 peak day / 22 avg. day / 365.

g. Assume the peak day factor for vessels at anchorage is equal to the factor for vessels in transit.

h. Assume the reefer peak day factor is equal to the CHE factor.

Table E-4. Summary of Annual Operational Emissions within the SCAB; Unmitigated Proposed Plan 2040

Source	Annual Emissions (ton/yr)								Annual Emissions (MT/yr) [l]			
	PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC	CO2	N2O	CH4	CO2e
Heavy Duty Trucks												
Container Trucks On-Terminal Exhaust [a]	0.1	0.1	0.1	237.0	0.5	241.9	10.8	11.4	49,945	3.2	0.4	50,922
Non-Container Trucks On-Terminal Exhaust [a]	0.0	0.0	0.0	1.5	0.0	1.2	0.1	0.1	298	0.0	0.0	305
All Trucks On-Terminal Tire and Brake Wear	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Terminal Road Dust	23.1	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Road Exhaust [b]	8.3	8.0	8.0	1,060.2	4.8	90.3	6.4	6.8	457,275	71.9	0.5	478,700
All Trucks On-Road Tire and Brake Wear	50.1	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Road Road Dust	36.8	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Locomotives												
On-Dock Trains: Line Haul Locomotives On-Port (Arrivals/Departures) [c]	2.1	2.2	2.2	146.3	0.5	138.7	5.4	5.7	48,568	1.3	3.9	49,048
On-Dock Trains: Line Haul Locomotives Off-Port (Train Transport) [d]	4.7	4.9	4.9	332.4	1.2	315.2	12.3	13.0	110,354	2.9	8.9	111,442
Near-Dock and Off-Dock Trains: Line Haul Locomotives Off-Site (Train Transport) [e]	0.8	0.8	0.8	53.2	0.2	50.5	2.0	2.1	17,672	0.5	1.4	17,846
Switching by PHL On-Port [f]	0.1	0.1	0.1	4.3	0.0	6.9	0.3	0.3	2,314	0.1	0.2	2,336
Cargo Handling Equipment [g]	12.2	11.1	9.8	343.1	2.4	1,148.2	46.2	48.7	199,107	4.5	7.4	200,633
Harbor Craft [h]	24.7	22.9	24.7	533.9	0.5	503.7	70.7	74.5	41,015	1.8	0.7	41,584
Ocean-Going Vessels												
OGVs in Transit, Maneuvering, and at Anchorage [i]	87.2	81.9	83.8	2,725.6	140.3	518.2	244.7	257.7	195,774	9.8	4.4	198,804
OGVs at Berth [j]	25.6	24.0	16.9	644.2	67.2	85.5	39.5	41.6	92,411	6.2	0.7	94,263
Automobiles [k]												
Automobile Exhaust	0.1	0.1	0.0	4.0	0.3	78.3	no calc	1.8	27,977	0.5	0.4	28,146
Automobile Tire and Brake Wear	6.9	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Automobile Road Dust	10.4	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Refrigerated Containers On-Port												
TRU Gensets	0.1	0.1	0.1	23.6	0.0	32.0	no calc	2.1	586	0.1	0.3	635
Refrigerant Leakage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	20,835
Electricity Consumption On-Port												
OGVs at Berth	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	29,308
Cargo Handling Equipment	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	14,335
Lighting	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	11,052
Refrigerated Containers	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	26,382

Notes:

a. On-terminal truck operations include queuing at terminal entry gates, travel and idling within the terminals, and queuing at the terminal exit gates.

b. On-road truck operations consist of travel on public roads within the SCAB, including public roads within port boundaries. Emissions reflect travel from the Port to the cargo's first point of rest within the SCAB or up to the basin boundary, whichever comes first.

c. Calculated by the ILUT and apportioned 0.31 on-port v. 0.69 off-port using locomotive data provided by the POLB (personal communication with John Kim. 11/3/2017. Original source: Starcrest, 7/25/2016). On-Port line haul locomotive emissions assume locomotives operate 1 hour on-Port for train arrivals, and 2.5 hours on-Port for train departures. The EPA duty cycle for line haul locomotives (28% load) is assumed.

d. Calculated by the ILUT and apportioned 0.31 on-port v. 0.69 off-port using locomotive data provided by the POLB (personal communication with John Kim. 11/3/2017. Original source: Starcrest, 7/25/2016). Off-Port line haul locomotive emissions assume an avg. one-way travel distance of 105 mi between the Port and the SCAB boundary (21 mi on the Alameda Corridor and 84 mi between the Alameda Corridor and SCAB boundary).

e. Near-dock trains refer to trains that originate and terminate at the ICTF, which is operated by Union Pacific (UP) as a joint powers authority of the Port of Long Beach and the Port of Los Angeles. Off-dock trains refer to trains that originate and terminate at UP and BNSF intermodal rail yards outside the Port (other than the ICTF), such as the rail yards near downtown Los Angeles. The emissions reflect the equivalent number of trains needed to transport the POLB containers 92 miles between the near- and off-dock yards and the SCAB boundary.

f. Calcluated by the ILUT.

g. Calculated by the ILUT for the main CHE (RTGs, top picks, side picks, and yard tractors). All other CHE was calculated manually by scaling up 2017 usage in proportion to TEUs and applying 2040 ILUT emission factors.

h. Calculated by the ILUT. Emissions include only assist tugboats. Other harbor craft activity is not directly tied to cargo throughput and therefore is not expected to increase substantially.

i. Calculated by the ILUT except cruise and reefer vessels, which were calculated separately. The emissions from OGVs in transit reflect 95 percent of all inbound vessels using VSR (maximum 12 knots) inside of 40 nm from Pt. Fermin, 95 percent of all outbound vessels using VSR inside of 20 nm of Pt. Fermin, and 90 percent of all outbound vessels using VSR between 20 and 40 nm of Pt. Fermin. Source: Starcrest, personal communication with Archana Agrawal, 4/18/2019.

j. Calculated by the ILUT except cruise and reefer vessels, which were calculated separately. The emissions from OGVs at berth assume 80 percent of container, cruise, and reefer vessels would use shore power in 2040. The at-berth emission reduction for a vessel using shore power is assumed to be 90 pecent. Source: POLB, Personal communication from Janna Morimoto. February 26, 2019.

k. Automobile emissions are calculated within the SCAB. There would be no appreciable Port-related automobile emissions outside the SCAB.

l. CO2e emissions assume global warming potentials of 1 for CO2, 25 for CH4, and 298 for N2O, in accordance with the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015* (EPA, 2017) and consistent with the *POLB 2017 Air Emissions Inventory* and IPCC Fourth Assessment Report.

Table E-5. Summary of Annual Operational GHG Emissions between the SCAB and CA Border; Unmitigated Proposed Plan 2040

Source	Annual Emissions (MT/yr) [d]			
	CO2	N2O	CH4	CO2e
Heavy Duty Trucks	89,020	14.0	0.1	93,187
Locomotives				
On-Dock Trains [a]	220,637	5.8	17.9	222,814
Near-Dock and Off-Dock Trains [b]	39,948	1.1	3.2	40,342
Ocean-Going Vessels [c]	no calc	no calc	no calc	291,197

Notes:

a. On-dock train emissions between the SCAB and CA border were scaled up from the transit (i.e., off-port) emissions within the SCAB. The scaling factor equals 210 miles between the SCAB and CA border divided by 105 miles within the SCAB.

b. Near-dock trains refer to trains that originate and terminate at the ICTF, which is operated by Union Pacific (UP) as a joint powers authority of the Port of Long Beach and the Port of Los Angeles. Off-dock trains refer to trains that originate and terminate at UP and BNSF intermodal rail yards outside the Port (other than the ICTF), such as the rail yards near downtown Los Angeles. The emissions reflect the equivalent number of trains needed to transport the POLB containers 209 miles between the SCAB and CA border.

c. OGV Emissions assume an avg. transit distance of 51.5 nautical miles (nm) between the SCAB and CA over-water boundaries.

d. CO2e emissions assume global warming potentials of 1 for CO2, 25 for CH4, and 298 for N2O, in accordance with the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015* (EPA, 2017) and consistent with the *POLB 2017 Air Emissions Inventory* and IPCC Fourth Assessment Report.

Table E-6. Peak Day Operational Emissions within the SCAB; Unmitigated Proposed Plan 2040

Source	Peak Day/ Annual Factor	Peak Day Emissions (lb/day)							
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC
Heavy Duty Trucks [a]									
Container Trucks On-Terminal Exhaust	0.00364	0.8	0.8	0.8	1,723.9	3.3	1,759.1	78.5	82.7
Non-Container Trucks On-Terminal Exhaust	0.00364	0.0	0.0	0.0	10.7	0.0	9.0	0.4	0.4
All Trucks On-Terminal Tire and Brake Wear	0.00364	5.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Terminal Road Dust	0.00364	167.8	25.2	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Road Exhaust	0.00364	60.6	58.0	58.2	7,710.2	34.9	656.7	46.6	49.1
All Trucks On-Road Tire and Brake Wear	0.00364	364.1	132.1	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Road Road Dust	0.00364	267.6	40.1	0.0	0.0	0.0	0.0	0.0	0.0
Locomotives [b]									
On-Dock Trains: Line Haul Locomotives On-Port (Arrivals/Departures)	0.00304	12.7	13.2	13.2	888.8	3.3	842.7	32.9	34.7
On-Dock Trains: Line Haul Locomotives Off-Port (Train Transport)	0.00304	28.8	29.9	29.9	2,019.4	7.5	1,914.7	74.8	78.8
Near-Dock and Off-Dock Trains: Line Haul Locomotives Off-Site (Train Transport)	0.00304	4.6	4.8	4.8	323.4	1.2	306.6	12.0	12.6
Switching by PHL On-Port	0.00304	0.4	0.4	0.4	26.3	0.1	41.8	2.0	2.1
Cargo Handling Equipment [c]	0.00386	93.9	85.6	76.0	2,651.6	18.7	8,874.3	357.4	376.4
Harbor Craft [d]	0.00450	222.7	206.5	222.7	4,806.3	4.2	4,534.0	636.7	670.4
Ocean-Going Vessels [e]									
OGVs in Transit, Maneuvering, and at Anchorage	0.00450	785.1	737.1	754.5	24,535.4	1,262.9	4,664.8	2,202.6	2,319.4
OGVs at Berth	0.00399	204.0	191.5	134.7	5,134.7	536.0	681.3	314.5	331.2
Automobiles [a]									
Automobile Exhaust	0.00364	0.6	0.6	0.0	28.9	2.2	569.6	no calc	13.4
Automobile Tire and Brake Wear	0.00364	50.4	20.0	0.0	0.0	0.0	0.0	0.0	0.0
Automobile Road Dust	0.00364	75.3	11.3	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerated Containers On-Port [f]									
TRU Gensets	0.00386	0.8	0.8	0.8	182.1	0.0	247.3	no calc	15.9

Notes:

a. The peak day factor for trucks and autos was provided by POLB (Personal communication with Shashank Patil, March 29, 2019).

b. Peak day factors for locomotives were obtained from the *Pier B On-Dock Rail Support Facility Project EIR* (POLB, December 2016), Table A1.2-48 of Appendix A (peak day per week factor divided by 52 weeks/yr).

c. Assume the peak day factor for CHE in 2017 is also representative of future 2040 conditions.

d. Assume the harbor craft peak day factor is equal to the OGV maneuvering factor.

e. The peak day factors for OGVs were developed from actual 2017 vessel data collected for the *Port of Long Beach 2017 Air Emissions Inventory* . Source: Starcrest, personal communication with A. Agrawal, 1/18/2019. For OGVs in transit: 23 peak day / 14 avg. day / 365. For OGVs at berth: 32 peak day / 22 avg. day / 365. Assume the factors are also representative of 2040.

f. Assume the reefer peak day factor is equal to the CHE factor.

Table E-7. Summary of Annual Operational Emissions within the SCAB; Unmitigated Alternative 1, 2040

Source	Annual Emissions (ton/yr)								Annual Emissions (MT/yr) [l]			
	PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC	CO2	N2O	CH4	CO2e
Heavy Duty Trucks												
Container Trucks On-Terminal Exhaust [a]	0.1	0.1	0.1	197.5	0.4	201.6	9.0	9.5	41,622	2.7	0.3	42,436
Non-Container Trucks On-Terminal Exhaust [a]	0.0	0.0	0.0	1.5	0.0	1.2	0.1	0.1	298	0.0	0.0	305
All Trucks On-Terminal Tire and Brake Wear	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Terminal Road Dust	19.3	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Road Exhaust [b]	7.3	7.0	7.0	913.8	4.2	77.9	5.6	5.9	397,543	62.5	0.4	416,171
All Trucks On-Road Tire and Brake Wear	43.6	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Road Road Dust	32.1	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Locomotives												
On-Dock Trains: Line Haul Locomotives On-Port (Arrivals/Departures) [c]	1.7	1.8	1.8	122.8	0.5	116.4	4.5	4.8	40,761	1.1	3.3	41,163
On-Dock Trains: Line Haul Locomotives Off-Port (Train Transport) [d]	4.0	4.1	4.1	277.4	1.0	263.0	10.3	10.8	92,081	2.4	7.5	92,990
Near-Dock and Off-Dock Trains: Line Haul Locomotives Off-Site (Train Transport) [e]	0.6	0.7	0.7	44.4	0.2	42.1	1.6	1.7	14,750	0.4	1.2	14,895
Switching by PHL On-Port [f]	0.1	0.1	0.1	5.5	0.0	8.7	0.4	0.4	2,911	0.1	0.2	2,938
Cargo Handling Equipment [g]	9.9	9.0	8.0	278.7	2.0	934.9	37.1	39.0	161,027	3.6	5.9	162,257
Harbor Craft [h]	23.0	21.3	23.0	497.0	0.4	468.8	65.8	69.3	38,176	1.7	0.7	38,705
Ocean-Going Vessels												
OGVs in Transit, Maneuvering, and at Anchorage [i]	80.4	75.5	77.3	2,535.4	129.8	472.4	222.5	234.3	181,360	9.1	4.0	184,166
OGVs at Berth [j]	24.6	23.1	16.2	621.0	64.8	82.0	37.9	39.9	89,079	5.9	0.7	90,868
Automobiles [k]												
Automobile Exhaust	0.1	0.1	0.0	3.6	0.3	71.3	no calc	1.7	25,496	0.5	0.4	25,650
Automobile Tire and Brake Wear	6.3	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Automobile Road Dust	9.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Refrigerated Containers On-Port												
TRU Gensets	0.1	0.1	0.1	19.5	0.0	26.4	no calc	1.7	484	0.1	0.3	525
Refrigerant Leakage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	17,243
Electricity Consumption On-Port												
OGVs at Berth	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	24,472
Cargo Handling Equipment	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	11,864
Lighting	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	10,262
Refrigerated Containers	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	21,833

Notes:

a. On-terminal truck operations include queuing at terminal entry gates, travel and idling within the terminals, and queuing at the terminal exit gates.

b. On-road truck operations consist of travel on public roads within the SCAB, including public roads within port boundaries. Emissions reflect travel from the Port to the cargo's first point of rest within the SCAB or up to the basin boundary, whichever comes first.

c. Calculated by the ILUT and apportioned 0.31 on-port v. 0.69 off-port using locomotive data provided by the POLB (personal communication with John Kim. 11/3/2017. Original source: Starcrest, 7/25/2016). On-Port line haul locomotive emissions assume locomotives operate 1 hour on-Port for train arrivals, and 2.5 hours on-Port for train departures. The EPA duty cycle for line haul locomotives (28% load) is assumed.

d. Calculated by the ILUT and apportioned 0.31 on-port v. 0.69 off-port using locomotive data provided by the POLB (personal communication with John Kim. 11/3/2017. Original source: Starcrest, 7/25/2016). Off-Port line haul locomotive emissions assume an avg. one-way travel distance of 105 mi between the Port and the SCAB boundary (21 mi on the Alameda Corridor and 84 mi between the Alameda Corridor and SCAB boundary).

e. Near-dock trains refer to trains that originate and terminate at the ICTF, which is operated by Union Pacific (UP) as a joint powers authority of the Port of Long Beach and the Port of Los Angeles. Off-dock trains refer to trains that originate and terminate at UP and BNSF intermodal rail yards outside the Port (other than the ICTF), such as the rail yards near downtown Los Angeles. The emissions reflect the equivalent number of trains needed to transport the POLB containers 92 miles between the near- and off-dock yards and the SCAB boundary.

f. Calcluated by the ILUT.

g. Calculated by the ILUT for the main CHE (RTGs, top picks, side picks, and yard tractors). All other CHE was calculated manually by scaling up 2017 usage in proportion to TEUs and applying 2040 ILUT emission factors.

h. Calculated by the ILUT. Emissions include only assist tugboats. Other harbor craft activity is not directly tied to cargo throughput and therefore is not expected to increase substantially.

i. Calculated by the ILUT except cruise and reefer vessels, which were calculated separately. The emissions from OGVs in transit reflect 95 percent of all inbound vessels using VSR (maximum 12 knots) inside of 40 nm from Pt. Fermin, 95 percent of all outbound vessels using VSR inside of 20 nm of Pt. Fermin, and 90 percent of all outbound vessels using VSR between 20 and 40 nm of Pt. Fermin. Source: Starcrest, personal communication with Archana Agrawal, 4/18/2019.

j. Calculated by the ILUT except cruise and reefer vessels, which were calculated separately. The emissions from OGVs at berth assume 80 percent of container, cruise, and reefer vessels would use shore power in 2040. The at-berth emission reduction for a vessel using shore power is assumed to be 90 pecent. Source: POLB, Personal communication from Janna Morimoto. February 26, 2019.

k. Automobile emissions are calculated within the SCAB. There would be no appreciable Port-related automobile emissions outside the SCAB.

l. CO2e emissions assume global warming potentials of 1 for CO2, 25 for CH4, and 298 for N2O, in accordance with the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015* (EPA, 2017) and consistent with the *POLB 2017 Air Emissions Inventory* and IPCC Fourth Assessment Report.

Table E-8. Summary of Annual Operational GHG Emissions between the SCAB and CA Border; Unmitigated Alternative 1, 2040

Source	Annual Emissions (MT/yr) [d]			
	CO2	N2O	CH4	CO2e
Heavy Duty Trucks	73,960	11.6	0.1	77,422
Locomotives				
On-Dock Trains [a]	184,104	4.8	14.9	185,921
Near-Dock and Off-Dock Trains [b]	33,343	0.9	2.7	33,672
Ocean-Going Vessels [c]	no calc	no calc	no calc	261,060

Notes:

a. On-dock train emissions between the SCAB and CA border were scaled up from the transit (i.e., off-port) emissions within the SCAB. The scaling factor equals 210 miles between the SCAB and CA border divided by 105 miles within the SCAB.

b. Near-dock trains refer to trains that originate and terminate at the ICTF, which is operated by Union Pacific (UP) as a joint powers authority of the Port of Long Beach and the Port of Los Angeles. Off-dock trains refer to trains that originate and terminate at UP and BNSF intermodal rail yards outside the Port (other than the ICTF), such as the rail yards near downtown Los Angeles. The emissions reflect the equivalent number of trains needed to transport the POLB containers 209 miles between the SCAB and CA border.

c. OGV Emissions assume an avg. transit distance of 51.5 nautical miles (nm) between the SCAB and CA over-water boundaries.

d. CO2e emissions assume global warming potentials of 1 for CO2, 25 for CH4, and 298 for N2O, in accordance with the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015* (EPA, 2017) and consistent with the *POLB 2017 Air Emissions Inventory* and IPCC Fourth Assessment Report.

Table E-9. Peak Day Operational Emissions within the SCAB; Unmitigated Alternative 1, 2040

Source	Peak Day/ Annual Factor	Peak Day Emissions (lb/day)							
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC
Heavy Duty Trucks [a]									
Container Trucks On-Terminal Exhaust	0.00364	0.7	0.6	0.7	1,436.6	2.8	1,465.9	65.5	68.9
Non-Container Trucks On-Terminal Exhaust	0.00364	0.0	0.0	0.0	10.7	0.0	9.0	0.4	0.4
All Trucks On-Terminal Tire and Brake Wear	0.00364	4.2	1.5	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Terminal Road Dust	0.00364	140.1	21.0	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Road Exhaust	0.00364	53.1	50.8	51.0	6,646.1	30.3	566.9	40.6	42.7
All Trucks On-Road Tire and Brake Wear	0.00364	317.3	115.1	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Road Road Dust	0.00364	233.2	35.0	0.0	0.0	0.0	0.0	0.0	0.0
Locomotives [b]									
On-Dock Trains: Line Haul Locomotives On-Port (Arrivals/Departures)	0.00304	10.6	11.1	11.1	745.9	2.8	707.2	27.6	29.1
On-Dock Trains: Line Haul Locomotives Off-Port (Train Transport)	0.00304	24.0	25.0	25.0	1,685.0	6.2	1,597.7	62.4	65.7
Near-Dock and Off-Dock Trains: Line Haul Locomotives Off-Site (Train Transport)	0.00304	3.8	4.0	4.0	269.9	1.0	255.9	10.0	10.5
Switching by PHL On-Port	0.00304	0.5	0.4	0.5	33.1	0.2	52.6	2.5	2.7
Cargo Handling Equipment [c]	0.00386	76.4	69.6	61.7	2,154.4	15.1	7,226.0	286.5	301.7
Harbor Craft [d]	0.00450	207.3	192.2	207.3	4,473.5	4.0	4,220.1	592.6	624.0
Ocean-Going Vessels [e]									
OGVs in Transit, Maneuvering, and at Anchorage	0.00450	724.1	679.7	695.5	22,823.9	1,168.4	4,252.7	2,003.1	2,109.3
OGVs at Berth	0.00399	196.1	184.1	128.9	4,949.5	516.6	653.6	301.7	317.7
Automobiles [a]									
Automobile Exhaust	0.00364	0.6	0.5	0.0	26.3	2.0	518.3	no calc	12.2
Automobile Tire and Brake Wear	0.00364	46.0	18.3	0.0	0.0	0.0	0.0	0.0	0.0
Automobile Road Dust	0.00364	68.7	10.3	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerated Containers On-Port [f]									
TRU Gensets	0.00386	0.7	0.6	0.7	150.4	0.0	204.3	no calc	13.1

Notes:

a. The peak day factor for trucks and autos was provided by POLB (Personal communication with Shashank Patil, March 29, 2019).

b. Peak day factors for locomotives were obtained from the *Pier B On-Dock Rail Support Facility Project EIR* (POLB, December 2016), Table A1.2-48 of Appendix A (peak day per week factor divided by 52 weeks/yr).

c. Assume the peak day factor for CHE in 2017 is also representative of future 2040 conditions.

d. Assume the harbor craft peak day factor is equal to the OGV maneuvering factor.

e. The peak day factors for OGVs were developed from actual 2017 vessel data collected for the *Port of Long Beach 2017 Air Emissions Inventory* . Source: Starcrest, personal communication with A. Agrawal, 1/18/2019. For OGVs in transit: 23 peak day / 14 avg. day / 365. For OGVs at berth: 32 peak day / 22 avg. day / 365. Assume the factors are also representative of 2040.

f. Assume the reefer peak day factor is equal to the CHE factor.

Table E-10. Summary of Annual Operational Emissions within the SCAB; Unmitigated Alternative 2, 2040

Source	Annual Emissions (ton/yr)								Annual Emissions (MT/yr) [l]			
	PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC	CO2	N2O	CH4	CO2e
Heavy Duty Trucks												
Container Trucks On-Terminal Exhaust [a]	0.1	0.1	0.1	197.5	0.4	201.6	9.0	9.5	41,622	2.7	0.3	42,436
Non-Container Trucks On-Terminal Exhaust [a]	0.0	0.0	0.0	1.5	0.0	1.2	0.1	0.1	298	0.0	0.0	305
All Trucks On-Terminal Tire and Brake Wear	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Terminal Road Dust	19.3	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Road Exhaust [b]	7.3	7.0	7.0	913.8	4.2	77.9	5.6	5.9	397,543	62.5	0.4	416,171
All Trucks On-Road Tire and Brake Wear	43.6	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Road Road Dust	32.1	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Locomotives												
On-Dock Trains: Line Haul Locomotives On-Port (Arrivals/Departures) [c]	1.7	1.8	1.8	122.8	0.5	116.4	4.5	4.8	40,761	1.1	3.3	41,163
On-Dock Trains: Line Haul Locomotives Off-Port (Train Transport) [d]	4.0	4.1	4.1	277.4	1.0	263.0	10.3	10.8	92,081	2.4	7.5	92,990
Near-Dock and Off-Dock Trains: Line Haul Locomotives Off-Site (Train Transport) [e]	0.6	0.7	0.7	44.4	0.2	42.1	1.6	1.7	14,750	0.4	1.2	14,895
Switching by PHL On-Port [f]	0.1	0.1	0.1	5.5	0.0	8.7	0.4	0.4	2,911	0.1	0.2	2,938
Cargo Handling Equipment [g]	9.9	9.0	8.0	278.7	2.0	934.9	37.1	39.0	161,027	3.6	5.9	162,257
Harbor Craft [h]	23.0	21.3	23.0	497.0	0.4	468.8	65.8	69.3	38,176	1.7	0.7	38,705
Ocean-Going Vessels												
OGVs in Transit, Maneuvering, and at Anchorage [i]	80.4	75.5	77.3	2,535.4	129.8	472.4	222.5	234.3	181,360	9.1	4.0	184,166
OGVs at Berth [j]	24.6	23.1	16.2	621.0	64.8	82.0	37.9	39.9	89,079	5.9	0.7	90,868
Automobiles [k]												
Automobile Exhaust	0.1	0.1	0.0	3.6	0.3	71.3	no calc	1.7	25,496	0.5	0.4	25,650
Automobile Tire and Brake Wear	6.3	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Automobile Road Dust	9.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Refrigerated Containers On-Port												
TRU Gensets	0.1	0.1	0.1	19.5	0.0	26.4	no calc	1.7	484	0.1	0.3	525
Refrigerant Leakage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	17,243
Electricity Consumption On-Port												
OGVs at Berth	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	24,472
Cargo Handling Equipment	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	11,864
Lighting	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	10,266
Refrigerated Containers	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	21,833

Notes:

a. On-terminal truck operations include queuing at terminal entry gates, travel and idling within the terminals, and queuing at the terminal exit gates.

b. On-road truck operations consist of travel on public roads within the SCAB, including public roads within port boundaries. Emissions reflect travel from the Port to the cargo's first point of rest within the SCAB or up to the basin boundary, whichever comes first.

c. Calculated by the ILUT and apportioned 0.31 on-port v. 0.69 off-port using locomotive data provided by the POLB (personal communication with John Kim. 11/3/2017. Original source: Starcrest, 7/25/2016). On-Port line haul locomotive emissions assume locomotives operate 1 hour on-Port for train arrivals, and 2.5 hours on-Port for train departures. The EPA duty cycle for line haul locomotives (28% load) is assumed.

d. Calculated by the ILUT and apportioned 0.31 on-port v. 0.69 off-port using locomotive data provided by the POLB (personal communication with John Kim. 11/3/2017. Original source: Starcrest, 7/25/2016). Off-Port line haul locomotive emissions assume an avg. one-way travel distance of 105 mi between the Port and the SCAB boundary (21 mi on the Alameda Corridor and 84 mi between the Alameda Corridor and SCAB boundary).

e. Near-dock trains refer to trains that originate and terminate at the ICTF, which is operated by Union Pacific (UP) as a joint powers authority of the Port of Long Beach and the Port of Los Angeles. Off-dock trains refer to trains that originate and terminate at UP and BNSF intermodal rail yards outside the Port (other than the ICTF), such as the rail yards near downtown Los Angeles. The emissions reflect the equivalent number of trains needed to transport the POLB containers 92 miles between the near- and off-dock yards and the SCAB boundary.

f. Calcluated by the ILUT.

g. Calculated by the ILUT for the main CHE (RTGs, top picks, side picks, and yard tractors). All other CHE was calculated manually by scaling up 2017 usage in proportion to TEUs and applying 2040 ILUT emission factors.

h. Calculated by the ILUT. Emissions include only assist tugboats. Other harbor craft activity is not directly tied to cargo throughput and therefore is not expected to increase substantially.

i. Calculated by the ILUT except cruise and reefer vessels, which were calculated separately. The emissions from OGVs in transit reflect 95 percent of all inbound vessels using VSR (maximum 12 knots) inside of 40 nm from Pt. Fermin, 95 percent of all outbound vessels using VSR inside of 20 nm of Pt. Fermin, and 90 percent of all outbound vessels using VSR between 20 and 40 nm of Pt. Fermin. Source: Starcrest, personal communication with Archana Agrawal, 4/18/2019.

j. Calculated by the ILUT except cruise and reefer vessels, which were calculated separately. The emissions from OGVs at berth assume 80 percent of container, cruise, and reefer vessels would use shore power in 2040. The at-berth emission reduction for a vessel using shore power is assumed to be 90 pecent. Source: POLB, Personal communication from Janna Morimoto. February 26, 2019.

k. Automobile emissions are calculated within the SCAB. There would be no appreciable Port-related automobile emissions outside the SCAB.

l. CO2e emissions assume global warming potentials of 1 for CO2, 25 for CH4, and 298 for N2O, in accordance with the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015* (EPA, 2017) and consistent with the *POLB 2017 Air Emissions Inventory* and IPCC Fourth Assessment Report.

Table E-11. Summary of Annual Operational GHG Emissions between the SCAB and CA Border; Unmitigated Alternative 2, 2040

Source	Annual Emissions (MT/yr) [d]			
	CO2	N2O	CH4	CO2e
Heavy Duty Trucks	73,960	11.6	0.1	77,422
Locomotives				
On-Dock Trains [a]	184,104	4.8	14.9	185,921
Near-Dock and Off-Dock Trains [b]	33,343	0.9	2.7	33,672
Ocean-Going Vessels [c]	no calc	no calc	no calc	261,060

Notes:

a. On-dock train emissions between the SCAB and CA border were scaled up from the transit (i.e., off-port) emissions within the SCAB. The scaling factor equals 210 miles between the SCAB and CA border divided by 105 miles within the SCAB.

b. Near-dock trains refer to trains that originate and terminate at the ICTF, which is operated by Union Pacific (UP) as a joint powers authority of the Port of Long Beach and the Port of Los Angeles. Off-dock trains refer to trains that originate and terminate at UP and BNSF intermodal rail yards outside the Port (other than the ICTF), such as the rail yards near downtown Los Angeles. The emissions reflect the equivalent number of trains needed to transport the POLB containers 209 miles between the SCAB and CA border.

c. OGV Emissions assume an avg. transit distance of 51.5 nautical miles (nm) between the SCAB and CA over-water boundaries.

d. CO2e emissions assume global warming potentials of 1 for CO2, 25 for CH4, and 298 for N2O, in accordance with the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015* (EPA, 2017) and consistent with the *POLB 2017 Air Emissions Inventory* and IPCC Fourth Assessment Report.

Table E-12. Peak Day Operational Emissions within the SCAB; Unmitigated Alternative 2, 2040

Source	Peak Day/ Annual Factor	Peak Day Emissions (lb/day)							
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC
Heavy Duty Trucks [a]									
Container Trucks On-Terminal Exhaust	0.00364	0.7	0.6	0.7	1,436.6	2.8	1,465.9	65.5	68.9
Non-Container Trucks On-Terminal Exhaust	0.00364	0.0	0.0	0.0	10.7	0.0	9.0	0.4	0.4
All Trucks On-Terminal Tire and Brake Wear	0.00364	4.2	1.5	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Terminal Road Dust	0.00364	140.1	21.0	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Road Exhaust	0.00364	53.1	50.8	51.0	6,646.1	30.3	566.9	40.6	42.7
All Trucks On-Road Tire and Brake Wear	0.00364	317.3	115.1	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Road Road Dust	0.00364	233.2	35.0	0.0	0.0	0.0	0.0	0.0	0.0
Locomotives [b]									
On-Dock Trains: Line Haul Locomotives On-Port (Arrivals/Departures)	0.00304	10.6	11.1	11.1	745.9	2.8	707.2	27.6	29.1
On-Dock Trains: Line Haul Locomotives Off-Port (Train Transport)	0.00304	24.0	25.0	25.0	1,685.0	6.2	1,597.7	62.4	65.7
Near-Dock and Off-Dock Trains: Line Haul Locomotives Off-Site (Train Transport)	0.00304	3.8	4.0	4.0	269.9	1.0	255.9	10.0	10.5
Switching by PHL On-Port	0.00304	0.5	0.4	0.5	33.1	0.2	52.6	2.5	2.7
Cargo Handling Equipment [c]	0.00386	76.4	69.6	61.7	2,154.4	15.1	7,226.0	286.5	301.7
Harbor Craft [d]	0.00450	207.3	192.2	207.3	4,473.5	4.0	4,220.1	592.6	624.0
Ocean-Going Vessels [e]									
OGVs in Transit, Maneuvering, and at Anchorage	0.00450	724.1	679.7	695.5	22,823.9	1,168.4	4,252.7	2,003.1	2,109.3
OGVs at Berth	0.00399	196.1	184.1	128.9	4,949.5	516.6	653.6	301.7	317.7
Automobiles [a]									
Automobile Exhaust	0.00364	0.6	0.5	0.0	26.3	2.0	518.3	no calc	12.2
Automobile Tire and Brake Wear	0.00364	46.0	18.3	0.0	0.0	0.0	0.0	0.0	0.0
Automobile Road Dust	0.00364	68.7	10.3	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerated Containers On-Port [f]									
TRU Gensets	0.00386	0.7	0.6	0.7	150.4	0.0	204.3	no calc	13.1

Notes:

a. The peak day factor for trucks and autos was provided by POLB (Personal communication with Shashank Patil, March 29, 2019).

b. Peak day factors for locomotives were obtained from the *Pier B On-Dock Rail Support Facility Project EIR* (POLB, December 2016), Table A1.2-48 of Appendix A (peak day per week factor divided by 52 weeks/yr).

c. Assume the peak day factor for CHE in 2017 is also representative of future 2040 conditions.

d. Assume the harbor craft peak day factor is equal to the OGV maneuvering factor.

e. The peak day factors for OGVs were developed from actual 2017 vessel data collected for the *Port of Long Beach 2017 Air Emissions Inventory* . Source: Starcrest, personal communication with A. Agrawal, 1/18/2019. For OGVs in transit: 23 peak day / 14 avg. day / 365. For OGVs at berth: 32 peak day / 22 avg. day / 365. Assume the factors are also representative of 2040.

f. Assume the reefer peak day factor is equal to the CHE factor.

Table E-13. Summary of Annual Operational Emissions within the SCAB; Unmitigated Alternative 3, 2040

Source	Annual Emissions (ton/yr)								Annual Emissions (MT/yr) [l]			
	PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC	CO2	N2O	CH4	CO2e
Heavy Duty Trucks												
Container Trucks On-Terminal Exhaust [a]	0.1	0.1	0.1	214.5	0.4	218.8	9.8	10.3	45,191	2.9	0.3	46,075
Non-Container Trucks On-Terminal Exhaust [a]	0.0	0.0	0.0	1.5	0.0	1.2	0.1	0.1	298	0.0	0.0	305
All Trucks On-Terminal Tire and Brake Wear	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Terminal Road Dust	20.9	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Road Exhaust [b]	7.7	7.4	7.4	980.7	4.4	83.5	5.9	6.3	423,415	66.5	0.4	443,254
All Trucks On-Road Tire and Brake Wear	46.4	16.8	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
All Trucks On-Road Road Dust	34.1	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Locomotives												
On-Dock Trains: Line Haul Locomotives On-Port (Arrivals/Departures) [c]	2.1	2.1	2.1	144.6	0.5	137.1	5.4	5.6	48,017	1.3	3.9	48,491
On-Dock Trains: Line Haul Locomotives Off-Port (Train Transport) [d]	4.6	4.8	4.8	324.0	1.2	307.2	12.0	12.6	107,555	2.8	8.7	108,616
Near-Dock and Off-Dock Trains: Line Haul Locomotives Off-Site (Train Transport) [e]	0.6	0.7	0.7	44.7	0.2	42.4	1.7	1.7	14,833	0.4	1.2	14,979
Switching by PHL On-Port [f]	0.1	0.1	0.1	6.9	0.0	11.0	0.5	0.6	3,684	0.1	0.3	3,718
Cargo Handling Equipment [g]	10.9	10.0	8.8	308.8	2.2	1,033.3	41.2	43.4	178,543	4.0	6.6	179,909
Harbor Craft [h]	23.4	21.7	23.4	504.3	0.4	475.7	66.8	70.3	38,741	1.7	0.7	39,278
Ocean-Going Vessels												
OGVs in Transit, Maneuvering, and at Anchorage [i]	83.0	77.9	79.7	2,605.6	133.9	489.2	230.7	242.9	186,930	9.4	4.2	189,824
OGVs at Berth [j]	24.9	23.4	16.4	631.1	65.7	83.1	38.4	40.4	90,295	6.0	0.7	92,108
Automobiles [k]												
Automobile Exhaust	0.1	0.1	0.0	3.8	0.3	74.5	no calc	1.8	26,621	0.5	0.4	26,782
Automobile Tire and Brake Wear	6.6	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Automobile Road Dust	9.9	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0
Refrigerated Containers On-Port												
TRU Gensets	0.1	0.1	0.1	22.5	0.0	30.6	no calc	2.0	559	0.1	0.3	607
Refrigerant Leakage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	no calc	no calc	no calc	18,765
Electricity Consumption On-Port												
OGVs at Berth	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	27,662
Cargo Handling Equipment	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	12,910
Lighting	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	10,476
Refrigerated Containers	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	no calc	no calc	no calc	23,760

Notes:

a. On-terminal truck operations include queuing at terminal entry gates, travel and idling within the terminals, and queuing at the terminal exit gates.

b. On-road truck operations consist of travel on public roads within the SCAB, including public roads within port boundaries. Emissions reflect travel from the Port to the cargo's first point of rest within the SCAB or up to the basin boundary, whichever comes first.

c. Calculated by the ILUT and apportioned 0.31 on-port v. 0.69 off-port using locomotive data provided by the POLB (personal communication with John Kim. 11/3/2017. Original source: Starcrest, 7/25/2016). On-Port line haul locomotive emissions assume locomotives operate 1 hour on-Port for train arrivals, and 2.5 hours on-Port for train departures. The EPA duty cycle for line haul locomotives (28% load) is assumed.

d. Calculated by the ILUT and apportioned 0.31 on-port v. 0.69 off-port using locomotive data provided by the POLB (personal communication with John Kim. 11/3/2017. Original source: Starcrest, 7/25/2016). Off-Port line haul locomotive emissions assume an avg. one-way travel distance of 105 mi between the Port and the SCAB boundary (21 mi on the Alameda Corridor and 84 mi between the Alameda Corridor and SCAB boundary).

e. Near-dock trains refer to trains that originate and terminate at the ICTF, which is operated by Union Pacific (UP) as a joint powers authority of the Port of Long Beach and the Port of Los Angeles. Off-dock trains refer to trains that originate and terminate at UP and BNSF intermodal rail yards outside the Port (other than the ICTF), such as the rail yards near downtown Los Angeles. The emissions reflect the equivalent number of trains needed to transport the POLB containers 92 miles between the near- and off-dock yards and the SCAB boundary.

f. Calcluated by the ILUT.

g. Calculated by the ILUT for the main CHE (RTGs, top picks, side picks, and yard tractors). All other CHE was calculated manually by scaling up 2017 usage in proportion to TEUs and applying 2040 ILUT emission factors.

h. Calculated by the ILUT. Emissions include only assist tugboats. Other harbor craft activity is not directly tied to cargo throughput and therefore is not expected to increase substantially.

i. Calculated by the ILUT except cruise and reefer vessels, which were calculated separately. The emissions from OGVs in transit reflect 95 percent of all inbound vessels using VSR (maximum 12 knots) inside of 40 nm from Pt. Fermin, 95 percent of all outbound vessels using VSR inside of 20 nm of Pt. Fermin, and 90 percent of all outbound vessels using VSR between 20 and 40 nm of Pt. Fermin. Source: Starcrest, personal communication with Archana Agrawal, 4/18/2019.

j. Calculated by the ILUT except cruise and reefer vessels, which were calculated separately. The emissions from OGVs at berth assume 80 percent of container, cruise, and reefer vessels would use shore power in 2040. The at-berth emission reduction for a vessel using shore power is assumed to be 90 pecent. Source: POLB, Personal communication from Janna Morimoto. February 26, 2019.

k. Automobile emissions are calculated within the SCAB. There would be no appreciable Port-related automobile emissions outside the SCAB.

l. CO2e emissions assume global warming potentials of 1 for CO2, 25 for CH4, and 298 for N2O, in accordance with the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015* (EPA, 2017) and consistent with the *POLB 2017 Air Emissions Inventory* and IPCC Fourth Assessment Report.

Table E-14. Summary of Annual Operational GHG Emissions between the SCAB and CA Border; Unmitigated Alternative 3, 2040

Source	Annual Emissions (MT/yr) [d]			
	CO2	N2O	CH4	CO2e
Heavy Duty Trucks	80,673	12.7	0.1	84,449
Locomotives				
On-Dock Trains [a]	215,041	5.7	17.4	217,163
Near-Dock and Off-Dock Trains [b]	33,531	0.9	2.7	33,862
Ocean-Going Vessels [c]	no calc	no calc	no calc	270,913

Notes:

a. On-dock train emissions between the SCAB and CA border were scaled up from the transit (i.e., off-port) emissions within the SCAB. The scaling factor equals 210 miles between the SCAB and CA border divided by 105 miles within the SCAB.

b. Near-dock trains refer to trains that originate and terminate at the ICTF, which is operated by Union Pacific (UP) as a joint powers authority of the Port of Long Beach and the Port of Los Angeles. Off-dock trains refer to trains that originate and terminate at UP and BNSF intermodal rail yards outside the Port (other than the ICTF), such as the rail yards near downtown Los Angeles. The emissions reflect the equivalent number of trains needed to transport the POLB containers 209 miles between the SCAB and CA border.

c. OGV Emissions assume an avg. transit distance of 51.5 nautical miles (nm) between the SCAB and CA over-water boundaries.

d. CO2e emissions assume global warming potentials of 1 for CO2, 25 for CH4, and 298 for N2O, in accordance with the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2015* (EPA, 2017) and consistent with the *POLB 2017 Air Emissions Inventory* and IPCC Fourth Assessment Report.

Table E-15. Peak Day Operational Emissions within the SCAB; Unmitigated Alternative 3, 2040

Source	Peak Day/ Annual Factor	Peak Day Emissions (lb/day)							
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC
Heavy Duty Trucks [a]									
Container Trucks On-Terminal Exhaust	0.00364	0.7	0.7	0.7	1,559.8	3.0	1,591.6	71.1	74.8
Non-Container Trucks On-Terminal Exhaust	0.00364	0.0	0.0	0.0	10.7	0.0	9.0	0.4	0.4
All Trucks On-Terminal Tire and Brake Wear	0.00364	4.6	1.7	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Terminal Road Dust	0.00364	152.0	22.8	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Road Exhaust	0.00364	56.2	53.8	54.0	7,132.0	32.3	607.5	43.2	45.5
All Trucks On-Road Tire and Brake Wear	0.00364	337.2	122.3	0.0	0.0	0.0	0.0	0.0	0.0
All Trucks On-Road Road Dust	0.00364	247.8	37.2	0.0	0.0	0.0	0.0	0.0	0.0
Locomotives [b]									
On-Dock Trains: Line Haul Locomotives On-Port (Arrivals/Departures)	0.00304	12.5	13.0	13.0	878.7	3.3	833.1	32.5	34.3
On-Dock Trains: Line Haul Locomotives Off-Port (Train Transport)	0.00304	28.0	29.2	29.2	1,968.2	7.3	1,866.1	72.9	76.8
Near-Dock and Off-Dock Trains: Line Haul Locomotives Off-Site (Train Transport)	0.00304	3.9	4.0	4.0	271.4	1.0	257.4	10.1	10.6
Switching by PHL On-Port	0.00304	0.6	0.6	0.6	41.9	0.2	66.6	3.2	3.4
Cargo Handling Equipment [c]	0.00386	84.5	77.0	68.3	2,386.9	16.7	7,986.0	318.7	335.6
Harbor Craft [d]	0.00450	210.4	195.0	210.4	4,539.8	4.0	4,282.6	601.4	633.3
Ocean-Going Vessels [e]									
OGVs in Transit, Maneuvering, and at Anchorage	0.00450	747.0	701.3	717.4	23,455.5	1,204.9	4,403.9	2,076.3	2,186.4
OGVs at Berth	0.00399	198.7	186.5	130.6	5,029.9	523.7	662.0	305.7	321.9
Automobiles [a]									
Automobile Exhaust	0.00364	0.6	0.6	0.0	27.5	2.1	541.9	no calc	12.7
Automobile Tire and Brake Wear	0.00364	47.9	19.0	0.0	0.0	0.0	0.0	0.0	0.0
Automobile Road Dust	0.00364	71.7	10.7	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerated Containers On-Port [f]									
TRU Gensets	0.00386	0.8	0.7	0.8	173.9	0.0	236.2	no calc	15.2

Notes:

a. The peak day factor for trucks and autos was provided by POLB (Personal communication with Shashank Patil, March 29, 2019).

b. Peak day factors for locomotives were obtained from the *Pier B On-Dock Rail Support Facility Project EIR* (POLB, December 2016), Table A1.2-48 of Appendix A (peak day per week factor divided by 52 weeks/yr).

c. Assume the peak day factor for CHE in 2017 is also representative of future 2040 conditions.

d. Assume the harbor craft peak day factor is equal to the OGV maneuvering factor.

e. The peak day factors for OGVs were developed from actual 2017 vessel data collected for the *Port of Long Beach 2017 Air Emissions Inventory* . Source: Starcrest, personal communication with A. Agrawal, 1/18/2019. For OGVs in transit: 23 peak day / 14 avg. day / 365. For OGVs at berth: 32 peak day / 22 avg. day / 365. Assume the factors are also representative of 2040.

f. Assume the reefer peak day factor is equal to the CHE factor.

Table E-16. On-Terminal Truck VMT and Idling Time at Container Terminals, 2040

Alternative	2040 Annual Truck Calls (calls/yr) [a]	On-Terminal Driving Distance (mi/call) [b]	On-Terminal VMT (mi/yr)	On-Terminal Idling Time (hr/call) [c]	On-Terminal Idling Time (hr/yr)
Proposed	8,658,236	0.740	6,407,094	0.68	5,887,600
Alts 1 and 2	7,215,407		5,339,401		4,906,477
Alt 3	7,834,080		5,797,219		5,327,174

Notes:

a. Truck calls were estimated using the QuickTrip model (POLB, personal communication with Shashank Patil. March 29, 2019).

b. Source: Starcrest, personal communication with Joe Ray, 4/11/2019. The distance is a weighted average, consistent with the POLB 2017 Air Emissions Inventory (the distance in Table 6.4 is a straight average and therefore is not appropriate to use in this calculation). Assumes 2017 on-terminal driving distance per call is representative of 2040.

c. Source: POLB 2017 Air Emissions Inventory (July 2018), Table 6.4. Sum of Gate In, Unload/Load, and Gate Out. Assumes 2017 idling time per call is representative of 2040.

Table E-17. On-Terminal Truck VMT and Idling Time at Non-Container Terminals, 2040

Alternative	2017 Annual Truck Calls (calls/yr) [a]	Growth Factor, 2017 to 2040 [b]	2040 Annual Truck Calls (calls/yr)	On-Terminal Driving Distance (mi/call) [c]	On-Terminal VMT (mi/yr)	On-Terminal Idling Time (hr/call) [d]	On-Terminal Idling Time (hr/yr)
Proposed	287,946	1.27	365,691	0.147	53,757	0.08	29,255
Alts 1 and 2			365,691		53,757		29,255
Alt 3			365,691		53,757		29,255

Notes:

a. Source: POLB 2017 Air Emissions Inventory, pg. 33.

b. Source: Fehr & Peers, personal communication with Netai Basu. March 29, 2019. Derived from the non-container forecast demand data for the Port. The growth would be the same regardless of alternative.

c. Source: Starcrest, personal communication with Joe Ray, 4/11/2019. The distance is a weighted average, consistent with the POLB 2017 Air Emissions Inventory (the distance in Table 6.5 is a straight average and therefore is not appropriate to use in this calculation). Assumes 2017 on-terminal driving distance per call is representative of 2040.

d. Source: POLB 2017 Air Emissions Inventory (July 2018), Table 6.5. Sum of Gate In, Unload/Load, and Gate Out. Assumes 2017 idling time per call is representative of 2040.

Table E-18. Annual On-Terminal Truck Driving Exhaust Emissions, Unmitigated 2040

Alternative	Terminal Type	On-Terminal VMT (mi/yr)	Annual Emissions (ton/yr) [a]							Annual Emissions (MT/yr) [a]		
			PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4
Proposed	Container	6,407,094	0.085	0.081	0.081	84.5	0.152	10.18	0.48	14,549	2.29	0.026
	Non-Container	53,757	0.001	0.001	0.001	0.7	0.001	0.09	0.00	122	0.02	0.000
Alt 1	Container	5,339,401	0.071	0.068	0.068	70.4	0.126	8.49	0.40	12,125	1.91	0.021
	Non-Container	53,757	0.001	0.001	0.001	0.7	0.001	0.09	0.00	122	0.02	0.000
Alt 2	Container	5,339,401	0.071	0.068	0.068	70.4	0.126	8.49	0.40	12,125	1.91	0.021
	Non-Container	53,757	0.001	0.001	0.001	0.7	0.001	0.09	0.00	122	0.02	0.000
Alt 3	Container	5,797,219	0.077	0.073	0.074	76.5	0.137	9.21	0.44	13,164	2.07	0.023
	Non-Container	53,757	0.001	0.001	0.001	0.7	0.001	0.09	0.00	122	0.02	0.000

Notes:

a. Emission calculations use an emission factor for 10 mph, consistent with the methodology used by Starcrest for the annual emission inventories (Starcrest, personal communication with Archana Agrawal, March 11, 2019). Emission factors are from EMFAC2017 based on a Port-specific truck fleet mix. Source for emission factors: POLB, Personal communication with Janna Morimoto, 3/18/2019. Original source: Starcrest, 3/15/2019.

Table E-19. Annual On-Terminal Truck Idling Emissions, Unmitigated 2040

Alternative	Terminal Type	On-Terminal Idling Time (hr/yr)	Annual Emissions (ton/yr) [a]							Annual Emissions (MT/yr) [a]		
			PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4
Proposed	Container	5,887,600	0.027	0.026	0.026	152.5	0.308	231.69	10.32	35,396	0.96	0.354
	Non-Container	29,255	0.000	0.000	0.000	0.8	0.002	1.15	0.05	176	0.00	0.002
Alt 1	Container	4,906,477	0.023	0.022	0.022	127.1	0.256	193.08	8.60	29,498	0.80	0.295
	Non-Container	29,255	0.000	0.000	0.000	0.8	0.002	1.15	0.05	176	0.00	0.002
Alt 2	Container	4,906,477	0.023	0.022	0.022	127.1	0.256	193.08	8.60	29,498	0.80	0.295
	Non-Container	29,255	0.000	0.000	0.000	0.8	0.002	1.15	0.05	176	0.00	0.002
Alt 3	Container	5,327,174	0.025	0.023	0.024	138.0	0.278	209.63	9.34	32,027	0.87	0.320
	Non-Container	29,255	0.000	0.000	0.000	0.8	0.002	1.15	0.05	176	0.00	0.002

Notes:

a. Emission factors are from EMFAC2017 based on a Port-specific truck fleet mix. Source for emission factors: POLB, Personal communication with Janna Morimoto, 3/18/2019. Original source: Starcrest, 3/15/2019.

Table E-20. Paved Road Dust Emission Factor Derivation

CARB Roadway Category	(sL) Silt Loading (g/m2) [a]	PM10 Particle Size Multiplier (g/mi)	PM2.5 Particle Size Multiplier (g/mi)	Average Vehicle Weight (tons) [c]	Uncontrolled PM10 Emission Factor (g/mi) [b]	Uncontrolled PM2.5 Emission Factor (g/mi) [b]
On-Terminal Trucks [d]	0.135	1.00	0.15	18.9	3.240	0.486
On-Terminal Autos	0.135	1.00	0.15	2.4	0.395	0.059
Local	0.135	1.00	0.15	2.4	0.395	0.059
Collector	0.013	1.00	0.15	2.4	0.047	0.007
Major	0.013	1.00	0.15	2.4	0.047	0.007
Freeway	0.015	1.00	0.15	2.4	0.053	0.008

Notes:

a. Source: CARB Emission Inventory Chapter 7.9: Miscellaneous Process Methodology. Entrained Road Travel, Paved Road Dust. https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2018.pdf. March 2018.

b. The equation is: Emission Factor = (Particle Size Multiplier) x (sL)^0.91 x (Vehicle Weight)^1.02

c. Average vehicle weight refers to the average weight of all vehicles traveling the road. Source for average vehicle weight of 2.4 tons: SCAQMD, *CalEEMod User's Guide* (February 2011). Appendix D, Table 4.1. Los Angeles County (South Coast).

d. Assume trucks drive primarily on truck-only routes while on-terminal; therefore, the average port truck weight of 18.9 tons was used for on-terminal trucks. Source: POLA, *Berths 97-109 [China Shipping] Container Terminal Recirculated Draft Supplemental EIR* , September 2018. Appendix B1, Table B1-503.

Table E-21. Summary of Daily VMT by Roadway Type; All Vehicles in the Los Angeles - Long Beach - Anaheim Metro Area

Description [a]	Interstate/ Other Fwy/ Exprwy	Other Principal Arterial	Minor Arterial	Collector	Local
Daily Vehicle-Miles Travelled (Thousands)	132,796	67,118	49,528	15,370	14,481
Travel Fraction	0.48	0.24	0.18	0.06	0.05

Notes:

a. Source: Federal Highway Adminstration. Highway Statistics 2016 - Urbanized Area Summaries - Length and Daily Vehicle-Miles of Travel. Table HM-71. October 2017. website: https://www.fhwa.dot.gov/policyinformation/statistics/2016/. Year 2016 was the most recent data available.

Table E-22. Composite Paved Road Dust Emission Factors for Off-Terminal Vehicle Travel

	Fraction of Travel by Roadway Type					Composite Emission Factor	
Vehicle Type	Interstate/ Other Fwy/ Exprwy	Other Principal Arterial	Minor Arterial	Collector	Local	PM10 (g/mi)	PM2.5 (g/mi)
Off-Terminal Trucks [a]	0.72	0.16	0.04	0.03	0.06	0.072	0.011
Off-Terminal Autos [b]	0.48	0.24	0.18	0.06	0.05	0.068	0.010

Notes:

a. Port truck travel fractions were provided by Cambridge Systematics (May 2, 2012) in support of the *Pier B On-Dock Rail Support Facility Project EIR* (POLB, December 2016).

b. All vehicles travel fractions were obtained from the Federal Highway Adminstration. Highway Statistics 2016 - Urbanized Area Summaries - Length and Daily Vehicle-Miles of Travel. Table HM-71. October 2017. website: https://www.fhwa.dot.gov/policyinformation/statistics/2016/. Year 2016 was the most recent data available.

Table E-23. Annual Truck Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB; CEQA Baseline, 2017

Source	Annual VMT (mi/yr) [a]	Emission Factor (g/mi) [b]		Annual Emissions (ton/yr)	
		PM10	PM2.5	PM10	PM2.5
Container Trucks On-Terminal					
Tire Wear	2,559,514	0.036	0.009	0.10	0.03
Brake Wear		0.062	0.026	0.17	0.07
Road Dust		3.240	0.486	9.14	1.37
Container Trucks On-Road					
Tire Wear	158,700,496	0.036	0.009	6.30	1.57
Brake Wear		0.062	0.026	10.80	4.63
Road Dust		0.072	0.011	12.56	1.88
Non-Container Trucks On-Terminal					
Tire Wear	42,337	0.036	0.009	0.002	0.0004
Brake Wear		0.062	0.026	0.003	0.001
Road Dust		3.240	0.486	0.15	0.02
Non-Container Trucks On-Road					
Tire Wear	8,252,426	0.036	0.009	0.33	0.08
Brake Wear		0.062	0.026	0.56	0.24
Road Dust		0.072	0.011	0.65	0.10

Notes:

a. Traffic data are from the POLB 2017 Air Emissions Inventory, Tables 6.2 and 6.3.

b. Emission factors for tire and brake wear are from EMFAC2017 for "T7 POLA" diesel trucks in the South Coast Air Basin. Emission factors for paved road dust were developed using CARB methodology in Emission Inventory Chapter 7.9: Miscellaneous Process Methodology. Entrained Road Travel, Paved Road Dust. https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2018.pdf. March 2018.

Table E-24. Annual Truck Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB; Unmitigated Proposed Plan, 2040

Source	Annual VMT (mi/yr) [a]	Emission Factor (g/mi) [b]		Annual Emissions (ton/yr)	
		PM10	PM2.5	PM10	PM2.5
Trucks On-Terminal					
Tire Wear	6,460,851	0.036	0.009	0.26	0.06
Brake Wear		0.062	0.026	0.44	0.19
Road Dust		3.240	0.486	23.08	3.46
Trucks On-Road					
Tire Wear	464,722,823	0.036	0.009	18.44	4.61
Brake Wear		0.062	0.026	31.63	13.55
Road Dust		0.072	0.011	36.79	5.52

Notes:

a. On-terminal VMT was calculated from truck call volumes estimated using the QuickTrip model and on-terminal driving distances consistent with the POLB 2017 Air Emissions Inventory. On-road VMT was provided by Fehr and Peers (personal communication with Netai Basu, May 10, 2019).

b. Emission factors for tire and brake wear are from EMFAC2017 for "T7 POLA" diesel trucks in the South Coast Air Basin. Emission factors for paved road dust were developed using CARB methodology in Emission Inventory Chapter 7.9: Miscellaneous Process Methodology. Entrained Road Travel, Paved Road Dust. https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2018.pdf. March 2018.

Table E-25. Annual Truck Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB; Unmitigated Alternative 1, 2040

Source	Annual VMT (mi/yr) [a]	Emission Factor (g/mi) [b]		Annual Emissions (ton/yr)	
		PM10	PM2.5	PM10	PM2.5
Trucks On-Terminal					
Tire Wear	5,393,158	0.036	0.009	0.21	0.05
Brake Wear		0.062	0.026	0.37	0.16
Road Dust		3.240	0.486	19.26	2.89
Trucks On-Road					
Tire Wear	404,999,564	0.036	0.009	16.07	4.02
Brake Wear		0.062	0.026	27.56	11.81
Road Dust		0.072	0.011	32.06	4.81

Notes:

a. On-terminal VMT was calculated from truck call volumes estimated using the QuickTrip model and on-terminal driving distances consistent with the POLB 2017 Air Emissions Inventory. On-road VMT was provided by Fehr and Peers (personal communication with Netai Basu, May 10, 2019).

b. Emission factors for tire and brake wear are from EMFAC2017 for "T7 POLA" diesel trucks in the South Coast Air Basin. Emission factors for paved road dust were developed using CARB methodology in Emission Inventory Chapter 7.9: Miscellaneous Process Methodology. Entrained Road Travel, Paved Road Dust. https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2018.pdf. March 2018.

Table E-26. Annual Truck Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB; Unmitigated Alternative 2, 2040

Source	Annual VMT (mi/yr) [a]	Emission Factor (g/mi) [b]		Annual Emissions (ton/yr)	
		PM10	PM2.5	PM10	PM2.5
Trucks On-Terminal					
Tire Wear	5,393,158	0.036	0.009	0.21	0.05
Brake Wear		0.062	0.026	0.37	0.16
Road Dust		3.240	0.486	19.26	2.89
Trucks On-Road					
Tire Wear	404,999,564	0.036	0.009	16.07	4.02
Brake Wear		0.062	0.026	27.56	11.81
Road Dust		0.072	0.011	32.06	4.81

Notes:

a. On-terminal VMT was calculated from truck call volumes estimated using the QuickTrip model and on-terminal driving distances consistent with the POLB 2017 Air Emissions Inventory. On-road VMT was provided by Fehr and Peers (personal communication with Netai Basu, May 10, 2019).

b. Emission factors for tire and brake wear are from EMFAC2017 for "T7 POLA" diesel trucks in the South Coast Air Basin. Emission factors for paved road dust were developed using CARB methodology in Emission Inventory Chapter 7.9: Miscellaneous Process Methodology. Entrained Road Travel, Paved Road Dust. https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2018.pdf. March 2018.

Table E-27. Annual Truck Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB; Unmitigated Alternative 3, 2040

Source	Annual VMT (mi/yr) [a]	Emission Factor (g/mi) [b]		Annual Emissions (ton/yr)	
		PM10	PM2.5	PM10	PM2.5
Trucks On-Terminal					
Tire Wear	5,850,976	0.036	0.009	0.23	0.06
Brake Wear		0.062	0.026	0.40	0.17
Road Dust		3.240	0.486	20.90	3.13
Trucks On-Road					
Tire Wear	430,392,293	0.036	0.009	17.08	4.27
Brake Wear		0.062	0.026	29.29	12.55
Road Dust		0.072	0.011	34.07	5.11

Notes:

a. On-terminal VMT was calculated from truck call volumes estimated using the QuickTrip model and on-terminal driving distances consistent with the POLB 2017 Air Emissions Inventory. On-road VMT was provided by Fehr and Peers (personal communication with Netai Basu, May 10, 2019).

b. Emission factors for tire and brake wear are from EMFAC2017 for "T7 POLA" diesel trucks in the South Coast Air Basin. Emission factors for paved road dust were developed using CARB methodology in Emission Inventory Chapter 7.9: Miscellaneous Process Methodology. Entrained Road Travel, Paved Road Dust. https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2018.pdf. March 2018.

Table E-28. Annual Truck Off-Terminal Exhaust Emissions within the SCAB, Unmitigated 2040

Alternative	Time Period	Annual VMT (mi/yr) [a]	Average Speed (mph)	Annual Emissions (ton/yr) [b]							Annual Emissions (MT/yr) [b]		
				PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4
Proposed Plan	AM	48,971,361	35	0.5	0.5	0.5	149.8	0.5	12.5	0.7	51,224	8.0	0.0
	PM	87,881,649	33	0.9	0.9	0.9	309.6	1.0	25.3	1.4	96,283	15.1	0.1
	MD	194,745,277	40	2.8	2.6	2.7	426.1	1.9	37.1	2.6	186,761	29.4	0.2
	Off-Peak	133,124,537	55	4.1	4.0	3.9	174.6	1.3	15.4	1.8	123,007	19.3	0.1
	Total	**464,722,823**	**--**	**8.3**	**8.0**	**8.0**	**1,060.2**	**4.8**	**90.3**	**6.4**	**457,275**	**71.9**	**0.5**
Alternative 1	AM	41,310,557	36	0.5	0.5	0.5	119.2	0.4	10.0	0.6	42,492	6.7	0.0
	PM	75,854,287	33	0.8	0.8	0.7	267.2	0.9	21.8	1.2	83,106	13.0	0.1
	MD	171,021,521	40	2.5	2.3	2.4	374.2	1.7	32.6	2.3	164,010	25.8	0.2
	Off-Peak	116,813,198	55	3.6	3.5	3.5	153.2	1.2	13.5	1.5	107,935	16.9	0.1
	Total	**404,999,564**	**--**	**7.3**	**7.0**	**7.0**	**913.8**	**4.2**	**77.9**	**5.6**	**397,543**	**62.5**	**0.4**
Alternative 2	AM	41,310,557	36	0.5	0.5	0.5	119.2	0.4	10.0	0.6	42,492	6.7	0.0
	PM	75,854,287	33	0.8	0.8	0.7	267.2	0.9	21.8	1.2	83,106	13.0	0.1
	MD	171,021,521	40	2.5	2.3	2.4	374.2	1.7	32.6	2.3	164,010	25.8	0.2
	Off-Peak	116,813,198	55	3.6	3.5	3.5	153.2	1.2	13.5	1.5	107,935	16.9	0.1
	Total	**404,999,564**	**--**	**7.3**	**7.0**	**7.0**	**913.8**	**4.2**	**77.9**	**5.6**	**397,543**	**62.5**	**0.4**
Alternative 3	AM	43,660,824	35	0.5	0.5	0.5	133.6	0.5	11.1	0.6	45,669	7.2	0.0
	PM	82,064,484	33	0.8	0.8	0.8	289.1	0.9	23.6	1.3	89,910	14.1	0.1
	MD	180,683,031	40	2.6	2.4	2.5	395.3	1.8	34.5	2.4	173,275	27.3	0.2
	Off-Peak	123,983,954	55	3.8	3.7	3.7	162.6	1.2	14.3	1.6	114,561	18.0	0.1
	Total	**430,392,293**	**--**	**7.7**	**7.4**	**7.4**	**980.7**	**4.4**	**83.5**	**5.9**	**423,415**	**66.5**	**0.4**

Notes:

a. Traffic data were provided by Fehr and Peers (personal communication with Netai Basu, May 10, 2019). Daily VMT is converted to annual VMT using a factor of 275 (POLB, personal communication with Shashank Patil. March 29, 2019).

b. Emissions were calculated using EMFAC2017 emission factors based on a Port-specific truck fleet mix. Source for emission factors: POLB, Personal communication with Janna Morimoto, 4/10/2019. Original source: Starcrest, personal communication from Joe Ray to Janna Morimoto, 4/10/2019. Emission factors were interpolated to the nearest 1 mph.

Table E-29. Annual Truck GHG Emissions Between the SCAB and CA Border

Alternative	Time Period	Annual VMT (mi/yr) [a]	Average Speed (mph) [b]	Annual Emissions (MT/yr) [c]		
				CO2	N2O	CH4
CEQA Baseline 2017	AM	3,042,349	50	2,732	0.4	0.0
	PM	6,697,773	50	6,015	0.9	0.0
	MD	13,654,042	50	12,261	1.9	0.0
	Off-Peak	11,475,878	55	10,604	1.7	0.0
	Total	**34,870,043**	**--**	**31,612**	**5.0**	**0.0**
Proposed Plan Unmitigated 2040	AM	8,813,403	50	7,914	1.2	0.0
	PM	19,420,913	50	17,440	2.7	0.0
	MD	38,726,666	50	34,777	5.5	0.0
	Off-Peak	31,265,264	55	28,889	4.5	0.0
	Total	**98,226,245**	**--**	**89,020**	**14.0**	**0.1**
Alternative 1 Unmitigated 2040	AM	7,016,757	50	6,301	1.0	0.0
	PM	15,780,482	50	14,171	2.2	0.0
	MD	32,312,399	50	29,017	4.6	0.0
	Off-Peak	26,484,192	55	24,471	3.8	0.0
	Total	**81,593,830**	**--**	**73,960**	**11.6**	**0.1**
Alternative 2 Unmitigated 2040	AM	7,016,757	50	6,301	1.0	0.0
	PM	15,780,482	50	14,171	2.2	0.0
	MD	32,312,399	50	29,017	4.6	0.0
	Off-Peak	26,484,192	55	24,471	3.8	0.0
	Total	**81,593,830**	**--**	**73,960**	**11.6**	**0.1**
Alternative 3 Unmitigated 2040	AM	7,711,118	50	6,925	1.1	0.0
	PM	17,711,580	50	15,905	2.5	0.0
	MD	35,082,448	50	31,504	4.9	0.0
	Off-Peak	28,506,022	55	26,340	4.1	0.0
	Total	**89,011,168**	**--**	**80,673**	**12.7**	**0.1**

Notes:

a. Traffic data were provided by Fehr and Peers (personal communication with Netai Basu, May 10, 2019). Daily VMT is converted to annual VMT using a factor of 275 (POLB, personal communication with Shashank Patil. March 29, 2019).

b. Average speeds of 50 mph outside the SCAB were assumed for the AM, PM, and MD periods, as recommended by Fehr and Peers (Personal communication with Netai Basu. May 10, 2019). Off-peak period speeds of 55 mph were assumed, which match the in-SCAB off-peak speeds.

c. Emissions were calculated using EMFAC2017 emission factors based on a Port-specific truck fleet mix. Source for emission factors: POLB, Personal communication with Janna Morimoto, 4/10/2019. Original source: Starcrest, personal communication from Joe Ray to Janna Morimoto, 4/10/2019. Emission factors were interpolated to the nearest 1 mph.

Table E-30. Annual Automobile Exhaust Emissions within the SCAB

Alternative	Time Period	Annual VMT (mi/yr) [a]	Average Speed (mph)	Annual Emissions (ton/yr) [b]							Annual Emissions (MT/yr) [b]		
				PM10	PM2.5	DPM	NOx	SOx	CO	VOC	CO2	N2O	CH4
CEQA Baseline 2017	AM	18,637,822	36	0.04	0.04	0.005	2.81	0.06	31.3	0.82	5,931	0.19	0.16
	PM	27,257,124	33	0.06	0.06	0.007	4.20	0.10	48.1	1.33	8,987	0.28	0.26
	MD	40,295,216	40	0.07	0.07	0.011	5.93	0.14	63.9	1.61	12,527	0.40	0.32
	Off-Peak	13,770,246	56	0.03	0.02	0.005	2.06	0.05	18.6	0.52	4,648	0.14	0.10
	Total	**99,960,409**	--	**0.20**	**0.18**	**0.028**	**14.98**	**0.35**	**161.8**	**4.28**	**32,093**	**1.00**	**0.85**
Proposed Plan Unmitigated 2040	AM	25,386,087	35	0.02	0.02	0.001	0.74	0.06	15.1	0.35	5,118	0.10	0.08
	PM	41,372,426	33	0.03	0.03	0.002	1.24	0.09	25.5	0.63	8,597	0.16	0.14
	MD	51,348,687	40	0.03	0.03	0.002	1.44	0.11	28.5	0.63	10,046	0.19	0.15
	Off-Peak	19,849,583	56	0.01	0.01	0.001	0.55	0.05	9.3	0.23	4,215	0.08	0.06
	Total	**137,956,784**	--	**0.09**	**0.08**	**0.006**	**3.97**	**0.30**	**78.3**	**1.84**	**27,977**	**0.53**	**0.43**
Alternative 1 Unmitigated 2040	AM	23,030,919	36	0.01	0.01	0.001	0.67	0.05	13.5	0.31	4,616	0.09	0.07
	PM	37,081,148	33	0.03	0.02	0.001	1.11	0.08	22.8	0.56	7,706	0.15	0.12
	MD	47,836,443	40	0.03	0.03	0.002	1.34	0.10	26.5	0.59	9,358	0.18	0.14
	Off-Peak	17,970,884	56	0.01	0.01	0.001	0.50	0.04	8.4	0.21	3,816	0.07	0.06
	Total	**125,919,395**	--	**0.08**	**0.07**	**0.005**	**3.61**	**0.28**	**71.3**	**1.67**	**25,496**	**0.48**	**0.40**
Alternative 2 Unmitigated 2040	AM	23,030,919	36	0.01	0.01	0.001	0.67	0.05	13.5	0.31	4,616	0.09	0.07
	PM	37,081,148	33	0.03	0.02	0.001	1.11	0.08	22.8	0.56	7,706	0.15	0.12
	MD	47,836,443	40	0.03	0.03	0.002	1.34	0.10	26.5	0.59	9,358	0.18	0.14
	Off-Peak	17,970,884	56	0.01	0.01	0.001	0.50	0.04	8.4	0.21	3,816	0.07	0.06
	Total	**125,919,395**	--	**0.08**	**0.07**	**0.005**	**3.61**	**0.28**	**71.3**	**1.67**	**25,496**	**0.48**	**0.40**
Alternative 3 Unmitigated 2040	AM	23,959,044	35	0.02	0.01	0.001	0.70	0.05	14.3	0.33	4,831	0.09	0.08
	PM	39,052,202	33	0.03	0.03	0.001	1.17	0.09	24.0	0.59	8,115	0.15	0.13
	MD	49,425,465	40	0.03	0.03	0.002	1.38	0.11	27.4	0.61	9,669	0.19	0.15
	Off-Peak	18,864,946	56	0.01	0.01	0.001	0.52	0.04	8.8	0.22	4,006	0.07	0.06
	Total	**131,301,657**	--	**0.08**	**0.08**	**0.006**	**3.77**	**0.29**	**74.5**	**1.75**	**26,621**	**0.50**	**0.41**

Notes:

a. Traffic data were provided by Fehr and Peers (personal communication with Netai Basu, May 10, 2019). Daily VMT is converted to annual VMT using a factor of 275 (POLB, personal communication with Shashank Patil. March 29, 2019).

b. Emissions were calculated using EMFAC2017 running exhaust emission factors for non-trucks. Emission factors were interpolated to the nearest 1 mph.

Table E-31. Annual Automobile Emissions of Tire Wear, Brake Wear, and Road Dust within the SCAB

Alternative	Source	Annual VMT (mi/yr) [a]	Emission Factor (g/mi) [b]		Annual Emissions (ton/yr)	
			PM10	PM2.5	PM10	PM2.5
CEQA Baseline 2017	Tire Wear	99,960,409	0.008	0.002	0.88	0.22
	Brake Wear		0.037	0.016	4.12	1.77
	Road Dust		0.068	0.010	7.50	1.13
Proposed Plan Unmitigated 2040	Tire Wear	137,956,784	0.008	0.002	1.22	0.31
	Brake Wear		0.038	0.016	5.71	2.45
	Road Dust		0.068	0.010	10.35	1.55
Alternative 1 Unmitigated 2040	Tire Wear	125,919,395	0.008	0.002	1.11	0.28
	Brake Wear		0.038	0.016	5.21	2.23
	Road Dust		0.068	0.010	9.45	1.42
Alternative 2 Unmitigated 2040	Tire Wear	125,919,395	0.008	0.002	1.11	0.28
	Brake Wear		0.038	0.016	5.21	2.23
	Road Dust		0.068	0.010	9.45	1.42
Alternative 3 Unmitigated 2040	Tire Wear	131,301,657	0.008	0.002	1.16	0.29
	Brake Wear		0.038	0.016	5.43	2.33
	Road Dust		0.068	0.010	9.85	1.48

Notes:

a. Traffic data were provided by Fehr and Peers (personal communication with Netai Basu, May 10, 2019). Daily VMT is converted to annual VMT using a factor of 275 (POLB, personal communication with Shashank Patil. March 29, 2019).

b. Emission factors for tire and brake wear are from EMFAC2017 (v1.0.2) for non-trucks in the South Coast Air Basin. Emission factors for paved road dust were developed using CARB methodology in Emission Inventory Chapter 7.9: Miscellaneous Process Methodology. Entrained Road Travel, Paved Road Dust. https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2018.pdf. March 2018.

Table E-32. Heavy Duty Truck Exhaust Emission Factors for 2017 and 2040

Speed (mph)	2040 Emission Factors, g/mi [a]									
	PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4
5	0.014	0.013	0.013	15.901	0.026	2.345	0.108	2,746	0.432	0.006
10	0.012	0.011	0.012	11.968	0.021	1.442	0.068	2,271	0.357	0.004
15	0.010	0.009	0.010	8.367	0.017	0.781	0.038	1,787	0.281	0.002
20	0.008	0.008	0.008	6.609	0.014	0.522	0.026	1,526	0.240	0.002
25	0.008	0.007	0.008	5.143	0.013	0.399	0.020	1,332	0.209	0.001
30	0.008	0.008	0.008	3.828	0.011	0.306	0.016	1,170	0.184	0.001
35	0.010	0.010	0.010	2.775	0.010	0.231	0.013	1,046	0.164	0.001
40	0.013	0.012	0.012	1.985	0.009	0.173	0.012	959	0.151	0.001
45	0.017	0.016	0.016	1.457	0.009	0.133	0.011	910	0.143	0.001
50	0.022	0.021	0.021	1.192	0.008	0.110	0.011	898	0.141	0.001
55	0.028	0.027	0.027	1.190	0.009	0.105	0.012	924	0.145	0.001
60	0.035	0.033	0.034	1.451	0.009	0.117	0.014	987	0.155	0.001
65	0.043	0.041	0.041	1.984	0.010	0.147	0.017	1,088	0.171	0.001
70	0.043	0.041	0.041	1.987	0.010	0.194	0.021	1,088	0.171	0.001
Idle (g/hr)	0.0042	0.0040	0.0040	23.5	0.047	35.7	1.59	6,012	0.16	0.060

Speed (mph)	2017 Emission Factors, g/mi [a]									
	PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4
5	0.065	0.063	0.062	15.663	0.036	4.782	1.187	3,782	0.594	0.070
10	0.059	0.056	0.057	13.188	0.031	3.650	0.936	3,267	0.514	0.055
15	0.050	0.048	0.048	10.352	0.025	2.450	0.642	2,686	0.422	0.038
20	0.045	0.043	0.043	8.621	0.022	1.747	0.459	2,337	0.367	0.027
25	0.041	0.039	0.039	7.561	0.020	1.291	0.338	2,090	0.329	0.020
30	0.038	0.037	0.036	6.794	0.018	0.961	0.252	1,901	0.299	0.015
35	0.037	0.035	0.036	6.200	0.017	0.715	0.188	1,754	0.276	0.011
40	0.036	0.035	0.035	5.756	0.016	0.532	0.141	1,644	0.258	0.008
45	0.037	0.035	0.036	5.447	0.015	0.399	0.107	1,566	0.246	0.006
50	0.038	0.036	0.036	5.266	0.014	0.305	0.083	1,517	0.239	0.005
55	0.040	0.038	0.038	5.210	0.014	0.242	0.066	1,497	0.235	0.004
60	0.043	0.041	0.041	5.331	0.014	0.224	0.061	1,519	0.239	0.004
65	0.048	0.046	0.046	5.634	0.015	0.238	0.065	1,579	0.248	0.004
70	0.048	0.046	0.046	5.651	0.015	0.243	0.065	1,579	0.248	0.004

Notes:

a. Source: POLB, Personal communication with Janna Morimoto, 4/10/2019. Original source: Starcrest, personal communication from Joe Ray to Janna Morimoto, 4/10/2019. Emission factors were derived from EMFAC2017. DPM emission factors equal PM10 x 0.96 to account for 4% LNG trucks. This adjustment was also made to the 2040 emission factors under the conservative assumption that the percent LNG trucks would remain unchanged.

Table E-33. Automobile Exhaust Emission Factors for 2017

Vehicle Type	Region	Calendar Year	Vehicle Category	Model Year	Speed (mph)	Fuel	Emission Factors (g/mi)										
							VOC	TOG	CO	NOx	SOx	CO2	CH4	PM10	PM2.5	N2O	DPM
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	5	Aggregated	0.264	0.490	3.375	0.340	0.0081	845.0	0.180	0.0127	0.0117	0.024	0.00122
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	10	Aggregated	0.175	0.324	2.911	0.281	0.0066	682.7	0.119	0.0083	0.0077	0.020	0.00090
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	15	Aggregated	0.118	0.205	2.485	0.221	0.0054	554.5	0.067	0.0056	0.0051	0.017	0.00057
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	20	Aggregated	0.088	0.237	2.606	0.220	0.0044	478.3	0.134	0.0039	0.0036	0.019	0.00034
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	25	Aggregated	0.062	0.086	1.856	0.154	0.0038	387.5	0.013	0.0029	0.0026	0.012	0.00026
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	30	Aggregated	0.049	0.068	1.685	0.143	0.0034	344.2	0.011	0.0023	0.0021	0.011	0.00023
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	35	Aggregated	0.041	0.057	1.543	0.137	0.0032	320.1	0.009	0.0019	0.0017	0.010	0.00023
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	40	Aggregated	0.036	0.050	1.438	0.133	0.0031	310.9	0.008	0.0017	0.0016	0.010	0.00024
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	45	Aggregated	0.034	0.046	1.353	0.130	0.0031	312.9	0.008	0.0016	0.0015	0.010	0.00027
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	50	Aggregated	0.033	0.045	1.292	0.130	0.0032	322.5	0.007	0.0016	0.0014	0.010	0.00029
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	55	Aggregated	0.033	0.046	1.233	0.134	0.0033	335.6	0.007	0.0016	0.0015	0.010	0.00034
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	60	Aggregated	0.036	0.049	1.188	0.142	0.0034	345.1	0.008	0.0018	0.0017	0.010	0.00041
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	65	Aggregated	0.040	0.055	1.168	0.150	0.0035	356.3	0.009	0.0021	0.0019	0.011	0.00053
Non-Trucks	SOUTH COAST	2017	Aggregated	Aggregated	70	Aggregated	0.045	0.061	1.180	0.156	0.0036	362.8	0.009	0.0022	0.0021	0.012	0.00062

Source: EMFAC2017 (v1.0.2). Running exhaust.

Table E-34. Automobile Exhaust Emission Factors for 2040

Vehicle Type	Region	Calendar Year	Vehicle Category	Model Year	Speed (mph)	Fuel	Emission Factors (g/mi)										
							VOC	TOG	CO	NOx	SOx	CO2	CH4	PM10	PM2.5	N2O	DPM
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	5	Aggregated	0.085	0.169	1.394	0.066	0.0051	535.8	0.074	0.0042	0.0038	0.011	0.00007
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	10	Aggregated	0.055	0.124	1.258	0.058	0.0042	438.6	0.063	0.0026	0.0024	0.010	0.00007
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	15	Aggregated	0.038	0.083	1.030	0.045	0.0034	355.7	0.040	0.0018	0.0016	0.008	0.00005
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	20	Aggregated	0.028	0.136	1.462	0.042	0.0028	315.9	0.105	0.0013	0.0012	0.011	0.00004
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	25	Aggregated	0.020	0.026	0.641	0.030	0.0024	244.7	0.004	0.0009	0.0008	0.004	0.00003
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	30	Aggregated	0.015	0.021	0.586	0.028	0.0021	217.1	0.004	0.0007	0.0007	0.004	0.00003
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	35	Aggregated	0.013	0.017	0.540	0.027	0.0020	201.6	0.003	0.0006	0.0006	0.004	0.00003
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	40	Aggregated	0.011	0.015	0.503	0.025	0.0019	195.6	0.003	0.0005	0.0005	0.004	0.00004
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	45	Aggregated	0.010	0.014	0.474	0.024	0.0019	196.9	0.003	0.0005	0.0005	0.004	0.00004
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	50	Aggregated	0.010	0.014	0.448	0.024	0.0020	202.6	0.003	0.0005	0.0004	0.004	0.00005
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	55	Aggregated	0.010	0.015	0.428	0.025	0.0021	211.0	0.003	0.0005	0.0005	0.004	0.00006
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	60	Aggregated	0.011	0.016	0.411	0.026	0.0021	217.8	0.003	0.0005	0.0005	0.004	0.00007
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	65	Aggregated	0.012	0.018	0.400	0.028	0.0022	223.1	0.004	0.0006	0.0006	0.004	0.00008
Non-Trucks	SOUTH COAST	2040	Aggregated	Aggregated	70	Aggregated	0.011	0.015	0.374	0.026	0.0022	224.4	0.003	0.0007	0.0006	0.004	0.00008

Source: EMFAC2017 (v1.0.2). Running exhaust.

Table E-35. Off-Dock Train Activity, 2017

Off-Dock Container Throughput (containers/ yr) [a]	Average Train Size (containers/ train) [b]	Equivalent Number of Trains (trains/year)	Average Train Weight (gross tons/train) [b]	Annual Gross Ton-Miles [c]		Fuel Consumption Factor (gal fuel/thousand GTM) [d]	Fuel Consumption Conversion Factor (hp-hr/gal) [e]	Annual Locomotive Usage	
				Within the SCAB (GTM/yr)	Between the SCAB and CA Border (GTM/yr)			Within the SCAB (hp-hr/yr)	Between the SCAB and CA Border (hp-hr/yr)
161,336	274	589	7,276	3.58E+08	1.02E+09	0.99	20.8	7.36E+06	2.11E+07

Notes:

a. Source: POLB, personal communication from Shashank Patil, 1/17/2019. Near-dock (ICTF) trains are excluded because their emissions were obtained from the POLB 2017 Air Emissions Inventory.

b. Source: POLB, *2013 POLB Air Emissions Inventory* . July 2014. Table 5.9.

c. Average transit distance for off-dock trains was 83 miles within the SCAB and 239 miles between the SCAB and CA border. Distances were determined from train routes by origin provided by POLB (personal communication from S. Patil, 1/17/2019) and train routes by destination provided by Starcrest (personal communication with A. Agrawal, 8/23/2018), and measured using Google Earth.

d. Source: POLB, *2017 POLB Air Emissions Inventory* . July 2018. Page 28.

e. Source: EPA, *Technical Highlights: Emission Factors for Locomotives* , EPA-420-F-09-025, April 2009.

Table E-36. Annual Off-Dock Train Emissions within the SCAB; CEQA Baseline, 2017

Locomotive Usage (hp-hr/yr) [b]	Annual Emissions (ton/yr) [a]							Annual Emissions (MT/yr) [a]		
	PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4
7.36E+06	1.62	1.46	1.62	43.83	0.04	10.39	2.35	3,638	0.10	0.29

Notes:

a. Calculated using 2017 line haul locomotive emission factors published in the *2017 POLB Air Emissions Inventory* (POLB, July 2018), Table 5.4. The emission factors were developed from CARB MOU compliance information submitted annually by BNSF and UP, and from EPA national fleet average emission factors (EPA, Emission Factors for Locomotives, Office of Transportation and Air Quality, EPA-420-F-09-025, April 2009).

b. Near-dock (ICTF) trains are excluded because their emissions were obtained from the POLB 2017 Air Emissions Inventory.

Table E-37. Annual Off-Dock Train GHG Emissions between the SCAB and CA Border; CEQA Baseline, 2017

Locomotive Usage (hp-hr/yr) [b]	Annual Emissions (MT/yr) [a]		
	CO2	N2O	CH4
2.11E+07	10,422	0.27	0.84

Notes:

a. Calculated using 2017 line haul locomotive emission factors published in the *2017 POLB Air Emissions Inventory* (POLB, July 2018), Table 5.4. The emission factors were developed from CARB MOU compliance information submitted annually by BNSF and UP, and from EPA national fleet average emission factors (EPA, *Emission Factors for Locomotives* , Office of Transportation and Air Quality, EPA-420-F-09-025, April 2009).

b. Near-dock (ICTF) trains are excluded because their emissions were obtained from the POLB 2017 Air Emissions Inventory.

Table E-38. Near-Dock and Off-Dock Train Activity, 2040

Alternative	Near-Dock and Off-Dock Container Throughput (containers/ yr) [a]	Average Train Size (containers/ train) [b]	Equivalent Number of Trains (trains/year)	Average Train Weight (gross tons/train) [b]	Annual Gross Ton-Miles [c]		Fuel Consumption Factor (gal fuel/thousand GTM) [d]	Fuel Consumption Conversion Factor (hp-hr/gal) [e]	Annual Locomotive Usage	
					Within the SCAB (GTM/yr)	Between the SCAB and CA Border (GTM/yr)			Within the SCAB (hp-hr/yr)	Between the SCAB and CA Border (hp-hr/yr)
Proposed	708,542	274	2,586	7,276	1.74E+09	3.93E+09	0.99	20.8	3.58E+07	8.09E+07
Alts 1 and 2	591,388	274	2,158	7,276	1.45E+09	3.28E+09	0.99	20.8	2.99E+07	6.75E+07
Alt 3	594,722	274	2,171	7,276	1.46E+09	3.30E+09	0.99	20.8	3.00E+07	6.79E+07

Notes:

a. Source: POLB, personal communication from Janna Morimoto. March 25, 2019. Originally from Ramesh Thammiraju/Cambridge Systematics.

b. Source: POLB, *2013 POLB Air Emissions Inventory* . July 2014. Table 5.9.

c. Average transit distance for near-dock (ICTF) and off-dock trains is 92 mi within the SCAB and 209 mi between the SCAB and CA border. Distances were determined from train routes by origin provided by the Port (personal communication with J. Morimoto, 3/25/2019) and train routes by destination provided by Starcrest (personal communication with A. Agrawal, 8/23/2018), and measured using Google Earth.

d. Source: POLB, *2017 POLB Air Emissions Inventory* . July 2018. Page 28.

e. Source: EPA, *Technical Highlights: Emission Factors for Locomotives* , EPA-420-F-09-025, April 2009.

Table E-39. Annual Near-Dock and Off-Dock Train Emissions within the SCAB, Unmitigated 2040

Alternative	Locomotive Usage (hp-hr/yr)	Annual Emissions (ton/yr) [a]							Annual Emissions (MT/yr) [a]		
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4
Proposed	3.58E+07	0.76	0.79	0.79	53.23	0.20	50.47	1.97	17,672	0.47	1.43
Alt 1	2.99E+07	0.63	0.66	0.66	44.43	0.16	42.13	1.65	14,750	0.39	1.19
Alt 2	2.99E+07	0.63	0.66	0.66	44.43	0.16	42.13	1.65	14,750	0.39	1.19
Alt 3	3.00E+07	0.64	0.66	0.66	44.68	0.17	42.36	1.65	14,833	0.39	1.20

a. Calculated using emissions factors provided by POLB (personal communication from Janna Morimoto, April 1, 2019). Original source: Starcrest. Derived from EPA national fleet average emission factors (EPA, *Emission Factors for Locomotives* , Office of Transportation and Air Quality, EPA-420-F-09-025, April 2009).

Table E-40. Annual Near-Dock and Off-Dock Train GHG Emissions between the SCAB and CA Border, Unmitigated 2040

Alternative	Locomotive Usage (hp-hr/yr)	Annual Emissions (MT/yr) [a]		
		CO2	N2O	CH4
Proposed	8.09E+07	39,948	1.05	3.23
Alt 1	6.75E+07	33,343	0.88	2.70
Alt 2	6.75E+07	33,343	0.88	2.70
Alt 3	6.79E+07	33,531	0.88	2.72

a. Calculated using emissions factors provided by POLB (personal communication from Janna Morimoto, April 1, 2019). Original source: Starcrest. Derived from EPA national fleet average emission factors (EPA, *Emission Factors for Locomotives* , Office of Transportation and Air Quality, EPA-420-F-09-025, April 2009).

Table E-41. Emission Factors for Line Haul Locomotives

Year	Emission Factor (g/hp-hr)										
	PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4	CO2e
2017 [a]	0.200	0.180	0.200	5.4	0.005	1.28	0.29	494	0.013	0.04	499
2040 [b]	0.019	0.020	0.020	1.35	0.005	1.28	0.05	494	0.013	0.04	499

Notes:

a. Source: POLB 2017 Air Emissions Inventory, Table 5.4. The emission factors were developed from CARB MOU compliance information submitted annually by BNSF and UP, and from EPA national fleet average emission factors (EPA, *Emission Factors for Locomotives* , Office of Transportation and Air Quality, EPA-420-F-09-025, April 2009).

b. Source: ILUT (POLB, Personal communication from Janna Morimoto. File "XE Values 190329.xlsx". April 1, 2019). Original source: Starcrest. Derived from EPA national fleet average emission factors (EPA, *Emission Factors for Locomotives* , Office of Transportation and Air Quality, EPA-420-F-09-025, April 2009).

Table E-42. Annual Emissions from Fossil-Fueled CHE Not Included in the ILUT; Unmitigated Proposed Plan, 2040

Equipment [a]	2040 Usage (hr/yr) [b]	Annual Emissions (ton/yr) [c]							Annual Emissions (MT/yr) [c]			
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4	CO2e
Bulldozer	4,265	0.04	0.04	0.04	0.3	0.00	0.6	0.08	239	0.01	0.01	242
Cone vehicle	9,981	0.00	0.00	0.00	0.5	0.00	1.1	0.04	386	0.00	0.01	388
Crane	896	0.01	0.01	0.01	0.1	0.00	0.2	0.02	39	0.00	0.00	39
Excavator	0	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0	0.00	0.00	0
Forklift	285,664	0.29	0.28	0.10	18.9	0.05	48.1	1.07	5,431	0.12	0.22	5,474
Loader	32,591	0.07	0.07	0.07	2.6	0.03	7.6	0.96	2,995	0.08	0.14	3,022
Man Lift	14,025	0.00	0.00	0.00	1.4	0.00	1.7	0.05	264	0.01	0.01	267
Material handler	2,425	0.01	0.01	0.01	0.4	0.01	1.2	0.13	575	0.02	0.03	580
Miscellaneous	2,371	0.00	0.00	0.00	0.1	0.00	0.2	0.02	9	0.00	0.00	9
Rail pusher	1,863	0.00	0.00	0.00	0.1	0.00	0.4	0.01	105	0.00	0.01	106
Skid steer loader	3,498	0.00	0.00	0.00	0.3	0.00	0.3	0.01	54	0.00	0.00	54
Sweeper	10,607	0.04	0.03	0.03	0.4	0.01	5.2	0.13	743	0.02	0.03	750
Tractor	13,649	0.05	0.05	0.00	0.2	0.00	27.7	0.01	506	0.00	0.00	506
Truck	17,942	0.01	0.01	0.01	0.8	0.01	2.0	0.07	695	0.01	0.01	697
Total		**0.53**	**0.50**	**0.29**	**26.0**	**0.12**	**96.3**	**2.58**	**12,041**	**0.27**	**0.47**	**12,132**

Notes:

a. The ILUT calculates emissions from RTGs, side picks, top picks, and yard tractors. Emissions from all other CHE are calcluated here.

b. The 2017 usages from Table 4.3 of the POLB 2017 Air Emissions Inventory were scaled up by 16937000 TEUs / 7544508 TEUs to obtain the 2040 usages. To match the ILUT emission factors, usages are for all fuel types combined.

c. Emission calculations use 2040 emission factors from the ILUT (POLB, Personal communication from Janna Morimoto. File "XE Values 190329.xlsx". April 1, 2019).

Table E-43. Annual Emissions from Fossil-Fueled CHE Not Included in the ILUT; Unmitigated Alternative 1, 2040

Equipment [a]	2040 Usage (hr/yr) [b]	Annual Emissions (ton/yr) [c]							Annual Emissions (MT/yr) [c]			
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4	CO2e
Bulldozer	3,530	0.03	0.03	0.03	0.2	0.00	0.5	0.06	198	0.01	0.01	200
Cone vehicle	8,260	0.00	0.00	0.00	0.4	0.00	0.9	0.03	320	0.00	0.00	321
Crane	741	0.01	0.01	0.01	0.1	0.00	0.1	0.02	32	0.00	0.00	32
Excavator	0	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0	0.00	0.00	0
Forklift	236,414	0.24	0.23	0.09	15.6	0.04	39.8	0.88	4,495	0.10	0.18	4,530
Loader	26,972	0.06	0.05	0.06	2.2	0.03	6.3	0.79	2,479	0.06	0.11	2,501
Man Lift	11,607	0.00	0.00	0.00	1.2	0.00	1.4	0.04	219	0.01	0.01	221
Material handler	2,007	0.01	0.01	0.01	0.3	0.01	1.0	0.10	476	0.01	0.02	480
Miscellaneous	1,962	0.00	0.00	0.00	0.0	0.00	0.1	0.01	7	0.00	0.00	7
Rail pusher	1,542	0.00	0.00	0.00	0.0	0.00	0.3	0.01	87	0.00	0.00	88
Skid steer loader	2,895	0.00	0.00	0.00	0.3	0.00	0.2	0.01	44	0.00	0.00	45
Sweeper	8,779	0.03	0.03	0.02	0.4	0.01	4.3	0.11	615	0.02	0.03	620
Tractor	11,296	0.04	0.04	0.00	0.1	0.00	22.9	0.01	418	0.00	0.00	419
Truck	14,848	0.01	0.01	0.01	0.7	0.01	1.6	0.06	575	0.01	0.01	577
Total		**0.44**	**0.42**	**0.24**	**21.5**	**0.10**	**79.7**	**2.14**	**9,965**	**0.22**	**0.39**	**10,040**

Notes:

a. The ILUT calculates emissions from RTGs, side picks, top picks, and yard tractors. Emissions from all other CHE are calcluated here.

b. The 2017 usages from Table 4.3 of the POLB 2017 Air Emissions Inventory were scaled up by 14017000 TEUs / 7544508 TEUs to obtain the 2040 usages. To match the ILUT emission factors, usages are for all fuel types combined.

c. Emission calculations use 2040 emission factors from the ILUT (POLB, Personal communication from Janna Morimoto. File "XE Values 190329.xlsx". April 1, 2019).

Table E-44. Annual Emissions from Fossil-Fueled CHE Not Included in the ILUT; Unmitigated Alternative 2, 2040

Equipment [a]	2040 Usage (hr/yr) [b]	Annual Emissions (ton/yr) [c]							Annual Emissions (MT/yr) [c]			
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4	CO2e
Bulldozer	3,530	0.03	0.03	0.03	0.2	0.00	0.5	0.06	198	0.01	0.01	200
Cone vehicle	8,260	0.00	0.00	0.00	0.4	0.00	0.9	0.03	320	0.00	0.00	321
Crane	741	0.01	0.01	0.01	0.1	0.00	0.1	0.02	32	0.00	0.00	32
Excavator	0	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0	0.00	0.00	0
Forklift	236,414	0.24	0.23	0.09	15.6	0.04	39.8	0.88	4,495	0.10	0.18	4,530
Loader	26,972	0.06	0.05	0.06	2.2	0.03	6.3	0.79	2,479	0.06	0.11	2,501
Man Lift	11,607	0.00	0.00	0.00	1.2	0.00	1.4	0.04	219	0.01	0.01	221
Material handler	2,007	0.01	0.01	0.01	0.3	0.01	1.0	0.10	476	0.01	0.02	480
Miscellaneous	1,962	0.00	0.00	0.00	0.0	0.00	0.1	0.01	7	0.00	0.00	7
Rail pusher	1,542	0.00	0.00	0.00	0.0	0.00	0.3	0.01	87	0.00	0.00	88
Skid steer loader	2,895	0.00	0.00	0.00	0.3	0.00	0.2	0.01	44	0.00	0.00	45
Sweeper	8,779	0.03	0.03	0.02	0.4	0.01	4.3	0.11	615	0.02	0.03	620
Tractor	11,296	0.04	0.04	0.00	0.1	0.00	22.9	0.01	418	0.00	0.00	419
Truck	14,848	0.01	0.01	0.01	0.7	0.01	1.6	0.06	575	0.01	0.01	577
Total		**0.44**	**0.42**	**0.24**	**21.5**	**0.10**	**79.7**	**2.14**	**9,965**	**0.22**	**0.39**	**10,040**

Notes:

a. The ILUT calculates emissions from RTGs, side picks, top picks, and yard tractors. Emissions from all other CHE are calcluated here.

b. The 2017 usages from Table 4.3 of the POLB 2017 Air Emissions Inventory were scaled up by 14017000 TEUs / 7544508 TEUs to obtain the 2040 usages. To match the ILUT emission factors, usages are for all fuel types combined.

c. Emission calculations use 2040 emission factors from the ILUT (POLB, Personal communication from Janna Morimoto. File "XE Values 190329.xlsx". April 1, 2019).

Table E-45. Annual Emissions from Fossil-Fueled CHE Not Included in the ILUT; Unmitigated Alternative 3, 2040

Equipment [a]	2040 Usage (hr/yr) [b]	Annual Emissions (ton/yr) [c]							Annual Emissions (MT/yr) [c]			
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4	CO2e
Bulldozer	3,842	0.04	0.03	0.04	0.2	0.00	0.6	0.07	216	0.01	0.01	218
Cone vehicle	8,989	0.00	0.00	0.00	0.4	0.00	1.0	0.03	348	0.00	0.00	349
Crane	807	0.01	0.01	0.01	0.1	0.00	0.1	0.02	35	0.00	0.00	35
Excavator	0	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0	0.00	0.00	0
Forklift	257,278	0.26	0.25	0.09	17.0	0.05	43.3	0.96	4,892	0.11	0.20	4,930
Loader	29,353	0.07	0.06	0.07	2.4	0.03	6.9	0.86	2,698	0.07	0.12	2,721
Man Lift	12,631	0.00	0.00	0.00	1.3	0.00	1.6	0.05	238	0.01	0.01	240
Material handler	2,184	0.01	0.01	0.01	0.3	0.01	1.1	0.11	518	0.01	0.02	522
Miscellaneous	2,135	0.00	0.00	0.00	0.0	0.00	0.2	0.01	8	0.00	0.00	8
Rail pusher	1,678	0.00	0.00	0.00	0.0	0.00	0.4	0.01	94	0.00	0.00	95
Skid steer loader	3,150	0.00	0.00	0.00	0.3	0.00	0.3	0.01	48	0.00	0.00	49
Sweeper	9,553	0.03	0.03	0.02	0.4	0.01	4.7	0.12	669	0.02	0.03	675
Tractor	12,293	0.04	0.04	0.00	0.2	0.00	24.9	0.01	455	0.00	0.00	455
Truck	16,159	0.01	0.01	0.01	0.8	0.01	1.8	0.06	625	0.01	0.01	628
Total		**0.48**	**0.45**	**0.26**	**23.4**	**0.11**	**86.7**	**2.33**	**10,844**	**0.24**	**0.42**	**10,926**

Notes:

a. The ILUT calculates emissions from RTGs, side picks, top picks, and yard tractors. Emissions from all other CHE are calcluated here.

b. The 2017 usages from Table 4.3 of the POLB 2017 Air Emissions Inventory were scaled up by 15254000 TEUs / 7544508 TEUs to obtain the 2040 usages. To match the ILUT emission factors, usages are for all fuel types combined.

c. Emission calculations use 2040 emission factors from the ILUT (POLB, Personal communication from Janna Morimoto. File "XE Values 190329.xlsx". April 1, 2019).

Table E-46. Annual GHG Emissions from CHE Electricity Consumption, CEQA Baseline, 2017

Equipment Type	Engine Type	Equipment Count [f]	Average Rated Power (hp) [f]	Average Rated Power (kW)	Load Factor [l]	In-Use Battery Output per Hour (kWh/OpHr) [n]	Battery System Efficiency	Equipment Electricity Use per Hour (kWh/OpHr) [o]	Equipment Electricity Use per Lift (kWh/Lift)	Annual Container Lifts (Lifts/Yr)	Average Annual Operating Hours per Unit (OpHr/Yr) [m]	Total Annual Electricity Use (MWh/yr)	CO2e Emission Factor (lb/MWh) [p]	Annual CO2e Emissions (MT/yr)
Automated guided vehicle [a]	Electric	56	n/a	n/a	n/a	15	75%	20	n/a	n/a	1,259	1,411	549	351
Automatic stacking crane [b]	Electric	32	n/a	n/a	n/a	n/a	n/a	n/a	5.0	117,685	n/a	588	549	147
Crane [c]	Electric	4	254	189	0.43	81	75%	108	n/a	n/a	200	87	549	22
Electric pallet jack [d]	Electric	2	105	79	0.30	24	75%	31	n/a	n/a	126	8	549	2
Forklift [g]	Electric	9	105	79	0.30	24	75%	31	n/a	n/a	288	81	549	20
Material handler [h]	Electric	1	544	406	0.59	239	75%	319	n/a	n/a	540	172	549	43
Miscellaneous [i]	Electric	3	13	10	0.51	5	75%	7	n/a	n/a	528	10	549	3
Ship to shore crane [e]	Electric	64	n/a	n/a	n/a	n/a	n/a	n/a	6.0	4,191,393	n/a	25,148	549	6,263
Sweeper [j]	Electric	1	135	101	0.68	68	75%	91	n/a	n/a	394	36	549	9
Truck [k]	Electric	6	337	252	0.51	128	75%	171	n/a	n/a	147	151	549	38
Total												**27,693**	--	**6,896**

Notes:

a. For the AGV, battery output and efficiency are from Terex Port Solutions, "Battery-Electric AGVs". Presentation for "Clean Air in Ports" Conference, Antwerp, October 8, 2013.

b. For the Automatic Stacking Crane, electricity use per lift is from J.H.R. Van Duin & H. Geerlings, 2011. "Estimating CO2 Footprints of Container Terminal Port-Operations". *International Journal of Sustainable Development and Planning* . Vol. 6, No. 4 (2011) 459–473. No. of lifts in 2017 is from POLB (personal communication from Janna Morimoto, February 5, 2019).

c. Assume average rated power and annual operating hours per unit are the same as diesel cranes in Table 4.3 of the POLB 2017 Air Emissions Inventory. Assume the same battery system efficiency as the AGV.

d. Assume average rated power and load factor are the same as forklifts. Assume the same battery system efficiency as the AGV.

e. For the Ship to Shore Crane, electricity use per lift is from J.H.R. Van Duin & H. Geerlings, 2011. "Estimating CO2 Footprints of Container Terminal Port-Operations". *International Journal of Sustainable Development and Planning* . Vol. 6, No. 4 (2011) 459–473.

f. Equipment counts and average rated power were obtained from Table 4.3 of the POLB 2017 Air Emissions Inventory.

g. Assume average rated power is the same as diesel, gasoline, and propane forklifts. Assume the same battery system efficiency as the AGV.

h. Assume average rated power and annual operating hours per unit are the same as diesel material handlers in Table 4.3 of the POLB 2017 Air Emissions Inventory. Assume the same battery system efficiency as the AGV.

i. Assume average rated power and annual operating hours per unit are the same as diesel miscellaneous equipment in Table 4.3 of the POLB 2017 Air Emissions Inventory. Assume the same battery system efficiency as the AGV.

j. Assume average rated power and annual operating hours per unit are the same as diesel and propane sweepers in Table 4.3 of the POLB 2017 Air Emissions Inventory. Assume the same battery system efficiency as the AGV.

k. Assume average rated power is the same as diesel trucks. Assume the same battery system efficiency as the AGV.

l. Load factors are consistent with the POLB 2017 Air Emissions Inventory, which is consistent with Table 4.11 of the POLB 2013 Air Emissions Inventory.

m. Except where noted, annual operating hours are from Appendix B of the Port of Long Beach 2017 POLB Air Emissions Inventory.

n. Battery output is assumed to equal the average rated power times the load factor.

o. Electricity use is assumed to be equal to in-use battery output divided by batter system efficiency.

p. GHG emission factors for electricity supplied by Southern California Edison are from Table E-48.

Table E-47. Annual GHG Emissions from CHE Electricity Consumption, Unmitigated Proposed Plan and Alternatives, 2040

Equipment Type	Engine Type	Total Annual Electricity Use (MWh/yr) [a]				CO2e Emission Factor (lb/MWh) [b]	Annual CO2e Emissions (MT/yr)			
		Proposed	Alt 1	Alt 2	Alt 3		Proposed	Alt 1	Alt 2	Alt 3
Automated guided vehicle	Electric	3,167	2,621	2,621	2,852	508	730	604	604	658
Automatic stacking crane	Electric	1,321	1,093	1,093	1,190	508	305	252	252	274
Crane	Electric	194	161	161	175	508	45	37	37	40
Electric pallet jack	Electric	18	15	15	16	508	4	3	3	4
Forklift	Electric	183	151	151	165	508	42	35	35	38
Material handler	Electric	387	320	320	349	508	89	74	74	80
Miscellaneous	Electric	23	19	19	21	508	5	4	4	5
Ship to shore crane	Electric	56,457	46,723	46,723	50,847	508	13,018	10,773	10,773	11,724
Sweeper	Electric	81	67	67	73	508	19	15	15	17
Truck	Electric	339	281	281	305	508	78	65	65	70
Total		**62,169**	**51,451**	**51,451**	**55,992**	--	**14,335**	**11,864**	**11,864**	**12,910**

Notes:

a. Electricity use is scaled up from 2017 values in proportion to annual TEU throughput.

b. GHG emission factors for electricity supplied by Southern California Edison are from Table E-48.

Table E-48. Electricity Consumption GHG Emission Factors for Southern California Edison

Year	Percent Carbon-Free Delivered Electricity [a]	CO2e Emission Factor (lb/MWh)
2017 [a]	46%	549
2040 [b]	50%	508

Notes:

a. Source for 2017 data: Edison International, *2017 Sustainability Report* , June 2018. The percent carbon-free electricity consists of 32% eligible renewable resources (biomass and waste, geothermal, eligible hydroelectric, solar, and wind) and 14% other carbon-free electricity (large hydroelectric and nuclear). Eligible renewable resources are defined by statute and the California Energy Commission. Retail sellers of electricity in California, including investor-owned utilities, electricity service providers, and community choice aggregators, and publicly owned utilities are required to serve 33% of their load with eligible renewables by 2020 and 50% by 2030.

b. Source for 2040 data: The percent carbon-free electricity is conservatively assumed to be 50% in response to the 2030 California mandate of 50% eligible renewable resources. The actual percent carbon-free electricity may be higher than 50% if additional non-eligible carbon-free electricity is part of the energy mix. The CO2e emission factor for 2040 is scaled from the 2017 factor by the ratio of percent non-carbon-free delivered electricity.

Table E-49. Annual Transit, Maneuvering, and Anchorage Emissions from Cruise and Reefer Vessels, All Unmitigated Plan Alternatives, 2040

Vessel Type [a]	No. of Calls, 2040 (calls/yr) [b]	Annual Emissions (ton/yr) [c,d]							Annual Emissions (MT/yr) [c,d]			
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4	CO2e
Cruise	261	11.98	11.28	11.98	238.29	19.20	58.74	26.20	26,467	1.23	0.48	26,845
Reefer	6	0.02	0.02	0.02	1.04	0.04	0.11	0.05	49	0.00	0.00	50
Total, All Vessels		**12.0**	**11.3**	**12.0**	**239.3**	**19.2**	**58.8**	**26.2**	**26,516**	**1.2**	**0.5**	**26,895**

Notes:

a. Cruise ships and reefers were not calculated in the ILUT; therefore, manual calculations are performed here.

b. Data are from Table 2.8 of the POLB 2017 Air Emissions Inventory. Assume no change in the annual number of cruise and reefer vessel calls relative to 2017 (POLB, personal communicaton with J. Morimoto, 2/28/2019).

c. Calculated with emission factors from the ILUT (POLB, Personal communication from Janna Morimoto. File "XE Values 190329.xlsx". April 1, 2019).

d. Emissions reflect 95 percent of all inbound vessels using VSR (maximum 12 knots) inside of 40 nm from Pt. Fermin, 95 percent of all outbound vessels using VSR inside of 20 nm of Pt. Fermin, and 90 percent of all outbound vessels using VSR between 20 and 40 nm of Pt. Fermin. Source: Starcrest, personal communication with Archana Agrawal, 4/18/2019.

Table E-50. Annual At-Berth Emissions from Cruise and Reefer Vessels, All Unmitigated Plan Alternatives, 2040

Vessel Type [a]	At-Berth Hours, 2040 (hr/yr) [b]	Percent Shore Power [c]	Annual Emissions (ton/yr) [d,e]							Annual Emissions (MT/yr) [d,e]			
			PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4	CO2e
Cruise	3,028	80%	2.92	2.76	2.45	49.93	6.24	11.26	5.15	8,598	0.49	0.09	8,747
Reefer	47	80%	0.00	0.00	0.00	0.17	0.01	0.02	0.01	12	0.00	0.00	13
Total, All Vessels			**2.9**	**2.8**	**2.4**	**50.1**	**6.3**	**11.3**	**5.2**	**8,611**	**0.5**	**0.1**	**8,760**

Notes:

a. Cruise and reefer vessels were not calculated in the ILUT; therefore, manual calculations are performed here.

b. Data are from Table 2.8 of the POLB 2017 Air Emissions Inventory. Assume no change in the annual number of cruise and reefer vessel calls relative to 2017 (POLB, personal communicaton with J. Morimoto, 2/28/2019).

c. Shore power is assumed for 80 percent of visits, which is the minimum percentage required by the California Port Regulations for At-Berth Ocean-Going Vessels (Title 13, CCR, Section 2299.3).

d. Calculated with emission factors from the ILUT (POLB, Personal communication from Janna Morimoto. File "XE Values 190329.xlsx". April 1, 2019).

e. Emission calculations use the ILUT methodology, which is to assume a 90 percent reduction in at-berth emissions for a vessel using shore power (POLB, personal communication from Janna Morimoto. 2/26/2019).

Table E-51. Annual GHG Emissions from OGV At-Berth Shore Power, CEQA Baseline, 2017

Vessel Type	No. of Arrivals, 2017 (arrivals/yr) [a]	No. of Departures, 2017 (arrivals/yr) [a]	Average At-Berth Duration (hr/visit) [b]	Total At-Berth Duration, 2017 (hr/yr) [c]	Percent Shore Power, 2017 [d]	Average Diesel Auxiliary Engine Load at Berth (kW) [e]	Shore Power Electrical Consumption (MWh/yr) [f]	CO2e Emission Factor (lb/MWh) [h]	Annual CO2e Emissions (MT/yr)
Auto Carrier	198	198	13.4	2,653	0.0%	1,284	0	549	0
Bulk	189	200	62.3	12,117	0.0%	210	0	549	0
Bulk - Heavy Load	3	3	239.6	719	0.0%	272	0	549	0
Bulk - Self Discharging	22	22	36.1	794	0.0%	179	0	549	0
Container - 1000	114	114	27.8	3,169	83.3%	720	1,902	549	474
Container - 2000	81	80	47.7	3,840	56.8%	1,039	2,266	549	564
Container - 3000	59	59	35.5	2,095	50.8%	641	683	549	170
Container - 4000	128	129	39.0	5,012	77.3%	1,136	4,403	549	1,097
Container - 5000	25	26	68.9	1,757	16.0%	1,107	311	549	77
Container - 6000	70	70	70.1	4,907	61.4%	832	2,508	549	625
Container - 7000	2	2	115.7	231	100.0%	845	196	549	49
Container - 8000	239	239	65.7	15,702	90.0%	1,008	14,239	549	3,546
Container - 9000	62	63	32.8	2,050	80.6%	924	1,528	549	380
Container - 10000	70	70	73.5	5,145	60.0%	981	3,028	549	754
Container - 11000	45	44	98.4	4,379	84.4%	1,500	5,546	549	1,381
Container - 12000	4	2	110.9	333	100.0%	1,650	549	549	137
Container - 13000	59	55	100.2	5,711	33.9%	1,317	2,550	549	635
Container - 14000	1	1	118.7	119	0.0%	3,000	0	549	0
Cruise	261	261	11.6	3,028	95.0%	6,123	17,614	549	4,386
General Cargo	54	57	37.9	2,103	0.0%	572	0	549	0
Reefer	6	6	7.8	47	0.0%	1,091	0	549	0
RoRo [g]	2	2	4,277.6	8,555	100.0%	229	1,959	549	488
Tanker - Aframax	96	97	44.8	4,323	0.0%	724	0	549	0
Tanker - Chemical	111	114	39.2	4,410	0.0%	967	0	549	0
Tanker - Handysize	8	9	45.1	383	0.0%	605	0	549	0
Tanker - Panamax	99	84	44.9	4,108	0.0%	679	0	549	0
Tanker - Suezmax	100	98	26.4	2,614	19.0%	2,509	1,246	549	310
Tanker - ULCC	32	30	28.7	890	0.0%	1,171	0	549	0
Tanker - VLCC	17	17	27.7	471	0.0%	1,171	0	549	0
Total, All Vessels	**2,157**	**2,152**	**--**	**101,665**	**--**	**--**	**60,526**	**--**	**15,073**

Notes:

a. Source: *POLB 2017 Air Emissions Inventory* (July 2018), Table 2.8.

b. Source: *POLB 2017 Air Emissions Inventory* (July 2018), Table 2.9.

c. Total hotelling time is the average of the arrivals and departures times the average hotelling time per visit.

d. Source: Starcrest Consulting Group, LLC. Personal communication from Archana Agrawal. February 11, 2019. Data are consistent with the *POLB 2017 Air Emissions Inventory* (July 2018).

e. Source: *POLB 2017 Air Emissions Inventory* (July 2018), Table 2.1. The average auxiliary engine load for cruise vessels was provided separately by Starcrest (personal communication with A. Agrawal, 2/13/2019).

f. Calculation assumes electrical consumption is the same as the equivalent diesel auxiliary engine load.

g. The RoRos have a high hoteling time due to vessels that are home based in the Port (*POLB 2017 Air Emissions Inventory* , July 2018).

h. GHG emission factors for electricity supplied by Southern California Edison are from Table E-48.

Table E-52. Annual GHG Emissions from OGV At-Berth Shore Power, Unmitigated Proposed Plan and Alternatives, 2040

	Total At-Berth Duration (hr/yr) [a]				Percent Shore Power, 2040 [b]	Average Diesel Auxiliary Engine Load at Berth (kW) [c]	Shore Power Electrical Consumption (MWh/yr) [d]				CO2e Emission Factor (lb/MWh) [e]	Annual CO2e Emissions (MT/yr)			
Vessel Type	Proposed	Alt 1	Alt 2	Alt 3			Proposed	Alt 1	Alt 2	Alt 3		Proposed	Alt 1	Alt 2	Alt 3
Container - 1000	0	0	0	0	80%	720	0	0	0	0	508	0	0	0	0
Container - 2000	2,571	2,571	2,571	2,571	80%	1,039	2,137	2,137	2,137	2,137	508	493	493	493	493
Container - 3000	3,329	4,299	4,299	3,329	80%	641	1,707	2,205	2,205	1,707	508	394	508	508	394
Container - 4000	1,361	1,361	1,361	1,361	80%	1,136	1,237	1,237	1,237	1,237	508	285	285	285	285
Container - 5000	3,245	3,245	3,245	3,245	80%	1,107	2,874	2,874	2,874	2,874	508	663	663	663	663
Container - 6000	2,730	2,645	2,645	1,742	80%	832	1,817	1,761	1,761	1,159	508	419	406	406	267
Container - 7000	3,390	3,390	3,390	5,086	80%	845	2,292	2,292	2,292	3,438	508	528	528	528	793
Container - 8000	5,068	2,534	2,534	5,068	80%	1,008	4,087	2,044	2,044	4,087	508	942	471	471	942
Container - 9000	17,337	15,038	15,038	15,038	80%	924	12,815	11,116	11,116	11,116	508	2,955	2,563	2,563	2,563
Container - 10000	17,704	14,809	14,809	14,809	80%	981	13,894	11,622	11,622	11,622	508	3,204	2,680	2,680	2,680
Container - 11000	6,147	6,147	6,147	6,147	80%	1,500	7,376	7,376	7,376	7,376	508	1,701	1,701	1,701	1,701
Container - 12000	3,415	3,415	3,415	3,415	80%	1,650	4,508	4,508	4,508	4,508	508	1,039	1,039	1,039	1,039
Container - 13000	13,881	10,410	10,410	10,410	80%	1,317	14,625	10,968	10,968	10,968	508	3,372	2,529	2,529	2,529
Container - 14000	3,182	3,182	3,182	3,182	80%	3,000	7,638	7,638	7,638	7,638	508	1,761	1,761	1,761	1,761
Container - 15000	0	0	0	0	80%	3,214	0	0	0	0	508	0	0	0	0
Container - 16000	12,844	8,563	8,563	12,844	80%	3,429	35,229	23,486	23,486	35,229	508	8,123	5,415	5,415	8,123
Cruise	3,028	3,028	3,028	3,028	80%	6,123	14,830	14,830	14,830	14,830	508	3,419	3,419	3,419	3,419
Reefer	47	47	47	47	80%	1,091	41	41	41	41	508	9	9	9	9
Total, All Vessels	**99,279**	**84,685**	**84,685**	**91,323**	**--**	**--**	**127,107**	**106,134**	**106,134**	**119,968**	**--**	**29,308**	**24,472**	**24,472**	**27,662**

Notes:

a. Source: ILUT except for cruise and reefer vessels. Data for cruise and reefer vessels are from Table 2.8 of the POLB 2017 Air Emissions Inventory. Assume no change in the annual number of cruise and reefer vessel calls relative to 2017 (POLB, personal communicaton with J. Morimoto, 2/28/2019).

b. The unmitigated emission calculations conservatively assume that container, cruise, and reefer vessels would use shore power in 2040 in accordance with the California Port Regulations for At-Berth Ocean-Going Vessels (Title 13, CCR, Section 2299.3). Shore power is assumed for 80 percent of visits, which is the minimum percentage required by the regulations in 2040.

c. Source: *POLB 2017 Air Emissions Inventory* (July 2018), Table 2.1. Engine loads for 15000 and 16000 TEU vessels were not provided, so they were scaled up from the 14000 TEU vessel by relative vessel size.

d. Calculation assumes electrical consumption is the same as the equivalent diesel auxiliary engine load.

e. GHG emission factors for electricity supplied by Southern California Edison are from Table E-48.

Table E-53. Annual GHG Emissions for OGVs Transiting between the SCAB and CA Over-Water Boundaries

	No. of One-Way Transits (transits/yr)				Emission Factors (lb/nm) [c]				CO2e Emissions (MT/yr) [d]			
Vessel Type	Baseline, 2017 [a]	Proposed Plan, 2040 [b]	Alts 1 & 2, 2040 [b]	Alt. 3, 2040 [b]	CO2	N2O	CH4	CO2e	Baseline, 2017	Unmitigated Proposed Plan, 2040	Unmitigated Alts 1 & 2, 2040	Unmitigated Alt. 3, 2040
Auto Carrier	396	414	414	414	865	0.04	0.01	878	8,124	8,484	8,493	8,493
Bulk	389	435	435	435	719	0.03	0.01	730	6,628	7,403	7,403	7,403
Bulk - Heavy Load	6	0	0	0	840	0.04	0.02	852	119	0	0	0
Bulk - Self Discharging	44	0	0	0	1,068	0.05	0.01	1,084	1,114	0	0	0
Container - 1000	228	0	0	0	1,045	0.05	0.01	1,061	5,651	0	0	0
Container - 2000	161	312	312	312	1,474	0.08	0.02	1,499	5,637	10,925	10,925	10,925
Container - 3000	118	312	416	312	1,311	0.06	0.01	1,331	3,667	9,697	12,929	9,697
Container - 4000	257	104	104	104	1,679	0.08	0.02	1,704	10,226	4,138	4,138	4,138
Container - 5000	51	208	208	208	1,776	0.09	0.02	1,803	2,147	8,758	8,758	8,758
Container - 6000	140	208	208	104	2,289	0.11	0.03	2,324	7,598	11,289	11,289	5,644
Container - 7000	4	208	208	312	2,259	0.11	0.04	2,293	214	11,141	11,141	16,712
Container - 8000	478	208	104	208	2,650	0.13	0.02	2,690	30,027	13,066	6,533	13,066
Container - 9000	125	624	520	520	2,595	0.13	0.02	2,634	7,690	38,387	31,989	31,989
Container - 10000	140	624	520	520	2,681	0.13	0.02	2,721	8,898	39,661	33,051	33,051
Container - 11000	89	208	208	208	2,780	0.14	0.05	2,822	5,866	13,709	13,709	13,709
Container - 12000	6	104	104	104	2,469	0.12	0.02	2,506	351	6,087	6,087	6,087
Container - 13000	114	416	312	312	2,925	0.14	0.03	2,969	7,904	28,844	21,633	21,633
Container - 14000	2	104	104	104	2,433	0.12	0.02	2,469	115	5,998	5,998	5,998
Container - 16000	0	312	208	312	2,848	0.14	0.02	2,891	0	21,067	14,044	21,067
Cruise	522	522	522	522	2,318	0.10	0.03	2,350	28,650	28,650	28,650	28,650
General Cargo	111	11	38	11	631	0.03	0.01	640	1,660	170	566	170
Reefer	12	12	12	12	775	0.04	0.01	787	220	220	220	220
RoRo	4	0	0	0	2,288	0.19	0.01	2,343	219	0	0	0
Tanker - Aframax	193	364	364	364	1,089	0.05	0.01	1,105	4,982	9,408	9,408	9,408
Tanker - Chemical	225	0	0	0	708	0.03	0.01	718	3,775	0	0	0
Tanker - Handysize	17	178	178	178	751	0.04	0.01	762	302	3,163	3,163	3,163
Tanker - Panamax	183	0	0	0	858	0.04	0.01	871	3,721	0	0	0
Tanker - Suezmax	198	246	246	246	1,715	0.08	0.03	1,739	8,043	10,005	10,005	10,005
Tanker - ULCC	62	0	0	0	1,994	0.10	0.03	2,024	2,930	0	0	0
Tanker - VLCC	34	20	20	20	1,941	0.10	0.02	1,970	1,564	929	929	929
Total, All Vessels	**4,309**	**6,154**	**5,765**	**5,843**					**168,046**	**291,197**	**261,060**	**270,913**

Notes:

a. Source: *Port of Long Beach 2017 POLB Air Emissions Inventory* (July 2018), Table 2.8.

b. Source: ILUT, except cruise and reefer vessels which were not calculated in the ILUT. Assume no change in the annual number of calls for cruise and reefer vessels relative to 2017 (POLB, personal communicaton with Janna Morimoto, 2/28/2019).

c. Source: Starcrest (personal communication from Archana Agrawal, 1/18/2019). Emission factors are consistent with the *Port of Long Beach 2017 POLB Air Emissions Inventory* . The emission factors assume the vessel speed between the SCAB and CA over-water boundaries (i.e., 40+ nm zone) is the same as the non-VSR speed in the 20+ to 40 nm zone. The emission factors are assumed to be representative of both 2017 and 2040 conditions. Emission factors for Container-16000 were not provided by Starcrest, so the Container-16000 emission factors were scaled from Container-14000 by applying the ratio of ILUT emission factors.

d. Emissions assume an average one-way transit distance of 51.5 nautical miles (nm) between the SCAB and CA over-water boundary.

Table E-54. OGV Transit Distance Between the SCAB and CA Over-Water Boundaries

Route [a]	Transit Distance from SCAB to CA Boundary (nm) [b]	Percent Route Usage [c]
Northern Route	110	39%
Western Route	38	22%
Southern Route	0	39%
Weighted Average	**51.5**	**100%**

Notes:

a. The routes are shown in Figure 1.1 of the *Port of Long Beach 2017 Air Emissions Inventory* (July 2018).

b. The California Over-Water Boundary is assumed to be the "Regulated California Waters" as defined in 13 CCR, section 2299.2. *Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels Within California Waters and 24 Nautical Miles of the California Baseline* (CARB, July 24, 2008). In general, the boundary is 24 nm from the coastline. The distances were measured using Google Earth.

c. Source: Starcrest (personal communication from Archana Agrawal, 2/11/2019). Data are consistent with the *Port of Long Beach 2017 POLB Air Emissions Inventory* .

Table E-55. POLB Loaded Volumes of Reefers and Dry Fulls, 2017

Destination	Reefer Type	Annual TEUs [a]
Exports	Reefers	60,870
	Dry Fulls	1,156,092
Imports	Reefers	88,088
	Dry fulls	3,703,336
Total	Dry Fulls	4,859,428
	Reefers	148,957
Percent Reefers [b]		**3.0%**

Notes:

a. Source: POLB, personal communication from Russell Mahakian to Janna Morimoto. September 14, 2018.

b. Assume the same percentage reefers in 2040 (POLB, personal communication with Janna Morimoto, February 1, 2019).

Table E-56. Estimated Percent Cooled v. Uncooled Reefers

Description	Percent
Total reefers as a percent of total TEUs [a]	3.0%
Uncooled Reefers as a percent of Total TEUs [b]	0.4%
Cooled Reefers as a percent of Total TEUs [c]	2.6%

Notes:

a. Assume the ratio of loaded reefers to loaded TEUs is representative of the ratio of total reefers to total TEUs.

b. Per Tom Becker/POLB (Personal communication, 4/22/2019), imported reefers returning empty to the Port for export will be uncooled and will not use a genset. To balance the number of arriving and departing reefers, the number of empty (uncooled) export reefers is assumed to equal the import minus export loaded reefers. The percent uncooled reefers equals this difference divided by 7,544,508 total TEU/yr.

c. The percent cooled reefers equals the percent total reefers minus the percent uncooled reefers. The percent uncooled reefers may be understated (and therefore the percent cooled reefers overstated) because some loaded reefers may not use a genset due to weight restrictions (POLB, personal communication with Tom Becker, 4/22/2019). This was conservatively not taken into account in the genset emission calculations for cooled reefers.

Table E-57. Annual TRU Genset On-Port Emissions

Alternative	On-Port Transport Mode	Annual Cooled Reefer Throughput (reefers/yr) [a]	On-Port Genset Engine Runtime (hr/reefer) [b]	Total Genset Engine Runtime (hr/yr)	Annual Emissions (ton/yr) [c]						Annual Emissions (MT/yr) [c]		
					VOC	CO	NOx	SOx	PM10	PM2.5	CO2	N2O	CH4
Baseline 2017	Truck	83,248	0.65	53,874	0.13	2.30	2.19	0.0005	0.04	0.04	47	0.011	0.025
	Rail	26,289	8.9	233,972	0.58	10.00	9.52	0.0021	0.18	0.16	203	0.048	0.108
	Total	**109,537**	--	**287,845**	**0.72**	**12.31**	**11.71**	**0.0025**	**0.22**	**0.20**	**249**	**0.060**	**0.133**
Proposed 2040 Unmitigated	Truck	183,227	0.65	118,574	0.36	5.61	4.13	0.0010	0.02	0.02	103	0.025	0.055
	Rail	62,678	8.9	557,832	1.69	26.39	19.43	0.0049	0.09	0.08	483	0.115	0.257
	Total	**245,905**	--	**676,406**	**2.05**	**32.00**	**23.56**	**0.0060**	**0.11**	**0.10**	**586**	**0.140**	**0.312**
Alt 1 2040 Unmitigated	Truck	151,765	0.65	98,214	0.30	4.65	3.42	0.0009	0.02	0.01	85	0.020	0.045
	Rail	51,745	8.9	460,531	1.40	21.79	16.04	0.0041	0.07	0.07	399	0.095	0.213
	Total	**203,510**	--	**558,745**	**1.70**	**26.43**	**19.46**	**0.0049**	**0.09**	**0.08**	**484**	**0.116**	**0.258**
Alt 2 2040 Unmitigated	Truck	151,765	0.65	98,214	0.30	4.65	3.42	0.0009	0.02	0.01	85	0.020	0.045
	Rail	51,745	8.9	460,531	1.40	21.79	16.04	0.0041	0.07	0.07	399	0.095	0.213
	Total	**203,510**	--	**558,745**	**1.70**	**26.43**	**19.46**	**0.0049**	**0.09**	**0.08**	**484**	**0.116**	**0.258**
Alt 3 2040 Unmitigated	Truck	160,551	0.65	103,899	0.32	4.91	3.62	0.0009	0.02	0.02	90	0.021	0.048
	Rail	60,919	8.9	542,180	1.65	25.65	18.88	0.0048	0.09	0.08	469	0.112	0.250
	Total	**221,470**	--	**646,080**	**1.96**	**30.56**	**22.50**	**0.0057**	**0.10**	**0.09**	**559**	**0.134**	**0.298**

Notes:

a. Total annual cooled reefer throughput equals the total annual TEUs x 2.6% / 1.8 TEU per lift. Reefers in 2017 are apportioned 0.24 to on-dock rail (POLB 2017 Air Emissions Inventory, page 54). Reefers in 2040 are apportioned to on-dock rail in proportion to the ILUT projected on-dock rail TEU throughput. The remaining reefers are apportioned to truck.

b. Reefers are plugged in while on-terminal except when placed on trucks or trains for transport (POLB, personal communication with Janna Morimoto, February 1, 2019). On-terminal dwell time of 8.9 hours on a train is from the Pier B On-Dock Rail Support Facility DEIR (December 2016), Appendix A1, Table A1.2-30. On-terminal dwell time of 0.65 hours on a truck is from the POLB 2017 Air Emissions Inventory (July 2018), Table 6.4 (one-half the drive time + unload/load time + gate out time).

c. Emissions were calculated using emission factors from Tables E-61 and E-62.

Table E-58. Reefer Refrigerant Composition

Refrigerant	Percent Composition [a]	Global Warming Potential [b]
R-404a	80%	3,922
HFC-134a	20%	1,430
Weighted Average		**3,424**

Notes:

a. Refrigerant composition is from POLB (Personal communication with Tom Becker, 4/22/2019).

b. Global Warming Potentials are from *The Climate Registry 2018 Default Emission Factors* , May 1, 2018, Tables B.1 and B.2, Column AR4.
Website: https://www.theclimateregistry.org/wp-content/uploads/2018/06/The-Climate-Registry-2018-Default-Emission-Factor-Document.pdf.

Table E-59. Annual GHG Emissions from On-Port Reefer Refrigerant Loss; CEQA Baseline and Unmitigated Proposed Plan and Alternatives

Alternative	Refrigerant Charge per Unit (kg) [a]	Annual Refrigerant Loss Rate (%/year) [b]	Annual Refrigerant Loss Rate per Reefer (kg/hr)	Total Annual Container Throughput (lifts/yr)	Total Annual Reefer Throughput (reefers/ yr) [c]	Average Reefer Dwell Time (days/ reefer) [d]	Total Reefer Dwell Time (hr/yr)	Total Refrigerant Loss (kg/yr)	Refrigerant Global Warming Potential (CO2e)	Annual CO2e Emissions (MT/yr)
Baseline 2017	6.35	50%	0.00036	4,191,393	124,658	2.5	7,479,505	2,711	3,424	9,281
Proposed 2040	6.35	50%	0.00036	9,409,444	279,851	2.5	16,791,073	6,086	3,424	20,835
Alt 1 2040	6.35	50%	0.00036	7,787,222	231,604	2.5	13,896,231	5,037	3,424	17,243
Alt 2 2040	6.35	50%	0.00036	7,787,222	231,604	2.5	13,896,231	5,037	3,424	17,243
Alt 3 2040	6.35	50%	0.00036	8,474,444	252,043	2.5	15,122,573	5,481	3,424	18,765

Notes:

a. Reefers contain an average of 6.35 kg of refrigerant. Source: Port of Los Angeles, *Berths 136-147 (TraPac) Container Terminal Project, Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR)* . June 29, 2007.

b. Loss Rate is from *The Climate Registry 2018 Default Emission Factors* , May 1, 2018, Table 16.2, Transport Refrigeration.

c. Assume all reefers, both loaded and empty, lose refrigerant. Total annual reefer volume equals No. of lifts per year x 3.0 percent.

d. Average on-Port dwell time is 2-3 days for import reefers and 2 days for export reefers (POLB, personal communication with J. Morimoto, 2/1/2019). Therefore, assume an average dwell time of 2.5 days per reefer.

Table E-60. Annual GHG Emissions from On-Port Reefer Electricity Consumption; CEQA Baseline and Unmitigated Proposed Plan and Alternatives

Alternative	Annual Cooled Reefer Throughput (reefers/yr)	Average Reefer Dwell Time (days/ reefer) [a]	Total Cooled Reefer Dwell Time (hr/yr)	Average Cooled Reefer Electricity Consumption (kWh/hr) [b]	Total Reefer Electricity Consumption (MWh/yr)	CO2e Emission Factor (lb/MWh) [c]	Annual CO2e Emissions (MT/yr)
Baseline 2017	109,537	2.5	6,572,239	7.8	50,966	549	12,692
Proposed 2040	245,905	2.5	14,754,310	7.8	114,415	508	26,382
Alt 1 2040	203,510	2.5	12,210,613	7.8	94,689	508	21,833
Alt 2 2040	203,510	2.5	12,210,613	7.8	94,689	508	21,833
Alt 3 2040	221,470	2.5	13,288,200	7.8	103,046	508	23,760

Notes:

a. Average on-Port dwell time is 2-3 days for import reefers and 2 days for export reefers (POLB, personal communication with J. Morimoto, 2/1/2019). Therefore, assume an average dwell time of 2.5 days per reefer.

b. Assumes electricity use is equivalent to the average diesel TRU genset output, which is 31.5 rated hp times a load factor of 0.33, converted to kW. Hp and load factor were obtained from CARB, Mobile Source Emission Inventory, 2011 Transport Refrigeration Unit (TRU) Regulation - Background Materials on Air Emissions, 2011 Emissions Inventory (zip file), March 27, 2012. The data were extracted from the database table EmissionsInventoryFinal.

c. GHG emission factors for electricity supplied by Southern California Edison are from Table E-48.

Table E-61. OFFROAD2017 Emission Factors for Diesel TRU Gensets

Analysis Year	Emission Factor (lb/hr) [a]						
	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.00498	0.0855	0.0814	0.0000176	0.00150	0.00138	1.91
2040	0.00607	0.0946	0.0697	0.0000176	0.00031	0.00029	1.91

Notes:

a. Source: CARB, OFFROAD2017 - ORION (v1.0.1). https://www.arb.ca.gov/orion/. Data accessed February 13, 2019. In-state and out-of-state genset TRUs in the South Coast Air Basin were aggregated for each analysis year for the "All Adopted Rules - Exhaust" scenario. Emission factors equal the OFFROAD fleet emissions (ton/day) x 365 days/year x 2000 lb/ton / OFFROAD fleet activity (hr/yr).

Table E-62. N2O and CH4 Emission Factors for Diesel TRU GenSets

Analysis Year	Average Rated Horsepower (hp) [a]	Load Factor [a]	BSFC (lb fuel/ bhp-hr) [b]	In-Use Fuel Consumption per Unit (gal/hr) [c]	Emission Factor (g/gal) [d]		Emission Factor (lb/hr)	
					N2O	CH4	N2O	CH4
2017	31.5	0.33	0.54	0.80	0.26	0.58	0.00046	0.0010
2040	31.5	0.33	0.54	0.80	0.26	0.58	0.00046	0.0010

Notes:

a. Horsepower and load factor were obtained from CARB, Mobile Source Emission Inventory, 2011 Transport Refrigeration Unit (TRU) Regulation - Background Materials on Air Emissions, 2011 Emissions Inventory (zip file). March 27, 2012. The data were extracted from the database table "EmissionsInventoryFinal".

b. Brake-specific fuel consumption (BSFC) is from OFFROAD 2007, "Equip.csv" file.

c. Fuel consumption is Rated hp x Load Factor x BSFC / 7.05 lb per gallon fuel. Source for fuel density: POLB 2013 Air Emissions Inventory (July 2014), page 87.

d. Emission factors are from The Climate Registry 2018 Default Emission Factors, May 1, 2018, Table 13.7, Construction/Mining Equipment. Website: https://www.theclimateregistry.org/wp-content/uploads/2018/06/The-Climate-Registry-2018-Default-Emission-Factor-Document.pdf.

Table E-63. Annual GHG Emissions from Yard Lighting Electricity Consumption; CEQA Baseline and Unmitigated Proposed Plan and Alternatives

Alternative	Analysis Year	Port Lighting Average Electricity Usage (kW/acre) [a]	Port Lighted Land Area (acres) [b]	Total Electricity Consumption (MWh/yr) [c]	CO2e Emission Factor (lb/MWh) [d]	Annual CO2e Emissions (MT/yr)
CEQA Baseline	2017	3.7	2,423	39,535	549	9,845
Proposed Plan	2040	3.7	2,938	47,932	508	11,052
Alt 1 (No Plan)	2040	3.7	2,728	44,505	508	10,262
Alt 2 (No Terminal Development)	2040	3.7	2,729	44,521	508	10,266
Alt 3 (Reduced Terminal Development)	2040	3.7	2,785	45,435	508	10,476

Notes:

a. Yard electricity usage is from the *Pier B On-Dock Rail Support Facility DEIR* (December 2016), Appendix A1, Table A1.2-45, 12th Street Alternative. Usage assumes 32 10-kW towers and 122 0.4-kW poles per 99 acres.

b. Lighted acreages were estimated using Google Earth Pro.

c. Assumes lights are on an average of 12 hours per day.

d. GHG emission factors for electricity supplied by Southern California Edison are from Table E-48.

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

G	Variable	Units	Terminal Type										
Diesel Equipment Operating Hours			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
Quay Crn	Crane	operating hours / year	0	0	0	0	0	0	0	0	0	0	0
Rbr Tire Gntry	Rub-trd Gantry Crane		60,180	0	0	87,940	110,350	0	0	62,491	19,929	0	340,890
Empty Hdlr	Side pick		27,218	10,965	0	39,773	49,909	0	0	196,740	51,242	0	375,847
Top Pick	Top handler		53,996	14,485	0	80,851	104,916	0	0	77,454	24,700	0	356,401
Yd Trctr	Yard tractor		272,349	49,467	140,899	409,338	533,843	0	0	473,327	150,944	0	2,030,167
PM10 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of PM10 / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.3	0.0	0.0	0.5	0.6	0.0	0.0	0.4	0.1	0.0	1.9
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.5	0.1	0.0	0.9
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.5
CYT.2040	Yard tractor		1.1	0.2	0.6	1.7	2.2	0.0	0.0	1.9	0.6	0.0	8.3
PM10		TOTAL PM10	1.6	0.2	0.6	2.4	3.1	0.0	0.0	2.9	0.9	0.0	11.6
PM2.5 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of PM2.5 / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.3	0.0	0.0	0.5	0.6	0.0	0.0	0.3	0.1	0.0	1.8
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.4	0.1	0.0	0.8
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.5
CYT.2040	Yard tractor		1.0	0.2	0.5	1.5	2.0	0.0	0.0	1.8	0.6	0.0	7.5
PM2.5		TOTAL PM2.5	1.4	0.2	0.5	2.2	2.8	0.0	0.0	2.6	0.8	0.0	10.6
DPM Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of DPM / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.3	0.0	0.0	0.5	0.6	0.0	0.0	0.4	0.1	0.0	1.9
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.5	0.1	0.0	0.9
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.5
CYT.2040	Yard tractor		0.8	0.2	0.4	1.3	1.6	0.0	0.0	1.4	0.5	0.0	6.2
DPM		TOTAL DPM	1.3	0.2	0.4	2.0	2.5	0.0	0.0	2.4	0.7	0.0	9.5
NOx Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of NOx / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		21.1	0.0	0.0	30.9	38.7	0.0	0.0	21.9	7.0	0.0	119.6
CSP.2040	Side pick		2.5	1.0	0.0	3.6	4.5	0.0	0.0	17.9	4.7	0.0	34.1
CTH.2040	Top handler		4.6	1.2	0.0	6.9	8.9	0.0	0.0	6.6	2.1	0.0	30.2
CYT.2040	Yard tractor		17.9	3.2	9.2	26.8	35.0	0.0	0.0	31.0	9.9	0.0	133.1
NOx		TOTAL NOx	46.0	5.5	9.2	68.2	87.2	0.0	0.0	77.4	23.6	0.0	317.1
SOx Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of SOx / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.3
CSP.2040	Side pick		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.4
CYT.2040	Yard tractor		0.2	0.0	0.1	0.2	0.3	0.0	0.0	0.3	0.1	0.0	1.2
SOx		TOTAL SOx	0.3	0.1	0.1	0.5	0.6	0.0	0.0	0.6	0.2	0.0	2.3
CO Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of CO / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		9.5	0.0	0.0	13.9	17.4	0.0	0.0	9.9	3.1	0.0	53.7
CSP.2040	Side pick		4.9	2.0	0.0	7.1	8.9	0.0	0.0	35.2	9.2	0.0	67.3
CTH.2040	Top handler		12.2	3.3	0.0	18.3	23.8	0.0	0.0	17.6	5.6	0.0	80.8
CYT.2040	Yard tractor		114.0	20.7	59.0	171.4	223.5	0.0	0.0	198.2	63.2	0.0	850.0
CO		TOTAL CO	140.6	26.0	59.0	210.7	273.6	0.0	0.0	260.8	81.1	0.0	1,051.9
HC Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of HC / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		1.7	0.0	0.0	2.5	3.1	0.0	0.0	1.7	0.6	0.0	9.5
CSP.2040	Side pick		0.8	0.3	0.0	1.2	1.5	0.0	0.0	6.0	1.6	0.0	11.4
CTH.2040	Top handler		1.6	0.4	0.0	2.4	3.1	0.0	0.0	2.3	0.7	0.0	10.4
CYT.2040	Yard tractor		1.7	0.3	0.9	2.5	3.2	0.0	0.0	2.9	0.9	0.0	12.3
HC		TOTAL HC	5.7	1.1	0.9	8.5	10.9	0.0	0.0	12.9	3.8	0.0	43.7
CO2 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of CO2 / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		5,169.4	0.0	0.0	7,554.0	9,479.0	0.0	0.0	5,368.0	1,711.9	0.0	29,282.3
CSP.2040	Side pick		2,191.1	882.7	0.0	3,201.8	4,017.8	0.0	0.0	15,838.0	4,125.1	0.0	30,256.6
CTH.2040	Top handler		5,848.0	1,568.7	0.0	8,756.5	11,362.8	0.0	0.0	8,388.6	2,675.1	0.0	38,599.7
CYT.2040	Yard tractor		14,496.7	2,633.0	7,499.9	21,788.5	28,415.7	0.0	0.0	25,194.5	8,034.5	0.0	108,062.7
CO2		TOTAL CO2	27,705.2	5,084.5	7,499.9	41,300.8	53,275.3	0.0	0.0	54,789.1	16,546.6	0.0	206,201.4
N2O Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of N2O / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.1	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.7
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.5	0.1	0.0	0.9
CTH.2040	Top handler		0.2	0.0	0.0	0.2	0.3	0.0	0.0	0.2	0.1	0.0	1.1
CYT.2040	Yard tractor		0.3	0.0	0.1	0.4	0.5	0.0	0.0	0.5	0.1	0.0	2.0
N2O		TOTAL N2O	0.6	0.1	0.1	0.9	1.2	0.0	0.0	1.3	0.4	0.0	4.7

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

CH4 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	*tons of CH4 / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.2	0.0	0.0	0.3	0.4	0.0	0.0	0.2	0.1	0.0	1.3
CSP.2040	Side pick		0.1	0.0	0.0	0.2	0.2	0.0	0.0	0.8	0.2	0.0	1.5
CTH.2040	Top handler		0.3	0.1	0.0	0.4	0.5	0.0	0.0	0.4	0.1	0.0	1.8
CYT.2040	Yard tractor		0.4	0.1	0.2	0.6	0.8	0.0	0.0	0.7	0.2	0.0	2.9
CH4		*TOTAL CH4*	*1.0*	*0.2*	*0.2*	*1.5*	*1.9*	*0.0*	*0.0*	*2.1*	*0.6*	*0.0*	*7.6*
CO2e Emissions			**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**		**Sum**
CCR.2040	Crane	*tons of CO2e / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		5,214.4	0.0	0.0	7,619.8	9,561.5	0.0	0.0	5,414.7	1,726.8	0.0	29,537.1
CSP.2040	Side pick		2,213.3	891.7	0.0	3,234.3	4,058.5	0.0	0.0	15,998.8	4,167.0	0.0	30,563.7
CTH.2040	Top handler		5,903.2	1,583.5	0.0	8,839.2	11,470.1	0.0	0.0	8,467.8	2,700.4	0.0	38,964.2
CYT.2040	Yard tractor		14,584.7	2,649.0	7,545.4	21,920.8	28,588.2	0.0	0.0	25,347.4	8,083.3	0.0	108,718.9
CO2e		*TOTAL CO2e*	*27,916*	*5,124*	*7,545*	*41,614*	*53,678*	*0*	*0*	*55,229*	*16,677*	*0*	*207,783.8*
Port-Wide Diesel Equipment Emissions			**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**		**Sum**
CHE	Capacity	*TEUs/year*	1,720,000	423,000	3,422,000	2,514,000	3,156,000	0	0	4,324,000	1,378,000	0	16,937,000
CHE PM10	PM10	*tons / M TEU*	0.93	0.59	0.17	0.94	0.97	0.00	0.00	0.66	0.64	0.00	0.69
CHE PM2.5	PM2.5		0.84	0.53	0.15	0.86	0.88	0.00	0.00	0.60	0.59	0.00	0.62
CHE DPM	DPM		0.76	0.47	0.13	0.78	0.80	0.00	0.00	0.55	0.53	0.00	0.56
CHE NOx	NOx		26.8	12.9	2.7	27.1	27.6	0.0	0.0	17.9	17.2	0.0	18.7
CHE SOx	SOx		0.18	0.14	0.02	0.18	0.19	0.00	0.00	0.14	0.13	0.00	0.14
CHE CO	CO		81.8	61.4	17.2	83.8	86.7	0.0	0.0	60.3	58.9	0.0	62.1
CHE HC	HC		3.34	2.50	0.25	3.38	3.45	0.00	0.00	2.97	2.72	0.00	2.58
CHE CO2	CO2		16,108	12,020	2,192	16,428	16,881	0	0	12,671	12,008	0	12,175
CHE N2O	N2O		0.36	0.28	0.04	0.37	0.38	0.00	0.00	0.30	0.28	0.00	0.28
CHE CH4	CH4		0.59	0.45	0.06	0.60	0.62	0.00	0.00	0.49	0.46	0.00	0.45
CHE CO2e	CO2e		16,230	12,114	2,205	16,553	17,008	0	0	12,773	12,103	0	12,268

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

Ocean Going Vessel Emisisons		Units	Terminal Type										
Number of Calls by Ship Size at Limiting Volume			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
OCA.2040	*1kT*	*calls / year*	0	0	0	0	0	0	0	0	0	0	0
OCB.2040	*2kT*		104	52	0	0	0	0	0	0	0	0	156
OCC.2040	*3kT*		52	104	0	0	0	0	0	0	0	0	156
OCD.2040	*4kT*		52	0	0	0	0	0	0	0	0	0	52
OCE.2040	*5kT*		52	0	0	0	0	0	0	52	0	0	104
OCF.2040	*6kT*		52	0	0	0	0	0	0	0	52	0	104
OCG.2040	*7kT*		0	0	52	52	0	0	0	0	0	0	104
OCH.2040	*8kT*		0	0	52	0	52	0	0	0	0	0	104
OCI.2040	*9kT*		104	0	52	0	52	0	0	104	0	0	312
OCJ.2040	*10kT*		0	0	52	52	52	0	0	104	52	0	312
OCK.2040	*11kT*		0	0	0	0	0	0	0	104	0	0	104
OCL.2040	*12kT*		0	0	0	0	0	0	0	52	0	0	52
OCM.2040	*13kT*		0	0	52	52	52	0	0	0	52	0	208
OCN.2040	*14kT*		0	0	0	0	0	0	0	52	0	0	52
OCO.2040	*15kT*		0	0	0	0	0	0	0	0	0	0	0
OCP.2040	*16kT*		0	0	52	52	52	0	0	0	0	0	156
OCQ.2040	*17kT*		0	0	0	0	0	0	0	0	0	0	0
OCR.2040	*18kT*		0	0	0	0	0	0	0	0	0	0	0
OCS.2040	*19kT*		0	0	0	0	0	0	0	0	0	0	0
OCT.2040	*20kT*		0	0	0	0	0	0	0	0	0	0	0
Call Duration by Ship Size (Hotelling Time)			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
OCA.H.2040	*1kT*	*hours / call*	0	0	0	0	0	0	0	0	0	0	0
OCB.H.2040	*2kT*		13	24	0	0	0	0	13	0	0	0	49
OCC.H.2040	*3kT*		15	24	0	0	0	19	15	19	0	0	92
OCD.H.2040	*4kT*		26	23	0	0	0	19	26	19	0	0	114
OCE.H.2040	*5kT*		39	0	0	0	0	23	39	23	0	0	125
OCF.H.2040	*6kT*		33	0	19	19	19	17	33	17	19	0	178
OCG.H.2040	*7kT*		63	0	33	33	33	17	63	17	33	0	289
OCH.H.2040	*8kT*		81	0	49	49	49	40	81	40	49	0	439
OCI.H.2040	*9kT*		72	0	44	44	44	51	72	51	44	0	422
OCJ.H.2040	*10kT*		71	0	56	56	56	59	71	59	56	0	483
OCK.H.2040	*11kT*		59	0	0	0	0	59	59	59	0	0	236
OCL.H.2040	*12kT*		0	0	0	0	0	66	0	66	0	0	131
OCM.H.2040	*13kT*		0	0	67	67	67	0	0	0	67	0	267
OCN.H.2040	*14kT*		0	0	0	0	0	61	0	61	0	0	122
OCO.H.2040	*15kT*		0	0	0	0	0	0	0	0	0	0	0
OCP.H.2040	*16kT*		0	0	82	82	82	0	0	0	82	0	329
OCQ.H.2040	*17kT*		0	0	0	0	0	0	0	0	0	0	0
OCR.H.2040	*18kT*		0	0	91	91	91	0	0	0	91	0	364
OCS.H.2040	*19kT*		0	0	0	0	0	0	0	0	0	0	0
OCT.H.2040	*20kT*		0	0	100	100	100	0	0	0	100	0	399
Non-Hotelling Emissions (transit, maneuvering, anchorage)			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	8.8	2.7	9.2	6.4	7.9	0.0	0.0	12.8	4.2	0.0	***51.8***
	PM2.5		8.3	2.5	8.6	6.0	7.4	0.0	0.0	12.0	3.9	0.0	***48.8***
	DPM		8.6	2.6	8.9	6.2	7.6	0.0	0.0	12.4	4.1	0.0	***50.4***
	NOx		380.4	125.6	299.9	184.0	239.7	0.0	0.0	373.4	130.6	0.0	***1,733.7***
	SOx		13.4	4.1	14.2	9.9	12.2	0.0	0.0	19.6	6.3	0.0	***79.8***
	CO		60.0	18.3	61.9	42.6	52.9	0.0	0.0	87.2	28.5	0.0	***351.4***
	HC		29.0	8.8	29.9	20.6	25.6	0.0	0.0	42.2	13.8	0.0	***169.9***
	CO2		20,333	6,257	21,482	15,060	18,487	0	0	29,639	9,602	0	***120,860.6***
	N2O		1.0	0.3	1.1	0.8	0.9	0.0	0.0	1.5	0.5	0.0	***6.0***
	CH4		0.6	0.2	0.6	0.4	0.5	0.0	0.0	0.8	0.3	0.0	***3.4***
	CO2e		20,647	6,353	21,816	15,295	18,775	0	0	30,100	9,751	0	***122,736.9***
Hotelling Emissions WITHOUT Shore Power Reductions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	5.3	0.6	5.5	2.4	4.4	0.0	0.0	8.8	1.9	0.0	***28.8***
	PM2.5		5	1	5	2	4	0	0	8	2	0	***27.0***
	DPM		4	0	4	2	3	0	0	7	1	0	***21.7***
	NOx		165	22	158	64	122	0	0	210	47	0	***786.9***
	SOx		12	1	13	6	10	0	0	20	5	0	***67.9***
	CO		19	2	19	9	16	0	0	32	7	0	***104.1***
	HC		9	1	9	4	7	0	0	15	3	0	***47.7***
	CO2		18,693	2,125	19,762	8,810	15,736	0	0	30,937	6,908	0	***102,971.1***
	N2O		1	0	1	1	1	0	0	2	0	0	***6.4***
	CH4		0	0	0	0	0	0	0	0	0	0	***0.9***
	CO2e		19,039	2,164	20,134	8,977	16,030	0	0	31,511	7,037	0	***104,891.7***

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

Hotelling Emissions AFTER Shore Power Reductions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	1.5	0.2	1.5	0.7	1.2	0.0	0.0	2.5	0.5	0.0	*8.1*
	PM2.5		1.4	0.2	1.4	0.6	1.1	0.0	0.0	2.3	0.5	0.0	*7.6*
	DPM		1.1	0.1	1.1	0.5	0.9	0.0	0.0	1.9	0.4	0.0	*6.1*
	NOx		46.2	6.1	44.2	17.9	34.1	0.0	0.0	58.8	13.1	0.0	*220.3*
	SOx		3.5	0.4	3.7	1.6	2.9	0.0	0.0	5.7	1.3	0.0	*19.0*
	CO		5.4	0.6	5.5	2.4	4.4	0.0	0.0	8.9	1.9	0.0	*29.1*
	HC		2.5	0.3	2.5	1.1	2.0	0.0	0.0	4.1	0.9	0.0	*13.4*
	CO2		5,233.9	595.0	5,533.5	2,466.7	4,406.1	0.0	0.0	8,662.5	1,934.3	0.0	*28,831.9*
	N2O		0.3	0.0	0.3	0.2	0.3	0.0	0.0	0.5	0.1	0.0	*1.8*
	CH4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	*0.2*
	CO2e		5,331.0	606.0	5,637.6	2,513.6	4,488.3	0.0	0.0	8,822.9	1,970.3	0.0	*29,369.7*
Total OGV Emissions per M TEU			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
OGV	Limiting Volume	*TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	3,156,000	0	0	4,324,000	1,378,000	0	*16,937,000*
OGV PM10	PM10	*tons / M TEU*	6.0	6.8	3.1	2.8	2.9	0.0	0.0	3.5	3.4	0.0	3.06
OGV PM2.5	PM2.5		6	6	3	3	3	0	0	3	3	0	2.88
OGV DPM	DPM		6	7	3	3	3	0	0	3	3	0	2.97
OGV NOx	NOx		248	311	101	80	87	0	0	100	104	0	102.4
OGV SOx	SOx		10	11	5	5	5	0	0	6	6	0	4.71
OGV CO	CO		38	45	20	18	18	0	0	22	22	0	20.7
OGV HC	HC		18	21	9	9	9	0	0	11	11	0	10.03
OGV CO2	CO2		14,864	16,199	7,895	6,972	7,254	0	0	8,858	8,372	0	7135.9
OGV N2O	N2O		1	1	0	0	0	0	0	0	0	0	0.35
OGV CH4	CH4		0	0	0	0	0	0	0	0	0	0	0.20
OGV CO2e	CO2e		15,103	16,452	8,023	7,084	7,371	0	0	9,002	8,506	0	7246.7

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

Escort / Assist Tug Emissions		Units											Monument
Emission Factors			All	H.2040									
	PM10	*pounds / call*	17.6										
	PM2.5		16.3										
	DPM		17.6										
	NOx		380.0										
	SOx		0.3										
	CO		358.5										
	HC		50.3										
	CO2		32,177.4										
	N2O		1.5										
	CH4		0.6										
	CO2e		32,623.4										
Total Number of Calls at Terminal Capacity			Container	Container	Container	Container	Container	Container	Container	Container	Container		
	Ship Calls	*total OGV calls / year*	416	156	312	208	260	0	0	468	156	0	1976
Total Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	3.7	1.4	2.7	1.8	2.3	0.0	0.0	4.1	1.4	0.0	*17.4*
	PM2.5		3.4	1.3	2.5	1.7	2.1	0.0	0.0	3.8	1.3	0.0	*16.1*
	DPM		3.7	1.4	2.7	1.8	2.3	0.0	0.0	4.1	1.4	0.0	*17.4*
	NOx		79.0	29.6	59.3	39.5	49.4	0.0	0.0	88.9	29.6	0.0	*375.4*
	SOx		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	*0.3*
	CO		74.6	28.0	55.9	37.3	46.6	0.0	0.0	83.9	28.0	0.0	*354.2*
	HC		10.5	3.9	7.9	5.2	6.5	0.0	0.0	11.8	3.9	0.0	*49.7*
	CO2		6,692.9	2,509.8	5,019.7	3,346.4	4,183.1	0.0	0.0	7,529.5	2,509.8	0.0	*31,791.2*
	N2O		0.3	0.1	0.2	0.2	0.2	0.0	0.0	0.3	0.1	0.0	*1.4*
	CH4		0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	*0.5*
	CO2e		6,785.7	2,544.6	5,089.2	3,392.8	4,241.0	0.0	0.0	7,633.9	2,544.6	0.0	*32,231.9*
Total Tug Emissions per M TEU			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
TUG	Limiting Volume	*TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	3,156,000	0	0	4,324,000	1,378,000	0	
TUG PM10	PM10	*tons / M vessel TEU*	2.13	3.25	0.80	0.73	0.73	0.00	0.00	0.95	1.00	0.00	
TUG PM2.5	PM2.5		1.97	3.01	0.74	0.68	0.67	0.00	0.00	0.88	0.92	0.00	
TUG DPM	DPM		2.13	3.25	0.80	0.73	0.73	0.00	0.00	0.95	1.00	0.00	
TUG NOx	NOx		45.95	70.07	17.32	15.72	15.65	0.00	0.00	20.56	21.51	0.00	
TUG SOx	SOx		0.04	0.06	0.02	0.01	0.01	0.00	0.00	0.02	0.02	0.00	
TUG CO	CO		43.35	66.10	16.34	14.83	14.77	0.00	0.00	19.40	20.29	0.00	
TUG HC	HC		6.09	9.28	2.29	2.08	2.07	0.00	0.00	2.72	2.85	0.00	
TUG CO2	CO2		3891.21	5933.41	1466.88	1331.12	1325.43	0.00	0.00	1741.33	1821.36	0.00	
TUG N2O	N2O		0.18	0.27	0.07	0.06	0.06	0.00	0.00	0.08	0.08	0.00	
TUG CH4	CH4		0.07	0.10	0.03	0.02	0.02	0.00	0.00	0.03	0.03	0.00	
TUG CO2e	CO2e		3945.15	6015.66	1487.21	1349.57	1343.80	0.00	0.00	1765.46	1846.61	0.00	

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

Truck Emissions		Units	Terminal Type										
Total Truck Calls at Limiting Volume			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	Truck Calls	*truck calls / yr*	752,671	251,495	1,342,083	1,058,955	1,256,047	0	0	1,896,871	644,850	0	7,202,971
Total Dray Truck Emissions Outside the Marine Terminal			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
T.2040	PM10	*tons of pollutant / year*	0.792	0.265	1.413	1.115	1.322	0.000	0.000	1.997	0.679	0.000	***7.6***
T.2040	PM2.5		0.758	0.253	1.352	1.067	1.265	0.000	0.000	1.911	0.650	0.000	***7.3***
T.2040	DPM		0.792	0.265	1.413	1.115	1.322	0.000	0.000	1.997	0.679	0.000	***7.6***
T.2040	NOx		51.7	17.3	92.2	72.8	86.3	0.0	0.0	130.3	44.3	0.0	***494.9***
T.2040	SOx		0.340	0.113	0.606	0.478	0.567	0.000	0.000	0.856	0.291	0.000	***3.3***
T.2040	CO		4.7	1.6	8.4	6.7	7.9	0.0	0.0	11.9	4.1	0.0	***45.3***
T.2040	HC		0.424	0.142	0.757	0.597	0.708	0.000	0.000	1.070	0.364	0.000	***4.1***
T.2040	CO2		35,947	12,011	64,097	50,575	59,988	0	0	90,594	30,798	0	***344,012***
T.2040	N2O		5.650	1.888	10.075	7.950	9.429	0.000	0.000	14.240	4.841	0.000	***54.1***
T.2040	CH4		0.025	0.008	0.045	0.035	0.042	0.000	0.000	0.063	0.021	0.000	***0.2***
T.2040	CO2e		37,632	12,574	67,101	52,945	62,799	0	0	94,839	32,241	0	***360,132***
Total Dray Truck Emissions Outside the MT, per M TEU			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
TRK	Limiting Volume	*TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	3,156,000	0	0	4,324,000	1,378,000	0	
TRK PM10	PM10	*tons / M vessel TEU*	0.46	0.63	0.41	0.44	0.42	0.00	0.00	0.46	0.49	0.00	3.3
TRK PM2.5	PM2.5		0.44	0.60	0.40	0.42	0.40	0.00	0.00	0.44	0.47	0.00	3.2
TRK DPM	DPM		0.46	0.63	0.41	0.44	0.42	0.00	0.00	0.46	0.49	0.00	3.3
TRK NOx	NOx		30.06	40.85	26.94	28.94	27.34	0.00	0.00	30.14	32.15	0.00	216.4
TRK SOx	SOx		0.20	0.27	0.18	0.19	0.18	0.00	0.00	0.20	0.21	0.00	1.4
TRK CO	CO		2.75	3.74	2.47	2.65	2.50	0.00	0.00	2.76	2.94	0.00	19.8
TRK HC	HC		0.25	0.34	0.22	0.24	0.22	0.00	0.00	0.25	0.26	0.00	1.8
TRK CO2	CO2		20,899.60	28,395.58	18,730.99	20,117.47	19,007.73	0.00	0.00	20,951.42	22,349.65	0.00	150,452.4
TRK N2O	N2O		3.29	4.46	2.94	3.16	2.99	0.00	0.00	3.29	3.51	0.00	23.6
TRK CH4	CH4		0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.02	0.00	0.1
TRK CO2e	CO2e		21,878.93	29,726.16	19,608.70	21,060.15	19,898.41	0.00	0.00	21,933.18	23,396.93	0.00	157,502.5

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

Rail Emissions		Units	Terminal Type										
Rail Usage at Degraded Volume			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	Switcher	*hours / year*	3,975	0	2,615	4,363	1,372	0	0	3,923	400	0	16,649
	Mainline	*round trips / year*	720	0	1,348	1,440	2,160	0	0	1,785	673	0	8,126
Trains	Train Type	*Type*	5.5k Maxi I	6.0k Maxi I	8.0k Maxi I	4.5k Maxi I	4.5k Maxi I	4.0k Maxi I	6.5k Maxi I	5.5k Maxi I	4.5k Maxi I	6.0k Maxi I	
	Total HP usage for round trip train	*hp-hr / train*	40,915	43,411	59,129	31,437	31,437	28,941	51,641	40,915	31,437	43,411	
Total Switcher Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
RSW.2040	PM10	*tons of pollutant / year*	0.01	0.00	0.01	0.02	0.00	0.00	0.00	0.01	0.00	0.00	*0.1*
RSW.2040	PM2.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.1*
RSW.2040	DPM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.1*
RSW.2040	NOx		1.0	0.0	0.7	1.1	0.4	0.0	0.0	1.0	0.1	0.0	*4.3*
RSW.2040	SOx		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*
RSW.2040	CO		1.6	0.0	1.1	1.8	0.6	0.0	0.0	1.6	0.2	0.0	*6.9*
RSW.2040	HC		0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	*0.3*
RSW.2040	CO2		609.0	0.0	400.6	668.4	210.2	0.0	0.0	601.1	61.4	0.0	*2,550.7*
RSW.2040	N2O		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.1*
RSW.2040	CH4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.2*
RSW.2040	CO2e		614.7	0.0	404.3	674.7	212.2	0.0	0.0	606.7	61.9	0.0	*2,574.5*
Total Line Haul Locomotive Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
R.2040	PM10	*tons of pollutant / year*	0.62	0.00	1.69	0.96	1.44	0.00	0.00	1.55	0.45	0.00	*6.7*
R.2040	PM2.5		0.6	0.0	1.8	1.0	1.5	0.0	0.0	1.6	0.5	0.0	*7.0*
R.2040	DPM		0.6	0.0	1.8	1.0	1.5	0.0	0.0	1.6	0.5	0.0	*7.0*
R.2040	NOx		43.8	0.0	118.6	67.4	101.0	0.0	0.0	108.7	31.5	0.0	*471.0*
R.2040	SOx		0.2	0.0	0.4	0.2	0.4	0.0	0.0	0.4	0.1	0.0	*1.7*
R.2040	CO		41.6	0.0	112.4	63.9	95.8	0.0	0.0	103.1	29.9	0.0	*446.6*
R.2040	HC		1.6	0.0	4.4	2.5	3.7	0.0	0.0	4.0	1.2	0.0	*17.4*
R.2040	CO2		16,041.5	0.0	43,397.8	24,650.7	36,976.0	0.0	0.0	39,773.9	11,524.5	0.0	*172,364.4*
R.2040	N2O		0.4	0.0	1.1	0.6	1.0	0.0	0.0	1.0	0.3	0.0	*4.5*
R.2040	CH4		1.3	0.0	3.5	2.0	3.0	0.0	0.0	3.2	0.9	0.0	*14.0*
R.2040	CO2e		16,199.8	0.0	43,826.0	24,893.9	37,340.8	0.0	0.0	40,166.4	11,638.2	0.0	*174,065.0*
Total Train Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	0.64	0.00	1.70	0.98	1.44	0.00	0.00	1.56	0.45	0.00	*6.8*
	PM2.5		0.7	0.0	1.8	1.0	1.5	0.0	0.0	1.6	0.5	0.0	*7.0*
	DPM		0.7	0.0	1.8	1.0	1.5	0.0	0.0	1.6	0.5	0.0	*7.0*
	NOx		44.9	0.0	119.3	68.5	101.4	0.0	0.0	109.7	31.6	0.0	*475.4*
	SOx		0.2	0.0	0.4	0.3	0.4	0.0	0.0	0.4	0.1	0.0	*1.8*
	CO		43.2	0.0	113.5	65.7	96.4	0.0	0.0	104.7	30.0	0.0	*453.5*
	HC		1.7	0.0	4.4	2.6	3.8	0.0	0.0	4.1	1.2	0.0	*17.8*
	CO2		16,650.5	0.0	43,798.4	25,319.1	37,186.2	0.0	0.0	40,375.0	11,585.9	0.0	*174,915.1*
	N2O		0.4	0.0	1.2	0.7	1.0	0.0	0.0	1.1	0.3	0.0	*4.6*
	CH4		1.3	0.0	3.5	2.0	3.0	0.0	0.0	3.3	0.9	0.0	*14.1*
	CO2e		16,814.5	0.0	44,230.3	25,568.5	37,553.0	0.0	0.0	40,773.0	11,700.1	0.0	*176,639.5*
Total Train Emissions per M TEU			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
TRN	Rail-Constrained Capacity	*Rail TEUs / year*	380,000	0	1,087,000	643,000	963,000	0	0	943,000	301,000	0	*4,317,000*
TRN PM10	PM10	*tons / M Rail TEU*	1.68	0.00	1.56	1.52	1.50	0.00	0.00	1.66	1.50	0.00	0.40
TRN PM2.5	PM2.5		1.7	0.0	1.6	1.6	1.6	0.0	0.0	1.7	1.6	0.0	0.4
TRN DPM	DPM		1.7	0.0	1.6	1.6	1.6	0.0	0.0	1.7	1.6	0.0	0.4
TRN NOx	NOx		118.1	0.0	109.7	106.5	105.3	0.0	0.0	116.3	105.0	0.0	28.1
TRN SOx	SOx		0.4	0.0	0.4	0.4	0.4	0.0	0.0	0.4	0.4	0.0	0.1
TRN CO	CO		113.7	0.0	104.4	102.1	100.1	0.0	0.0	111.0	99.8	0.0	26.8
TRN HC	HC		4.5	0.0	4.1	4.0	3.9	0.0	0.0	4.4	3.9	0.0	1.0
TRN CO2	CO2		43,817.2	0.0	40,292.9	39,376.5	38,614.9	0.0	0.0	42,815.5	38,491.3	0.0	10,327.4
TRN N2O	N2O		1.2	0.0	1.1	1.0	1.0	0.0	0.0	1.1	1.0	0.0	0.3
TRN CH4	CH4		3.5	0.0	3.3	3.2	3.1	0.0	0.0	3.5	3.1	0.0	0.8
TRN CO2e	CO2e		44,248.6	0.0	40,690.3	39,764.4	38,995.8	0.0	0.0	43,237.6	38,870.9	0.0	10,429.2

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

Total Emissions, All Sources		Units	Terminal Type										Sum
Total Emissions, All Sources at 2040 Rates			Container	Container	Container	Container	Container	Container	Container	Container	Container		
	Terminal at Volume	*Vessel TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	3,156,000	0	0	4,324,000	1,378,000	0	*16,937,000*
ALL	Rail traffic	*Rail TEUs / year*	380,000	0	1,087,000	643,000	963,000	0	0	943,000	301,000	0	*4,317,000*
ALL PM10	PM10	*tons of pollutant / year*	17.0	4.8	17.1	13.4	17.2	0.0	0.0	25.8	8.1	0.0	*103.3*
ALL PM2.5	PM2.5		16	4	16	13	16	0	0	24	8	0	*97.3*
ALL DPM	DPM		16	5	16	13	16	0	0	24	8	0	*98.0*
ALL NOx	NOx		648	184	624	451	598	0	0	839	273	0	*3,616.7*
ALL SOx	SOx		18	5	19	13	17	0	0	27	8	0	*106.5*
ALL CO	CO		329	74	304	365	482	0	0	557	174	0	*2,285.4*
ALL HC	HC		50	14	46	39	50	0	0	76	24	0	*298.5*
ALL CO2	CO2		112,563	26,458	147,431	138,068	177,526	0	0	231,589	72,977	0	*906,611.8*
ALL N2O	N2O		8	2	13	11	13	0	0	19	6	0	*72.6*
ALL CH4	CH4		3	0	5	4	6	0	0	6	2	0	*26.2*
ALL CO2e	CO2e		115,125	27,202	151,420	141,329	181,535	0	0	237,397	74,884	0	*928,893.3*
Emissions by Source at 2040 Rates			Container	Container	Container	Container	Container	Container	Container	Container	Container		
PM10	CHE	*tons of pollutant / year*	1.6	0.2	0.6	2.4	3.1	0.0	0.0	2.9	0.9	0.0	*11.6*
	OGV		10.3	2.9	10.7	7.1	9.1	0.0	0.0	15.2	4.7	0.0	*59.9*
	TUG		3.7	1.4	2.7	1.8	2.3	0.0	0.0	4.1	1.4	0.0	*17.4*
	TRK		0.8	0.3	1.4	1.1	1.3	0.0	0.0	2.0	0.7	0.0	*7.6*
	TRN		0.6	0.0	1.7	1.0	1.4	0.0	0.0	1.6	0.5	0.0	*6.8*
PM2.5	CHE	*tons of pollutant / year*	1.4	0.2	0.5	2.2	2.8	0.0	0.0	2.6	0.8	0.0	*10.6*
	OGV		9.7	2.7	10.1	6.6	8.6	0.0	0.0	14.3	4.4	0.0	*56.3*
	TUG		3.4	1.3	2.5	1.7	2.1	0.0	0.0	3.8	1.3	0.0	*16.1*
	TRK		0.8	0.3	1.4	1.1	1.3	0.0	0.0	1.9	0.6	0.0	*7.3*
	TRN		0.7	0.0	1.8	1.0	1.5	0.0	0.0	1.6	0.5	0.0	*7.0*
DPM	CHE	*tons of pollutant / year*	1.3	0.2	0.4	2.0	2.5	0.0	0.0	2.4	0.7	0.0	*9.5*
	OGV		9.7	2.8	10.0	6.7	8.5	0.0	0.0	14.3	4.5	0.0	*56.5*
	TUG		3.7	1.4	2.7	1.8	2.3	0.0	0.0	4.1	1.4	0.0	*17.4*
	TRK		0.8	0.3	1.4	1.1	1.3	0.0	0.0	2.0	0.7	0.0	*7.6*
	TRN		0.7	0.0	1.8	1.0	1.5	0.0	0.0	1.6	0.5	0.0	*7.0*
NOx	CHE	*tons of pollutant / year*	46.0	5.5	9.2	68.2	87.2	0.0	0.0	77.4	23.6	0.0	*317*
	OGV		426.6	131.6	344.2	201.9	273.8	0.0	0.0	432.2	143.7	0.0	*1,954*
	TUG		79.0	29.6	59.3	39.5	49.4	0.0	0.0	88.9	29.6	0.0	*375*
	TRK		51.7	17.3	92.2	72.8	86.3	0.0	0.0	130.3	44.3	0.0	*495*
	TRN		44.9	0.0	119.3	68.5	101.4	0.0	0.0	109.7	31.6	0.0	*475*
SOx	CHE	*tons of pollutant / year*	0.3	0.1	0.1	0.5	0.6	0.0	0.0	0.6	0.2	0.0	*2.3*
	OGV		16.9	4.5	17.8	11.6	15.1	0.0	0.0	25.3	7.6	0.0	*98.8*
	TUG		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	*0.3*
	TRK		0.3	0.1	0.6	0.5	0.6	0.0	0.0	0.9	0.3	0.0	*3.3*
	TRN		0.2	0.0	0.4	0.3	0.4	0.0	0.0	0.4	0.1	0.0	*1.8*
CO	CHE	*tons of pollutant / year*	140.6	26.0	59.0	210.7	273.6	0.0	0.0	260.8	81.1	0.0	*1,052*
	OGV		65.4	18.9	67.3	45.0	57.3	0.0	0.0	96.1	30.4	0.0	*381*
	TUG		74.6	28.0	55.9	37.3	46.6	0.0	0.0	83.9	28.0	0.0	*354*
	TRK		4.7	1.6	8.4	6.7	7.9	0.0	0.0	11.9	4.1	0.0	*45*
	TRN		43.2	0.0	113.5	65.7	96.4	0.0	0.0	104.7	30.0	0.0	*453*
HC	CHE	*tons of pollutant / year*	5.7	1.1	0.9	8.5	10.9	0.0	0.0	12.9	3.8	0.0	*43.7*
	OGV		31.5	9.1	32.4	21.7	27.6	0.0	0.0	46.3	14.7	0.0	*183.3*
	TUG		10.5	3.9	7.9	5.2	6.5	0.0	0.0	11.8	3.9	0.0	*49.7*
	TRK		0.4	0.1	0.8	0.6	0.7	0.0	0.0	1.1	0.4	0.0	*4.1*
	TRN		1.7	0.0	4.4	2.6	3.8	0.0	0.0	4.1	1.2	0.0	*17.8*
CO2	CHE	*tons of pollutant / year*	27,705.2	5,084.5	7,499.9	41,300.8	53,275.3	0.0	0.0	54,789.1	16,546.6	0.0	*206,201*
	OGV		25,566.8	6,852.4	27,015.2	17,526.6	22,893.2	0.0	0.0	38,301.7	11,536.7	0.0	*149,692*
	TUG		6,692.9	2,509.8	5,019.7	3,346.4	4,183.1	0.0	0.0	7,529.5	2,509.8	0.0	*31,791*
	TRK		35,947.3	12,011.3	64,097.4	50,575.3	59,988.4	0.0	0.0	90,594.0	30,797.8	0.0	*344,012*
	TRN		16,650.5	0.0	43,798.4	25,319.1	37,186.2	0.0	0.0	40,375.0	11,585.9	0.0	*174,915*
N2O	CHE	*tons of pollutant / year*	0.6	0.1	0.1	0.9	1.2	0.0	0.0	1.3	0.4	0.0	*4.7*
	OGV		1.3	0.3	1.4	0.9	1.2	0.0	0.0	2.0	0.6	0.0	*7.8*
	TUG		0.3	0.1	0.2	0.2	0.2	0.0	0.0	0.3	0.1	0.0	*1.4*
	TRK		5.7	1.9	10.1	7.9	9.4	0.0	0.0	14.2	4.8	0.0	*54.1*
	TRN		0.4	0.0	1.2	0.7	1.0	0.0	0.0	1.1	0.3	0.0	*4.6*
CH4	CHE	*tons of pollutant / year*	1.0	0.2	0.2	1.5	1.9	0.0	0.0	2.1	0.6	0.0	*7.6*
	OGV		0.6	0.2	0.6	0.4	0.5	0.0	0.0	0.9	0.3	0.0	*3.6*
	TUG		0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	*0.5*
	TRK		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	*0.2*
	TRN		1.3	0.0	3.5	2.0	3.0	0.0	0.0	3.3	0.9	0.0	*14.1*
CO2e	CHE	*tons of pollutant / year*	27,915.7	5,124.3	7,545.4	41,614.0	53,678.4	0.0	0.0	55,228.7	16,677.4	0.0	*207,784*
	OGV		25,977.7	6,959.3	27,453.9	17,808.6	23,263.2	0.0	0.0	38,922.8	11,721.1	0.0	*152,107*
	TUG		6,785.7	2,544.6	5,089.2	3,392.8	4,241.0	0.0	0.0	7,633.9	2,544.6	0.0	*32,232*
	TRK		37,631.8	12,574.2	67,101.0	52,945.2	62,799.4	0.0	0.0	94,839.1	32,241.0	0.0	*360,132*
	TRN		16,814.5	0.0	44,230.3	25,568.5	37,553.0	0.0	0.0	40,773.0	11,700.1	0.0	*176,639*

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

		Terminal Type																								
		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Ocean Going Vessel Emisisons	**Units**	**Terminal Type**																								
Ship Type	*class name*																									
OGV Designator	*3-letter code*	OAC	OAC	OAC	OAC	OBG	OBG	OBG	OBG	OBG	OBG	OBG	OBG	OBG	OTH	OTV	OTA	OTH	OTA	OTH	OTS	OGC	OGC	OGC	OGC	OGC
Annual Call Count at Volume	*calls / year*	129	43	0	34	6	25	10	16	56	3	45	56	0	50	10	90	0	93	39	123	0	5	0	1	0
Call Duration	*hrs / call*	23	47	69	69	49	65	57	72	70	40	41	70	41	47	154	49	20	20	20	20	158	35	158	85	88
Annual Hotelling Time	*hrs / year*	2,914	2,035	0	2,382	286	1,613	572	1,183	3,939	131	1,856	3,939	0	2,330	1,551	4,352	0	1,854	782	2,463	0	164	0	88	0
Non-Hotelling Emission Rates (transit, maneuvering, anchorage)		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*lb of pollutant / call*	19.8	19.8	19.8	19.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	28.3	188.3	59.5	28.3	59.5	28.3	159.6	26.6	26.6	26.6	26.6	26.6
PM2.5		18.7	18.7	18.7	18.7	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	26.4	174.8	55.5	26.4	55.5	26.4	148.5	24.9	24.9	24.9	24.9	24.9
DPM		18.9	18.9	18.9	18.9	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	24.8	166.0	50.9	24.8	50.9	24.8	151.5	25.1	25.1	25.1	25.1	25.1
NOx		340.3	340.3	340.3	340.3	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,170.9	4,440.6	1,914.8	1,170.9	1,914.8	1,170.9	5,212.7	1,028.6	1,028.6	1,028.6	1,028.6	1,028.6
SOx		33.5	33.5	33.5	33.5	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	53.2	350.2	115.0	53.2	115.0	53.2	268.2	45.1	45.1	45.1	45.1	45.1
CO		102.1	102.1	102.1	102.1	169.5	169.5	169.5	169.5	169.5	169.5	169.5	169.5	169.5	131.4	804.9	265.1	131.4	265.1	131.4	724.3	129.6	129.6	129.6	129.6	129.6
HC		45.5	45.5	45.5	45.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	58.9	365.1	119.5	58.9	119.5	58.9	326.8	57.6	57.6	57.6	57.6	57.6
CO2		50,955	50,955	50,955	50,955	94,441	94,441	94,441	94,441	94,441	94,441	94,441	94,441	94,441	83,052	567,927	182,248	83,052	182,248	83,052	435,564	70,856	70,856	70,856	70,856	70,856
N2O		2.6	2.6	2.6	2.6	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.6	30.4	10.3	4.6	10.3	4.6	21.3	3.6	3.6	3.6	3.6	3.6
CH4		0.9	0.9	0.9	0.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.2	7.3	2.4	1.2	2.4	1.2	6.5	1.2	1.2	1.2	1.2	1.2
CO2e		51,763	51,763	51,763	51,763	95,953	95,953	95,953	95,953	95,953	95,953	95,953	95,953	95,953	84,467	577,181	185,380	84,467	185,380	84,467	442,068	71,967	71,967	71,967	71,967	71,967
Hotelling Emission Rates (at berth)		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*lb of pollutant / hr*	0.7	0.7	0.7	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.3	1.6	1.3	1.3	1.3	1.3	3.0	0.4	0.4	0.4	0.4	0.4
PM2.5		0.7	0.7	0.7	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.3	1.5	1.2	1.3	1.2	1.3	2.8	0.4	0.4	0.4	0.4	0.4
DPM		0.6	0.6	0.6	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.7	0.4	0.4	0.4	0.4	2.3	0.3	0.3	0.3	0.3	0.3
NOx		10.4	10.4	10.4	10.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	30.8	40.5	27.8	30.8	27.8	30.8	107.0	14.5	14.5	14.5	14.5	14.5
SOx		1.4	1.4	1.4	1.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	4.8	5.1	4.6	4.8	4.6	4.8	6.8	0.7	0.7	0.7	0.7	0.7
CO		2.9	2.9	2.9	2.9	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	3.2	4.2	2.9	3.2	2.9	3.2	11.0	1.5	1.5	1.5	1.5	1.5
HC		1.3	1.3	1.3	1.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.5	2.0	1.4	1.5	1.4	1.5	5.1	0.7	0.7	0.7	0.7	0.7
CO2		2,166	2,166	2,166	2,166	564	564	564	564	564	564	564	564	564	7,221	7,770	6,999	7,221	6,999	7,221	10,285	1,119	1,119	1,119	1,119	1,119
N2O		0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.5	0.6	0.5	0.6	0.6	0.1	0.1	0.1	0.1	0.1
CH4		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	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
CO2e		2,203	2,203	2,203	2,203	576	576	576	576	576	576	576	576	576	7,386	7,941	7,161	7,386	7,161	7,386	10,472	1,137	1,137	1,137	1,137	1,137
OGV Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / yr*	2.3	1.2	0.0	1.2	0.1	0.6	0.2	0.4	1.3	0.1	0.9	1.3	0.0	2.3	2.2	5.4	0.0	3.9	1.1	13.5	0.0	0.1	0.0	0.0	0.0
PM2.5		2.2	1.1	0.0	1.1	0.1	0.5	0.2	0.4	1.2	0.1	0.9	1.2	0.0	2.1	2.0	5.1	0.0	3.7	1.0	12.6	0.0	0.1	0.0	0.0	0.0
DPM		2.2	1.1	0.0	1.1	0.1	0.5	0.2	0.3	1.1	0.1	0.8	1.1	0.0	1.1	1.3	3.1	0.0	2.7	0.6	12.2	0.0	0.1	0.0	0.0	0.0
NOx		37.1	18.0	0.0	18.2	4.7	21.0	8.2	14.1	47.9	2.6	34.8	47.9	0.0	65.0	53.8	146.2	0.0	114.5	35.0	452.7	0.0	3.6	0.0	1.2	0.0
SOx		4.2	2.2	0.0	2.3	0.2	1.0	0.4	0.7	2.4	0.1	1.7	2.4	0.0	6.9	5.8	15.2	0.0	9.6	2.9	24.9	0.0	0.2	0.0	0.1	0.0
CO		10.8	5.1	0.0	5.2	0.6	2.6	1.0	1.7	5.8	0.3	4.3	5.8	0.0	7.0	7.3	18.1	0.0	14.9	3.8	58.2	0.0	0.4	0.0	0.1	0.0
HC		4.8	2.3	0.0	2.3	0.3	1.2	0.5	0.8	2.6	0.1	1.9	2.6	0.0	3.2	3.4	8.3	0.0	6.8	1.7	26.4	0.0	0.2	0.0	0.1	0.0
CO2		6,446	3,308	0	3,454	356	1,635	634	1,105	3,755	193	2,637	3,755	0	10,481	8,892	23,386	0	14,938	4,450	39,484	0	256	0	86	0
N2O		0.3	0.2	0.0	0.2	0.0	0.1	0.0	0.1	0.2	0.0	0.1	0.2	0.0	0.8	0.6	1.6	0.0	1.0	0.3	2.1	0.0	0.0	0.0	0.0	0.0
CH4		0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0
CO2e		6,551	3,362	0	3,511	363	1,664	645	1,124	3,821	197	2,682	3,821	0	10,708	9,071	23,878	0	15,233	4,542	40,115	0	260	0	88	0

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

Tug Emisisons	Units	Terminal Type																								
Emission Factors		All	H.2040																							
PM10	*pounds / call*	17.6																								
PM2.5		16.3																								
DPM		17.6																								
NOx		380.0																								
SOx		0.3																								
CO		358.5																								
HC		50.3																								
CO2		32,177																								
N2O		1.5																								
CH4		0.6																								
CO2e		32,623																								
Total Number of Calls		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Ship Calls	*total OGV calls / year*	129	43	0	34	6	25	10	16	56	3	45	56	0	50	10	90	0	93	39	123	0	5	0	1	0
Total Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	1.1	0.4	0.0	0.3	0.1	0.2	0.1	0.1	0.5	0.0	0.4	0.5	0.0	0.4	0.1	0.8	0.0	0.8	0.3	1.1	0.0	0.0	0.0	0.0	0.0
PM2.5		1.1	0.4	0.0	0.3	0.0	0.2	0.1	0.1	0.5	0.0	0.4	0.5	0.0	0.4	0.1	0.7	0.0	0.8	0.3	1.0	0.0	0.0	0.0	0.0	0.0
DPM		1.1	0.4	0.0	0.3	0.1	0.2	0.1	0.1	0.5	0.0	0.4	0.5	0.0	0.4	0.1	0.8	0.0	0.8	0.3	1.1	0.0	0.0	0.0	0.0	0.0
NOx		24.5	8.2	0.0	6.5	1.1	4.7	1.9	3.1	10.6	0.6	8.5	10.6	0.0	9.5	1.9	17.0	0.0	17.6	7.4	23.4	0.0	0.9	0.0	0.2	0.0
SOx		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO		23.1	7.8	0.0	6.1	1.0	4.5	1.8	2.9	10.0	0.6	8.0	10.0	0.0	8.9	1.8	16.0	0.0	16.6	7.0	22.1	0.0	0.8	0.0	0.2	0.0
HC		3.2	1.1	0.0	0.9	0.1	0.6	0.3	0.4	1.4	0.1	1.1	1.4	0.0	1.3	0.3	2.3	0.0	2.3	1.0	3.1	0.0	0.1	0.0	0.0	0.0
CO2		2,077	697	0	552	94	402	161	263	901	53	720	901	0	801	162	1,440	0	1,492	629	1,981	0	75	0	17	0
N2O		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	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
CH4		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO2e		2,106	707	0	560	95	408	163	266	913	54	730	913	0	812	165	1,460	0	1,512	638	2,009	0	76	0	17	0
Truck Emisisons	**Units**	**Terminal Type**																								
Emission Factors		All	T.2040																							
PM10	*grams / roundtrip*	0.955																								
PM2.5		0.914																								
DPM		0.955																								
NOx		62.3																								
SOx		0.4																								
CO		5.7																								
HC		0.5																								
CO2		43,327																								
N2O		6.8																								
CH4		0.0																								
CO2e		45,357																								
Total Number of Truck		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Annual Trucks at Volume	*trucks / year*	20,858	17,066	0	15,350	10,601	36,100	18,781	38,888	83,700	9,604	99,307	83,700	0	108,474	0	36,628	0	60,817	42,678	0	0	5,674	0	470	0
Total Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PM2.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DPM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOx		1.4	1.2	0.0	1.1	0.7	2.5	1.3	2.7	5.8	0.7	6.8	5.8	0.0	7.5	0.0	2.5	0.0	4.2	2.9	0.0	0.0	0.4	0.0	0.0	0.0
SOx		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO		0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.2	0.5	0.1	0.6	0.5	0.0	0.7	0.0	0.2	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
HC		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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
CO2		996	815	0	733	506	1,724	897	1,857	3,997	459	4,743	3,997	0	5,181	0	1,749	0	2,905	2,038	0	0	271	0	22	0
N2O		0.2	0.1	0.0	0.1	0.1	0.3	0.1	0.3	0.6	0.1	0.7	0.6	0.0	0.8	0.0	0.3	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0
CH4		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO2e		1,043	853	0	767	530	1,805	939	1,944	4,185	480	4,965	4,185	0	5,423	0	1,831	0	3,041	2,134	0	0	284	0	23	0

Table E-64. ILUT Output; Unmitigated Proposed Plan, 2040

Rail Emisisons (line haul only)	Units	Terminal Type	
Emission Factors		All	R.2040
PM10	*grams / hp-hr*	0.019	
PM2.5		0.02	
DPM		0.02	
NOx		1.35	
SOx		0.01	
CO		1.28	
HC		0.05	
CO2		494.0	
N2O		0.01	
CH4		0.04	
CO2e		498.9	

Total Annual hp-hr Usage at Volume		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Annual hp-hrs at Volume	*hp-hr / year*	843,972	0	0	267,241	0	0	0	0	0	0	2,736,027	0	0	0	0	0	0	887,596	322,113	0	0	0	0	111,449	0
Total Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0
PM2.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0
DPM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0
NOx		1.3	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.5	0.0	0.0	0.0	0.2	0.0
SOx		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO		1.2	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.5	0.0	0.0	0.0	0.2	0.0
HC		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	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
CO2		460	0	0	146	0	0	0	0	0	0	1,490	0	0	0	0	0	0	483	175	0	0	0	61	0
N2O		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CH4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0
CO2e		464	0	0	147	0	0	0	0	0	0	1,505	0	0	0	0	0	0	488	177	0	0	0	61	0

Total Emisisons	Units	Terminal Type																							
		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	3.5	1.6	0.0	1.5	0.2	0.8	0.3	0.6	1.9	0.1	1.5	1.9	0.0	2.8	2.2	6.2	0.0	4.8	1.5	14.6	0.0	0.1	0.0	0.0	0.0
PM2.5		3.3	1.5	0.0	1.4	0.2	0.8	0.3	0.5	1.7	0.1	1.4	1.7	0.0	2.6	2.1	5.8	0.0	4.5	1.4	13.6	0.0	0.1	0.0	0.0	0.0
DPM		3.3	1.5	0.0	1.4	0.2	0.8	0.3	0.5	1.7	0.1	1.4	1.7	0.0	1.7	1.4	3.9	0.0	3.6	1.0	13.3	0.0	0.1	0.0	0.0	0.0
NOx		64.3	27.4	0.0	26.2	6.5	28.2	11.4	19.8	64.3	3.8	54.2	64.3	0.0	81.9	55.7	165.7	0.0	137.7	45.8	476.1	0.0	4.8	0.0	1.6	0.0
SOx		4.3	2.2	0.0	2.3	0.2	1.1	0.4	0.7	2.5	0.1	1.8	2.5	0.0	7.0	5.8	15.3	0.0	9.7	2.9	24.9	0.0	0.2	0.0	0.1	0.0
CO		35.2	13.0	0.0	11.8	1.7	7.3	2.9	4.9	16.4	1.0	16.8	16.4	0.0	16.6	9.1	34.4	0.0	33.2	11.5	80.3	0.0	1.3	0.0	0.5	0.0
HC		8.2	3.4	0.0	3.2	0.4	1.8	0.7	1.2	4.1	0.2	3.3	4.1	0.0	4.5	3.6	10.6	0.0	9.2	2.8	29.5	0.0	0.3	0.0	0.1	0.0
CO2		9,979	4,820	0	4,884	957	3,762	1,693	3,225	8,654	705	9,590	8,654	0	16,463	9,054	26,576	0	19,818	7,293	41,465	0	602	0	186	0
N2O		0.6	0.3	0.0	0.3	0.1	0.4	0.2	0.4	0.9	0.1	1.0	0.9	0.0	1.6	0.6	2.0	0.0	1.5	0.7	2.2	0.0	0.1	0.0	0.0	0.0
CH4		0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.0	0.1	0.1	0.2	0.0	0.2	0.1	0.6	0.0	0.0	0.0	0.0	0.0
CO2e		10,164	4,923	0	4,985	988	3,877	1,748	3,335	8,920	731	9,882	8,920	0	16,944	9,236	27,170	0	20,274	7,491	42,124	0	619	0	189	0

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

G	Variable	Units	Terminal Type										Sum
Diesel Equipment Operating Hours			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
Quay Crn	Crane	operating hours / year	0	0	0	0	0	0	0	0	0	0	0
Rbr Tire Gntry	Rub-trd Gantry Crane		60,180	0	0	87,940	42,931	35,441	0	53,412	0	0	279,904
Empty Hdlr	Side pick		27,218	10,965	0	39,773	19,417	16,029	0	168,155	0	0	281,557
Top Pick	Top handler		53,996	14,485	0	80,851	41,157	33,975	0	66,200	0	0	290,663
Yd Trctr	Yard tractor		272,349	49,467	140,899	409,338	209,672	173,083	0	404,555	0	0	1,659,363
PM10 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of PM10 / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.3	0.0	0.0	0.5	0.2	0.2	0.0	0.3	0.0	0.0	1.6
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.7
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.4
CYT.2040	Yard tractor		1.1	0.2	0.6	1.7	0.9	0.7	0.0	1.7	0.0	0.0	6.8
PM10		TOTAL PM10	1.6	0.2	0.6	2.4	1.2	1.0	0.0	2.5	0.0	0.0	9.4
PM2.5 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of PM2.5 / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.3	0.0	0.0	0.5	0.2	0.2	0.0	0.3	0.0	0.0	1.4
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.6
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.4
CYT.2040	Yard tractor		1.0	0.2	0.5	1.5	0.8	0.6	0.0	1.5	0.0	0.0	6.2
PM2.5		TOTAL PM2.5	1.4	0.2	0.5	2.2	1.1	0.9	0.0	2.2	0.0	0.0	8.6
DPM Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of DPM / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.3	0.0	0.0	0.5	0.2	0.2	0.0	0.3	0.0	0.0	1.6
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.7
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.4
CYT.2040	Yard tractor		0.8	0.2	0.4	1.3	0.6	0.5	0.0	1.2	0.0	0.0	5.1
DPM		TOTAL DPM	1.3	0.2	0.4	2.0	1.0	0.8	0.0	2.0	0.0	0.0	7.7
NOx Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of NOx / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		21.1	0.0	0.0	30.9	15.1	12.4	0.0	18.7	0.0	0.0	98.2
CSP.2040	Side pick		2.5	1.0	0.0	3.6	1.8	1.5	0.0	15.3	0.0	0.0	25.6
CTH.2040	Top handler		4.6	1.2	0.0	6.9	3.5	2.9	0.0	5.6	0.0	0.0	24.6
CYT.2040	Yard tractor		17.9	3.2	9.2	26.8	13.8	11.4	0.0	26.5	0.0	0.0	108.8
NOx		TOTAL NOx	46.0	5.5	9.2	68.2	34.1	28.1	0.0	66.1	0.0	0.0	257.2
SOx Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of SOx / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
CSP.2040	Side pick		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.3
CYT.2040	Yard tractor		0.2	0.0	0.1	0.2	0.1	0.1	0.0	0.2	0.0	0.0	1.0
SOx		TOTAL SOx	0.3	0.1	0.1	0.5	0.2	0.2	0.0	0.5	0.0	0.0	1.9
CO Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of CO / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		9.5	0.0	0.0	13.9	6.8	5.6	0.0	8.4	0.0	0.0	44.1
CSP.2040	Side pick		4.9	2.0	0.0	7.1	3.5	2.9	0.0	30.1	0.0	0.0	50.4
CTH.2040	Top handler		12.2	3.3	0.0	18.3	9.3	7.7	0.0	15.0	0.0	0.0	65.9
CYT.2040	Yard tractor		114.0	20.7	59.0	171.4	87.8	72.5	0.0	169.4	0.0	0.0	694.8
CO		TOTAL CO	140.6	26.0	59.0	210.7	107.4	88.6	0.0	222.9	0.0	0.0	855.2
HC Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of HC / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		1.7	0.0	0.0	2.5	1.2	1.0	0.0	1.5	0.0	0.0	7.8
CSP.2040	Side pick		0.8	0.3	0.0	1.2	0.6	0.5	0.0	5.1	0.0	0.0	8.6
CTH.2040	Top handler		1.6	0.4	0.0	2.4	1.2	1.0	0.0	1.9	0.0	0.0	8.5
CYT.2040	Yard tractor		1.7	0.3	0.9	2.5	1.3	1.1	0.0	2.5	0.0	0.0	10.1
HC		TOTAL HC	5.7	1.1	0.9	8.5	4.3	3.5	0.0	11.0	0.0	0.0	34.9
CO2 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of CO2 / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		5,169.4	0.0	0.0	7,554.0	3,687.8	3,044.3	0.0	4,588.0	0.0	0.0	24,043.6
CSP.2040	Side pick		2,191.1	882.7	0.0	3,201.8	1,563.1	1,290.4	0.0	13,536.8	0.0	0.0	22,666.0
CTH.2040	Top handler		5,848.0	1,568.7	0.0	8,756.5	4,457.5	3,679.6	0.0	7,169.7	0.0	0.0	31,480.1
CYT.2040	Yard tractor		14,496.7	2,633.0	7,499.9	21,788.5	11,160.5	9,212.9	0.0	21,533.8	0.0	0.0	88,325.4
CO2		TOTAL CO2	27,705.2	5,084.5	7,499.9	41,300.8	20,868.9	17,227.2	0.0	46,828.5	0.0	0.0	166,515.1
N2O Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of N2O / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.1	0.0	0.0	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.6
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.7
CTH.2040	Top handler		0.2	0.0	0.0	0.2	0.1	0.1	0.0	0.2	0.0	0.0	0.9
CYT.2040	Yard tractor		0.3	0.0	0.1	0.4	0.2	0.2	0.0	0.4	0.0	0.0	1.6
N2O		TOTAL N2O	0.6	0.1	0.1	0.9	0.5	0.4	0.0	1.1	0.0	0.0	3.8

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

CH4 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	*tons of CH4 / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.2	0.0	0.0	0.3	0.2	0.1	0.0	0.2	0.0	0.0	1.1
CSP.2040	Side pick		0.1	0.0	0.0	0.2	0.1	0.1	0.0	0.7	0.0	0.0	1.1
CTH.2040	Top handler		0.3	0.1	0.0	0.4	0.2	0.2	0.0	0.3	0.0	0.0	1.5
CYT.2040	Yard tractor		0.4	0.1	0.2	0.6	0.3	0.2	0.0	0.6	0.0	0.0	2.4
CH4		*TOTAL CH4*	*1.0*	*0.2*	*0.2*	*1.5*	*0.8*	*0.6*	*0.0*	*1.8*	*0.0*	*0.0*	*6.1*
CO2e Emissions			**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**		**Sum**
CCR.2040	Crane	*tons of CO2e / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		5,214.4	0.0	0.0	7,619.8	3,719.9	3,070.8	0.0	4,628.0	0.0	0.0	24,252.8
CSP.2040	Side pick		2,213.3	891.7	0.0	3,234.3	1,579.0	1,303.5	0.0	13,674.2	0.0	0.0	22,896.0
CTH.2040	Top handler		5,903.2	1,583.5	0.0	8,839.2	4,499.6	3,714.4	0.0	7,237.4	0.0	0.0	31,777.3
CYT.2040	Yard tractor		14,584.7	2,649.0	7,545.4	21,920.8	11,228.3	9,268.9	0.0	21,664.6	0.0	0.0	88,861.7
CO2e		*TOTAL CO2e*	*27,916*	*5,124*	*7,545*	*41,614*	*21,027*	*17,358*	*0*	*47,204*	*0*	*0*	*167,787.8*
Port-Wide Diesel Equipment Emissions			**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**		**Sum**
CHE	Capacity	*TEUs/year*	1,720,000	423,000	3,422,000	2,514,000	1,228,000	1,014,000	0	4,284,000	0	0	14,605,000
CHE PM10	PM10	*tons / M TEU*	0.93	0.59	0.17	0.94	0.98	0.98	0.00	0.57	0.00	0.00	0.65
CHE PM2.5	PM2.5		0.84	0.53	0.15	0.86	0.89	0.89	0.00	0.52	0.00	0.00	0.59
CHE DPM	DPM		0.76	0.47	0.13	0.78	0.80	0.80	0.00	0.48	0.00	0.00	0.53
CHE NOx	NOx		26.8	12.9	2.7	27.1	27.7	27.7	0.0	15.4	0.0	0.0	17.6
CHE SOx	SOx		0.18	0.14	0.02	0.18	0.19	0.19	0.00	0.12	0.00	0.00	0.13
CHE CO	CO		81.8	61.4	17.2	83.8	87.4	87.4	0.0	52.0	0.0	0.0	58.6
CHE HC	HC		3.34	2.50	0.25	3.38	3.47	3.47	0.00	2.56	0.00	0.00	2.39
CHE CO2	CO2		16,108	12,020	2,192	16,428	16,994	16,989	0	10,931	0	0	11,401
CHE N2O	N2O		0.36	0.28	0.04	0.37	0.38	0.38	0.00	0.26	0.00	0.00	0.26
CHE CH4	CH4		0.59	0.45	0.06	0.60	0.62	0.62	0.00	0.42	0.00	0.00	0.42
CHE CO2e	CO2e		16,230	12,114	2,205	16,553	17,123	17,118	0	11,019	0	0	11,488

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

Ocean Going Vessel Emisisons		Units	Terminal Type										
Number of Calls by Ship Size at Limiting Volume			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
OCA.2040	*1kT*	*calls / year*	0	0	0	0	0	0	0	0	0	0	0
OCB.2040	*2kT*		104	52	0	0	0	0	0	0	0	0	156
OCC.2040	*3kT*		52	104	0	0	0	0	0	52	0	0	208
OCD.2040	*4kT*		52	0	0	0	0	0	0	0	0	0	52
OCE.2040	*5kT*		52	0	0	0	0	0	0	52	0	0	104
OCF.2040	*6kT*		52	0	0	0	0	0	0	52	0	0	104
OCG.2040	*7kT*		0	0	52	52	0	0	0	0	0	0	104
OCH.2040	*8kT*		0	0	52	0	0	0	0	0	0	0	52
OCI.2040	*9kT*		104	0	52	0	0	52	0	52	0	0	260
OCJ.2040	*10kT*		0	0	52	52	52	52	0	52	0	0	260
OCK.2040	*11kT*		0	0	0	0	0	0	0	104	0	0	104
OCL.2040	*12kT*		0	0	0	0	0	0	0	52	0	0	52
OCM.2040	*13kT*		0	0	52	52	52	0	0	0	0	0	156
OCN.2040	*14kT*		0	0	0	0	0	0	0	52	0	0	52
OCO.2040	*15kT*		0	0	0	0	0	0	0	0	0	0	0
OCP.2040	*16kT*		0	0	52	52	0	0	0	0	0	0	104
OCQ.2040	*17kT*		0	0	0	0	0	0	0	0	0	0	0
OCR.2040	*18kT*		0	0	0	0	0	0	0	0	0	0	0
OCS.2040	*19kT*		0	0	0	0	0	0	0	0	0	0	0
OCT.2040	*20kT*		0	0	0	0	0	0	0	0	0	0	0
Call Duration by Ship Size (Hotelling Time)			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
OCA.H.2040	*1kT*	*hours / call*	0	0	0	0	0	0	0	0	0	0	0
OCB.H.2040	*2kT*		13	24	0	0	0	0	13	0	0	0	49
OCC.H.2040	*3kT*		15	24	0	0	0	19	15	19	0	0	92
OCD.H.2040	*4kT*		26	23	0	0	0	19	26	19	0	0	114
OCE.H.2040	*5kT*		39	0	0	0	0	23	39	23	0	0	125
OCF.H.2040	*6kT*		33	0	19	19	19	17	33	17	19	0	178
OCG.H.2040	*7kT*		63	0	33	33	33	17	63	17	33	0	289
OCH.H.2040	*8kT*		81	0	49	49	49	40	81	40	49	0	439
OCI.H.2040	*9kT*		72	0	44	44	44	51	72	51	44	0	422
OCJ.H.2040	*10kT*		71	0	56	56	56	59	71	59	56	0	483
OCK.H.2040	*11kT*		59	0	0	0	0	59	59	59	0	0	236
OCL.H.2040	*12kT*		0	0	0	0	0	66	0	66	0	0	131
OCM.H.2040	*13kT*		0	0	67	67	67	0	0	0	67	0	267
OCN.H.2040	*14kT*		0	0	0	0	0	61	0	61	0	0	122
OCO.H.2040	*15kT*		0	0	0	0	0	0	0	0	0	0	0
OCP.H.2040	*16kT*		0	0	82	82	82	0	0	0	82	0	329
OCQ.H.2040	*17kT*		0	0	0	0	0	0	0	0	0	0	0
OCR.H.2040	*18kT*		0	0	91	91	91	0	0	0	91	0	364
OCS.H.2040	*19kT*		0	0	0	0	0	0	0	0	0	0	0
OCT.H.2040	*20kT*		0	0	100	100	100	0	0	0	100	0	399
Non-Hotelling Emissions (transit, maneuvering, anchorage)			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	8.8	2.7	9.2	6.4	2.9	2.7	0.0	12.2	0.0	0.0	***44.9***
	PM2.5		8.3	2.5	8.6	6.0	2.8	2.5	0.0	11.5	0.0	0.0	***42.3***
	DPM		8.6	2.6	8.9	6.2	2.9	2.6	0.0	11.9	0.0	0.0	***43.6***
	NOx		380.4	125.6	299.9	184.0	73.4	82.5	0.0	390.8	0.0	0.0	***1,536.7***
	SOx		13.4	4.1	14.2	9.9	4.5	4.1	0.0	18.8	0.0	0.0	***69.0***
	CO		60.0	18.3	61.9	42.6	20.0	18.6	0.0	83.4	0.0	0.0	***304.7***
	HC		29.0	8.8	29.9	20.6	9.7	9.0	0.0	40.3	0.0	0.0	***147.3***
	CO2		20,333	6,257	21,482	15,060	6,770	6,164	0	28,432	0	0	***104,497.4***
	N2O		1.0	0.3	1.1	0.8	0.3	0.3	0.0	1.4	0.0	0.0	***5.2***
	CH4		0.6	0.2	0.6	0.4	0.2	0.2	0.0	0.8	0.0	0.0	***2.9***
	CO2e		20,647	6,353	21,816	15,295	6,875	6,260	0	28,872	0	0	***106,118.5***
Hotelling Emissions WITHOUT Shore Power Reductions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	5.3	0.6	5.5	2.4	1.4	2.8	0.0	6.8	0.0	0.0	***24.6***
	PM2.5		5	1	5	2	1	3	0	6	0	0	***23.1***
	DPM		4	0	4	2	1	2	0	5	0	0	***18.6***
	NOx		165	22	158	64	28	66	0	170	0	0	***671.8***
	SOx		12	1	13	6	3	6	0	16	0	0	***58.0***
	CO		19	2	19	9	5	10	0	25	0	0	***89.0***
	HC		9	1	9	4	2	5	0	11	0	0	***40.8***
	CO2		18,693	2,125	19,762	8,810	4,783	9,818	0	23,940	0	0	***87,931.1***
	N2O		1	0	1	1	0	1	0	1	0	0	***5.4***
	CH4		0	0	0	0	0	0	0	0	0	0	***0.7***
	CO2e		19,039	2,164	20,134	8,977	4,872	10,003	0	24,381	0	0	***89,571.2***

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

Hotelling Emissions AFTER Shore Power Reductions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	1.5	0.2	1.5	0.7	0.4	0.8	0.0	1.9	0.0	0.0	***6.9***
	PM2.5		1.4	0.2	1.4	0.6	0.4	0.7	0.0	1.8	0.0	0.0	***6.5***
	DPM		1.1	0.1	1.1	0.5	0.3	0.6	0.0	1.4	0.0	0.0	***5.2***
	NOx		46.2	6.1	44.2	17.9	7.7	18.5	0.0	47.5	0.0	0.0	***188.1***
	SOx		3.5	0.4	3.7	1.6	0.9	1.8	0.0	4.4	0.0	0.0	***16.2***
	CO		5.4	0.6	5.5	2.4	1.4	2.8	0.0	6.9	0.0	0.0	***24.9***
	HC		2.5	0.3	2.5	1.1	0.6	1.3	0.0	3.2	0.0	0.0	***11.4***
	CO2		5,233.9	595.0	5,533.5	2,466.7	1,339.3	2,749.1	0.0	6,703.2	0.0	0.0	***24,620.7***
	N2O		0.3	0.0	0.3	0.2	0.1	0.2	0.0	0.4	0.0	0.0	***1.5***
	CH4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	***0.2***
	CO2e		5,331.0	606.0	5,637.6	2,513.6	1,364.2	2,800.9	0.0	6,826.6	0.0	0.0	***25,079.9***
Total OGV Emissions per M TEU			**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**		**Sum**
OGV	Limiting Volume	*TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	1,228,000	1,014,000	0	3,696,000	0	0	***14,017,000***
OGV PM10	PM10	*tons / M TEU*	6.0	6.8	3.1	2.8	2.7	3.4	0.0	3.8	0.0	0.0	3.20
OGV PM2.5	PM2.5		6	6	3	3	3	3	0	4	0	0	3.01
OGV DPM	DPM		6	7	3	3	3	3	0	4	0	0	3.11
OGV NOx	NOx		248	311	101	80	66	100	0	119	0	0	109.6
OGV SOx	SOx		10	11	5	5	4	6	0	6	0	0	4.92
OGV CO	CO		38	45	20	18	17	21	0	24	0	0	21.7
OGV HC	HC		18	21	9	9	8	10	0	12	0	0	10.51
OGV CO2	CO2		14,864	16,199	7,895	6,972	6,604	8,790	0	9,506	0	0	7455.0
OGV N2O	N2O		1	1	0	0	0	0	0	0	0	0	0.37
OGV CH4	CH4		0	0	0	0	0	0	0	0	0	0	0.21
OGV CO2e	CO2e		15,103	16,452	8,023	7,084	6,709	8,936	0	9,659	0	0	7570.7

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

Escort / Assist Tug Emissions		Units											
													Monument
Emission Factors			All	H.2040									
	PM10	*pounds / call*	17.6										
	PM2.5		16.3										
	DPM		17.6										
	NOx		380.0										
	SOx		0.3										
	CO		358.5										
	HC		50.3										
	CO2		32,177.4										
	N2O		1.5										
	CH4		0.6										
	CO2e		32,623.4										
Total Number of Calls at Terminal Capacity			Container	Container	Container	Container	Container	Container	Container	Container	Container		
	Ship Calls	*total OGV calls / year*	416	156	312	208	104	104	0	468	0	0	1768
Total Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	3.7	1.4	2.7	1.8	0.9	0.9	0.0	4.1	0.0	0.0	*15.6*
	PM2.5		3.4	1.3	2.5	1.7	0.8	0.8	0.0	3.8	0.0	0.0	*14.4*
	DPM		3.7	1.4	2.7	1.8	0.9	0.9	0.0	4.1	0.0	0.0	*15.6*
	NOx		79.0	29.6	59.3	39.5	19.8	19.8	0.0	88.9	0.0	0.0	*335.9*
	SOx		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	*0.3*
	CO		74.6	28.0	55.9	37.3	18.6	18.6	0.0	83.9	0.0	0.0	*316.9*
	HC		10.5	3.9	7.9	5.2	2.6	2.6	0.0	11.8	0.0	0.0	*44.5*
	CO2		6,692.9	2,509.8	5,019.7	3,346.4	1,673.2	1,673.2	0.0	7,529.5	0.0	0.0	*28,444.8*
	N2O		0.3	0.1	0.2	0.2	0.1	0.1	0.0	0.3	0.0	0.0	*1.3*
	CH4		0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	*0.5*
	CO2e		6,785.7	2,544.6	5,089.2	3,392.8	1,696.4	1,696.4	0.0	7,633.9	0.0	0.0	*28,839.1*
Total Tug Emissions per M TEU			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
TUG	Limiting Volume	*TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	1,228,000	1,014,000	0	3,696,000	0	0	
TUG PM10	PM10	*tons / M vessel TEU*	2.13	3.25	0.80	0.73	0.75	0.90	0.00	1.11	0.00	0.00	
TUG PM2.5	PM2.5		1.97	3.01	0.74	0.68	0.69	0.84	0.00	1.03	0.00	0.00	
TUG DPM	DPM		2.13	3.25	0.80	0.73	0.75	0.90	0.00	1.11	0.00	0.00	
TUG NOx	NOx		45.95	70.07	17.32	15.72	16.09	19.49	0.00	24.06	0.00	0.00	
TUG SOx	SOx		0.04	0.06	0.02	0.01	0.01	0.02	0.00	0.02	0.00	0.00	
TUG CO	CO		43.35	66.10	16.34	14.83	15.18	18.38	0.00	22.70	0.00	0.00	
TUG HC	HC		6.09	9.28	2.29	2.08	2.13	2.58	0.00	3.19	0.00	0.00	
TUG CO2	CO2		3891.21	5933.41	1466.88	1331.12	1362.56	1650.12	0.00	2037.20	0.00	0.00	
TUG N2O	N2O		0.18	0.27	0.07	0.06	0.06	0.07	0.00	0.09	0.00	0.00	
TUG CH4	CH4		0.07	0.10	0.03	0.02	0.02	0.03	0.00	0.04	0.00	0.00	
TUG CO2e	CO2e		3945.15	6015.66	1487.21	1349.57	1381.45	1672.99	0.00	2065.44	0.00	0.00	

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

Truck Emissions		Units	Terminal Type									
Total Truck Calls at Limiting Volume			Container	Container	Container	Container	Container	Container	Container	Container	Container	Sum
	Truck Calls	*truck calls / yr*	752,671	251,495	1,342,083	1,058,955	481,519	397,517	0	1,651,175	0	0	5,935,414
Total Dray Truck Emissions Outside the Marine Terminal			Container	Container	Container	Container	Container	Container	Container	Container	Container	Sum
T.2040	PM10	*tons of pollutant / year*	0.792	0.265	1.413	1.115	0.507	0.419	0.000	1.739	0.000	0.000	*6.2*
T.2040	PM2.5		0.758	0.253	1.352	1.067	0.485	0.400	0.000	1.663	0.000	0.000	*6.0*
T.2040	DPM		0.792	0.265	1.413	1.115	0.507	0.419	0.000	1.739	0.000	0.000	*6.2*
T.2040	NOx		51.7	17.3	92.2	72.8	33.1	27.3	0.0	113.4	0.0	0.0	*407.8*
T.2040	SOx		0.340	0.113	0.606	0.478	0.217	0.179	0.000	0.745	0.000	0.000	*2.7*
T.2040	CO		4.7	1.6	8.4	6.7	3.0	2.5	0.0	10.4	0.0	0.0	*37.3*
T.2040	HC		0.424	0.142	0.757	0.597	0.272	0.224	0.000	0.931	0.000	0.000	*3.3*
T.2040	CO2		35,947	12,011	64,097	50,575	22,997	18,985	0	78,860	0	0	*283,473*
T.2040	N2O		5.650	1.888	10.075	7.950	3.615	2.984	0.000	12.396	0.000	0.000	*44.6*
T.2040	CH4		0.025	0.008	0.045	0.035	0.016	0.013	0.000	0.055	0.000	0.000	*0.2*
T.2040	CO2e		37,632	12,574	67,101	52,945	24,075	19,875	0	82,555	0	0	*296,757*
Total Dray Truck Emissions Outside the MT, per M TEU			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
TRK	Limiting Volume	*TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	1,228,000	1,014,000	0	3,696,000	0	0	
TRK PM10	PM10	*tons / M vessel TEU*	0.46	0.63	0.41	0.44	0.41	0.41	0.00	0.47	0.00	0.00	3.2
TRK PM2.5	PM2.5		0.44	0.60	0.40	0.42	0.39	0.39	0.00	0.45	0.00	0.00	3.1
TRK DPM	DPM		0.46	0.63	0.41	0.44	0.41	0.41	0.00	0.47	0.00	0.00	3.2
TRK NOx	NOx		30.06	40.85	26.94	28.94	26.94	26.93	0.00	30.69	0.00	0.00	211.4
TRK SOx	SOx		0.20	0.27	0.18	0.19	0.18	0.18	0.00	0.20	0.00	0.00	1.4
TRK CO	CO		2.75	3.74	2.47	2.65	2.47	2.47	0.00	2.81	0.00	0.00	19.4
TRK HC	HC		0.25	0.34	0.22	0.24	0.22	0.22	0.00	0.25	0.00	0.00	1.7
TRK CO2	CO2		20,899.60	28,395.58	18,730.99	20,117.47	18,727.34	18,723.14	0.00	21,336.47	0.00	0.00	146,930.6
TRK N2O	N2O		3.29	4.46	2.94	3.16	2.94	2.94	0.00	3.35	0.00	0.00	23.1
TRK CH4	CH4		0.01	0.02	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.1
TRK CO2e	CO2e		21,878.93	29,726.16	19,608.70	21,060.15	19,604.88	19,600.49	0.00	22,336.27	0.00	0.00	153,815.6

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

Rail Emissions		Units	Terminal Type										
Rail Usage at Degraded Volume			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	Switcher	*hours / year*	3,975	0	2,615	4,363	2,750	2,531	0	4,712	0	0	20,946
	Mainline	*round trips / year*	720	0	1,348	1,440	873	824	0	1,404	0	0	6,609
Trains	Train Type	*Type*	5.5k Maxi I	6.0k Maxi I	8.0k Maxi I	4.5k Maxi I	4.5k Maxi I	4.0k Maxi I	6.5k Maxi I	5.5k Maxi I	4.5k Maxi I	6.0k Maxi I	
	Total HP usage for round trip train	*hp-hr / train*	40,915	43,411	59,129	31,437	31,437	28,941	51,641	40,915	31,437	43,411	
Total Switcher Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
RSW.2040	PM10	*tons of pollutant / year*	0.01	0.00	0.01	0.02	0.01	0.01	0.00	0.02	0.00	0.00	*0.1*
RSW.2040	PM2.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.1*
RSW.2040	DPM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.1*
RSW.2040	NOx		1.0	0.0	0.7	1.1	0.7	0.7	0.0	1.2	0.0	0.0	*5.5*
RSW.2040	SOx		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*
RSW.2040	CO		1.6	0.0	1.1	1.8	1.1	1.0	0.0	1.9	0.0	0.0	*8.7*
RSW.2040	HC		0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	*0.4*
RSW.2040	CO2		609.0	0.0	400.6	668.4	421.4	387.8	0.0	721.9	0.0	0.0	*3,209.1*
RSW.2040	N2O		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.1*
RSW.2040	CH4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	*0.2*
RSW.2040	CO2e		614.7	0.0	404.3	674.7	425.3	391.4	0.0	728.6	0.0	0.0	*3,239.0*
Total Line Haul Locomotive Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
R.2040	PM10	*tons of pollutant / year*	0.62	0.00	1.69	0.96	0.58	0.51	0.00	1.22	0.00	0.00	*5.6*
R.2040	PM2.5		0.6	0.0	1.8	1.0	0.6	0.5	0.0	1.3	0.0	0.0	*5.8*
R.2040	DPM		0.6	0.0	1.8	1.0	0.6	0.5	0.0	1.3	0.0	0.0	*5.8*
R.2040	NOx		43.8	0.0	118.6	67.4	40.9	35.5	0.0	85.5	0.0	0.0	*391.6*
R.2040	SOx		0.2	0.0	0.4	0.2	0.2	0.1	0.0	0.3	0.0	0.0	*1.5*
R.2040	CO		41.6	0.0	112.4	63.9	38.7	33.6	0.0	81.1	0.0	0.0	*371.3*
R.2040	HC		1.6	0.0	4.4	2.5	1.5	1.3	0.0	3.2	0.0	0.0	*14.5*
R.2040	CO2		16,041.5	0.0	43,397.8	24,650.7	14,951.4	12,979.2	0.0	31,288.7	0.0	0.0	*143,309.3*
R.2040	N2O		0.4	0.0	1.1	0.6	0.4	0.3	0.0	0.8	0.0	0.0	*3.8*
R.2040	CH4		1.3	0.0	3.5	2.0	1.2	1.1	0.0	2.5	0.0	0.0	*11.6*
R.2040	CO2e		16,199.8	0.0	43,826.0	24,893.9	15,098.9	13,107.3	0.0	31,597.4	0.0	0.0	*144,723.2*
Total Train Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	0.64	0.00	1.70	0.98	0.59	0.51	0.00	1.23	0.00	0.00	*5.7*
	PM2.5		0.7	0.0	1.8	1.0	0.6	0.5	0.0	1.3	0.0	0.0	*5.9*
	DPM		0.7	0.0	1.8	1.0	0.6	0.5	0.0	1.3	0.0	0.0	*5.9*
	NOx		44.9	0.0	119.3	68.5	41.6	36.1	0.0	86.7	0.0	0.0	*397.1*
	SOx		0.2	0.0	0.4	0.3	0.2	0.1	0.0	0.3	0.0	0.0	*1.5*
	CO		43.2	0.0	113.5	65.7	39.9	34.7	0.0	83.0	0.0	0.0	*380.0*
	HC		1.7	0.0	4.4	2.6	1.6	1.4	0.0	3.3	0.0	0.0	*14.9*
	CO2		16,650.5	0.0	43,798.4	25,319.1	15,372.8	13,367.0	0.0	32,010.6	0.0	0.0	*146,518.4*
	N2O		0.4	0.0	1.2	0.7	0.4	0.4	0.0	0.8	0.0	0.0	*3.9*
	CH4		1.3	0.0	3.5	2.0	1.2	1.1	0.0	2.6	0.0	0.0	*11.8*
	CO2e		16,814.5	0.0	44,230.3	25,568.5	15,524.2	13,498.7	0.0	32,326.0	0.0	0.0	*147,962.2*
Total Train Emissions per M TEU			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
TRN	Rail-Constrained Capacity	*Rail TEUs / year*	380,000	0	1,087,000	643,000	390,000	322,000	0	742,000	0	0	*3,564,000*
TRN PM10	PM10	*tons / M Rail TEU*	1.68	0.00	1.56	1.52	1.52	1.60	0.00	1.66	0.00	0.00	0.40
TRN PM2.5	PM2.5		1.7	0.0	1.6	1.6	1.6	1.7	0.0	1.7	0.0	0.0	0.4
TRN DPM	DPM		1.7	0.0	1.6	1.6	1.6	1.7	0.0	1.7	0.0	0.0	0.4
TRN NOx	NOx		118.1	0.0	109.7	106.5	106.6	112.2	0.0	116.9	0.0	0.0	28.3
TRN SOx	SOx		0.4	0.0	0.4	0.4	0.4	0.4	0.0	0.4	0.0	0.0	0.1
TRN CO	CO		113.7	0.0	104.4	102.1	102.3	107.7	0.0	111.9	0.0	0.0	27.1
TRN HC	HC		4.5	0.0	4.1	4.0	4.0	4.2	0.0	4.4	0.0	0.0	1.1
TRN CO2	CO2		43,817.2	0.0	40,292.9	39,376.5	39,417.4	41,512.4	0.0	43,140.9	0.0	0.0	10,452.9
TRN N2O	N2O		1.2	0.0	1.1	1.0	1.0	1.1	0.0	1.1	0.0	0.0	0.3
TRN CH4	CH4		3.5	0.0	3.3	3.2	3.2	3.4	0.0	3.5	0.0	0.0	0.8
TRN CO2e	CO2e		44,248.6	0.0	40,690.3	39,764.4	39,805.7	41,921.3	0.0	43,566.1	0.0	0.0	10,555.9

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

Total Emissions, All Sources		Units	Terminal Type										
Total Emissions, All Sources at 2040 Rates			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	Terminal at Volume	*Vessel TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	1,228,000	1,014,000	0	3,696,000	0	0	14,017,000
ALL	Rail traffic	*Rail TEUs / year*	380,000	0	1,087,000	643,000	390,000	322,000	0	742,000	0	0	3,564,000
ALL PM10	PM10	*tons of pollutant / year*	17.0	4.8	17.1	13.4	6.5	6.3	0.0	23.3	0.0	0.0	88.4
ALL PM2.5	PM2.5		16	4	16	13	6	6	0	22	0	0	83.3
ALL DPM	DPM		16	5	16	13	6	6	0	22	0	0	84.0
ALL NOx	NOx		648	184	624	451	210	212	0	785	0	0	3,113.7
ALL SOx	SOx		18	5	19	13	6	6	0	25	0	0	91.5
ALL CO	CO		329	74	304	365	190	166	0	460	0	0	1,888.5
ALL HC	HC		50	14	46	39	19	18	0	69	0	0	255.0
ALL CO2	CO2		112,563	26,458	147,431	138,068	69,021	60,166	0	193,935	0	0	747,642.3
ALL N2O	N2O		8	2	13	11	5	4	0	16	0	0	60.0
ALL CH4	CH4		3	0	5	4	2	2	0	5	0	0	21.6
ALL CO2e	CO2e		115,125	27,202	151,420	141,329	70,561	61,489	0	198,939	0	0	766,065.2
Emissions by Source at 2040 Rates			Container	Container	Container	Container	Container	Container	Container	Container	Container		
PM10	CHE	*tons of pollutant / year*	1.6	0.2	0.6	2.4	1.2	1.0	0.0	2.1	0.0	0.0	9.1
	OGV		10.3	2.9	10.7	7.1	3.3	3.4	0.0	14.1	0.0	0.0	51.8
	TUG		3.7	1.4	2.7	1.8	0.9	0.9	0.0	4.1	0.0	0.0	15.6
	TRK		0.8	0.3	1.4	1.1	0.5	0.4	0.0	1.7	0.0	0.0	6.2
	TRN		0.6	0.0	1.7	1.0	0.6	0.5	0.0	1.2	0.0	0.0	5.7
PM2.5	CHE	*tons of pollutant / year*	1.4	0.2	0.5	2.2	1.1	0.9	0.0	1.9	0.0	0.0	8.3
	OGV		9.7	2.7	10.1	6.6	3.1	3.2	0.0	13.3	0.0	0.0	48.7
	TUG		3.4	1.3	2.5	1.7	0.8	0.8	0.0	3.8	0.0	0.0	14.4
	TRK		0.8	0.3	1.4	1.1	0.5	0.4	0.0	1.7	0.0	0.0	6.0
	TRN		0.7	0.0	1.8	1.0	0.6	0.5	0.0	1.3	0.0	0.0	5.9
DPM	CHE	*tons of pollutant / year*	1.3	0.2	0.4	2.0	1.0	0.8	0.0	1.8	0.0	0.0	7.5
	OGV		9.7	2.8	10.0	6.7	3.1	3.2	0.0	13.4	0.0	0.0	48.8
	TUG		3.7	1.4	2.7	1.8	0.9	0.9	0.0	4.1	0.0	0.0	15.6
	TRK		0.8	0.3	1.4	1.1	0.5	0.4	0.0	1.7	0.0	0.0	6.2
	TRN		0.7	0.0	1.8	1.0	0.6	0.5	0.0	1.3	0.0	0.0	5.9
NOx	CHE	*tons of pollutant / year*	46.0	5.5	9.2	68.2	34.1	28.1	0.0	57.1	0.0	0.0	248
	OGV		426.6	131.6	344.2	201.9	81.1	101.0	0.0	438.4	0.0	0.0	1,725
	TUG		79.0	29.6	59.3	39.5	19.8	19.8	0.0	88.9	0.0	0.0	336
	TRK		51.7	17.3	92.2	72.8	33.1	27.3	0.0	113.4	0.0	0.0	408
	TRN		44.9	0.0	119.3	68.5	41.6	36.1	0.0	86.7	0.0	0.0	397
SOx	CHE	*tons of pollutant / year*	0.3	0.1	0.1	0.5	0.2	0.2	0.0	0.5	0.0	0.0	1.8
	OGV		16.9	4.5	17.8	11.6	5.4	5.9	0.0	23.2	0.0	0.0	85.2
	TUG		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3
	TRK		0.3	0.1	0.6	0.5	0.2	0.2	0.0	0.7	0.0	0.0	2.7
	TRN		0.2	0.0	0.4	0.3	0.2	0.1	0.0	0.3	0.0	0.0	1.5
CO	CHE	*tons of pollutant / year*	140.6	26.0	59.0	210.7	107.4	88.6	0.0	192.3	0.0	0.0	825
	OGV		65.4	18.9	67.3	45.0	21.4	21.4	0.0	90.3	0.0	0.0	330
	TUG		74.6	28.0	55.9	37.3	18.6	18.6	0.0	83.9	0.0	0.0	317
	TRK		4.7	1.6	8.4	6.7	3.0	2.5	0.0	10.4	0.0	0.0	37
	TRN		43.2	0.0	113.5	65.7	39.9	34.7	0.0	83.0	0.0	0.0	380
HC	CHE	*tons of pollutant / year*	5.7	1.1	0.9	8.5	4.3	3.5	0.0	9.5	0.0	0.0	33.4
	OGV		31.5	9.1	32.4	21.7	10.3	10.3	0.0	43.5	0.0	0.0	158.8
	TUG		10.5	3.9	7.9	5.2	2.6	2.6	0.0	11.8	0.0	0.0	44.5
	TRK		0.4	0.1	0.8	0.6	0.3	0.2	0.0	0.9	0.0	0.0	3.3
	TRN		1.7	0.0	4.4	2.6	1.6	1.4	0.0	3.3	0.0	0.0	14.9
CO2	CHE	*tons of pollutant / year*	27,705.2	5,084.5	7,499.9	41,300.8	20,868.9	17,227.2	0.0	40,401.0	0.0	0.0	160,088
	OGV		25,566.8	6,852.4	27,015.2	17,526.6	8,109.3	8,913.1	0.0	35,134.8	0.0	0.0	129,118
	TUG		6,692.9	2,509.8	5,019.7	3,346.4	1,673.2	1,673.2	0.0	7,529.5	0.0	0.0	28,445
	TRK		35,947.3	12,011.3	64,097.4	50,575.3	22,997.2	18,985.3	0.0	78,859.6	0.0	0.0	283,473
	TRN		16,650.5	0.0	43,798.4	25,319.1	15,372.8	13,367.0	0.0	32,010.6	0.0	0.0	146,518
N2O	CHE	*tons of pollutant / year*	0.6	0.1	0.1	0.9	0.5	0.4	0.0	1.0	0.0	0.0	3.6
	OGV		1.3	0.3	1.4	0.9	0.4	0.5	0.0	1.8	0.0	0.0	6.7
	TUG		0.3	0.1	0.2	0.2	0.1	0.1	0.0	0.3	0.0	0.0	1.3
	TRK		5.7	1.9	10.1	7.9	3.6	3.0	0.0	12.4	0.0	0.0	44.6
	TRN		0.4	0.0	1.2	0.7	0.4	0.4	0.0	0.8	0.0	0.0	3.9
CH4	CHE	*tons of pollutant / year*	1.0	0.2	0.2	1.5	0.8	0.6	0.0	1.6	0.0	0.0	5.9
	OGV		0.6	0.2	0.6	0.4	0.2	0.2	0.0	0.9	0.0	0.0	3.2
	TUG		0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.5
	TRK		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2
	TRN		1.3	0.0	3.5	2.0	1.2	1.1	0.0	2.6	0.0	0.0	11.8
CO2e	CHE	*tons of pollutant / year*	27,915.7	5,124.3	7,545.4	41,614.0	21,026.7	17,357.5	0.0	40,725.2	0.0	0.0	161,309
	OGV		25,977.7	6,959.3	27,453.9	17,808.6	8,238.8	9,061.3	0.0	35,699.0	0.0	0.0	131,198
	TUG		6,785.7	2,544.6	5,089.2	3,392.8	1,696.4	1,696.4	0.0	7,633.9	0.0	0.0	28,839
	TRK		37,631.8	12,574.2	67,101.0	52,945.2	24,074.8	19,874.9	0.0	82,554.9	0.0	0.0	296,757
	TRN		16,814.5	0.0	44,230.3	25,568.5	15,524.2	13,498.7	0.0	32,326.0	0.0	0.0	147,962

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

		Terminal Type																								
		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Ocean Going Vessel Emisisons	**Units**	**Terminal Type**																								
Ship Type	*class name*																									
OGV Designator	*3-letter code*	OAC	OAC	OAC	OAC	OBG	OBG	OBG	OBG	OBG	OBG	OBG	OBG	OBG	OTH	OTV	OTA	OTH	OTA	OTH	OTS	OGC	OGC	OGC	OGC	OGC
Annual Call Count at Volume	*calls / year*	142	27	0	38	6	25	10	16	56	3	45	56	0	50	10	90	0	93	39	123	2	3	0	1	13
Call Duration	*hrs / call*	23	47	69	69	49	65	57	72	70	40	41	70	41	47	154	49	20	20	20	20	158	35	158	85	88
Annual Hotelling Time	*hrs / year*	3,212	1,261	0	2,625	286	1,613	572	1,183	3,939	131	1,856	3,939	0	2,330	1,551	4,352	0	1,854	782	2,463	315	94	0	88	1,169
Non-Hotelling Emission Rates (transit, maneuvering, anchorage)		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*lb of pollutant / call*	19.8	19.8	19.8	19.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	28.3	188.3	59.5	28.3	59.5	28.3	159.6	26.6	26.6	26.6	26.6	26.6
PM2.5		18.7	18.7	18.7	18.7	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	26.4	174.8	55.5	26.4	55.5	26.4	148.5	24.9	24.9	24.9	24.9	24.9
DPM		18.9	18.9	18.9	18.9	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	24.8	166.0	50.9	24.8	50.9	24.8	151.5	25.1	25.1	25.1	25.1	25.1
NOx		340.3	340.3	340.3	340.3	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,170.9	4,440.6	1,914.8	1,170.9	1,914.8	1,170.9	5,212.7	1,028.6	1,028.6	1,028.6	1,028.6	1,028.6
SOx		33.5	33.5	33.5	33.5	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	53.2	350.2	115.0	53.2	115.0	53.2	268.2	45.1	45.1	45.1	45.1	45.1
CO		102.1	102.1	102.1	102.1	169.5	169.5	169.5	169.5	169.5	169.5	169.5	169.5	169.5	131.4	804.9	265.1	131.4	265.1	131.4	724.3	129.6	129.6	129.6	129.6	129.6
HC		45.5	45.5	45.5	45.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	58.9	365.1	119.5	58.9	119.5	58.9	326.8	57.6	57.6	57.6	57.6	57.6
CO2		50,955	50,955	50,955	50,955	94,441	94,441	94,441	94,441	94,441	94,441	94,441	94,441	94,441	83,052	567,927	182,248	83,052	182,248	83,052	435,564	70,856	70,856	70,856	70,856	70,856
N2O		2.6	2.6	2.6	2.6	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.6	30.4	10.3	4.6	10.3	4.6	21.3	3.6	3.6	3.6	3.6	3.6
CH4		0.9	0.9	0.9	0.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.2	7.3	2.4	1.2	2.4	1.2	6.5	1.2	1.2	1.2	1.2	1.2
CO2e		51,763	51,763	51,763	51,763	95,953	95,953	95,953	95,953	95,953	95,953	95,953	95,953	95,953	84,467	577,181	185,380	84,467	185,380	84,467	442,068	71,967	71,967	71,967	71,967	71,967
Hotelling Emission Rates (at berth)		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*lb of pollutant / hr*	0.7	0.7	0.7	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.3	1.6	1.3	1.3	1.3	1.3	3.0	0.4	0.4	0.4	0.4	0.4
PM2.5		0.7	0.7	0.7	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.3	1.5	1.2	1.3	1.2	1.3	2.8	0.4	0.4	0.4	0.4	0.4
DPM		0.6	0.6	0.6	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.7	0.4	0.4	0.4	0.4	2.3	0.3	0.3	0.3	0.3	0.3
NOx		10.4	10.4	10.4	10.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	30.8	40.5	27.8	30.8	27.8	30.8	107.0	14.5	14.5	14.5	14.5	14.5
SOx		1.4	1.4	1.4	1.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	4.8	5.1	4.6	4.8	4.6	4.8	6.8	0.7	0.7	0.7	0.7	0.7
CO		2.9	2.9	2.9	2.9	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	3.2	4.2	2.9	3.2	2.9	3.2	11.0	1.5	1.5	1.5	1.5	1.5
HC		1.3	1.3	1.3	1.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.5	2.0	1.4	1.5	1.4	1.5	5.1	0.7	0.7	0.7	0.7	0.7
CO2		2,166	2,166	2,166	2,166	564	564	564	564	564	564	564	564	564	7,221	7,770	6,999	7,221	6,999	7,221	10,285	1,119	1,119	1,119	1,119	1,119
N2O		0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.5	0.6	0.5	0.6	0.6	0.1	0.1	0.1	0.1	0.1
CH4		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	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
CO2e		2,203	2,203	2,203	2,203	576	576	576	576	576	576	576	576	576	7,386	7,941	7,161	7,386	7,161	7,386	10,472	1,137	1,137	1,137	1,137	1,137
OGV Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / yr*	2.6	0.7	0.0	1.3	0.1	0.6	0.2	0.4	1.3	0.1	0.9	1.3	0.0	2.3	2.2	5.4	0.0	3.9	1.1	13.5	0.1	0.1	0.0	0.0	0.4
PM2.5		2.4	0.7	0.0	1.2	0.1	0.5	0.2	0.4	1.2	0.1	0.9	1.2	0.0	2.1	2.0	5.1	0.0	3.7	1.0	12.6	0.1	0.0	0.0	0.0	0.4
DPM		2.4	0.7	0.0	1.2	0.1	0.5	0.2	0.3	1.1	0.1	0.8	1.1	0.0	1.1	1.3	3.1	0.0	2.7	0.6	12.2	0.1	0.0	0.0	0.0	0.4
NOx		40.9	11.1	0.0	20.1	4.7	21.0	8.2	14.1	47.9	2.6	34.8	47.9	0.0	65.0	53.8	146.2	0.0	114.5	35.0	452.7	3.3	2.0	0.0	1.2	15.3
SOx		4.7	1.4	0.0	2.5	0.2	1.0	0.4	0.7	2.4	0.1	1.7	2.4	0.0	6.9	5.8	15.2	0.0	9.6	2.9	24.9	0.2	0.1	0.0	0.1	0.7
CO		11.9	3.2	0.0	5.7	0.6	2.6	1.0	1.7	5.8	0.3	4.3	5.8	0.0	7.0	7.3	18.1	0.0	14.9	3.8	58.2	0.4	0.2	0.0	0.1	1.7
HC		5.3	1.4	0.0	2.6	0.3	1.2	0.5	0.8	2.6	0.1	1.9	2.6	0.0	3.2	3.4	8.3	0.0	6.8	1.7	26.4	0.2	0.1	0.0	0.1	0.8
CO2		7,104	2,051	0	3,806	356	1,635	634	1,105	3,755	193	2,637	3,755	0	10,481	8,892	23,386	0	14,938	4,450	39,484	246	146	0	86	1,123
N2O		0.4	0.1	0.0	0.2	0.0	0.1	0.0	0.1	0.2	0.0	0.1	0.2	0.0	0.8	0.6	1.6	0.0	1.0	0.3	2.1	0.0	0.0	0.0	0.0	0.1
CH4		0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0
CO2e		7,220	2,085	0	3,870	363	1,664	645	1,124	3,821	197	2,682	3,821	0	10,708	9,071	23,878	0	15,233	4,542	40,115	250	149	0	88	1,141

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

Tug Emisisons	Units	Terminal Type																								
Emission Factors		All	H.2040																							
PM10	*pounds / call*	17.6																								
PM2.5		16.3																								
DPM		17.6																								
NOx		380.0																								
SOx		0.3																								
CO		358.5																								
HC		50.3																								
CO2		32,177																								
N2O		1.5																								
CH4		0.6																								
CO2e		32,623																								
Total Number of Calls		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Ship Calls	*total OGV calls / year*	142	27	0	38	6	25	10	16	56	3	45	56	0	50	10	90	0	93	39	123	2	3	0	1	13
Total Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	1.3	0.2	0.0	0.3	0.1	0.2	0.1	0.1	0.5	0.0	0.4	0.5	0.0	0.4	0.1	0.8	0.0	0.8	0.3	1.1	0.0	0.0	0.0	0.0	0.1
PM2.5		1.2	0.2	0.0	0.3	0.0	0.2	0.1	0.1	0.5	0.0	0.4	0.5	0.0	0.4	0.1	0.7	0.0	0.8	0.3	1.0	0.0	0.0	0.0	0.0	0.1
DPM		1.3	0.2	0.0	0.3	0.1	0.2	0.1	0.1	0.5	0.0	0.4	0.5	0.0	0.4	0.1	0.8	0.0	0.8	0.3	1.1	0.0	0.0	0.0	0.0	0.1
NOx		27.0	5.1	0.0	7.2	1.1	4.7	1.9	3.1	10.6	0.6	8.5	10.6	0.0	9.5	1.9	17.0	0.0	17.6	7.4	23.4	0.4	0.5	0.0	0.2	2.5
SOx		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO		25.5	4.8	0.0	6.8	1.0	4.5	1.8	2.9	10.0	0.6	8.0	10.0	0.0	8.9	1.8	16.0	0.0	16.6	7.0	22.1	0.4	0.5	0.0	0.2	2.4
HC		3.6	0.7	0.0	1.0	0.1	0.6	0.3	0.4	1.4	0.1	1.1	1.4	0.0	1.3	0.3	2.3	0.0	2.3	1.0	3.1	0.1	0.1	0.0	0.0	0.3
CO2		2,290	432	0	608	94	402	161	263	901	53	720	901	0	801	162	1,440	0	1,492	629	1,981	32	43	0	17	213
N2O		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	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
CH4		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO2e		2,321	438	0	617	95	408	163	266	913	54	730	913	0	812	165	1,460	0	1,512	638	2,009	32	43	0	17	216
Truck Emisisons	**Units**	**Terminal Type**																								
Emission Factors		All	T.2040																							
PM10	*grams / roundtrip*	0.955																								
PM2.5		0.914																								
DPM		0.955																								
NOx		62.3																								
SOx		0.4																								
CO		5.7																								
HC		0.5																								
CO2		43,327																								
N2O		6.8																								
CH4		0.0																								
CO2e		45,357																								
Total Number of Truck		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Annual Trucks at Volume	*trucks / year*	22,989	10,748	0	16,918	10,601	36,100	18,781	38,888	83,700	9,604	99,307	83,700	0	108,474	0	36,628	0	60,817	42,678	0	2,987	3,241	0	470	7,419
Total Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PM2.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DPM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOx		1.6	0.7	0.0	1.2	0.7	2.5	1.3	2.7	5.8	0.7	6.8	5.8	0.0	7.5	0.0	2.5	0.0	4.2	2.9	0.0	0.2	0.2	0.0	0.0	0.5
SOx		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO		0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.2	0.5	0.1	0.6	0.5	0.0	0.7	0.0	0.2	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
HC		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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
CO2		1,098	513	0	808	506	1,724	897	1,857	3,997	459	4,743	3,997	0	5,181	0	1,749	0	2,905	2,038	0	143	155	0	22	354
N2O		0.2	0.1	0.0	0.1	0.1	0.3	0.1	0.3	0.6	0.1	0.7	0.6	0.0	0.8	0.0	0.3	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.1
CH4		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO2e		1,149	537	0	846	530	1,805	939	1,944	4,185	480	4,965	4,185	0	5,423	0	1,831	0	3,041	2,134	0	149	162	0	23	371

Table E-65. ILUT Output; Unmitigated Alternatives 1 and 2, 2040

Rail Emisisons (line haul only)	Units	Terminal Type																								
Emission Factors		All	R.2040																							
PM10	*grams / hp-hr*	0.019																								
PM2.5		0.02																								
DPM		0.02																								
NOx		1.35																								
SOx		0.01																								
CO		1.28																								
HC		0.05																								
CO2		494.0																								
N2O		0.01																								
CH4		0.04																								
CO2e		498.9																								
Total Annual hp-hr Usage at Volume		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Annual hp-hrs at Volume	*hp-hr / year*	930,165	0	0	294,534	0	0	0	0	0	0	2,736,027	0	0	0	0	0	0	887,596	322,113	0	0	0	0	111,449	450,154
Total Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0
PM2.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0
DPM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0
NOx		1.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.5	0.0	0.0	0.0	0.0	0.2	0.7
SOx		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO		1.3	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.5	0.0	0.0	0.0	0.0	0.2	0.6
HC		0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	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
CO2		507	0	0	160	0	0	0	0	0	0	1,490	0	0	0	0	0	0	483	175	0	0	0	0	61	245
N2O		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CH4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0
CO2e		512	0	0	162	0	0	0	0	0	0	1,505	0	0	0	0	0	0	488	177	0	0	0	0	61	248
Total Emisisons	**Units**	**Terminal Type**																								
		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	3.9	1.0	0.0	1.7	0.2	0.8	0.3	0.6	1.9	0.1	1.5	1.9	0.0	2.8	2.2	6.2	0.0	4.8	1.5	14.6	0.1	0.1	0.0	0.0	0.5
PM2.5		3.6	0.9	0.0	1.6	0.2	0.8	0.3	0.5	1.7	0.1	1.4	1.7	0.0	2.6	2.1	5.8	0.0	4.5	1.4	13.6	0.1	0.1	0.0	0.0	0.5
DPM		3.7	0.9	0.0	1.6	0.2	0.8	0.3	0.5	1.7	0.1	1.4	1.7	0.0	1.7	1.4	3.9	0.0	3.6	1.0	13.3	0.1	0.1	0.0	0.0	0.5
NOx		70.9	17.0	0.0	28.9	6.5	28.2	11.4	19.8	64.3	3.8	54.2	64.3	0.0	81.9	55.7	165.7	0.0	137.7	45.8	476.1	3.9	2.8	0.0	1.6	19.0
SOx		4.7	1.4	0.0	2.5	0.2	1.1	0.4	0.7	2.5	0.1	1.8	2.5	0.0	7.0	5.8	15.3	0.0	9.7	2.9	24.9	0.2	0.1	0.0	0.1	0.7
CO		38.8	8.1	0.0	13.0	1.7	7.3	2.9	4.9	16.4	1.0	16.8	16.4	0.0	16.6	9.1	34.4	0.0	33.2	11.5	80.3	0.7	0.7	0.0	0.5	4.8
HC		9.0	2.1	0.0	3.6	0.4	1.8	0.7	1.2	4.1	0.2	3.3	4.1	0.0	4.5	3.6	10.6	0.0	9.2	2.8	29.5	0.2	0.2	0.0	0.1	1.1
CO2		10,998	2,996	0	5,383	957	3,762	1,693	3,225	8,654	705	9,590	8,654	0	16,463	9,054	26,576	0	19,818	7,293	41,465	421	344	0	186	1,936
N2O		0.7	0.2	0.0	0.4	0.1	0.4	0.2	0.4	0.9	0.1	1.0	0.9	0.0	1.6	0.6	2.0	0.0	1.5	0.7	2.2	0.0	0.0	0.0	0.0	0.1
CH4		0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.0	0.1	0.1	0.2	0.0	0.2	0.1	0.6	0.0	0.0	0.0	0.0	0.0
CO2e		11,202	3,060	0	5,494	988	3,877	1,748	3,335	8,920	731	9,882	8,920	0	16,944	9,236	27,170	0	20,274	7,491	42,124	432	354	0	189	1,976

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

G	Variable	Units	Terminal Type										Sum
Diesel Equipment Operating Hours			Container	Container	Container	Container	Container	Container	Container	Container	Container		
Quay Crn	Crane	operating hours / year	0	0	0	0	0	0	0	0	0	0	0
Rbr Tire Gntry	Rub-trd Gantry Crane		60,180	0	0	87,940	99,712	0	0	62,491	0	0	310,323
Empty Hdlr	Side pick		27,218	10,965	0	39,773	45,097	0	0	196,740	0	0	319,794
Top Pick	Top handler		53,996	14,485	0	80,851	95,600	0	0	77,454	0	0	322,385
Yd Trctr	Yard tractor		272,349	49,467	140,899	409,338	487,036	0	0	473,327	0	0	1,832,416
PM10 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of PM10 / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.3	0.0	0.0	0.5	0.6	0.0	0.0	0.4	0.0	0.0	1.7
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.5	0.0	0.0	0.8
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.5
CYT.2040	Yard tractor		1.1	0.2	0.6	1.7	2.0	0.0	0.0	1.9	0.0	0.0	7.5
PM10		TOTAL PM10	1.6	0.2	0.6	2.4	2.8	0.0	0.0	2.9	0.0	0.0	10.5
PM2.5 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of PM2.5 / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.3	0.0	0.0	0.5	0.5	0.0	0.0	0.3	0.0	0.0	1.6
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.4	0.0	0.0	0.7
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.4
CYT.2040	Yard tractor		1.0	0.2	0.5	1.5	1.8	0.0	0.0	1.8	0.0	0.0	6.8
PM2.5		TOTAL PM2.5	1.4	0.2	0.5	2.2	2.5	0.0	0.0	2.6	0.0	0.0	9.5
DPM Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of DPM / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.3	0.0	0.0	0.5	0.6	0.0	0.0	0.4	0.0	0.0	1.7
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.5	0.0	0.0	0.8
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.5
CYT.2040	Yard tractor		0.8	0.2	0.4	1.3	1.5	0.0	0.0	1.4	0.0	0.0	5.6
DPM		TOTAL DPM	1.3	0.2	0.4	2.0	2.3	0.0	0.0	2.4	0.0	0.0	8.6
NOx Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of NOx / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		21.1	0.0	0.0	30.9	35.0	0.0	0.0	21.9	0.0	0.0	108.9
CSP.2040	Side pick		2.5	1.0	0.0	3.6	4.1	0.0	0.0	17.9	0.0	0.0	29.0
CTH.2040	Top handler		4.6	1.2	0.0	6.9	8.1	0.0	0.0	6.6	0.0	0.0	27.3
CYT.2040	Yard tractor		17.9	3.2	9.2	26.8	31.9	0.0	0.0	31.0	0.0	0.0	120.2
NOx		TOTAL NOx	46.0	5.5	9.2	68.2	79.1	0.0	0.0	77.4	0.0	0.0	285.4
SOx Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of SOx / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.3
CSP.2040	Side pick		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3
CTH.2040	Top handler		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.4
CYT.2040	Yard tractor		0.2	0.0	0.1	0.2	0.3	0.0	0.0	0.3	0.0	0.0	1.1
SOx		TOTAL SOx	0.3	0.1	0.1	0.5	0.5	0.0	0.0	0.6	0.0	0.0	2.1
CO Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of CO / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		9.5	0.0	0.0	13.9	15.7	0.0	0.0	9.9	0.0	0.0	48.9
CSP.2040	Side pick		4.9	2.0	0.0	7.1	8.1	0.0	0.0	35.2	0.0	0.0	57.3
CTH.2040	Top handler		12.2	3.3	0.0	18.3	21.7	0.0	0.0	17.6	0.0	0.0	73.1
CYT.2040	Yard tractor		114.0	20.7	59.0	171.4	203.9	0.0	0.0	198.2	0.0	0.0	767.2
CO		TOTAL CO	140.6	26.0	59.0	210.7	249.4	0.0	0.0	260.8	0.0	0.0	946.5
HC Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of HC / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		1.7	0.0	0.0	2.5	2.8	0.0	0.0	1.7	0.0	0.0	8.7
CSP.2040	Side pick		0.8	0.3	0.0	1.2	1.4	0.0	0.0	6.0	0.0	0.0	9.7
CTH.2040	Top handler		1.6	0.4	0.0	2.4	2.8	0.0	0.0	2.3	0.0	0.0	9.4
CYT.2040	Yard tractor		1.7	0.3	0.9	2.5	3.0	0.0	0.0	2.9	0.0	0.0	11.1
HC		TOTAL HC	5.7	1.1	0.9	8.5	9.9	0.0	0.0	12.9	0.0	0.0	38.9
CO2 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of CO2 / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		5,169.4	0.0	0.0	7,554.0	8,565.2	0.0	0.0	5,368.0	0.0	0.0	26,656.7
CSP.2040	Side pick		2,191.1	882.7	0.0	3,201.8	3,630.4	0.0	0.0	15,838.0	0.0	0.0	25,744.1
CTH.2040	Top handler		5,848.0	1,568.7	0.0	8,756.5	10,353.9	0.0	0.0	8,388.6	0.0	0.0	34,915.7
CYT.2040	Yard tractor		14,496.7	2,633.0	7,499.9	21,788.5	25,924.2	0.0	0.0	25,194.5	0.0	0.0	97,536.8
CO2		TOTAL CO2	27,705.2	5,084.5	7,499.9	41,300.8	48,473.8	0.0	0.0	54,789.1	0.0	0.0	184,853.3
N2O Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	tons of N2O / year	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.1	0.0	0.0	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.7
CSP.2040	Side pick		0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.5	0.0	0.0	0.8
CTH.2040	Top handler		0.2	0.0	0.0	0.2	0.3	0.0	0.0	0.2	0.0	0.0	1.0
CYT.2040	Yard tractor		0.3	0.0	0.1	0.4	0.5	0.0	0.0	0.5	0.0	0.0	1.8
N2O		TOTAL N2O	0.6	0.1	0.1	0.9	1.1	0.0	0.0	1.3	0.0	0.0	4.2

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

CH4 Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
CCR.2040	Crane	*tons of CH4 / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		0.2	0.0	0.0	0.3	0.4	0.0	0.0	0.2	0.0	0.0	1.2
CSP.2040	Side pick		0.1	0.0	0.0	0.2	0.2	0.0	0.0	0.8	0.0	0.0	1.3
CTH.2040	Top handler		0.3	0.1	0.0	0.4	0.5	0.0	0.0	0.4	0.0	0.0	1.7
CYT.2040	Yard tractor		0.4	0.1	0.2	0.6	0.7	0.0	0.0	0.7	0.0	0.0	2.6
CH4		*TOTAL CH4*	*1.0*	*0.2*	*0.2*	*1.5*	*1.8*	*0.0*	*0.0*	*2.1*	*0.0*	*0.0*	*6.8*
CO2e Emissions			**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**		**Sum**
CCR.2040	Crane	*tons of CO2e / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
CRG.2040	Rub-trd Gantry Crane		5,214.4	0.0	0.0	7,619.8	8,639.7	0.0	0.0	5,414.7	0.0	0.0	26,888.5
CSP.2040	Side pick		2,213.3	891.7	0.0	3,234.3	3,667.3	0.0	0.0	15,998.8	0.0	0.0	26,005.4
CTH.2040	Top handler		5,903.2	1,583.5	0.0	8,839.2	10,451.6	0.0	0.0	8,467.8	0.0	0.0	35,245.3
CYT.2040	Yard tractor		14,584.7	2,649.0	7,545.4	21,920.8	26,081.6	0.0	0.0	25,347.4	0.0	0.0	98,129.0
CO2e		*TOTAL CO2e*	*27,916*	*5,124*	*7,545*	*41,614*	*48,840*	*0*	*0*	*55,229*	*0*	*0*	*186,268.3*
Port-Wide Diesel Equipment Emissions			**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**		**Sum**
CHE	Capacity	*TEUs/year*	1,720,000	423,000	3,422,000	2,514,000	2,851,000	0	0	4,324,000	0	0	15,254,000
CHE PM10	PM10	*tons / M TEU*	0.93	0.59	0.17	0.94	0.98	0.00	0.00	0.66	0.00	0.00	0.69
CHE PM2.5	PM2.5		0.84	0.53	0.15	0.86	0.89	0.00	0.00	0.60	0.00	0.00	0.62
CHE DPM	DPM		0.76	0.47	0.13	0.78	0.80	0.00	0.00	0.55	0.00	0.00	0.56
CHE NOx	NOx		26.8	12.9	2.7	27.1	27.8	0.0	0.0	17.9	0.0	0.0	18.7
CHE SOx	SOx		0.18	0.14	0.02	0.18	0.19	0.00	0.00	0.14	0.00	0.00	0.13
CHE CO	CO		81.8	61.4	17.2	83.8	87.5	0.0	0.0	60.3	0.0	0.0	62.1
CHE HC	HC		3.34	2.50	0.25	3.38	3.47	0.00	0.00	2.97	0.00	0.00	2.55
CHE CO2	CO2		16,108	12,020	2,192	16,428	17,002	0	0	12,671	0	0	12,118
CHE N2O	N2O		0.36	0.28	0.04	0.37	0.38	0.00	0.00	0.30	0.00	0.00	0.27
CHE CH4	CH4		0.59	0.45	0.06	0.60	0.62	0.00	0.00	0.49	0.00	0.00	0.45
CHE CO2e	CO2e		16,230	12,114	2,205	16,553	17,131	0	0	12,773	0	0	12,211

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

Ocean Going Vessel Emisisons		Units	Terminal Type										
Number of Calls by Ship Size at Limiting Volume			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
OCA.2040	*1kT*	*calls / year*	0	0	0	0	0	0	0	0	0	0	0
OCB.2040	*2kT*		104	52	0	0	0	0	0	0	0	0	156
OCC.2040	*3kT*		52	104	0	0	0	0	0	0	0	0	156
OCD.2040	*4kT*		52	0	0	0	0	0	0	0	0	0	52
OCE.2040	*5kT*		52	0	0	0	0	0	0	52	0	0	104
OCF.2040	*6kT*		52	0	0	0	0	0	0	0	0	0	52
OCG.2040	*7kT*		0	0	52	52	52	0	0	0	0	0	156
OCH.2040	*8kT*		0	0	52	0	52	0	0	0	0	0	104
OCI.2040	*9kT*		104	0	52	0	0	0	0	104	0	0	260
OCJ.2040	*10kT*		0	0	52	52	52	0	0	104	0	0	260
OCK.2040	*11kT*		0	0	0	0	0	0	0	104	0	0	104
OCL.2040	*12kT*		0	0	0	0	0	0	0	52	0	0	52
OCM.2040	*13kT*		0	0	52	52	52	0	0	0	0	0	156
OCN.2040	*14kT*		0	0	0	0	0	0	0	52	0	0	52
OCO.2040	*15kT*		0	0	0	0	0	0	0	0	0	0	0
OCP.2040	*16kT*		0	0	52	52	52	0	0	0	0	0	156
OCQ.2040	*17kT*		0	0	0	0	0	0	0	0	0	0	0
OCR.2040	*18kT*		0	0	0	0	0	0	0	0	0	0	0
OCS.2040	*19kT*		0	0	0	0	0	0	0	0	0	0	0
OCT.2040	*20kT*		0	0	0	0	0	0	0	0	0	0	0
Call Duration by Ship Size (Hotelling Time)			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
OCA.H.2040	*1kT*	*hours / call*	0	0	0	0	0	0	0	0	0	0	0
OCB.H.2040	*2kT*		13	24	0	0	0	0	13	0	0	0	49
OCC.H.2040	*3kT*		15	24	0	0	0	19	15	19	0	0	92
OCD.H.2040	*4kT*		26	23	0	0	0	19	26	19	0	0	114
OCE.H.2040	*5kT*		39	0	0	0	0	23	39	23	0	0	125
OCF.H.2040	*6kT*		33	0	19	19	19	17	33	17	19	0	178
OCG.H.2040	*7kT*		63	0	33	33	33	17	63	17	33	0	289
OCH.H.2040	*8kT*		81	0	49	49	49	40	81	40	49	0	439
OCI.H.2040	*9kT*		72	0	44	44	44	51	72	51	44	0	422
OCJ.H.2040	*10kT*		71	0	56	56	56	59	71	59	56	0	483
OCK.H.2040	*11kT*		59	0	0	0	0	59	59	59	0	0	236
OCL.H.2040	*12kT*		0	0	0	0	0	66	0	66	0	0	131
OCM.H.2040	*13kT*		0	0	67	67	67	0	0	0	67	0	267
OCN.H.2040	*14kT*		0	0	0	0	0	61	0	61	0	0	122
OCO.H.2040	*15kT*		0	0	0	0	0	0	0	0	0	0	0
OCP.H.2040	*16kT*		0	0	82	82	82	0	0	0	82	0	329
OCQ.H.2040	*17kT*		0	0	0	0	0	0	0	0	0	0	0
OCR.H.2040	*18kT*		0	0	91	91	91	0	0	0	91	0	364
OCS.H.2040	*19kT*		0	0	0	0	0	0	0	0	0	0	0
OCT.H.2040	*20kT*		0	0	100	100	100	0	0	0	100	0	399
Non-Hotelling Emissions (transit, maneuvering, anchorage)			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	8.8	2.7	9.2	6.4	7.8	0.0	0.0	12.8	0.0	0.0	***47.6***
	PM2.5		8.3	2.5	8.6	6.0	7.3	0.0	0.0	12.0	0.0	0.0	***44.8***
	DPM		8.6	2.6	8.9	6.2	7.6	0.0	0.0	12.4	0.0	0.0	***46.2***
	NOx		380.4	125.6	299.9	184.0	250.3	0.0	0.0	373.4	0.0	0.0	***1,613.7***
	SOx		13.4	4.1	14.2	9.9	12.1	0.0	0.0	19.6	0.0	0.0	***73.4***
	CO		60.0	18.3	61.9	42.6	52.4	0.0	0.0	87.2	0.0	0.0	***322.4***
	HC		29.0	8.8	29.9	20.6	25.3	0.0	0.0	42.2	0.0	0.0	***155.9***
	CO2		20,333	6,257	21,482	15,060	18,335	0	0	29,639	0	0	***111,106.4***
	N2O		1.0	0.3	1.1	0.8	0.9	0.0	0.0	1.5	0.0	0.0	***5.5***
	CH4		0.6	0.2	0.6	0.4	0.5	0.0	0.0	0.8	0.0	0.0	***3.1***
	CO2e		20,647	6,353	21,816	15,295	18,621	0	0	30,100	0	0	***112,832.0***
Hotelling Emissions WITHOUT Shore Power Reductions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	5.3	0.6	5.5	2.4	4.1	0.0	0.0	8.8	0.0	0.0	***26.6***
	PM2.5		5	1	5	2	4	0	0	8	0	0	***24.9***
	DPM		4	0	4	2	3	0	0	7	0	0	***20.0***
	NOx		165	22	158	64	119	0	0	210	0	0	***738.0***
	SOx		12	1	13	6	10	0	0	20	0	0	***62.7***
	CO		19	2	19	9	14	0	0	32	0	0	***95.9***
	HC		9	1	9	4	7	0	0	15	0	0	***44.0***
	CO2		18,693	2,125	19,762	8,810	14,727	0	0	30,937	0	0	***95,054.1***
	N2O		1	0	1	1	1	0	0	2	0	0	***5.9***
	CH4		0	0	0	0	0	0	0	0	0	0	***0.8***
	CO2e		19,039	2,164	20,134	8,977	15,003	0	0	31,511	0	0	***96,828.9***

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

Hotelling Emissions AFTER Shore Power Reductions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	1.5	0.2	1.5	0.7	1.1	0.0	0.0	2.5	0.0	0.0	***7.4***
	PM2.5		1.4	0.2	1.4	0.6	1.1	0.0	0.0	2.3	0.0	0.0	***7.0***
	DPM		1.1	0.1	1.1	0.5	0.8	0.0	0.0	1.9	0.0	0.0	***5.6***
	NOx		46.2	6.1	44.2	17.9	33.5	0.0	0.0	58.8	0.0	0.0	***206.6***
	SOx		3.5	0.4	3.7	1.6	2.7	0.0	0.0	5.7	0.0	0.0	***17.6***
	CO		5.4	0.6	5.5	2.4	4.0	0.0	0.0	8.9	0.0	0.0	***26.9***
	HC		2.5	0.3	2.5	1.1	1.9	0.0	0.0	4.1	0.0	0.0	***12.3***
	CO2		5,233.9	595.0	5,533.5	2,466.7	4,123.6	0.0	0.0	8,662.5	0.0	0.0	***26,615.1***
	N2O		0.3	0.0	0.3	0.2	0.3	0.0	0.0	0.5	0.0	0.0	***1.6***
	CH4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	***0.2***
	CO2e		5,331.0	606.0	5,637.6	2,513.6	4,200.9	0.0	0.0	8,822.9	0.0	0.0	***27,112.1***
Total OGV Emissions per M TEU			**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**	**Container**		**Sum**
OGV	Limiting Volume	*TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	2,851,000	0	0	4,324,000	0	0	***15,254,000***
OGV PM10	PM10	*tons / M TEU*	6.0	6.8	3.1	2.8	3.1	0.0	0.0	3.5	0.0	0.0	3.12
OGV PM2.5	PM2.5		6	6	3	3	3	0	0	3	0	0	2.94
OGV DPM	DPM		6	7	3	3	3	0	0	3	0	0	3.03
OGV NOx	NOx		248	311	101	80	100	0	0	100	0	0	105.8
OGV SOx	SOx		10	11	5	5	5	0	0	6	0	0	4.81
OGV CO	CO		38	45	20	18	20	0	0	22	0	0	21.1
OGV HC	HC		18	21	9	9	10	0	0	11	0	0	10.22
OGV CO2	CO2		14,864	16,199	7,895	6,972	7,878	0	0	8,858	0	0	7283.8
OGV N2O	N2O		1	1	0	0	0	0	0	0	0	0	0.36
OGV CH4	CH4		0	0	0	0	0	0	0	0	0	0	0.20
OGV CO2e	CO2e		15,103	16,452	8,023	7,084	8,005	0	0	9,002	0	0	7396.9

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

Escort / Assist Tug Emissions		Units											
													Monument
Emission Factors			All	H.2040									
	PM10	*pounds / call*	17.6										
	PM2.5		16.3										
	DPM		17.6										
	NOx		380.0										
	SOx		0.3										
	CO		358.5										
	HC		50.3										
	CO2		32,177.4										
	N2O		1.5										
	CH4		0.6										
	CO2e		32,623.4										
Total Number of Calls at Terminal Capacity			Container	Container	Container	Container	Container	Container	Container	Container	Container		
	Ship Calls	*total OGV calls / year*	416	156	312	208	260	0	0	468	0	0	1820
Total Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	3.7	1.4	2.7	1.8	2.3	0.0	0.0	4.1	0.0	0.0	*16.0*
	PM2.5		3.4	1.3	2.5	1.7	2.1	0.0	0.0	3.8	0.0	0.0	*14.9*
	DPM		3.7	1.4	2.7	1.8	2.3	0.0	0.0	4.1	0.0	0.0	*16.0*
	NOx		79.0	29.6	59.3	39.5	49.4	0.0	0.0	88.9	0.0	0.0	*345.8*
	SOx		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	*0.3*
	CO		74.6	28.0	55.9	37.3	46.6	0.0	0.0	83.9	0.0	0.0	*326.2*
	HC		10.5	3.9	7.9	5.2	6.5	0.0	0.0	11.8	0.0	0.0	*45.8*
	CO2		6,692.9	2,509.8	5,019.7	3,346.4	4,183.1	0.0	0.0	7,529.5	0.0	0.0	*29,281.4*
	N2O		0.3	0.1	0.2	0.2	0.2	0.0	0.0	0.3	0.0	0.0	*1.3*
	CH4		0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	*0.5*
	CO2e		6,785.7	2,544.6	5,089.2	3,392.8	4,241.0	0.0	0.0	7,633.9	0.0	0.0	*29,687.3*
Total Tug Emissions per M TEU			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
TUG	Limiting Volume	*TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	2,851,000	0	0	4,324,000	0	0	
TUG PM10	PM10	*tons / M vessel TEU*	2.13	3.25	0.80	0.73	0.80	0.00	0.00	0.95	0.00	0.00	
TUG PM2.5	PM2.5		1.97	3.01	0.74	0.68	0.74	0.00	0.00	0.88	0.00	0.00	
TUG DPM	DPM		2.13	3.25	0.80	0.73	0.80	0.00	0.00	0.95	0.00	0.00	
TUG NOx	NOx		45.95	70.07	17.32	15.72	17.33	0.00	0.00	20.56	0.00	0.00	
TUG SOx	SOx		0.04	0.06	0.02	0.01	0.02	0.00	0.00	0.02	0.00	0.00	
TUG CO	CO		43.35	66.10	16.34	14.83	16.35	0.00	0.00	19.40	0.00	0.00	
TUG HC	HC		6.09	9.28	2.29	2.08	2.30	0.00	0.00	2.72	0.00	0.00	
TUG CO2	CO2		3891.21	5933.41	1466.88	1331.12	1467.22	0.00	0.00	1741.33	0.00	0.00	
TUG N2O	N2O		0.18	0.27	0.07	0.06	0.07	0.00	0.00	0.08	0.00	0.00	
TUG CH4	CH4		0.07	0.10	0.03	0.02	0.03	0.00	0.00	0.03	0.00	0.00	
TUG CO2e	CO2e		3945.15	6015.66	1487.21	1349.57	1487.56	0.00	0.00	1765.46	0.00	0.00	

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

Truck Emissions		Units	Terminal Type										
Total Truck Calls at Limiting Volume			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	Truck Calls	*truck calls / yr*	752,671	251,495	1,342,083	1,058,955	1,118,166	0	0	1,786,173	0	0	6,309,542
Total Dray Truck Emissions Outside the Marine Terminal			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
T.2040	PM10	*tons of pollutant / year*	0.792	0.265	1.413	1.115	1.177	0.000	0.000	1.881	0.000	0.000	*6.6*
T.2040	PM2.5		0.758	0.253	1.352	1.067	1.126	0.000	0.000	1.799	0.000	0.000	*6.4*
T.2040	DPM		0.792	0.265	1.413	1.115	1.177	0.000	0.000	1.881	0.000	0.000	*6.6*
T.2040	NOx		51.7	17.3	92.2	72.8	76.8	0.0	0.0	122.7	0.0	0.0	*433.5*
T.2040	SOx		0.340	0.113	0.606	0.478	0.505	0.000	0.000	0.806	0.000	0.000	*2.8*
T.2040	CO		4.7	1.6	8.4	6.7	7.0	0.0	0.0	11.2	0.0	0.0	*39.7*
T.2040	HC		0.424	0.142	0.757	0.597	0.630	0.000	0.000	1.007	0.000	0.000	*3.6*
T.2040	CO2		35,947	12,011	64,097	50,575	53,403	0	0	85,307	0	0	*301,342*
T.2040	N2O		5.650	1.888	10.075	7.950	8.394	0.000	0.000	13.409	0.000	0.000	*47.4*
T.2040	CH4		0.025	0.008	0.045	0.035	0.037	0.000	0.000	0.059	0.000	0.000	*0.2*
T.2040	CO2e		37,632	12,574	67,101	52,945	55,906	0	0	89,304	0	0	*315,462*
Total Dray Truck Emissions Outside the MT, per M TEU			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
TRK	Limiting Volume	*TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	2,851,000	0	0	4,324,000	0	0	
TRK PM10	PM10	*tons / M vessel TEU*	0.46	0.63	0.41	0.44	0.41	0.00	0.00	0.43	0.00	0.00	2.8
TRK PM2.5	PM2.5		0.44	0.60	0.40	0.42	0.40	0.00	0.00	0.42	0.00	0.00	2.7
TRK DPM	DPM		0.46	0.63	0.41	0.44	0.41	0.00	0.00	0.43	0.00	0.00	2.8
TRK NOx	NOx		30.06	40.85	26.94	28.94	26.94	0.00	0.00	28.38	0.00	0.00	182.1
TRK SOx	SOx		0.20	0.27	0.18	0.19	0.18	0.00	0.00	0.19	0.00	0.00	1.2
TRK CO	CO		2.75	3.74	2.47	2.65	2.47	0.00	0.00	2.60	0.00	0.00	16.7
TRK HC	HC		0.25	0.34	0.22	0.24	0.22	0.00	0.00	0.23	0.00	0.00	1.5
TRK CO2	CO2		20,899.60	28,395.58	18,730.99	20,117.47	18,731.41	0.00	0.00	19,728.73	0.00	0.00	126,603.8
TRK N2O	N2O		3.29	4.46	2.94	3.16	2.94	0.00	0.00	3.10	0.00	0.00	19.9
TRK CH4	CH4		0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.1
TRK CO2e	CO2e		21,878.93	29,726.16	19,608.70	21,060.15	19,609.14	0.00	0.00	20,653.20	0.00	0.00	132,536.3

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

Rail Emissions		Units	Terminal Type										
Rail Usage at Degraded Volume			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	Switcher	*hours / year*	3,975	0	2,615	4,363	9,432	0	0	6,121	0	0	26,505
	Mainline	*round trips / year*	720	0	1,348	1,440	2,032	0	0	2,232	0	0	7,772
Trains	Train Type	*Type*	5.5k Maxi I	6.0k Maxi I	8.0k Maxi I	4.5k Maxi I	4.5k Maxi I	4.0k Maxi I	6.5k Maxi I	5.5k Maxi I	4.5k Maxi I	6.0k Maxi I	
	Total HP usage for round trip train	*hp-hr / train*	40,915	43,411	59,129	31,437	31,437	28,941	51,641	40,915	31,437	43,411	
Total Switcher Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
RSW.2040	PM10	*tons of pollutant / year*	0.01	0.00	0.01	0.02	0.03	0.00	0.00	0.02	0.00	0.00	*0.1*
RSW.2040	PM2.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.1*
RSW.2040	DPM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.1*
RSW.2040	NOx		1.0	0.0	0.7	1.1	2.5	0.0	0.0	1.6	0.0	0.0	*6.9*
RSW.2040	SOx		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*
RSW.2040	CO		1.6	0.0	1.1	1.8	3.9	0.0	0.0	2.5	0.0	0.0	*11.0*
RSW.2040	HC		0.1	0.0	0.1	0.1	0.2	0.0	0.0	0.1	0.0	0.0	*0.5*
RSW.2040	CO2		609.0	0.0	400.6	668.4	1,445.0	0.0	0.0	937.7	0.0	0.0	*4,060.9*
RSW.2040	N2O		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.1*
RSW.2040	CH4		0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	*0.3*
RSW.2040	CO2e		614.7	0.0	404.3	674.7	1,458.5	0.0	0.0	946.5	0.0	0.0	*4,098.7*
Total Line Haul Locomotive Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
R.2040	PM10	*tons of pollutant / year*	0.62	0.00	1.69	0.96	1.35	0.00	0.00	1.94	0.00	0.00	*6.6*
R.2040	PM2.5		0.6	0.0	1.8	1.0	1.4	0.0	0.0	2.0	0.0	0.0	*6.8*
R.2040	DPM		0.6	0.0	1.8	1.0	1.4	0.0	0.0	2.0	0.0	0.0	*6.8*
R.2040	NOx		43.8	0.0	118.6	67.4	95.1	0.0	0.0	135.9	0.0	0.0	*460.8*
R.2040	SOx		0.2	0.0	0.4	0.2	0.4	0.0	0.0	0.5	0.0	0.0	*1.7*
R.2040	CO		41.6	0.0	112.4	63.9	90.1	0.0	0.0	128.9	0.0	0.0	*436.9*
R.2040	HC		1.6	0.0	4.4	2.5	3.5	0.0	0.0	5.0	0.0	0.0	*17.1*
R.2040	CO2		16,041.5	0.0	43,397.8	24,650.7	34,787.4	0.0	0.0	49,732.3	0.0	0.0	*168,609.7*
R.2040	N2O		0.4	0.0	1.1	0.6	0.9	0.0	0.0	1.3	0.0	0.0	*4.4*
R.2040	CH4		1.3	0.0	3.5	2.0	2.8	0.0	0.0	4.0	0.0	0.0	*13.7*
R.2040	CO2e		16,199.8	0.0	43,826.0	24,893.9	35,130.6	0.0	0.0	50,223.0	0.0	0.0	*170,273.2*
Total Train Emissions			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	PM10	*tons of pollutant / year*	0.64	0.00	1.70	0.98	1.39	0.00	0.00	1.96	0.00	0.00	*6.7*
	PM2.5		0.7	0.0	1.8	1.0	1.4	0.0	0.0	2.0	0.0	0.0	*6.9*
	DPM		0.7	0.0	1.8	1.0	1.4	0.0	0.0	2.0	0.0	0.0	*6.9*
	NOx		44.9	0.0	119.3	68.5	97.5	0.0	0.0	137.5	0.0	0.0	*467.7*
	SOx		0.2	0.0	0.4	0.3	0.4	0.0	0.0	0.5	0.0	0.0	*1.7*
	CO		43.2	0.0	113.5	65.7	94.0	0.0	0.0	131.4	0.0	0.0	*447.8*
	HC		1.7	0.0	4.4	2.6	3.7	0.0	0.0	5.2	0.0	0.0	*17.6*
	CO2		16,650.5	0.0	43,798.4	25,319.1	36,232.4	0.0	0.0	50,670.1	0.0	0.0	*172,670.5*
	N2O		0.4	0.0	1.2	0.7	1.0	0.0	0.0	1.3	0.0	0.0	*4.5*
	CH4		1.3	0.0	3.5	2.0	2.9	0.0	0.0	4.1	0.0	0.0	*14.0*
	CO2e		16,814.5	0.0	44,230.3	25,568.5	36,589.1	0.0	0.0	51,169.5	0.0	0.0	*174,371.9*
Total Train Emissions per M TEU			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
TRN	Rail-Constrained Capacity	*Rail TEUs / year*	380,000	0	1,087,000	643,000	906,000	0	0	1,180,000	0	0	*4,196,000*
TRN PM10	PM10	*tons / M Rail TEU*	1.68	0.00	1.56	1.52	1.53	0.00	0.00	1.66	0.00	0.00	0.44
TRN PM2.5	PM2.5		1.7	0.0	1.6	1.6	1.6	0.0	0.0	1.7	0.0	0.0	0.5
TRN DPM	DPM		1.7	0.0	1.6	1.6	1.6	0.0	0.0	1.7	0.0	0.0	0.5
TRN NOx	NOx		118.1	0.0	109.7	106.5	107.6	0.0	0.0	116.5	0.0	0.0	30.7
TRN SOx	SOx		0.4	0.0	0.4	0.4	0.4	0.0	0.0	0.4	0.0	0.0	0.1
TRN CO	CO		113.7	0.0	104.4	102.1	103.8	0.0	0.0	111.3	0.0	0.0	29.4
TRN HC	HC		4.5	0.0	4.1	4.0	4.1	0.0	0.0	4.4	0.0	0.0	1.2
TRN CO2	CO2		43,817.2	0.0	40,292.9	39,376.5	39,991.6	0.0	0.0	42,940.7	0.0	0.0	11,319.7
TRN N2O	N2O		1.2	0.0	1.1	1.0	1.1	0.0	0.0	1.1	0.0	0.0	0.3
TRN CH4	CH4		3.5	0.0	3.3	3.2	3.2	0.0	0.0	3.5	0.0	0.0	0.9
TRN CO2e	CO2e		44,248.6	0.0	40,690.3	39,764.4	40,385.3	0.0	0.0	43,364.0	0.0	0.0	11,431.2

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

Total Emissions, All Sources		Units	Terminal Type										
Total Emissions, All Sources at 2040 Rates			Container	Container	Container	Container	Container	Container	Container	Container	Container		Sum
	Terminal at Volume	*Vessel TEUs / year*	1,720,000	423,000	3,422,000	2,514,000	2,851,000	0	0	4,324,000	0	0	*15,254,000*
ALL	Rail traffic	*Rail TEUs / year*	380,000	0	1,087,000	643,000	905,875	0	0	1,180,000	0	0	*4,195,875*
ALL PM10	PM10	*tons of pollutant / year*	17.0	4.8	17.1	13.4	16.6	0.0	0.0	26.0	0.0	0.0	*94.8*
ALL PM2.5	PM2.5		16	4	16	13	16	0	0	25	0	0	*89.4*
ALL DPM	DPM		16	5	16	13	16	0	0	25	0	0	*90.0*
ALL NOx	NOx		648	184	624	451	587	0	0	859	0	0	*3,352.6*
ALL SOx	SOx		18	5	19	13	16	0	0	27	0	0	*97.9*
ALL CO	CO		329	74	304	365	454	0	0	583	0	0	*2,109.5*
ALL HC	HC		50	14	46	39	48	0	0	77	0	0	*274.0*
ALL CO2	CO2		112,563	26,458	147,431	138,068	164,746	0	0	236,597	0	0	*825,863.4*
ALL N2O	N2O		8	2	13	11	12	0	0	18	0	0	*64.6*
ALL CH4	CH4		3	0	5	4	5	0	0	7	0	0	*24.8*
ALL CO2e	CO2e		115,125	27,202	151,420	141,329	168,393	0	0	242,259	0	0	*845,728.7*
Emissions by Source at 2040 Rates			Container	Container	Container	Container	Container	Container	Container	Container	Container		
PM10	CHE	*tons of pollutant / year*	1.6	0.2	0.6	2.4	2.8	0.0	0.0	2.9	0.0	0.0	*10.5*
	OGV		10.3	2.9	10.7	7.1	8.9	0.0	0.0	15.2	0.0	0.0	*55.1*
	TUG		3.7	1.4	2.7	1.8	2.3	0.0	0.0	4.1	0.0	0.0	*16.0*
	TRK		0.8	0.3	1.4	1.1	1.2	0.0	0.0	1.9	0.0	0.0	*6.6*
	TRN		0.6	0.0	1.7	1.0	1.4	0.0	0.0	2.0	0.0	0.0	*6.7*
PM2.5	CHE	*tons of pollutant / year*	1.4	0.2	0.5	2.2	2.5	0.0	0.0	2.6	0.0	0.0	*9.5*
	OGV		9.7	2.7	10.1	6.6	8.4	0.0	0.0	14.3	0.0	0.0	*51.8*
	TUG		3.4	1.3	2.5	1.7	2.1	0.0	0.0	3.8	0.0	0.0	*14.9*
	TRK		0.8	0.3	1.4	1.1	1.1	0.0	0.0	1.8	0.0	0.0	*6.4*
	TRN		0.7	0.0	1.8	1.0	1.4	0.0	0.0	2.0	0.0	0.0	*6.9*
DPM	CHE	*tons of pollutant / year*	1.3	0.2	0.4	2.0	2.3	0.0	0.0	2.4	0.0	0.0	*8.6*
	OGV		9.7	2.8	10.0	6.7	8.4	0.0	0.0	14.3	0.0	0.0	*51.9*
	TUG		3.7	1.4	2.7	1.8	2.3	0.0	0.0	4.1	0.0	0.0	*16.0*
	TRK		0.8	0.3	1.4	1.1	1.2	0.0	0.0	1.9	0.0	0.0	*6.6*
	TRN		0.7	0.0	1.8	1.0	1.4	0.0	0.0	2.0	0.0	0.0	*6.9*
NOx	CHE	*tons of pollutant / year*	46.0	5.5	9.2	68.2	79.1	0.0	0.0	77.4	0.0	0.0	*285*
	OGV		426.6	131.6	344.2	201.9	283.8	0.0	0.0	432.2	0.0	0.0	*1,820*
	TUG		79.0	29.6	59.3	39.5	49.4	0.0	0.0	88.9	0.0	0.0	*346*
	TRK		51.7	17.3	92.2	72.8	76.8	0.0	0.0	122.7	0.0	0.0	*433*
	TRN		44.9	0.0	119.3	68.5	97.5	0.0	0.0	137.5	0.0	0.0	*468*
SOx	CHE	*tons of pollutant / year*	0.3	0.1	0.1	0.5	0.5	0.0	0.0	0.6	0.0	0.0	*2.1*
	OGV		16.9	4.5	17.8	11.6	14.8	0.0	0.0	25.3	0.0	0.0	*90.9*
	TUG		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	*0.3*
	TRK		0.3	0.1	0.6	0.5	0.5	0.0	0.0	0.8	0.0	0.0	*2.8*
	TRN		0.2	0.0	0.4	0.3	0.4	0.0	0.0	0.5	0.0	0.0	*1.7*
CO	CHE	*tons of pollutant / year*	140.6	26.0	59.0	210.7	249.4	0.0	0.0	260.8	0.0	0.0	*947*
	OGV		65.4	18.9	67.3	45.0	56.4	0.0	0.0	96.1	0.0	0.0	*349*
	TUG		74.6	28.0	55.9	37.3	46.6	0.0	0.0	83.9	0.0	0.0	*326*
	TRK		4.7	1.6	8.4	6.7	7.0	0.0	0.0	11.2	0.0	0.0	*40*
	TRN		43.2	0.0	113.5	65.7	94.0	0.0	0.0	131.4	0.0	0.0	*448*
HC	CHE	*tons of pollutant / year*	5.7	1.1	0.9	8.5	9.9	0.0	0.0	12.9	0.0	0.0	*38.9*
	OGV		31.5	9.1	32.4	21.7	27.2	0.0	0.0	46.3	0.0	0.0	*168.2*
	TUG		10.5	3.9	7.9	5.2	6.5	0.0	0.0	11.8	0.0	0.0	*45.8*
	TRK		0.4	0.1	0.8	0.6	0.6	0.0	0.0	1.0	0.0	0.0	*3.6*
	TRN		1.7	0.0	4.4	2.6	3.7	0.0	0.0	5.2	0.0	0.0	*17.6*
CO2	CHE	*tons of pollutant / year*	27,705.2	5,084.5	7,499.9	41,300.8	48,473.8	0.0	0.0	54,789.1	0.0	0.0	*184,853*
	OGV		25,566.8	6,852.4	27,015.2	17,526.6	22,458.9	0.0	0.0	38,301.7	0.0	0.0	*137,722*
	TUG		6,692.9	2,509.8	5,019.7	3,346.4	4,183.1	0.0	0.0	7,529.5	0.0	0.0	*29,281*
	TRK		35,947.3	12,011.3	64,097.4	50,575.3	53,403.3	0.0	0.0	85,307.0	0.0	0.0	*301,342*
	TRN		16,650.5	0.0	43,798.4	25,319.1	36,227.4	0.0	0.0	50,670.1	0.0	0.0	*172,666*
N2O	CHE	*tons of pollutant / year*	0.6	0.1	0.1	0.9	1.1	0.0	0.0	1.3	0.0	0.0	*4.2*
	OGV		1.3	0.3	1.4	0.9	1.2	0.0	0.0	2.0	0.0	0.0	*7.2*
	TUG		0.3	0.1	0.2	0.2	0.2	0.0	0.0	0.3	0.0	0.0	*1.3*
	TRK		5.7	1.9	10.1	7.9	8.4	0.0	0.0	13.4	0.0	0.0	*47.4*
	TRN		0.4	0.0	1.2	0.7	1.0	0.0	0.0	1.3	0.0	0.0	*4.5*
CH4	CHE	*tons of pollutant / year*	1.0	0.2	0.2	1.5	1.8	0.0	0.0	2.1	0.0	0.0	*6.8*
	OGV		0.6	0.2	0.6	0.4	0.5	0.0	0.0	0.9	0.0	0.0	*3.3*
	TUG		0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	*0.5*
	TRK		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	*0.2*
	TRN		1.3	0.0	3.5	2.0	2.9	0.0	0.0	4.1	0.0	0.0	*14.0*
CO2e	CHE	*tons of pollutant / year*	27,915.7	5,124.3	7,545.4	41,614.0	48,840.3	0.0	0.0	55,228.7	0.0	0.0	*186,268*
	OGV		25,977.7	6,959.3	27,453.9	17,808.6	22,821.8	0.0	0.0	38,922.8	0.0	0.0	*139,944*
	TUG		6,785.7	2,544.6	5,089.2	3,392.8	4,241.0	0.0	0.0	7,633.9	0.0	0.0	*29,687*
	TRK		37,631.8	12,574.2	67,101.0	52,945.2	55,905.7	0.0	0.0	89,304.4	0.0	0.0	*315,462*
	TRN		16,814.5	0.0	44,230.3	25,568.5	36,584.1	0.0	0.0	51,169.5	0.0	0.0	*174,367*

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

		Terminal Type																								
		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Ocean Going Vessel Emisisons	**Units**	**Terminal Type**																								
Ship Type	*class name*																									
OGV Designator	*3-letter code*	OAC	OAC	OAC	OAC	OBG	OBG	OBG	OBG	OBG	OBG	OBG	OBG	OBG	OTH	OTV	OTA	OTH	OTA	OTH	OTS	OGC	OGC	OGC	OGC	OGC
Annual Call Count at Volume	*calls / year*	142	27	0	38	6	25	10	16	56	3	45	56	0	50	10	90	0	93	39	123	2	3	0	1	0
Call Duration	*hrs / call*	23	47	69	69	49	65	57	72	70	40	41	70	41	47	154	49	20	20	20	20	158	35	158	85	88
Annual Hotelling Time	*hrs / year*	3,212	1,261	0	2,625	286	1,613	572	1,183	3,939	131	1,856	3,939	0	2,330	1,551	4,352	0	1,854	782	2,463	315	94	0	88	0
Non-Hotelling Emission Rates (transit, maneuvering, anchorage)		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*lb of pollutant / call*	19.8	19.8	19.8	19.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	28.3	188.3	59.5	28.3	59.5	28.3	159.6	26.6	26.6	26.6	26.6	26.6
PM2.5		18.7	18.7	18.7	18.7	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	26.4	174.8	55.5	26.4	55.5	26.4	148.5	24.9	24.9	24.9	24.9	24.9
DPM		18.9	18.9	18.9	18.9	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	24.8	166.0	50.9	24.8	50.9	24.8	151.5	25.1	25.1	25.1	25.1	25.1
NOx		340.3	340.3	340.3	340.3	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,330.9	1,170.9	4,440.6	1,914.8	1,170.9	1,914.8	1,170.9	5,212.7	1,028.6	1,028.6	1,028.6	1,028.6	1,028.6
SOx		33.5	33.5	33.5	33.5	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	53.2	350.2	115.0	53.2	115.0	53.2	268.2	45.1	45.1	45.1	45.1	45.1
CO		102.1	102.1	102.1	102.1	169.5	169.5	169.5	169.5	169.5	169.5	169.5	169.5	169.5	131.4	804.9	265.1	131.4	265.1	131.4	724.3	129.6	129.6	129.6	129.6	129.6
HC		45.5	45.5	45.5	45.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	58.9	365.1	119.5	58.9	119.5	58.9	326.8	57.6	57.6	57.6	57.6	57.6
CO2		50,955	50,955	50,955	50,955	94,441	94,441	94,441	94,441	94,441	94,441	94,441	94,441	94,441	83,052	567,927	182,248	83,052	182,248	83,052	435,564	70,856	70,856	70,856	70,856	70,856
N2O		2.6	2.6	2.6	2.6	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.6	30.4	10.3	4.6	10.3	4.6	21.3	3.6	3.6	3.6	3.6	3.6
CH4		0.9	0.9	0.9	0.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.2	7.3	2.4	1.2	2.4	1.2	6.5	1.2	1.2	1.2	1.2	1.2
CO2e		51,763	51,763	51,763	51,763	95,953	95,953	95,953	95,953	95,953	95,953	95,953	95,953	95,953	84,467	577,181	185,380	84,467	185,380	84,467	442,068	71,967	71,967	71,967	71,967	71,967
Hotelling Emission Rates (at berth)		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*lb of pollutant / hr*	0.7	0.7	0.7	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.3	1.6	1.3	1.3	1.3	1.3	3.0	0.4	0.4	0.4	0.4	0.4
PM2.5		0.7	0.7	0.7	0.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.3	1.5	1.2	1.3	1.2	1.3	2.8	0.4	0.4	0.4	0.4	0.4
DPM		0.6	0.6	0.6	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.7	0.4	0.4	0.4	0.4	2.3	0.3	0.3	0.3	0.3	0.3
NOx		10.4	10.4	10.4	10.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	30.8	40.5	27.8	30.8	27.8	30.8	107.0	14.5	14.5	14.5	14.5	14.5
SOx		1.4	1.4	1.4	1.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	4.8	5.1	4.6	4.8	4.6	4.8	6.8	0.7	0.7	0.7	0.7	0.7
CO		2.9	2.9	2.9	2.9	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	3.2	4.2	2.9	3.2	2.9	3.2	11.0	1.5	1.5	1.5	1.5	1.5
HC		1.3	1.3	1.3	1.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1.5	2.0	1.4	1.5	1.4	1.5	5.1	0.7	0.7	0.7	0.7	0.7
CO2		2,166	2,166	2,166	2,166	564	564	564	564	564	564	564	564	564	7,221	7,770	6,999	7,221	6,999	7,221	10,285	1,119	1,119	1,119	1,119	1,119
N2O		0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.5	0.6	0.5	0.6	0.6	0.1	0.1	0.1	0.1	0.1
CH4		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	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
CO2e		2,203	2,203	2,203	2,203	576	576	576	576	576	576	576	576	576	7,386	7,941	7,161	7,386	7,161	7,386	10,472	1,137	1,137	1,137	1,137	1,137
OGV Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / yr*	2.6	0.7	0.0	1.3	0.1	0.6	0.2	0.4	1.3	0.1	0.9	1.3	0.0	2.3	2.2	5.4	0.0	3.9	1.1	13.5	0.1	0.1	0.0	0.0	0.0
PM2.5		2.4	0.7	0.0	1.2	0.1	0.5	0.2	0.4	1.2	0.1	0.9	1.2	0.0	2.1	2.0	5.1	0.0	3.7	1.0	12.6	0.1	0.0	0.0	0.0	0.0
DPM		2.4	0.7	0.0	1.2	0.1	0.5	0.2	0.3	1.1	0.1	0.8	1.1	0.0	1.1	1.3	3.1	0.0	2.7	0.6	12.2	0.1	0.0	0.0	0.0	0.0
NOx		40.9	11.1	0.0	20.1	4.7	21.0	8.2	14.1	47.9	2.6	34.8	47.9	0.0	65.0	53.8	146.2	0.0	114.5	35.0	452.7	3.3	2.0	0.0	1.2	0.0
SOx		4.7	1.4	0.0	2.5	0.2	1.0	0.4	0.7	2.4	0.1	1.7	2.4	0.0	6.9	5.8	15.2	0.0	9.6	2.9	24.9	0.2	0.1	0.0	0.1	0.0
CO		11.9	3.2	0.0	5.7	0.6	2.6	1.0	1.7	5.8	0.3	4.3	5.8	0.0	7.0	7.3	18.1	0.0	14.9	3.8	58.2	0.4	0.2	0.0	0.1	0.0
HC		5.3	1.4	0.0	2.6	0.3	1.2	0.5	0.8	2.6	0.1	1.9	2.6	0.0	3.2	3.4	8.3	0.0	6.8	1.7	26.4	0.2	0.1	0.0	0.1	0.0
CO2		7,104	2,051	0	3,806	356	1,635	634	1,105	3,755	193	2,637	3,755	0	10,481	8,892	23,386	0	14,938	4,450	39,484	246	146	0	86	0
N2O		0.4	0.1	0.0	0.2	0.0	0.1	0.0	0.1	0.2	0.0	0.1	0.2	0.0	0.8	0.6	1.6	0.0	1.0	0.3	2.1	0.0	0.0	0.0	0.0	0.0
CH4		0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.2	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0
CO2e		7,220	2,085	0	3,870	363	1,664	645	1,124	3,821	197	2,682	3,821	0	10,708	9,071	23,878	0	15,233	4,542	40,115	250	149	0	88	0

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

Tug Emisisons	Units	Terminal Type																								
Emission Factors		All	H.2040																							
PM10	*pounds / call*	17.6																								
PM2.5		16.3																								
DPM		17.6																								
NOx		380.0																								
SOx		0.3																								
CO		358.5																								
HC		50.3																								
CO2		32,177																								
N2O		1.5																								
CH4		0.6																								
CO2e		32,623																								
Total Number of Calls		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Ship Calls	*total OGV calls / year*	142	27	0	38	6	25	10	16	56	3	45	56	0	50	10	90	0	93	39	123	2	3	0	1	0
Total Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	1.3	0.2	0.0	0.3	0.1	0.2	0.1	0.1	0.5	0.0	0.4	0.5	0.0	0.4	0.1	0.8	0.0	0.8	0.3	1.1	0.0	0.0	0.0	0.0	0.0
PM2.5		1.2	0.2	0.0	0.3	0.0	0.2	0.1	0.1	0.5	0.0	0.4	0.5	0.0	0.4	0.1	0.7	0.0	0.8	0.3	1.0	0.0	0.0	0.0	0.0	0.0
DPM		1.3	0.2	0.0	0.3	0.1	0.2	0.1	0.1	0.5	0.0	0.4	0.5	0.0	0.4	0.1	0.8	0.0	0.8	0.3	1.1	0.0	0.0	0.0	0.0	0.0
NOx		27.0	5.1	0.0	7.2	1.1	4.7	1.9	3.1	10.6	0.6	8.5	10.6	0.0	9.5	1.9	17.0	0.0	17.6	7.4	23.4	0.4	0.5	0.0	0.2	0.0
SOx		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO		25.5	4.8	0.0	6.8	1.0	4.5	1.8	2.9	10.0	0.6	8.0	10.0	0.0	8.9	1.8	16.0	0.0	16.6	7.0	22.1	0.4	0.5	0.0	0.2	0.0
HC		3.6	0.7	0.0	1.0	0.1	0.6	0.3	0.4	1.4	0.1	1.1	1.4	0.0	1.3	0.3	2.3	0.0	2.3	1.0	3.1	0.1	0.1	0.0	0.0	0.0
CO2		2,290	432	0	608	94	402	161	263	901	53	720	901	0	801	162	1,440	0	1,492	629	1,981	32	43	0	17	0
N2O		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	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
CH4		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO2e		2,321	438	0	617	95	408	163	266	913	54	730	913	0	812	165	1,460	0	1,512	638	2,009	32	43	0	17	0
Truck Emisisons	**Units**	**Terminal Type**																								
Emission Factors		All	T.2040																							
PM10	*grams / roundtrip*	0.955																								
PM2.5		0.914																								
DPM		0.955																								
NOx		62.3																								
SOx		0.4																								
CO		5.7																								
HC		0.5																								
CO2		43,327																								
N2O		6.8																								
CH4		0.0																								
CO2e		45,357																								
Total Number of Truck		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Annual Trucks at Volume	*trucks / year*	22,989	10,748	0	16,918	10,601	36,100	18,781	38,888	83,700	9,604	99,307	83,700	0	108,474	0	36,628	0	60,817	42,678	0	2,987	3,241	0	470	0
Total Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PM2.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DPM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOx		1.6	0.7	0.0	1.2	0.7	2.5	1.3	2.7	5.8	0.7	6.8	5.8	0.0	7.5	0.0	2.5	0.0	4.2	2.9	0.0	0.2	0.2	0.0	0.0	0.0
SOx		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO		0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.2	0.5	0.1	0.6	0.5	0.0	0.7	0.0	0.2	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0
HC		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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
CO2		1,098	513	0	808	506	1,724	897	1,857	3,997	459	4,743	3,997	0	5,181	0	1,749	0	2,905	2,038	0	143	155	0	22	0
N2O		0.2	0.1	0.0	0.1	0.1	0.3	0.1	0.3	0.6	0.1	0.7	0.6	0.0	0.8	0.0	0.3	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0
CH4		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO2e		1,149	537	0	846	530	1,805	939	1,944	4,185	480	4,965	4,185	0	5,423	0	1,831	0	3,041	2,134	0	149	162	0	23	0

Table E-66. ILUT Output; Unmitigated Alternative 3, 2040

Rail Emisisons (line haul only)	Units	Terminal Type																								
Emission Factors		All	R.2040																							
PM10	*grams / hp-hr*	0.019																								
PM2.5		0.02																								
DPM		0.02																								
NOx		1.35																								
SOx		0.01																								
CO		1.28																								
HC		0.05																								
CO2		494.0																								
N2O		0.01																								
CH4		0.04																								
CO2e		498.9																								
Total Annual hp-hr Usage at Volume		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
Annual hp-hrs at Volume	*hp-hr / year*	930,165	0	0	294,534	0	0	0	0	0	0	2,736,027	0	0	0	0	0	0	887,596	322,113	0	0	0	0	111,449	0
Total Emissions		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0
PM2.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0
DPM		0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0
NOx		1.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.5	0.0	0.0	0.0	0.0	0.2	0.0
SOx		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CO		1.3	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.5	0.0	0.0	0.0	0.0	0.2	0.0
HC		0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	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
CO2		507	0	0	160	0	0	0	0	0	0	1,490	0	0	0	0	0	0	483	175	0	0	0	0	61	0
N2O		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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CH4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0
CO2e		512	0	0	162	0	0	0	0	0	0	1,505	0	0	0	0	0	0	488	177	0	0	0	0	61	0
Total Emisisons	**Units**	**Terminal Type**																								
		Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.	Noncont.
PM10	*tons of pollutant / year*	3.9	1.0	0.0	1.7	0.2	0.8	0.3	0.6	1.9	0.1	1.5	1.9	0.0	2.8	2.2	6.2	0.0	4.8	1.5	14.6	0.1	0.1	0.0	0.0	0.0
PM2.5		3.6	0.9	0.0	1.6	0.2	0.8	0.3	0.5	1.7	0.1	1.4	1.7	0.0	2.6	2.1	5.8	0.0	4.5	1.4	13.6	0.1	0.1	0.0	0.0	0.0
DPM		3.7	0.9	0.0	1.6	0.2	0.8	0.3	0.5	1.7	0.1	1.4	1.7	0.0	1.7	1.4	3.9	0.0	3.6	1.0	13.3	0.1	0.1	0.0	0.0	0.0
NOx		70.9	17.0	0.0	28.9	6.5	28.2	11.4	19.8	64.3	3.8	54.2	64.3	0.0	81.9	55.7	165.7	0.0	137.7	45.8	476.1	3.9	2.8	0.0	1.6	0.0
SOx		4.7	1.4	0.0	2.5	0.2	1.1	0.4	0.7	2.5	0.1	1.8	2.5	0.0	7.0	5.8	15.3	0.0	9.7	2.9	24.9	0.2	0.1	0.0	0.1	0.0
CO		38.8	8.1	0.0	13.0	1.7	7.3	2.9	4.9	16.4	1.0	16.8	16.4	0.0	16.6	9.1	34.4	0.0	33.2	11.5	80.3	0.7	0.7	0.0	0.5	0.0
HC		9.0	2.1	0.0	3.6	0.4	1.8	0.7	1.2	4.1	0.2	3.3	4.1	0.0	4.5	3.6	10.6	0.0	9.2	2.8	29.5	0.2	0.2	0.0	0.1	0.0
CO2		10,998	2,996	0	5,383	957	3,762	1,693	3,225	8,654	705	9,590	8,654	0	16,463	9,054	26,576	0	19,818	7,293	41,465	421	344	0	186	0
N2O		0.7	0.2	0.0	0.4	0.1	0.4	0.2	0.4	0.9	0.1	1.0	0.9	0.0	1.6	0.6	2.0	0.0	1.5	0.7	2.2	0.0	0.0	0.0	0.0	0.0
CH4		0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.0	0.1	0.1	0.2	0.0	0.2	0.1	0.6	0.0	0.0	0.0	0.0	0.0
CO2e		11,202	3,060	0	5,494	988	3,877	1,748	3,335	8,920	731	9,882	8,920	0	16,944	9,236	27,170	0	20,274	7,491	42,124	432	354	0	189	0

Table E-67. ILUT 2040 Emission Factors

Code	Generator	Mode	Units	Pollutant										
				PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4	CO2e
Ocean Going Vessels 2040				**PM10**	**PM2.5**	**DPM**	**NOx**	**SOx**	**CO**	**HC**	**CO2**	**N2O**	**CH4**	**CO2e**
OCA.2040	Container1000	*not at berth (includes transit, manuevering, and anchorage)*	*lbs / call*	29.1	27.4	28.6	1,344	44.4	192	92.4	67,338	3.26	1.85	68,357
OCB.2040	Container2000			33.3	31.3	32.6	1,539	51.0	222	106.7	77,287	3.78	2.13	78,467
OCC.2040	Container3000			35.4	33.3	34.6	1,645	53.9	241	116.0	81,690	4.02	2.32	82,946
OCD.2040	Container4000			40.3	38.0	39.4	1,865	61.8	271	130.8	93,550	4.60	2.62	94,986
OCE.2040	Container5000			43.8	41.2	42.7	2,032	66.9	299	144.6	101,244	5.00	2.89	102,807
OCF.2040	Container6000			47.3	44.5	46.1	2,199	71.9	326	158.4	108,938	5.41	3.17	110,628
OCG.2040	Container7000			49.8	46.9	48.4	2,315	76.1	344	167.1	115,179	5.75	3.34	116,975
OCH.2040	Container8000			54.8	51.6	53.5	2,550	83.2	376	182.1	125,976	6.21	3.64	127,918
OCI.2040	Container9000			52.5	49.4	51.0	1,907	79.9	364	176.2	121,018	6.02	3.52	122,901
OCJ.2040	Container10000			50.2	47.2	48.6	1,264	76.7	351	170.3	116,059	5.84	3.41	117,883
OCK.2040	Container11000			56.4	53.1	55.0	1,412	86.0	385	186.2	130,192	6.43	3.72	132,202
OCL.2040	Container12000			56.4	53.1	55.0	1,412	86.0	385	186.2	130,192	6.43	3.72	132,202
OCM.2040	Container13000			62.6	58.9	61.4	1,560	95.3	419	202.1	144,326	7.03	4.04	146,521
OCN.2040	Container14000			72.7	68.4	70.1	1,750	114.8	472	227.3	173,995	8.71	4.55	176,705
OCO.2040	Container15000			72.7	68.4	70.1	1,750	114.8	472	227.3	173,995	8.71	4.55	176,705
OCP.2040	Container16000			82.8	77.9	78.9	1,939	134.4	525	252.5	203,664	10.40	5.05	206,890
OCQ.2040	Container17000			89.2	83.9	84.4	3,092	146.7	560	268.7	222,276	11.46	5.37	225,825
OCR.2040	Container18000			89.2	83.9	84.4	3,092	146.7	560	268.7	222,276	11.46	5.37	225,825
OCS.2040	Container19000			89.2	83.9	84.4	3,092	146.7	560	268.7	222,276	11.46	5.37	225,825
OCT.2040	Container20000			95.6	89.9	90.0	4,244	159.0	594	284.9	240,889	12.51	5.70	244,759
OAC.2040	Auto Carrier			19.8	18.7	18.9	340	33.5	102	45.5	50,955	2.63	0.91	51,763
OBG.2040	Bulk - General			34.8	32.5	32.3	1,331	60.1	170	75.5	94,441	4.95	1.51	95,953
OBH.2040	Bulk - Heavy Load			60.8	56.4	54.9	1,353	109.9	261	118.1	178,625	9.30	2.36	181,454
OBS.2040	Bulk - Self Discharging			21.9	20.6	20.8	958	36.7	112	49.9	56,917	2.94	1.00	57,816
OWC.2040	Bulk Wood Chips			34.8	32.5	32.3	1,331	60.1	170	75.5	94,441	4.95	1.51	95,953
OUG.2040	Cruise			91.8	86.4	91.8	1,826	147.1	450	200.8	223,561	10.39	4.02	226,757
OGC.2040	General Cargo			26.6	24.9	25.1	1,029	45.1	130	57.6	70,856	3.63	1.15	71,967
OIT.2040	ITB			31.0	29.2	31.0	516	46.7	178	78.7	70,947	3.46	1.57	72,019
OGM.2040	MISC			38.1	35.8	37.8	1,968	60.2	194	86.7	92,694	4.38	1.73	94,042
OFG.2040	Reefer			7.1	6.7	6.9	346	11.8	37	16.5	17,975	0.90	0.33	18,252
ORG.2040	Roro			19.8	18.7	18.9	340	33.5	102	45.5	50,955	2.63	0.91	51,763
OTA.2040	Tanker - Aframax			59.5	55.5	50.9	1,915	115.0	265	119.5	182,248	10.31	2.39	185,380
OTC.2040	Tanker - Chemical			38.1	35.6	34.3	1,456	69.0	179	80.2	108,427	5.86	1.60	110,214
OTH.2040	Tanker - Handysize			28.3	26.4	24.8	1,171	53.2	131	58.9	83,052	4.65	1.18	84,467
OTP.2040	Tanker - Panamax			71.4	66.5	48.6	1,579	172.4	270	123.1	270,681	17.65	2.46	276,002
OTS.2040	Tanker - Suezmax			159.6	148.5	151.5	5,213	268.2	724	326.8	435,564	21.28	6.54	442,068
OUT.2040	Tanker - ULCC			224.5	208.4	197.2	4,566	419.6	951	432.3	681,993	36.62	8.65	693,122
OTV.2040	Tanker - VLCC			188.3	174.8	166.0	4,441	350.2	805	365.1	567,927	30.44	7.30	577,181

Table E-67. ILUT 2040 Emission Factors

Code	Generator	Mode	Units	Pollutant										
				PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4	CO2e
Ocean Going Vessels 2040				**PM10**	**PM2.5**	**DPM**	**NOx**	**SOx**	**CO**	**HC**	**CO2**	**N2O**	**CH4**	**CO2e**
OCA.H.2040	Container1000	*At Berth*	*lbs / hour*	0.5	0.5	0.4	18	1.0	2	0.9	1,585	0.09	0.02	1,612
OCB.H.2040	Container2000			0.7	0.7	0.6	26	1.5	3	1.2	2,220	0.13	0.02	2,259
OCC.H.2040	Container3000			0.5	0.5	0.4	17	1.2	2	0.8	1,770	0.11	0.02	1,803
OCD.H.2040	Container4000			0.8	0.7	0.6	28	1.7	3	1.4	2,594	0.15	0.03	2,639
OCE.H.2040	Container5000			0.7	0.7	0.6	25	1.7	3	1.2	2,517	0.15	0.02	2,562
OCF.H.2040	Container6000			0.7	0.6	0.5	22	1.6	2	1.1	2,440	0.15	0.02	2,485
OCG.H.2040	Container7000			0.7	0.6	0.5	22	1.6	2	1.1	2,475	0.16	0.02	2,523
OCH.H.2040	Container8000			0.8	0.7	0.6	26	1.9	3	1.3	2,799	0.17	0.03	2,850
OCI.H.2040	Container9000			0.8	0.7	0.6	21	1.8	3	1.2	2,692	0.17	0.02	2,743
OCJ.H.2040	Container10000			0.7	0.7	0.6	15	1.7	3	1.2	2,584	0.16	0.02	2,632
OCK.H.2040	Container11000			0.8	0.8	0.7	17	1.9	3	1.4	2,856	0.17	0.03	2,907
OCL.H.2040	Container12000			0.8	0.8	0.7	17	1.9	3	1.4	2,856	0.17	0.03	2,907
OCM.H.2040	Container13000			0.9	0.9	0.7	19	2.1	3	1.6	3,128	0.19	0.03	3,185
OCN.H.2040	Container14000			1.6	1.5	1.4	33	3.3	6	2.8	5,066	0.29	0.06	5,154
OCO.H.2040	Container15000			1.6	1.5	1.4	33	3.3	6	2.8	5,066	0.29	0.06	5,154
OCP.H.2040	Container16000			2.3	2.1	2.0	46	4.6	9	4.1	7,004	0.39	0.08	7,122
OCQ.H.2040	Container17000			2.8	2.6	2.4	85	5.6	11	5.0	8,569	0.47	0.10	8,712
OCR.H.2040	Container18000			2.8	2.6	2.4	85	5.6	11	5.0	8,569	0.47	0.10	8,712
OCS.H.2040	Container19000			2.8	2.6	2.4	85	5.6	11	5.0	8,569	0.47	0.10	8,712
OCT.H.2040	Container20000			3.3	3.1	2.9	124	6.7	13	5.9	10,134	0.56	0.12	10,304
OAC.H.2040	Auto Carrier			0.7	0.7	0.6	10	1.4	3	1.3	2,166	0.12	0.03	2,203
OBG.H.2040	Bulk - General			0.2	0.2	0.1	5	0.4	1	0.3	564	0.04	0.01	576
OBH.H.2040	Bulk - Heavy Load			0.2	0.2	0.2	7	0.4	1	0.3	655	0.04	0.01	667
OBS.H.2040	Bulk - Self Discharging			0.1	0.1	0.1	5	0.4	0	0.2	524	0.03	0.00	533
OWC.H.2040	Bulk Wood Chips			0.2	0.2	0.1	5	0.4	1	0.3	564	0.04	0.01	576
OUG.H.2040	Cruise			6.9	6.5	5.8	118	14.7	27	12.2	22,361	1.28	0.24	22,748
OGC.H.2040	General Cargo			0.4	0.4	0.3	14	0.7	2	0.7	1,119	0.06	0.01	1,137
OIT.H.2040	ITB			0.1	0.1	0.1	1	0.1	0	0.1	142	0.01	0.00	145
OGM.H.2040	MISC			1.2	1.2	1.2	54	2.1	5	2.4	3,249	0.15	0.05	3,295
OFG.H.2040	Reefer			0.7	0.7	0.6	27	1.4	3	1.3	2,079	0.11	0.03	2,113
ORG.H.2040	Roro			0.7	0.7	0.6	10	1.4	3	1.3	2,166	0.12	0.03	2,203
OTA.H.2040	Tanker - Aframax			1.3	1.2	0.4	28	4.6	3	1.4	6,999	0.54	0.03	7,161
OTC.H.2040	Tanker - Chemical			1.3	1.2	0.4	30	4.7	3	1.5	7,151	0.54	0.03	7,313
OTH.H.2040	Tanker - Handysize			1.3	1.3	0.4	31	4.8	3	1.5	7,221	0.55	0.03	7,386
OTP.H.2040	Tanker - Panamax			1.4	1.3	0.4	23	5.0	3	1.5	7,549	0.58	0.03	7,723
OTS.H.2040	Tanker - Suezmax			3.0	2.8	2.3	107	6.8	11	5.1	10,285	0.62	0.10	10,472
OUT.H.2040	Tanker - ULCC			1.6	1.5	0.7	34	5.1	4	2.0	7,770	0.57	0.04	7,941
OTV.H.2040	Tanker - VLCC			1.6	1.5	0.7	41	5.1	4	2.0	7,770	0.57	0.04	7,941

Table E-67. ILUT 2040 Emission Factors

Code	Generator	Mode	Units	Pollutant										
				PM10	PM2.5	DPM	NOx	SOx	CO	HC	CO2	N2O	CH4	CO2e
Harbor Tugs				**PM10**	**PM2.5**	**DPM**	**NOx**	**SOx**	**CO**	**HC**	**CO2**	**N2O**	**CH4**	**CO2e**
H.2040	Harbor Tug 2040	*All modes*	*lbs / call*	17.6	16.3	17.6	380	0.34	358	50.3	32,177	1.45	0.55	32,623
Cargo Handling Equipment 2040				**PM10**	**PM2.5**	**DPM**	**NOx**	**SOx**	**CO**	**HC**	**CO2**	**N2O**	**CH4**	**CO2e**
CBD.2040	Bulldozer	*All modes*	*grams / hour*	8.88	8.06	8.88	56.4	0.65	135.5	16.55	56,130	1.68	2.83	56,701
CCR.2040	Crane			13.77	12.47	13.77	66.2	0.50	155.4	19.07	43,251	1.27	2.17	43,685
CEX.2040	Excavator			2.10	1.89	2.10	60.3	1.17	204.9	15.72	116,086	2.89	5.16	117,075
CFL.2040	Forklift			0.92	0.88	0.33	60.0	0.17	152.8	3.39	19,013	0.43	0.78	19,161
CGL.2040	Loader			2.03	1.84	2.03	73.6	0.95	212.4	26.63	91,904	2.36	4.18	92,713
CML.2040	Man Lift			0.18	0.16	0.18	90.9	0.22	111.4	3.49	18,835	0.56	1.00	19,028
CMH.2040	Material handler			4.93	4.45	4.93	136.2	2.40	449.7	46.98	237,101	6.20	10.76	239,216
CXX.2040	Miscellaneous			0.09	0.09	0.01	20.0	0.01	64.4	5.95	3,706	0.01	0.02	3,711
CRP.2040	Rail Pusher			0.73	0.65	0.73	25.1	0.65	194.3	6.29	56,229	1.67	2.82	56,798
CRG.2040	Rub-trd Gantry Crane			5.09	4.68	5.09	318.3	0.80	143.0	25.37	77,927	1.98	3.55	78,605
CSP.2040	Side pick			2.21	2.01	2.21	82.3	0.84	162.5	27.56	73,030	2.18	3.66	73,772
CSS.2040	Skid Steer Loader			0.51	0.46	0.51	87.7	0.20	77.8	2.21	15,341	0.52	0.88	15,517
CSW.2040	Sweeper			3.15	2.92	2.27	38.0	0.71	446.1	11.18	70,056	1.84	3.08	70,680
CTH.2040	Top handler			1.28	1.15	1.28	76.9	1.07	205.8	26.47	98,252	2.72	4.67	99,180
CTR.2040	Tractor			3.25	3.24	0.01	11.7	0.00	1,837.8	0.65	37,047	0.01	0.01	37,050
CTK.2040	Truck			0.35	0.32	0.32	42.2	0.43	100.4	3.42	38,709	0.41	0.51	38,844
CYT.2040	Yard tractor			3.70	3.36	2.78	59.5	0.55	379.8	5.50	48,288	0.87	1.31	48,581
Trucks				**PM10**	**PM2.5**	**DPM**	**NOx**	**SOx**	**CO**	**HC**	**CO2**	**N2O**	**CH4**	**CO2e**
T.2040	Truck 2040	*All modes*	*grams/roundtrip*	0.955	0.914	0.955	62.325	0.409	5.706	0.512	43,327	6.810	0.030	45,357
Rail				**PM10**	**PM2.5**	**DPM**	**NOx**	**SOx**	**CO**	**HC**	**CO2**	**N2O**	**CH4**	**CO2e**
R.2040	Rail 2040	*All modes*	*grams / hp-hr*	0.019	0.020	0.020	1.350	0.005	1.280	0.050	494	0.013	0.040	499
RSW.2040	Switcher 2040	*All modes*	*grams / hr*	3.26	3.16	3.26	236.20	1.29	375.15	18.00	138,990	3.49	10.25	140,285

Table E-68. Example Unmitigated Peak Daily Emissions for Construction Activities from the Proposed Plan Alternatives

Construction Project/Activity	Emissions (Pounds per Day) (1)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Dredging/Dike Realignment - Pier S FEIS/FEIR						
Dredge/Material Disposal	21	114	635	3	26	24
Rock Placement	32	354	945	2	39	36
Total - Dredging/Dike Realignment	**53**	**468**	**1,580**	**5**	**65**	**60**
Wharf Construction - Pier S FEIS/FEIR						
Pile Construction	10	55	315	1	13	12
Deck Construction	9	262	101	0.2	6	6
Crane Delivery	137	287	2,491	69	47	40
Total - Wharf Construction	**156**	**604**	**2,907**	**70**	**66**	**58**
Terminal Backlands Construction - Pier S FEIS/FEIR						
Grading	13	65	167	0.3	256	132
Utilities	12	76	136	0.2	7	6
Paving	9	49	112	0.2	6	5
Terminal Buildings Construction	22	200	270	0.5	15	13
Total - Terminal Backlands Construction	**56**	**390**	**685**	**1**	**284**	**156**
Rail Yard Construction - Pier S FEIS/FEIR						
Grading	7	33	88	0.1	34	19
Utilities	11	66	128	0.2	7	6
Paving/Rail Construction	12	72	144	0.2	8	7
Total	**30**	**171**	**360**	**1**	**49**	**32**
Rail Yard Construction - Pier B DEIR						
Total Rail Yard Construction	**36**	**276**	**518**	**1**	**68**	**29**
Peak Daily Emissions (2)	**212**	**994**	**3,592**	**71**	**350**	**214**
SCAQMD Daily Significance Thresholds	**75**	**550**	**100**	**150**	**150**	**55**

Note: (1) Data are for the most recent year of emissions estimates from Pier S Marine Terminal + Back Channel Improvements Project FEIS/FEIR Table 3.2-8a and Year 4 in Pier B On-Dock Rail Support Facility Project DEIR Table 3.2-7.

(2) Includes Wharf Construction (for max combustive emissions) and terminal Backlands Construction (for max fugitive dust) for Pier S.

Table E-69. Example Mitigated Peak Daily Emissions for Construction Activities from the Proposed Plan Alternatives

Construction Project/Activity	Emissions (Pounds per Day) (1)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Dredging/Dike Realignment - Pier S FEIS/FEIR						
Dredge/Material Disposal	19	114	372	3	12	11
Rock Placement	29	354	556	1	18	16
Total - Dredging/Dike Realignment	**48**	**468**	**928**	**4**	**30**	**27**
Wharf Construction - Pier S FEIS/FEIR						
Pile Construction	9	55	181	1	6	5
Deck Construction	9	261	101	0.2	6	6
Crane Delivery	137	287	2,491	69	47	40
Total - Wharf Construction	**155**	**603**	**2,773**	**70**	**59**	**51**
Terminal Backlands Construction - Pier S FEIS/FEIR						
Grading	13	65	167	0.3	108	58
Utilities	12	76	136	0.2	7	6
Paving	9	49	112	0.2	6	5
Terminal Buildings Construction	22	200	270	0.5	15	13
Total - Terminal Backlands Construction	**56**	**390**	**685**	**1**	**136**	**82**
Rail Yard Construction - Pier S FEIS/FEIR						
Grading	7	33	88	0.1	16	10
Utilities	11	66	128	0.2	7	6
Paving/Rail Construction	12	72	144	0.2	8	7
Total	**30**	**171**	**360**	**1**	**31**	**23**
Rail Yard Construction - Pier B DEIR						
Total Rail Yard Construction	**29**	**269**	**175**	**1**	**53**	**18**
Peak Daily Emissions (2)	**211**	**993**	**3,458**	**71**	**195**	**133**
SCAQMD Daily Significance Thresholds	**75**	**550**	**100**	**150**	**150**	**55**

Note: (1) Data are for the most recent year of emissions estimates from Pier S Marine Terminal + Back Channel Improvements Project FEIS/FEIR Table 3.2-8b and Year 4 in Pier B On-Dock Rail Support Facility Project DEIR Table 3.2-9.

(2) Includes Wharf Construction (for max combustive emissions) and terminal Backlands Construction (for max fugitive dust) for Pier S.

Table E-70. Example Unmitigated GHGs for Construction Activities from the Proposed Plan Alternatives

Activity/Location	Year/MT CO2e				30-Year Amortized
	2011	2012	2013	Total	
Dredging/Dike Realignment - Pier S FEIS/FEIR					
Dredge/Material Disposal	4,229	873		5,102	
Rock Placement	4,080	6,666		10,746	
Indirect Emissions - Dredging	1,736	358		2,094	
Total - Dredging/Dike Realignment				**17,942**	**598**
Wharf Construction - Pier S FEIS/FEIR					
Pile Construction	264	3,254		3,518	
Deck Construction		1,903	746	2,649	
Crane Delivery		269		269	
Total - Wharf Construction				**6,436**	**215**
Terminal Backlands Construction - Pier S FEIS/FEIR					
Grading	2,275			2,275	
Utilities	1,973			1,973	
Paving		462		462	
Terminal Buildings Construction	4,361	5,023		9,384	
Total - Terminal Backlands Construction				**14,094**	**470**
Rail Yard Construction - Pier S FEIS/FEIR					
Grading	1,050			1,050	
Utilities	955	328		1,283	
Paving/Rail Construction		1,435		1,435	
Total - Rail Yard Construction				**3,768**	
Total Pier S FEIS/FEIR Construction				**42,240**	**1,408**
Rail Yard Construction - Pier B DEIR					
Total Rail Yard Construction				**38,910**	**1,297**

Note: (1) Data are for the most recent year of emissions estimates from Pier S Marine Terminal + Back Channel Improvements Project FEIS/FEIR Table 3.2-8a and Year 4 in Pier B On-Dock Rail Support Facility Project DEIR Table 3.2-7.

Table E-71. Example Mitigated GHGs for Construction Activities from the Proposed Plan Alternatives

Activity/Location	Year/MT CO2e				30-Year Amortized
	2011	2012	2013	Total	
Dredging/Dike Realignment - Pier S FEIS/FEIR					
Dredge/Material Disposal					
Rock Placement					
Total - Dredging/Dike Realignment					
Wharf Construction - Pier S FEIS/FEIR					
Pile Construction					
Deck Construction					
Crane Delivery					
Total - Wharf Construction					
Terminal Backlands Construction - Pier S FEIS/FEIR					
Grading					
Utilities					
Paving					
Terminal Buildings Construction					
Total - Terminal Backlands Construction					
Rail Yard Construction - Pier S FEIS/FEIR					
Grading					
Utilities					
Paving/Rail Construction					
Total Pier S FEIS/FEIR Construction				**42,240**	**1,408**
Rail Yard Construction - Pier B DEIR					
Total Rail Yard Construction				**32,970**	**1,099**

Table E-72. Potential Unmitigated GHGs for Construction Activities under the Proposed Plan

Project/Activity	*Acres*	*Factor*	*Total CO2e (MT)*
Protective Boat Basin (Berth F202)			
Dredge/Material Disposal - cy		0.03	210
Rock Placement - SF	12,000	0.01	107
Fill	0.3	0.01	42
Dock Construction			
Dock Demo			
Fourth Track at Ocean Boulevard			
Rail Yard - Compared to Pier B DEIR		0.10	3,891
Pier D Street Realignment			
Compared to Pier B DEIR		0.20	7,782
Pier S Shoreline Enhancement			
Dredge/Material Disposal - cy		0.01	72
Rock Placement		0.10	1,075
Pier J Terminal Redevelopment			
Cut/Fill	75	1.47	10,582
Rock Placement		1.00	10,746
Wharf Construction	4,000	1.25	8,045
Terminal Backlands Construction	212	1.33	18,675
Rail Yard	52	0.29	11,117
Pier S Mixed Use Development			
Wharf Construction			
Terminal Backlands Construction	125	0.78	11,011
Rail Yard			
Pier T Improvements			
Dredge/Fill - cy	70	1.37	9,877
Rock Placement		0.10	1,075
Wharf Construction		0.20	1,287
Terminal Backlands Construction		0.06	881
Rail Yard	65	0.36	13,896
Pier W Terminal Development			
Dredge/Fill - cy	100	1.96	14,110
Rock Placement - SF		1.00	10,746
Wharf Construction		1.00	6,436
Terminal Backlands Construction	100	0.63	8,809
Rail Yard		0.10	3,891
Total Construction GHGs - Proposed Plan			**154,362**
Total Construction GHGs - Proposed Plan - 30 Year Amortized			**5,145**

Table E-73. Potential Mitigated GHGs for Construction Activities under the Proposed Plan

Project/Activity	*Acres*	*Factor*	*Total CO2e (MT)*
Protective Boat Basin (Berth F202)			
Dredge/Material Disposal - cy		0.03	210
Rock Placement - SF	12,000	0.01	107
Fill	0.3	0.01	42
Dock Construction			
Dock Demo			
Fourth Track at Ocean Boulevard			
Rail Yard - Compared to Pier B DEIR		0.10	3,297
Pier D Street Realignment			
Compared to Pier B DEIR		0.20	6,594
Pier S Shoreline Enhancement			
Dredge/Material Disposal - cy		0.01	72
Rock Placement		0.10	1,075
Pier J Terminal Redevelopment			
Cut/Fill	75	1.47	10,582
Rock Placement		1.00	10,746
Wharf Construction	4,000	1.25	8,045
Terminal Backlands Construction	212	1.33	18,675
Rail Yard	52	0.29	9,420
Pier S Mixed Use Development			
Wharf Construction			
Terminal Backlands Construction	125	0.78	11,011
Rail Yard			
Pier T Improvements			
Dredge/Fill - cy	70	1.37	9,877
Rock Placement		0.10	1,075
Wharf Construction		0.20	1,287
Terminal Backlands Construction		0.06	881
Rail Yard	65	0.36	11,775
Pier W Terminal Development			
Dredge/Fill - cy	100	1.96	14,110
Rock Placement - SF		1.00	10,746
Wharf Construction		1.00	6,436
Terminal Backlands Construction	100	0.63	8,809
Rail Yard		0.10	3,297
Total Construction GHGs - Proposed Plan			**148,168**
Total Construction GHGs - Proposed Plan - 30 Year Amortized			**4,939**

Table E-74. Potential Unmitigated GHGs for Construction Activities under Alternative 1

Project/Activity	*Acres*	*Factor*	*Total CO2e (MT)*
Fourth Track at Ocean Boulevard			
Rail Yard - Compared to Pier B DEIR		0.10	3,891
Pier D Street Realignment			
Compared to Pier B DEIR		0.20	7,782
Pier S Shoreline Enhancement			
Dredge/Material Disposal - cy		0.01	72
Rock Placement		0.10	1,075
Pier S Mixed Use Development			
Wharf Construction			
Terminal Backlands Construction	125	0.78	11,011
Rail Yard			
Total Construction GHGs - Alternative 1			**23,830**
Total Construction GHGs - Alternative 1 - 30 Year Amortized			**794**

Table E-75. Potential Mitigated GHGs for Construction Activities under Alternative 1

Project/Activity	*Acres*	*Factor*	*Total CO2e (MT)*
Fourth Track at Ocean Boulevard			
Rail Yard - Compared to Pier B DEIR		0.10	3,297
Pier D Street Realignment			
Compared to Pier B DEIR		0.20	6,594
Pier S Shoreline Enhancement			
Dredge/Material Disposal - cy		0.01	72
Rock Placement		0.10	1,075
Pier S Mixed Use Development			
Wharf Construction			
Terminal Backlands Construction	125	0.78	11,011
Rail Yard			
Total Construction GHGs - Alternative 1			**22,048**
Total Construction GHGs - Alternative 1 - 30 Year Amortized			**735**

Table E-76. Potential Unmitigated GHGs for Construction Activities under Alternative 2

Project/Activity	*Acres*	*Factor*	*Total CO2e (MT)*
Protective Boat Basin (Berth F202)			
Dredge/Material Disposal - cy		0.03	210
Rock Placement - SF	12,000	0.01	107
Fill	0.3	0.01	42
Dock Construction			
Dock Demo			
Fourth Track at Ocean Boulevard			
Rail Yard - Compared to Pier B DEIR		0.10	3,891
Pier D Street Realignment			
Compared to Pier B DEIR		0.20	7,782
Pier S Shoreline Enhancement			
Dredge/Material Disposal - cy		0.01	72
Rock Placement		0.10	1,075
Pier S Mixed Use Development			
Wharf Construction			
Terminal Backlands Construction	125	0.78	11,011
Rail Yard			
Total Construction GHGs - Alternative 2			**24,190**
Total Construction GHGs - Alternative 2 - 30 Year Amortized			**806**

Table E-77. Potential Mitigated GHGs for Construction Activities under Alternative 2

Project/Activity	*Acres*	*Factor*	*Total CO2e (MT)*
Protective Boat Basin (Berth F202)			
Dredge/Material Disposal - cy		0.03	210
Rock Placement - SF	12,000	0.01	107
Fill	0.3	0.01	42
Dock Construction			
Dock Demo			
Fourth Track at Ocean Boulevard			
Rail Yard - Compared to Pier B DEIR		0.10	3,297
Pier D Street Realignment			
Compared to Pier B DEIR		0.20	6,594
Pier S Shoreline Enhancement			
Dredge/Material Disposal - cy		0.01	72
Rock Placement		0.10	1,075
Pier S Mixed Use Development			
Wharf Construction			
Terminal Backlands Construction	125	0.78	11,011
Rail Yard			
Total Construction GHGs - Alternative 2			**22,408**
Total Construction GHGs - Alternative 2 - 30 Year Amortized			**747**

Table E-78. Potential Unmitigated GHGs for Construction Activities under Alternative 3

Project/Activity	*Acres*	*Factor*	*Total CO2e (MT)*
Protective Boat Basin (Berth F202)			
Dredge/Material Disposal - cy		0.03	210
Rock Placement - SF	12,000	0.01	107
Fill	0.3	0.01	42
Dock Construction			
Dock Demo			
Fourth Track at Ocean Boulevard			
Rail Yard - Compared to Pier B DEIR		0.10	3,891
Pier D Street Realignment			
Compared to Pier B DEIR		0.20	7,782
Pier S Shoreline Enhancement			
Dredge/Material Disposal - cy		0.01	72
Rock Placement		0.10	1,075
Pier J Reduced Development			
Cut/Fill	75	1.47	10,582
Rock Placement		1.00	10,746
Wharf Construction	4,000	1.25	8,045
Terminal Backlands Construction	212	1.33	18,675
Rail Yard	52	0.29	11,117
Pier S Mixed Use Development			
Wharf Construction			
Terminal Backlands Construction	125	0.78	11,011
Rail Yard			
Pier T Improvements			
Dredge/Fill - cy	70	1.37	9,877
Rock Placement		0.10	1,075
Wharf Construction		0.20	1,287
Terminal Backlands Construction		0.06	881
Rail Yard	65	0.36	13,896
Total Construction GHGs - Alternative 3			**110,371**
Total Construction GHGs - Alternative 3 - 30 Year Amortized			**3,679**

Table E-79. Potential Mitigated GHGs for Construction Activities under Alternative 3

Project/Activity	*Acres*	*Factor*	*Total CO2e (MT)*
Protective Boat Basin (Berth F202)			
Dredge/Material Disposal - cy		0.03	210
Rock Placement - SF	12,000	0.01	107
Fill	0.3	0.01	42
Dock Construction			
Dock Demo			
Fourth Track at Ocean Boulevard			
Rail Yard - Compared to Pier B DEIR		0.10	3,297
Pier D Street Realignment			
Compared to Pier B DEIR		0.20	6,594
Pier S Shoreline Enhancement			
Dredge/Material Disposal - cy		0.01	72
Rock Placement		0.10	1,075
Pier J Reduced Development			
Cut/Fill	75	1.47	10,582
Rock Placement		1.00	10,746
Wharf Construction	4,000	1.25	8,045
Terminal Backlands Construction	212	1.33	18,675
Rail Yard	52	0.29	9,420
Pier S Mixed Use Development			
Wharf Construction			
Terminal Backlands Construction	125	0.78	11,011
Rail Yard			
Pier T Improvements			
Dredge/Fill - cy	70	1.37	9,877
Rock Placement		0.10	1,075
Wharf Construction		0.20	1,287
Terminal Backlands Construction		0.06	881
Rail Yard	65	0.36	11,775
Total Construction GHGs - Alternative 3			**104,770**
Total Construction GHGs - Alternative 3 - 30 Year Amortized			**3,492**

Table E-80. Prior Projects and Facility Metrics for use in Factoring Construction GHGs

Project/Facility	*Acres*
Pier S Container Terminal FEIS/FEIR	
Dredge/Material Disposal - cy, ~51 acres	881,000
Rock Placement - Tons	551,000
Wharf Construction - Feet	3,200
Terminal Backlands Construction	160
Rail Yard Construction	17
Pier B Rail Yard DEIR	
Rail Yard	182

Table E-81. Proposed Plan Project Facility Metrics for use in Factoring Construction GHGs

Project/Facility	*Acres*	*Factor*
Protective Boat Basin (Berth F202)		
Dredge/Material Disposal - cy		0.03
Rock Placement - SF	12,000	0.01
Fill	0.3	0.01
Dock Construction		
Dock Demo		
Fourth Track at Ocean Boulevard		
Rail Yard - Compared to Pier B DEIR		0.10
Pier D Street Realignment		
Compared to Pier B DEIR		0.20
Pier S Shoreline Enhancement		
Dredge/Material Disposal - cy		0.01
Rock Placement		0.10
Pier J Terminal Redevelopment		
Cut/Fill	75	1.47
Rock Placement		1.00
Wharf Construction - Feet, 23 acres	4,000	1.25
Terminal Backlands Construction	212	1.33
Rail Yard	52	0.29
Pier S Mixed Use Development		
Wharf Construction		
Terminal Backlands Construction	125	0.78
Rail Yard		
Pier T Improvements		
Dredge/Fill - cy	70	1.37
Rock Placement		0.10
Wharf Construction		0.20
Terminal Backlands Construction	10	0.06
Rail Yard	65	0.36
Pier W Terminal Development		
Dredge/Fill - cy	100	1.96
Rock Placement		1.00
Wharf Construction		1.00
Terminal Backlands Construction	100	0.63
Rail Yard		0.10

This page is intentionally blank.

Appendix F
Historic Resources Data

This page intentionally left blank.

Appendix F-1

Historic Resources Evaluation Report for the Port of Long Beach Master Plan Update

This page intentionally left blank.

Historic Resources Evaluation Report for the Port of Long Beach Master Plan Update

Annie McCausland, Susan Wood, and Maggie Wineland

Prepared By



Applied EarthWorks, Inc.
3550 E Florida Ave. Suite H
Hemet, CA 92544

Prepared For
Leidos
1180 Eugenia Place
Carpinteria, CA 93013

Submitted To
Port of Long Beach
4801 Airport Plaza Drive
Long Beach, CA 90815

May 2019
Final Report

CONTENTS

1 INTRODUCTION 1

2 METHODS 4
2.1 RECORDS SEARCH AND LITERATURE REVIEW 4
2.2 PROPERTY IDENTIFICATION 5
2.3 DOCUMENTATION 5
2.4 ARCHIVAL RESEARCH 5
2.5 EVALUATION 6

3 HISTORICAL CONTEXT 7

4 REGULATORY 12
4.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) 12
4.2 CITY OF LONG BEACH REGULATIONS 13

5 HISTORIC RESOURCES AND EVALUATIONS 15
5.1 KOCH CARBON BULK TERMINAL (KOPPEL GRAIN TERMINAL) – 1020 PIER F AVE. / BERTH F211 15
5.1.1 Property-specific History 15
5.1.2 Description 18
5.1.3 Evaluation 19
5.2 JACOBSEN PILOT SERVICES, INC. – 1259 PIER F AVE. / BERTH F202 23
5.2.1 Project-specific History 23
5.2.2 Description 28
5.2.3 Evaluation 28
5.3 TRANSIT SHED – 1480 PIER F AVE. / BERTHS F206-F207 31
5.3.1 Property-specific History 31
5.3.2 Description 34
5.3.3 Evaluation 37
5.4 WAREHOUSE - PIER F AVE. / BERTHS F204–F205 38
5.4.1 Property-specific History 38
5.4.2 Description 40
5.4.3 Evaluation 40

6 CONCLUSIONS 44

7 REFERENCES 45

FIGURES

1-1 Port Master Plan Update (PMPU) and Coastal Zone Boundaries 2
1-2 Resources selected for evaluation in support of the PMPU..... 3
5-1 Irving and Leonard Koppel, second and fourth from left. From *Harbor Highlights*, 1961. Courtesy of the Port of Long Beach Records Department. 15
5-2 Koppel Grain Terminal circa early 1960s. Courtesy of PortTown.POLB.com..... 16
5-3 Koppel Grain Terminal in 1962, looking west. Courtesy of PortTown.POLB.com 16
5-4 Concrete silos during construction, 1961. Courtesy of PortTown.POLB.com..... 17
5-5 Koppel Grain Terminals circa late 1960s. Courtesy of PortTown.POLB.com. 18
5-6 Koch Carbon Bulk Terminal Berth F211. Courtesy of PortTown.POLB.com..... 19
5-7 Koch Carbon Bulk Terminal (Koppel Grain Terminal) property boundary..... 20
5-8 View of the concrete silos, 2019..... 21
5-9 Headhouse and an original corrugated iron enclosure for up-ending train cars, 2019. . 21
5-10 Navy mole on Pier F (Pier A), 1945. Courtesy of POLB Records Department. 23
5-11 Pier Point Landing and the original Jacobsen Pilot Services, Inc. Station, circa 1964. Courtesy of PortTown.POLB.com..... 24
5-12 Jacobsen Pilot Services Station, circa 1946-1948. Courtesy of POLB Records Department, featured in *Images of America: The Port of Long Beach*. 25
5-13 Oil derrick repurposed for off-shore radar system, circa 1949. Courtesy of POLB Records Department..... 26
5-14 Jacobsen Pilot Services, Inc. Pilot Station (lower right corner). Courtesy of PortTown.POLB.com 26
5-15 Illustration of Captain J.A. Jacobsen from *Harbor Highlights*, 1982. Courtesy of the Port of Long Beach Records Department. 27
5-16 Jacobsen Pilot Services, Inc. property boundary. 29
5-17 Jacobsen Pilot Services, Inc. Pilot Station, north façade, 2019. 30
5-18 Viewing deck and entrance of Jacobsen's, east façade, 2019..... 30
5-19 Moderne Transit Sheds on Pier F, circa 1955. Courtesy of the Port of Long Beach Records Department..... 32
5-20 Clear span transit sheds on Pier F, 1962. Courtesy of the Port of Long Beach Records Department..... 33
5-21 Transit Shed Berths 206-207, circa 1965. Courtesy of the Port of Long Beach Records Department..... 34
5-22 Transit Shed at Berth F206/207, south façade, 2019..... 35
5-23 The berth side elevation's roll up doors and ribbon windows. 2019..... 35
5-24 Transit Shed at Berths F206-F207 property boundary. 36
5-25 The original plan was for two structures, a warehouse and a transit shed, 1966. Courtesy of the Port of Long Beach Records Department. 38
5-26 By 1968, the mixed-use shed was completed with driveway access from Pier F Avenue, 1968. Courtesy of the Port of Long Beach Records Department. 39
5-27 Warehouse at Berths F204-F205 property boundary..... 41
5-28 South and east elevations, looking northwest, 2019..... 42
5-29 Warehouse interior and tapered steel trusses. 2019..... 42

TABLES

1-1 Properties Selected for Evaluation in Support of the Port of Long Beach Master Plan Update 1
2-1 Previous Cultural Studies Consulted 4
6-1 Results of Resource Evaluations in Support of the Port of Long Beach Master Plan Update 44

1
INTRODUCTION

The Port of Long Beach (POLB) is preparing a Program Environmental Impact Report (PEIR) for the Port of Long Beach Master Plan Update (PMP Update). The PMP Update serves as a long-range plan to establish policies and guidelines for future development at the Port of Long Beach (Port), which is situated in San Pedro Bay approximately 20 miles south of downtown Los Angeles. The PMP Update will serve as the Local Coastal Plan for the portion of the Port's jurisdiction that falls within the coastal zone, as required under the California Coastal Act. Accordingly, the PMP Update will focus on the entire Port boundary that lies within the coastal zone (i.e., the Port's Coastal Zone Boundary) (Figure 1-1). In general, the PMP Update area is bounded by the City of Long Beach to the north and east and the Port of Los Angles to the west. The PEIR is prepared by the POLB as lead agency pursuant to the California Environmental Quality Act (CEQA) and California Public Resources Code (PRC) Section 21000 et seq. The PEIR will analyze potential environmental impacts from a Port-wide perspective that is programmatic in nature. As such, it will not specifically analyze individual projects. Project-specific analysis will be undertaken at the appropriate time when individual projects are proposed and carried forward for environmental review.

Applied EarthWorks, Inc. (Æ) prepared this technical report in support of the PMP Update under subcontract to Leidos at the request of the POLB. Four properties within Pier F were identified as over 50 years old and in need of evaluation (Table 1-1 and Figure 1-2). The properties were selected in consultation with POLB staff and are not at this time identified in proposed individual projects. The purpose of this report is to evaluate the eligibility of the selected properties meeting the age criteria for the California Register of Historical Resources (CRHR) and the Long Beach Register of Historic Landmarks (LBRHL).

Table 1-1
Properties Selected for Evaluation in Support of the Port of Long Beach Master Plan Update

Property Name	Buildings/Structures	Address	Harbor Location
Transit Shed	1	1480 Pier F Ave.	Berths F206-F207
Jacobsen Pilot Services, Inc. Pilot Station	2	1259 Pier F Ave.	Berth F202
Koch Carbon Bulk Terminal (Koppel Grain Terminal)	1	1020 Pier F Ave.	Berth F211
Warehouse	1	1020 Pier F Ave.	Berths F204-F205



Figure 1-1 Port Master Plan Update (PMPU) and Coastal Zone Boundaries.



Figure 1-2 Resources selected for evaluation in support of the PMPU.

2
METHODS

Æ carried out four basic tasks to complete the selection, documentation, and historical evaluation of properties located at the Port. First, a California Historic Information System (CHRIS) records and literature search was performed at the South Central Coastal Information Center (SCCIC) in order to identify previously documented historical resources within the Port of Long Beach (POLB). Æ then conducted a reconnaissance survey of Pier F using historic aerials provided by the Port to identify properties 50 years or older and in need of evaluation. Once the list of properties to be evaluated was decided upon, site-specific research on the history of each was completed. Æ Architectural Historians, Annie McCausland and Maggie Wineland performed a historic built-environment survey to document the properties and their associated features. Finally, Æ Architectural Historians assessed the historical significance and integrity of each property within the historic context to determine each property's eligibility for listing in the California Register of Historic Resources (CRHR) and/or the City of Long Beach Register of Historic Landmarks (LBRHL). These steps are described in greater detail below.

2.1 RECORDS SEARCH AND LITERATURE REVIEW

Prior to the systematic cultural resource survey of Pier F, a literature review and records search were conducted at the SCCIC, housed at the California State University, Fullerton on July 25, 2018. This search included the entire Port of Long Beach Harbor District. The records search results were needed in order to determine whether any prehistoric or historical cultural resources have been recorded previously within the survey area prior to the intensive pedestrian survey. Additional sources consulted during the archaeological literature and records search include the Office of Historic Preservation (OHP) Archaeological Determinations of Eligibility and the Directory of Properties in the Historic Property Data File. The LBRHL was also consulted to see if any properties within the survey area are currently listed.

Cultural reports acquired from POLB as well as reports from the Æ library were also consulted during the literature review. Reports consulted from the Æ in-house library and from POLB are listed in Table 2-1.

Table 2-1
Previous Cultural Studies Consulted

Company	Date	Author(s)	Title
Æ	2006	Hamilton, M. Colleen	Peer Review for Port of Long Beach Cultural Resources Inventory, Middle Harbor
CH2M Hill	2006	Barrier, C. & Calvit, E.	Port of Long Beach Cultural Resources Inventory, Middle Harbor
Parsons	2012	Chasteen, Carrie	Identification and Evaluation of Smokehouses

Company	Date	Author(s)	Title
Æ	2010	Morlet, Aubrie & Hamilton, M. Colleen	Port of Long Beach Administration Building: Photographic, Architectural, and Historical Documentation
Rincon	2010	Carmack, Shannon	SCE Cerritos Channel Tower Removal Project: Historic Properties Assessment
Atkins	2018	Pentney, Sandra; Maximillian,Jewett; Mendoza, Mariela & Shouse, Sara	Historical Resource Research Report: Carnival Cruise Line Port of Long Beach Dredge Maintenance & Dock Improvements
LSA	2018	Collison, Kerrie	Historic Property Survey Report: Class 1 Bike Path on Pier J
AECOM	2015	Beherec, Marc A.	Memorandum: Pacific Crane Maintenance Company Chasis Support Faciltiy Project Cultural Resources Records Search
Tetra Tech, Inc.	2011	Benfield, Heather	Port of Long Beach Smoke House Relocation Project

2.2 PROPERTY IDENTIFICATION

On January 16, 2019, *Æ* was given access to the PortAtlas aerial database maintained by POLB. Architectural Historian, Annie McCausland, assessed the historic aerials on PortAtlas to identify properties 50 years or older in age. *Æ* undertook a review of previously recorded resources on the Port's facilities to determine where gaps in recordation existed.

2.3 DOCUMENTATION

On January 16, 2019, McCausland and Wineland surveyed and documented the four selected properties. Each property and its features were recorded on a California Department of Parks and Recreation Primary Record (DPR 523A) and Building, Site, and Object Record (DPR 523B). Photographs were taken with a Fujifilm digital camera.

2.4 ARCHIVAL RESEARCH

Architectural Historians, Annie McCausland and Maggie Wineland conducted archival research at the POLB Records Department on January 17, 2019 and January 18, 2019. Historic as-builts, photographs, maps, and POLB publications, were collected and consulted through consultation with the Records Department staff.

2.5 EVALUATION

Architectural Historians Annie McCausland, Susan Wood, and Maggie Wineland, evaluated the selected properties for historical significance by applying the eligibility criteria of the CRHR and the LBRHL. The significance of each resource was considered with reference to the historic context presented in Chapter 3. Whereas the CRHR and LBRHL criteria provide the general standards of significance, the historic context delineates the specific association with history through which a resource may have achieved significance. Significance is based on how well the resource being considered represents one or more of the themes discussed in the historic context and its association with important events or people as well as its inherent architectural and engineering qualities and potential to yield information about the past. Moreover, in order to be considered as representative of a particular historical theme, a resource not only must possess significant associations but also must retain integrity—it must possess the ability to convey its importance. The seven aspects of integrity are location, setting, feeling, association, workmanship, materials, and design. All of these factors were considered during the eligibility evaluation.

3
HISTORICAL CONTEXT

Much of the historical setting has been adapted from Aubrie Morlet, *Documenting the Port of Long Beach Administration Building: A Work of Art on the Water* (Morlet 2014).

Although Juan Rodriguez Cabrillo first discovered San Pedro Bay on October 8, 1542, it would be the landing of 1734 by Cabrera Buena that would give the bay its current name (Queenan 1986:9–10). Following a positive report from Buena, Spanish leaders eventually determined that development of Alta California was in their best interest. With Gaspar de Portolá leading the way, Father Junipero Serra established several missions during the exploration period including Mission San Diego de Alcala in 1769, Mission San Gabriel in 1771, and Mission San Juan Capistrano in 1776. These missions required a location from which they could receive goods from Spanish ships to supplement mission-produced products, and San Pedro Bay provided a safe harbor. Both the mission at San Gabriel and San Juan Capistrano utilized San Pedro Bay for trading (Queenan 1986:13).

In 1784, Manuel Perez Nieto, a veteran of the Portolá expedition, was granted a 300,000-acre section of land that includes what is now the City and Port of Long Beach. Following the death of Nieto in 1804, his son Juan José subdivided the land into five ranchos. In 1843, John Temple purchased Rancho Los Cerritos with several miles of its border along San Pedro Bay. Five years later, Temple, together with his partner Juan Alexander, purchased additional waterfront property from the Rancho Los Palos Verdes located on the west portion of the bay. This was the location of Alexander's first general store and shipping company. Goods were moved between the store and the bay by cart and oxen, a slow and dangerous task due to the rough terrain and bandits along the route. As the transportation of passengers increased, Diego Sepulveda, an alcalde of the Pueblo of Los Angeles, saw an opportunity and created the first stagecoach line. Sepulveda's landing included the construction of the first wharf, storehouse, and passenger house on San Pedro Bay around 1850 (Queenan 1986:23).

Following the annexation of California by the United States in 1848, the population in the Los Angeles area exploded. One new arrival saw great potential in the San Pedro Bay region. Phineas Banning was an industrious man and his hard work paid off when he purchased Temple's share of his shipping company. Banning immediately set out to enlarge the existing business. After a storm destroyed the wharf in 1857, Banning decided to relocate the business to another area that he had previously purchased on the bay. This portion of the San Pedro Bay was mostly mud but Banning was determined. He proceeded to drain the area and develop the land, naming the site after his hometown of Wilmington, Delaware. Banning constructed flat-bottomed barges and shallow-draft steamers to overcome the shallow water that lay at his wharf. Banning's ingenuity and improvements made Wilmington the busiest wharf on San Pedro Bay (Queenan 1986:26).

Fort Drum, created in 1861 in support of the Union Army, expedited the development of Wilmington and the success of Banning and his partner. When Army Captain Phil Sheridan arrived in Wilmington, Banning donated 60 acres in support of a military installation. In return,

the military awarded Banning the contract to construct the buildings for the Fort. Known as Fort Drum, the barracks were abandoned in 1866, impacting the local economy (Queenan 1986:29). Nonetheless, during this time the first telegraph, post office, and newspaper were established in Wilmington, connecting the people and the wharf to Los Angeles.

Elected State Senator in 1865, Banning began pushing improvements for both southern California and Wilmington. Los Angeles bonds financed the Los Angeles and San Pedro Railroad, completed in 1869. The line ran for 21 miles from Los Angeles to Wilmington's wharf. Three years later, the Southern Pacific Railroad purchased the line connecting it to their network of statewide lines and, more importantly, to the transcontinental railroad. This particular rail line was vital to the development of local communities through the import of lumber from the north. For several decades, this commodity would dominate the harbor's commerce. Following the dredging of the San Pedro Bay channel in 1881, the Southern Pacific extended the Los Angeles and San Pedro line from Wilmington to San Pedro.

The Long Beach Water & Land Company bought a land option of 4,000 acres from J. Bixby & Company, the owners of the Rancho Los Cerritos and Rancho Los Alamitos, in 1882 and began selling parcels for the new community. In 1884, Long Beach, named after the town's 6-mile stretch of beach, received its first wharf. During that same year, a general merchandise store with post office and the Long Beach Hotel were constructed. Over the next three years, the growth in business attracted new residents with the population reaching 800 in 1888. That same year, the City of Long Beach voted to incorporate, only to reverse the decision in 1896 over liquor issues. As city services began to break down, the town voted to re-incorporate in 1897, the same year that Congress approved the funding to build a breakwater in San Pedro Bay. Sadly, the much-needed breakwater would not be completed until 1911.

During the construction of the breakwater, visions of a port on Long Beach surfaced in local newspapers. Funds appropriated in 1903 to deepen the harbor in Wilmington gained the interest of investors. Formed for the development of the harbor, the Long Beach Land and Navigation Company purchased 800 acres west of Long Beach with the intent of creating a shipping canal from the Cerritos Slough. In 1906, the Los Angeles Dock and Terminal Company purchased this land at the mouth of the Los Angeles River and dredged out three channels for dockage. The new development led to the relocation of the Craig Shipbuilding Company, which brought new enthusiasm to the port project. In September 1909, the City of Long Beach passed a bond to purchase frontage on Channel No. 3 (Queenan 1986:67). This purchase and subsequent development made the city see the benefits of operating a port. As commercial development increased on the port, so grew the city. The population increased dramatically from 12,000 residents in 1905 to 40,000 in 1914 (Sanborn Map and Publishing Company 1905; 1914).

Officially founded on June 24, 1911, with a grant of trust from the State of California over the tidelands, the Port of Long Beach received its first official cargo on Pier 1 from the S.S. Iaqua. Within the next year, passenger steamship service was established, and development projects continued to move forward (Queenan 1986:68). Several large industries moved into the port during the first five years after opening, including the Southern California Edison Company's Long Beach Steam Plant, the Western Hardwood Lumber Company yards, the Long Beach Salt Company plant, American Potash plant, and a large fish canning plant. Other plants located nearby include the California Woolen Manufacture Company, Star Drilling Machine Company,

and the California Glass Insulator Company (Sanborn Map and Publishing Company 1914). All of the commercial business increased ship activity at the new port, forcing the city to take on additional improvements.

Unfortunately, the Los Angeles Dock and Terminal Company had problems with sand and silt continuously being deposited from the Los Angeles River into the port channels and restricting ship movement. Constant dredging of the channels was necessary, consuming time and financial resources. As a result, in 1916, the City of Long Beach took over the dredging projects and acquired the deeds to the channels and nearby land from the bankrupted Dock and Terminal Company (Queenan 1986:79). In 1917, the Los Angeles County Flood Control District was created to construct a silt diversion channel for the Los Angeles River that diverted floodwater filled with sand and silt into the ocean. Both of these efforts assisted the port in achieving "deep water" status in 1926.

With the discovery of oil at Signal Hill in 1921 (to become the Wilmington Oil Field), the City of Long Beach received a large increase in city revenues that could be devoted to harbor improvements. In 1924, a $5 million bond was approved to build a breakwater and other improvements intended to protect the harbor. Four years later, another bond measure passed to construct additional piers, wharves, and facilities, including Piers A and B in the outer harbor, and to reconstruct the older Municipal Wharf. In addition to the pier project, the city built a municipal rail line that connected to both the Union Pacific Railroad and the Pacific Electric Railroad, improving the movement of cargo around the port (Port of Long Beach 1981:10). While these much-needed improvements did result in unprecedented traffic, revenue to the port could not be sustained. The Great Depression would keep the port from realizing this traffic volume again until 1938.

In 1936, the General Petroleum Corporation discovered oil in the Long Beach harbor. This event led to the hiring of the Westgate-Greenland Oil Company by the Long Beach Harbor Department to explore the harbor for oil. The first oil well, brought in on March 8, 1938, prompted the city to create a Petroleum Division, which contracted with the Long Beach Oil Development Company. Some 126 wells were operating within the tidelands in the next five years. Revenue generated from the oil allowed the port to pursue several important projects, including the construction of the first transit shed at Pier A, the hydraulic dredging of the inner harbor creating a nine-block landmass south of Seaside Boulevard that would become the Terminal Island Naval Base, and construction of a Port of Long Beach Administration Building at the foot of Pier C in the then-popular Mission Style (Port of Long Beach 1981:10).

In 1940, the U.S. Navy took control of 104 acres on the east side of Terminal Island and constructed "Victory Pier" along the southern end of Pier A (later renamed Pier F). The Navy had docked ships at the Long Beach Harbor since 1919 but did not officially open a base until 1942 (Queenan 1986:113). During World War II, all nonmilitary construction halted, giving the Navy full access to the port. When construction resumed in 1946, the port built the first clear-span transit shed on Pier A. As the 1940s came to a close, the port completed the expansion of Pier B and the addition of the new Pier C (Port of Long Beach 1981:10). At the start of 1950, Piers A, B, and C made up the outer harbor and Channels 2 and 3 constituted the inner harbor, but all of this would soon change as the port began a large expansion program aimed at better competing with the neighboring Port of Los Angeles.

While the city and harbor reaped the financial benefit of oil extraction, the grounds surrounding the harbor paid the consequences. In 1945, a United States Coast and Geodetic Survey reported that the ground had subsided 4.2 feet at the east end of Terminal Island. Further investigation revealed that other areas along the Long Beach waterfront had also subsided several feet. Subsidence damaged the Terminal Island Bridge, the Naval Shipyard, and buildings at the Craig shipyard. In order to combat this problem, the port began Operation Big Squirt in 1953. Following the successful testing of injecting saltwater into the areas depleted of oil, repressurization efforts intensified in 1958, reaching over 1 million barrels of water injected each day into the voids by 1960. That same year the Long Beach Board of Harbor Commissioners reported in Harbor Highlights that subsidence had halted and several areas had now stabilized (Port of Long Beach 1960:1,5).

While efforts to correct the subsidence issue were a priority, the compensation measures spurred new construction. The port replaced old wooden wharfs with new reinforced concrete facilities that were elevated to avoid future subsidence. Eight additional clear-span transit sheds were built, also of reinforced concrete, to create a fireproof environment attractive to the shipping industry. The expansion program developed and approved by the Harbor Commission in 1957 proposed the creation of four new piers off the southern end of Pier A. The plan, envisioning a build-out over the next 20 years, would add 41 berths to the existing 30. Following the approval of the new plan, the port began dredging the existing Pier E (as the site for the new Richfield crude petroleum terminal) and used the fill to partially create the new landmass needed for Piers F and G (Port of Long Beach 1957:1–3). It was during this build-out phase that the need for a new administration building was fully realized.

The Harbor Commission initially pursued adding on to the existing Administration Building at 1331 El Embarcadero but soon realized that the existing site was too unstable. In September 1956, the commission chose Friend and Dedrick to jointly design a new building. A preliminary design was approved in July 1957 that included a round reflecting pool in front of a mural that told the history of the harbor. By the time that specifications were issued in February 1958, the pool had been reduced to a curved reflecting pool that matched the dimensions of the mural. Once the contract was awarded in March, construction of the new administration building began in June 1958. The street that it faces was renamed Harbor Plaza in August 1959 (Board of Harbor Commissioners 1959).

The construction of Piers F and G begun in 1958 as part of this building phase was completed one year after the Administration Building (in 1961). This initial expansion beyond the original outer harbor area changed the map for the Port of Long Beach; truly it had emerged as the "World's Most Modern Port." The old outer harbor, consisting of Piers A, B, C, D, and E, became the Middle Harbor and the new Outer Harbor consisted of Piers F and G. The new transportation mode of "containerization" reached the port in 1962. Cargo shipped in these large metal containers revolutionized the port's operation capacity by increasing available storage space (the containers could be stacked) and improving cargo movement out of the port (with the ease of loading trucks and trains). Combined with the opening of Highway 710 in 1958, traffic moved efficiently in and out of the port (Port of Long Beach 1958). This new shipping tool urged the port to begin construction of the new Pier J and the extension of Pier F in 1962. Completed in 1965, the new and expanded piers created over 300 acres of much-needed space for container

unloading and storage. Pier J was expanded again in 1971 and 1975 to accommodate a container and automobile shipping terminal (Port of Long Beach 1981:11).

From the 1980s to the present POLB has been improving its infrastructure and technology to expand containerization facilities. Containerization lead to intermodalism, the movement of cargo on a single bill of lading. Intermodalism allows for one transportation entity to manage the entire move, from a factory in Asia to a warehouse anywhere in the United States. This has simplified trade tremendously, making it more efficient and requiring less labor.

Due to intermodalism, during the 1990s and 2010s POLB was able to double its cargo volume each decade. Some predict that the port will treble its cargo volume by 2020 (Bonacich and Wilson 2008:59). In Getting the Goods, Bonacich and Wilson believe that the success of POLB is a combination of geographic location, prime infrastructure, logistics services, and the size of the local market. The POLB combined with the Port of Los Angeles (POLA) is the largest container port complex in the United States (Bonacich and Wilson 2008:58). It has been estimated that 40 percent of the entire nation's containerized import trade passes through POLB/POLA (Bonacich and Wilson 2008:58).

4
REGULATORY

4.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Port of Long Beach (POLB) is preparing a PEIR update to analyze the potential significant environmental effects of implementing the PMP Update in accordance with the requirements of CEQA Guidelines Section 15168. Because future projects have the potential to impact cultural resources, POLB selected properties to be assessed for eligibility for the California Register of Historical Resources (CRHR) and the Long Beach Register of Historic Landmarks (LBRHL), to better inform future CEQA reports.

The CEQA (PRC 21000 et seq.) requires consideration of project impacts on archaeological or historical sites deemed to be historical resources. For the purposes of CEQA, a "historical resource" is a property listed in, or determined to be eligible for listing in, the CRHR, included in a local register of historical resources (as defined in PRC 5020.1[k]), or identified as significant in a historical resources survey. According to the CEQA Guidelines, historical resources may include, but are not limited to:

Any object, building, structure, site, area, place, record or manuscript which a lead agency determines to be historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California . . . [CEQA Guidelines Section 15064.5(a)(3)].

According to the CEQA Guidelines, a resource is eligible for the CRHR if it meets the criteria defined in Section 5024.1 of the California PRC:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(2) Is associated with the lives of persons important in our past;

(3) Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values;

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

The site must also, except in rare circumstance, be 50 years old or older. In addition, the resource must retain enough of its historic integrity to convey the reason for its significance. If the resource does not retain sufficient integrity, then the resource is not eligible for listing on the CRHR. The criteria of integrity as defined by the National Parks Service are location, setting, materials, design, craftsmanship, feeling, and association (National Park Service 2002).

Project impacts are not considered herein for the properties being assessed, and no mitigation measures for lessening the significance of impacts are discussed as allowed for by CEQA.

4.2 CITY OF LONG BEACH REGULATIONS

In 1978, the City of Long Beach created a Cultural Heritage Committee, which subsequently became the Cultural Heritage Commission, and adopted a Cultural Heritage Commission Ordinance in 1992 as part of the effort to become a Certified Local Government. The Long Beach 2030 update to the General Plan includes a Historic Preservation Element that provides the framework for a comprehensive preservation program that integrates historic preservation into the City's planning procedures.

Resources included in a local register of historical resources (pursuant to the PRC § 5020.1(k)) or identified as significant in a historical resources survey (meeting the criteria in PRC §5024.8(g)) also are presumptively considered "historical resources" for the purposes of CEQA.

City of Long Beach Municipal Code, Title 2, Chapter 2.63 establishes the procedures for the designation of individual landmarks and landmark districts for listing in the LBRHL. A resource may be recommended for designation as a landmark or landmark district if it manifests one (1) or more of the following criteria:

A. It possesses a significant character, interest or value attributable to the development, heritage or cultural characteristics of the City, the southern California region, the State or the nation; or

B. It is the site of a historic event with a significant place in history; or

C. It is associated with the life of a person or persons significant to the community, City, region or nation; or

D. It portrays the environment in an era of history characterized by a distinctive architectural style; or

E. It embodies those distinguishing characteristics of an architectural type or engineering specimen; or

F. It is the work of a person or persons whose work has significantly influenced the development of the City or the southern California region; or

G. It contains elements of design, detail, materials or craftsmanship which represent a significant innovation; or

H. It is a part of or related to a distinctive area and should be developed or preserved according to a specific historical, cultural or architectural motif; or

I. It represents an established and familiar visual feature of a neighborhood or community due to its unique location or specific distinguishing characteristic; or

J. It is, or has been, a valuable information source important to the prehistory or history of the City, the southern California region or the State; or

K. It is one of the few remaining examples in the City, region, State or nation possessing distinguishing characteristics of an architectural or historical type; or

L. In the case of the designation of a tree(s) based on historic significance, that the tree(s) is (are) associated with individuals, places and/or events that are deemed significant based on their importance to national, State and community history; or

M. In the case of the designation of a tree(s) based on cultural contribution, that the tree(s) is (are) associated with a particular event or adds (add) significant aesthetic or cultural contribution to the community (City of Long Beach 2005).

5
HISTORIC RESOURCES AND EVALUATIONS

5.1 KOCH CARBON BULK TERMINAL (KOPPEL GRAIN TERMINAL) – 1020 PIER F AVE. / BERTH F211

5.1.1 Property-specific History

The Koch Carbon facility on Pier F in the Port of Long Beach (POLB) was built by the Port Harbor Department in 1960 and 1961 for operation by Koppel Bulk Terminals under a 40-year lease agreement (Cunningham and Cunningham 2015). The Koppel Brothers (Koppel Bros.) were locally respected businessmen with expertise in the shipping industry who organized the Koppel Bulk Terminal Company specifically to engage in the import and export of bulk grains. (*Wilmington Daily Press Journal* 1943:2; *Independent Press-Telegram* 1959:70). Irving Koppel was president of Koppel Bros. and his brother Leonard and son George were vice presidents when the Koppel Grain Terminal was conceived in the late 1950s (Figure 5-1). The new grain terminal facility was planned and designed in consultation with grain and other experts in the shipping field to be unmatched among Pacific Ports in capacity for both loading and unloading vessels (Cunningham and Cunningham 2015; *Independent Press Telegram* 1959:70; Port of Long Beach 1959:15–17). Additionally, the facility that would be the fourth largest building in Los Angeles upon completion was built in anticipation of expansion as business allowed (*Independent Press-Telegram* 1959:70; *Los Angeles Times* (*LA Times)* 1959:E5). The 216-foot Koppel Grain Terminal with 22 concrete silos began operations in 1961 (Figure 5-2 and Figure 5-3). In 1964, the terminal was expanded with the addition of 18 larger concrete silos to provide double the capacity during a period of grain export growth due to the Asian market (Cunningham and Cunningham 2015; *LA Times* 1963:55). After Leonard Koppel's death in 1969, his son George grew and diversified the company he inherited (*Press-Telegram* 2011).



Figure 5-1 Irving and Leonard Koppel, second and fourth from left. From *Harbor Highlights,* 1961. Courtesy of the Port of Long Beach Records Department.

The original Koppel Grain Terminal was designed by the engineering firm of Marshall, Barr, and Associates of Seattle, Washington (*LA Times* 1959:E5; Marshall 1962:A-4). The firm had already made history that year when the 3.3 million bushel grain terminal they designed was built for the North Pacific Grain Growers, Inc. at the Port of Kalama in Washington state utilizing the largest single, monolithic slip-concrete pour ever attempted (*The Daily Chronicle* 1961). Little is known of the firm or its partners beyond the few times they are noted in the press or in trade literature referring to work on similar concrete grain terminals built on the West Coast (Wilcox 1962:40).

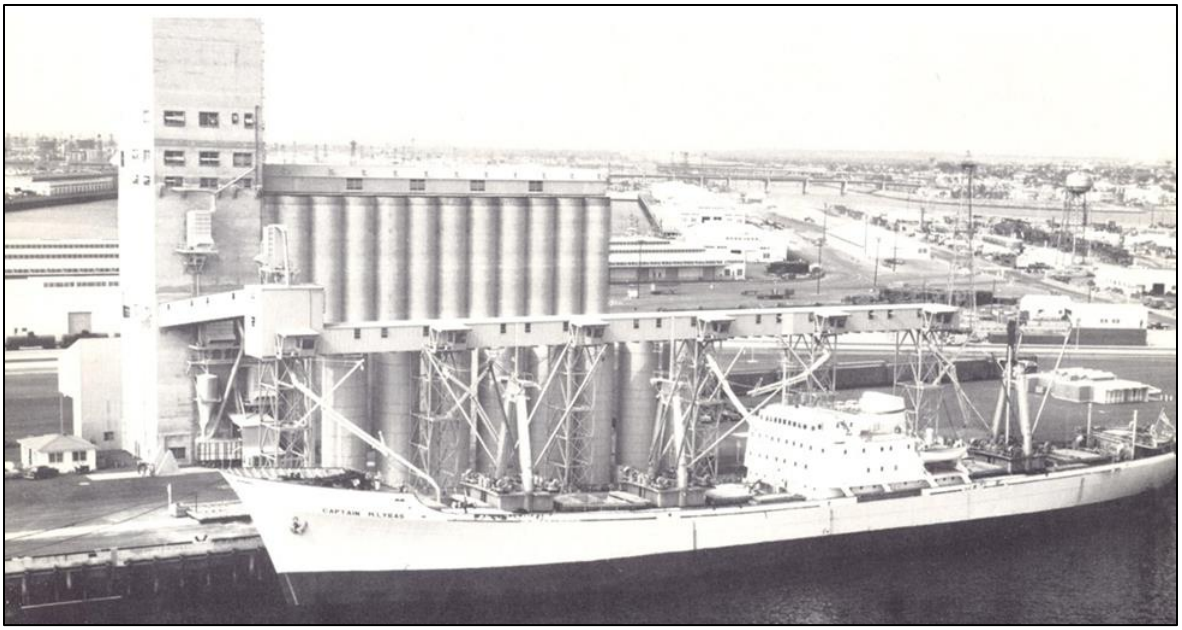


Figure 5-2 Koppel Grain Terminal circa early 1960s. Courtesy of PortTown.POLB.com.

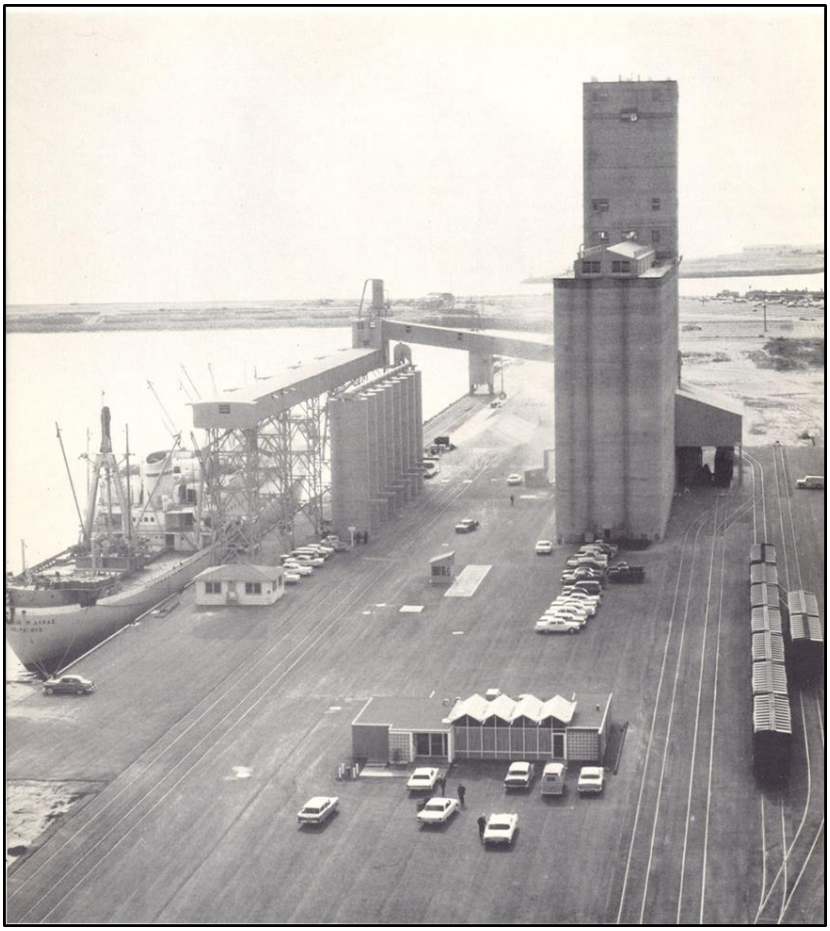


Figure 5-3 Koppel Grain Terminal in 1962, looking west. Courtesy of PortTown.POLB.com

When the Koppel Grain Terminal facility was designed and built, almost all large grain elevators were being built of concrete. California's grain industry overcame the dangers of wooden elevators which were particularly prone to spontaneous combustion with the use of concrete, and by 1916, all grain terminals over 100,000-bushel capacity were built of this material (Humphrey 1917:343; *San Francisco Chronicle* 1922:40). The slip-form construction concrete pouring method used for the construction of the facility was tricky. In order to prevent weak spots in the concrete silos, they each had to be formed in one continuous pour to avoid any "wet to dry" connections. This necessitated a slow, continuous pour into a slowly ascending cylindrical form (Figure 5-4). The construction required 62 concrete trucks and shifts of 150 men working around the clock (Cunningham and Cunningham 2015). The terminal, when finished, included 38 silos over 120 feet tall and a large workhouse from where the loading and unloading of ships and railcars was controlled (Cunningham and Cunningham 2015).



Figure 5-4 Concrete silos during construction, 1961. Courtesy of PortTown.POLB.com.

At the time it was built, the Koppel Grain Terminal was the largest grain loading terminal on the west coast handling wheat, safflower seed, sorghum grains and animal feed for export and copra and barley for import (Queenan 1986:134; Cunningham and Cunningham 2015). Built at a cost of $2.5 million (about $19 million in today's dollars), the facility could load ships at the rate of 43,000 bushels per hour and had a mechanism for quickly unloading rail cars (*Independent Press-Telegram* 1959:70). One of the original and more celebrated features of the new facility was the ability to tilt a train car off the track, spilling its load in a shed near the headhouse for uptake into the system, and a control booth with a window inside the shed to allow staff to monitor the process (Marshall 1962:A-4; Port of Long Beach 1961:22). The terminal's efficiency was a significant factor in the need to double capacity soon after it opened to meet demand. The

facility completed a second bank of sixteen concrete silos by 1964 as shown in Figure 5-5 (Cunningham and Cunningham 2015:348).



Figure 5-5 Koppel Grain Terminals circa late 1960s. Courtesy of PortTown.POLB.com.

In 1979, the grain terminal was taken over by Agrex, Inc., a subsidiary of Mitsubishi, and later came to serve in other commodities. The cargo system and facilities of the grain terminal worked for other bulk products like petroleum coke, a byproduct of oil refinement with a market overseas (Giles 2019). In 1987, the grain facility was converted to handle "petcoke" for Koch Carbon, which is how it operates today with the U.S. and India having a robust trade in the product (Port of Long Beach Blogspot 2011; Statista 2019).

5.1.2 Description

The subject property is a large industrial site on Pier F in the Port of Long Beach, California (Figures 5-6 and 5-7). The site is covered with bituminous asphalt and several small and large structures. The area is flanked on the south by the wharf and Berth 211 and on the north by the oil storage tanks of the neighboring property (Figure 5-7). Two monolithic concrete structures in the center of the site constitute a very long narrow footprint in a caterpillar shape and comprise the middle and east end. The headhouse is approximately 220 feet tall and the cylinders 160 feet (*Independent* 1976:19) as shown in Figures 5-8 and 5-9. A very long, low structure with a medium-pitched roof stretches from the headhouse across the top of all the silos; its two multi-pane windows are present at the top of the structure's northeast elevation. Appendages to the main building include a metal extension raising the height of the headhouse; industrial equipment related to its current use; a gallery consisting of metal covered bridges over the belts that bring product to and from the ships and where loading equipment is anchored; drive-through

truck showers; a corrugated iron lean-to for rail cars to upend their load to the headhouse (Figure 5-9), and a small guard shack at the eastern end (Marshall 1962:A-4). Adjacent to the berth are two wooden, one-story longshoreman smoke houses, evaluated as not eligible for the National Register of Historic Places (NRHP) and the CRHR, and described further in a 2012 report by Parson's (Chasteen 2012:21). One of the smokehouses was extant in 1963 and likely original to the facility (see Figure 5-3) and the other was moved there later according to facility manager, Chris Giles (Giles 2019).



Figure 5-6 Koch Carbon Bulk Terminal Berth F211. Courtesy of PortTown.POLB.com.

5.1.3 Evaluation

Although this type of bulk terminal structure is ubiquitous in eastern states, it doesn't appear to be a prevalent type in California, especially at this size (Statista 2019). In 2006, CH2M Hill provided a preliminary evaluation for this property and found it ineligible due to its lack of integrity; however, Æ does not concur with this finding (CH2M 2006:11). The CH2M Hill evaluation also states that the silos were built in the late 1960s. However, the original silos were utilized beginning in 1961, and the second bank of silos was built soon after the first and completed by 1964 (Cunningham and Cunningham 2015; Huff & McGinnis 1964:5). A formal CRHR evaluation is outlined below:

Criterion 1. The Koch Carbon Bulk Terminal (Koppel Grain Terminal) is associated with the expansion of agricultural exports in California, and with grain exports both statewide and nationally during the mid-twentieth century. However, the Koch Carbon Bulk Terminal (Koppel Grain Terminal) was not an identified historically significant component in this growing enterprise and therefore is not considered eligible under Criterion 1.



Figure 5-7 Koch Carbon Bulk Terminal (Koppel Grain Terminal) property boundary.



Figure 5-8 View of the concrete silos, 2019.



Figure 5-9 Headhouse and an original corrugated iron enclosure for up-ending train cars, 2019.

Criterion 2. The Koch Carbon Bulk Terminal (Koppel Grain Terminal) construction and continued development cannot be attributed to any one individual of historical significance. The Koppel brothers and family who leased and operated the terminal were important local businessmen, but the terminal was financed and built by the Port of Long Beach Harbor Department. The terminal is not associated with significant person(s) who contributed to local, state, or national history. The terminal is not eligible under Criterion 2.

Criterion 3. The Koch Carbon Bulk Terminal (Koppel Grain Terminal) is one of the largest remaining concrete grain terminals on the West Coast, is potentially the last extant one in a harbor, and it embodies the distinct characteristics of the then-new "slip-form" concrete construction method. This method facilitated for the first time, the construction of large, tall, one-piece concrete silos. The Koch Carbon Bulk Terminal (Koppel Grain Terminal) was constructed in the mid-twentieth century utilizing the new method, and after completion, it was one of the largest on the West Coast. The engineering firm who designed the terminal was noted for at least one other large grain terminal on the West Coast, but they did not attain historical significance as a firm. However, this construction method that included pouring the concrete in one long continuous pour was significant to the construction of tall fire-resistant, concrete silos because it prevented weak spots that could occur when wet concrete was poured against areas that had been previously set and dried.

This large capacity silo terminal, along with the innovative, faster grain loading and unloading methods, allowed for the expansion of bulk shipping at the Port of Long Beach. The Koch Carbon Bulk Terminal (Koppel Grain Terminal) is recommended eligible under Criterion 3 with a period of significance from 1961–1964, when the terminal was first constructed using the slip-form technology.

Criterion 4. This Criterion is most relevant for archaeological sites, but it can be applied to built-environment resources if further study has the potential to yield information that cannot be obtained from other sources. However, historical information about bulk shipping terminals is well documented, and further study of the locality would not add any new information. The Koch Carbon Bulk Terminal (Koppel Grain Terminal) is not considered significant under Criterion 4.

Integrity. The Koch Carbon Bulk Terminal (Koppel Grain Terminal) main structure, consisting of both banks of silos, the gallery, and the headhouse are in their original location on Pier F with a similar viewshed of the port. The resource retains its integrity of location and setting. The overall integrity of the terminal is good, with only some in-kind repairs to the concrete and some minor fenestration changes. The gallery's original small containers are gone and there are several added structures near the silos which could be removed without loss of integrity. The terminal has not undergone significant alteration in materials or workmanship from the respective period of significance and the terminal itself still conveys its historical qualities and does retain integrity of feeling and association as a bulk terminal. The Koch Carbon Bulk Terminal (Koppel Grain Terminal), having retained its integrity of materials, craftsmanship, design, setting, association and location, continues to convey its significance as a bulk shipping terminal constructed in 1961–1964 at the Port of Long Beach. Thus, the Koch Carbon Bulk Terminal (Koppel Grain Terminal) is recommended eligible for listing in the CRHR under Criterion 3 with a period of significance from 1961–1964, when the terminal was first constructed.

Long Beach Register of Historic Landmarks (LBRHR)

With regard to the local register, the City of Long Beach has developed its own historic context statement whereby built-environment resources are categorized under specific and predefined contexts, themes, and periods of significance to facilitate the evaluation process. Koch Carbon Bulk Terminal (Koppel Grain Terminal) falls within the "Economic Context" and is related to the theme "Port and Harbor Development, circa 1900–1965." It was constructed within the 1900–1965 period of significance and has sufficient integrity. The Koch Carbon Bulk Terminal (Koppel Grain Terminal) is recommended eligible for the LBRHR under local Criterion K: "It is one of the few remaining examples in the city, region, state or nation possessing distinguishing characteristics of an architectural or historical type" (Sapphos 2009:80).

5.2 JACOBSEN PILOT SERVICES, INC. – 1259 PIER F AVE. / BERTH F202

5.2.1 Project-specific History

In 1943, the United States Navy constructed a mole (a man-made peninsula) and 28-acre site known as Victory Pier on Pier A (now known as Pier F) (Figure 5-10). When the mole was no longer needed by the Navy, the Port developed Victory Pier into a recreation area called Pier Point Landing as shown in Figure 5-11 (Cunningham and Cunningham 2015:298). Pier Point Landing later became the location of the Jacobsen Pilot Services, Inc. pilot station.

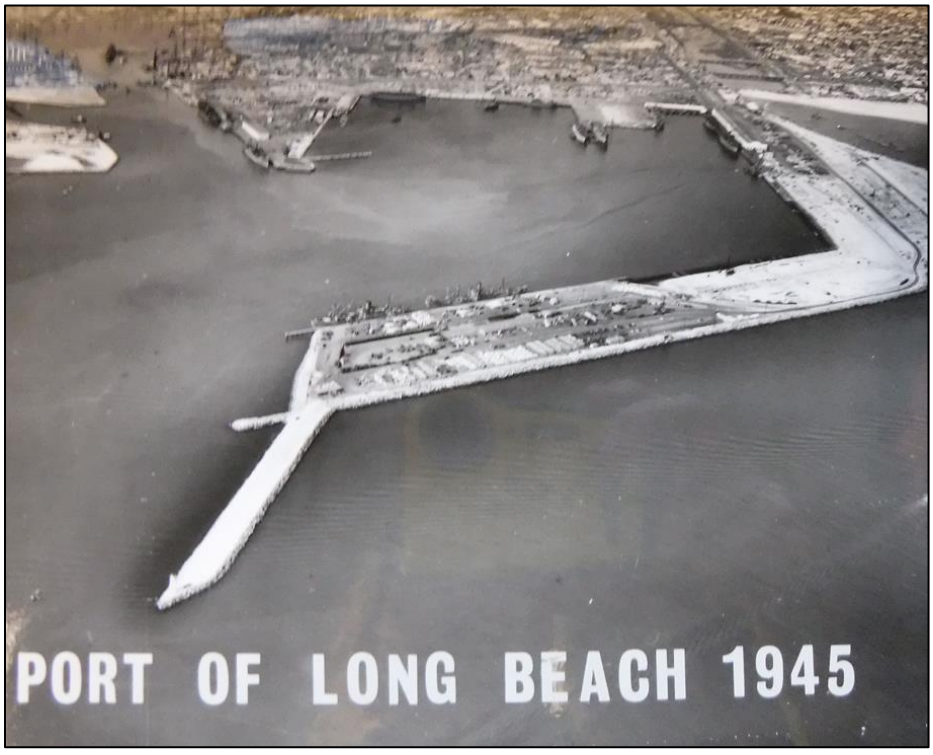


Figure 5-10 Navy mole on Pier F (Pier A), 1945. Courtesy of POLB Records Department.



Figure 5-11 Pier Point Landing and the original Jacobsen Pilot Services, Inc. Station, circa 1964. Courtesy of PortTown.POLB.com.

Jacobsen Pilot Services, Inc. (JPS) was started by Captain Jacob A. Jacobsen in 1924. Jacobsen, originally from Norway, spent his entire life working on ships starting at the age of 14 as a deck hand. He served aboard fishing boats, cargo ships, whaling ships, and Navy ships during World War II. His travels took him to the United States and soon after he joined a steamship line which carried cargo to China on the China Run (Port of Long Beach 1982:4–5).

In 1922, Jacobsen was given command of his first ship which took him to Japan where in September of 1923 he helped to rescue people during the Yokohma-Tokyo earthquake of September 21, 1923. Later that year in 1923, Jacobsen came to Long Beach and established himself as an independent pilot. His first customer was a tanker vessel and his reputation quickly spread. The U.S. Navy and the Port of Long Beach became consistent customers and loyal clients of Jacobsen's pilot services (Port of Long Beach 1982:4–5).

JPS played a key role in World War II and took over pilotage for U.S. Navy ships—a contract it has held in Seal Beach ever since. Jacobsen was placed in charge of 25 port pilots who handled all Port Navy pilotage. Afterward, several of these men came with him to work at the Port's first Pilot Station (Port of Long Beach 1982:4–5). After World War II, the Port of Long Beach constructed a pilot station on the breakwater of Victory Pier (now Pier F) circa 1946–1948 (Figures 5-11 and 5-12).



Figure 5-12 Jacobsen Pilot Services Station, circa 1946-1948. Courtesy of POLB Records Department, featured in *Images of America: The Port of Long Beach*.

An oil derrick was moved to the pilot station property in 1949 as a mount for the installation of the new state-of-the-art shore-based radar system, the first installation in the western hemisphere, second in the world (Figure 5-13). The first installation was in Liverpool, United Kingdom (Port of Long Beach 1982:4). This cutting-edge technology of the time helped improve safe vessel movements in all weather conditions. This type of radar has since been implemented at America's busiest ports (White 2012:1) Jacobsen's son, Richard J. Jacobsen, expanded radar technology even further by utilizing fiber optics and microwave for remote radars. This advanced technology allowed JPS to safely pilot in large ships, like the Queen Mary (Jacobsen Pilot Services Inc. n.d.).

In 1968 the original Pilot station was demolished, and a new station was built just south of the original on Pier F (Figure 5-14). The new mid-century modern style building featured all the modern comforts for the growing company (Baldwin 1968). The oil derrick was also moved to the new location to support the radio-radar system of the time. The station was dedicated that year when Jacob A. Jacobsen himself, at 67 years old, piloted the Queen Mary to her new home dock in the Port of Long Beach (Baldwin 1968). From 1968 onwards, this station has housed Jacobsen Pilot Services, Inc., and continues to do so.

Even after retirement, Captain Jacob A. Jacobsen would visit the station almost daily to visit staff and provide guidance (Figure 5-15). He died on August 22, 1980 (Port of Long Beach 1982:4–5).



Figure 5-13 Oil derrick repurposed for off-shore radar system, circa 1949. Courtesy of POLB Records Department.



Figure 5-14 Jacobsen Pilot Services, Inc. Pilot Station (lower right corner). Courtesy of PortTown.POLB.com

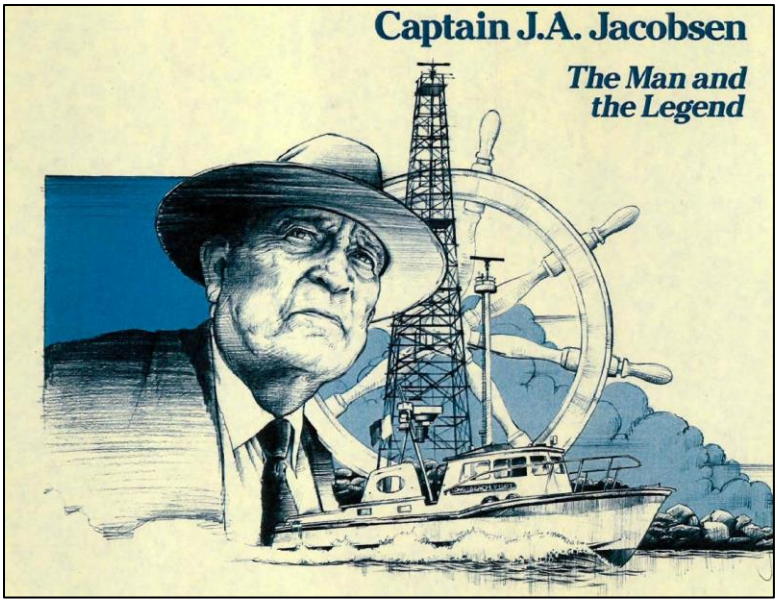


Figure 5-15 Illustration of Captain J.A. Jacobsen from *Harbor Highlights*, 1982. Courtesy of the Port of Long Beach Records Department.

JPS continues to provide innovative solutions to the ever-increasing complexities of port operations including the massive container ships. A pilot service operates in cooperation with clients' ships, some as long as 1,300 feet and weighing 260,000 tons. When the vessel arrives at the mouth of the harbor, Jacobsen sends out a small fast boat with a qualified pilot to board the ship. This pilot takes over the wheel, using decades of experience in the harbor and its hazards to bring the vessel safely into its assigned berth (Port of Long Beach 1982:1). In 1949, Jacobsen's was the first pilot service in America to install shore-based radar at their station to help with this process (Port of Long Beach 1982:4). The radar equipment was attached to a derrick at the earlier pilot station as shown in Figure 5-11, and when the company moved, they also moved the derrick (Curtis 1971:4). For ships entering the port until the late 1970s, radar was the height of technology that made pilots' work possible with increasingly massive container ships.

Today, as the only contracted piloting company for the Port of Long Beach, JPS pilots move an average of 7,000 ships per year—including the largest container ships and oil tankers in the world—containing cargo valued at more than $155 billion. The company prides itself on acting as partner with the port, helping to keep Long Beach number one on the West Coast, and acting as a role model for other ports (Jacobsen Pilot Services, Inc. n.d.).

Today Jacobsen is known to pilots worldwide as the company that partnered with a GIS company to create an iPad-sized GPS positioning device for pilots (Aerospace.com 2005). The container ship of today's port commerce is the size of a skyscraper laid sideways and could not be brought to port safely without this type of GPS technology because the pilot on the bridge literally can't see past the enormous ship (White 2012:1).

5.2.2 Description

This two-story building with an articulated flat roof is situated very near the water on the westernmost point at the elbow of Pier F (Figure 5-16). Its footprint is T-shaped with a slightly larger front section bearing many large windows facing out to the Port. Various overhangs shade the first floor. Ingress is through a single-width door on the second floor, accessed by open-tread terrazzo stairs along the southeast façade. The landing at the top of the stairs protects the entry area with a roofed and glass-walled semi-enclosure.

The building displays a variety of fenestration types with most windows framed in metal (Figure 5-17). On the southeast and northwest elevations, seated above decorative cladding walls of blonde brick, ribbons of fixed windows illuminate the bottom floor and are overhung with protruding banks of sliding windows deeply set into the stucco-clad walls of the second floor. These windows have exaggerated slanted sill areas. Facing south out to sea, a balcony enclosed with round metal tubing railing wraps around the front façade and is supported beneath by square tubing posts. The slanted floor-to-ceiling bank of windows behind the balcony serves the station viewing deck (Figure 5-18). At the opposite end, the asymmetrical rear façade has a bank of inset windows on the left and a metal door with a protruding stucco and metal overhang. Near this rear façade on the southeast elevation, a nautical-themed art glass window sits flush with the stucco cladding (see Figure 5-17). A full-sized steel derrick at the northwest elevation straddles a two-car garage with a front-gabled, asphalt shingled roof. The garage does not appear to be over 50 years old and was not documented for this study. The condition of the pilot station and derrick is very good.

5.2.3 Evaluation

Criterion 1. Jacobsen Pilot Services, Inc. is a storied operation which in 1948 set the technological standard for pilotage in the U.S. by implementing shore-based radar, the first in the nation. This type of radar has since been implemented at America's busiest ports, an event which would render the pilot station radar tower significant under Criterion 1 for its association with important historic events at the national level. The period of significance is 1949, when the radar was installed on the oil derrick.

Criterion 2. Jacobsen Pilot Services, Inc. is directly associated with Jacob A. Jacobsen and his legacy as a successful and innovative pilot captain in the Port of Long Beach. His company significantly impacted the safety, efficiency, and speed contributing to the prosperity of the Port of Long Beach. Therefore, the pilot station is significant under Criterion 2 for its association with a significant person(s) who contributed to local history. Although Jacob A. Jacobsen was significant to the Port of Long Beach throughout his tenure from 1924 until his death in 1982, the current Pilot Station was constructed in 1968. Therefore, the period of significance under Criterion 2 begins in 1968 with the construction of the extant pilot station, and ends in 1982, when J.A. Jacobsen passed away.

Criterion 3. The subject building and derrick do not embody the distinctive characteristic of a method of construction, or represent the work of a master, or possess high artistic values. The subject building does embody a few distinctive characteristics of the Mid-century Modern



Figure 5-16 Jacobsen Pilot Services, Inc. property boundary.



Figure 5-17 Jacobsen Pilot Services, Inc. Pilot Station, north façade, 2019.



Figure 5-18 Viewing deck and entrance of Jacobsen's, east façade, 2019.

architectural style, but not enough to qualify under the Criterion due to later additions. The subject building is not historically significant under Criterion 3.

Criterion 4. This Criterion is most relevant for archaeological sites, but it can be applied to built-environment resources if further study has the potential to yield information that cannot be obtained from other sources. However, historical information about pilot station construction is well documented, and further study would not add any new information about this facility. The Jacobsen Pilot Services, Inc. Pilot Station is not considered significant under Criterion 4.

Integrity. The Jacobsen Pilot Services, Inc. Pilot Station was constructed in 1968 and retains integrity of location, setting, feeling, association. However, the building has been repeatedly remodeled, including a large addition in 1980 and does not retain sufficient integrity of materials, workmanship, and design from the original 1968 design. The radar tower was moved from its original location to its current location in 1969 and no longer retains the 1949 radar system. The radar tower does not retain integrity of location, association, feeling, design, setting, materials, and craftsmanship. In summary, the Pilot Station does not retain sufficient integrity to convey its significance under Criteria 1 and 2 and is not eligible for listing in the CRHR.

Long Beach Register of Historic Landmarks (LBRHR)

With regard to a local register, the City has developed its own historic context statement whereby built-environment resources are categorized under specific and predefined contexts, themes, and periods of significance to facilitate the evaluation process. The pilot station at Pier F, berth F202 (1259 Pier F Avenue) falls within the "Economic Context" and is related to the theme "Port and Harbor Development, circa 1900–1965." Because it was not constructed within the theme's period of significance and does not have sufficient integrity to qualify under the City's Criteria A through K, it is not recommended as a City of Long Beach historical resource.

5.3 TRANSIT SHED – 1480 PIER F AVE. / BERTHS F206-F207

5.3.1 Property-specific History

In the years during and after the Great Depression, the Moderne style was popular for use in transportation buildings and a number of domestic buildings as well. The style is identified by its smooth wall surfaces, flat roofs often with coping or parapets, and a general sense of horizontality. The Moderne style was born along with Art Deco, its more vertical, zigzagged sister "Modernistic" style, when Eliel Saarinen's 1922 design won second place in a widely publicized Chicago architecture competition. The style quickly became fashionable. In the 1930s, the streamlined designs gaining popularity for industrial products like planes, trains, automobiles and ships spread to the design for transportation buildings and had their own effect on the Modernistic styles. In southern California, the National Register-listed Union Station in downtown Los Angeles stands out as a celebrated contemporaneous example of the Moderne style applied to a large-scale semi-public transportation facility (McAlester 2018:567 and 2009:465-6).

The transit shed at 1480 Pier Avenue, Berth F206/207, having been completed in 1963, would normally be a nonsensically late example of the Moderne style. Moreover, the stylishness of the building is not in keeping with the industrial and utilitarian form of a commercial building

designed for profitmaking and seen only by dock workers. But this structure is the last of a string of buildings begun in 1938, the heyday of Moderne, and completed over the decades with modifications to the original architecture (Figure 5-19).



Figure 5-19 Moderne Transit Sheds on Pier F, circa 1955. Courtesy of the Port of Long Beach Records Department.

The first steel and concrete Moderne transit shed was built on Pier A around 1938 with help from the Depression-era Work Projects Administration. It was built for use by both cargo and passenger vessels (Queenan 1986:96).

After the end of WWII, the subsequent matching sheds then sprang up along the quickly developing Pier A, Victory Pier and Pier F, which were all consolidated into Pier F in 1993 (Riffenburgh 2012:xi). The series of sheds are shown in Figure 5-20. The fact of their rapid appearance attests to the velocity at which trade in the Port of Long Beach was growing.

The physical attributes of the building also reflect the International style, which began in the 1930s but was much more prevalent in the 1960s. Particularly the “curtain wall” over a steel frame building technology and ribbons of metal and glass windows used for this transit shed were hallmarks of the International style. Thus, a building which was the last accomplishment of a 1930s to 1950s campaign of modernization visually took into account the prevailing styles of the decade in which it was built (CH2M HILL 2006).

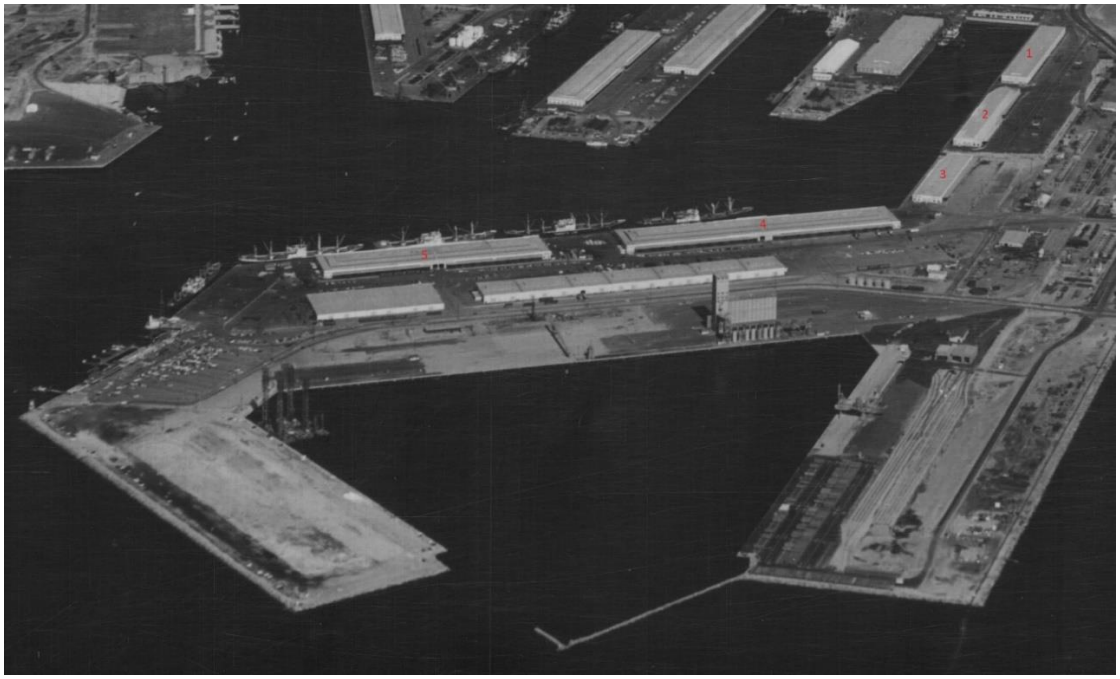


Figure 5-20 Clear span transit sheds on Pier F, 1962. Courtesy of the Port of Long Beach Records Department.

The subject transit shed was the last transit shed constructed on Pier F in 1963 (Figure 5-21). It was built in a pared-down version of the original Moderne design, with fewer clerestory windows and detailing. In the early architectural studies done by the Harbor Department, this shed was first conceived as a passenger building and then as passenger/cargo, like its predecessors on the Pier A. In 1938, passengers travelling by sea would expect to disembark in a reasonably stylish terminal which justifies the design of the first building. By 1963, ship travel was waning and the Port was predominantly moving cargo hand over fist. This eighth shed of the project on the new arm of Pier F was finally completed in 1963 as a cargo transit shed in an architectural style similar to the earlier wharf buildings of the 1930s and 1940s when ship travel was more common. (Queenan 1986:96).

This building is a steel frame with tilt-up concrete curtain walls (Bigler 1963:34), a construction technique which made possible a quick erection and a long clear span of interior space, allowing for more storage of larger items without support columns in the way (*Los Angeles Evening Newspaper* 1906). A transit shed is distinguished from a warehouse in that it lacks an organizational system for long-term storage; it requires sprinklers throughout, direct rail and truck access to its numerous doors, and direct adjacency to the berth (Ques10.com 2014). Until the 1960s, much of the Port's operations involved loads of "breakbulk" cargo: stevedores unloaded crates, boxes, and bags and sheltered them temporarily in transit sheds such as this one. By 1965, when all nine Moderne sheds were completed, however, the age of the container ship had arrived, and the transit shed and warehouse were soon to be obsolete. Heavy, waterproof steel containers, unlike boxes and bags of cargo, were more easily dealt with outdoors, could be stacked higher than the sheds could accommodate, and did not need protection from the elements. (Riffenburgh 2010:xi; Queenan 1986:134)

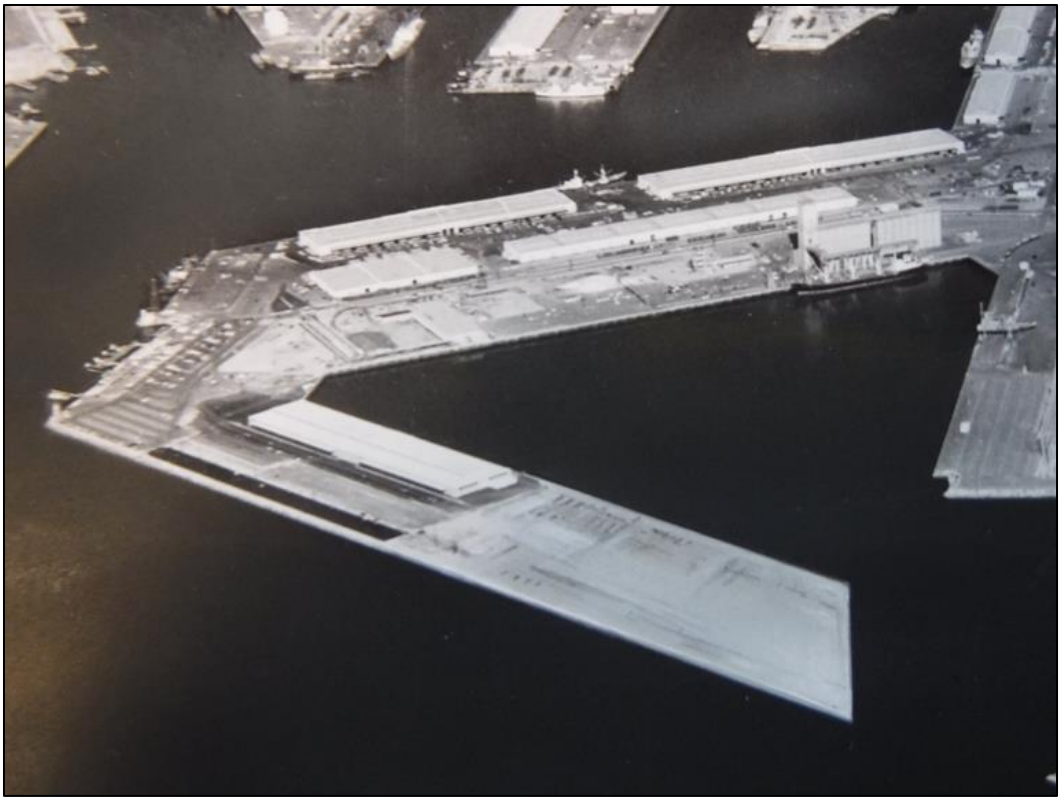


Figure 5-21 Transit Shed Berths 206-207, circa 1965. Courtesy of the Port of Long Beach Records Department.

5.3.2 Description

The subject transit shed is a long rectangular, one and a half story building with a flat roof on the first floor, and a very low-pitched clerestory mass as the half-story. Tall entryways with simple parapets are centered on the north and south (short) ends with three groups of metal-framed windows (separated by concrete vertical elements) flank the entrances. These north and south façades are rendered asymmetrical by a one-story, Moderne-style office attached to the elevation nearest the berths. The west elevation faces the "backlands" of Pier F and an elevated concrete dock shaded by a metal canopy gives truck access to the numerous roll-up doors and several man doors adjacent to two-light steel windows (Figure 5-22).

The east façade faces the berth where ships dock, and the pier has been graded so that the waterside elevation is at grade with the berth. The "backlands" elevation is below grade, allowing for truck (and formerly rail) access to the raised concrete dock and 22 roll-up doors. The clerestory mass and the main story are fenestrated by continual ribbons of metal-framed windows, many with wired security glass (Figures 5-23 and 5-24). The walls are unadorned and unpainted concrete tilt-up panels. In the interior, the steel framing can be seen spanning across the ceiling. The duplex structure consisting of two exactly mirrored sections is divided by a full-height concrete wall with an automatic fire door. Integrity is high with only a few man-doors and adjacent windows changed out and some visible damage to the concrete skin, possibly from siding that had been attached and later removed.



Figure 5-22 Transit Shed at Berth F206/207, south façade, 2019.



Figure 5-23 The berth side elevation's roll up doors and ribbon windows. 2019.



Figure 5-24 Transit Shed at Berths F206-F207 property boundary.

5.3.3 Evaluation

Criterion 1. This Moderne style concrete clear span transit shed is one of the few remaining in the Port of Long Beach. This type of transit shed represents the old cargo handling system before containerization in the late 1960s and 1970s. Originally there were dozens of these shed within the Port that were used to store cargo and house passengers. This shed, along with four other Moderne passenger/transit sheds (now demolished), was deemed eligible by CH2M HILL as the last remaining example of the old cargo handling system. This study concurs with the preliminary evaluation and recommends the transit shed at berths F206-F207 eligible for listing in the CRHR under Criterion 1, important events within the development of the regional and state economy (CH2M HILL 2006:10). The period of significance being 1963, when the transit shed was constructed, through its continuing use.

Criterion 2. The transit shed is not associated with any historical person(s) significant at the local, state, or national level and is not significant under Criterion 2.

Criterion 3. The subject building does not represent the work of a master and does not possess high artistic values. However, the building does embody the distinctive characteristic of clear-span construction as well as the Moderne architectural style. As the last of a series of distinctive, stylistically coordinated industrial structures, and as one of few such buildings designed in the 1960s with this predominantly 1930s style, the transit shed is significant under Criterion 3 with a period of significance dating to 1963, the year it was constructed.

Criterion 4. This Criterion is most relevant for archaeological sites, but it can be applied to built-environment resources if further study has the potential to yield information that cannot be obtained from other sources. However, historical information about transit-shed construction is well documented, and further study would not add any new information. The transit-shed is not considered significant under Criterion 4.

Integrity. The transit-shed was constructed in 1963 and retains integrity of location, setting, feeling, association, materials, workmanship, and design. No major changes appear to have been made to the building. The transit shed retains sufficient integrity to convey its significance under Criteria 1 and 3 and is eligible for listing in the CRHR.

Long Beach Register of Historic Landmarks (LBRHR)

The technology of concrete clear span warehouses was already in use by 1907 (*Los Angeles Evening News* 1906) but the potential span was more limited. This transit shed is one of few remaining at the Port of Long Beach from the era before containerization. It is one of the last examples of architecture from the old cargo handling system before containerization revolutionized global commerce (Bonacich and Wilson 2008:22). It is directly associated with the historic event of the development of the Port of Long Beach.

In their 2009 Historic Context written for the City of Long Beach, Sapphos defined the theme of Port and Harbor Development and defined as potentially significant any intact structures in the Port of Long Beach built from 1900 to 1965 (Sapphos 2009:79). This last Moderne transit shed from the rapid growth of Pier A, Victory Pier, and Pier F falls within these parameters.

With regard to a local register of historical resources, the City has developed its own historic context statement whereby built-environment resources are categorized under specific and predefined contexts, themes, and periods of significance to facilitate the evaluation process. The transit shed at Pier F, berths F206 and F207 (1480 Pier F Avenue) falls within the context "Economic Context" and is related to the theme "Port and Harbor Development, circa 1900–1965." Because the shed was constructed within the period of significance and has sufficient integrity, it qualifies as a City of Long Beach local historical resource under Criteria K, as one of few of its kind remaining in the Port, and D, "Portraying an era of history characterized by a distinctive architectural style."

5.4 WAREHOUSE - PIER F AVE. / BERTHS F204–F205

5.4.1 Property-specific History

The final section of Pier F was built in 1967 at a total cost of $2.35M, a significant investment for the time (*Independent Press-Telegram* 1967a). Commerce volume continued to grow in the 1960s and Berths 204–205 were soon added to the pier extension's harbor side. This new plan made necessary a transit shed adjacent to the berths. A transit shed is distinguished from a warehouse in that it lacks an organizational system for long-term storage. The transit shed requires sprinklers throughout, it provides direct rail and truck access to its numerous rollup doors, and always has adjacency to the berth so it can be unloaded efficiently (Ques10.com 2014). The plans for the location of storage spaces evolved over time, with the proposed building called either "warehouse," "transit shed," or both, or envisioned as two separate buildings (Huff 1966) **(**Figures 5-25 and 5-26).

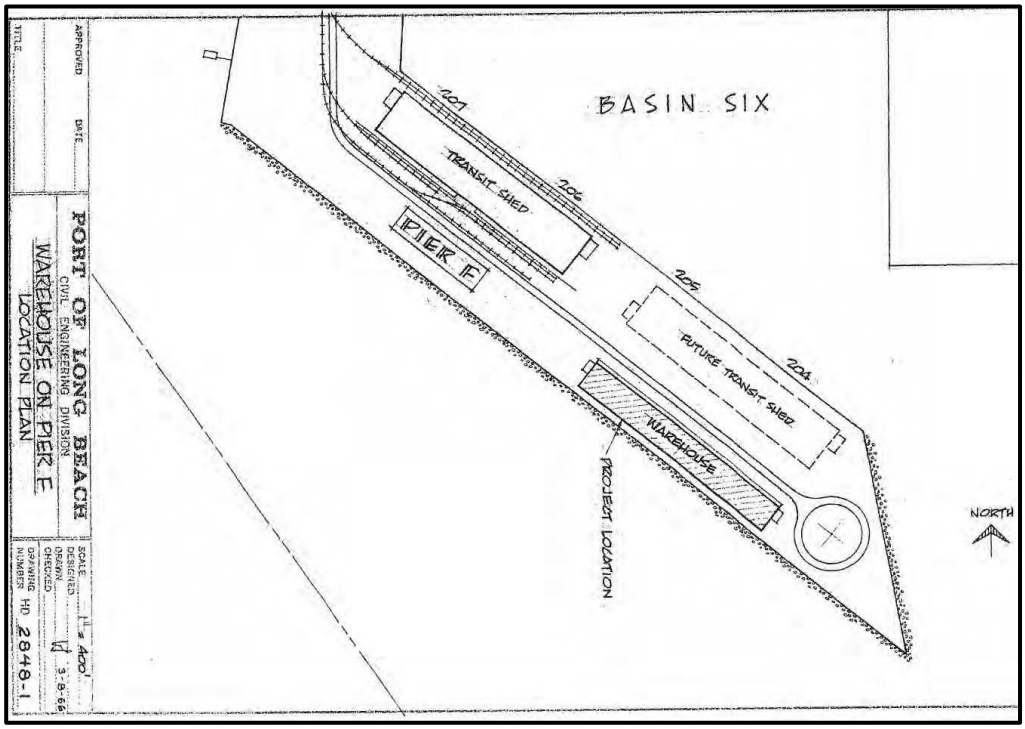


Figure 5-25 The original plan was for two structures, a warehouse and a transit shed, 1966. Courtesy of the Port of Long Beach Records Department.

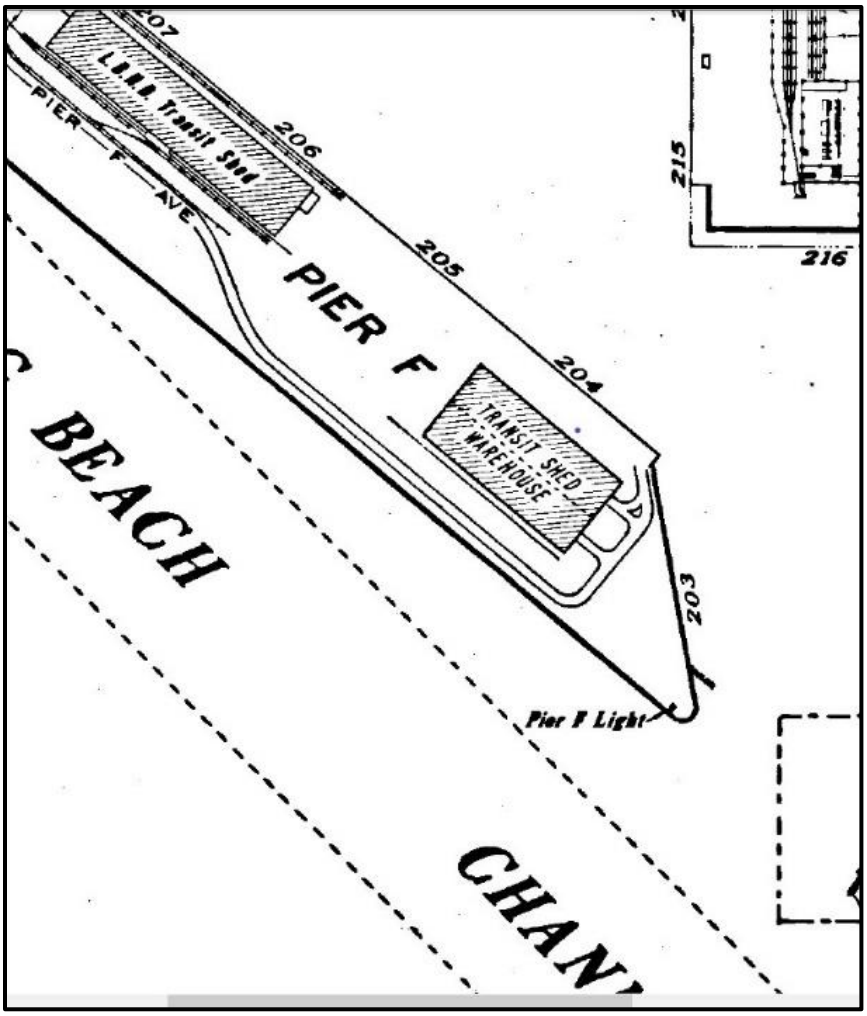


Figure 5-26 By 1968, the mixed-use shed was completed with driveway access from Pier F Avenue, 1968. Courtesy of the Port of Long Beach Records Department.

Evans (construction) Products signed a lease for the shed and South Bay Warehouse, importers of steel and plywood. They planned to lease the warehouse even before the buildings were started. South Bay eventually withdrew and the Evans firm was the only one who ultimately moved in (*Independent Press-Telegram* 1967b). In the end, the building was designed by the Harbor Department and built by BCI Construction Company with a chain link fence down the middle of the interior so that it could be used by two tenants for both transit shed and warehouse purposes (Baldwin 1966). Los Angeles and other major port managers in California protested the lease of $188,000 for the first year, then 25 percent of revenues thereafter, calling it a "special deal for the privileged few" (*Independent Press-Telegram* 1967b)."

The 1967 plans by the Port's civil engineering division showed the warehouse with a nearby smokehouse planned, suggesting that significant numbers of Union longshoremen, who were guaranteed by California legislation an indoor waiting area with a bathroom, were expected to staff the berth (Chasteen 2012:21). A warehouse is distinguished from a transit shed in that it lacks an internal organizational system for long-term storage; it requires sprinklers throughout,

direct rail and truck access to its numerous rollup doors, and direct access to the berth (Ques10.com 2014). Until the 1960s, much of the Port's operations involved loads of "breakbulk" cargo: stevedores unloaded crates, boxes, and bags and sheltered them temporarily in transit sheds or more long-term in warehouses. By 1968, when Pier F and the string of storage houses were completed, however, the age of the container ship had arrived, and the transit shed and warehouse were soon to be obsolete. Heavy, waterproof steel containers, unlike boxes and bags of cargo, were more easily dealt with outdoors, could be stacked higher than the sheds could accommodate, and did not need protection from the elements (Riffenburgh 2010:xi; Queenan 1986:134).

This warehouse/shed is utilitarian and suited to its purpose. Its construction of a steel skeleton, concrete foundation and corrugated metal panels makes possible a very wide, clear span of interior space, allowing for more storage of larger items without support columns in the way (*Los Angeles Evening News* 1906). Wide doors on the berth side allow quick movement of cargo from the vessel. Cargo forwarded by train was very common, and the rollup doors on the ocean side led to a raised concrete dock where railroad tracks allowed the boxcars to be loaded up.

Currently, Cooper/T. Smith Stevedoring utilizes the warehouse and berths F203 and 204 to provide services for all types of non-containerized cargo in the Port (Cooper 2019).

5.4.2 Description

This 181,394.42-square foot clear-span warehouse/transit shed clad with corrugated metal siding rests on a concrete foundation on the southern tip of Pier F (Figure 5-27). The nearly square warehouse/transit shed has concrete loading dock platforms and seven roll-up doors on the south elevation covered by a beveled metal canopy (Figure 5-28). The north façade faces berths F204 and 205 and is at grade with numerous roll-up doors. The east and west façades each can be entered through two high wide openings. The roof is very low-pitched, covered with corrugated metal and fenestrated with a number of skylights. The interior skeleton consists of strutted, tapered metal trusses holding up perpendicular metal joists which hold the sheet metal roof. Structural elements are the frame from which sprinklers and lighting are hung inside (Figure 5-29). Outside the southwest loading dock, obsolete railroad tracks are still extant but half-covered in asphalt and likely not usable. A variety of light fixtures are attached to the edge of the roof and canopy.

5.4.3 Evaluation

This building was created via a dynamic planning process at the Harbor: conceived as a warehouse on the backlands, then as a transit shed at the new berth 204 with a warehouse behind it. It was finally built as a single structure twice as wide as the nine massive transit sheds built before it on Pier F. Ultimately adapted to play both the parts of transit shed and warehouse, this building maintains integrity but is not otherwise a unique or historically significant architectural type like the Moderne style transit shed found on Pier F. A formal CRHR evaluation is outlined below.



Figure 5-27 Warehouse at Berths F204-F205 property boundary.



Figure 5-28 South and east elevations, looking northwest, 2019.



Figure 5-29 Warehouse interior and tapered steel trusses. 2019.

Criterion 1. The warehouse/transit shed is not singularly representative of any historic events that have made a significant contribution to the broad patterns of local, state, or national history and is not significant under Criterion 1.

Criterion 2. The warehouse/transit shed is not directly associated with the lives of persons important to our past and is not eligible under Criterion 2.

Criterion 3. The warehouse/transit shed does embody the distinctive characteristic of clear-span construction, but it is not a significant example. Nor does the building represent the work of a master or possess high artistic values. The warehouse/transit shed is not significant under Criterion 3.

Criterion 4. This Criterion is most relevant for archaeological sites, but it can be applied to built-environment resources if further study has the potential to yield information that cannot be obtained from other sources. However, historical information about warehouse/transit sheds are well documented, and further study would not add any new information about this structure. The warehouse is not considered significant under Criterion 4.

Integrity. The warehouse/transit shed is not significant under any of the four CRHR criteria. An assessment of the building's integrity is not necessary.

Long Beach Register of Historic Landmarks (LBRHR)

With regard to a local register, the City of Long Beach has developed its own historic context statement whereby built-environment resources are categorized under specific and predefined contexts, themes, and periods of significance to facilitate the evaluation process. The warehouse/transit shed at Pier F, berths F204 and F205 (1020 Pier F Avenue) falls within the context "Economic Context" and is related to the theme "Port and Harbor Development, circa 1900–1965" (Sapphos 2009:79). Although the warehouse was constructed at a time very close to the period of significance and has sufficient integrity, it is not singularly representative of important events or trends at the harbor and is not known to have housed a historically important tenant or activity. Therefore, it is not considered a historical resource for the City of Long Beach.

6
CONCLUSIONS

Applied EarthWorks, Inc. evaluated four properties for eligibility for listing on the California Register of Historical Resources (CRHR) and the Long Beach Register of Historic Landmarks (LBRHL) (Table 6-1). Two of the properties were considered ineligible and two properties are eligible for the CRHR/LBRHL. As eligible resources, the Koch Carbon Bulk Terminal (Koppel Grain Terminal) and the Transit Shed at Berths F206–F207 shall be considered historical resources under CEQA.

Table 6-1
Results of Resource Evaluations in Support of the Port of Long Beach Master Plan Update

Property Name	Resource Type	Age	Address	CRHR Eligible	LBRHL
Koch Carbon Bulk Terminal (Koppel Grain Terminal)	Bulk terminal structure	1961-1964	1020 Pier F Ave. / Berth F211	Eligible for listing under Criterion 3	Eligible for listing under Criterion K
Transit Shed Berths F206–F207	Structure	1963	1480 Pier F Ave. / Berths F206-F207	Eligible for listing under Criteria 1 and 3	Eligible for listing under Criteria K and D
Jacobsen Pilot Services, Inc. Pilot Station	Building/ structure	1968	1259 Pier F Ave. /Berth F202	Not eligible	Not eligible
Warehouse Berths F204–F205	Structure	1966	1480 Pier F Ave. /Berths F204-F205	Not eligible	Not eligible

7
REFERENCES

Aerospace
2005 Tampa Bay Pilots Will Get New PilotMate® GPS Systems From ARINC., May 2005. Electronic document accessed February 14, 2019: https://www.aerospaceonline.com/doc/tampa-bay-pilots-will-get-new-pilotmate-gps-s-0001.

Baldwin, Jack
1966 "Pier F Warehouse Contract Awarded". *Independent Press-Telegram*. Electronic document accessed February 14, 2019: https://www.newspapers.com/clip/28988342/warehouse_contractor_1966/.

1968 "Service has Grown: Port Pilots in New Home." *Independent*. Electronic document: https://www.newspapers.com/image/18846842/?terms=Jacobsen%2Bpilot%2Bservices%2Blong%2Bbeach%2Bnew%2Bstation, accessed May 17, 2019.

Bigler, Richter-Schultz
1963 Transit shed (2) berths F206-207. Architectural plans on paper, on file at the Port of Long Beach Administration Records Department, File HD-20099.

Board of Harbor Commissioners
1959 Minutes of a Regular Meeting of the Board of Harbor Commissioners of the City of Long Beach, August 31, 1959. On file at the Port of Long Beach Records Department, Long Beach, California.

Bonacich, Edna, and Jake B. Wilson
2008 *Getting the Goods: Ports, Labor, and the Logistics Revolution*. Cornell University Press, Ithica, New York.

CH2M HILL, Inc.
2006 Memorandum to Pat Shoemaker and Janna Watanabe: Port of Long Beach Cultural Resources Inventory, Middle Harbor. Prepared for Port of Long Beach, California.

Chasteen, Carrie
2012 *Identification and Evaluation of Smokehouses, Port of Long Beach*. Prepared for Port of Long Beach, California.

The Daily Chronicle
1961 "Elevator Finished (Kalama)." *Daily Chronicle*. October 3, 1961. Electronic document accessed February 14, 2019, https://www/newspapers.com/image/5719338.

City of Long Beach
2005 "Criteria for Designation of Landmarks and Landmark Districts." Municipal Code, Title 2, Chapter 2.63.050.

Cooper T. Smith Stevedoring
2019 The Cooper Group of Companies. Electronic document: https://coopertsmith.com/Operations/CTS-Stevedoring, Electronic document accessed February 12, 2019.

Cunningham, George, and Carmela Cunningham
2015 *Port Town: How the People of Long Beach Built, Defended, and Profited from Their Harbor*. Port of Long Beach, Long Beach, California.

Curtis, Charley C.
1971 New Matt Foundation for Relocation of Derrick Radar Tower, paper blueprint; Letter to Richard Jacobsen (sic) regarding details of relocating derrick with radar. On file at the Port of Long Beach Records Department, Long Beach, California.

Giles, Chris
2019 Interview with Assistant Operations Manager, Chris Giles, and AE Architectural Historians Maggie Wineland and Annie McCausland. Koch Carbon terminal at the Port of Long Beach. February 2019.

Huff & McGinnis
1964 Port of Long Beach As-Built Plan. Port of Long Beach Civil Engineering Division. On file at the Port of Long Beach Administration Records Department.

Humphrey, Richard L.
1917 Concrete Elevators. *Proceedings of the 9th Annual Convention 1912*, edited by Barney I. Weller. National Association of Cement Users, Washington DC.

Independent
1976 "Landmark." *Independent*. June 16, 1976. Long Beach, California. Electronic document accessed March 1, 2019, https://www.newspapers.com/image/18895109.

Independent Press-Telegram
1959 "Big Grain Elevator to Boost Shipping." *Independent Press-Telegram*. January 4, 1959. Long Beach, California. Electronic document accessed May 2, 2019, https://www.newspapers.com/image/17608300/#.

1967a "Long Beach Harbor Grows into Sea." *Independent Press-Telegram*, Long Beach, California, February 12, 1967. Page 90. Electronic document accessed Mar 2, 2019: https://www.newspapers.com/clip/28987314/independent_presstelegram/1/1.

1967b "Evans Products LB Terminal Lease OKd." *Independent Press-Telegram*, Long Beach, California, 13 Aug 1967, Sun Page 10, From our National Bureau. Electronic document accessed on Feb 28, 2019: https://www.newspapers.com/clip/28987459/warehouse_1967_evans/.

Jacobsen Pilot Services, Inc
n.d. "About." Jacobsen Pilot Services, Inc. https://www.jacobsenpilot.com/press.html, accessed February 12, 2019.

Los Angeles Evening Newspaper

1906 "New Santa Fe Depot to be Concrete." *Los Angeles Evening Newspaper*, found at PCAD. Electronic document: http://pcad.lib.washington.edu/publication/5292/.

Los Angeles Times

1959 "Huge Grain Elevator Set for Long Beach." *Los Angeles Times*. December 20, 1969. Los Angeles, California. Accessed through ProQuest Historical Newspapers.

1963 "Grain Trade Boom Forecast in Area." *Los Angeles Times*. October 10, 1963. Los Angeles, California. Electronic document accessed March 1, 2019, https://www.newspapers.com/image/381600054/.

Marshall, Barr and Associates

1962 Koppel grain terminal as-built plans: HD 10988. On file at the Koch Carbon facility.

McAlester, Virginia

2009 *A Field Guide to American Houses*. Knopf, New York.

2018 *A Field Guide to American Houses*. Knopf, New York.

Morlet, Aubrie

2014 *Documenting the Port of Long Beach Administration Building: A Work of Art on the Water*. Master's Thesis. California State University.

National Park Service

2002 *How to Apply the National Register Criteria for Evaluation*. Revised. U.S. Department of the Interior, National Park Service, Cultural Resources, National Register, History, and Education, Washington D.C.

Port of Long Beach

1957 "Target:1977." *Harbor Highlights*. Vol. 3, No. 3 (Summer 1957):1-3.

1958 "Port of Long Beach Advertisement Regarding Opening of Highway 710." *Harbor Highlights*. Vol. 4, No. 4 (Fall 1958).

1959 "News and Views: Grain Elevator Rises." *Harbor Highlights*. Vol. 5, No. 1 (Winter 1959):5-17.

1960 "President's Report." *Harbor Highlights.* Vol. 6, No. 1 (Winter 1960):1,5.

1961 "Grain Elevator Rises." *Harbor Highlights*. Vol. 7, No. 1 (Winter, 1959):22.

1981 "Trials and Tribulations Shaped Port's Future." *Harbor Highlights*. Vol. 4, No. 4. (Summer 1981):4–14.

1982 "Hub of Port's Ship Traffic: Jacobsen Pilot Service Keeps Ships Moving." *Harbor Highlights*. Vol. 5, No. 2 (Spring 1982):1–5.

Port of Long Beach Blogspot
2011 "The Koppel Grain Terminal." *Port of Long Beach Centennial Forum*. August 4, 2011. Electronic document accessed December 2, 2019, http://portoflongbeach.blogspot.com/2011/08/koppel-grain-terminal.html.

Press-Telegram
2011 "Obituary for George E. Koppel." *Press-Telegram*. May 12, 2011. Electronic document accessed February 26, 2019, https://www.legacy.com/obituaries/lbpresstelegram/obituary.aspx?n=george-edward-koppel&pid=150960490.

Queenan, Charles F.
1986 *Long Beach and Los Angeles: A Tale of Two Ports*. Windsor Publications, Inc., Northridge, California.

Ques10.com
2014 Forum question and answer May 2014. Mumbai University Civil Engineering, Semester 5 Transportation Engineering 1. "Write a short note on: Transit sheds & Warehouses." Electronic document: http://www.ques10.com/p/16041/write-a-short-note-on-transit-sheds-ware-houses/.

Riffenburgh, Robert R.
2012 *A Project History of the Port of Long Beach: 1970-2010.* Compiled for the Port of Long Beach, California. 2007, updated 2012. On file with the Port of Long Beach Records Department, Long Beach, California.

Sanborn Map and Publishing Co.
2005 Long Beach, CA. Accessed through subscription with the Los Angeles Public Library.

2014 Long Beach, CA. Accessed through subscription with the Los Angeles Public Library.

San Francisco Chronicle
1922 "Concrete Grain Elevators." *San Francisco Chronicle*. Electronic document accessed February 14, 2019, https://www.newspapers.com/image/27400604.

Sapphos Environmental, Inc.
2009 *City of Long Beach Historic Context Statement*. Prepared for the City of Long Beach Office of Historic Preservation, Long Beach, California.

Statista
2019 "Number of Grain Elevators in the United States as of September 2014, by Region." Electronic document accessed May 2, 2019, https://www.statista.com/statistics/802041/total-us-grain-elevator-number-by-region/

White, Ronald D.
2012 "Navigating the Port at Long Beach." *The Los Angeles Times.* June 09, 2012. Los Angeles, California. Electronic document accessed May 27, 2019. https://www.latimes.com/business/la-xpm-2012-jun-09-la-fi-jacobsen-pilots-20120609-story.html

Wilcox, Steve
1962 "From Seattle." *Honolulu Advertiser*. December 23, 1962. Electronic document accessed March, 5, 2019, https://www.newspapers.com/image/259928722/?terms=marshall%2C%2Bbarr%2Band%2Bassociates.

Wilmington Daily Press Journal
1943 "Irving and Leonard Koppel." *Wilmington Daily Press Journal*. April 30, 1943. Electronic document accessed March 2, 2019, https://www.newspapers.com/image/18895109/.

This page intentionally left blank.

Appendix F-2
Assembly Bill 52 / Senate Bill 18 Letters

This page intentionally left blank.

4801 Airport Plaza Drive, Long Beach, CA 90815 Tel 562.283.7000 www.polb.com

Port of
LONG BEACH
The Green Port

May 2, 2019

Mr. Andrew Salas
Chairperson
Gabrieleno Band of Mission Indians – Kizh Nation
P.O. Box 393
Covina, CA 91723

Via Certified U.S. Mail and
Email to: admin@gabrielenoindians.org

Subject: **Tribal Cultural Resources under the California Environmental Quality Act (CEQA), Assembly Bill 52 (Gatto, 2014) and Senate Bill 18 (Burton, 2004) – Formal Notification of Decision to Undertake a Project and Notification of Consultation Opportunity, Pursuant to Public Resources Code §21080.3.1 and §65352.3 – 65352.4.**

Dear Mr. Salas:

Pursuant to the provisions of AB52 and SB18, as the Lead Agency under CEQA, the City of Long Beach Harbor Department (Port of Long Beach) has decided to undertake the Port Master Plan Update (PMPU) and the PMPU Program Environmental Impact Report (PEIR). Pursuant to Public Resources Code §21080.3.1(d) and §65352.3., below is a description of the proposed project, project location, and the name of the project point of contact. A map showing the proposed project site is also attached herein.

Project Name:	Port of Long Beach Port Master Plan Update and Program Environmental Impact Report
Project Location:	Port of Long Beach Harbor District (attached Figure 1)
Project Description:	The Port Master Plan (PMP) serves as a long-range plan to establish policies and guidelines for future development within the coastal zone boundary of the Port. The existing 1990 PMP is being updated to incorporate previous PMP amendments and reflect changes in the global shipping industry, technological advances, and important factors such as climate change and energy resources consistent with Green Port Policy objectives. A Program Environmental Impact Report (PEIR) will be prepared to evaluate the following plan elements: changes to existing PMP land and water use categories; reduction in the number of PMP Planning Districts; changes to the boundary of the PMP Planning Districts; revisions to allowed land uses within the Planning Districts; and potential projects that may be initiated or completed within the next 10 to 20 years.

Lead Agency Point of Contact:	Janna Morimoto, Environmental Specialist Port of Long Beach (562) 283-7100 janna.morimoto@polb.com

This letter serves to initiate consultation in compliance with Assembly Bill 52 (AB 52, Chapter 532, Statutes of 2014), which is required to consider the Proposed Project potential impacts to tribal cultural resources as part of the CEQA environmental review. Pursuant to AB 52 and Public Resources Code Section 21080.3.1, we are requesting any information you may have of tribal cultural resources within the project area boundaries and offer this opportunity to request consultation with the Port regarding the Proposed Project.

In addition, as the Proposed Project is an amendment to the Port Master Plan, this letter also serves to initiate consultation in compliance with Senate Bill 18 (California Public Resources Code Sections 65352.3 – 65352.4). Senate Bill 18 (SB18) requires local governments to notify and consult with California Native American tribes, on the contact list maintained by the California Native American Heritage Commission, prior to adopting or amending the Port Master Plan.

We respectfully request that you advise the Port if you wish to initiate consultations with the Port on the Proposed Project. Under the provisions of SB18, you have 90 days from the date of this notice to advise the Port if you are interested in further consultation. Under provisions of AB52 (PRC § 21080.3.1), you have 30 days from the receipt of this letter to request in writing, consultation with the Port of Long Beach. Should your organization request consultation, the Port will begin the consultation process within 30 days of receiving your request.

Should the Port not receive a written response within the 30 days (under AB52) or 90 days (under SB18), it will be presumed that you have declined consultation. Thank you for your consideration on this matter.

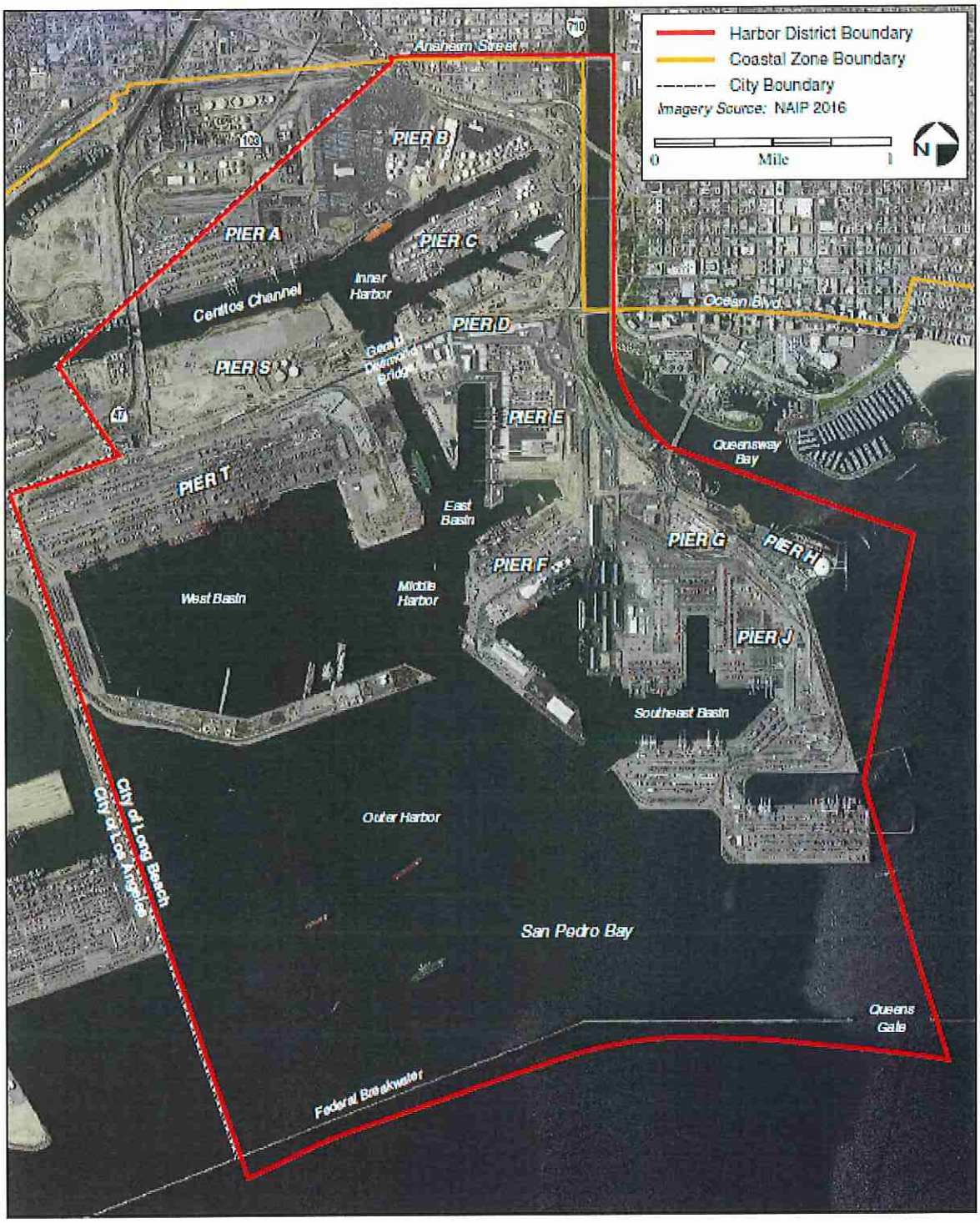
Sincerely,

Matthew Arms
Acting Director of Environmental Planning

Attachment: Figure 1 - Project Site Map

Figure 1 - Project Site Map

Mr. Andrew Salas
Tribal Cultural Resources Under AB52 and SB18
May 2, 2019
Page 4 of 4



4801 Airport Plaza Drive, Long Beach, CA 90815 Tel 562.283.7000 www.polb.com

Port of
LONG BEACH
The Green Port

May 2, 2019

Mr. Robert Dorame
Chairperson
Gabrielino Tongva Indians of
California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Via Certified U.S. Mail and
Email to: gtongva@gmail.com

Subject: **Tribal Cultural Resources under the California Environmental Quality Act (CEQA), Assembly Bill 52 (Gatto, 2014) and Senate Bill 18 (Burton, 2004) – Formal Notification of Decision to Undertake a Project and Notification of Consultation Opportunity, Pursuant to Public Resources Code §21080.3.1 and §65352.3 – 65352.4.**

Dear Mr. Dorame:

Pursuant to the provisions of AB52 and SB 18, as the Lead Agency under CEQA, the City of Long Beach Harbor Department (Port of Long Beach) has decided to undertake the Port Master Plan Update (PMPU) and the PMPU Program Environmental Impact Report (PEIR). Pursuant to Public Resources Code §21080.3.1(d) and §65352.3., below is a description of the proposed project, project location, and the name of the project point of contact. A map showing the proposed project site is also attached herein.

Project Name:	Port of Long Beach Port Master Plan Update and Program Environmental Impact Report
Project Location:	Port of Long Beach Harbor District (attached Figure 1)
Project Description:	The Port Master Plan (PMP) serves as a long-range plan to establish policies and guidelines for future development within the coastal zone boundary of the Port. The existing 1990 PMP is being updated to incorporate previous PMP amendments and reflect changes in the global shipping industry, technological advances, and important factors such as climate change and energy resources consistent with Green Port Policy objectives. A Program Environmental Impact Report (PEIR) will be prepared to evaluate the following plan elements: changes to existing PMP land and water use categories; reduction in the number of PMP Planning Districts; changes to the boundary of the PMP Planning Districts; revisions to allowed land uses within the Planning Districts; and potential projects that may be initiated or completed within the next 10 to 20 years.

Lead Agency Point of Contact:	Janna Morimoto, Environmental Specialist Port of Long Beach (562) 283-7100 janna.morimoto@polb.com

This letter serves to initiate consultation in compliance with Assembly Bill 52 (AB 52, Chapter 532, Statutes of 2014), which is required to consider the Proposed Project potential impacts to tribal cultural resources as part of the CEQA environmental review. Pursuant to AB 52 and Public Resources Code Section 21080.3.1, we are requesting any information you may have of tribal cultural resources within the project area boundaries and offer this opportunity to request consultation with the Port regarding the Proposed Project.

In addition, as the Proposed Project is an amendment to the Port Master Plan, this letter also serves to initiate consultation in compliance with Senate Bill 18 (California Public Resources Code Sections 65352.3 – 65352.4). Senate Bill 18 (SB 18) requires local governments to notify and consult with California Native American tribes, on the contact list maintained by the California Native American Heritage Commission, prior to adopting or amending the Port Master Plan.

We respectfully request that you advise the Port if you wish to initiate consultations with the Port on the Proposed Project. Under the provisions of SB 18, you have 90 days from the date of this notice to advise the Port if you are interested in further consultation. Under provisions of AB 52 (PRC § 21080.3.1), you have 30 days from the receipt of this letter to request in writing, consultation with the Port of Long Beach. Should your organization request consultation, the Port will begin the consultation process within 30 days of receiving your request.

Should the Port not receive a written response within the 30 days (under AB 52) or 90 days (under SB 18), it will be presumed that you have declined consultation. Thank you for your consideration on this matter.

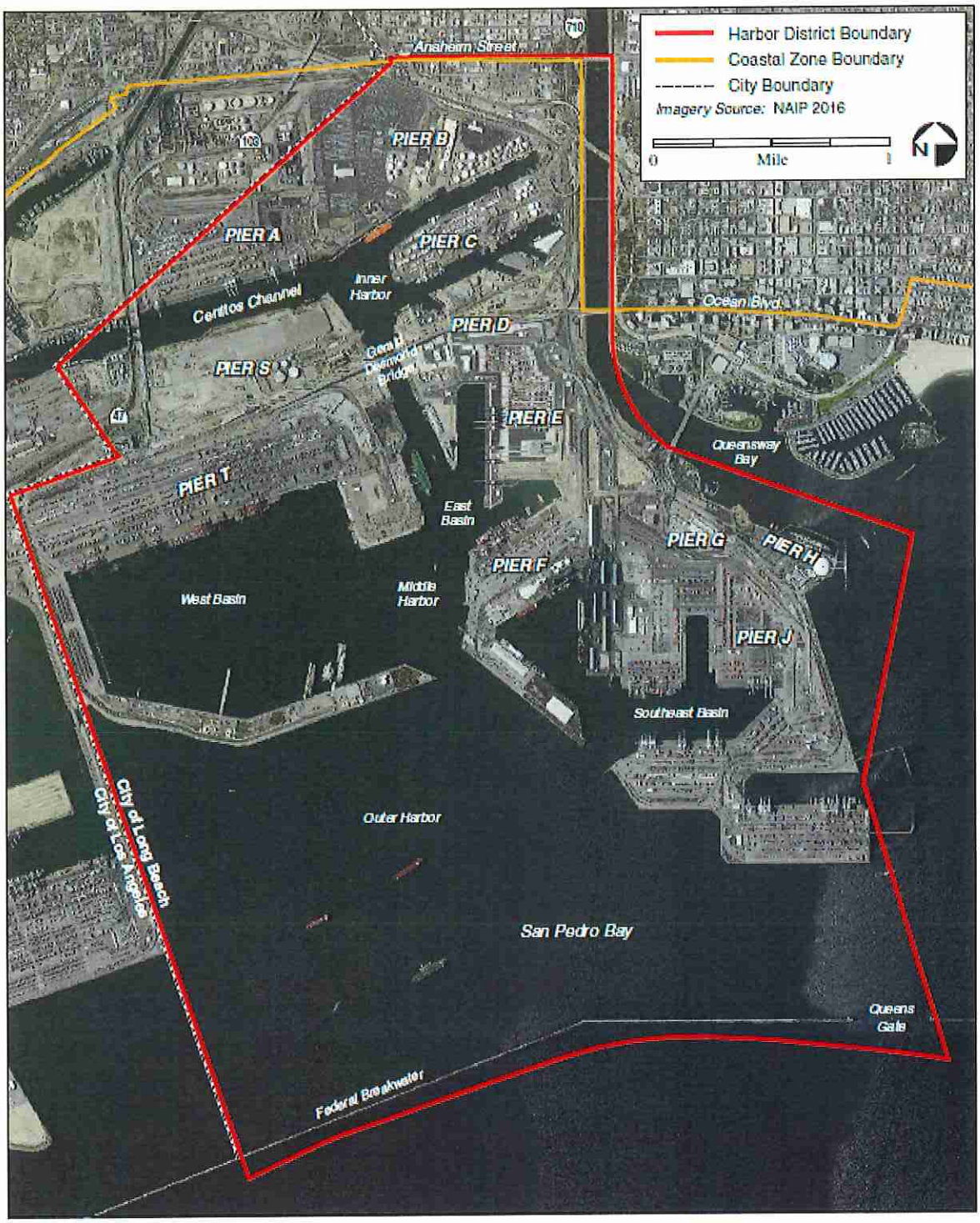
Sincerely,

Matthew Arms
Acting Director of Environmental Planning

Attachment: Figure 1 - Project Site Map

Figure 1 - Project Site Map

Mr. Robert Dorame
Tribal Cultural Resources Under AB52 and SB18
May 2, 2019
Page 4 of 4



4801 Airport Plaza Drive, Long Beach, CA 90815 Tel 562.283.7000 www.polb.com

Port of
LONG BEACH
The Green Port

May 2, 2019

Ms. Sandonne Goad
Chairperson
Gabrielino/Tongva Nation
106 ½ Judge John Aiso Street, #231
Los Angeles, CA 90012

Via Certified U.S. Mail and
Email to: sgoad@gabrielino-tongva.com

Subject: **Tribal Cultural Resources under the California Environmental Quality Act (CEQA), Assembly Bill 52 (Gatto, 2014) and Senate Bill 18 (Burton, 2004) – Formal Notification of Decision to Undertake a Project and Notification of Consultation Opportunity, Pursuant to Public Resources Code §21080.3.1 and §65352.3 – 65352.4.**

Dear Ms. Goad:

Pursuant to the provisions of AB52 and SB 18, as the Lead Agency under CEQA, the City of Long Beach Harbor Department (Port of Long Beach) has decided to undertake the Port Master Plan Update (PMPU) and the PMPU Program Environmental Impact Report (PEIR). Pursuant to Public Resources Code §21080.3.1(d) and §65352.3., below is a description of the proposed project, project location, and the name of the project point of contact. A map showing the proposed project site is also attached herein.

Project Name:	Port of Long Beach Port Master Plan Update and Program Environmental Impact Report
Project Location:	Port of Long Beach Harbor District (attached Figure 1)
Project Description:	The Port Master Plan (PMP) serves as a long-range plan to establish policies and guidelines for future development within the coastal zone boundary of the Port. The existing 1990 PMP is being updated to incorporate previous PMP amendments and reflect changes in the global shipping industry, technological advances, and important factors such as climate change and energy resources consistent with Green Port Policy objectives. A Program Environmental Impact Report (PEIR) will be prepared to evaluate the following plan elements: changes to existing PMP land and water use categories; reduction in the number of PMP Planning Districts; changes to the boundary of the PMP Planning Districts; revisions to allowed land uses within the Planning Districts; and potential projects that may be initiated or completed within the next 10 to 20 years.

Lead Agency Point of Contact:	Janna Morimoto, Environmental Specialist Port of Long Beach (562) 283-7100 janna.morimoto@polb.com

This letter serves to initiate consultation in compliance with Assembly Bill 52 (AB 52, Chapter 532, Statutes of 2014), which is required to consider the Proposed Project potential impacts to tribal cultural resources as part of the CEQA environmental review. Pursuant to AB 52 and Public Resources Code Section 21080.3.1, we are requesting any information you may have of tribal cultural resources within the project area boundaries and offer this opportunity to request consultation with the Port regarding the Proposed Project.

In addition, as the Proposed Project is an amendment to the Port Master Plan, this letter also serves to initiate consultation in compliance with Senate Bill 18 (California Public Resources Code Sections 65352.3 – 65352.4). Senate Bill 18 (SB 18) requires local governments to notify and consult with California Native American tribes, on the contact list maintained by the California Native American Heritage Commission, prior to adopting or amending the Port Master Plan.

We respectfully request that you advise the Port if you wish to initiate consultations with the Port on the Proposed Project. Under the provisions of SB 18, you have 90 days from the date of this notice to advise the Port if you are interested in further consultation. Under provisions of AB 52 (PRC § 21080.3.1), you have 30 days from the receipt of this letter to request in writing, consultation with the Port of Long Beach. Should your organization request consultation, the Port will begin the consultation process within 30 days of receiving your request.

Should the Port not receive a written response within the 30 days (under AB 52) or 90 days (under SB 18), it will be presumed that you have declined consultation. Thank you for your consideration on this matter.

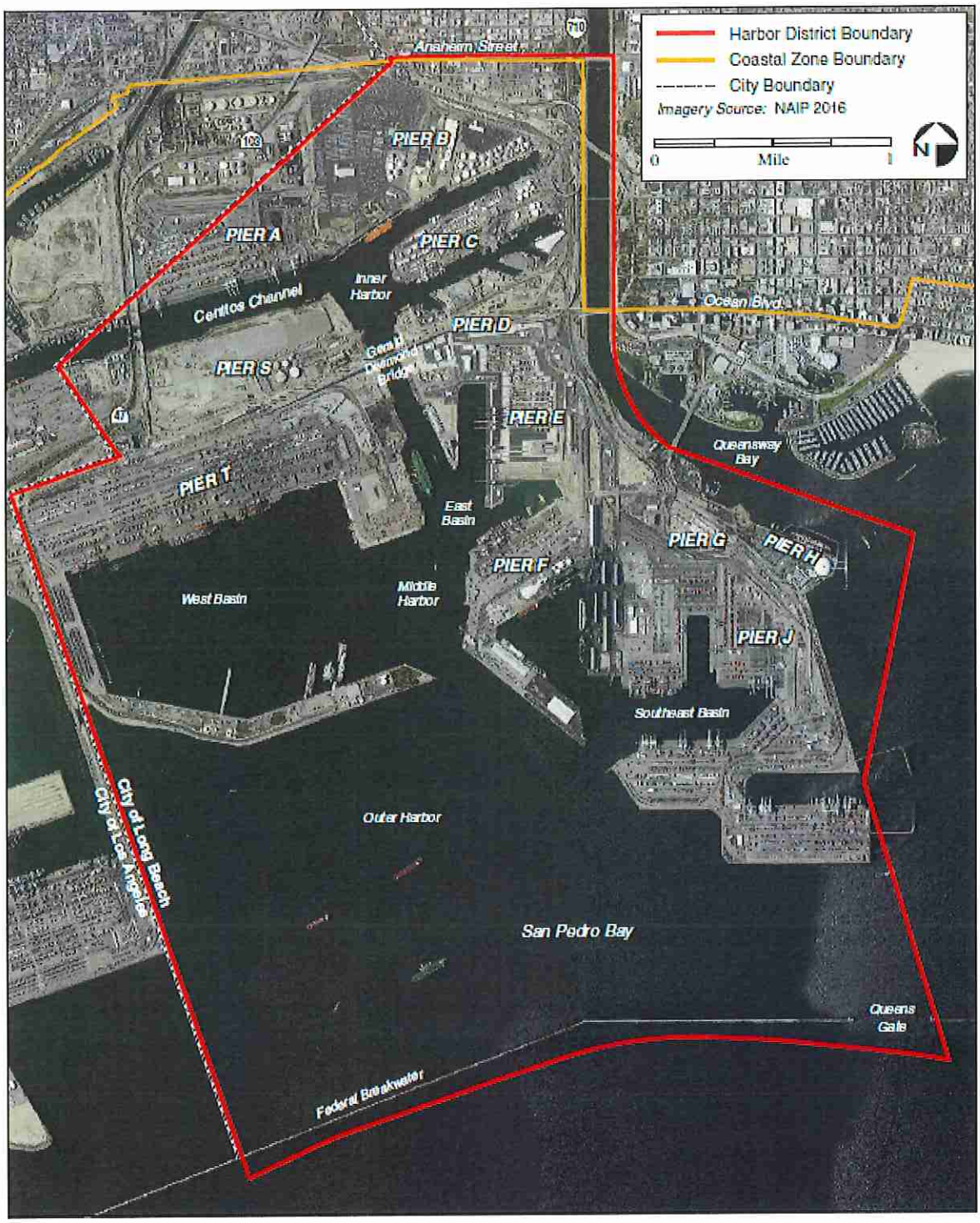
Sincerely,

Matthew Arms
Acting Director of Environmental Planning

Attachment: Figure 1 - Project Site Map

Figure 1 - Project Site Map

Ms. Sandonne Goad
Tribal Cultural Resources Under AB52 and SB18
May 2, 2019
Page 4 of 4



4801 Airport Plaza Drive, Long Beach, CA 90815 Tel 562.283.7000 www.polb.com

Port of
LONG BEACH
The Green Port

May 2, 2019

Mr. Anthony Morales
Chairperson
Gabrieleno/Tongva San Gabriel Band
of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Via Certified U.S. Mail and
Email to: GTTribalcouncil@aol.com

Subject: **Tribal Cultural Resources under the California Environmental Quality Act (CEQA), Assembly Bill 52 (Gatto, 2014) and Senate Bill 18 (Burton, 2004) – Formal Notification of Decision to Undertake a Project and Notification of Consultation Opportunity, Pursuant to Public Resources Code §21080.3.1 and §65352.3 – 65352.4.**

Dear Mr. Morales:

Pursuant to the provisions of AB52 and SB 18, as the Lead Agency under CEQA, the City of Long Beach Harbor Department (Port of Long Beach) has decided to undertake the Port Master Plan Update (PMPU) and the PMPU Program Environmental Impact Report (PEIR). Pursuant to Public Resources Code §21080.3.1(d) and §65352.3., below is a description of the proposed project, project location, and the name of the project point of contact. A map showing the proposed project site is also attached herein.

Project Name:	Port of Long Beach Port Master Plan Update and Program Environmental Impact Report
Project Location:	Port of Long Beach Harbor District (attached Figure 1)
Project Description:	The Port Master Plan (PMP) serves as a long-range plan to establish policies and guidelines for future development within the coastal zone boundary of the Port. The existing 1990 PMP is being updated to incorporate previous PMP amendments and reflect changes in the global shipping industry, technological advances, and important factors such as climate change and energy resources consistent with Green Port Policy objectives. A Program Environmental Impact Report (PEIR) will be prepared to evaluate the following plan elements: changes to existing PMP land and water use categories; reduction in the number of PMP Planning Districts; changes to the boundary of the PMP Planning Districts; revisions to allowed land uses within the Planning Districts; and potential projects that may be initiated or completed within the next 10 to 20 years.

Lead Agency Point of Contact:	Janna Morimoto, Environmental Specialist Port of Long Beach (562) 283-7100 janna.morimoto@polb.com

This letter serves to initiate consultation in compliance with Assembly Bill 52 (AB 52, Chapter 532, Statutes of 2014), which is required to consider the Proposed Project potential impacts to tribal cultural resources as part of the CEQA environmental review. Pursuant to AB 52 and Public Resources Code Section 21080.3.1, we are requesting any information you may have of tribal cultural resources within the project area boundaries and offer this opportunity to request consultation with the Port regarding the Proposed Project.

In addition, as the Proposed Project is an amendment to the Port Master Plan, this letter also serves to initiate consultation in compliance with Senate Bill 18 (California Public Resources Code Sections 65352.3 – 65352.4). Senate Bill 18 (SB 18) requires local governments to notify and consult with California Native American tribes, on the contact list maintained by the California Native American Heritage Commission, prior to adopting or amending the Port Master Plan.

We respectfully request that you advise the Port if you wish to initiate consultations with the Port on the Proposed Project. Under the provisions of SB 18, you have 90 days from the date of this notice to advise the Port if you are interested in further consultation. Under provisions of AB 52 (PRC § 21080.3.1), you have 30 days from the receipt of this letter to request in writing, consultation with the Port of Long Beach. Should your organization request consultation, the Port will begin the consultation process within 30 days of receiving your request.

Should the Port not receive a written response within the 30 days (under AB 52) or 90 days (under SB 18), it will be presumed that you have declined consultation. Thank you for your consideration on this matter.

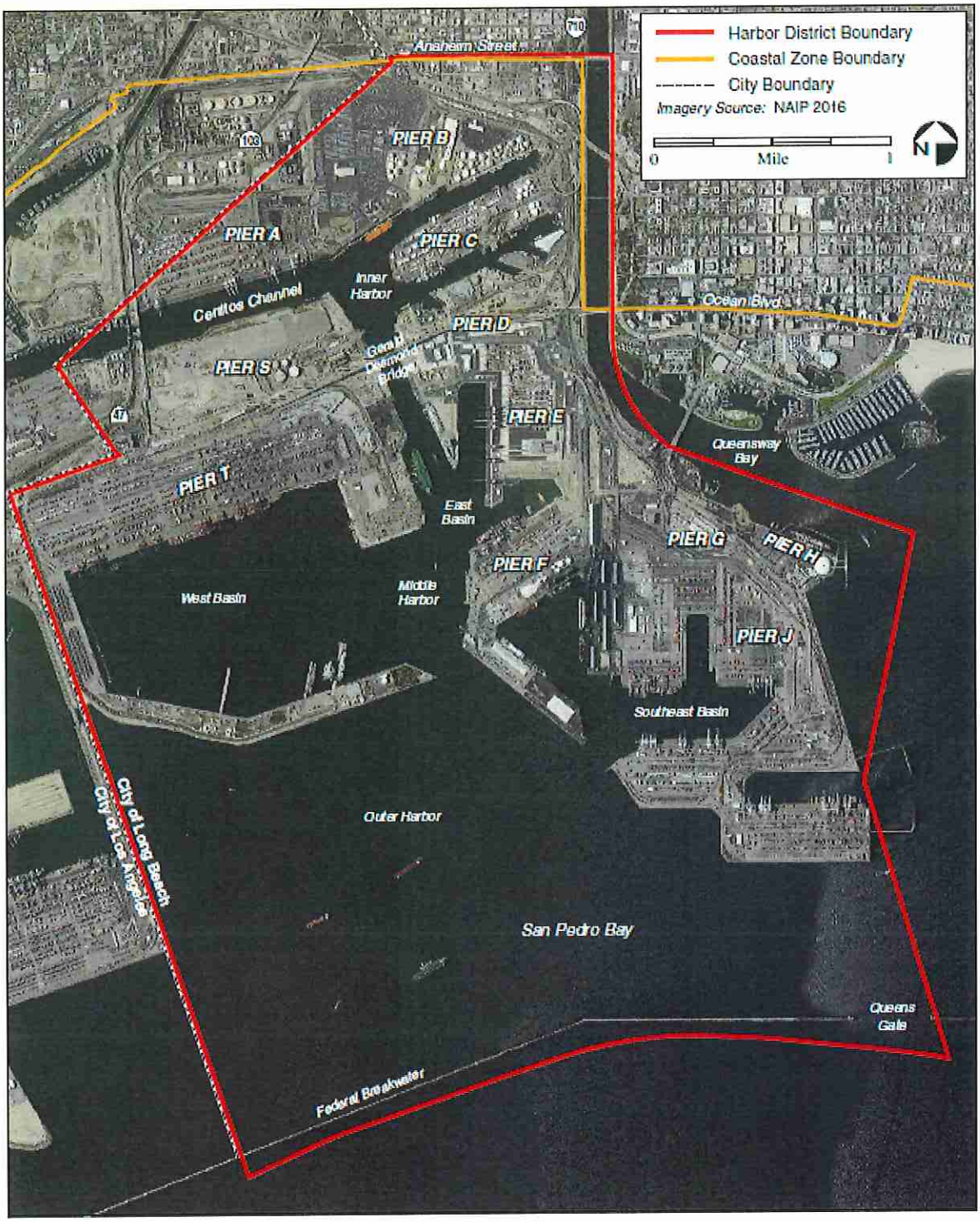
Sincerely,

Matthew Arms
Acting Director of Environmental Planning

Attachment: Figure 1 - Project Site Map

Figure 1 - Project Site Map

Mr. Anthony Morales
Tribal Cultural Resources Under AB52 and SB18
May 2, 2019
Page 4 of 4



4801 Airport Plaza Drive, Long Beach, CA 90815 Tel 562.283.7000 www.polb.com

Port of
LONG BEACH
The Green Port

May 2, 2019

Mr. Charles Alvarez
Gabrielino-Tongva Tribe
23454 Vanowen Street
West Hills, CA 91307

Via Certified U.S. Mail and
Email to: roadkingcharles@aol.com

Subject: **Tribal Cultural Resources under the California Environmental Quality Act (CEQA), Assembly Bill 52 (Gatto, 2014) and Senate Bill 18 (Burton, 2004) – Formal Notification of Decision to Undertake a Project and Notification of Consultation Opportunity, Pursuant to Public Resources Code §21080.3.1 and §65352.3 – 65352.4.**

Dear Mr. Alvarez:

Pursuant to the provisions of AB52 and SB18, as the Lead Agency under CEQA, the City of Long Beach Harbor Department (Port of Long Beach) has decided to undertake the Port Master Plan Update (PMPU) and the PMPU Program Environmental Impact Report (PEIR). Pursuant to Public Resources Code §21080.3.1(d) and §65352.3., below is a description of the proposed project, project location, and the name of the project point of contact. A map showing the proposed project site is also attached herein.

Project Name:	Port of Long Beach Port Master Plan Update and Program Environmental Impact Report
Project Location:	Port of Long Beach Harbor District (attached Figure 1)
Project Description:	The Port Master Plan (PMP) serves as a long-range plan to establish policies and guidelines for future development within the coastal zone boundary of the Port. The existing 1990 PMP is being updated to incorporate previous PMP amendments and reflect changes in the global shipping industry, technological advances, and important factors such as climate change and energy resources consistent with Green Port Policy objectives. A Program Environmental Impact Report (PEIR) will be prepared to evaluate the following plan elements: changes to existing PMP land and water use categories; reduction in the number of PMP Planning Districts; changes to the boundary of the PMP Planning Districts; revisions to allowed land uses within the Planning Districts; and potential projects that may be initiated or completed within the next 10 to 20 years.

Lead Agency Point of Contact:	Janna Morimoto, Environmental Specialist Port of Long Beach (562) 283-7100 janna.morimoto@polb.com

This letter serves to initiate consultation in compliance with Assembly Bill 52 (AB52, Chapter 532, Statutes of 2014), which is required to consider the Proposed Project potential impacts to tribal cultural resources as part of the CEQA environmental review. Pursuant to AB52 and Public Resources Code Section 21080.3.1, we are requesting any information you may have of tribal cultural resources within the project area boundaries and offer this opportunity to request consultation with the Port regarding the Proposed Project.

In addition, as the Proposed Project is an amendment to the Port Master Plan, this letter also serves to initiate consultation in compliance with Senate Bill 18 (California Public Resources Code Sections 65352.3 – 65352.4). Senate Bill 18 (SB18) requires local governments to notify and consult with California Native American tribes, on the contact list maintained by the California Native American Heritage Commission, prior to adopting or amending the Port Master Plan.

We respectfully request that you advise the Port if you wish to initiate consultations with the Port on the Proposed Project. Under the provisions of SB18, you have 90 days from the date of this notice to advise the Port if you are interested in further consultation. Under provisions of AB52 (PRC § 21080.3.1), you have 30 days from the receipt of this letter to request in writing, consultation with the Port of Long Beach. Should your organization request consultation, the Port will begin the consultation process within 30 days of receiving your request.

Should the Port not receive a written response within the 30 days (under AB52) or 90 days (under SB18), it will be presumed that you have declined consultation. Thank you for your consideration on this matter.

Sincerely,

Matthew Arms
Acting Director of Environmental Planning

Attachment: Figure 1 - Project Site Map

Figure 1 - Project Site Map

Mr. Charles Alvarez
Tribal Cultural Resources Under AB52 and SB18
May 2, 2019
Page 4 of 4



4801 Airport Plaza Drive, Long Beach, CA 90815 Tel 562.283.7000 www.polb.com

Port of
LONG BEACH
The Green Port

May 2, 2019

Mr. Joseph Ontiveros
Cultural Resource Director
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, CA 92581

Via Certified U.S. Mail and
Email to: jontiveros@soboba-nsn.gov

Subject: **Tribal Cultural Resources under the California Environmental Quality Act (CEQA), Assembly Bill 52 (Gatto, 2014) and Senate Bill 18 (Burton, 2004) – Formal Notification of Decision to Undertake a Project and Notification of Consultation Opportunity, Pursuant to Public Resources Code §21080.3.1 and §65352.3 – 65352.4.**

Dear Mr. Ontiveros:

Pursuant to the provisions of AB52 and SB18, as the Lead Agency under CEQA, the City of Long Beach Harbor Department (Port of Long Beach) has decided to undertake the Port Master Plan Update (PMPU) and the PMPU Program Environmental Impact Report (PEIR). Pursuant to Public Resources Code §21080.3.1(d) and §65352.3., below is a description of the proposed project, project location, and the name of the project point of contact. A map showing the proposed project site is also attached herein.

Project Name:	Port of Long Beach Port Master Plan Update and Program Environmental Impact Report
Project Location:	Port of Long Beach Harbor District (attached Figure 1)
Project Description:	The Port Master Plan (PMP) serves as a long-range plan to establish policies and guidelines for future development within the coastal zone boundary of the Port. The existing 1990 PMP is being updated to incorporate previous PMP amendments and reflect changes in the global shipping industry, technological advances, and important factors such as climate change and energy resources consistent with Green Port Policy objectives. A Program Environmental Impact Report (PEIR) will be prepared to evaluate the following plan elements: changes to existing PMP land and water use categories; reduction in the number of PMP Planning Districts; changes to the boundary of the PMP Planning Districts; revisions to allowed land uses within the Planning Districts; and potential projects that may be initiated or completed within the next 10 to 20 years.

Lead Agency Point of Contact:	Janna Morimoto, Environmental Specialist Port of Long Beach (562) 283-7100 janna.morimoto@polb.com

This letter serves to initiate consultation in compliance with Assembly Bill 52 (AB52, Chapter 532, Statutes of 2014), which is required to consider the Proposed Project potential impacts to tribal cultural resources as part of the CEQA environmental review. Pursuant to AB 52 and Public Resources Code Section 21080.3.1, we are requesting any information you may have of tribal cultural resources within the project area boundaries and offer this opportunity to request consultation with the Port regarding the Proposed Project.

In addition, as the Proposed Project is an amendment to the Port Master Plan, this letter also serves to initiate consultation in compliance with Senate Bill 18 (California Public Resources Code Sections 65352.3 – 65352.4). Senate Bill 18 (SB18) requires local governments to notify and consult with California Native American tribes, on the contact list maintained by the California Native American Heritage Commission, prior to adopting or amending the Port Master Plan.

We respectfully request that you advise the Port if you wish to initiate consultations with the Port on the Proposed Project. Under the provisions of SB18, you have 90 days from the date of this notice to advise the Port if you are interested in further consultation. Under provisions of AB52 (PRC § 21080.3.1), you have 30 days from the receipt of this letter to request in writing, consultation with the Port of Long Beach. Should your organization request consultation, the Port will begin the consultation process within 30 days of receiving your request.

Should the Port not receive a written response within the 30 days (under AB52) or 90 days (under SB18), it will be presumed that you have declined consultation. Thank you for your consideration on this matter.

Sincerely,

Matthew Arms
Acting Director of Environmental Planning

Attachment: Figure 1 - Project Site Map

Figure 1 - Project Site Map

Mr. Joseph Ontiveros
Tribal Cultural Resources Under AB52 and SB18
May 2, 2019
Page 4 of 4

