AECOM

DRAFT

Avalon and Fries Street Segments Closure Project

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION (IS/MND)

ADP #: 120809-510

FRIES AVENUE

AVALON BOULEVARD

THE PORT
OF LOS ANGELES

PREPARED FOR
City of Los Angeles Harbor Department
Environmental Management Division
425 S. Palos Verdes St.
San Pedro, CA 90731

APRIL 2014

Avalon and Fries Street Segments Closure Project

Draft Initial Study/Mitigated Negative Declaration

ADP No. 120809-510
SCH# ___________________

Prepared for:

Los Angeles City Harbor Department
Environmental Management Division
425 S. Palos Verdes Street
San Pedro, California 90731

Prepared by:

AECOM
999 Town & Country Road
Orange, California 92868

April 2014

DRAFT MITIGATED NEGATIVE DECLARATION

Pursuant to the California Environmental Quality Act (Division 13, Public Resources Code)

Proposed Project

The City of Los Angeles Harbor Department (LAHD) has prepared and intends to adopt a Mitigated Negative Declaration (MND) for the proposed segment closures of Avalon Boulevard and Fries Avenue between Water Street and "A" Street. (hereafter "proposed Project"). The proposed Project involves the permanent physical closure of segments of Avalon Boulevard and Fries Avenue by installing street modifications that include cul-de-sacs or curbs and gutters, and fencing and signage. The primary goal of the proposed Project is to respond to improvements in rail operational efficiency and reduce rail traffic congestion along the West Basin Branch mainline track serving the West Basin Terminal of the Port of Los Angeles (POLA or the Port). These rail operational changes would improve the efficiency of service to TraPac, Yang Ming, China Shipping container terminals, and other Port rail customers and reduce congestion by allowing simultaneous moves of unit container trains destined for the Yang Ming and TraPac container terminals. The proposed Project would also comply with the California Public Utilities Commission (CPUC) General Order 135 rule, which limits road crossing blockages due to stopped or switching train cars to 10 minutes.

In order to maintain adequate access and circulation in the Project area, the proposed Project would not occur until the completion of the South Wilmington Grade Separation Project, which is a separate project that is scheduled to open in January 2015. The construction of the South Wilmington Grade Separation Project will allow for direct, quick, and safe access to the waterfront, supplementing the proposed Project segments proposed for closure.

Determination

Based on the analysis provided in this MND, LAHD finds that with the incorporation of described mitigation measures, the proposed Project would not have a significant effect on the environment.

DRAFT INITIAL STUDY/MND ORGANIZATION

This Draft Initial Study (IS)/MND has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] 21000 et seq.) and the CEQA Guidelines (California Code of Regulations [CCR] 15000 et seq.).

The following sections are included in this Draft IS/MND:

Section 1. **Introduction.** This section provides an overview of the proposed Project and the applicable CEQA process.

Section 2. Project Description. This section provides a detailed description of the proposed Project objectives and components.

Section 3. Initial Study Checklist. This section presents the CEQA checklist for all impact areas and mandatory findings of significance.

Section 4. Impacts and Mitigation Measures. This section presents the environmental analysis for each issue area identified on the environmental checklist form. If the proposed Project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the proposed Project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts, and appropriate mitigation measures and/or permit requirements that would reduce those impacts to a less than significant level.

Section 5. Mitigation Monitoring and Reporting Program. This section includes a checklist to be used during the mitigation monitoring period. The checklist will record the name of the monitor, the date of the monitoring activity, and any related remarks for each mitigation measure.

Section 6. Proposed Finding. This section provides the proposed finding for the proposed Project.

Section 7. References. This section provides the references used throughout the IS/MND.

Section 8. Preparers and Contributors. This section provides a list of key personnel involved in the preparation of the IS/MND.

Section 9. Acronyms and Abbreviations. This section provides a list of acronyms and abbreviations used throughout the IS/MND.

Appendix A: Air Quality and Greenhouse Gas Analysis by SRA, February 2014
Appendix B: Noise and Vibration Assessment by TAHA, February 2014
Appendix C: Traffic Report by Fehr & Peers, February 2014

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1.0 INTRODUCTION

The City of Los Angeles Harbor Department (LAHD) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) to address the environmental effects of the proposed segment closures of Avalon Boulevard and Fries Avenue (hereafter "proposed Project"). LAHD is the lead agency under the California Environmental Quality Act (CEQA).

1.1 CEQA PROCESS

This document has been prepared in accordance with the CEQA Public Resources Code Section 21000 *et seq*. and the State CEQA Guidelines, California Code of Regulations (CCR) Section 15000 *et seq*, and the City of Los Angeles CEQA Guidelines (City of Los Angeles 2002). One of the main objectives of CEQA is to disclose to the public and decision-makers the potential environmental effects of proposed activities. CEQA requires that the potential environmental effects of a project be evaluated prior to implementation. This IS/MND includes a discussion on the proposed Project's effects on the existing environment, including the identification of avoidance, minimization, and mitigation measures.

Under CEQA, the Lead Agency is the public agency with primary responsibility over approval of a proposed Project. Pursuant to Section 15367, the CEQA Lead Agency for the proposed Project is the LAHD. LAHD has directed the preparation of an environmental document that complies with CEQA. LAHD will consider the information in this document when determining whether to approve the proposed use of LAHD property.

The preparation of initial studies is guided by Section 15063 of the State CEQA Guidelines; whereas Sections 15070–15075 guide the process for the preparation of a Negative or Mitigated Negative Declaration. Where appropriate and supportive to an understanding of the issues, reference will be made to the statute, the State CEQA Guidelines, or appropriate case law.

This IS/MND meets CEQA content requirements by including a project description; a description of the environmental setting; potential environmental impacts and mitigation measures for any significant effects; discussion of consistency with plans and policies; and names of the document preparers.

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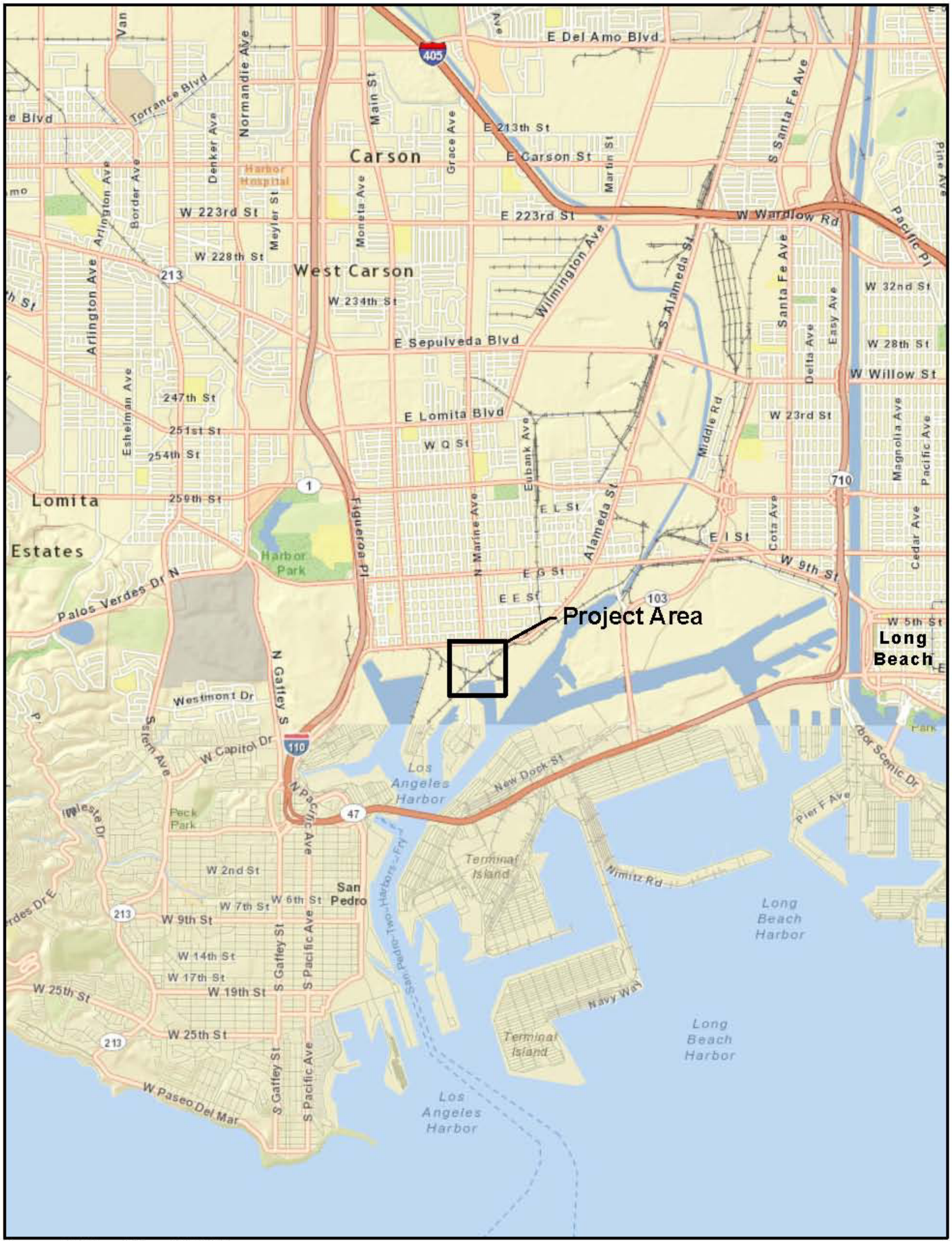
2.0 PROJECT BACKGROUND

This IS/MND is being prepared to evaluate the potential environmental impacts that may result from the proposed Project. This chapter provides an overview of the proposed segment closures of Fries Avenue and Avalon Boulevard (proposed Project), existing conditions at the proposed Project site , the objectives, detailed Project elements, intended used of the MND, and subsequent discretionary and ministerial actions.

2.1 PROJECT LOCATION

2.1.1 Regional Setting

The Port is located at the southernmost portion of the City of Los Angeles and comprises 43 miles of waterfront and 7,500 acres of land and water, with approximately 300 commercial berths. The Port is approximately 23 miles south of downtown Los Angeles and is surrounded by the community of San Pedro to the west, the Wilmington community to the north, the Port of Long Beach to the east, and the Pacific Ocean to the south. Figure 2-1, *Regional Location*, shows the regional location and depicts the location of the Project site. The Port is an area of mixed uses, supporting various maritime-themed activities. Port operations are predominantly centered on shipping activities, including containerized, break-bulk, dry-bulk, liquid-bulk, auto, and intermodal rail shipping. In addition to the large shipping industry at the Port, the Port also supports a cruise ship industry and a commercial fishing fleet. In addition, the Port accommodates boat repair yards and provides slips for approximately 3,950 recreational vessels, 150 commercial fishing boats, 35 miscellaneous small service crafts, and 15 charter vessels that handle sportfishing and harbor cruises. The Port has retail shops and restaurants, primarily along the west side of the Main Channel. It also accommodates recreation, community, and educational facilities, such as a public swimming beach, Cabrillo Beach Youth Waterfront Sports Center, the Cabrillo Marine Aquarium, the Los Angeles Maritime Museum, 22nd Street Park, and the Wilmington Waterfront Park.



Source: ESRI Street Map; AECOM

0 0.5 1 1.5 Miles Scale = 1:80,000

Figure 2-1
Regional Location

2.1.2 Project Setting

The proposed Project site refers to and encompasses: 1) the segment of Fries Avenue between Water Street at the Union Pacific Rail Tracks and the intersection with West A Street proposed for closure (1337 linear feet of roadway): and 2) the segment of Avalon Boulevard between the Union Pacific Rail Tracks and the intersection of North Broad Avenue proposed for closure (438 linear feet of roadway).

Figure 2-2, *Local Vicinity/Aerial Photo,* shows the road segment closures in the local context. Figure 2-2 also illustrates the segments slated for closure on an aerial photograph.

The community of Wilmington is located north of the proposed Project site and to the south is Terminal Island. Berths 136-147 [TraPac] are located to the east while Berths 196-200A (Wallenius Wilhemsen Logistics [WWL] Auto Terminal) are located to the west.

Adjacent to the proposed Project site, bordering Fries Avenue and the Berth 200 Rail Yard, is the Wilmington Waterfront Development Project, approved in 2009 and scheduled for completion by 2020. The purpose of the 94-acre Wilmington Waterfront Development Project is to create a strong connection between the Wilmington community and the waterfront while providing 11 acres of green open space for recreational uses, 8 acres of plazas, a waterfront promenade, floating docks for recreational vessels, water features, and a 200-foot observational tower. Commercial and industrial developments are also included along Harry Bridges Boulevard. Figure 2-3, *Wilmington Waterfront Development Project,* shows the boundaries of the approved Wilmington Waterfront Development Project, which is divided into two districts, the Avalon Development District and the Avalon Waterfront District, and the location of the proposed Project.

The Port is upgrading and constructing additional mainline tracks serving rail customers within the West Basin area of the Port. In addition, recent and projected rail operational changes will improve the efficiency in rail service to TraPac, Yang Ming, and China Shipping container terminals, and other Port rail customers. This will result in greater train switching and staging delays across Fries Avenue and Avalon Boulevard grade crossings. Previously, train movements entering and exiting the terminal rail yard were pulled continuously across Fries Avenue and Avalon Boulevard to the west and then continue into the terminal rail yard via the west leg of the Pier A Wye track. This operation complied with CPUC General Order 135 (limiting crossing blockages due to stopped or switching train cars to 10 minutes), but changes in operations and improvements described below present challenges for compliance with CPUC General Order 135.

To improve rail operational efficiency in serving Port terminal customers and reduce rail traffic congestion along the West Basin Branch mainline track, the Port is implementing mainline rail improvements and operational changes. Those improvements, which are not part of this Project and were previously assessed and approved as part of the Berths 136-147 [TraPac] Container Terminal Project (POLA, December 2007), include:

- Two additional mainline tracks and associated track connections are proposed to be constructed across Avalon Boulevard to improve rail switching and staging flexibility in serving the West Basin area rail customers

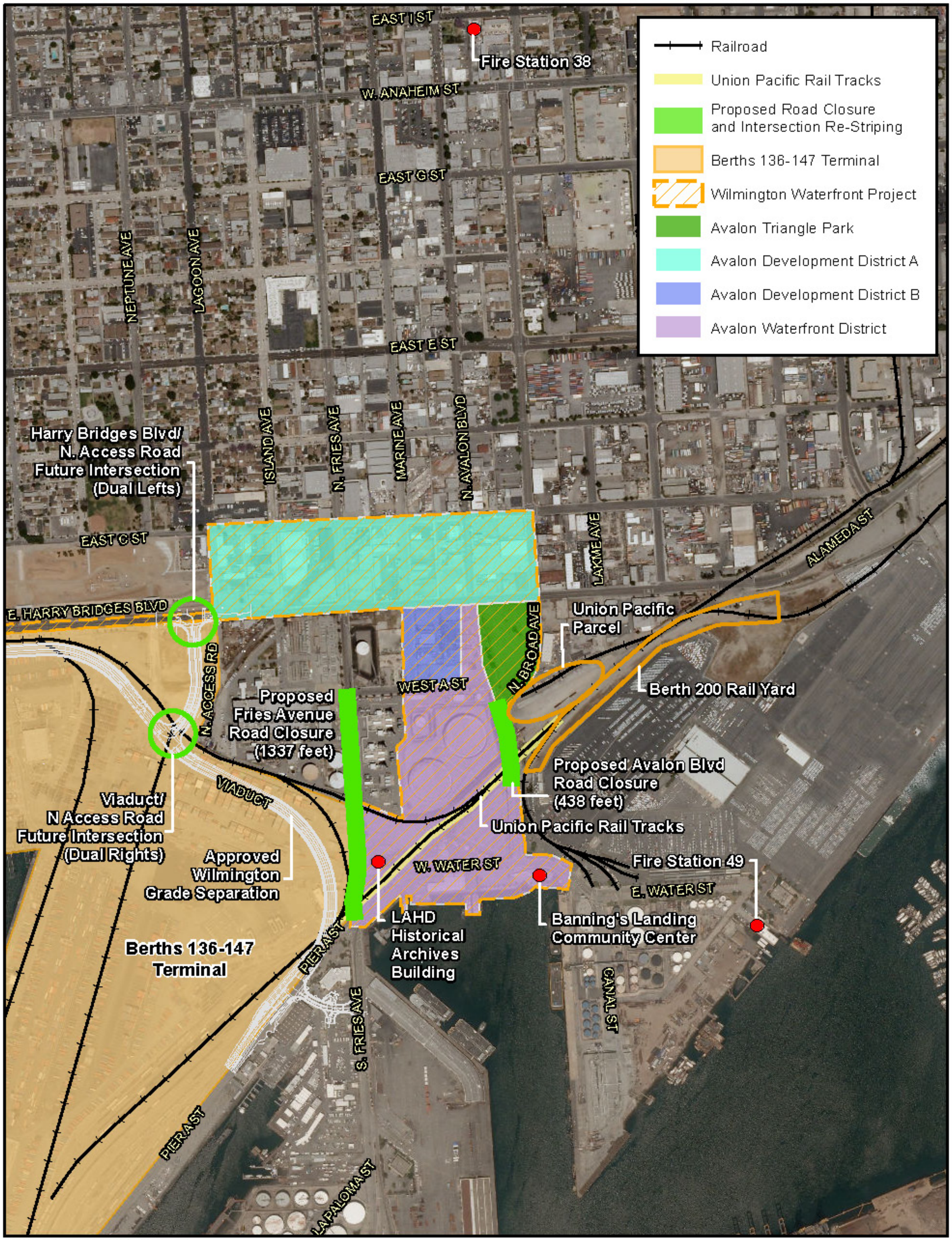
- POLA and Pacific Harbor Line (PHL), the Port's short line rail operator, plan to improve the operational efficiency of providing rail access to the new TraPac on-dock rail yard. The improved operating plan involves priority staging of arriving and departing trains along the direct lead track into the terminal, which crosses Fries Avenue and Avalon Boulevard at-grade, as opposed to the current plan of staging the trains along the west leg of the Pier A Wye track. This will reduce congestion on the West Basin Branch single main track, allowing simultaneous moves of unit container trains destined for the Yang Ming and TraPac container terminals.

2.1.3 Project Setting Land Use and Zoning Designations

The applicable land use plans for the Port include the City of Los Angeles General Plan, the Port of Los Angeles Community Plan, and the Port Master Plan. The General Plan designates the Project site as Public Facilities; and the adjacent properties are designated Non-Hazard Industrial; Commercial; and Community Commercial. The Project site is zoned for public facilities (PF), and the adjacent properties are zoned for commercial use (C2), and heavy industrial use (M3) (see Figures 4.10-1 and 4.10-2 of this document). The proposed Project's closure of segments of Fries Avenue and Avalon Boulevard; street improvements; cul-de-sac construction; removal of two ornamental street trees; removal/replacement/relocation of fencing, power poles, streetlight, and fire hydrant; and other minor project components would not require a change to the current zoning, general plan or the existing land use designation of the Project site within the August 2013 Port Master Plan (Mixed Land Use).

Source: NAIP 2010; AECOM

Figure 2-2
Local Vicinity/Aerial Photo



Source: NAIP 2010; AECOM

Figure 2-3
Wilmington Waterfront Development Project

2.2 PROJECT OBJECTIVES

The following overall and specific objectives have been established for the proposed Project and will aid decision-makers in their review of the proposed Project and its associated environmental impacts:

The overall Project objective is to minimize rail traffic delays/lengthy blockages at existing roadways that will occur due to recent and projected rail operational changes for the West Basin Terminal.

The specific objectives of the proposed project include:

- Remove at grade crossings on segments of Avalon Boulevard and Fries Avenue to enable improved rail operations for the West Basin area rail customers.
- Comply with the California Public Utilities Commission (CPUC) General Order 135 rule, which limits crossing blockages due to stopped or switching train cars to 10 minutes.
- Maintain sufficient access and circulation (via private driveways or other means) to adjacent parcels with sufficient crossing protection.
- Provide safe and clear segment closures using innovative street closure techniques such as cul-de-sacs and signage designed to slow/re-direct traffic.
- Ensure adequate vehicular circulation in the Project area by implementing striping modifications at two future intersections on the approved South Wilmington Grade Separation Project (see Figure 2-6).

2.3 PROJECT DESCRIPTION

As stated above, operational changes with train assembly, combined with the requirement to comply with CPUC regulations, has necessitated the consideration of the street segment closures. The addition of three tracks south of the existing track on Avalon Boulevard included in the Berths 136-147 [TraPac] Terminal Project; approved in 2007 and 2012 Addendum to the EIR (TraPac Project) is unaffected by the proposed Project and accounted for in the preliminary engineering design for the proposed Project. The preliminary engineering designs of the Fries Avenue and Avalon Boulevard proposed segment closures are depicted in Figures 2-4, *Preliminary Design for Fries Avenue Segment Closure* and 2-5, *Preliminary Design for Avalon Boulevard Segment Closure*, respectively.

To ensure adequate access is maintained to the Project area, the construction schedule for the proposed Project segment closures is tied to the opening of a separate previously approved project, the South Wilmington Grade Separation Project, which is scheduled to be completed in December 2014 and open in January 2015. The construction of the South Wilmington Grade Separation Project (see Figure 2-4) will allow for direct, quick, and safe access to the waterfront, supplementing the proposed Project segments that are proposed for closure. The South Wilmington Grade Separation Project will provide grade-separated vehicular access to all facilities south of Harry Bridges Boulevard from a heavily utilized rail line. Fries Avenue is an important north-south commercial street within the Port of Los Angeles complex. The South Wilmington Grade Separation Project will eliminate the conflict between vehicular traffic at two existing at-grade railroad crossings. It will provide unimpeded grade-separated vehicular access to the South Wilmington area, which is made up of many businesses and community areas, including TraPac Container Terminal, Wilmington Liquid Bulk, Pasha Terminal, Shell Oil Co., Borax Co., GATX, Union Oil, Banning's Landing Community Center, and Wilmington Waterfront Park. Currently, slow moving trains block most access to South Wilmington, including emergency vehicle access from Fire and Police Departments. The proposed Project segment closures are described in detail below and opening the South Wilmington Grade Separation Project in 2015 is a pre-requisite for the proposed Project.

2.3.1 Project Elements

The proposed Project includes the following elements:

- Vacate Fries Avenue and Avalon Boulevard between Water Street and A Street;
- Construct street improvements as shown in Figures 2-4 and 2-5;
- Install chain link fencing at the vacated boundaries of Fries Avenue, per City of LA Bureau of Engineering (BOE) Standard Plans [standard plan S-691-0 with fabric 2 inch mesh];
- Install signage and striping to effectively close access to the vacated portions of Fries Avenue and Avalon Boulevard and re-route traffic accordingly;
- Install a gate on the north side of the rail line along Fries Avenue over 13 feet from the existing rail and 26 feet from new rail, thereby meeting American Railway Engineering and Maintenance-of-Way Association (AREMA) (railroad clearance) standards;
- Provide a southerly gate on Fries Avenue that is anticipated to be used infrequently and/or for emergency purposes only;
- Provide primary access to the Port Archives Building from the north gate (near A Street) from Fries Avenue;
- Provide additional crossing protection including signing and striping, crossing arms, and lights, at an existing at grade crossing at the completed private road into WWL;

- Close Fries Avenue at A Street on the north side and Water Street on the south side. Road improvements include the construction of curb and gutter, sidewalk, fencing, and two driveways with the majority of Fries Avenue to remain in place. Perform minor grading and paving to join existing conditions at each location. Remove one mature tree on north Fries Avenue to construct closure. Maintain access to the Port Archive Building, as well as emergency vehicle access, with a secure gate;

- Construct two “elbow” closures on Fries Avenue with a minimum radius of 35 feet. A radius of 35 feet is proposed on Fries Avenue for the design of the “elbow” closure (see Figure 2-4);

- Construct two cul-de-sacs on Avalon Boulevard at the north and south side of the track crossings to close off the street to vehicular and pedestrian traffic. Per the City of Los Angeles Bureau of Engineering Standard Plan, a 50 feet radius is preferred, however; due to right-of-way constraints, only 35 feet can be accommodated. It is large enough to accommodate emergency vehicle access (see Figure 2-5);

- Remove a large palm tree immediately north of the existing tracks on Avalon Boulevard;

- Remove and replace (in kind) a portion of the fencing along the Department of Water and Power (DWP) property line along Avalon Boulevard;

- Remove and/or relocate two DWP power poles, one streetlight, and one fire hydrant on Avalon Boulevard. Also, perform minor grading and paving on Avalon Boulevard;

- Change the Harry Bridges Boulevard/N. Access Road intersection configuration to provide dual left turn lanes in the westbound direction (see Figure 2-6); and

- Provide dual right turn lanes southbound at the intersection of Viaduct/N. Access Road (see Figure 2-6).

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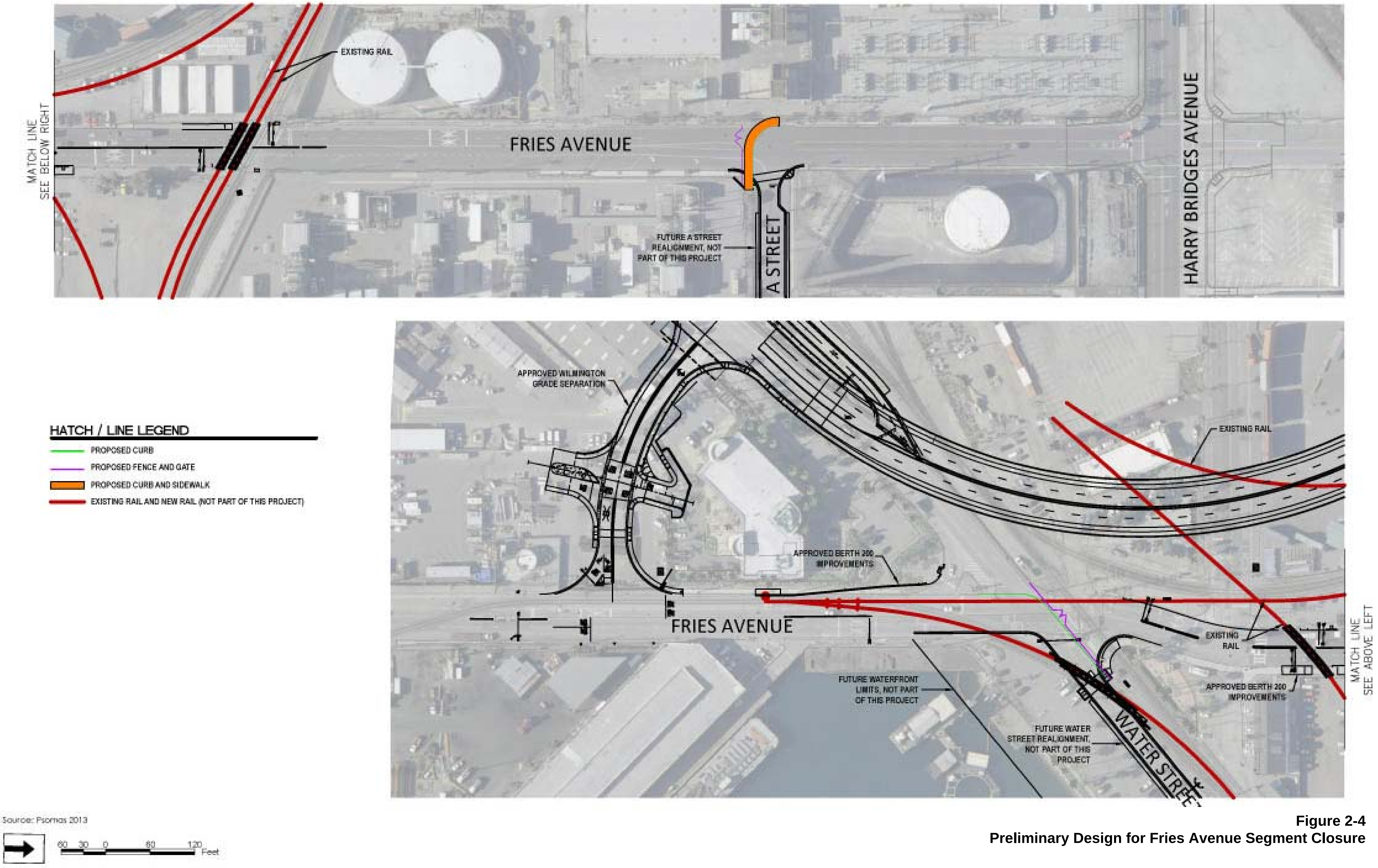

Source: Psomas 2013

Figure 2-4
Preliminary Design for Fries Avenue Segment Closure

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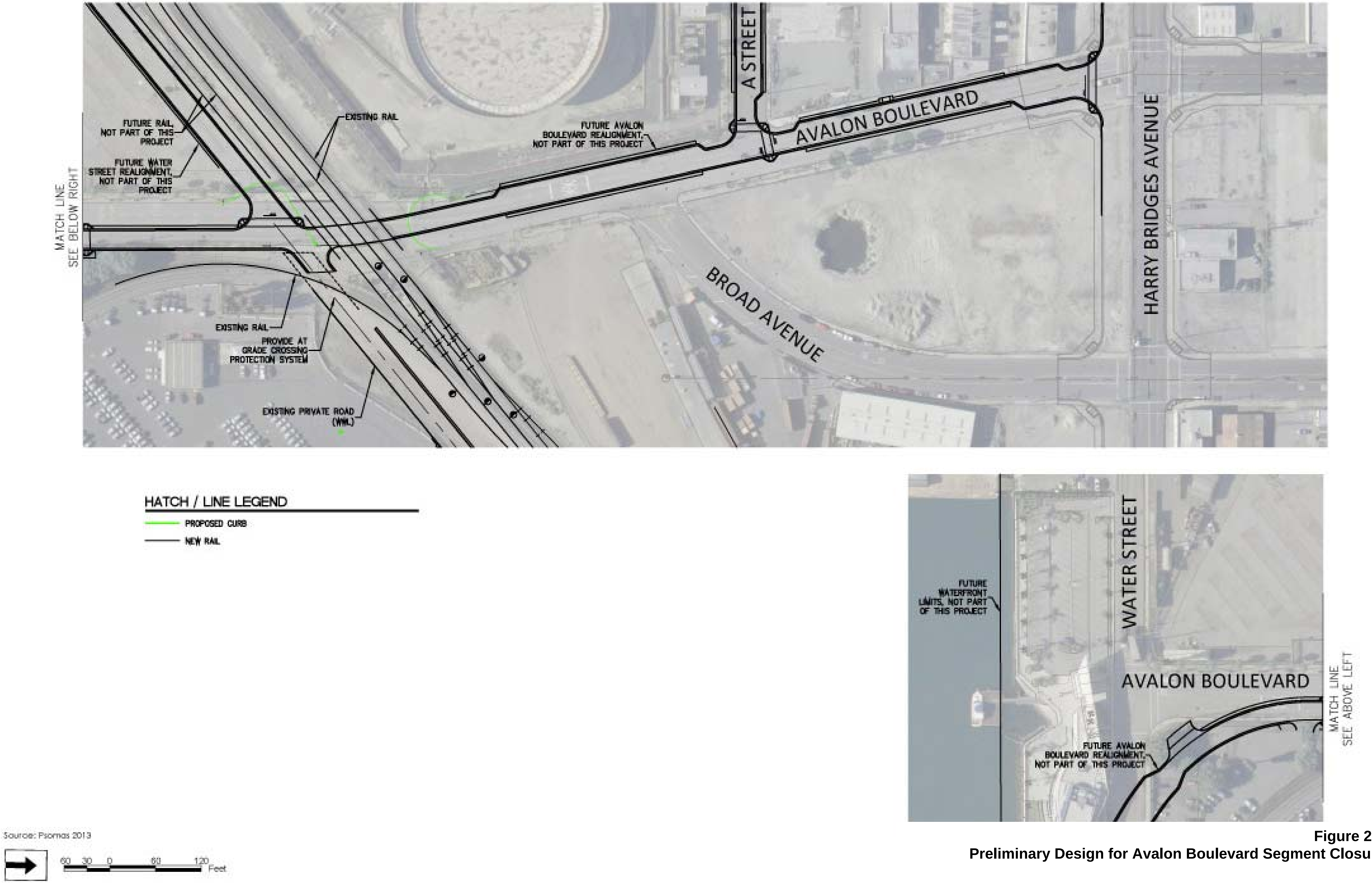

Source: Psomas 2013

Figure 2-5
Preliminary Design for Avalon Boulevard Segment Closure

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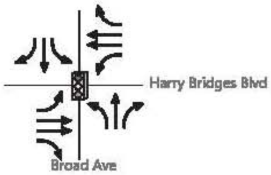
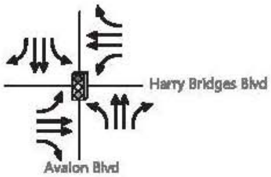
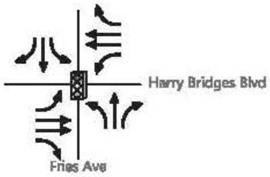
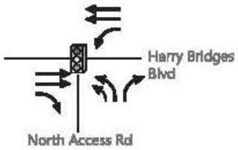
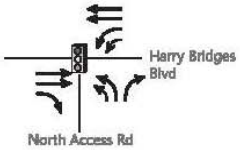
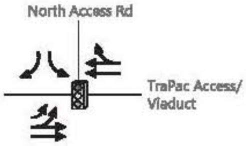
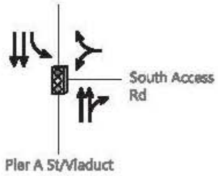
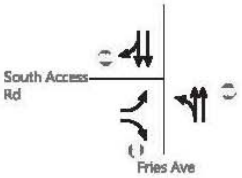
	EXISTING CONDITIONS	FUTURE CONDITIONS	FUTURE WITH PROJECT CONDITIONS
1. Broad Ave & Harry Bridges Blvd		Same as Existing	Same as Existing
2. Avalon Blvd & Harry Bridges Blvd		Same as Existing	Same as Existing
3. Fries Ave & Harry Bridges Blvd		Same as Existing	Same as Existing
4. North Access Rd & Harry Bridges Blvd	Does Not Exist		
5. North Access Rd & TraPac Access/Viaduct	Does Not Exist		
6. Pier A St/Viaduct & South Access Rd	Does Not Exist		Same as Future
7. Fries Ave & South Access Rd	Does Not Exist		Same as Future

Source: Fehr & Peers 2013

Figure 2-6
Intersection Lane Configurations

2.4 PROJECT CONSTRUCTION AND OPERATIONS

Project Construction

Construction activities would occur over an approximate 10-12 month period and are expected to begin in 2015 after the newly constructed South Wilmington Grade Separation is in operation. Table 2-1, Construction Duration, shows the duration of each construction activity for the proposed Project. Project construction phases would include mobilization concurrently with DWP relocations, demolition, civil improvements, and grade crossing protection. No detours are anticipated to be needed during construction, as traffic will be rerouted to the new grade separation, which will provide access and circulation to the surrounding land uses.

The proposed Project also includes striping modifications to the intersections of Harry Bridges Boulevard/N. Access Road and Viaduct/N. Access Road (see Figure 2-6).

Construction would be performed up to 6 days per week (Monday through Saturday) with no construction occurring on Sundays or national holidays. In general, construction would occur from 6:00am to as late as 6:00pm. Construction equipment would include concrete saws, heavy-duty trucks, excavators, backhoe/loaders, welders, pavers, and paving equipment.

Table 2-1
Construction Duration

Construction Activity	Duration
Demolition	5 days
Civil Improvements	30 days
Mobilization	1 month
DWP-Power System, DWP-Water System Relocations, and Grade Crossing Protection	6 months

Source: PSOMAS 2013

Project Operations

Once Fries Avenue and Avalon Boulevard are permanently vacated between Water Street and “A” Street, vehicular and truck access along the vacated streets would be re-routed to the newly constructed South Wilmington Grade Separation, located west of Fries Avenue. Operation of the road segments closure would involve maintenance of the hardscape, fencing, signage, gates, and safety barriers proposed (see Figures 2-4 and 2-5). Maintenance would be undertaken as necessary consistent with ongoing maintenance practices for infrastructure facilities around the Port and would not require additional, workers or facilities.

2.5 INTENDED USES OF THE MND

This MND examines the potential environmental impacts of the proposed Project, including the various actions by the LAHD and other agencies that are necessary to implement the proposed Project. It is the intent of this MND to enable the LAHD, responsible agencies, and interested parties to evaluate the environmental impacts of the proposed Project, thereby enabling them to make informed decisions with respect to the requested entitlements.

Under Section 15381 of the CEQA Guidelines, a "Responsible Agency" means a public agency, which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, the term "Responsible Agency" includes all public agencies other than the Lead Agency, which have discretionary approval power over the project.

The anticipated approvals and agencies expected to use this MND are as follows:

Lead Agency	*Action*
City of Los Angeles Harbor Department (LAHD)	• Pursuant to its authority, the Harbor Department may approve permits and other approvals (e.g., coastal development permits; leases for occupancy; approval of operating, joint venture, or other types of agreements for the operation of the facilities) for the project evaluated in this MND. The Harbor Department has leasing authority for the Port's land; permitting authority for engineering construction; responsibility for general regulatory compliance; Master Plan amendment and map change (if required). • CEQA lead agency for the adoption of the MND.
Responsible Agencies	*Action*
California Regional Water Quality Control Board, Los Angeles Region (LARWQCB)	• The Project will be subject to the requirements of the NPDES Stormwater Program, which requires obtaining coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity, General Construction Permit 2009-0009-DWQ.
Local Agencies	*Action*
Los Angeles Department of Water and Power (LADWP)	• Approval of any necessary power facility relocations.
California Public Utilities Commission (CPUC)	• Approval of grade crossing closures and changes as well as any utility relocation plan.
City of Los Angeles Bureau of Engineering (BOE)	• Permitting authority for storm drain connections and stormwater discharges; permits for water discharges to the wastewater collection system; disposal of materials and haul routes and approval of street vacations.
City of Los Angeles Planning Department	• Approval of a street downgrade to a "local street" to allow for vacation.
City of Los Angeles Building and Safety	• Permitting authority for building and grading permits.

2.6 SUBSEQUENT DISCRETIONARY AND MINISTERIAL ACTIONS

In addition to the actions listed above, subsequent approvals by the LAHD and the City BOE that may rely on this MND may include:

- Regulatory or other actions implementing mitigation measures or project requirements;

- Approval of road closure plans by the BOE; the process to vacate a public easement such as street, alley, walk or other public easements within the City of LA is governed by the provisions of the State Streets and Highways Code and the LA City Administrative Code. It is a legislative act of the City Council terminating any stipulated public rights within the area proposed to be vacated; and

- Approval of the following ownership transfers by the BOE (required after street segment vacations). For the Fries Avenue segment between the rail and West A Street, the property would revert back to LADWP Harbor Generating Station and for the Fries segment south of the rail to Pier A Street, the property would revert back to the Port. A portion of the segment would also revert back to the railroad right-of-way. For the Avalon Boulevard segment, the property would revert back to LADWP’s tank farm, and to the railroad right-of-way, as applicable.

Although no future uses are proposed at this time, it is anticipated that the proposed uses of the land that revert back to the adjacent property owners would be similar or complementary to the current use of the adjacent property’s primary uses. Prior to the implementation of any future uses, a determination will be made if additional CEQA analysis is necessary for the uses.

3.0 INITIAL STUDY CHECKLIST

1. **Project Title:** Avalon and Fries Street Segments Closure Project

2. **Lead Agency:**
City of Los Angeles Harbor Department (LAHD)
Environmental Management Division
425 S. Palos Verdes Street
San Pedro, CA 90731

3. **Contact Person:** Kevin Grant, Environmental Project Manager

4. **Project Location:** The Project area is bordered by E. Harry Bridges Boulevard and residential areas of Wilmington to the north; Pier A Street, Union Pacific Rail Tracks, and W. Water Street to the south; Union Pacific Parcel and berth 200 Rail Yard to the east; and Berths 136-147 Terminal to the west.

5. **General Plan Designation:** The Project site is designated Public Facilities; and the adjacent properties are designated Non-Hazard Industrial; Commercial; and Community Commercial.

6. **Zoning:** The Project site is zoned PF – Public Facilities and the adjacent properties are zoned C2 – Commercial; and M3 – Heavy Industrial.

7. **Description of Project:** The proposed Project includes the closure of segments of: 1) Fries Avenue (approximately 1,337 linear feet of roadway) between Water Street at the Union Pacific Rail Tracks and the intersection with West A Street; and 2) Avalon Boulevard between the Union Pacific Rail Tracks and the intersection of North Broad Avenue (approximately 438 linear feet of roadway). The Project also includes striping modifications to the intersections of Harry Bridges Boulevard/N. Access Road and Viaduct/N. Access Road.

   The construction schedule for the closures is tied to the opening of the South Wilmington Grade Separation Project, which is scheduled to be completed in December 2014 and open in January 2015. The proposed Project's construction would occur over approximately 10-12 months.

8. Surrounding Land Uses/Setting:

The overall character of the surrounding area is primarily industrial. The properties to the north of the road closure segments are zoned commercial (C2) and industrial (M3) according to the Los Angeles City Zoning Ordinance. The nearest sensitive receptors are residential areas within the City of Wilmington, approximately 0.4 mile to the northwest. These include properties zoned One-Family Dwelling (R1) and Restricted Density Multiple Dwelling (RD 1.5). The properties to the south, east, and west are all zoned for heavy industrial (M3).The City of Wilmington is located north of the Project site and to the south is Terminal Island. Berths 136-147 [TraPac] are located to the west, while Berths 196-200A WWL Auto Terminal are located to the east. Adjacent to the Project site, bordering Fries Avenue and the Berth 200 Rail Yard, is the Wilmington Waterfront Development Project.

9. Other Public Agencies Whose Approval is Required:

- City of LA permits for disposal of materials and haul routes
- City of LA Building and Safety permits for building and grading permits
- City of LA Planning Department permits for vacation or downgrade of streets
- LAHD Road Closure Plan Approval/Permit, Coastal Development Permit
- LA Regional Water Quality Control Board requires obtaining coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity, General Construction Permit 2009-0009-DWQ
- City of LA BOE and CPUC Street Vacation approval

3.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist.

☐ Aesthetics
☐ Biological Resources
☐ Greenhouse Gas Emissions
☐ Land Use & Planning
☐ Population/Housing
☐ Transportation & Traffic
☐ Agriculture & Forestry Resources
☐ Cultural Resources
☐ Hazards & Hazardous Materials
☐ Mineral Resources
☐ Public Services
☐ Utilities & Service Systems
☐ Air Quality
☐ Geology/Soils
☐ Hydrology & Water Quality
☐ Noise
☐ Recreation
☐ Mandatory Findings of Significance

3.2 DETERMINATION

On the basis of this initial evaluation:

I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐

I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. ☒

I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☐

I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. ☐

I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required. ☐

04-03-14

Signature
Christopher Cannon, Director
Environmental Management Division
City of Los Angeles Harbor Department

Date

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "no impact" answers that are adequately supported by the information sources a Lead Agency cites in the parentheses following each question. A "no impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "no impact" answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site and on-site cumulative; project-level; indirect and direct; construction, and operational impacts. For the purposes of the analysis, a separate discussion on construction and operational phases was provided for only applicable resource areas to further identify and assess the impacts associated during those stages of project implementation.
3. Once the Lead Agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant impact with mitigation, or less than significant. "Potentially significant impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "potentially significant impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant Impact With Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from a "potentially significant impact" to a "less than significant impact." The Lead Agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used if, pursuant to tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063[c][3][D]). In this case, a brief discussion should identify the following:
    a. Earlier analysis used. Identify and state where earlier analyses are available for review.
    b. Impacts adequately addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "less than significant impact with mitigation incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead Agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting information sources. A source list should be attached and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and Lead Agencies are free to use different formats; however, Lead Agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    a. the significance criteria or threshold, if any, used to evaluate each question, and
    b. the mitigation measure identified, if any, to reduce the impact to a less than significant level.

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Environmental Checklist

	Potentially Significant Impact	*Less Than Significant Impact After Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
1. AESTHETICS. Would the project:				
a. Have a substantial adverse effect on a scenic vista?				X
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c. Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?				X
e. Create a new source of substantial shade or shadow that would adversely affect daytime views in the area?				X
2. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, Lead Agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b. Conflict with existing zoning for agricultural use, or a Williamson act contract?				X
c. Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned timberland production?				X
d. Result in the loss of forest land or conversion of forest land to non-forest use?				X

	Potentially Significant Impact	*Less Than Significant Impact After Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
e. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan or clean air programs?			X	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?			X	
d. Expose sensitive receptors to substantial pollutant concentrations?			X	
e. Create objectionable odors affecting a substantial number of people?			X	
4. BIOLOGICAL RESOURCES. Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X

	Potentially Significant Impact	*Less Than Significant Impact After Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X
5. CULTURAL RESOURCES. Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?			X	
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?		X		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
d. Disturb any human remains, including those interred outside of formal cemeteries?			X	
6. GEOLOGY AND SOILS. Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				

	Potentially Significant Impact	*Less Than Significant Impact After Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?				X
b. Result in substantial soil erosion, loss of topsoil, or changes in topography or unstable soil conditions from excavation, grading, or fill?			X	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
7. GREENHOUSE GAS EMISSIONS: Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	
8. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	

	Potentially Significant Impact	*Less Than Significant Impact After Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X
9. HYDROLOGY AND WATER QUALITY. Would the project:				
a. Violate any water quality standards or waste discharge requirements?			X	

	Potentially Significant Impact	*Less Than Significant Impact After Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?			X	
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?			X	
e. Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
f. Otherwise substantially degrade water quality?			X	
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?				X
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of sea level rise?			X	
k. Inundation by seiche, tsunami, or mudflow?			X	

	Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
10. LAND USE AND PLANNING. Would the project:				
a. Physically divide an established community?			X	
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
11. MINERAL RESOURCES. Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X
12. NOISE. Would the project result in:				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

	Potentially Significant Impact	*Less Than Significant Impact After Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X
13. POPULATION AND HOUSING. Would the project:				
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X
14. PUBLIC SERVICES.				
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?			X	
ii) Police protection?			X	
iii) Schools?				X
iv) Parks?				X
v) Other public facilities?				X

	Potentially Significant Impact	*Less Than Significant Impact After Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
15. RECREATION.				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				X
16. TRANSPORTATION AND TRAFFIC. Would the project:				
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			X	
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			X	
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
e. Result in inadequate emergency access?			X	
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			X	

	Potentially Significant Impact	*Less Than Significant Impact After Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
17. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g. Comply with federal, state, and local statutes and regulations related to solid waste?			X	
18. MANDATORY FINDINGS OF SIGNIFICANCE.				
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		

	Potentially Significant Impact	*Less Than Significant Impact After Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
b. Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.		X		
c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?			X	

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4.0 IMPACTS AND MITIGATION MEASURES

4.1 AESTHETICS

The purpose of this section is to identify and evaluate key visual and aesthetic resources in the Project area and to determine the degree of visual and aesthetic impacts that would be attributable to the proposed Project.

Would the Project:

a) Have a substantial adverse effect on a scenic vista?

No Impact. The Project site is located within the Port and is zoned PF for Public Facilities. The project site is surrounded by heavy industrial (M3) and commercial (C2) zoned areas and does not contain areas designated as scenic vistas. The closest scenic highways are Malibu Canyon Road (40.4 miles) and Angeles Crest Highway (37.1 miles). The proposed Project street segments are not designated as scenic routes per the community plan. Because no protected or designated scenic vistas are available from the Project site, no impacts related to scenic vistas would occur. No mitigation is required.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less Than Significant Impact. There are trees in the vicinity of the proposed Project. However, except for a bottlebrush tree on north Fries Avenue and a large palm tree along Avalon Boulevard, immediately north of the existing tracks, no other trees would need to be removed to install the curb and fencing to close the street. Therefore, the proposed street vacations would not result in removal of substantial number of trees, rock outcroppings, or historic buildings. Impacts would be less than significant and no mitigation is required. See also response to 1a above.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. Visible changes that would result from implementation of the proposed Project would include elimination of traffic on the closed street segments and new cul-de-sacs on Avalon Boulevard. Chain link fencing with fabric 2” mesh would be installed with gates and signage and striping would be installed to effectively close access to the vacated street segments. Additional crossing protection would be provided, including signing and striping, crossing arms, and lights, at an existing at grade crossing at the completed private road into WWL. A bottlebrush tree on north Fries Avenue and a large palm tree immediately north of the existing tracks would be removed. A portion of the fencing along the DWP property line along

Avalon Boulevard would be removed and replaced, as well. Two DWP power poles, one streetlight, and one fire hydrant on Avalon Boulevard would be removed and/or relocated.

The current views down Avalon Boulevard and Fries Avenue from the Wilmington community do not include the waterfront due to the curved street alignments; therefore, the proposed cul-de-sacing across rail lines and chain link fencing would not obstruct scenic views and the changes would be consistent with the types of facilities that currently exist. Additionally, the Project improvements described above would be consistent with the industrial/commercial landscape of the area and would not block views of the Port available from public and private vantages, including views from the Wilmington community located north of the Project site and hillside residential areas of San Pedro.

Based upon the above discussion, the proposed Project would not substantially degrade the existing visual character of the site and its surroundings. Therefore, impacts related to existing visual character and quality of the site would be less than significant. No mitigation is required.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

No Impact. No new structures are proposed as part of the Project that could introduce new source of lighting. Therefore, the Project would not result in significant impacts to light and glare. No mitigation is required.

e) Create a new source of substantial shade or shadow that would adversely affect daytime views in the area?

No Impact. No new structures are proposed as part of the Project that could introduce new source of substantial shade. Therefore, the Project would not result in significant impacts to substantial shade. No mitigation is required.

4.2 AGRICULTURE AND FORESTRY RESOURCES

The purpose of this section is to identify and evaluate agricultural and forestry resources in the Project area and to determine the degree of impacts that would be attributable to the proposed Project.

Would the Project:

a) **Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

No Impact. The Project site is zoned for public facilities use (PF), commercial use (C2), and heavy industrial use (M3). Properties within the Project site are owned by the Port of Los Angeles, City of Los Angeles, and private parties. Permit jurisdiction falls under the Port of Los Angeles and the City of Los Angeles, as well as the State of California Tidelands Trust. The California Department of Conservation's Farmland Mapping and Monitoring Program develops maps and statistical data used for analyzing impacts on California's agricultural resources. There are no designated farmlands near the proposed Project. Because no farmland currently exists on the Project site, none would be converted to accommodate the proposed Project. No impact would occur. No mitigation is required.

b) **Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

No Impact. As mentioned above, the Project site is zoned for public facilities use (PF), commercial use (C2), and heavy industrial use (M3). There are no designated farmlands near the proposed Project. The Williamson Act applies to parcels consisting of at least 20 acres of Prime Farmland or at least 40 acres of land not designated as Prime Farmland. Since the proposed Project site is not located within a Prime Farmland designation, nor does it consist of more than 40 acres of farmland, the Project would not conflict with existing zoning for agricultural use, or a Williamson act contract. No impact would occur. No mitigation is required.

c) **Conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned timberland production?**

No Impact. The site does not contain any property designated as forest or timberland. Therefore, the proposed Project would not result in impacts to agricultural and forestry resources. No impact would occur, and no mitigation is required.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The proposed Project would occur on the existing developed land and would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur and no mitigation is required.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

No Impact. As discussed above, no farmland or forestland is located within the surrounding area or at the proposed Project site. Therefore, the proposed Project would not involve disruption or damage of the existing environment that would result in the loss of Farmland or conversion to non-agricultural use. No impact would occur and no mitigation is required.

4.3 AIR QUALITY

This section presents an assessment of potential air quality impacts associated with the proposed Project. An air quality and greenhouse gas technical report was prepared by Scientific Resources Associated (SRA) (see Appendix A) which provides a summary of existing conditions in the Project area, a regulatory review, and a discussion of potential impacts to air quality from the proposed Project.

Would the Project:

a) Conflict with or obstruct implementation of the applicable air quality plan or clean air programs?

Less than Significant Impact. The proposed Project is located within the South Coast Air Basin (SCAB), which includes Orange County and portions of Los Angeles, Riverside, and San Bernardino Counties. Due to the combined air pollution sources within the SCAB and meteorological and geographical effects that limit dispersion of air pollution, the SCAB can experience high air pollutant concentrations. The SCAB is currently classified as an extreme nonattainment area for the 8-hour national ambient air quality standard (NAAQS) for ozone (O_3), and a nonattainment area for the NAAQS for particulate matter less than 2.5 microns ($PM_{2.5}$). The SCAB is also classified as a maintenance area for the NAAQS for particulate matter less than 10 microns (PM_{10}) and carbon monoxide (CO) and as a nonattainment area for the California ambient air quality standards (CAAQS) for O_3, $PM_{2.5}$, and PM_{10}.

Within the SCAB, the South Coast Air Quality Management District (SCAQMD) is responsible for the development and implementation of air quality plans and programs. Air quality plans describe air pollution control strategies to be implemented within the SCAB designed to attain and maintain the NAAQS and CAAQS in accordance with the requirements of the federal and California Clean Air Acts. The SCAQMD and the Southern California Association of Governments (SCAG) prepared the Air Quality Management Plan (AQMP). The most recent AQMP was adopted on December 7, 2012. The 2012 AQMP proposes emission reduction strategies and provides a demonstration that the SCAB will attain the federal $PM_{2.5}$ standard in 2014 with implementation of all feasible control strategies. The AQMP also includes specific additional control measures to implement the ozone strategy within the 2007 AQMP that are designed to achieve attainment of the 8-hour NAAQS by 2023. The additional measures are also designed to demonstrate attainment of the revoked 1-hour O_3 NAAQS, which is required by the U.S. Environmental Protection Agency (EPA).

The Project would not result in changes in the mobile source projections within the AQMP as it would not result in any additional vehicle trips. Rather, the Project is designed to reduce congestion and idling time by eliminating long wait times at current grade crossings and rerouting traffic to the new grade-separated crossing. Therefore, the Project would not conflict with the AQMP and would result in less than significant impact. No mitigation is required.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact.

<u>Construction Impacts</u>

The SCAQMD developed both regional significance thresholds and Localized Significance Thresholds (LSTs) (SCAQMD 2008a), which are designed to assist CEQA lead agencies in analyzing localized air quality impacts from proposed projects. LSTs have been developed for NO_x, CO, and particulate matter (PM_{10} and $PM_{2.5}$). The SCAQMD has developed LST look-up tables that apply to projects with an area of five acres or less. Based on the Project site size and locations where construction activities would take place, it is estimated that the disturbed construction area would be approximately 1 acre. For each phase of construction, air emissions from the proposed Project construction activities mainly would occur from mobile off-road construction equipment and fugitive dust within the Project area. The LST look-up tables for a 1-acre project size with a receptor distance of 82 feet was used to evaluate potential ambient air quality impacts. Table 4.3-1 below presents the LSTs for the source-receptor area for the Project.

Table 4.3-1
SCAQMD Air Quality Localized Significance Thresholds

Localized Significance Threshold, lbs/day[a]					
		PM_{10}		$PM_{2.5}$	
NO_x	CO	Construction	Operation	Construction	Operation
57	585	4	1	3	1

[a] Based on 5-acre site, 25-meter receptor distance

Construction emissions are short-term and temporary in duration. The main construction phases and their duration include the following:

- Mobilization (concurrently with DWP Relocations) – 30 days
- Demolition – 5 days
- Civil Improvements – 30 days
- DWP-PS, DWP-WS Relocations, and grade crossing protection – 6 months

Construction activities, including demolition; and the construction of sidewalk, curb, and gutter; fencing, grade crossing protection; and landscaping would be conducted per the timeframe above, commencing in 2015. Construction would be performed six days per week (Monday through

Saturday) with no construction occurring on Sundays or national holidays. In general, construction would occur from 6:00 am to as late as 6:00 pm. Construction equipment would include concrete saws, heavy-duty trucks, excavators, backhoe/loaders, welders, pavers, and paving equipment.

The Project would follow the *Sustainable Construction Guidelines* prepared by the LAHD for reducing air emissions from all LAHD-sponsored construction projects (LAHD 2009). The *Sustainable Construction Guidelines* include the use of best management practices (BMPs) aimed at reducing vehicle emissions, construction dust, etc. In addition, construction would be subject to the requirements of the San Pedro Bay Ports Clean Air Action Plan (CAAP) (POLA and POLB 2006). The most recent version of the CAAP was adopted in 2010 (POLA and POLB 2010). The sources associated with the proposed Project that would be subject to specific CAAP requirements would be construction sources. In the 2006 CAAP, the ports committed to develop BMPs for port-related construction activity. These BMPs will be evaluated on a project-specific basis and applicable practices will be incorporated into construction project contracts. For the purpose of this analysis, it was assumed that all construction equipment would meet Tier 4 standards as required under the BMPs adopted in the CAAP.

Emissions associated with construction activities and vehicles were calculated using the CalEEMod Model, Version 2013.22. Table 4.3-2 below provides a summary of the emissions associated with Project construction.

Table 4.3-2
Daily Emissions from Construction of the Proposed Project

Construction Activity	**Peak Daily Emissions, lbs/day**					
	ROG	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Mobilization	0.4407	6.4662	12.1569	0.02045	0.5211	0.2003
Demolition	0.6985	11.6794	20.5771	0.03158	0.3735	0.1882
Civil Improvements	0.8878	19.7845	28.068	0.04215	0.7535	0.4587
DWP-PS and DWP-WS	0.8711	17.2681	24.5234	0.03911	0.8046	0.4688
Peak Daily Emissions[a]	**0.8877**	**19.7846**	**28.0680**	**0.0421**	**0.8046**	**0.4688**
Localized Significance Threshold	NA	57	585	NA	4	3
SCAQMD Daily Significance Threshold	75	100	550	150	150	55

[a] Peak daily emissions calculated within CalEEMod as the maximum daily emissions, considering simultaneous construction activities.

As shown in Table 4.3-2 above, the peak daily emissions generated by Project construction would not exceed any of the LST thresholds, nor would they exceed the SCAQMD daily significance thresholds. Accordingly, the proposed Project construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and impacts would be less than significant. No mitigation is required.

Operational Impacts

The Avalon and Fries Street Segments Closure Traffic Report (Fehr & Peers 2013) (see Appendix C of this MND) evaluated potential impacts to traffic associated with the closure of Avalon Boulevard and Fries Avenue. Based on the analysis, the Project would not result in significant impacts on traffic, and would reduce the delay at the intersections of Harry Bridges Boulevard and Broad Avenue, Harry Bridges Boulevard and Fries Avenue, and the North Access Road and Harry Bridges Boulevard. As stated in the Project traffic report, the Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the Project. Shifts are forecast to occur in response to frequent operations at the crossings that would result in traffic redirecting to the under construction South Wilmington Grade Separation Project. The South Wilmington Grade Separation Project will provide a new route between the Wilmington community and the regional street network and the areas of the Port south of Harry Bridges Boulevard. Some minor localized shifts in traffic due to the street segment closures are also forecast to occur. Accordingly, the Project would not result in localized air pollutant impacts from CO (i.e., CO "hot spots"), nor would the Project increase traffic and therefore increase operational emissions form traffic in the study area.

The proposed Project would eliminate traffic from the grade crossings and thereby the delays when trains are present at the crossings and would also eliminate vehicle queues that could otherwise result due to blockages from rail operations. Therefore, the Project would reduce future emissions associated with vehicle idling during queuing. In addition, the proposed Project would not affect trip generation rates for the projects in the vicinity, and therefore, the Project would not result in an increase in operational emissions. Accordingly, the proposed Project operations would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and impacts would be less than significant. No mitigation is required.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

Less than Significant Impact.

Construction Impacts

The proposed Project site is located in the Los Angeles County portion of the SCAB. Los Angeles County is designated as a federal and state nonattainment area for O_3 and $PM_{2.5}$. The Project area is also classified as a maintenance area for CO, PM_{10}, and NO_2, and an attainment area for sulfur dioxide (SO_2) and lead. The SCAB is classified as a nonattainment area for the

CAAQS for PM_{10}. The SCAQMD cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. Per CEQA Guidelines Section 15064(h)(4), the existence of significant cumulative impacts caused by other projects alone will not constitute substantial evidence that the proposed Project's incremental effects are cumulatively considerable.

As mentioned above, construction of the proposed Project would result in the temporary generation of emissions of ozone precursors volatile organic compounds VOCs and NO_x, and emissions of CO, oxides of sulfur- SO_x, PM_{10}, and $PM_{2.5}$. Table 4.3-2 above summarizes the construction emissions results for the construction activities, which are proposed for 2015. Based on the modeling conducted, construction of the proposed Project would not result in emissions that exceed the daily emission thresholds. In addition, the proposed Project would not result in emissions of CO, NO_x, PM_{10}, or $PM_{2.5}$ that exceed the localized emission thresholds established by the SCAQMD and no mitigation is required.

As previously mentioned, construction of the Project would implement the BMPs established by the LAHD in the *Sustainable Construction Guidelines* (LAHD 2009), and the CAAP (POLA and POLB 2010). According to these requirements, construction equipment would meet Tier 4 emission standards. In addition, the *Sustainable Construction Guidelines* required that by January 1, 2012, all on-road heavy-duty diesel trucks with a gross vehicle weight of 19,500 pounds or greater used at POLA will comply with EPA 2007 on-road emission standards for PM_{10} and NO_x (0.01 g/bhp-hr and at least 1.2 g/bhp-hr, respectively). According to the SCAQMD thresholds, the proposed Project construction would not contribute to a cumulatively considerable air quality impact.

Operational Impacts

As discussed above, the proposed Project would eliminate the grade crossings and thereby vehicle delays when trains are present at the crossings and eliminate truck queues that could otherwise result due to blockages from rail operations. Therefore, the proposed Project would reduce future emissions associated with vehicle idling and queuing. In addition, the Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the Project. Therefore, the Project would not result in an increase in operational emissions. Accordingly, the proposed Project operations would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. The impacts would be less than significant and no mitigation is required.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. The SCAQMD considers a sensitive receptor to be a receptor such as a residence, hospital, school, or convalescent facility where sensitive individuals could be exposed to substantial pollutant concentrations. Commercial and industrial facilities are not included in the definition of sensitive receptors because employees do not remain onsite for a full 24 hours, and are not considered sensitive.

The nearest sensitive receptors to the Project site are residential receptors located within the City of Wilmington north of C Street over 1,600 feet from the site.

Impacts to sensitive receptors are evaluated in terms of the greatest exposure to Toxic Air Contaminants (TACs). Diesel particulate matter, which is emitted from on- and off-road vehicles that utilize diesel as fuel, is a TAC. Construction-related activities would result in short-term Project generated emissions of diesel particulate matter from the exhaust of off-road heavy-duty diesel equipment and on-road heavy-duty trucks required for demolition activities, including pavement removal; paving; materials transport and handling; and other miscellaneous activities. According to SCAQMD methodology, health effects from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 70-year lifetime exposure to TACs.

Construction Impacts

The proposed Project construction duration is approximately 10-12 months, which is much lower than the exposure duration of 70 years used to evaluate potential excess cancer risks. The maximum daily emission for diesel particulate matter is less than 1 lb. /day during Project construction activities (see Table 4.3-2). Further, the proposed Project would not exceed the SCAQMD localized significance thresholds for PM_{10} and $PM_{2.5}$. As previously mentioned, construction of the proposed Project would implement the BMPs established by the LAHD in the *Sustainable Construction Guidelines* (LAHD 2009), and the CAAP (POLA and POLB 2010). Based on the temporary use of off-road heavy-duty diesel equipment and with implementation of BMPs required in the *Sustainable Construction Guidelines* and the CAAP, construction-related emissions of TACs would not expose sensitive receptors to substantial emissions of TACs. The impact would be less than significant and no mitigation is required.

Operational Impacts

The Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the Project. Shifts are forecast to occur in response to frequent operations at the crossings that would result in traffic redirecting to the South Wilmington Grade Separation currently under construction. The South Wilmington Grade Separation will provide a new route between the Wilmington community and the regional street network and the areas of the Port south of Harry Bridges Boulevard. Some minor localized shifts in traffic due to the street segment closures are also forecast to occur. Therefore, the Project would not result in an increase in operational TAC emissions. As discussed above, the Project would reduce future TAC emissions associated with train idling and truck queuing. Accordingly, the proposed Project operations would not expose sensitive receptors to substantial pollutant concentrations, and impacts would be less than significant. No mitigation is required.

e) Create objectionable odors affecting a substantial number of people?

Less than Significant Impact. The SCAQMD identifies land uses associated with odor complaints, including agricultural operations, wastewater treatment plants, food processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding plants.

Construction Impacts

Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. These compounds would be emitted in various amounts and at various locations during construction. Odors are highest near the source and would quickly dissipate offsite; any odors associated with construction would be temporary. As discussed above, the nearest sensitive receptors are the residences located to over 1,600 feet the north of the Project site in the City of Wilmington.

Due to the temporary nature of construction odors and the anticipated dissipation of odors offsite, odors from these sources would be localized and generally confined to the immediate area where construction equipment is operating. Therefore, impacts during construction would be less than significant. No mitigation is required.

Operation Impacts

The proposed Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the Project. Shifts are forecast to occur in response to frequent operations at the crossings that would result in traffic redirecting to the South Wilmington Grade Separation currently under construction. The South Wilmington Grade Separation will provide a new route between the Wilmington community and the regional street network and the areas of the Port south of Harry Bridges Boulevard. Some minor localized shifts in traffic due to the street segment closures are also forecast to occur. Since the Project is not an odor source (as defined by the SCAQMD), the Project would not result in significant odor impact from operations. Impacts are less than significant and no mitigation is required.

4.4 BIOLOGICAL RESOURCES

Would the Project:

a) **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

No Impact. One state- and federally-listed endangered species, the California least tern (*Sterna antillarum browni*) is found in the harbor area; however, they are not expected to be affected by the proposed Project. The proposed Project site is located within previously disturbed areas containing existing hardscape. The Project site is entirely paved and is currently utilized as public roadways. The site is not suitable for use by biological species. The proposed Project site is not a nesting, roosting, or foraging area for any species of special concern, and no adverse effect on these species is anticipated because of the proposed Project. Therefore, the proposed Project would have no impacts to candidate, sensitive, or special-status species. No mitigation is required.

b) **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?**

No Impact. No designated Significant Ecological Areas (SEAs) or other biologically sensitive areas including the least tern nesting site on Pier 400 (approximately 1 mile from Project site), would be affected by the proposed Project. No impact would occur. No mitigation is required.

c) **Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

No Impact. The proposed Project would not involve direct removal, filling, or hydrologic interruption of federally protected wetlands, marshes, vernal pools, or coastal wetlands. There are no federally protected wetlands located on or adjacent to the proposed Project site. No impact would occur. No mitigation is required.

d) **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

No Impact. No known terrestrial wildlife or aquatic species migration corridors are present in the proposed Project area. The Project site does not support any vegetation or contain habitat suitable for wildlife species. The Project site is not a suitable resting site and it is not suitable foraging area because of the ongoing industrial infrastructure that support port related activities. The California least tern is a migratory bird species that nests on Pier 400, approximately 1 mile from the Project site and construction of the proposed Project would not interfere with the aerial migration of this species. Movement to and from foraging areas in the Harbor also would not be affected by any of the proposed Project construction activities. The Project site is located adjacent to the Inner Harbor, which is not considered an important area for California least tern or California brown pelican (another migratory species). The proposed closure of existing roadways (which includes the removal of one bottlebrush tree along Fries Avenue and one palm tree along Avalon Boulevard) would be required to comply with LAHD tree removal guidelines and would not have the potential to interfere with wildlife movement (nesting migrants) or wildlife nursery sites. The tree removal guidelines include hiring a qualified biologist to conduct a nest survey and carefully inspect the area to be trimmed/removed no more than 3 days prior to beginning work. No impact would occur. No mitigation is required.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. As stated previously, the Project site is fully developed and paved, and generally consists of hardscape. There are palm trees along Avalon Boulevard that serve as aesthetic landscaping and one palm would need to be removed to install the curb and fence to close the street. There is also one bottle brush tree along Fries Avenue that would need to be removed with the segment closure. These ornamental street trees slated for removal are not preserved by any City tree ordinance. Therefore, the proposed Project would not conflict with any local policies or ordinances protecting trees or other such biological resources. No impact would occur. No mitigation is required.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The proposed Project site is not included as part of an adopted Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP). The proposed Project would not conflict with the provisions of an adopted HCP or other approved local, regional, or state conservation plan. Neither the Project site nor any adjacent areas are included as part of an NCCP. No impact would occur. No mitigation is required.

4.5 CULTURAL RESOURCES

Regulatory Framework

CEQA provides a broad definition of what constitutes a cultural or historical resource. Cultural resources can include traces of prehistoric habitation and activities, historic-era sites and materials, and places used for traditional Native American observances or places with special cultural significance. In general, it is required to treat any trace of human activity more than 50 years in age as a potential cultural resource.

CEQA states that if a project would have significant impacts on important cultural resources, then alternative plans or mitigation measures must be considered. However, only significant cultural resources (termed “historical resources”) need to be addressed. The CEQA Guidelines define a historical resource as a resource listed or eligible for listing on the California Register of Historical Resources (CRHR) (Public Resources Code Section 5024.1).

Cultural resources in California are protected by a number of federal, state, and local regulations, statues, and ordinances. The determination of CRHR significance of a resource is guided by specific legal context outlined in Sections 15064.5 (b), 21083.2, and 21084.1 of the Public Resources Code (PRC), and the CEQA Guidelines (CCR Title 14, Section 15064.5). A cultural resource may be eligible for listing in the CRHR if it:

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; or
4. has yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the above criteria, historical resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be able to convey the reasons for their significance. Such integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

The CEQA Guidelines also require consideration of unique archaeological resources (Section 15064.5). As used in the PRC (Section 21083.2), the term “unique archaeological resource” means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;

2. has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. is directly associated with a scientifically recognized important prehistoric or historic event or person.

Archeological resources may also be assessed under CEQA as unique archeological resources, defined as archeological artifacts, objects, or sites that contain information needed to answer important scientific research questions.

Would the Project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less Than Significant Impact. According to Section 15064.5(a)(2) of the CEQA Guidelines, a resource "identified as significant in an historical resource survey meeting the requirements [set forth in] section 5024.1(g) of the Public Resources Code (PRC), shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant." The improvements proposed would be limited to surface and infrastructure improvements and would not modify any structures. While the proposed Project would affect access to the Port's Archives building (which is not a Federally or State listed historic building or landmark), it would not affect any structures. Therefore, impacts to historical resources would be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant Impact After Mitigation Incorporated. The proposed Project is located on mostly surficial fill material and is paved. A visual inspection conducted on October 22, 2013 identified that the entire Project site is fully developed. Surface disturbance activities associated with construction of the proposed Project would be limited to the proposed Project area. The site has been extensively disturbed. Because the site is comprised of fill and is extensively disturbed, there is extremely low potential for discovering archaeological or ethnographic cultural resources. Further, the proposed Project would involve surface and infrastructure improvements with excavations of 3-4 feet in the majority of the proposed Project site (with the exception being a 10-foot embedment for power pole depths). Based on the above analysis, proposed Project construction activities are not anticipated to result in significant impacts to known archaeological or ethnographic cultural resources. Although impact to unknown resources is remote given the high degree of previous disturbance and the presence of manmade fill materials, archaeological or ethnographic cultural resources have been encountered throughout the Port in the past. Should such unknown resources occur within the area of disturbance, the proposed Project could potentially cause an adverse effect. To avoid potential impacts to unknown buried resources, Mitigation Measure CR-1 is provided.

Mitigation Measure CR-1: Prior to the start of any ground disturbing activities, a qualified archeologist shall be retained to respond on an as-needed basis in the event archeological discoveries occur. In the event any cultural resources are encountered during earthmoving activities, the construction contractor shall cease activity in the affected area until the discovery can be evaluated and recorded by the cultural resources specialist in accordance with CEQA §15064.5. The archeologist shall complete any requirements for treatment measures and data recovery.

With the implementation of the above Mitigation Measure CR-1, the proposed Project would have a less than significant impact on archaeological resources.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact After Mitigation Incorporated. A previous paleontological records searches (AECOM 2012) at the Vertebrate Paleontology Division of the Natural History Museum of Los Angeles County indicated that there is one known vertebrate fossil locality in proximity to the proposed Project site boundaries, along Anaheim Street near the intersection of Henry Ford Avenue. The vertebrate fossil locality (LACM 1163), is associated with older Quaternary Alluvium. This vertebrate fossil locality does not lie within the Project site and, as such, the Project is not anticipated to impact any known paleontological resources.

The Project site predominantly consists of artificial fill and surficial deposits composed of younger Quaternary Alluvium resulting from the Dominguez Channel that flows east of the Project site. Surface excavations within the artificial fill or shallow excavations in the younger Quaternary Alluvium would likely not uncover significant vertebrate fossils. However, relatively shallow excavations, which extend down into older Quaternary deposits could encounter significant vertebrate fossils of Late Pleistocene age.

Implementation of the proposed Project would also result in the construction street improvements, which is anticipated to disturb soils at depths of approximately 3-4 feet below ground surface for the majority of the site, with the exception being a 10- foot embedment for power pole depths. Paleontological resources are not anticipated to be impacted as a result of the proposed Project. However, Project grading and excavation could have the potential to adversely impact unknown but potentially significant paleontological resources. Implementing the following mitigation measure (Mitigation Measure CR-2) would reduce the potential impact level to less than significant.

Mitigation Measure CR-2: Equipment operators shall temporarily cease work in the event a potential vertebrate fossil is encountered during ground disturbances. If a potential fossil is encountered, excavation within 10-meters (30-feet) of the find shall be temporarily suspended and redirected elsewhere. A qualified vertebrate paleontologist shall be retained to evaluate the significance of the fossil. If the fossil is determined to be a significant vertebrate specimen, the paleontologist shall systematically remove and stabilize the specimen in anticipation of its preservation. The Port shall fund the curation of the significant vertebrate specimen in a qualified professional research facility, such as the Los Angeles County Natural History Museum.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. No formal cemeteries or other places of human internment are known to exist in the proposed Project site itself. A lack of surface evidence and the fact that human remains have not been encountered in the area however, does not preclude the possibility that unknown and unanticipated human remains may be encountered within the proposed Project site.

In the event human remains are encountered during construction activities, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains and the Los Angeles County Coroner will be contacted in accordance with, Health and Safety Code §7050.5, PRC §5097.98, and §15064.5 of the CEQA Guidelines. Work would not continue at the excavation site or nearby areas until the coroner determine that no investigation of the cause of death is required. If the remains are deemed Native American in origin, the Native American Heritage Commission will be contacted to request consultation with a Native American Heritage Commission appointed Most-Likely Descendant pursuant to PRC §5097.98 and CCR §15064.5. As such, the proposed Project would have a less than significant impact related to the disturbance of human remains. No mitigation is required.

4.6 GEOLOGY AND SOILS

Would the Project:

a) **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**

i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the state geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

Less Than Significant Impact. Several earthquake faults are located within the boundaries of the Port, though none of the faults in the vicinity of the Port are currently designated as a Special Study Zone under the Alquist-Priolo Earthquake Zoning Act (City of Los Angeles 1994a). However, the Palos Verdes Fault Zone, which runs near the proposed Project site, is designated as a Fault Rupture Study Area within the City of Los Angeles General Plan Safety Element (City of Los Angeles 1994a). Therefore, substantial damage to structures or infrastructure could occur during a seismic event. However, the proposed vacation of the road segments; street improvements; cul-de-sac construction; removal of two ornamental street trees; removal/replacement/relocation of fencing, power poles, streetlight, and fire hydrant; and other minor Project components would not involve new structure buildings and the vacated segments would not be open to the public for their use. Impacts due to seismically induced ground failures would be less than significant. No mitigation is required.

ii) **Strong seismic ground shaking?**

Less Than Significant Impact. The Project site is located within the seismically active Southern California region and has the potential to be subjected to ground shaking hazards associated with earthquake events on active faults. The proposed Project would not construct habitable structures or any new structures. The proposed Project would comply with all Port and City of Los Angeles building and safety guidelines, restrictions, and permit regulations, which are designed to address the risks associated with seismic ground shaking. The impact would be less than significant. No mitigation is required.

iii) **Seismic-related ground failure, including liquefaction?**

Less Than Significant Impact. Per the City of Los Angeles General Plan Safety Element, the Project site is located in an area identified as being susceptible to liquefaction (City of Los Angeles 1996). Liquefaction is the process in which saturated silty to cohesionless soils below the groundwater table temporarily lose strength during strong ground shaking as a consequence of increased pore pressure during conditions such as those caused by an earthquake. The proposed

Project would not construct any habitable structures susceptible to liquefaction. Further, the Project would comply with all City building and safety design requirements that address safety and stability on sites at risk of liquefaction. As such, the proposed Project would not result in exposure to liquefaction. The impact would be less than significant. No mitigation is required.

iv) Landslides?

No Impact. The proposed Project site is relatively flat with no significant natural or graded slopes. According to the City of Los Angeles Safety Element, the Project site is not located within an area susceptible to landslides. As such, no impacts would occur and no mitigation is required.

b) Result in substantial soil erosion, loss of topsoil, or changes in topography or unstable soil conditions from excavation, grading, or fill?

Less Than Significant Impact. Construction of the proposed Project would result in ground surface disturbance during excavation and grading that could create the potential for erosion to occur. Exposed ground surfaces would be relatively small and flat areas and exposure would last only a short time before being paved. The proposed Project would be subject to the requirements of the National Pollution Discharge Elimination System (NPDES) Stormwater Program, which requires obtaining coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity, General Construction Permit 2009-0009-DWQ. This also requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). After construction, the Project site would be completely paved which would prevent erosion. The impact would be less than significant. No mitigation is required.

c) Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less Than Significant Impact. See response to 6a above.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less Than Significant Impact. Expansive soils are often present in liquefaction zones due to the high level of groundwater typically associated with liquefiable soils. As aforementioned, the Project site is located in an area identified as being susceptible to liquefaction (City of Los Angeles 1996). No structures would be built that would be susceptible to expansive soils. As such, the proposed Project would not result in exposure to expansive soils. The impact would be less than significant. No mitigation is required.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The proposed Project would utilize the existing sewer system for storm water purposes only, as there would be no wastewater related to the proposed Project. The use of septic tanks or other alternative wastewater disposal systems would not be necessary. No impacts would occur and therefore, no mitigation is required.

4.7 GREENHOUSE GAS EMISSIONS

This section describes the projected greenhouse gas emissions (GHG) and the potential impacts associated with the proposed Project. An air quality and greenhouse gas technical report was prepared by SRA (see Appendix A) which provides a summary of existing conditions in the project area, a regulatory review, and a discussion of potential impacts to greenhouse gases from the proposed Project.

Appendix G of the State CEQA Guidelines provides guidance that a project would have a significant GHG impact if it would:

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

To date, the City of Los Angeles has not established a threshold to determine whether project-specific emissions of GHGs would have a significance impact on the environment. The SCAQMD has adopted an interim CEQA significance threshold of 10,000 metric tons per year of CO_2e for industrial projects where SCAQMD is the lead agency (SCAQMD 2008b). For the purpose of this Project, this analysis used the SCAQMD GHG threshold identified above to evaluate proposed Project GHG emissions under CEQA (SCAQMD 2011).

GHGs differ from criteria pollutants in that GHG emissions do not cause direct adverse human health effects. Rather, the direct environmental effect of GHG emissions is the increase in global temperatures, which in turn has numerous indirect effects on the environment and humans. In California, the Office of Environmental Health Hazard Assessment (OEHHA) has identified observations of changes in California’s climate in its report, *Indicators of Climate Change in California*, including increases in average air temperature, increases in the frequency and intensity of extreme heat events, decreases in winter chill time, increases in freezing elevation at Lake Tahoe, and variability in the amount of annual precipitation. OEHHA has reported effects they attribute to climate change, including a decline in Sierra Nevada snowmelt, reductions in size of Sierra Nevada glaciers, and sea level rise measured at stations in San Francisco and La Jolla.

Would the Project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact. As discussed above, the GHG emission threshold used for this analysis is the 10,000 metric ton threshold proposed by the SCAQMD.

Construction Impacts

GHG emissions associated with Project construction activities and vehicles were calculated using the CalEEMod Model, Version 2013.2.2. Table 4.7-1 below provides a summary of the total GHG emissions associated with Project construction.

Table 4.7-1
Total GHG Emissions from Construction of the Proposed Project

	Total Emissions, metric tons			
Construction Activity	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Mobilization	23.57	0.01	0.00	23.69
Demolition	8.69	0.00	0.00	8.73
Civil Improvements	49.24	0.01	0.00	49.51
DWP-PS,DWP-WS, Grade Crossing Protection and Street Vacations	265.99	0.07	0.00	267.44
Total GHG Emissions	**347.49**	**0.09**	**0.00**	**349.37**
SCAQMD Significance Threshold	10,000 metric tons/year			

As shown in table 4.7-1 above, the total GHG emissions are well below the SCAQMD's significance threshold. Furthermore, since SCAQMD recommends amortizing construction emissions over a 30-year period to account for their contribution to operational impacts from GHGs, the impacts from Project construction would be negligible. Accordingly, the proposed Project construction would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Impacts would be less than significant and no mitigation is required.

Operational Impacts

The proposed Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the Project (refer to Section 4.16, Transportation and Traffic). Therefore, the Project would not result in an increase in operational GHG emissions. In addition, because the Project would eliminate the grade crossings and thereby the delays when trains are present and eliminate vehicle queues that could otherwise result due to blockages from rail operations, the Project would reduce future GHG emissions associated with vehicle idling and truck queuing. Accordingly, the proposed Project operation would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Impacts would be less than significant and no mitigation is required.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact. The applicable plans, policies, and regulations include the requirements of Assembly Bill (AB) 32; the Green LA Plan, which presents a citywide framework for confronting global climate change to create a cleaner, greener, sustainable Los Angeles; and the Port's Climate Action Plan.

Construction Impacts

Statewide GHG emissions must adhere to the requirements of AB 32, which establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 directed the California Air Resources Board (ARB) to develop a Scoping Plan, which is the state's plan to achieve the GHG reductions required by AB32. A draft update to the ARB approved Scoping Plan was released on October 1, 2013. The *Climate Change AB 32 Scoping Plan* includes measures that would directly address GHG emission levels associated with the proposed Project construction and operations, such as the phasing-in of cleaner technologies for diesel engine fleets (including construction equipment) and the development of a Low Carbon Fuel Standard. Policies formulated under the mandate of AB 32 that are applicable to the proposed Project, either directly or indirectly, are assumed to be implemented by the beginning of proposed construction. Therefore, it is assumed that the proposed Project would not conflict with the *Scoping Plan*.

The Green LA Plan presents a citywide framework for confronting global climate change to create a cleaner, greener, sustainable Los Angeles. The Green LA Plan directs the Port to develop an individual Climate Action Plan, consistent with the goals of Green LA, to examine opportunities to reduce GHG emissions from Port operations. In accordance with this directive, the LAHD prepared a Harbor Department Climate Action Plan (December 2007) that details GHG emissions related to municipally-controlled Port activities (such as Port buildings and Port workforce operations) and outlines current and proposed actions to reduce GHGs from these operations. The Port is a founding member of The Climate Registry (TCR). The LAHD completed annual GHG emissions inventories for LAHD-controlled operations beginning in 2006, and they submitted annual GHG inventories for trucks, ships, and rail to TCR (formerly the California Climate Action Registry) beginning in 2008 for year 2006. The LAHD is developing a Sustainability Plan in accordance with the Mayor's Office Directive that will incorporate Port environmental programs and reports, including the Port's Climate Action Plan.

As shown in Table 4.7-1, construction of the proposed Project would not exceed the SCAQMD GHG threshold of 10,000 metric tons of CO_2e per year. The proposed Project would not conflict with AB 32, Executive Directive No. 10, the City of Los Angeles Green LA Plan, or the Port's

Climate Action Plan. Accordingly, impacts would be less than significant. No mitigation is required.

Operational Impacts

As the Project would not result in an increase in operational GHG emissions, the Project would not conflict with an applicable plan, policy, or regulation designed to reduce GHG emissions. Accordingly, impacts would be less than significant and no mitigation is required.

4.8 HAZARDS AND HAZARDOUS MATERIALS

State and federal regulations define hazardous substances as substances that must be regulated to protect the public health and the environment. The California Code of Regulations Title 22, Chapter 11, Article 2, Section 66261 defines a hazardous material as “a substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of or otherwise managed.”

According to Title 22 (CCR Chapter 11, Article 3), substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered hazardous. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, contaminated, or stored prior to disposal.

Toxic substances may cause short-term or long-term health effects, ranging from temporary effects to permanent disability or death. Examples of toxic substances include most heavy metals, pesticides, benzene, petroleum, hexane, natural gas, sulfuric acid, lye, explosives, pressurized canisters, and radioactive and biohazardous materials. Soils may also be toxic because of accidental spilling of toxic substances.

This section discusses the potential for the proposed Project to expose people to hazards and hazardous materials.

Would the Project:

a) **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

Less Than Significant Impact. General construction activities for the proposed Project would not involve the handling of significant amounts of hazardous materials beyond those needed for construction vehicle operations and typical construction activities. Additionally, all storage, handling, and disposal of hazardous materials is regulated by the federal EPA, California Department of Toxic Substances Control (DTSC), Occupational Safety and Health Administration, the City of Los Angeles fire department, and the Los Angeles County fire department. As such, all chemicals used during construction of the proposed Project would be used and stored in compliance with applicable requirements. Compliance with applicable laws and regulations governing the use, storage, and transportation of hazardous materials would minimize the potential for significant safety impacts such as accidental spill, release, or explosion of hazardous materials to occur. Implementation of these laws and regulations would result in less than significant impacts. No mitigation is required.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. See response to 8a above. No mitigation is required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. The Project site is not located within 0.25 mile of an existing or proposed school. The nearest school is George De La Torre Jr Elementary School (500 North Island Avenue) approximately 0.6 mile northwest of the Project site. Additionally, with the implementation of the laws and regulations outlined in 8a above, impacts would be less than significant. No mitigation is required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less Than Significant Impact. There are several cleanup sites near the proposed Project site (within one-quarter mile), which are listed below:

Project Name	Status	Project Type	Address
Roehl Disposal Services	Closed	Non-Operating	131 N Marine Avenue, Wilmington, CA 90744
Avalon Triangle	Active	Voluntary Cleanup	101 North Broad Avenue, Wilmington, CA 90744
Koppers – Los Angeles	Active	Voluntary Cleanup	210 South Avalon Boulevard, Wilmington, CA 90744
California Yacht Club	Inactive – Needs Evaluation	Military Evaluation	San Pedro, CA

However, the proposed Project site is not included on a list of hazardous materials sites.[1],[2] Therefore, the impacts would be less than significant. No mitigation is required.

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[1] California Environmental Protection Agency, Cortese List: Section 65962.5(a). Available at: http://www.calepa.ca.gov/sitecleanup/corteselist/SectionA.htm. Last accessed April 26, 2013.

[2] EnviroStor Website. Available at: http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id=&x=-119&y=37&zl=18&ms=640,480&mt=m&findaddress=True&city=Fries%20Avenue,%20Los%20Angeles,%20CA&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&ca_site=true&tiered_permit=true&evaluation=true&military_evaluation=true&school_investigation=true&operating=true&post_closure=true&non_operating=true. Last accessed April 26, 2013.

e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

No Impact. The Project site is not located within two miles of a public airport, nor is it located within an airport land use plan. The closest public airport, Long Beach Airport, is located approximately 6.5 miles to the northeast from the Project area. The closest private airstrip is the Torrance Municipal Airfield, which is located approximately 5 miles from the Project area. Therefore, no impact related to airport uses would occur. No mitigation is required.

f) **For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

No Impact. See response to 8e above.

g) **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Less Than Significant Impact. The proposed Project would not physically interfere with an adopted emergency response plan as coordination with both the Los Angeles Fire Department and the Los Angeles Port Police would occur prior to construction activities. In addition, the proposed closure of the streets would not occur until the South Wilmington Grade Separation Project is completed. Improved access would be provided prior to the proposed street closures. The South Wilmington Grade Separation will provide unimpeded grade-separated vehicular access to the South Wilmington area, which is comprised of many businesses and community areas, including TraPac Container Terminal, Wilmington Liquid Bulk, Pasha Terminal, Shell Oil Co., Borax Co., GATX, Union Oil, Banning's Landing Community Center, and Wilmington Waterfront Park. Currently, slow moving trains block all access to South Wilmington, including emergency vehicle access from Fire and Police Departments. In addition, this grade separation will eliminate truck queues on surrounding streets and nearby freeway off-ramps. As such, impacts to any adopted emergency response plan or emergency evacuation plan would be less than significant. No mitigation is required.

h) **Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

No Impact. The proposed Project site is in an urban area surrounded on all sides by public facilities, industrial, commercial, or Port waters. No wildlands that could be adversely affected by the proposed Project or that could affect the proposed Project area are adjacent to the site. No impacts would occur. No mitigation is required.

4.9 HYDROLOGY AND WATER QUALITY

This section describes the existing conditions relating to hydrology and water quality and the potential impacts associated with the proposed Project. In addition, this analysis includes a discussion on the potential sea-level rise impacts that may result with implementation of the proposed Project.

Would the Project:

a) Violate any water quality standards or waste discharge requirements?

Less Than Significant Impact. The proposed Project would be subject to the requirements of the National Pollution Discharge Elimination System (NPDES) Stormwater Program, which requires obtaining coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity, General Construction Permit 2009-0009-DWQ. This also requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). Implementation of appropriate BMPs; preparation of a SWPPP; and compliance with the requirements of the NPDES Stormwater Program, City of Los Angeles Municipal Code, and all other applicable federal, state, and local regulations prior to Project approval would result in a less than significant impact. No mitigation is required.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

No Impact. The proposed Project would not deplete groundwater supplies or groundwater recharge facilities because none of these resources are located in the proposed Project area, nor would the proposed Project have an impact upon aquifers. No impact would occur. No mitigation is required.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. There would be no short- term construction or long-term operation associated with the proposed Project that would result in substantial soil erosion or loss of topsoil because BPMs would be in place during the Project's construction phase to prevent short- term erosion impacts and the Project site would be entirely paved at completion. As stated above in response 4.9a, the Project would be subject to the requirements of the NPDES Stormwater Program, which requires obtaining coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity, General Construction Permit 2009-0009-

DWQ. The proposed Project would not create additional impervious surface areas that could generate additional surface runoff. The proposed Project is paved property that is not located within the course of a stream or river and therefore construction and operation of the proposed Project would not alter the course of a stream or river. The existing rail crossings are raised and surface flows go south and north away from the rails. The construction of cul-de-sacs, new curbs and gutter and re-pavement of the segment closures would not substantially alter the drainage pattern of the currently paved site and would continue to direct runoff to the existing storm drain system. Therefore, impacts would be less than significant. No mitigation is required.

d) Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?

Less Than Significant Impact. As stated above in response 4.9c, the proposed Project would not adversely alter the existing drainage patterns of the Project area. No streams or rivers are located within the Project area. The proposed Project would not create additional impervious surface areas that could generate additional surface runoff that could cause on or offsite flooding. The proposed Project, which includes the closure of two road segments; curb and gutter improvements; cul-de-sac construction; removal of two trees; removal/replacement/relocation of fencing, power poles, streetlight, and fire hydrant; and other minor Project components, would not affect such resources. Impacts would be less than significant. No mitigation is required.

e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. The proposed Project involves the closure of two road segments; street improvements; cul-de-sac construction; removal of two ornamental street trees; removal/replacement/relocation of fencing, power poles, streetlight, and fire hydrant; and other minor Project components within the Port that is currently developed with Port-related uses. It would not introduce new uses or new areas of impervious surface that would create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. In addition, if necessary, the proposed Project would employ applicable BMPs. Therefore, impacts would be less than significant. No mitigation is required.

f) Otherwise substantially degrade water quality?

Less Than Significant Impact. The proposed Project would not otherwise degrade water quality. See response to 9a above.

g) Place housing within a 100-year flood hazard area as mapped on a federal flood hazard boundary or Flood Insurance Rate Pap or other flood hazard delineation map?

No Impact. The proposed Project does not include construction of housing. Therefore, no impact would occur. No mitigation is required.

h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?

No Impact. According to the City of Los Angeles General Plan Safety Element, the Project site is located within an area susceptible to impacts from a tsunami and subject to possible inundation as a result (City of Los Angeles 1996). The proposed Project involves the closure of two road segments; street improvements; cul-de-sac construction; and associated minor infrastructure work. The proposed Project does not involve construction of structures that would impede or redirect flood flows within a 100-year flood hazard area. The impact would be less than significant. No mitigation is required.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The proposed Project site is not within any potential dam or levee inundation areas as identified in the Los Angeles General Plan Safety Element (City of Los Angeles 1996). Since the proposed Project does not involve construction of habitable structures and no habitable structures exist in the Project vicinity, it would not expose people or structures to significant risk of loss, injury or death from flooding, including flooding from failure of a levee or dam. No impact would occur. No mitigation is required.

j) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the sea level rise?

Less than Significant Impact. Due to its geographic location, the infrastructure and operations of the Port would be vulnerable to sea level rise by nature. Wharves and piers may be damaged in strong storms, waves, or surges resulting from a rise in sea level.

As part of the climate change research, there have been many recent developments in the science underlying the projection of sea level rise. Higher temperatures are expected to further raise sea level by expanding ocean water, melting mountain glaciers and small ice caps, and causing portions of Greenland and the Antarctic ice sheets to melt. The International Panel on Climate Change (IPCC) estimates that the global average sea level would rise between 0.6 and 2 feet (0.18 to 0.59 meters) in the next century (IPCC 2007).

Coastal zones are particularly vulnerable to climate variability and change. Rising sea levels inundate wetlands and other low-lying lands, erode beaches, intensify flooding, and increase the salinity of rivers, bays, and groundwater tables. Some of these effects may be further compounded by other effects of a changing climate such as increased frequency and severity of storms and changes in precipitation patterns. Additionally, measures that people take to protect private property from rising sea level such as the construction of barriers may have adverse effects on the environment and on public uses of beaches and waterways. Some property owners and state and local governments are already starting to take measures to prepare for the consequences of rising sea level (USEPA 2011).

On November 14, 2008, the Governor's Executive Order S-13-08 was issued in order to provide guidance for incorporating sea-level rise (SLR) projections into planning and decision making for projects in California. The executive order requested the National Research Council (NRC) to issue a report on sea-level rise (SLR) to advise California on planning efforts.

In October 2010, the Sea Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team prepared the State of California Sea Level Rise Interim Guidance Document. The intent of this interim guidance document is to inform and assist state agencies as they develop approaches for incorporating sea level rise into planning decisions. As the *Interim Sea-Level Rise Guidance Document* explicitly called for an update when the findings of the NRC report were available, the March 2013 update document was revised to include results and the scientific findings of the 2012 NRC report. The 2012 NRC Report, unlike the Interim Guidance Document, divides the California coast into two separate regions- north of Cape Mendocino and south of Cape Mendocino. The projections for north of Cape Mendocino incorporate the uplift trends that are partially associated with the Cascadia Subduction Zone and result in very different projections for sea level rise than are anticipated for the rest of the coast. Specifically, the March 2013 document provides information and recommendations to enhance consistency across agencies in their development of approaches to SLR. Because of their differing mandates and decision-making processes, State agencies will interpret and use the March 2013 recommendations in a flexible manner, taking into consideration risk tolerances, timeframes, economic considerations, adaptive capacities, legal requirements and other relevant factors.

The proposed Project would not construct any new structures including habitable structures. Furthermore, LAHD and the Rand Corporation completed a study in 2012 entitled, "Characterizing Uncertain Sea Level Rise Projections to Support Investment Decisions". . The study examines how to address the potential for presumably low probability but large impact levels of extreme SLR in the Port large infrastructure investment plans. The study's focus was whether POLA should harden its container ship terminal against future SLR during the next major upgrades of those terminals. Overall, the study concluded that a decision to harden at the next upgrade would merit serious consideration only for one of the four POLA facilities considered: the Alameda and Harry Bridges Crossing.

Because of the above study findings and the fact that the proposed Project would be surface improvements and not involve construction of structures, impacts associated with risks from SLR would be less than significant. No mitigation is required.

k) Inundation by seiche, tsunami, or mudflow?

Less Than Significant Impact. The proposed Project would not contribute to inundation by mudflows. The topography of the proposed Project area, which is essentially flat, lacks sufficient relief to support a mudflow. While the proposed Project site is identified to be within an area "potentially impacted by a tsunami" (City of Los Angeles 1994a), detailed studies of tsunami risk within the Ports of Los Angeles and Long Beach indicate that the Project area is sufficiently interior and distant from open ocean such that waves under various scenarios would not reach above 0.6 meters and would not exceed deck elevations (Moffatt & Nichol 2007). Furthermore, the City of Los Angeles Tsunami Response Plan does not identify the Project area as part of the Tsunami Inundation Zone for San Pedro and the Harbor Area (City of Los Angeles 2008). Project impacts associated with issue are considered less than significant. No mitigation is required.

4.10 LAND USE AND PLANNING

This section contains a description and analysis of the land use and planning considerations that would result from Project implementation.

Would the Project:

a) Physically divide an established community?

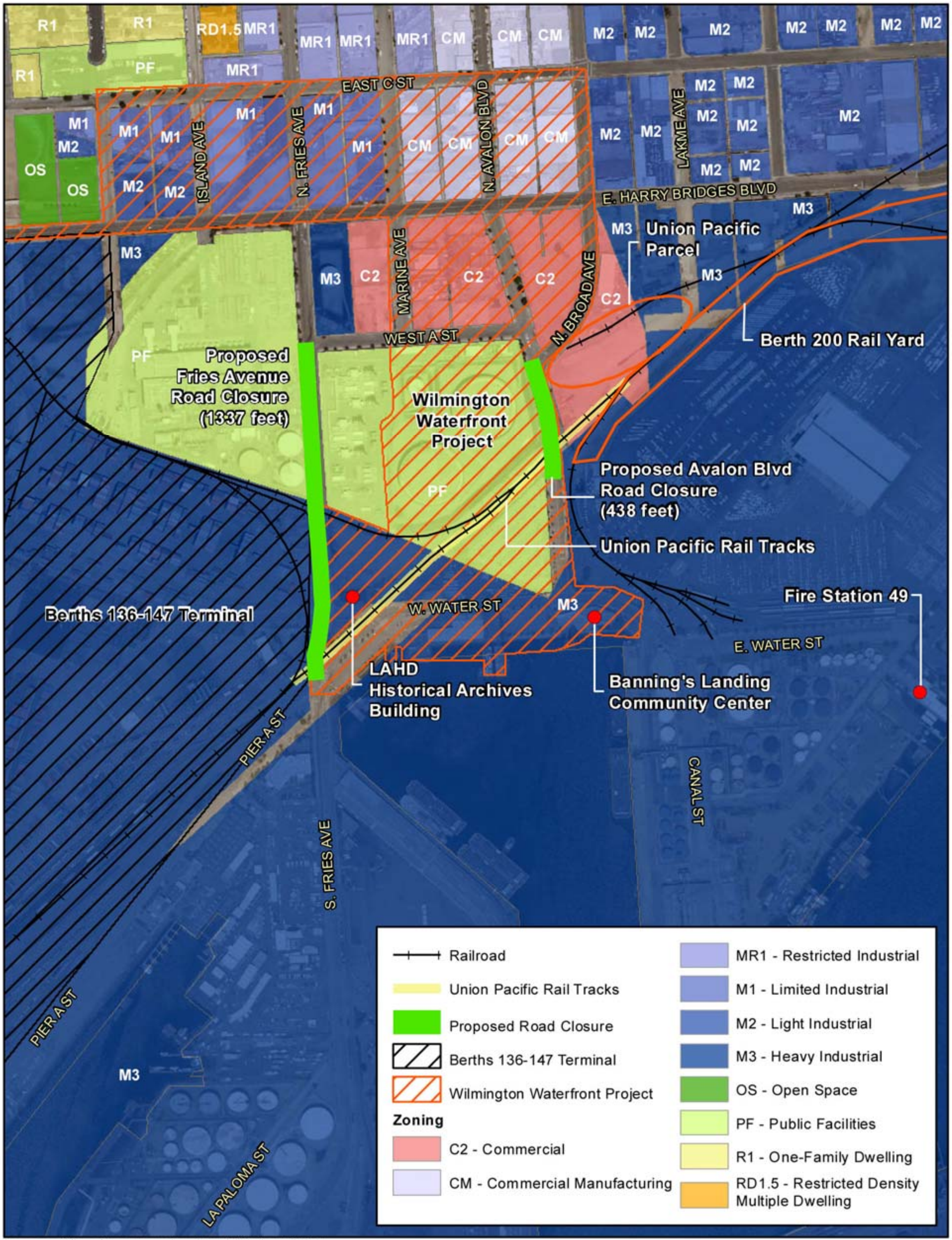
Less Than Significant Impact. The proposed Project site does not contain any established communities. The City of Wilmington is currently afforded access to the waterfront via these streets. The proposed Project includes the closure of segments of Fries Avenue and Avalon Boulevard, only with the precondition that the South Wilmington Grade Separation Project be complete prior to commencement. The South Wilmington Grade Separation will provide unimpeded grade-separated vehicular access to the South Wilmington area, which is comprised of many businesses and community areas, including TraPac Container Terminal, Wilmington Liquid Bulk, Pasha Terminal, Shell Oil Co., Borax Co., GATX, Union Oil, Banning's Landing Community Center, and Wilmington Waterfront Park. Currently, slow moving trains block all access to South Wilmington, including emergency vehicle access from Fire and Police Departments. In addition, this grade separation will eliminate truck queues on surrounding streets and nearby freeway off-ramps. Changes in rail operations will increase the duration of waiting at the crossings without the proposed Project. Based on the above and the fact that the alternative access provided by the grade separation will improve vehicular access, this Project would not separate uses, or divide an established community or disrupt access. No impact would occur. No mitigation is required.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The proposed Project would not conflict with a specific plan, general plan, or zoning ordinance. The Project site is zoned for public facilities (PF), and would be consistent with the land use designations and associated regulations (see Figures 4.10-1 and 4.10-2). The applicable land use plans for the Port include the City of Los Angeles General Plan that identifies the site as public facilities (PF), the Port of Los Angeles Community Plan, and the Port Master Plan. The proposed Project would not change the existing land use designation of the Project site within the August 2013 Port Master Plan (Mixed Land Use). As such, the proposed Project is compatible with applicable land use plans, policies, or regulations of the City of Los Angeles. No mitigation is required.

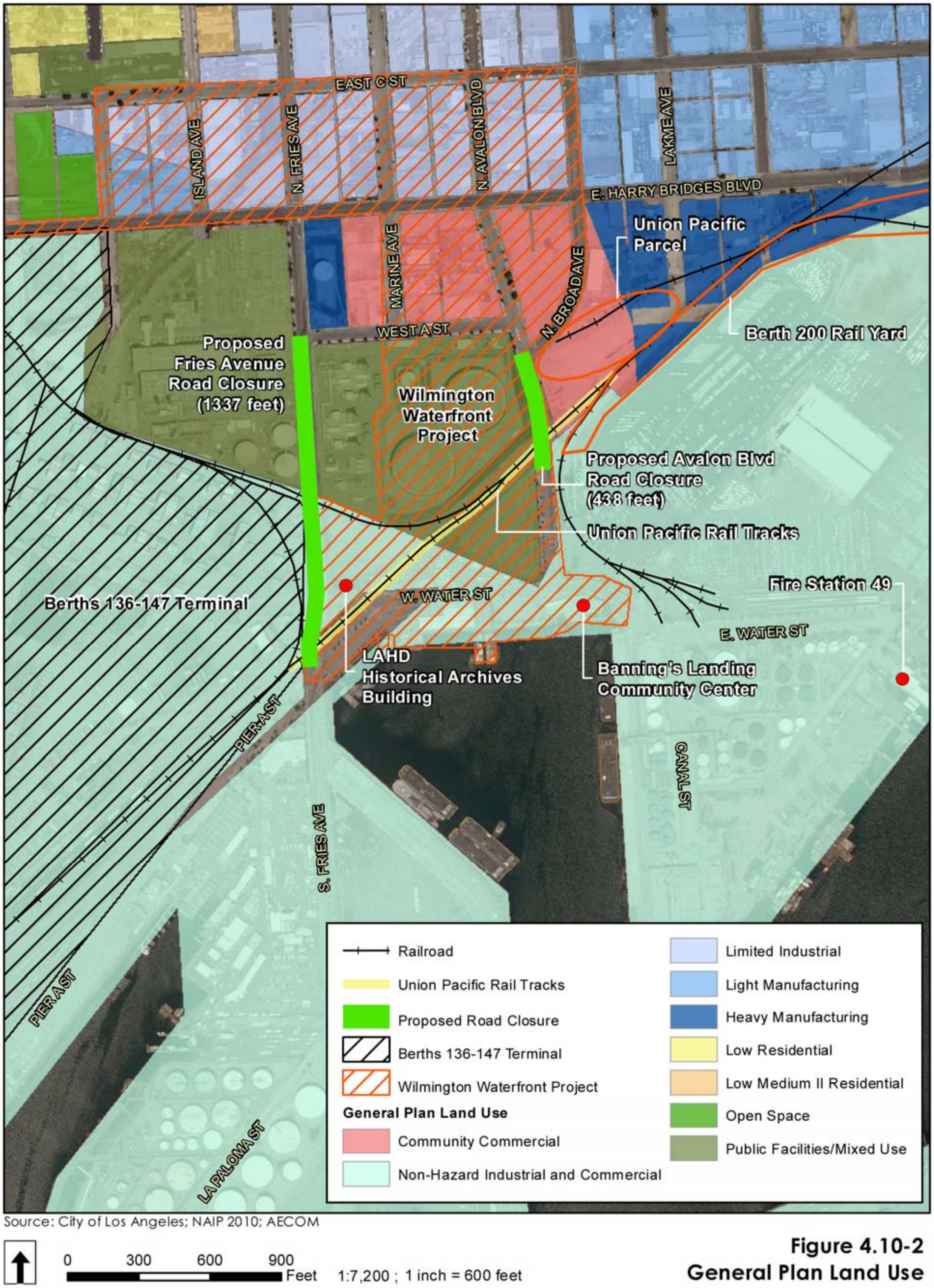
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The Project site is located in a highly industrialized area within the Port and is fully developed. It is not located within any habitat conservation plan or natural community's conservation plan. Therefore, no impacts would occur. No mitigation is required.



Source: City of Los Angeles; NAIP 2010; AECOM

Figure 4.10-1
Zoning



Source: City of Los Angeles; NAIP 2010; AECOM

Figure 4.10-2
General Plan Land Use

4.11 MINERAL RESOURCES

The purpose of this section is to identify and evaluate key mineral resources in the Project area and to determine the degree of impacts that would be attributable to the proposed Project.

Would the Project:

a) **Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

No Impact. The proposed Project site is in a mineral resource zone area classified as MRZ-1, an area where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence (California Department of Conservation, Division of Mines and Geology 1994). The proposed Project site is within the identified boundaries of the Wilmington Oil Field, one of the major oil drilling areas of the Los Angeles basin (City of Los Angeles 1994b). However, there are no oil drilling rigs or current oil exploration investigations within the proposed Project area, and the proposed Project would not preclude the exploration or access to subsurface mineral resources. Therefore, proposed Project would not result in significant impacts to mineral resources. No mitigation is required.

b) **Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?**

No Impact. No known locally-important mineral resources would be impacted by the proposed Project. No impact would occur and no mitigation is required.

4.12 NOISE

The purpose of this section is to identify sensitive receptors in the Project area and to determine the degree of noise impacts that would be attributable to the proposed Project. Noise and vibration levels related to construction activity and changes to mobile source noise associated with rerouted traffic have been analyzed by Terry A. Hayes Inc. (TAHA) (see Appendix B). Mitigation measures are recommended where necessary.

Would the Project Result In:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. The City of Los Angeles has established policies and regulations regarding the generation and control of noise that could adversely affect its citizens and noise sensitive land uses. Section 41.40 (Noise Due to Construction, Excavation Work – When Prohibited) of the Los Angeles Municipal Code (LAMC) indicates that no construction or repair work shall be performed between the hours of 9:00 p.m. and 7:00 a.m., since such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment, or other place of residence. The provisions of this section do not apply to construction, repair or excavation work done within any district zoned for manufacturing or industrial uses. The proposed Project is located within an industrial zone near the Port and the time limitations do not apply.

Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools) of the LAMC also specifies the maximum noise level for powered equipment or powered hand tools. Any powered equipment or hand tool that produces a maximum noise level exceeding 75 A-weighted decibel (dBA) at a distance of 50 feet is prohibited. However, this noise limitation does not apply where compliance is technically infeasible. Technically infeasible means the above noise limitation cannot be met despite the use of mufflers, shields, sound barriers and/or any other noise reduction device or techniques during the operation of equipment.

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, and senior care facilities would each be considered noise- and vibration-sensitive and may warrant unique measures for protection from intruding noise. Sensitive receptors near the Project site include the following:

- Residences in Wilmington, the nearest located 1,630 feet to the northwest of the activity on Fries Avenue; and

- Newmark's Yacht Centre Marina with live-aboard yachts located 2,500 feet to the east of the activity on Avalon Boulevard.

Existing noise levels at these locations were recorded on November 12, 2013. Measurements were used to establish existing ambient noise conditions, provide a baseline for evaluating construction impacts, and assess operational impacts. As shown in Table 4.12-1 below, the daytime existing ambient noise levels were 53.9 at dBA L_{eq} in the residential area and 55.6 dBA L_{eq} at the Newmark's Yacht Centre.

Table 4.12-1
Existing Noise Levels

Location	Sound Levels (dBA, L_{eq})
Wilmington Residences	53.9
Newmark's Yacht Centre	55.6

Source: TAHA, 2013

Construction Noise

A significant impact related to construction activity would occur if:

- Construction activities lasting more than one day would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive use;
- Construction activities lasting more than ten days in a three-month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive use; and/or

Construction activity associated with the proposed Project would potentially begin at 6:00 a.m. This would conflict with the LAMC if activity were to be located adjacent dwelling, hotel, apartment or other place of residence. The nearest residence is approximately 1,630 feet from the construction area and would not be adjacent to noise-generating equipment. The proposed Project would not include nighttime construction activity, but would last for more than ten days in a three-month period. Therefore, a significant impact would occur if construction noise levels exceed existing exterior ambient noise levels by 5 dBA.

Construction activity would temporarily increase ambient noise levels on an intermittent basis. Noise levels would fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers. Construction activities typically require the use of numerous pieces of noise-generating equipment. Typical noise levels from various types of equipment that may be used during construction are listed in Table 4.12-2 below. The table shows noise levels at distances of 50 and 100 feet from the construction noise source. When various activities are aggregated, it is anticipated that roadway construction activity generates a noise level of 82 dBA Leq at 100 feet. This reference noise level was used to estimate noise levels at sensitive receptors by (1) making a distance adjustment to the construction source noise level; and (2) logarithmically adding the adjusted construction noise source level to the existing ambient noise level.

Table 4.12-2
Maximum Noise Levels of Common Construction Machines

Noise Source	Noise Level (L_{eq}, dBA)	
	50 Feet	**100 Feet**
Front Loader	80	74
Trucks	89	83
Jackhammers	90	84
Generators	77	71
Back Hoe	84	89
Tractor	88	82
Scraper/Grader	87	81
Paver	87	81

Source: City of Los Angeles, *L.A. CEQA Thresholds Guide,* 2006

Table 4.12-3 below presents the estimated incremental increase in noise levels associated with construction activity at sensitive receptor locations.

Table 4.12-3
Construction Noise Levels

Sensitive Receptor	Distance (feet)	Existing L_{eq} (dBA)	Projected Construction-Related L_{eq} (dBA)	Incremental Increase
Residences to the North	1,630	53.9	54.8	0.9
Newmark's Yacht Centre	2,500	55.6	57.9	2.3

Source: TAHA, 2013

Construction noise would not exceed the 5-dBA significance threshold at the analyzed sensitive land uses. Therefore, the proposed Project would result in a less than significant impact related to construction noise.

Operational Noise

The operational noise analysis assessed mobile and stationary sources. Based on the *CEQA Thresholds Guide*, a significant impact related to operational activity would occur if:

- Ambient noise levels measured at the property line of the residences increase by 3 dBA CNEL to or within 70 CNEL for “normally unacceptable” or above 70 dBA CNEL for “clearly unacceptable” categories or any 5-dBA or more increase in noise level.

Mobile Noise

The proposed Project would not generate new vehicle trips but would reroute traffic on the surface street network. The rerouting of traffic is not a significant traffic change (See Section 4.16). The Federal Highway Administration RD-77-108 noise calculation formulas were used to predict mobile source noise levels under existing conditions and in years 2017 and 2038 The results are in Tables 4.12-4 and 4.12-5, below. The greatest Project-related noise increase in 2017 or 2038 would be 0.8 dBA community noise equivalent level (CNEL) and would occur along Harry Bridges Boulevard west of Fries Avenue in 2017. The roadway noise increase attributed to the proposed Project would be less than the 3-dBA CNEL increment at all analyzed segments. Therefore, the proposed Project would result in a less than significant impact related to Project-level mobile noise levels.

Table 4.12-4
Estimated Community Noise Equivalent Level (2017)

	Estimated dBA, CNEL				
Time Period and Roadway Segment	**Existing**	**Future Without Project (2017)**	**Future With project (2017)**	**Project Increase**	**Cumulative Increase**
AM Peak Hour					
Harry Bridges Blvd. west of Fries Ave.	73.5	74.7	75.5	0.8	2.0
Harry Bridges Blvd. east of Avalon Blvd.	71.9	74.2	74.9	0.7	3.0
Fries Ave. north of Harry Bridges Blvd.	60.5	61.3	61.3	0.0	(1.2)
Avalon Blvd. north of Harry Bridges Blvd.	67.3	65.4	65.4	0.0	(1.9)
PM Peak Hour					
Harry Bridges Blvd. west of Fries Ave.	75.6	77.6	77.9	0.3	2.3
Harry Bridges Blvd. east of Avalon Blvd.	72.7	77.0	77.3	0.3	4.6
Fries Ave. north of Harry Bridges Blvd.	63.4	63.0	63.0	0.0	(0.4)
Avalon Blvd. north of Harry Bridges Blvd.	65.9	65.4	65.4	0.0	(0.4)
Midday Peak Hour					
Harry Bridges Blvd. west of Fries Ave.	73.3	75.1	75.5	0.4	2.2
Harry Bridges Blvd. east of Avalon Blvd.	74.3	74.7	75.1	0.4	0.8
Fries Ave. north of Harry Bridges Blvd.	63.4	63.0	63.0	0.0	(0.4)
Avalon Blvd. north of Harry Bridges Blvd.	69.7	68.9	68.9	0.0	(0.8)

Source: TAHA, 2013 and *Traffic Study for the Avalon and Fries Street Segments Closure Project,* November, 2013

Table 4.12-5
Estimated Community Noise Equivalent Level (2038)

	Estimated dBA, CNEL				
Time Period and Roadway Segment	Existing	Future Without Project (2038)	Future With project (2038)	Project Increase	Cumulative Increase
AM Peak Hour					
Harry Bridges Blvd. west of Fries Ave.	73.5	78.3	78.6	0.3	5.1
Harry Bridges Blvd. east of Avalon Blvd.	71.9	75.2	75.8	0.6	3.9
Fries Ave. north of Harry Bridges Blvd.	62.5	61.8	61.8	0.0	(0.7)
Avalon Blvd. north of Harry Bridges Blvd.	67.3	68.2	68.2	0.0	0.9
PM Peak Hour					
Harry Bridges Blvd. west of Fries Ave.	75.6	78.6	78.8	0.2	3.2
Harry Bridges Blvd. east of Avalon Blvd.	72.7	73.6	74.0	0.4	1.3
Fries Ave. north of Harry Bridges Blvd.	63.4	63.0	63.0	0.0	(0.4)
Avalon Blvd. north of Harry Bridges Blvd.	65.9	66.0	66.1	0.1	0.2
Midday Peak Hour					
Harry Bridges Blvd. west of Fries Ave.	73.3	77.2	77.4	0.2	4.1
Harry Bridges Blvd. east of Avalon Blvd.	74.3	76.6	77.1	0.5	2.8
Fries Ave. north of Harry Bridges Blvd.	63.4	63.0	63.0	0.0	(0.4)
Avalon Blvd. north of Harry Bridges Blvd.	69.7	71.0	71.1	0.1	1.4

Source: TAHA, 2013 and *Traffic Study for the Avalon and Fries Street Segments Closure Project*, November, 2013

The Harry Bridges Boulevard west of Fries Avenue segment would experience the highest cumulative increase of the studies roadway segments; a 5.1-dBA CNEL increase in noise levels when comparing year 2038 to existing conditions. The Project-related increase would be 0.3 dBA. The majority of increased noise would be related to cumulative growth and the proposed Project would not significantly contribute to a cumulatively considerable noise impact.

Stationary Noise

The proposed Project includes a grade crossing protection gate on the north side of the rail line along Fries Avenue that would be located approximately 13 feet from the existing rail track and 26 feet from the new rail track. Bells sound when the gates are activated by a passing train. The location of this new gate would not be significantly different from the existing gate location from the perspective of a noise source. The 13-foot difference would not change the existing CNEL at any of the identified sensitive receptors. Therefore, the proposed Project would not result in a less than significant impact related to stationary noise. No mitigation is required.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Construction activities can generate varying degrees of vibration, depending on the construction procedures and the type of construction equipment used. The operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. Unless heavy construction activities are conducted extremely close (within a few feet) to neighboring structures, vibrations from construction activities rarely reach levels that damage structures. Typical vibration levels associated with construction equipment are provided in Table 4.12-6 below. Heavy equipment (e.g., large bulldozer) generates vibrations levels of 0.089 inches per second peak particle velocity (PPV) at a distance of 25 feet.

Table 4.12-6
Vibration Velocities for Construction Equipment

Equipment	PPV at 25 feet (inches/second)
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

According to the Federal Transit Administration (FTA) *Traffic Noise and Vibration Impact Assessment*, the primary concern regarding construction vibration relates to potential damage effects. The construction vibration damage criterion for buildings that are extremely susceptible to vibration damage is 0.12 inches per second PPV. This is the strictest PPV vibration threshold established by the FTA. The Port Archives Building would be the nearest building to heavy equipment at approximately 30 feet. The typical vibration level from heavy equipment at this distance would be approximately 0.07 PPV. Regardless of the degree of building sensitivity (e.g., historic or reinforced), heavy equipment vibration would not exceed the FTA damage criteria. Therefore, the proposed Project would result in a less than significant impact related to construction vibration. No mitigation is required.

Operation of the proposed Project would not include significant stationary sources of vibration, such as heavy equipment operations. Operational vibration in the Project vicinity would be generated by vehicular travel on the local roadways. According to the FTA *Transit Noise and Vibration Impact Assessment*, significant vibration impact from rubber tire-fitted vehicles is extremely rare. Vehicle suspension design and rubber tires act as a highly effective barrier to vibration transmission from the vibration-generating carriage and the ground. Therefore, the proposed Project would result in a less than significant impact related to operational vibration. No mitigation is required.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. Potential permanent increases in ambient noise levels were assessed above for on-road vehicles and stationary sources. As discussed above, operational noise level would not exceed the significance threshold. Therefore, the proposed Project would result in a less than significant impact related to substantial permanent increase in ambient noise levels. No mitigation is required.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. Potential temporary increases in ambient noise levels were assessed above for construction activities. As discussed above, construction activity would not increase ambient noise levels by more than 5 dBA. Therefore, the proposed Project would result in a less than significant impact related to a temporary increase in noise levels. No mitigation is required.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or pubic use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The proposed Project is not located within two miles of a public airport. The nearest public airport to the Project site is the Long Beach Airport, located approximately 6.5 miles to the northeast. Therefore, the proposed Project would not expose construction workers to excessive noise levels associated with public airport activities. The proposed Project would not result in an impact related to exposure to noise generated at public airports. No impact would occur and no mitigation is required.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The proposed Project is not located within two miles of a private airstrip. The closest private airstrip is the Torrance Municipal Airfield, which is located approximately 5 miles from the Project area. Given the distance of the airstrip, the proposed Project would not expose construction workers to excessive noise levels associated with any private airstrip activities. Therefore, the proposed Project would not result in an impact related to exposure to noise generated at private airports. No impact would occur and no mitigation is required.

4.13 POPULATION AND HOUSING

This section describes potential impacts to population and housing associated with the proposed Project.

Would the Project:

a) **Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

No Impact. The proposed Project involves street segment closures at Fries Avenue and Avalon Boulevard. The proposed Project would neither establish new residential uses within the Port nor require expansion of roads or other infrastructure sufficient to induce substantial population growth. Therefore, the proposed Project would not induce substantial population growth either directly or indirectly. While some population growth may occur from economic growth related to projects undertaken in the future, the growth would be minimal and not attributable to the proposed Project. No mitigation is required.

b) **Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

No Impact. There is no housing within the proposed Project boundaries that would be displaced as a result of the proposed Project. No impacts would occur. No mitigation is required.

c) **Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

No Impact. There is no housing within the proposed Project boundaries that would be displaced as a result of the proposed Project. No impacts would occur. No mitigation is required.

4.14 PUBLIC SERVICES

This section evaluates public services impacts associated with the implementation of the proposed Project in terms of fire protection, police protection, schools, parks, and other public services.

Would the Project:

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

i) **Fire Protection?**

Less Than Significant Impact. The Los Angeles Fire Department (LAFD) provides fire protection and emergency services for the proposed Project site and LAFD representatives were contacted by LAHD during the preparation of this document. Fire protection capabilities are based on the distance from the emergency to the nearest fire station and the number of simultaneous emergency or fire-related calls. The LAFD has a required maximum response time of 9 minutes by land and 14 minutes by water. LAFD facilities in the vicinity of the proposed Project site include land-based fire stations and fireboat companies. In the harbor area, Battalion 6 is responsible for all of San Pedro and its waterfronts, Terminal Island and all of the surrounding water, Wilmington, Harbor City, and Harbor Gateway. There are 10 fire stations within these geographical areas, which consists of fireboats, hazardous material squads, paramedic and rescue vehicles, three-truck companies, an urban search and rescue team, and a foam tender apparatus. The fire stations closest to the Project site are: Fire Station 38 (located at 124 East I Street in Wilmington) and Fire Station 49 (located at 400 Yacht Street in Wilmington between Berths 194 and 195). Station 38 is a task force station with a staff of 9 that maintains a truck and engine company and paramedic ambulance. Station 49 is staffed by 13 personnel and equipped with a single engine company and two boats (Fire Boats #4 and #49) and serves as Battalion 6 Headquarters. The proposed Project would be reviewed by the LAFD prior to commencement of demolition/construction activities. Since the road segment closures would not occur until traffic can be re-routed to the newly constructed South Wilmington Grade Separation located west of Fries Avenue, no impacts to response times are anticipated. Further, the proposed Project would comply with the City of Los Angles Municipal Code requirements and any LAFD requirements. The proposed Project would not result in any increase in residential population. No housing or employment opportunities would be provided by the proposed Project that would require increased fire protection services. The Project would require neither the expansion of existing facilities nor the construction of new fire facilities. The impact would be less than significant and no mitigation is required.

ii) Police protection?

Less Than Significant Impact. The proposed Project would be within the jurisdiction of the Los Angeles Police Department (LAPD) Harbor Division and the Los Angeles Harbor Department Port Police (Port Police). The LAPD Harbor Community Station is located near the Port entrance at 22175 John S. Gibson Boulevard and supports a staff of approximately 260 patrol officers, detectives, and support staff, including a minimum of 19 officers in the field at all times. The LAPD does not have an established goal for response time to emergency calls. The Port Police headquarters are located in the Port Police Headquarters Building at 330 S. Centre Street in San Pedro. The Port Police personnel and facilities include a Dive Team, K-9 Unit, Cargo Theft Interdiction Program, and High Intensity Drug Trafficking Area Task Force. The Port Police maintain six patrol areas and the number of officers assigned to these patrols varies depending on events and national security intelligence. The Port Police service levels are considered adequate in the Project site. The proposed Project would be reviewed by the Port Police prior to commencement of demolition/construction activities. Further, the proposed Project would comply with the City of Los Angeles Municipal Code requirements and any Port Police requirements. The proposed Project would not result in any increase in residential population. No housing or employment opportunities would be provided by the proposed Project that would require increased police protection services. The Project would require neither the expansion of existing facilities nor the construction of new police protection facilities. The impact would be less than significant. No mitigation is required.

iii) Schools?

No Impact. The proposed Project would not result in any increase in residential population. No housing or employment opportunities would be provided by the proposed Project. Therefore, the proposed Project would not result in new students or increase in demand on local schools. No impacts to schools would occur. No mitigation is required.

iv) Parks?

No Impact. The proposed Project would not result in any increase in residential population. No housing or employment opportunities would be provided by the proposed Project. Therefore, the proposed Project would not result in increase in demand on local parks. No impacts to parks would occur. No mitigation is required.

v) Other public facilities?

No Impact. The U.S. Coast Guard (USCG) is maintains a post within the Port that is on Terminal Island. Within the Port area, the USCG's primary responsibility is to ensure the safety of vessel traffic in the channels of the Port and in coastal waters. The 11th USCG District provides USCG support to the Port area, including the proposed Project. The proposed Project involves closure of two roads and is located within the same operating distance of other facilities served by the

USCG. In addition, the proposed Project would not increase the demand for additional law enforcement officers and/or facilities. Therefore, no impacts to other public facilities would occur. No mitigation is required.

4.15 RECREATION

This section evaluates recreation impacts associated with the implementation of the proposed Project. The analysis addresses construction-related and operational impacts and the associated potential impact to the surrounding local parks or other recreation facilities that would occur as a result of the proposed Project.

Would the Project:

a) **Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

No Impact. The proposed Project is located completely within LAHD property and consists of road segment closures. The proposed Project would not result in direct impacts to parks or recreational facilities as none exist on or immediately adjacent the Project site. Access to the existing Banning's Landing Community Center would be secured with the precondition that the South Wilmington Grade Separation Project be completed prior to construction of these street segments closure improvements. Further, the proposed Project does not include development of any residential uses or emplacement opportunities and would not generate any new permanent residents that would increase the demand on local parks or recreation facilities. The proposed Project would not result in impacts to recreation. No mitigation is required.

b) **Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?**

No Impact. See response to 15a above.

4.16 TRANSPORTATION AND TRAFFIC

This section provided a summary of the existing and future traffic conditions analysis conducted. Fehr & Peers conducted a traffic study to evaluate the potential traffic impacts of the proposed Project, which involves the closure of Fries Avenue and Avalon Boulevard between Water Street and A Street within the Port due to operational changes with train assembly in the vicinity and the requirement to comply with CPUC regulations regarding duration of railroad-related roadway blockages.

The traffic report (see Appendix C) identified the base data and assumptions, explains the methodologies used, and summarizes the findings of the study. Because the Project is conditioned upon the completion of the ongoing South Wilmington Grade Separation Project, which changes the traffic flow in the area and is under construction, existing (2012) plus project analysis is not presented. The traffic impact analysis conducted for this report includes analysis of existing (2012) conditions, interim year (2017) conditions and cumulative (2038) conditions. The traffic report assessed potential Project impacts during the weekday AM, midday, and PM peak hours. The unsignalized future intersection was analyzed to determine whether it would meet traffic signal warrants in accordance with LADOT policies and procedures.

The following seven intersections were identified for analysis:

1. Harry Bridges Boulevard & Broad Avenue (signalized) – Existing
2. Harry Bridges Boulevard & Avalon Boulevard (signalized) – Existing
3. Harry Bridges Boulevard & Fries Avenue (signalized) – Existing
4. Harry Bridges Boulevard & North Access Road (signalized) – Future
5. North Access Road & TraPac Access/Viaduct (signalized) – Future
6. South Access Road & Pier A Street/Viaduct (signalized) – Future
7. South Access Road & Fries Avenue (all way stop-controlled) - Future

Would the Project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less Than Significant Impact. Since all study intersections are in the City of Los Angeles, consistent with the *Traffic Study Policies and Procedures* (LADOT, June 2013), the traffic study used the Critical Movement Analysis (CMA) method of intersection capacity calculation to analyze the LOS at the existing and future signalized intersections. LOS is a qualitative measure used to describe the condition of traffic flow, ranging from excellent "free-flow" conditions at

LOS A to overloaded "stop-and-go" conditions at LOS F. LOS D is typically considered to be the minimum desirable level of service in urban areas. The CMA methodology determines the volume to capacity (V/C) ratio of an intersection based on the number of approach lanes, the traffic signal phasing and the traffic volumes. The V/C ratio is then used to find the corresponding LOS based on the definitions in Table 1 of the traffic study (see Appendix C).

Under the LADOT guidelines, an intersection would be significantly impacted with an increase in V/C ratio equal to or greater than 0.04, or an increase of 6.0 seconds in delay for intersections projected to operate at LOS C after the addition of project traffic. Stricter thresholds of significance apply to intersections projected to operate at LOS D, E, or F after the addition of project traffic.

Intersections operating at LOS A or B after the addition of the project traffic are not considered significantly impacted regardless of the project related increase in V/C ratio or delay. Therefore, a project would have a significant impact on the transportation/circulation if it increases an intersection's V/C ratio in accordance with the following impact criteria:

LOS	**Final V/C Ratio**	**Project-related Increase in V/C**
C	>0.700 – 0.800	equal to or greater than 0.040
D	>0.800 – 0.900	equal to or greater than 0.020
E or F	>0.900	equal to or greater than 0.010
LOS	**Final Delay**	**Project-related Increase in V/C**
C	>20 – 35	equal to or greater than 6.0 seconds
D	>35 – 55	equal to or greater than 4.0 seconds
E	>55 – 80	equal to or greater than 2.5 seconds
F	>80	equal to or greater than 2.5 seconds

Cumulative (2017) Traffic Conditions and Cumulative (2017) plus Project Traffic Conditions

Future (year 2017) base traffic projections were analyzed to establish future (2017) base operating conditions without and with the Project. The results of this analysis, presented in Table 4.16-1 below, show that the study intersections would continue to operate at acceptable levels of service (LOS A or B). The traffic shifts due to the proposed Project would result in minor V/C improvements where Harry Bridges Boulevard intersects with Broad Avenue and where it intersects with the North Access Road (Study Intersections 1 and 4). At the other study intersections, small increases in V/C would occur due to traffic shifted from the streets that are proposed for closure.

Table 4.16-1
Future (Year 2017) Intersection Level of Service Analysis

No.	Intersection	Peak Hour	Future (Year 2017) V/C or Delay	Future (Year 2017) LOS	Future + Project (Year 2017) V/C or Delay	Future + Project (Year 2017) LOS	Project Increase V/C or Delay	Significant Project Impact
1	Harry Bridges Boulevard & Broad Avenue *Signalized*	AM	0.240	A	0.198	A	-0.042	NO
		MD	0.261	A	0.193	A	-0.067	NO
		PM	0.481	A	0.403	A	-0.077	NO
2	Harry Bridges Boulevard & Avalon Boulevard *Signalized*	AM	0.218	A	0.276	A	0.058	NO
		MD	0.227	A	0.253	A	0.025	NO
		PM	0.413	A	0.442	A	0.029	NO
3	Harry Bridges Boulevard & Fries Avenue *Signalized*	AM	0.164	A	0.216	A	0.052	NO
		MD	0.198	A	0.212	A	0.014	NO
		PM	0.439	A	0.457	A	0.018	NO
4	North Access Road & Harry Bridges Boulevard *Signalized*	AM	0.303	A	0.336	A	0.034	NO
		MD	0.370	A	0.355	A	-0.015	NO
		PM	0.615	B	0.614	B	-0.001	NO
5	North Access Road & TraPac Access/Viaduct *Signalized*	AM	0.113	A	0.349	A	0.236	NO
		MD	0.161	A	0.267	A	0.106	NO
		PM	0.153	A	0.298	A	0.145	NO
6	South Access Road & Pier A Street Viaduct *Signalized*	AM	0.139	A	0.302	A	0.164	NO
		MD	0.073	A	0.158	A	0.085	NO
		PM	0.071	A	0.179	A	0.108	NO
7	Fries Avenue & South Access Road *All-way stop-controlled*	AM	8.1 secs	A	8.7 secs	A	0.6 secs	NO
		MD	7.7 secs	A	8.0 secs	A	0.3 secs	NO
		PM	7.9 secs	A	8.3 secs	A	0.4 secs	NO

Note: A v/c credit of 0.100 has been applied to reflect the combined benefits of ATSAC and STCS at the signalized intersections.

Cumulative (2038) Traffic Conditions and Cumulative (2038) plus Project Traffic Conditions

Future (year 2038) base traffic projections were analyzed to establish future (2038) base operating conditions without and with the Project. The results of this analysis, presented in Table 4.16-2 below, show that the study intersections would continue to operate at acceptable levels of service (LOS A, B, or C). The traffic shifts due to the proposed Project would result in minor V/C improvements where Harry Bridges Boulevard intersects with Broad Avenue and with Fries Avenue. Construction of the South Wilmington Grade Separation (currently underway) where the North Access Road intersects with Harry Bridges Boulevard (Study Intersections 1, 3, and 4) would also result in small improvements to V/C. At the other study intersections, small increases in V/C would occur due to traffic shifted from the streets that are proposed for closure.

Table 4.16-2
Future (Year 2038) Intersection Level of Service Analysis

			Future (Year 2038)		Future + Project (Year 2038)		Project Increase	
No.	**Intersection**	**Peak Hour**	**V/C or Delay**	**LOS**	**V/C or Delay**	**LOS**	**V/C or Delay**	**Significant Project Impact**
1	Harry Bridges Boulevard & Broad Avenue *Signalized*	AM	0.477	A	0.520	A	0.043	NO
		MD	0.390	A	0.313	A	-0.077	NO
		PM	0.638	B	0.529	A	-0.109	NO
2	Harry Bridges Boulevard & Avalon Boulevard *Signalized*	AM	0.579	A	0.673	B	0.094	NO
		MD	0.355	A	0.397	A	0.042	NO
		PM	0.594	A	0.656	B	0.063	NO
3	Harry Bridges Boulevard & Fries Avenue *Signalized*	AM	0.528	A	0.549	A	0.021	NO
		MD	0.356	A	0.353	A	-0.003	NO
		PM	0.624	B	0.614	B	-0.010	NO
4	North Access Road & Harry Bridges Boulevard *Signalized*	AM	0.827	D	0.718	C	-0.109	NO
		MD	0.631	B	0.549	A	-0.082	NO
		PM	0.797	C	0.792	C	-0.005	NO
5	North Access Road & TraPac Access/Viaduct *Signalized*	AM	0.631	B	0.659	B	0.027	NO
		MD	0.421	A	0.479	A	0.057	NO
		PM	0.270	A	0.486	A	0.216	NO
6	South Access Road & Pier A Street Viaduct *Signalized*	AM	0.139	A	0.384	A	0.246	NO
		MD	0.073	A	0.201	A	0.128	NO
		PM	0.071	A	0.336	A	0.266	NO
7	Fries Avenue & South Access Road *All-way stop-controlled*	AM	8.1 secs	A	9.4 secs	A	1.3 secs	NO
		MD	7.7 secs	A	8.3 secs	A	0.6 secs	NO
		PM	7.9 secs	A	9.7 secs	A	1.8 secs	NO

Note: A v/c credit of 0.100 has been applied to reflect the combined benefits of ATSAC and STCS at the signalized intersections.

<u>Project Intersection Impacts Years 2017 and 2038</u>

To determine whether significant impacts would occur at the study intersections, the results of this analysis were compared and assessed against the impact criteria described above. As shown in Tables 4.16-1 and 4.16-2 above, using the City of Los Angeles criteria for determination of significant traffic impacts, the proposed Project would not result in any significant impacts under either future analysis year 2017 or 2038. Based on good levels of service and relatively low projected traffic volumes projected for the South Access Road & Fries Avenue (Study Intersection 7), this intersection would not meet traffic signal warrant thresholds in any of the peak hours analyzed. No mitigation is required.

Please refer to response f) below for a discussion of potential conflicts with adopted policies, plans, or programs regarding pedestrian and bicycle paths, and mass transit.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. The proposed Project is not expected to generate any new trips on the roadway system but is intended to better accommodate projected future trips in the Project area. It would result in localized traffic shifts, which would not extend to the nearest Congestion Management Plan (CMP) arterial monitoring stations. Those intersections, located approximately two miles north of the Project site, are Figueroa Street and Pacific Coast Highway and Alameda Street and Pacific Coast Highway. The proposed Project would not alter traffic volumes or patterns through these arterial monitoring stations, and no further analysis of CMP arterial intersections is required. Therefore, CMP arterial intersection impacts are considered to be less than significant. In addition, the CMP mainline freeway monitoring location nearest to the Project site is I-110 south of C Street, approximately one-half mile to the west. Similar to the arterial monitoring intersections, the localized traffic shifts that would occur if the proposed Project are implemented would not extend to the freeway monitoring location and no further CMP freeway analysis is required. As a result, traffic impacts would be less than significant and no mitigation is required.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The Project site is not located within two miles of a public airport, nor is it located within an airport land use plan. The closest public airport, Long Beach Airport, is located approximately 6.5 miles to the northeast from the Project area. The closest private airstrip is the Torrance Municipal Airfield, which is located approximately 5 miles from the Project area. Given the distance of the airport and airstrip, the proposed Project would not result in a change in air traffic patterns, including increased air traffic levels or a change in location that results in substantial safety risks. The proposed Project segment closures do not include any aerial structures and no changes to air traffic patterns would occur. Therefore, no impacts would occur and no mitigation is required.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. The proposed Project includes closure of the portions of Fries Avenue and Avalon Boulevard to vehicular traffic, which are the two access routes to the Mormon Island area of the Port. As part of the Project, minor changes would be made to the planned lane configuration at two future intersections on the South Wilmington Grade Separation Project (see Figure 2-6). The proposed Project would not generate new traffic on the surrounding streets but rather would result in localized shifts of the traffic that is forecast to be present if the project was not implemented. In addition, the proposed Project would install signage and striping to effectively close access to the vacated portions of Fries Avenue and Avalon Boulevard. The Project would provide primary access to the Port Archives Building from the north gate near A Street. The Project would also provide additional crossing protection, including signing and striping, crossing arms, and lights, at an existing at-grade crossing at the completed private road into WWL. Therefore, impact would be less than significant and no mitigation is required.

e) Result in inadequate emergency access?

Less Than Significant Impact. As stated above, the proposed Project is not expected to generate any new trips on the roadway systems but is intended rather to eliminate conflicts with rail operations. Therefore, the proposed Project would not result in inadequate emergency access. Impact would be less than significant and no mitigation is required.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less Than Significant Impact. The Project site is inside the Port. Primary regional access to the Project area is provided by the Harbor Freeway (I-110), located approximately one-half mile west of Avalon Boulevard. Local access to the Project site is provided by a well-defined grid of arterial and collector roads: Harry Bridges Boulevard, Avalon Boulevard, Broad Avenue, A Street, and Pier A Street/Water Street. There is no public transit service that operates on the portions of the Avalon Boulevard or Fries Avenue that are proposed for closure. The proposed Project street segment closures would eliminate the existing pedestrian and bicycle access to the waterfront and the Banning’s Landing Community Center, which are currently available along Fries Avenue and Avalon Boulevard. There are currently sidewalks on Fries Avenue and Avalon Boulevard and a small portion (one block) of bike path on Fries Avenue, which goes from Harry Bridges Boulevard to A Street. There are currently no formally designated bike lanes along the Project segment of Avalon Boulevard. Alternate pedestrian and bicycle access would be provided by the South Wilmington Grade Separation Project, which would be completed as a pre-requisite to initiate the proposed segment closures Project. Based on the latest South Wilmington Grade Separation plans, there will be a continuous pedestrian sidewalk from Harry Bridges Boulevard to Fries Avenue at the south end of the South Wilmington Grade Separation. While there are no formal bicycle lanes on the new South Wilmington Grade Separation roadway, consistent with the California Vehicle Code, the roadway would be available for use by cyclists. The South Wilmington Grade Separation Project would include an incline for pedestrians and cyclists to climb in contrast to the almost flat access along Avalon Boulevard or Fries Avenue. However, the safety conflicts present along these street segments between pedestrians/cyclists and rail operations would be avoided by using the South Wilmington Grade Separation. Additionally, the future Wilmington Waterfront Development project will provide a park and extensive promenade to connect the Wilmington community to the waterfront. Therefore, impact would be less than significant and no mitigation is required.

4.17 UTILITIES AND SERVICE SYSTEMS

This section evaluates impacts related to utilities and service systems associated with the implementation of the proposed Project in terms of water service, wastewater, solid waste, and stormwater.

Would the Project:

a) **Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

Less Than Significant Impact. The proposed Project would be required to comply with requirements of the Regional Water Quality Control Board (RWQCB). The Project site is serviced by the City of Los Angeles Bureau of Sanitation's Terminal Island Water Reclamation Plant (TIWRP). The proposed Project would not alter the current discharge from TIWRP and would not exceed wastewater treatment requirements of the RWQCB as minor amounts of wastewater would be generated during construction. Thus, impacts would be less than significant. No mitigation is required.

b) **Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

Less Than Significant Impact. The proposed Project would not provide new housing or a large number of employment opportunities, and no population increase would result from the implementation of the closure of road segments as proposed. As such, the proposed Project would not require new water or wastewater treatment facilities. Thus, impacts would be less than significant. No mitigation is required.

c) **Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

Less Than Significant Impact. As stated above, the proposed Project would not provide new housing or a large number of employment opportunities, and no population increase would result from the implementation of the closure of road segments as proposed. Additionally, no new large areas of impervious surfaces would result from implementation of the proposed Project that would generate substantial volumes of stormwater runoff. As such, the proposed Project would not require new stormwater drainage facilities or expansion of existing facilities. Thus, impacts would be less than significant. No mitigation is required.

d) **Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

No Impact. The proposed Project would not result in impacts to water supplies, as the proposed Project does not include uses that would have a permanent increase in the water use. Thus, no impacts would occur and no mitigation is required.

e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. The proposed Project involves closure of road segments; street improvements and, would not require any additional wastewater treatment services. No population increase would result from the construction and operation of the proposed Project nor would it provide housing or a large number of employment opportunities. The impact would be less than significant. No mitigation is required.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. Some solid waste would be generated during construction and demolition of the proposed road segment closures. Construction and demolition activities would generate debris that would include concrete, asphalt, metal, and timber solids. The LAHD Construction and Maintenance Division recycles asphalt and concrete demolition debris by crushing and stockpiling the crushed material to use on Port projects. Although hazardous materials (i.e. contaminated soils) could be encountered and require disposal during demolition/construction activities, several contaminated soil treatment and disposal options and Class I landfills are available for off-site disposal that have adequate capacity. Non-hazardous waste would be disposed at available Class III landfills. Impacts would be less than significant. No mitigation is required.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less Than Significant Impact. The proposed Project would be compliant with applicable federal, state, and local statutes and regulations related to solid waste, including the Solid Waste Integrated Resource Plan, the long-range master plan for solid waste management in the City of Los Angeles. Thus, impacts would be less than significant. No mitigation is required.

4.18 MANDATORY FINDINGS OF SIGNIFICANCE

a) **Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?**

Less Than Significant Impact After Mitigation Incorporated. As stated previously, the Project site is fully developed and paved, and generally consists of hardscape and is subject to ongoing industrial infrastructure improvements and activities. The Project which would include the removal of one bottle brush tree along Fries Avenue and one palm tree along Avalon Boulevard will comply with LAHD tree removal guidelines and would therefore not interfere with possible nesting migratory birds. The proposed Project site is not a suitable habitat for wildlife. Additionally, due to the extensive nature of previous ground disturbances for the roads within the proposed Project area, it will not reduce the habitat for fish and wildlife species nor threaten to eliminate or restrict the range of a plant or animal community. It is also highly unlikely that any unknown, intact archaeological deposits exist within soils in the proposed Project area. However, Mitigation Measures CR-1 and CR-2 are included to ensure that the possible impacts to unknown buried cultural resources would be less than significant.

b) **Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)**

Less Than Significant Impact After Mitigation Incorporated. The proposed Project would result in no impacts to agricultural and forestry resources, mineral resources, population and housing, and recreation. The proposed Project would have less than significant impacts to aesthetics, air quality, biological resources, geology and soils, GHG emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, public services, transportation and traffic, and utilities and service systems.

To avoid the potential for unforeseen impacts to cultural resources, Mitigation Measures CR-1 and CR-2 are provided. With the implementation of Mitigation Measures CR-1 and CR-2, the proposed Project would have a less than significant impact on cultural resources.

The proposed Project would not result in significant impacts that cannot be mitigated to a less than significant level, as described within sections 4.5. Because of the small scale and localized effects of the proposed Project, the potential incremental contribution from the proposed Project would not be cumulatively considerable. Other cumulative projects discussed in this document include the approved South Wilmington Grade Separation and Wilmington Waterfront projects.

These approved projects and other present and/or probable future projects are required to comply with CEQA requirements, including implementation of mitigation measures to reduce or avoid environmental impacts, as well as with applicable laws and regulations at the Federal, State and Local level, including but not limited to the Los Angeles City Municipal Code and local ordinances governing land use and development. The analysis contained herein has determined that the proposed Project would not have any individually limited but cumulatively considerable impacts. No additional mitigation would be required.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact. Because of the limited scope of this Project and the fact that impacts would predominantly be temporary in nature driven by construction activities, the Project is not anticipated to result in environmental effects that would cause substantial adverse effects on human beings or contribute considerably to any such effects.

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5.0 MITIGATION MONITORING AND REPORTING PLAN

CEQA requires public agencies to adopt a reporting or monitoring program for the changes to the project that have been adopted to mitigate or avoid significant effects on the environment (PRC Section 21081.6). The purpose of this program is to ensure that when an MND identifies measures to reduce potential environmental impacts to less than significant levels, that those measures are implemented as detailed in the environmental document. As lead agency, the LAHD is responsible for implementation of this Mitigation Monitoring and Reporting Plan (MMRP). Once the Board of Harbor Commissioners adopts the MMRP, the applicable LAHD division(s) would incorporate the mitigation monitoring/reporting requirements in the appropriate permits (i.e., engineering specifications, engineering construction permits, and/or real estate entitlements). Therefore, in accordance with the aforementioned requirements, this MMRP lists each mitigation measure, describes the methods for implementation and verification, and identifies the responsible party or parties as detailed below.

Mitigation Measure	Timing and Methods	Responsible Party
CR-1: Prior to the start of any ground disturbing activities, a qualified archeologist shall be retained to respond on an as-needed basis in the event archeological discoveries occur. In the event any cultural resources are encountered during earthmoving activities, the construction contractor shall cease activitiy in the affected area until the discovery can be evaluated and recorded by the cultural resources specialist in accordance with CEQA §15064.5. The archeologist shall complete any requirements for treatment measures and data recovery.	**Timing**: Pre- construction. **Method**: This mitigation measure must be performed prior to any ground disturbing activities. A qualified archeologist shall be retained by the LAHD Environmental Management Division or by the construction contractor with the LAHD Environmental Management Division approval. All construction equipment operators shall attend a preconstruction meeting presented by a professional archeologist retained by the LAHD Environmental Management Division or the construction contractor that shall review types of cultural resources and artifacts that would be considered potentially significant, and to ensure operator recognition of these materials during construction. If materials are found during construction,	**Implementation**: LAHD Environmental Management Division, LAHD Construction Management Division, and Construction Contractor. **Monitoring and Reporting**: LAHD Construction Management and Environmental Management Divisions and Construction Contractor.

Mitigation Measure	Timing and Methods	Responsible Party
	work shall be immediately stopped and the construction contractor shall contact the LAHD Environmental Management Division, the LAHD Inspector, and/or the County Coroner, if necessary.	
CR-2: The Port shall require that equipment operators be directed to temporarily cease work in the event a potential vertebrate fossil is encountered during ground disturbances. If a potential fossil is encountered, excavation within 10-meters (30-feet) of the find shall be temporarily suspended and redirected elsewhere. A qualified vertebrate paleontologist shall be retained to evaluate the significance of the fossil. If the fossil is determined to be a significant vertebrate specimen, the paleontologist shall systematically remove and stabilize the specimen in anticipation of its preservation. The Port shall fund the curation of the significant vertebrate specimen in a qualified professional research facility, such as the Los Angeles County Natural History Museum.	**Timing**: During construction. **Method**: If materials are found during construction, work shall be immediately stopped and relocated from that area until a qualified vertebrate paleontologist retained by the Port can evaluate the significance of the find. The construction contractor shall contact the LAHD Environmental Management Division, and/or the LAHD Inspector, if necessary.	**Implementation**: LAHD Environmental Management Division and LAHD Construction Management Division. **Monitoring and Reporting**: LAHD Construction Management and Environmental Management Divisions and Construction Contractor.

6.0 PROPOSED FINDING

LAHD has prepared this IS/MND to address the environmental effects of the proposed Project. Based on the analysis provided in this IS/MND, LAHD finds that with the incorporation of the mitigation measures, the proposed Project would not have a significant effect on the environment.

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7.0 PREPARERS AND CONTRIBUTORS

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8.0 ACRONYMS AND ABBREVIATIONS

AQAP	Air Quality Attainment Plan
AQMP	Air Quality Management Plan
AREMA	American Railway Engineering and Maintenance-of-Way Association
Basin Plan	Water Quality Control Plan for the Los Angeles River Basin (Region 4)
BMPs	Best Management Practices
C2	Commercial
CAA	Clean Air Act
CAAP	San Pedro Bay Ports Clean Air Action Plan
CAAQS	California Ambient Air Quality Standard
CARB	California Air Resources Board
CCC	California Coastal Commission
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulation
CRHR	California Register of Historic Resources
CMP	Congestion Management Program
CNEL	Community Noise Equivalent Level
CMP	Congestion Management Plan
CO	Carbon Monoxide
CPUC	California Public Utility Commission
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dBA	A-Weighted Decibel
DTSC	Department of Toxic Substances Control
DWP	Department of Water and Power
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FTA	Federal Transit Administration
General Plan	General Plan of the City of Los Angeles
GHG	Greenhouse Gas
HCP	Habitat Conservation Plan
IPCC	International Panel on Climate Change
IS/MND	Initial Study/Mitigated Negative Declaration
LAFD	Los Angeles Fire Department
LAHD	City of Los Angeles Harbor Department
LAMC	Los Angeles Municipal Code
LAPD	Los Angeles Police Department
LARWQCB	California Regional Water Quality Control Board, Los Angeles Region

LCP	Local Coastal Program
LOS	Level of Service
LST	Localized Significance Thresholds
M3	Heavy Industrial
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MMRP	Mitigation Monitoring and Reporting Program
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NO_2	Nitrogen dioxide
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
O_3	Ozone
PF	Public Facilities
PHL	Pacific Harbor Line
POLA	Port of Los Angeles
Port	Port of Los Angeles
Port Police	Los Angeles Harbor Department Port Police
$PM_{2.5}$	Fine Particulate Matter (particulate matter with an aerodynamic diameter of 2.5 microns or less)
PM_{10}	Respirable Particulate Matter (particulate matter with an aerodynamic diameter of 10 microns or less)
PMP	Port Master Plan
PPV	Peak Particle Velocity
PRC	Public Resources Code
R1	One-Family Dwelling
RCPG	Regional Comprehensive Plan and Guide
RD 1.5	Restricted Density Multiple Dwelling
RMP	Risk Management Plan
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SEA	Significant Ecological Area
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Oxides of Sulfur
SRA	Scientific Resources Associated

SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	Toxic Air Contaminants
TAHA	Terry A. Hayes Inc.
TIWRP	Terminal Island Water Reclamation Plant
USACE	U.S. Army Corps of Engineers
USCG	U. S. Coast Guard
USEPA	U.S. Environmental Protection Agency
V/C	Volume to Capacity
VOCs	Volatile Organic Compounds
WWL	Wallenius Wilhemsen Logistics

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APPENDIX A

Air Quality Analysis
SRA

February 2014

Air Quality and Greenhouse Gas Analysis

for the

Avalon Blvd. and Fries Street Segments Closure Project

Prepared By:

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February 26, 2014

Table of Contents

Glossary of Terms and Acronyms

AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BACM	Best Available Control Measure
BACT	Best Available Control Technology
BMPs	Best Management Practices
CAA	Clean Air Act (Federal)
CAAQS	California Ambient Air Quality Standard
CCAA	California Clean Air Act
CO	Carbon Monoxide
EPA	United States Environmental Protection Agency
mg/m^3	Milligrams per Cubic Meter
$\mu g/m^3$	Micrograms per Cubic Meter
NAAQS	National Ambient Air Quality Standard
NOx	Oxides of Nitrogen
NO_2	Nitrogen Dioxide
O_3	Ozone
$PM_{2.5}$	Fine Particulate Matter (particulate matter with an aerodynamic diameter of 2.5 microns or less
PM_{10}	Respirable Particulate Matter (particulate matter with an aerodynamic diameter of 10 microns or less
ppm	Parts per million
ROG	Reactive Organic Gases
SCAQMD	South Coast Air Quality Management District
SCAB	South Coast Air Basin
SIP	State Implementation Plan
SOx	Oxides of Sulfur
SO_2	Sulfur Dioxide
TACs	Toxic Air Contaminants
VOCs	Volatile Organic Compounds

1.0 Introduction

This report presents an assessment of potential air quality and greenhouse gas impacts associated with the Avalon and Fries Street Segments Closure Project. The proposed Project includes the closure of segments of Fries Avenue and Avalon Boulevard. The purpose of the proposed Project is to achieve the following objectives:

- Remove at grade crossings on segments of Avalon Boulevard and Fries Avenue to enable improved rail operations for the West Basin area rail customers.
- Comply with the California Public Utilities Commission (CPUC) General Order 135 rule, which limits crossing blockages due to stopped or switching train cars to 10 minutes.
- Maintain sufficient access and circulation (via private driveways or other means) to adjacent parcels with sufficient crossing protection.
- Provide safe and clear segment closures using innovative street closure techniques such as cul-de-sacs and signage designed to slow/re-direct traffic.
- Ensure adequate vehicular circulation in the project area by implementing striping modifications at two future intersections on the approved South Wilmington Grade Separation Project

The proposed Project includes the following elements:

- Vacate Fries Avenue and Avalon Boulevard between Water Street and “A” Street;
- Install chain link fencing at the vacated boundaries of Fries Ave, per City of LA Bureau of Engineering Standard Plans [standard plan S-691-0 with fabric 2 inch mesh];
- Install signage and striping to effectively close access to the vacated portions of Fries Avenue and Avalon Boulevard and re-route traffic accordingly;
- Install a gate on the north side of the rail line along Fries Avenue over 13 feet from the existing rail and 26 feet from new rail, thereby meeting American Railway Engineering and Maintenance-of-Way Association (AREMA) (railroad clearance) standards;

- Provide a southerly gate on Fries Avenue that is anticipated to be used infrequently and/or for emergency purposes only;

- Provide primary access to the Port Archives Building from the north gate (near A Street) from Fries Avenue;

- Provide additional crossing protection including signing and striping, crossing arms, and lights, at an existing "At Grade" crossing at the completed private road into WWL;

- Close Fries Avenue at A Street on the north side and Water Street on the south side. Road improvements include the construction of curb and gutter, sidewalk, fencing and two driveways with the majority of Fries Avenue to remain in place. Perform minor grading and paving to join existing conditions at each location. Remove one mature tree on north Fries Avenue to construct closure. Maintain access to the Port Archive Building, as well as emergency vehicle access, with a secure gate;

- Construct two "elbow" closures on Fries Avenue with a minimum radius of 35 feet. A radius of 35 feet is proposed on Fries Avenue for the design of the "elbow" closure ;

- Construct two cul-de-sacs on Avalon Boulevard at the north and south side of the track crossings to close off the street to vehicular and pedestrian traffic. Per the City of Los Angeles Bureau of Engineering Standard Plan a 50 feet radius is preferred, however; due to right-of-way constraints, only 35 feet can be accommodated. It is large enough to accommodate emergency vehicle access;

- Remove a large palm tree immediately north of the existing tracks on Avalon Boulevard;

- Remove and replace (in kind) a portion of the fencing along the Department of Water and Power (DWP) property line along Avalon Boulevard;

- Remove and/or relocate two DWP power poles, one streetlight, and one fire hydrant on Avalon Boulevard. Also, perform minor grading and paving on Avalon Boulevard;

- Change the Harry Bridges Boulevard/N. Access Road intersection configuration to provide dual left turn lanes in the westbound direction; and

- Provide dual right turn lanes southbound at the intersection of Viaduct/N. Access Road.

The following sections of the report provide a summary of existing conditions in the Project area, a regulatory review, and a discussion of potential impacts to air quality and greenhouse gases from the proposed Project.

2.0 Existing Conditions

The proposed Project site refers to and encompasses: 1) the segment of Fries Avenue between Water Street at the Union Pacific Rail Tracks and the intersection with West A Street proposed for closure (1337 linear feet of roadway): and 2) the segment of Avalon Boulevard between the Union Pacific Rail Tracks and the intersection of North Broad Avenue proposed for closure (438 linear feet of roadway). The community of Wilmington is located north of the proposed Project site and to the south is Terminal Island. Berths 136-147 [TraPac] are located to the east while Berths 196-200A WWL Auto Terminal are located to the west.

The Port of Los Angeles proposes to close segments of two streets to public vehicular circulation:

- Fries Avenue between A Street and Pier A Street (closing two grade crossings and approximately 1,337 feet of street to the public); and
- Avalon Boulevard between south of Broad Avenue and south of the existing grade crossing (closing one grade crossing and approximately 438 feet of street to the public).
- The currently planned lane configuration at two new intersections along the South Wilmington Grade Separation will be modified slightly, resulting in a second westbound left-turn lane from Harry Bridges Boulevard onto the North Access Road and a second southbound right-turn lane from the North Access Road toward the relocated TraPac gate.

The proposed Project site is located in the community of Wilmington area of the City of Los Angeles (LAHD), within the South Coast Air Basin (SCAB). The SCAB consists of the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County. The SCAB covers an area of approximately 6,000 square miles and is bounded on the west by the Pacific Ocean; on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains; and on the south by the San Diego County line. The following section provides information about the existing air quality regulatory framework, climate and meteorology, air pollutants and sources, and sensitive receptors in the proposed Project area.

2.1 Regulatory Framework

2.1.1 Federal Regulations

Air quality is defined by ambient air concentrations of specific pollutants identified by the United States Environmental Protection Agency (EPA) to be of concern with respect to health and welfare of the general public. The EPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the EPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the EPA established both primary and secondary standards for seven pollutants (called "criteria" pollutants). The seven pollutants regulated under the NAAQS are as follows: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), respirable particulate matter (or particulate matter with an aerodynamic diameter of 10 microns or less, PM_{10}), fine particulate matter (or particulate matter with an aerodynamic diameter of 2.5 microns or less, $PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. Areas that do not meet the NAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant. The South Coast Air Basin (SCAB) is classified as an extreme nonattainment area for the 8-hour NAAQS for O_3, and a nonattainment area for the NAAQS for $PM_{2.5}$. The SCAB is also designated as a maintenance area for the NAAQS for CO and PM_{10}. The Los Angeles County portion of the SCAB has recently been classified as a maintenance area for the NAAQS for NO_2 and lead.

The following specific descriptions of health effects for each of the criteria air pollutants associated with Project construction and operations are based on EPA (EPA 2007) and the California Air Resources Board (ARB) (ARB 2005).

Ozone. O_3 is considered a photochemical oxidant, which is a chemical that is formed when volatile organic compounds (VOCs) and oxides of nitrogen (NOx), both by-products of combustion, react in the presence of ultraviolet light. O_3 is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to O_3.

Carbon Monoxide. CO is a product of combustion, and the main source of CO in the SDAB is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease, and can also affect mental alertness and vision.

Nitrogen Dioxide. NO_2 is also a by-product of fuel combustion, and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter. Respirable particulate matter, or PM_{10}, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or $PM_{2.5}$, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in this size range has been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, combustion, tire and brake wear, construction operations and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs.

Sulfur dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Pb in the atmosphere occurs as particulate matter. Pb has historically been emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Pb has the potential to cause gastrointestinal, central nervous system, kidney and blood diseases upon prolonged exposure. Pb is also classified as a probable human carcinogen.

Volatile Organic Compounds. While the EPA has not set ambient air quality standards for volatile organic compounds (VOCs), VOCs are considered ozone precursors as they react in the atmosphere to form O_3. Accordingly, VOCs are regulated through limitations on VOC emissions from solvents, paints, processes, and other sources.

Hazardous Air Pollutants. Also referred to as toxic air contaminants (TACs), HAPs are pollutants that are known or suspected to result in adverse health effects upon exposure through inhalation or other exposure routes. HAPs from stationary sources are regulated through the federal National Emission Standards for Hazardous Air Pollutants (NESHAPS) program. HAPs from mobile sources such as vehicles and off-road equipment are regulated through emission standards implemented by the EPA and/or state regulatory agencies.

2.1.2 State and Local Regulations

California Clean Air Act. The California Clean Air Act was signed into law on September 30, 1988, and became effective on January 1, 1989. The Act requires that local air districts implement regulations to reduce emissions from mobile sources through the adoption and enforcement of transportation control measures. The California Clean Air Act required the SDAB to achieve a five percent annual reduction in ozone precursor emissions from 1987 until the standards are attained. If this reduction cannot be achieved, all feasible control measures must be implemented. Furthermore, the California Clean Air Act required local air districts to implement a Best Available Control Technology rule and to require emission offsets for nonattainment pollutants.

The ARB is the state regulatory agency with authority to enforce regulations to both achieve and maintain air quality in the state. The ARB is responsible for the development, adoption, and enforcement of the state's motor vehicle emissions program, as well as the adoption of the California Ambient Air Quality Standards (CAAQS). The ARB also reviews operations and programs of the local air districts, and requires each air district with jurisdiction over a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS. The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. The ARB has established the more stringent CAAQS for the six criteria pollutants through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. The SCAB is also considered a nonattainment area for the CAAQS for O_3, $PM_{2.5}$, and PM_{10}. The area is considered unclassified or attainment for all other NAAQS and CAAQS for the other criteria pollutants.

The following specific descriptions of health effects for the additional California criteria air pollutants are based on the ARB (ARB 2007).

Sulfates. Sulfates are the fully oxidized ionic form of sulfur. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO_2) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The ARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide. H_2S is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H_2S at levels above the standard would result in exposure to a very disagreeable odor. In 1984, an ARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance.

Vinyl Chloride. Vinyl chloride, a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants and hazardous waste sites, due to microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer, in humans.

Visibility Reducing Particles. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The CAAQS is intended to limit the frequency and severity of visibility impairment due to regional haze. A separate standard for visibility-reducing particles that is applicable only in the Lake Tahoe Air Basin is based on reduction in scenic quality.

Table 1 presents a summary of the ambient air quality standards adopted by the federal and California Clean Air Acts.

Table 1
Ambient Air Quality Standards

POLLUTANT	AVERAGE TIME	CALIFORNIA STANDARDS		NATIONAL STANDARDS		
		Concentration	Measurement Method	Primary	Secondary	Measurement Method
Ozone (O_3)	1 hour	0.09 ppm (180 $\mu g/m^3$)	Ultraviolet Photometry	--	--	Ethylene Chemiluminescence
	8 hour	0.070 ppm (137 $\mu g/m^3$)		0.075 ppm (147 $\mu g/m^3$)	0.075 ppm (147 $\mu g/m^3$)	
Carbon Monoxide (CO)	8 hours	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Spectroscopy (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Spectroscopy (NDIR)
	1 hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm (56 $\mu g/m^3$)	Gas Phase Chemiluminescence	0.053 ppm (100 $\mu g/m^3$)	0.053 ppm (100 $\mu g/m^3$)	Gas Phase Chemiluminescence
	1 hour	0.18 ppm (338 $\mu g/m^3$)		0.100 ppm (188 $\mu g/m^3$)	--	
Sulfur Dioxide (SO_2)	24 hours	0.04 ppm (105 $\mu g/m^3$)	Ultraviolet Fluorescence	--	--	Pararosaniline
	3 hours	--		--	0.5 ppm (1300 $\mu g/m^3$)	
	1 hour	0.25 ppm (655 $\mu g/m^3$)		75 ppb (196 $\mu g/m^3$)	--	
Respirable Particulate Matter (PM_{10})	24 hours	50 $\mu g/m^3$	Gravimetric or Beta Attenuation	150 $\mu g/m^3$	150 $\mu g/m^3$	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 $\mu g/m^3$		--	--	
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 $\mu g/m^3$	Gravimetric or Beta Attenuation	12 $\mu g/m^3$	15 $\mu g/m^3$	Inertial Separation and Gravimetric Analysis
	24 hours	--		35 $\mu g/m^3$	35 $\mu g/m^3$	
Sulfates	24 hours	25 $\mu g/m^3$	Ion Chromatography	--	--	--
Lead (Pb)	30-day Average	1.5 $\mu g/m^3$	Atomic Absorption	--	--	Atomic Absorption
	Calendar Quarter	--		1.5 $\mu g/m^3$	1.5 $\mu g/m^3$	
	3-month Rolling Average	--		0.15 $\mu g/m^3$	0.15 $\mu g/m^3$	
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm (42 $\mu g/m^3$)	Ultraviolet Fluorescence	--	--	--
Vinyl Chloride	24 hours	0.010 ppm (26 $\mu g/m^3$)	Gas Chromatography	--	--	--

ppm= parts per million
$\mu g/m^3$ = micrograms per cubic meter
mg/m^3= milligrams per cubic meter
Source: California Air Resources Board 2013

The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. The South Coast Air Quality Management District (SCAQMD) is the local agency responsible for the administration and enforcement of air quality regulations for the SCAB.

The SCAQMD and the Southern California Association of Governments (SCAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SCAB. The most recently adopted air quality plan in the SCAB is the 2012 Air Quality Management Plan (AQMP), which was adopted by the Board on December 7, 2012.

On November 20, 2006, the governing boards of the Ports of Los Angeles and Long Beach voted to approve the landmark San Pedro Bay Ports Clean Air Action Plan (CAAP) (POLA and POLB 2006), which sets forth the Port's comprehensive strategy to cut air pollution and reduce health risks. The CAAP includes programs designed to reduce air emissions from sources operating within the Ports. The most recent version of the CAAP was adopted in 2010 (POLA and POLB 2010). The sources associated with the proposed Project that would be subject to specific CAAP requirements would be construction sources. In the 2006 CAAP, the ports committed to develop Best Management Practices (BMPs) for port-related construction activity. To meet this commitment, the Port of Los Angeles adopted its "Sustainable Construction Guidelines for Reducing Air Emissions." These BMPs will be evaluated on a project-specific basis and applicable practices will be incorporated into construction project contracts. The BMPs to which the proposed Project will be subject include the following:

- All on-road heavy-duty trucks must meet the requirements of the Clean Truck Program.
- Off-road construction equipment must meet Tier 2 standards in the period prior to 12/31/2011, Tier 3 standards in the period between 1/1/2012 to 12/31/2014, and shall meet Tier 4 standards after 1/1/2015.
- As applicable, off-road construction equipment shall be equipped with a CARB-verified Level 3 diesel emission control system.
- Construction equipment idling is limited to five minutes when not in use.

- Full compliance with SCAQMD Rule 403, Fugitive Dust, including an approved Control Plan is required.

Toxic Air Contaminants. In 1983, the California Legislature enacted a program to identify the health effects of Toxic Air Contaminants (TACs) and to reduce exposure to these contaminants to protect the public health (AB 1807: Health and Safety Code sections 39650-39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The State of California has identified diesel particulate matter as a TAC. Diesel particulate matter is emitted from on- and off-road vehicles that utilize diesel as fuel. Following identification of diesel particulate matter as a TAC in 1998, the ARB has worked on developing strategies and regulations aimed at reducing the emissions and associated risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the *Risk Reduction Plan to Reduce Particulate Matter from Diesel-Fueled Engines and Vehicles* (State of California 2000). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter by 75 percent by 2010 and by 85 percent by 2020. The CAAP has also adopted a goal of reducing the population-rated cancer risk of ports-related diesel particulate matter emissions by 85% in highly-impacted communities located proximate to port sources and throughout the residential areas in the Port region.

As an ongoing process, the ARB reviews air contaminants and identifies those that are classified as TACs. The ARB also continues to establish new programs and regulations for the control of TACs, including diesel particulate matter, as appropriate.

2.2 Regional Climate and Meteorology

The climate of the SCAB is classified as Mediterranean, characterized by warm, rainless summers and mild, wet winters. The major influence on the regional climate is the Eastern Pacific High, a strong persistent area of high atmospheric pressure over the Pacific Ocean. The climate is also influenced by the topography of the SCAB and the moderating effects of the

Pacific Ocean. Seasonal variations in the position and strength of the High are a key factor in the weather changes in the area.

The Eastern Pacific High attains its greatest strength and most northerly position during the summer, when it is centered west of northern California. In this location, this high effectively shelters Southern California from the effects of polar storm systems. Large-scale atmospheric subsidence associated with the high produces an elevated temperature inversion along the West Coast. The base of this subsidence inversion is generally 1,000 to 2,500 feet above mean sea level during the summer. Vertical mixing is often limited to the base of the inversion and air pollutants are trapped in the lower atmosphere. The mountain ranges that surround the SCAB constrain the horizontal movement of air and also inhibit the dispersion of air pollutants out of the region. These two factors, combined with the air pollution sources from more than 15 million people, businesses, and industries, are responsible for the high pollutant conditions that can occur in the SCAB. In addition, high solar radiation during the warmer months promotes the formation of ozone (O_3), which has its highest concentration levels during the summer season.

The proximity of the Eastern Pacific High and a thermal low-pressure system in the desert interior to the east produce a sea breeze regime that prevails within the proposed Project region for most of the year, particularly during the spring and summer months. Sea breezes at the Port typically increase during the morning hours from the southerly direction. They reach a peak in the afternoon as they blow from the southwest and then generally subside after sundown. During the warmest months of the year, however, sea breezes could persist well into the nighttime hours. Conversely, during the colder months of the year, northerly land breezes increase by sunset and into the evening hours. Sea breezes transport air pollutants away from the coast and toward the interior regions in the afternoon hours for most of the year.

During the fall and winter months, the Eastern Pacific High can combine with high pressure over the continent to produce light winds and extended inversion conditions in the region. These stagnant atmospheric conditions often result in elevated pollutant concentrations in the SCAB. Excessive buildup of high pressure in the desert interior can produce a “Santa Ana” condition, characterized by warm, dry, northeast winds in the basin and offshore regions. Santa Ana winds often help clear the SCAB of air pollutants. As winter approaches, the Eastern Pacific High begins to weaken and shift to the south, allowing storm systems to pass through the region. The number of days with precipitation varies substantially from year to year, which produces a wide range of variability in annual precipitation totals.

Locally, the Palos Verdes Hills have a major influence on wind flow in the San Pedro Bay (SCAQMD 1977). For example, during afternoon southwest sea breeze conditions, the Palos Verdes Hills often block this flow and create a zone of lighter winds in the inner harbor area of the Port. During strong sea breezes, this flow can bend around the north side of the Palos Verdes Hills and end up as a northwest breeze in the inner harbor area. This topographic feature also deflects northeasterly land breezes that flow from the coastal plains to a more northerly direction through the Port.

2.3 Criteria Pollutants and Ambient Air Monitoring

Air quality at a given location can be characterized by the concentration of various pollutants in the air. Units of concentration are generally expressed as parts per million by volume (ppmv) or micrograms per cubic meter ($\mu g/m^3$). The SCAQMD maintains a network of air quality monitoring stations throughout the SCAB, which measure ambient concentrations of criteria air pollutants.

The nearest SCAQMD air monitoring station to the proposed Project site is the North Long Beach Monitoring Station, which is located at 3648 Long Beach Boulevard, approximately 4.5 miles northeast of the proposed Project site. Data from this station are used to describe the air quality of the proposed Project region, as it is the closest station and has the longest period of record of measured ambient air quality conditions. Table 2 provides a summary of air quality monitoring data collected in North Long Beach. The data indicate that exceedances of the NAAQS for O_3 and $PM_{2.5}$ standards have been recorded at the North Long Beach monitoring station, and exceedances of the CAAQS for O_3, $PM_{2.5}$, and PM_{10} have been recorded.

Table 2
Ambient Background Concentrations
(ppm unless otherwise indicated)

Pollutant	**Averaging Time**	**2008**	**2009**	**2010**	**2011**	**2012**	**National Ambient Air Quality Standard**	**California Ambient Air Quality Standard**
Ozone	8 hour	0.074	0.067	0.084	0.062	0.067	0.075	0.070
	1 hour	0.093	0.089	0.101	0.073	0.084	NA	0.09
PM_{10}	Annual	27.6 $\mu g/m^3$	20.4 $\mu g/m^3$	22.0 $\mu g/m^3$	24.2 $\mu g/m^3$	23.2 $\mu g/m^3$	NA	20 $\mu g/m^3$
	24 hour	61.0 $\mu g/m^3$	62.0 $\mu g/m^3$	44.0 $\mu g/m^3$	43.0 $\mu g/m^3$	45.0 $\mu g/m^3$	150 $\mu g/m^3$	50 $\mu g/m^3$
$PM_{2.5}$	Annual	14.1 $\mu g/m^3$	12.8 $\mu g/m^3$	10.3 $\mu g/m^3$	11.3 $\mu g/m^3$	10.6 $\mu g/m^3$	12 $\mu g/m^3$	12 $\mu g/m^3$
	24 hour	57.2 $\mu g/m^3$	63.0 $\mu g/m^3$	35 $\mu g/m^3$	39.7 $\mu g/m^3$	49.8 $\mu g/m^3$	35 $\mu g/m^3$	35 $\mu g/m^3$
NO_2	Annual	0.021	0.0212	0.020	0.0177	0.0208	0.053	0.030
	1 hour	0.125	0.111	0.0928	0.1064	0.0772	0.100	0.188
CO	8 hour	2.49	2.17	2.08	2.56	2.17	9	9.0
	1 hour	3	3	3	NA	NA		
SO_2	24 hour	0.012	0.005	0.006	NA	NA	NA	0.04
	1 hour	0.09	0.02	0.040	0.0148	0.0222	0.075	0.25
Sulfates	24-hour	11.0 $\mu g/m^3$	13.6 $\mu g/m^3$	11.8 $\mu g/m^3$	6.1 $\mu g/m^3$	NA	NA	25 $\mu g/m^3$

N/A = Not Available
[1]New CAAQS proposed by ARB
[2]Secondary NAAQS
Source: www.arb.ca.gov/aqd/aqd.htm, http://www.aqmd.gov/smog/historicaldata.htm

The Port has been conducting its own air quality monitoring program since February 2005. The main objective of the program is to estimate ambient levels of DPM near the Port. The secondary objective of the program is to estimate ambient particulate matter levels within adjacent communities due to Port emissions. To achieve these objectives, the program measures ambient concentrations of PM_{10}, $PM_{2.5}$, and elemental carbon $PM_{2.5}$ (which indicates fossil fuel combustion sources) at four locations in the Port vicinity (POLA 2013). The station locations are:

- Wilmington Station – Located at the Saints Peter and Paul School. This station measures aged urban emissions during offshore flows and a combination of marine aerosols (salt spray from the ocean that typically consists of sodium chloride [table salt] and other salts and organic matter), aged urban emissions (man-made and naturally occurring airborn particulates that have been in the atmosphere long enough to have undergone some chemical reaction or accumulation with other airborne compounds or particles), and fresh emissions from Port operations during onshore flows. This station also provides information on the relative strengths of these source combinations. Meteorological data are also collected at this monitoring station.

- Coastal Boundary Station – Located at Berth 47 in the Port Outer Harbor. This station measures aged urban and Port emissions and marine aerosols during onshore flows and aged urban emissions and fresh Port emissions during offshore flows. Meteorological data are also collected at this monitoring station.
- Source-Dominated Station – Located at the Terminal Island Water Reclamation Plant. This site is surrounded by three terminals and has a potential to receive emissions from off-road equipment, on-road trucks, and rail. During onshore flows, this station measures marine aerosols and fresh emissions from several nearby diesel-fired sources (trucks, trains, and ships). During offshore flows, this station measures aged urban emissions and port emissions.
- San Pedro Station – Located at the Liberty Hill Plaza Building, adjacent to the Port administrative property on Palos Verdes Street. This location is near the western edge of the Port operational emission sources and adjacent to residential areas in San Pedro. During onshore flows, aged urban emissions, marine aerosols, and fresh Port emission shave the potential to affect this site. During nighttime offshore flows, this site measures aged urban emissions and Port emissions.

The Port has been collecting particulate data since 2005. In addition, in 2008 the Port began collecting and transmitting real-time data for ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, PM_{10} and $PM_{2.5}$, polycyclic aromatic hydrocarbons (PAHs), and ultrafine particles to a publicly-accessible, real-time air monitoring website.

2.4 Toxic Air Contaminants

TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). TACs include air pollutants that can produce adverse human health effects, including carcinogenic effects, after short-term (acute) or long-term (chronic) exposure. Examples of TAC sources within the SCAB include industrial processes, dry cleaners, gasoline stations, paint and solvent operations, and fossil fuel combustion sources.

The SCAQMD estimates in the Multiple Air Toxics Exposure Study III (MATES-III) (SCAQMD 2008a) that about 84 percent of the background airborne cancer risk in the SCAB is due to PM emissions from diesel-powered on- and off-road motor vehicles. The highest modeled air toxics risk was near the Ports. In addition to the Ports, areas of elevated risk were found near Central Los Angeles and near transportation corridors and freeways. Compared to the MATES II study, the MATES III study found a decrease in carcinogenic risk, with the population-weighted risk down by 8 percent from the analysis in MATES II.

As discussed in Section 2.1, the Port of Los Angeles, in conjunction with the Port of Long Beach, developed the San Pedro Bays CAAP, which proposes to reduce the risks associated with diesel particulate matter emissions from the Ports by 85 percent from 2005 levels. Through 2012, the Port had achieved actual reductions of 79 percent for diesel particulate matter, 77 percent for $PM_{2.5}$, 79 percent for PM_{10}, 56 percent for NOx, and 88 percent for SOx, relative to 2005.

2.5 Secondary $PM_{2.5}$ Formation

Primary particles are emitted directly into the atmosphere by fossil fuel combustion sources, wind-blown soil and dust, and sea spray. Secondary $PM_{2.5}$ forms in the atmosphere by complex reactions of precursor emissions of gaseous pollutants such as NO_x, sulfurous oxides (SO_x), VOC, and ammonia (SCAQMD 2008c). Secondary $PM_{2.5}$ includes sulfates, nitrates, and complex carbon compounds. Project-generated emissions of NOx, SOx, and VOCs would contribute to secondary $PM_{2.5}$ formation some distance downwind of the emission sources. Since it is difficult to predict secondary $PM_{2.5}$ formation from an individual project, the air quality analysis in this Air Quality Analysis focuses on the effects of direct $PM_{2.5}$ emissions. This approach is consistent with the recommendations of the SCAQMD (SCAQMD 2008c).

2.6 Ultrafine Particles

Although USEPA and the State of California currently monitor and regulate PM_{10} and $PM_{2.5}$, research is being done on ultrafine particles (UFP), which are particles classified as less than 0.1 micron in diameter. UFPs are usually formed during combustion, independent of fuel type. When diesel fuel is used, UFPs can be formed directly from fuel combustion. With gasoline and natural gas, UFPs are formed mostly from the burning of lubricant oils. UFPs are emitted directl from the tailpipe as solid particles and semi-volatile particles that coagulate to form particles.

The research regarding UFPs suggests UFPs might be more dangerous to human health than the larger PM_{10} and $PM_{2.5}$ particles (termed fine particles) due to size and shape. Because of their smaller size, UFPs are able to travel more deeply into the lung and into the alveoli, and may be deposited in the deep lung regions more efficiently than fine particles. UFPs are insert; therefore, normal bodily defenses do not recognize the particle. UFPs may have the ability to travel across cell layers and enter into the bloodstream and/or individual cells. Recent studies have found that exposure to UFPs may pose a risk to cardiovascular health, and may be a risk factor for heart arrhythmias (University of California, Los Angeles 2010).

The University of Southern California (USC), in collaboration with CARB and the California Environmental Protection Agency (Cal/EPA) released a study in April 2011 investigating UFP concentrations within communities in Los Angeles, including the port area of San Pedro and Long Beach (USC 2011). The study found that UFP concentrations vary significantly near the Ports and therefore substantiated concerns about the applicability of using centrally-located UFP concentrations for estimating population exposures.

Additional UFP research primarily involved roadway exposure. The Port began collecting UFP data at its four air quality monitoring stations in 2007 and early 2008. The Port actively participates in the CARB testing and will comply with all future regulations regarding UFPs. It should be noted that measures adopted within the CAAP to reduce emissions will also reduce UFP emissions.

2.7 Atmospheric Deposition

The fallout of air pollutants to the surface of the Earth is known as atmospheric deposition. Atmospheric deposition occurs in both wet and dry forms. Wet deposition occurs in the form of precipitation or cloud water and is associated with the conversion in the atmosphere of directly emitted pollutants into secondary pollutants such as acids. Dry deposition occurs in the form of directly emitted pollutants or the conversion of gaseous pollutants into secondary PM. Atmospheric deposition can produce watershed acidification, aquatic toxic pollutant loading, deforestation, damage to building materials, and respiratory problems.

ARB and the California Water Resources Control Board are in the process of examining the need to regulate atmospheric deposition for the purpose of protecting both fresh and salt water bodies from pollution. Port emissions deposit into both local waterways and regional land areas. Through its Clean Air Action Plan (CAAP), the Port will reduce air pollutants from its future operations, which will help achieve the goal of reducing atmospheric deposition for purposes of water quality protection. The CAAP will reduce air pollutants that generate both acidic and toxic compounds, including emissions of NO_x, SO_x, and DPM.

2.8 Sensitive Receptors

The impact of air emissions on sensitive members of the population is a special concern. Sensitive receptor groups include children and infants, pregnant women, older adults, and the acutely and chronically ill. According to SCAQMD guidance, sensitive receptor locations include schools, hospitals, convalescent homes, day care centers, and other locations where children, chronically ill individuals, or other sensitive persons could be exposed. In addition, this analysis includes residents as sensitive receptors.

The nearest sensitive receptors to the proposed Project site include residents in Wilmington, San Pedro, and on-board liveaboard vessels within public marinas at the Port.

2.9 Greenhouse Gases and Climate Change

Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs). GHGs are emitted by natural processes and human activities. Examples of GHGs that are produced both by natural processes and industry include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons [HFCs] and perfluorocarbons [PFCs]), as well as sulfur hexafluoride (SF_6).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without these natural GHGs, the earth's surface would be about 61 degrees Fahrenheit (°F) colder (AEP 2007). However, emissions from fossil fuel combustion for activities such as electricity production and vehicular transportation have elevated the concentration of GHGs in the atmosphere above natural levels. According to the Intergovernmental Panel on Climate Change (IPCC), the atmospheric concentration of CO_2 in 2005 was 379 parts per million (ppm) versus pre-industrial levels of 280 ppm (IPCC 2007). Recent data collected indicates that global CO_2 levels in 2013 are approximately 393 ppm (ESRL 2013).

There appears to be a close relationship between the increased concentration of GHGs in the atmosphere and global temperatures. For example, the California Natural Resources Agency reports that, by the end of this century, average global surface temperatures could rise by 4 to 9°F due to increased GHG emissions (California Natural Resources Agency 2009). Scientific evidence indicates a trend of increasing global temperatures near the Earth's surface over the past century due to increased human-induced levels of GHGs.

GHGs differ from criteria pollutants in that GHG emissions do not cause direct adverse human health effects. Rather, the direct environmental effect of GHG emissions is the increase in global temperatures, which in turn has numerous indirect effects on the environment and humans. In California, the Office of Environmental Health Hazard Assessment (OEHHA) has identified observations of changes in California's climate in its report, *Indicators of Climate Change in California*, including increases in average air temperature, increases in the frequency and intensity of extreme heat events, decreases in winter chill time, increases in freezing elevation at

Lake Tahoe, and variability in the amount of annual precipitation. OEHHA has reported effects they attribute to climate change, including a decline in Sierra Nevada snowmelt, reductions in size of Sierra Nevada glaciers, and sea level rise measured at stations in San Francisco and La Jolla.

3.0 Thresholds of Significance

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the State CEQA Guidelines which provides guidance that a project would have a significant air quality impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan;
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors);
4. Expose sensitive receptors to substantial pollutant concentrations; or
5. Create objectionable odors affecting a substantial number of people.

In addition, Appendix G of the State CEQA Guidelines provides guidance that a project would have a significant GHG impact if it would:

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

To date, the City of Los Angeles has not established a threshold to determine whether project-specific emissions of GHGs would have a significant impact on the environment. The SCAQMD has adopted an interim CEQA significance threshold of 10,000 metric tons per year of CO_2e for industrial projects where SCAQMD is the lead agency (SCAQMD 2008b). For the purpose of this IS/MND, this analysis used the SCAQMD GHG threshold identified above to evaluate proposed Project GHG emissions under CEQA (SCAQMD 2011). Consistent with SCAQMD guidelines, construction emissions for the proposed Project are amortized over the life of the project (defined as 30 years), added to operational annual emissions, and then compared to this threshold (SCAQMD 2008b). If estimated GHG emissions remain below this threshold, they would be expected to produce less than significant impacts to GHG levels.

The SCAQMD has developed CEQA Significance Thresholds for criteria pollutants, air toxics, and greenhouse gases (SCAQMD 2011). Table 3 presents the SCAQMD's thresholds.

Table 3
Air Quality Significance Thresholds

Pollutant	Construction	Operation
Criteria Pollutants Mass Daily Thresholds		
NO_x	100 lbs/day	55 lbs/day
ROG	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
TAC, AHM, and Odor Thresholds		
Toxic Air Contaminants (TACs)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 Metric tons/year CO_2e for industrial facilities	
Ambient Air Quality for Criteria Pollutants		
NO_2 1-hour NO_2 annual	0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM_{10} 24-hour PM_{10} annual average	10.4 μg/m^3 (construction) and 2.5 μg/m^3 (operations) 1.0 μg/m^3	
$PM_{2.5}$ 24-hour	10.4 μg/m^3 (construction) and 2.5 μg/m^3 (operations)	
SO_2 24-hour SO_2 annual average	0.25 ppm (state) and 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 μg/m^3	
CO 1-hour average CO 8-hour average	20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day average Lead rolling 3-month average Lead quarterly average	1.5 μg/m^3 0.15 μg/m^3 1.5 μg/m^3	

μg/m^3 = microgram per cubic meter; pphm = parts per hundred million; mg/m^3 = milligram per cubic meter; ppm = parts per million; TAC = toxic air contaminant; GHG = greenhouse gases; CO_2e = CO_2-equivalent

With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (Preschool-12th Grade), hospitals, resident care facilities, or day-care centers, residences, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Any project which has the potential to directly impact a sensitive receptor located within 1 mile and results in a health risk greater than 10 in 1 million would be deemed to have a potentially significant impact. Impacts to sensitive receptors may also occur due to exposure to CO and particulate matter.

The impacts associated with construction and operation of the proposed Project were evaluated for significance based on these significance criteria.

4.0 Impacts

This section presents an evaluation of impacts associated with construction and operations for the Avalon and Fries Street Segments Closure Project. The analysis follows the CEQA significance thresholds and the thresholds established by the SCAQMD as discussed in Section 3.0.

4.1 Consistency with Applicable Air Quality Plan

Would the project conflict with or obstruct implementation of the applicable air quality plan?

The proposed Project is located within the South Coast Air Basin (SCAB), which includes Orange County and portions of Los Angeles, Riverside, and San Bernardino Counties. Due to the combined air pollution sources within the SCAB and meteorological and geographical effects that limit dispersion of air pollution, the SCAB can experience high air pollutant concentrations. The SCAB is currently classified as an extreme nonattainment area for the 8-hour national ambient air quality standard (NAAQS) for ozone (O_3), and a nonattainment area for the NAAQS for particulate matter less than 2.5 microns ($PM_{2.5}$). On June 12, 2013, the U.S. EPA redesignated the SCAB as a maintenance area for the NAAQS for particulate matter less than 10 microns (PM_{10}). The SCAB is also classified as a maintenance area for the NAAQS for carbon monoxide (CO). The SCAB is also classified as a nonattainment area for the California ambient air quality standards (CAAQS) for O_3, $PM_{2.5}$, and PM_{10}.

Within the SCAB, the SCAQMD is responsible for the development and implementation of air quality plans and programs. Air quality plans describe air pollution control strategies to be implemented within the SCAB designed to attain and maintain the NAAQS and CAAQS in accordance with the requirements of the federal and California Clean Air Acts. The SCAQMD and the Southern California Association of Governments (SCAG) prepared the Air Quality Management Plan (AQMP). The most recent AQMP was adopted on December 7, 2012. The 2012 AQMP proposes emission reduction strategies and provides a demonstration that the SCAB will attain the federal $PM_{2.5}$ standard in 2014 with implementation of all feasible control strategies. The AQMP also includes specific additional control measures to implement the ozone strategy within the 2007 AQMP that are designed to achieve attainment of the 8-hour NAAQS by 2023. The additional measures are also designed to demonstrate attainment of the revoked 1-hour O3 NAAQS, which is required by the U.S. EPA.

The proposed Project would not result in changes in the mobile source projections within the AQMP as it would not result in any additional vehicle trips. Rather, the proposed Project is designed to reduce congestion and idling time. The proposed Project would therefore not conflict with the AQMP.

To summarize the proposed Project would not conflict with or obstruct implementation of the AQMP.

4.2 Air Quality Impacts

Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

4.2.1 Construction Impacts

The SCAQMD has developed both regional significance thresholds and Localized Significance Thresholds (LSTs) (SCAQMD 2008c), which are designed to assist CEQA lead agencies in analyzing localized air quality impacts from proposed projects. LSTs were developed based on a calculation of the maximum emissions from a project that would not cause or contribute to a violation of the most stringent applicable federal or state ambient air quality standard. Accordingly, the LSTs were derived based on the ambient concentration of pollutant versus distance to receptor for each source-receptor area within the SCAB. LSTs have been developed for NOx, CO, and particulate matter (PM_{10} and $PM_{2.5}$). The SCAQMD has developed LST look-up tables that apply to projects with an area of five acres or less. Based on the site size and locations where construction activities would take place, it is estimated that the disturbed construction area would be approximately 1 acre. The LST look-up tables are therefore appropriate to evaluate ambient air quality impacts from the proposed Project construction activities. For each phase of construction, air emissions from proposed construction activities mainly would occur from mobile off-road construction equipment and fugitive dust within the proposed Project area. The LST look-up tables for a 1-acre project size with a receptor distance of 25 meters (82 feet) were used to evaluate potential ambient air quality impacts. Table 4 presents the LSTs for the source-receptor area for the proposed Project.

Table 4
SCAQMD Air Quality Localized Significance Thresholds

Localized Significance Threshold, lbs/day[a]					
		PM_{10}		$PM_{2.5}$	
NOx	**CO**	**Construction**	**Operation**	**Construction**	**Operation**
57	585	4	1	3	1

[a] Based on 5-acre site, 25-meter receptor distance

Construction emissions are short-term and temporary in duration. Construction emissions are associated with the following activities required for the closure of Avalon Blvd. and Fries Ave.:

- Vacate Fries Avenue and Avalon Boulevard between Water Street and “A” Street;
- Install chain link fencing, per City of LA Bureau of Engineering Standard Plans [standard plan S-691-0 with fabric 2 inch mesh];
- Install signage and striping to effectively close access to the vacated portions of Fries Avenue and Avalon Boulevard and re-route traffic accordingly;
- Install a gate on the north side of the rail line along Fries Avenue over 13 feet from the existing rail and 26 feet from new rail, thereby meeting American Railway Engineering and Maintenance-of-Way Association (AREMA) (railroad clearance) standards;
- Provide a southerly gate on Fries Avenue that is anticipated to be used infrequently and/or for emergency purposes only;
- Provide primary access to the Port Archives Building from the north gate (near A Street) from Fries Avenue;
- Provide additional crossing protection including signing and striping, crossing arms, and lights, at an existing “At Grade” crossing at the completed private road into WWL;

- Close Fries Avenue at A Street on the north side and Water Street on the south side. Road improvements include the construction of curb and gutter, sidewalk, fencing and two driveways with the majority of Fries Avenue to remain in place. Perform minor grading and paving to join existing conditions at each location. Remove one mature tree on north Fries Avenue to construct closure. Maintain access to the Port Archive Building, as well as emergency vehicle access, with a secure gate;

- Construct two “elbow” closures on Fries Avenue with a minimum radius of 35 feet. A radius of 35 feet is proposed on Fries Avenue for the design of the “elbow” closure;

- Construct two cul-de-sacs on Avalon Boulevard at the north and south side of the track crossings to close off the street to vehicular and pedestrian traffic. Per the City of Los Angeles Bureau of Engineering Standard Plans, a 50 feet radius is preferred, however; due to right-of-way constraints, only 35 feet can be accommodated. It is large enough to accommodate emergency vehicle access;

- Remove a large palm tree immediately north of the existing tracks on Avalon Boulevard;

- Remove and replace (in kind) a portion of the fencing along the Department of Water and Power (DWP) property line along Avalon Boulevard;

- Remove and/or relocate two DWP power poles, one streetlight, and one fire hydrant on Avalon Boulevard. Also, perform minor grading and paving on Avalon Boulevard;

- Change the Harry Bridges Boulevard/N. Access Road intersection configuration to provide dual left turn lanes in the westbound direction; and

- Provide dual right turn lanes southbound at the intersection of Viaduct/N. Access Road.

The main construction phases and their duration include the following:

1. Mobilization (concurrently with DWP Relocations) – 30 days
2. Demolition – 5 days
3. Civil Improvements – 30 days
4. DWP-Power System, DWP-Water System Relocations, and Grade Crossing Protection – 6 months

The Port is upgrading and constructing additional mainline tracks serving rail customers within the West basin area of the Port of Los Angeles. The additional tracks were previously addressed in the June 6th, 2012 Addendum EIR for Berth 136-147 [TraPac] (POLA 2012).

Construction activities, including demolition; construction of sidewalk, curb, and gutter; fencing; and landscaping would be conducted in a single construction phase commencing in 2015. Construction was assumed to be performed up to six days per week (Monday through Saturday) with no construction occurring on Sundays or national holidays. In general, construction would occur from 6:00 am to between 4:00 and 6:00 pm. Construction equipment was assumed to include concrete saws, heavy-duty trucks, excavators, backhoe/loaders, welders, pavers, and paving equipment. The proposed Project would follow the *Sustainable Construction Guidelines* prepared by the LAHD for reducing air emissions from all LAHD-sponsored construction projects (LAHD 2009). In addition, construction would be subject to the requirements of the CAAP. For the purpose of this analysis, it was assumed that all construction equipment would meet Tier 4 standards as required under the BMPs adopted in the CAAP.

Emissions associated with construction activities and vehicles were calculated using the CalEEMod Model, Version 2013.2.2. The model includes the latest emission factors for offroad equipment and on-road vehicles using the ARB's OFFROAD model and EMFAC2011 model. The CalEEMod Model outputs are provided in Attachment A. Table 5 provides a summary of the emissions associated with proposed Project construction. As shown in Table 5, the peak daily emissions generated by proposed Project construction would not exceed any of the LST thresholds, nor would they exceed the SCAQMD daily significance thresholds. Accordingly, the proposed Project construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and impacts would be less than significant. No mitigation is required.

Table 5
Daily Emissions from Construction of the Proposed Project

	Peak Daily Emissions, lbs/day					
Construction Activity	**ROG**	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Mobilization	0.4407	6.4662	12.1569	0.02045	0.5211	0.2003
Demolition	0.6985	11.6794	20.5771	0.03158	0.3735	0.1882
Civil Improvements	0.8878	19.7845	28.068	0.04215	0.7535	0.4587
DWP-PS and DWP-WS	0.8711	17.2681	24.5234	0.03911	0.8046	0.4688
Peak Daily Emissions[a]	**0.8877**	**19.7846**	**28.0680**	**0.0421**	**0.8046**	**0.4688**
Localized Significance Threshold	NA	57	585	NA	4	3
SCAQMD Daily Significance Threshold	75	100	550	150	150	55

[a] Peak daily emissions calculated within CalEEMod as the maximum daily emissions, considering simultaneous construction activities.

4.2.2 Operational Impacts

To reduce congestion on the West Basin Branch single main track, allowing simultaneous moves of unit container trains destined for the Yang Ming and TraPac container terminals, and to comply with the California Public Utilities Commission (CPUC) General Order 135 rule which limits crossing blockages due to stopped or switching train cars to 10 minutes, Fries Ave., and Avalon Blvd. would need to be vacated between Water Street and “A” Street. Vehicular and truck access along the vacated streets would be re-routed to the newly constructed South Wilmington Grade Separation, located west of Fries Ave.

The South Wilmington Grade Separation will provide grade-separated vehicular access to all facilities south of Harry Bridges Boulevard from a heavily utilized rail line. Fries Avenue is an important north-south commercial street within the Port of Los Angeles complex. This grade separation project will eliminate the conflict between vehicular traffic and two existing at-grade railroad crossings. It will provide unimpeded grade-separated vehicular access to the South Wilmington area which is made up of many businesses and community areas, including TraPac Container Terminal, Wilmington Liquid Bulk, Pasha Terminal, Shell Oil Co., Borax Co., GATX, Union Oil, Banning's Landing Community Center and Wilmington Waterfront Park. Currently, slow moving trains block all access to South Wilmington, including emergency vehicle access from Fire and Police Departments. In addition, this grade separation will eliminate truck queues on surrounding streets and nearby freeway off-ramps.

The *Avalon and Fries Street Segment Closure Project Traffic Report* (Fehr & Peers 2013) evaluated potential impacts to traffic associated with the closure of Avalon Blvd. and Fries Street. The study analyzed existing conditions, Cumulative 2017 conditions and Cumulative 2038 conditions without the proposed Project, and Cumulative 2017 conditions and Cumulative 2038 conditions with the proposed Project. The study evaluated the impact of the proposed Project on three existing intersections and seven existing and future intersections in the study area for morning, midday, and afternoon conditions. Based on the analysis, the proposed Project would not result in significant impacts on traffic, and would reduce the delay at Harry Bridges Blvd. and Broad Avenue, Harry Bridges Blvd. and Fries Avenue, and the North Access Road and Harry Bridges Blvd. As stated in the study, the proposed Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the proposed Project. Accordingly, the proposed Project would not result in localized air pollutant impacts from CO (i.e., CO "hot spots"), nor would the proposed Project increase traffic and therefore increase operational emissions from traffic in the study area.

Because the proposed Project would alleviate train switching and delays and would also eliminate truck queues that could otherwise result due to blockages from rail operations, the proposed Project would reduce future emissions associated with train idling truck queuing. The proposed Project itself would not affect trip generation rates for the projects in the vicinity, and therefore, the proposed Project would not result in an increase in operational emissions. Accordingly, the proposed Project operations would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and impacts would be less than significant. No mitigation is required.

4.3 Cumulatively Considerable Impacts

Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

As discussed in Section 2, NAAQS and CAAQS have been established for the following criteria pollutants: CO, O_3, SO_2, NO_2, PM_{10}, $PM_{2.5}$, and lead. Areas are classified under the federal Clean Air Act and the California Clean Air Act as attainment, non-attainment, or maintenance (previously non-attainment and currently attainment) for each criteria pollutant based on whether the NAAQS and/or CAAQS have been attained.

4.3.1 Construction Impacts

The proposed Project site is located in the Los Angeles County portion of the SCAB. Los Angeles County is designated as a federal and state nonattainment area for O_3 and $PM_{2.5}$. The proposed Project area is also classified as a maintenance area for CO, PM_{10}, and NO_2, and an attainment area for SO_2 and lead. The SCAB is classified as a nonattainment area for the CAAQS for PM_{10}. The SCAQMD cumulative analysis focuses on whether a specific project would result in cumulatively considerable emissions. Per CEQA Guidelines Section 15064(h)(4), the existence of significance cumulative impacts caused by other projects alone will not constitute substantial evidence that the proposed Project's incremental effects are cumulatively considerable.

As discussed in Section 4.2.1, construction of the proposed Project would result in the temporary generation of emissions of ozone precursors VOCs and NOx, and emissions of CO, SOx, PM_{10}, and $PM_{2.5}$. Table 5 summarizes the construction emissions results for the construction activities, which are proposed for 2014. Based on the modeling conducted, construction of the proposed Project would not result in emissions that exceed the daily emission thresholds. In addition, the proposed Project would not result in emissions of CO, NOx, PM_{10}, or $PM_{2.5}$ that exceed the localized emission thresholds established by the SCAQMD. As discussed in Section 4.2.1, no mitigation is required.

Construction of the proposed Project will be subject to the best management practices (BMPs) established by the LAHD in the *Sustainable Construction Guidelines* (LAHD 2009), and the CAAP (POLA and POLB 2010). The BMPs included in these guidance documents are aimed at reducing emissions from on-road and off-road equipment and construction dust. According to these requirements, construction equipment will be required to meet Tier 4 emission standards. In addition, the *Sustainable Construction Guidelines* required that by January 1, 2012, all on-road heavy-duty diesel trucks with a gross vehicle weight of 19,500 pounds or greater used at Port will comply with EPA 2007 on-road emission standards for PM_{10} and NOx (0.01 g/bhp-hr and at least 1.2 g/bhp-hr, respectively). According to the SCAQMD thresholds, the proposed Project construction would not contribute to a cumulatively considerable air quality impact.

4.3.2 Operational Impacts

As discussed in Section 4.2.2, proposed Project operations would not increase with implementation of the proposed Project. Because the proposed Project would alleviate train switching and delays and would also eliminate truck queues that could otherwise result due to blockages from rail operations, the proposed Project would reduce future emissions associated with train idling and truck queuing. The proposed Project itself would not affect trip generation rates for the projects in the vicinity, and therefore, the proposed Project would not result in an increase in operational emissions. Accordingly, the proposed Project operations would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and impacts would be less than significant. No mitigation is required.

As discussed in the Traffic Study (Fehr & Peers 2013), the proposed Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the proposed Project, and therefore, the proposed Project would not result in an increase in operational emissions. According to the SCAQMD thresholds, the proposed Project construction would not contribute to a cumulatively considerable air quality impact.

4.4 Impacts to Sensitive Receptors

Would the project expose sensitive receptors to substantial pollutant concentrations?

For the purpose of a CEQA analysis, the SCAQMD considers a sensitive receptor to be a receptor such as a residence, hospital, school, or convalescent facility where sensitive receptors could be exposed to substantial pollutant concentrations. Commercial and industrial facilities are not included in the definition of sensitive receptors because employees do not remain onsite for a full 24 hours, and are not considered sensitive.

The nearest sensitive receptors to the proposed Project site are residential receptors located within the community of Wilmington north of C Street. These residential areas include properties zoned One-Family (R-1) and Restricted Density Multiple Dwelling (RD). The permitted uses include one and two-family dwellings, multiple dwellings, apartments, and park playgrounds or community centers.

Impacts to sensitive receptors are evaluated in terms of the greatest exposure to TACs. Diesel particulate matter is a TAC. Construction-related activities would result in short-term project generated emissions of diesel particulate matter from the exhaust of off-road heavy-duty diesel equipment and on-road heavy-duty trucks required for demolition activities, including pavement removal; paving, materials transport and handling; and other miscellaneous activities. According to SCAQMD methodology, health effects from carcinogenic TACs are usually described in terms of individual cancer risk, which is based on a 70-year lifetime exposure to TACs.

4.4.1 Construction Impacts

The proposed Project construction period duration of 12 months would be much lower than the exposure duration of 70 years used to evaluate potential excess cancer risks. The maximum daily emission for diesel particulate matter is less than 1 lb/day during construction activities, as displayed in Table 5. Further, the proposed Project would not exceed the SCAQMD localized significance thresholds for PM_{10} and $PM_{2.5}$. The application of the *Sustainable Construction*

Guidelines prepared by LAHD for reducing air emissions from all LAHD-sponsored construction projects (LAHD 2009). The *Sustainable Construction Guidelines* include the use of best management practices (BMPs) aimed at reducing vehicle emissions, construction dust, etc. According to these requirements, construction equipment will be required to meet Tier 4 emission standards. In addition, the *Sustainable Construction Guidelines* required that by January 1, 2012, all on-road heavy-duty diesel trucks with a gross vehicle weight of 19,500 pounds or greater used at the Port will comply with EPA 2007 on-road emission standards for PM_{10} and NOx (0.01 g/bhp-hr and at least 1.2 g/bhp-hr, respectively). According to the SCAQMD thresholds, the proposed Project construction would not contribute to a cumulatively considerable air quality impact.

Because the use of off-road heavy-duty diesel equipment would be temporary and with implementation of BMPs required in the *Sustainable Construction Guidelines* and the CAAP, construction-related emissions of TACs would not expose sensitive receptors to substantial emissions of TACs. The impacts would be less than significant.

4.4.2 Operational Impacts

As discussed in the Traffic Study (Fehr & Peers 2013), the proposed Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the proposed Project, and therefore, the proposed Project would not result in an increase in operational TAC emissions. As discussed in Section 4.2.2, because the proposed Project would alleviate train switching and delays and would also eliminate truck queues that could otherwise result due to blockages from rail operations, the project would reduce future TAC emissions associated with train idling and truck queuing. Accordingly, the proposed Project operations would not expose sensitive receptors to substantial pollutant concentrations, and impacts would be less than significant. No mitigation is required.

4.5 Odors

Would the project create objectionable odors affecting a substantial number of people?

The SCAQMD identifies land uses associated with odor complaints, including agricultural operations, wastewater treatment plants, food processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding plants.

4.5.1 Construction Impacts

Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. These compounds would be emitted in various amounts and at various locations during construction. Odors are highest near the source and would quickly dissipate offsite; any odors associated with construction would be temporary. As discussed in Section 4.4, the nearest sensitive receptors are the residences located to the north of the proposed Project site in the community of Wilmington.

Due to the temporary nature of construction odors and the anticipated dissipation of odors offsite. Odors from these sources would be localized and generally confined to the immediate area where construction equipment is operating. Impacts during construction would be less than significant.

4.5.2 Operational Impacts

As discussed in the Traffic Study (Fehr & Peers 2013), the proposed Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the project. Shifts are forecast to occur in response to frequent operations at the crossings that would result in traffic redirecting to the under construction South Wilmington Grade Separation Project. The South Wilmington Grade Separation Project will provide a new route between the Wilmington community and the regional street network and the areas of the Port south of Harry Bridges Boulevard. Some minor localized shifts in traffic due to the street segment closures are also forecast to occur. The proposed Project is not an odor source as defined by the SCAQMD. Therefore, the proposed Project would not result in a significant odor impact from operations. Impacts are less than significant and no mitigation is required.

4.6 Greenhouse Gas Emissions

Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

As discussed in Section 3.0, the GHG emission threshold used for this analysis is the 10,000 metric ton threshold proposed by the SCAQMD.

4.6.1 Construction Impacts

GHG emissions associated with construction activities and vehicles were calculated using the CalEEMod Model, Version 2013.2.2. As discussed in Section 4.1.1, the CalEEMod model includes the latest emission factors for offroad equipment and on-road vehicles using the ARB's OFFROAD model and EMFAC2011 model. The CalEEMod Model outputs are provided in Attachment A. Table 6 provides a summary of the total GHG emissions associated with proposed Project construction. As shown in Table 6, the total GHG emissions are well below the SCAQMD's significance threshold. Furthermore, because the SCAQMD recommends amortizing construction emissions over a 30-year period to account for their contribution to operational impacts from GHGs, the impacts from construction would be negligible. Accordingly, the proposed Project construction would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. No mitigation is required.

Table 6
Total GHG Emissions from Construction of the Proposed Project

	Total Emissions, metric tons			
Construction Activity	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
Mobilization	23.57	0.01	0.00	23.69
Demolition	8.69	0.00	0.00	8.73
Civil Improvements	49.24	0.01	0.00	49.51
DWP-PS and DWP-WS	265.99	0.07	0.00	267.44
Total GHG Emissions	**347.49**	**0.09**	**0.00**	**349.37**
SCAQMD Significance Threshold	10,000 metric tons/year			

4.6.2 Operational Impacts

As discussed in the Traffic Study (Fehr & Peers 2013), the proposed Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the proposed Project. Therefore, the proposed Project would not result in an increase in operational GHG emissions. As discussed in Section 4.2.2, because the proposed Project would alleviate train switching and delays and would also eliminate truck queues that could otherwise result due to blockages from rail operations, the proposed Project would reduce future GHG emissions associated with train idling and truck queuing. Accordingly, the proposed Project operation would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. No mitigation is required.

4.7 Consistency with Greenhouse Gas Plans, Policies, and Regulations

Would the project conflict with applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The applicable plans, policies, and regulations include the requirements of Assembly Bill (AB) 32, first signed by Governor Arnold Schwarzenegger in 2006; the Green LA Plan, which presents a citywide framework for confronting global climate change to create a cleaner, greener, sustainable Los Angeles; and the Port's Climate Action Plan.

4.7.1 Construction Impacts

Statewide GHG emissions must adhere to the requirements of Assembly Bill (AB) 32, first signed by Governor Arnold Schwarzenegger in 2006. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions.

AB 32 directed the California Air Resources Board (ARB) to develop a Scoping Plan, which is the state's plan to achieve the GHG reductions required by AB 32. The Scoping Plan was approved by ARB on December 11, 2008, and was updated in August 2011. A draft update to the Scoping Plan was released on October 1, 2013.

The *Climate Change AB 32 Scoping Plan* includes measures that would indirectly address GHG emission levels associated with the proposed Project construction and operations, such as the phasing-in of cleaner technologies for diesel engine fleets (including construction equipment) and the development of a Low Carbon Fuel Standard. Policies formulated under the mandate of AB 32 that are applicable to the proposed Project, either directly or indirectly, are assumed to be implemented by the beginning of proposed construction. Therefore, it is assumed that the proposed Project would not conflict with the *Scoping Plan*.

In May 2007, the City of Los Angeles Mayor's Office released the Green LA Plan, which is an action plan to lead the nation in fighting global warming. The Green LA Plan presents a citywide framework for confronting global climate change to create a cleaner, greener, sustainable Los Angeles. The Green LA Plan directs the Port to develop an individual Climate Action Plan, consistent with the goals of Green LA, to examine opportunities to reduce GHG emissions from Port operations. In accordance with this directive, the LAHD prepared a Harbor Department Climate Action Plan (December 2007) that details GHG emissions related to municipally-controlled Port activities (such as Port buildings and Port workforce operations) and outlines current and proposed actions to reduce GHGs from these operations. The Port is a founding member of The Climate Registry (TCR). The LAHD completed annual GHG emissions inventories for LAHD-controlled operations beginning in 2006, and they submitted annual GHG inventories for trucks, ships, and rail to TCR (formerly the California Climate Action Registry) beginning in 2008 for year 2006. The LAHD is developing a Sustainability Plan in accordance with the Mayor's Office Directive that will incorporate Port environmental programs and reports, including the Port's Climate Action Plan.

As shown in Table 6, construction and operation of the proposed Project would not exceed the SCAQMD GHG threshold of 10,000 metric tons of CO_2e per year. The proposed Project would not conflict with AB 32, Executive Directive No. 10, the City of Los Angeles Green LA Plan, or the Port's Climate Action Plan. Accordingly impacts would be less than significant. No mitigation is required.

4.7.2 Operational Impacts

Because the proposed Project would not result in an increase in operational GHG emissions, the proposed Project would not conflict with an applicable plan, policy, or regulation designed to reduce GHG emissions. No mitigation is required.

5.0 Conclusions

In conclusion, the Avalon Blvd. and Fries Street Segments Closure Project would result in air emissions during construction activities. The emissions of criteria pollutants, TACs, odor compounds, and GHGs would be temporary and would not result in a significant adverse air quality impacts.

Operation of the proposed Project would not generate new traffic on the surrounding streets, but would result in localized shifts of the traffic that is forecast to be present with or without the proposed Project. Therefore, the proposed Project would not result in an increase in operational criteria pollutant, TAC, odor, or GHG emissions.

Impacts are less than significant and no mitigation is required.

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Appendix A

CalEEMod Model Outputs

Avalon and Fries Street Segments Closure Project

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.35	Acre	0.35	15,246.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2015
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Off-road Equipment - Construction equipment all to site during mobilization

Off-road Equipment - Estimated constructino equipment

Off-road Equipment - Estimated constructin equipment

Off-road Equipment - Estimated construction equipment

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	22869	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	100	0

tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	50	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDays	5.00	27.00
tblConstructionPhase	NumDays	5.00	158.00
tblConstructionPhase	NumDays	1.00	26.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	2/6/2015	2/7/2015
tblConstructionPhase	PhaseEndDate	9/11/2015	10/31/2015
tblConstructionPhase	PhaseStartDate	1/31/2015	2/1/2015
tblConstructionPhase	PhaseStartDate	3/12/2015	5/1/2015
tblGrading	AcresOfGrading	0.00	0.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00

tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblTripsAndVMT	WorkerTripNumber	43.00	38.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.5272	3.1605	2.6537	4.0300e-003	0.0463	0.2044	0.2507	0.0123	0.1941	0.2064	0.0000	347.4837	347.4837	0.0900	0.0000	349.3730
Total	**0.5272**	**3.1605**	**2.6537**	**4.0300e-003**	**0.0463**	**0.2044**	**0.2507**	**0.0123**	**0.1941**	**0.2064**	**0.0000**	**347.4837**	**347.4837**	**0.0900**	**0.0000**	**349.3730**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.0875	1.7512	2.5426	4.0300e-003	0.0461	0.0347	0.0808	0.0122	0.0340	0.0462	0.0000	347.4834	347.4834	0.0900	0.0000	349.3726
Total	**0.0875**	**1.7512**	**2.5426**	**4.0300e-003**	**0.0461**	**0.0347**	**0.0808**	**0.0122**	**0.0340**	**0.0462**	**0.0000**	**347.4834**	**347.4834**	**0.0900**	**0.0000**	**349.3726**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**83.40**	**44.59**	**4.19**	**0.00**	**0.48**	**83.03**	**67.78**	**0.24**	**82.51**	**77.62**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr								MT/yr		
Area	0.0595	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0595**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0595	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0595**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization	Site Preparation	1/1/2015	1/30/2015	6	26	
2	Demolition	Demolition	2/1/2015	2/7/2015	6	6	
3	Civil Improvements	Paving	2/8/2015	3/11/2015	6	27	
4	DWP-PS and DWP-WS Relocations	Paving	5/1/2015	10/31/2015	6	158	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilization	Excavators	1	2.00	162	0.38
Mobilization	Graders	1	0.00	174	0.41
Mobilization	Off-Highway Trucks	2	2.00	400	0.38
Mobilization	Pavers	2	2.00	125	0.42
Mobilization	Paving Equipment	1	2.00	130	0.36
Mobilization	Plate Compactors	1	2.00	8	0.43
Mobilization	Rubber Tired Dozers	3	0.00	255	0.40
Mobilization	Tractors/Loaders/Backhoes	2	2.00	97	0.37
Mobilization	Welders	4	2.00	46	0.45
Demolition	Concrete/Industrial Saws	1	10.00	81	0.73
Demolition	Excavators	1	10.00	162	0.38
Demolition	Off-Highway Trucks	2	2.00	400	0.38
Demolition	Rubber Tired Dozers	2	0.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	10.00	97	0.37

Civil Improvements	Cement and Mortar Mixers	2	0.00	9	0.56
Civil Improvements	Pavers	2	10.00	125	0.42
Civil Improvements	Paving Equipment	1	10.00	130	0.36
Civil Improvements	Plate Compactors	1	10.00	8	0.43
Civil Improvements	Rollers	2	0.00	80	0.38
Civil Improvements	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Civil Improvements	Welders	4	10.00	46	0.45
DWP-PS and DWP-WS Relocations	Cement and Mortar Mixers	2	0.00	9	0.56
DWP-PS and DWP-WS Relocations	Excavators	1	10.00	162	0.38
DWP-PS and DWP-WS Relocations	Off-Highway Trucks	2	2.00	400	0.38
DWP-PS and DWP-WS Relocations	Pavers	1	0.00	125	0.42
DWP-PS and DWP-WS Relocations	Paving Equipment	2	0.00	130	0.36
DWP-PS and DWP-WS Relocations	Rollers	2	0.00	80	0.38
DWP-PS and DWP-WS Relocations	Tractors/Loaders/Backhoes	2	10.00	97	0.37
DWP-PS and DWP-WS Relocations	Welders	4	10.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilization	17	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	8	20.00	0.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Civil Improvements	14	35.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
DWP-PS and DWP-WS Relocations	16	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Mobilization - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0227	0.1888	0.1166	2.0000e-004		9.9300e-003	9.9300e-003		9.3000e-003	9.3000e-003	0.0000	18.3065	18.3065	5.3800e-003	0.0000	18.4194
Total	**0.0227**	**0.1888**	**0.1166**	**2.0000e-004**	**2.7000e-004**	**9.9300e-003**	**0.0102**	**3.0000e-005**	**9.3000e-003**	**9.3300e-003**	**0.0000**	**18.3065**	**18.3065**	**5.3800e-003**	**0.0000**	**18.4194**

3.2 Mobilization - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-003	3.2200e-003	0.0335	7.0000e-005	5.4200e-003	5.0000e-005	5.4700e-003	1.4400e-003	4.0000e-005	1.4800e-003	0.0000	5.2596	5.2596	3.0000e-004	0.0000	5.2658
Total	**2.2000e-003**	**3.2200e-003**	**0.0335**	**7.0000e-005**	**5.4200e-003**	**5.0000e-005**	**5.4700e-003**	**1.4400e-003**	**4.0000e-005**	**1.4800e-003**	**0.0000**	**5.2596**	**5.2596**	**3.0000e-004**	**0.0000**	**5.2658**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-004	0.0000	1.0000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4000e-003	0.0809	0.1253	2.0000e-004		1.1000e-003	1.1000e-003		1.0800e-003	1.0800e-003	0.0000	18.3065	18.3065	5.3800e-003	0.0000	18.4194
Total	**3.4000e-003**	**0.0809**	**0.1253**	**2.0000e-004**	**1.0000e-004**	**1.1000e-003**	**1.2000e-003**	**1.0000e-005**	**1.0800e-003**	**1.0900e-003**	**0.0000**	**18.3065**	**18.3065**	**5.3800e-003**	**0.0000**	**18.4194**

3.2 Mobilization - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-003	3.2200e-003	0.0335	7.0000e-005	5.4200e-003	5.0000e-005	5.4700e-003	1.4400e-003	4.0000e-005	1.4800e-003	0.0000	5.2596	5.2596	3.0000e-004	0.0000	5.2658
Total	**2.2000e-003**	**3.2200e-003**	**0.0335**	**7.0000e-005**	**5.4200e-003**	**5.0000e-005**	**5.4700e-003**	**1.4400e-003**	**4.0000e-005**	**1.4800e-003**	**0.0000**	**5.2596**	**5.2596**	**3.0000e-004**	**0.0000**	**5.2658**

3.3 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.4800e-003	0.0809	0.0535	9.0000e-005		5.0700e-003	5.0700e-003		4.7800e-003	4.7800e-003	0.0000	8.0162	8.0162	2.0100e-003	0.0000	8.0583
Total	**8.4800e-003**	**0.0809**	**0.0535**	**9.0000e-005**	**1.1000e-004**	**5.0700e-003**	**5.1800e-003**	**2.0000e-005**	**4.7800e-003**	**4.8000e-003**	**0.0000**	**8.0162**	**8.0162**	**2.0100e-003**	**0.0000**	**8.0583**

3.3 Demolition - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.7000e-004	1.2000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0341	0.0341	0.0000	0.0000	0.0341
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.9000e-004	4.0700e-003	1.0000e-005	6.6000e-004	1.0000e-005	6.6000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	0.6388	0.6388	4.0000e-005	0.0000	0.6396
Total	**2.8000e-004**	**5.6000e-004**	**4.1900e-003**	**1.0000e-005**	**6.7000e-004**	**1.0000e-005**	**6.7000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.6729**	**0.6729**	**4.0000e-005**	**0.0000**	**0.6737**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8000e-003	0.0345	0.0576	9.0000e-005		3.9000e-004	3.9000e-004		3.7000e-004	3.7000e-004	0.0000	8.0162	8.0162	2.0100e-003	0.0000	8.0583
Total	**1.8000e-003**	**0.0345**	**0.0576**	**9.0000e-005**	**4.0000e-005**	**3.9000e-004**	**4.3000e-004**	**1.0000e-005**	**3.7000e-004**	**3.8000e-004**	**0.0000**	**8.0162**	**8.0162**	**2.0100e-003**	**0.0000**	**8.0583**

3.3 Demolition - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.7000e-004	1.2000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0341	0.0341	0.0000	0.0000	0.0341
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	3.9000e-004	4.0700e-003	1.0000e-005	6.6000e-004	1.0000e-005	6.6000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	0.6388	0.6388	4.0000e-005	0.0000	0.6396
Total	**2.8000e-004**	**5.6000e-004**	**4.1900e-003**	**1.0000e-005**	**6.7000e-004**	**1.0000e-005**	**6.7000e-004**	**1.7000e-004**	**1.0000e-005**	**1.8000e-004**	**0.0000**	**0.6729**	**0.6729**	**4.0000e-005**	**0.0000**	**0.6737**

3.4 Civil Improvements - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0761	0.4883	0.3631	5.1000e-004		0.0319	0.0319		0.0302	0.0302	0.0000	44.2078	44.2078	0.0127	0.0000	44.4754
Paving	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0766**	**0.4883**	**0.3631**	**5.1000e-004**		**0.0319**	**0.0319**		**0.0302**	**0.0302**	**0.0000**	**44.2078**	**44.2078**	**0.0127**	**0.0000**	**44.4754**

3.4 Civil Improvements - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1100e-003	3.0800e-003	0.0320	6.0000e-005	5.1800e-003	5.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	5.0307	5.0307	2.8000e-004	0.0000	5.0366
Total	**2.1100e-003**	**3.0800e-003**	**0.0320**	**6.0000e-005**	**5.1800e-003**	**5.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**5.0307**	**5.0307**	**2.8000e-004**	**0.0000**	**5.0366**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.2900e-003	0.2641	0.3476	5.1000e-004		4.8400e-003	4.8400e-003		4.7500e-003	4.7500e-003	0.0000	44.2077	44.2077	0.0127	0.0000	44.4754
Paving	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.7500e-003**	**0.2641**	**0.3476**	**5.1000e-004**		**4.8400e-003**	**4.8400e-003**		**4.7500e-003**	**4.7500e-003**	**0.0000**	**44.2077**	**44.2077**	**0.0127**	**0.0000**	**44.4754**

3.4 Civil Improvements - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1100e-003	3.0800e-003	0.0320	6.0000e-005	5.1800e-003	5.0000e-005	5.2300e-003	1.3800e-003	4.0000e-005	1.4200e-003	0.0000	5.0307	5.0307	2.8000e-004	0.0000	5.0366
Total	**2.1100e-003**	**3.0800e-003**	**0.0320**	**6.0000e-005**	**5.1800e-003**	**5.0000e-005**	**5.2300e-003**	**1.3800e-003**	**4.0000e-005**	**1.4200e-003**	**0.0000**	**5.0307**	**5.0307**	**2.8000e-004**	**0.0000**	**5.0366**

3.5 DWP-PS and DWP-WS Relocations - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4003	2.3751	1.8364	2.6700e-003		0.1571	0.1571		0.1495	0.1495	0.0000	232.3459	232.3459	0.0673	0.0000	233.7595
Paving	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.4008**	**2.3751**	**1.8364**	**2.6700e-003**		**0.1571**	**0.1571**		**0.1495**	**0.1495**	**0.0000**	**232.3459**	**232.3459**	**0.0673**	**0.0000**	**233.7595**

3.5 DWP-PS and DWP-WS Relocations - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr								MT/yr		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0141	0.0206	0.2143	4.3000e-004	0.0347	3.1000e-004	0.0350	9.2100e-003	2.8000e-004	9.4900e-003	0.0000	33.6443	33.6443	1.9000e-003	0.0000	33.6842
Total	**0.0141**	**0.0206**	**0.2143**	**4.3000e-004**	**0.0347**	**3.1000e-004**	**0.0350**	**9.2100e-003**	**2.8000e-004**	**9.4900e-003**	**0.0000**	**33.6443**	**33.6443**	**1.9000e-003**	**0.0000**	**33.6842**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr								MT/yr		
Off-Road	0.0534	1.3441	1.7280	2.6700e-003		0.0279	0.0279		0.0274	0.0274	0.0000	232.3456	232.3456	0.0673	0.0000	233.7592
Paving	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0539**	**1.3441**	**1.7280**	**2.6700e-003**		**0.0279**	**0.0279**		**0.0274**	**0.0274**	**0.0000**	**232.3456**	**232.3456**	**0.0673**	**0.0000**	**233.7592**

3.5 DWP-PS and DWP-WS Relocations - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0141	0.0206	0.2143	4.3000e-004	0.0347	3.1000e-004	0.0350	9.2100e-003	2.8000e-004	9.4900e-003	0.0000	33.6443	33.6443	1.9000e-003	0.0000	33.6842
Total	**0.0141**	**0.0206**	**0.2143**	**4.3000e-004**	**0.0347**	**3.1000e-004**	**0.0350**	**9.2100e-003**	**2.8000e-004**	**9.4900e-003**	**0.0000**	**33.6443**	**33.6443**	**1.9000e-003**	**0.0000**	**33.6842**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.515437	0.060435	0.179988	0.139880	0.041945	0.006639	0.015487	0.028746	0.001918	0.002517	0.004333	0.000596	0.002079

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0595	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	0.0595	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.4200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0551					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**0.0595**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.4200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0551					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**0.0595**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Avalon and Fries Street Segments Closure Project

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.35	Acre	0.35	15,246.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2015
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Off-road Equipment - Construction equipment all to site during mobilization

Off-road Equipment - Estimated constructino equipment

Off-road Equipment - Estimated constructin equipment

Off-road Equipment - Estimated construction equipment

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	22869	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	100	0

tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	50	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	NumDays	5.00	27.00
tblConstructionPhase	NumDays	5.00	158.00
tblConstructionPhase	NumDays	1.00	26.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	2/6/2015	2/7/2015
tblConstructionPhase	PhaseEndDate	9/11/2015	10/31/2015
tblConstructionPhase	PhaseStartDate	1/31/2015	2/1/2015
tblConstructionPhase	PhaseStartDate	3/12/2015	5/1/2015
tblGrading	AcresOfGrading	0.00	0.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	10.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	10.00
tblOffRoadEquipment	UsageHours	7.00	10.00

tblOffRoadEquipment	UsageHours	7.00	10.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblTripsAndVMT	WorkerTripNumber	43.00	38.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	5.8377	36.3898	29.2135	0.0421	0.4471	2.3642	2.7555	0.1186	2.2389	2.3426	0.0000	4,014.1592	4,014.1592	1.0639	0.0000	4,036.5002
Total	**5.8377**	**36.3898**	**29.2135**	**0.0421**	**0.4471**	**2.3642**	**2.7555**	**0.1186**	**2.2389**	**2.3426**	**0.0000**	**4,014.1592**	**4,014.1592**	**1.0639**	**0.0000**	**4,036.5002**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	0.8877	19.7846	28.0680	0.0421	0.4471	0.3622	0.8046	0.1186	0.3549	0.4688	0.0000	4,014.1592	4,014.1592	1.0639	0.0000	4,036.5001
Total	**0.8877**	**19.7846**	**28.0680**	**0.0421**	**0.4471**	**0.3622**	**0.8046**	**0.1186**	**0.3549**	**0.4688**	**0.0000**	**4,014.1592**	**4,014.1592**	**1.0639**	**0.0000**	**4,036.5001**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**84.79**	**45.63**	**3.92**	**0.00**	**0.00**	**84.68**	**70.80**	**0.00**	**84.15**	**79.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3261	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		8.0000e-005	8.0000e-005	0.0000		8.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.3261**	**0.0000**	**4.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3261	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		8.0000e-005	8.0000e-005	0.0000		8.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.3261**	**0.0000**	**4.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization	Site Preparation	1/1/2015	1/30/2015	6	26	
2	Demolition	Demolition	2/1/2015	2/7/2015	6	6	
3	Civil Improvements	Paving	2/8/2015	3/11/2015	6	27	
4	DWP-PS and DWP-WS Relocations	Paving	5/1/2015	10/31/2015	6	158	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilization	Excavators	1	2.00	162	0.38
Mobilization	Graders	1	0.00	174	0.41
Mobilization	Off-Highway Trucks	2	2.00	400	0.38
Mobilization	Pavers	2	2.00	125	0.42
Mobilization	Paving Equipment	1	2.00	130	0.36
Mobilization	Plate Compactors	1	2.00	8	0.43
Mobilization	Rubber Tired Dozers	3	0.00	255	0.40

Mobilization	Tractors/Loaders/Backhoes	2	2.00	97	0.37
Mobilization	Welders	4	2.00	46	0.45
Demolition	Concrete/Industrial Saws	1	10.00	81	0.73
Demolition	Excavators	1	10.00	162	0.38
Demolition	Off-Highway Trucks	2	2.00	400	0.38
Demolition	Rubber Tired Dozers	2	0.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Civil Improvements	Cement and Mortar Mixers	2	0.00	9	0.56
Civil Improvements	Pavers	2	10.00	125	0.42
Civil Improvements	Paving Equipment	1	10.00	130	0.36
Civil Improvements	Plate Compactors	1	10.00	8	0.43
Civil Improvements	Rollers	2	0.00	80	0.38
Civil Improvements	Tractors/Loaders/Backhoes	2	10.00	97	0.37
Civil Improvements	Welders	4	10.00	46	0.45
DWP-PS and DWP-WS Relocations	Cement and Mortar Mixers	2	0.00	9	0.56
DWP-PS and DWP-WS Relocations	Excavators	1	10.00	162	0.38
DWP-PS and DWP-WS Relocations	Off-Highway Trucks	2	2.00	400	0.38
DWP-PS and DWP-WS Relocations	Pavers	1	0.00	125	0.42
DWP-PS and DWP-WS Relocations	Paving Equipment	2	0.00	130	0.36
DWP-PS and DWP-WS Relocations	Rollers	2	0.00	80	0.38
DWP-PS and DWP-WS Relocations	Tractors/Loaders/Backhoes	2	10.00	97	0.37
DWP-PS and DWP-WS Relocations	Welders	4	10.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilization	17	38.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	8	20.00	0.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Civil Improvements	14	35.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
DWP-PS and DWP-WS Relocations	16	40.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Mobilization - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0204	0.0000	0.0204	2.2000e-003	0.0000	2.2000e-003			0.0000			0.0000
Off-Road	1.7472	14.5191	8.9687	0.0154		0.7640	0.7640		0.7157	0.7157		1,552.2655	1,552.2655	0.4560		1,561.8419
Total	**1.7472**	**14.5191**	**8.9687**	**0.0154**	**0.0204**	**0.7640**	**0.7844**	**2.2000e-003**	**0.7157**	**0.7179**		**1,552.2655**	**1,552.2655**	**0.4560**		**1,561.8419**

3.2 Mobilization - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1795	0.2410	2.5177	5.0500e-003	0.4248	3.7400e-003	0.4285	0.1127	3.4300e-003	0.1161		439.1446	439.1446	0.0252		439.6735
Total	**0.1795**	**0.2410**	**2.5177**	**5.0500e-003**	**0.4248**	**3.7400e-003**	**0.4285**	**0.1127**	**3.4300e-003**	**0.1161**		**439.1446**	**439.1446**	**0.0252**		**439.6735**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.9500e-003	0.0000	7.9500e-003	8.6000e-004	0.0000	8.6000e-004			0.0000			0.0000
Off-Road	0.2612	6.2252	9.6392	0.0154		0.0846	0.0846		0.0833	0.0833	0.0000	1,552.2655	1,552.2655	0.4560		1,561.8419
Total	**0.2612**	**6.2252**	**9.6392**	**0.0154**	**7.9500e-003**	**0.0846**	**0.0926**	**8.6000e-004**	**0.0833**	**0.0841**	**0.0000**	**1,552.2655**	**1,552.2655**	**0.4560**		**1,561.8419**

3.2 Mobilization - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1795	0.2410	2.5177	5.0500e-003	0.4248	3.7400e-003	0.4285	0.1127	3.4300e-003	0.1161		439.1446	439.1446	0.0252		439.6735
Total	**0.1795**	**0.2410**	**2.5177**	**5.0500e-003**	**0.4248**	**3.7400e-003**	**0.4285**	**0.1127**	**3.4300e-003**	**0.1161**		**439.1446**	**439.1446**	**0.0252**		**439.6735**

3.3 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0357	0.0000	0.0357	5.4000e-003	0.0000	5.4000e-003			0.0000			0.0000
Off-Road	2.8274	26.9736	17.8472	0.0288		1.6885	1.6885		1.5922	1.5922		2,945.4350	2,945.4350	0.7377		2,960.9264
Total	**2.8274**	**26.9736**	**17.8472**	**0.0288**	**0.0357**	**1.6885**	**1.7242**	**5.4000e-003**	**1.5922**	**1.5976**		**2,945.4350**	**2,945.4350**	**0.7377**		**2,960.9264**

3.3 Demolition - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.4400e-003	0.0542	0.0398	1.2000e-004	2.9000e-003	9.0000e-004	3.8000e-003	7.9000e-004	8.2000e-004	1.6200e-003		12.5109	12.5109	1.0000e-004		12.5130
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0945	0.1268	1.3251	2.6600e-003	0.2236	1.9700e-003	0.2255	0.0593	1.8000e-003	0.0611		231.1287	231.1287	0.0133		231.4071
Total	**0.0979**	**0.1810**	**1.3649**	**2.7800e-003**	**0.2265**	**2.8700e-003**	**0.2293**	**0.0601**	**2.6200e-003**	**0.0627**		**243.6396**	**243.6396**	**0.0134**		**243.9201**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0139	0.0000	0.0139	2.1100e-003	0.0000	2.1100e-003			0.0000			0.0000
Off-Road	0.6006	11.4984	19.2122	0.0288		0.1303	0.1303		0.1234	0.1234	0.0000	2,945.4350	2,945.4350	0.7377		2,960.9264
Total	**0.6006**	**11.4984**	**19.2122**	**0.0288**	**0.0139**	**0.1303**	**0.1442**	**2.1100e-003**	**0.1234**	**0.1255**	**0.0000**	**2,945.4350**	**2,945.4350**	**0.7377**		**2,960.9264**

3.3 Demolition - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.4400e-003	0.0542	0.0398	1.2000e-004	2.9000e-003	9.0000e-004	3.8000e-003	7.9000e-004	8.2000e-004	1.6200e-003		12.5109	12.5109	1.0000e-004		12.5130
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0945	0.1268	1.3251	2.6600e-003	0.2236	1.9700e-003	0.2255	0.0593	1.8000e-003	0.0611		231.1287	231.1287	0.0133		231.4071
Total	**0.0979**	**0.1810**	**1.3649**	**2.7800e-003**	**0.2265**	**2.8700e-003**	**0.2293**	**0.0601**	**2.6200e-003**	**0.0627**		**243.6396**	**243.6396**	**0.0134**		**243.9201**

3.4 Civil Improvements - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.6384	36.1679	26.8946	0.0375		2.3608	2.3608		2.2357	2.2357		3,609.6839	3,609.6839	1.0407		3,631.5377
Paving	0.0340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**5.6723**	**36.1679**	**26.8946**	**0.0375**		**2.3608**	**2.3608**		**2.2357**	**2.2357**		**3,609.6839**	**3,609.6839**	**1.0407**		**3,631.5377**

3.4 Civil Improvements - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1654	0.2219	2.3189	4.6500e-003	0.3912	3.4400e-003	0.3947	0.1038	3.1600e-003	0.1069		404.4753	404.4753	0.0232		404.9624
Total	**0.1654**	**0.2219**	**2.3189**	**4.6500e-003**	**0.3912**	**3.4400e-003**	**0.3947**	**0.1038**	**3.1600e-003**	**0.1069**		**404.4753**	**404.4753**	**0.0232**		**404.9624**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6884	19.5626	25.7491	0.0375		0.3588	0.3588		0.3518	0.3518	0.0000	3,609.6839	3,609.6839	1.0407		3,631.5377
Paving	0.0340					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7224**	**19.5626**	**25.7491**	**0.0375**		**0.3588**	**0.3588**		**0.3518**	**0.3518**	**0.0000**	**3,609.6839**	**3,609.6839**	**1.0407**		**3,631.5377**

3.4 Civil Improvements - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1654	0.2219	2.3189	4.6500e-003	0.3912	3.4400e-003	0.3947	0.1038	3.1600e-003	0.1069		404.4753	404.4753	0.0232		404.9624
Total	**0.1654**	**0.2219**	**2.3189**	**4.6500e-003**	**0.3912**	**3.4400e-003**	**0.3947**	**0.1038**	**3.1600e-003**	**0.1069**		**404.4753**	**404.4753**	**0.0232**		**404.9624**

3.5 DWP-PS and DWP-WS Relocations - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.0676	30.0641	23.2461	0.0338		1.9885	1.9885		1.8922	1.8922		3,241.9934	3,241.9934	0.9393		3,261.7183
Paving	5.8000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**5.0734**	**30.0641**	**23.2461**	**0.0338**		**1.9885**	**1.9885**		**1.8922**	**1.8922**		**3,241.9934**	**3,241.9934**	**0.9393**		**3,261.7183**

3.5 DWP-PS and DWP-WS Relocations - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1890	0.2537	2.6502	5.3100e-003	0.4471	3.9300e-003	0.4510	0.1186	3.6100e-003	0.1222		462.2575	462.2575	0.0265		462.8142
Total	**0.1890**	**0.2537**	**2.6502**	**5.3100e-003**	**0.4471**	**3.9300e-003**	**0.4510**	**0.1186**	**3.6100e-003**	**0.1222**		**462.2575**	**462.2575**	**0.0265**		**462.8142**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6763	17.0144	21.8732	0.0338		0.3536	0.3536		0.3466	0.3466	0.0000	3,241.9934	3,241.9934	0.9393		3,261.7183
Paving	5.8000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6821**	**17.0144**	**21.8732**	**0.0338**		**0.3536**	**0.3536**		**0.3466**	**0.3466**	**0.0000**	**3,241.9934**	**3,241.9934**	**0.9393**		**3,261.7183**

3.5 DWP-PS and DWP-WS Relocations - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1890	0.2537	2.6502	5.3100e-003	0.4471	3.9300e-003	0.4510	0.1186	3.6100e-003	0.1222		462.2575	462.2575	0.0265		462.8142
Total	**0.1890**	**0.2537**	**2.6502**	**5.3100e-003**	**0.4471**	**3.9300e-003**	**0.4510**	**0.1186**	**3.6100e-003**	**0.1222**		**462.2575**	**462.2575**	**0.0265**		**462.8142**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.515437	0.060435	0.179988	0.139880	0.041945	0.006639	0.015487	0.028746	0.001918	0.002517	0.004333	0.000596	0.002079

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3261	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		8.0000e-005	8.0000e-005	0.0000		8.0000e-005
Unmitigated	0.3261	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		8.0000e-005	8.0000e-005	0.0000		8.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0242					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3019					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		8.0000e-005	8.0000e-005	0.0000		8.0000e-005
Total	**0.3261**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**8.0000e-005**	**8.0000e-005**	**0.0000**		**8.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.3019					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		8.0000e-005	8.0000e-005	0.0000		8.0000e-005
Architectural Coating	0.0242					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3261**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**8.0000e-005**	**8.0000e-005**	**0.0000**		**8.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX B

Noise and Vibration Assessment
TAHA

February 2014

Memorandum

TO: Matt Valerio, Senior Project Manager
Jayna Morgan, Environmental Planner/Project Manager
AECOM

FROM: Sam Silverman, Senior Associate
Terry A. Hayes Associates Inc.

DATE: February 19, 2014

RE: Avalon and Fries Street Segments Closure Project Noise and Vibration Assessment

Terry A. Hayes Associates Inc. (TAHA) is pleased to submit this noise and vibration assessment for the Avalon and Fries Street Segments Closure Project. The purpose of this analysis is to evaluate the potential impacts associated with the proposed project based on the California Environmental Quality Act (CEQA) checklist questions listed in Appendix G of the CEQA Guidelines. Noise and vibration levels have been analyzed related to construction activity and changes to mobile source noise associated with rerouted traffic. Mitigation measures are recommended, where necessary.

Project Description

The Avalon and Fries Street Segments Closure Project include the elements listed below.

- Vacate Fries Avenue and Avalon Boulevard between Water Street and A Street;
- Construct associated street improvements;
- Install chain link fencing per City of LA Bureau of Engineering Standards Plans [standard plan S-691-0 with fabric 2 inch mesh];
- Install signage and striping to effectively close access to the vacated portions of Fries Avenue and Avalon Boulevard;
- Install a gate on the north side of the rail line along Fries Avenue over 13 feet from the existing rail track and 26 feet from the new rail track;
- Provide a southerly gate that is anticipated to be used infrequently and/or for emergency purposes only;
- Provide primary access to the Port Archives Building from the north gate near A Street;
- Provide additional crossing protection, including signing and striping, crossing arms, and lights, at an existing at-grade crossing at the completed private road into Wallenius Wilhelmsen Logistics;
- Construct two cul-de-sacs on Avalon Boulevard with a minimum radius of 35 feet;
- Remove a large palm tree immediately north of the existing tracks;
- Remove and replace (in kind) a portion of the fencing along the Los Angeles Department of Water and Power (LADWP) property line;

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- Remove and/or relocate two LADWP power poles, one streetlight, and one fire hydrant on Avalon Boulevard;
- Change the Harry Bridges/North Access Road intersection configuration to provide dual left-turn lanes in the westbound direction; and
- Provide dual right-turn lanes southbound at the intersection of Viaduct/North Access Road.

Noise and Vibration Characteristics and Effects

Sound is technically described in terms of the loudness (amplitude) and frequency (pitch). The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The "A-weighted scale," abbreviated dBA, reflects the normal hearing sensitivity range of the human ear. On this scale, the range of human hearing extends from approximately 3 to 140 dBA.

This analysis describes sound levels in terms of Community Noise Equivalent Level (CNEL) and Equivalent Noise Level (L_{eq}). CNEL is an average sound level during a 24-hour period and is a noise measurement scale, which accounts for noise source, distance, single event duration, single event occurrence, frequency and time of day. Human reaction to sound between 7:00 p.m. and 10:00 p.m. is as if the sound were actually 5dBA higher than if it occurred from 7:00 a.m. to 7:00 p.m. From 10:00 p.m. to 7:00 a.m., humans perceive sound as if it were 10 dBA higher due to the lower background level. Hence, the CNEL is obtained by adding an additional 5 dBA to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and 10 dBA to sound levels in the night before 7:00 a.m. and after 10:00 p.m. Because CNEL accounts for human sensitivity to sound, the CNEL 24-hour noise level is always a higher number than the actual 24-hour average. L_{eq} is the average noise level on an energy basis (i.e., acoustic energy of the sound) for any specific time period. The L_{eq} for one hour is the energy average noise level during the hour. L_{eq} can be thought of as the level of a continuous noise, which has the same energy content as the fluctuating noise level. The equivalent noise level is expressed in terms of dBA.

Noise generally is defined as unwanted sound. The degree to which noise can impact the human environment ranges from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise, the amount of background noise present before the intruding noise, the nature of work or human activity that is exposed to the noise source.

Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 dBA. A change of at least 5 dBA would be noticeable and would likely evoke a community reaction. A 10-dBA increase is subjectively heard as a doubling in loudness and would cause a community response.

Noise levels decrease as the distance from the noise source to the receiver increases. Noise generated by a stationary noise source, or "point source," will decrease by approximately 6 dBA over hard surfaces (e.g., pavement) and 7.5 dBA over soft surfaces (e.g., grass) for each doubling of the distance. For example, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, then the noise level would be 83 dBA at a distance of 100 feet from the noise source, 77 dBA at a distance of 200 feet, and so on. Noise generated by a mobile source will decrease by approximately 3 dBA over hard surfaces and 4.5 dBA over soft surfaces for each doubling of the distance.

Generally, noise is most audible when traveling by direct line-of-sight. Barriers, such as walls, berms, or buildings that break the line-of-sight between the source and the receiver greatly reduce noise levels from the source since sound can only reach the receiver by bending over the top of the barrier (diffraction).

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as blasting, pile driving, and heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the affect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.

High levels of vibration may cause physical personal injury or damage to buildings. However, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that may affect concentration or disturb sleep. In addition, high levels of vibration may damage fragile buildings or interfere with equipment that is highly sensitive to vibration (e.g., electron microscopes).

In contrast to noise, vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 Vdb RMS or lower, well below the threshold of perception for humans which is around 65 Vdb RMS. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

Would the project result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standard of other agencies?

Less-Than-Significant Impact. The City of Los Angeles has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise sensitive land uses. Section 41.40 (Noise Due to Construction, Excavation Work – When Prohibited) of the Los Angeles Municipal Code (LAMC) indicates that no construction or repair work shall be performed between the hours of 9:00 p.m. and 7:00 a.m., since such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment or other place of residence. The provisions of this section do not apply to construction, repair or excavation work done within any district zoned for manufacturing or industrial uses. The proposed project is located within an industrial zone near the Port of Los Angeles and the time limitations do not apply.

Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools) of the LAMC also specifies the maximum noise level for powered equipment or powered hand tools. Any powered equipment or hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet is prohibited.

However, this noise limitation does not apply where compliance is technically infeasible. Technically infeasible means the above noise limitation cannot be met despite the use of mufflers, shields, sound barriers and/or any other noise reduction device or techniques during the operation of equipment.

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, and senior care facilities would each be considered noise- and vibration-sensitive and may warrant unique measures for protection from intruding noise. Sensitive receptors near the project site include the following:

- Residences in Wilmington, the nearest located 1,630 feet to the northwest of the activity on Fries Avenue; and
- Newmark's Yacht Centre with live-aboard yachts located 2,500 feet to the east of the activity on Avalon Boulevard.

Existing noise levels at these locations were recorded on November 12, 2013. Measurements were used to establish existing ambient noise conditions, provide a baseline for evaluating construction impacts, and assess operational impacts. As shown in **Table 1**, the daytime existing ambient noise level was 53.9 at dBA L_{eq} in the residential area and 55.6 dBA L_{eq} at the Newmark's Yacht Centre.

TABLE1: EXISTING NOISE LEVELS

Location	**Sound Levels (dBA, L_{eq})**
Wilmington Residences	53.9
Newmark's Yacht Centre	55.6

SOURCE: Terry A. Hayes Associates Inc., 2013.

Construction Noise

A significant impact related to construction activity would occur if:

- Construction activities lasting more than one day would exceed existing ambient exterior noise levels by 10 dBA or more at a noise-sensitive use; and/or
- Construction activities lasting more than ten days in a three-month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive use.

The proposed project would last for more than ten days in a three-month period. Therefore, a significant impact would occur if construction noise levels exceed existing exterior ambient noise levels by 5 dBA.

Construction activity would temporarily increase ambient noise levels on an intermittent basis. Noise levels would fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers. Construction activities typically require the use of numerous pieces of noise-generating equipment. Typical noise levels from various types of equipment that may be used during construction are listed in **Table 2**. The table shows noise levels at distances of 50 and 100 feet from the construction noise source. When various activities are aggregated, it is anticipated that roadway construction activity generates a noise level of82 dBA L_{eq} at 100 feet. This reference noise level was used to estimate noise levels at sensitive receptors by (1) making a distance adjustment to the construction source noise level; and (2) logarithmically adding the adjusted construction noise source level to the existing ambient noise level.

TABLE 2: MAXIMUM NOISE LEVELS OF COMMON CONSTRUCTION MACHINES

	Noise Level (L_{eq}, dBA)	
Noise Source	**50 Feet**	**100 Feet**
Front Loader	80	74
Trucks	89	83
Jackhammers	90	84
Generators	77	71
Back Hoe	84	78
Tractor	88	82
Scraper/Grader	87	81
Paver	87	81

SOURCE: City of Los Angeles, *L.A. CEQA Thresholds Guide*, 2006.

Table 3 presents the estimated incremental increase in noise levels associated with construction activity at sensitive receptor locations. Construction noise would not exceed the 5-dBA significance threshold at the analyzed sensitive land uses. Therefore, the proposed project would result in a less-than-significant impact related to construction noise.

TABLE 3: CONSTRUCTION NOISE LEVELS

Sensitive Receptor	Distance (feet)	Existing L_{eq} (dBA)	Projected Construction-Related L_{eq} (dBA)	Incremental Increase
Residences to the North	1,630	53.9	54.8	0.9
Newmark's Yacht Centre	2,500	55.6	57.9	2.3

SOURCE: Terry A. Hayes Associates Inc., 2013.

Operational Noise

The operational noise analysis assessed mobile and stationary sources. Based on the *CEQA Thresholds Guide*, a significant impact related to operational activity would occur if:

- Ambient noise levels measured at the property line of the residences increase by 3dBA CNEL to or within 70 CNEL for "normally unacceptable" or above 70 dBA CNEL for "clearly unacceptable" categories or any 5-dBA or more increase in noise level. For the Wilmington Recreation Center, an impact would result if the ambient noise level measured at the property line of increases by 3 dBA CNEL to or within 67 CNEL for "normally unacceptable" or above 72 dBA CNEL for "clearly unacceptable" categories or any 5-dBA or more increase in noise level.

Mobile Noise. The proposed project would not generate new vehicle trips but would reroute traffic on the surface street network. The Federal Highway Administration RD-77-108 noise calculation formulas were used to predict mobile source noise levels under existing conditions and in years 2017 and 2038. The results are in**Tables4** and **5**. The greatest project-related noise increase in 2017 or 2038 would be 0.8 dBA CNEL and would occur along Harry Bridges Boulevard west of Fries Avenue in 2017. The roadway noise increase attributed to the proposed project would be less than the 3-dBA CNEL increment at all analyzed segments. Therefore, the proposed project would result in a less-than-significant impact related to project-level mobile noise levels.

The Harry Bridges Boulevard west of Fries Avenue segment would experience a 5.1-dBA CNEL increase in noise levels when comparing year 2038 to existing conditions. The project-related increase would be 0.3 dBA. The majority of increased noise would be related to cumulative growth and the proposed project would not significantly contribute to a cumulatively considerable noise impact.

TABLE 4: ESTIMATED COMMUNITY NOISE EQUIVALENT LEVEL (2017)

Time Period and Roadway Segment	Estimated dBA, CNEL				
	Existing	Future Without Project (2017)	Future With Project (2017)	Project Increase	Cumulative Increase
AM Peak Hour					
Harry Bridges Boulevard west of Fries Avenue	73.5	74.7	75.5	0.8	2.0
Harry Bridges Boulevard east of Avalon Boulevard	71.9	74.2	74.9	0.7	3.0
Fries Avenue north of Harry Bridges Boulevard	62.5	61.3	61.3	0.0	(1.2)
Avalon Boulevard north of Harry Bridges Boulevard	67.3	65.4	65.4	0.0	(1.9)
PM Peak Hour					
Harry Bridges Boulevard west of Fries Avenue	75.6	77.6	77.9	0.3	2.3
Harry Bridges Boulevard east of Avalon Boulevard	72.7	77.0	77.3	0.3	4.6
Fries Avenue north of Harry Bridges Boulevard	63.4	63.0	63.0	0.0	(0.4)
Avalon Boulevard north of Harry Bridges Boulevard	65.9	65.4	65.4	0.0	(0.4)
Midday Peak Hour					
Harry Bridges Boulevard west of Fries Avenue	73.3	75.1	75.5	0.4	2.2
Harry Bridges Boulevard east of Avalon Boulevard	74.3	74.7	75.1	0.4	0.8
Fries Avenue north of Harry Bridges Boulevard	63.4	63.0	63.0	0.0	(0.4)
Avalon Boulevard north of Harry Bridges Boulevard	69.7	68.9	68.9	0.0	(0.8)

SOURCE: Terry A. Hayes Associates Inc., 2013 and *Traffic Study for the Avalon and Fries Street Segments Closure Project*, November, 2013.

TABLE 5: ESTIMATED COMMUNITY NOISE EQUIVALENT LEVEL (2038)

Time Period and Roadway Segment	Estimated dBA, CNEL Existing	Future Without Project (2038)	Future With Project (2038)	Project Increase	Cumulative Increase
AM Peak Hour					
Harry Bridges Boulevard west of Fries Avenue	73.5	78.3	78.6	0.3	5.1
Harry Bridges Boulevard east of Avalon Boulevard	71.9	75.2	75.8	0.6	3.9
Fries Avenue north of Harry Bridges Boulevard	62.5	61.8	61.8	0.0	(0.7)
Avalon Boulevard north of Harry Bridges Boulevard	67.3	68.2	68.2	0.0	0.9
PM Peak Hour					
Harry Bridges Boulevard west of Fries Avenue	75.6	78.6	78.8	0.2	3.2
Harry Bridges Boulevard east of Avalon Boulevard	72.7	73.6	74.0	0.4	1.3
Fries Avenue north of Harry Bridges Boulevard	63.4	63.0	63.0	0.0	(0.4)
Avalon Boulevard north of Harry Bridges Boulevard	65.9	66.0	66.1	0.1	0.2
Midday Peak Hour					
Harry Bridges Boulevard west of Fries Avenue	73.3	77.2	77.4	0.2	4.1
Harry Bridges Boulevard east of Avalon Boulevard	74.3	76.6	77.1	0.5	2.8
Fries Avenue north of Harry Bridges Boulevard	63.4	63.0	63.0	0.0	(0.4)
Avalon Boulevard north of Harry Bridges Boulevard	69.7	71.0	71.1	0.1	1.4

SOURCE: Terry A. Hayes Associates Inc., 2013 and *Traffic Study for the Avalon and Fries Street Segments Closure Project*, November, 2013.

Stationary Noise. The proposed project includes a grade crossing protection gate on the north side of the rail line along Fries Avenue that would be located approximately 13 feet from the existing rail track and 26 feet from the new rail track. Bells will sound when the gate is activated by a passing train. The location of this new gate would not be significantly different from the existing gate location from the perspective of a noise source. The 13-foot difference would not change the existing CNEL at any of the identified sensitive receptors. Therefore, the proposed project would result in a less-than-significant impact related to stationary noise.

Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less-Than-Significant Impact. Construction activities can generate varying degrees of vibration, depending on the construction procedures and the type of construction equipment used. The operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. Unless heavy construction activities are conducted extremely close (within a few feet) to the neighboring structures, vibrations from construction activities rarely reach levels that damage structures. Typical vibration levels associated with construction equipment are provided in **Table 6**. Heavy equipment (e.g., a large bulldozer) generates vibration levels of 0.089 inches per second peak particle velocity (PPV) at a distance of 25 feet.

TABLE 6:VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT	
Equipment	**PPV at 25 Feet (Inches/Second)**
Large Bulldozer	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

According to the Federal Transit Administration (FTA)*Traffic Noise and Vibration Impact Assessment*, the primary concern regarding construction vibration relates to potential damage effects. The construction vibration damage criterion for buildings that are extremely susceptible to vibration damage is 0.12 inches per second PPV. This is the strictest PPV vibration threshold established by the FTA. The Port Archives Building would be the nearest building to heavy equipment at approximately 30 feet. The typical vibration level from heavy equipment at this distance would be approximately 0.07 PPV. Regardless of the degree of building sensitivity (e.g., historic or reinforced), heavy equipment vibration would not exceed the FTA damage criteria. Therefore, the proposed project would result in a less-than-significant impact related to construction vibration.

The proposed project would not include significant stationary sources of vibration, such as heavy equipment operations. Operational vibration in the project vicinity would generated by vehicular travel on the local roadways. According to the FTA *Transit Noise and Vibration Impact Assessment*, significant vibration impact from rubber tire-fitted vehicles is extremely rare. Vehicle suspension design and rubber tires act as a highly effective barrier to vibration transmission from the vibration-generating carriage and the ground. Therefore, the proposed project would result in a less-than-significant impact related to operational vibration.

Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-Than-Significant Impact. Potential permanent increases in ambient noise levels were assessed above for on-road vehicles and stationary sources. As discussed above, operational noise level would not exceed the significance threshold. Therefore, the proposed project would result in a less-than-significant impact related to substantial permanent increase in ambient noise levels.

Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-Than-Significant Impact. Potential temporary increases in ambient noise levels were assessed above for construction activities. As discussed above, construction activity would not increase ambient noise levels by more than 5dBA. Therefore, the proposed project would result in a less-than-significant impact related to a temporary increase in noise levels.

For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The nearest public airport to the project site is the Long Beach Airport, located approximately 6.5 miles to the northeast. The proposed project is not located within two miles of a public airport. The proposed project would not expos construction workers to excessive noise levels associated with public airport activities. Therefore, the proposed project would not result in an impact related to exposure to noise generated at public airports.

For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The proposed project is not located within two miles of a private airstrip. The proposed project would not expose construction workers to excessive noise levels associated with any private airstrip activities. Therefore, the proposed project would not result in an impact related to exposure to noise generated at private airports.

NOISE APPENDIX

Mobile Source Noise Levels - AM Peak Hour

Harry Bridges West of Fries	TOT. # VEH.	ROW CNEL (dBA)
Existing	1050	73.5
2017 Base	1361	74.7
2017 Cumulative + Project	1634	75.5
2038 Base	3145	78.3
2038 Cumulative + Project	3364	78.6

Harry Bridges East of Avalon		(dBA)
Existing	712	71.9
2017 Base	1221	74.2
2017 Cumulative + Project	1451	74.9
2038 Base	1546	75.2
2038 Cumulative + Project	1778	75.8

Fries North of Harry Bridges		(dBA)
Existing	82	62.5
2017 Base	63	61.3
2017 Cumulative + Project	63	61.3
2038 Base	70	61.8
2038 Cumulative + Project	70	61.8

Avalon North of Harry Bridges		(dBA)
Existing	249	67.3
2017 Base	163	65.4
2017 Cumulative + Project	163	65.4
2038 Base	305	68.2
2038 Cumulative + Project	310	68.2

Mobile Source Noise Levels - PM Peak Hour

Harry Bridges West of Fries	TOT. # VEH.	ROW CNEL (dBA)
Existing	1678	75.6
2017 Base	2653	77.6
2017 Cumulative + Project	2858	77.9
2038 Base	3394	78.6
2038 Cumulative + Project	3548	78.8

Harry Bridges East of Avalon		(dBA)
Existing	858	72.7
2017 Base	2343	77.0
2017 Cumulative + Project	2526	77.3
2038 Base	1064	73.6
2038 Cumulative + Project	1178	74.0

Fries North of Harry Bridges		(dBA)
Existing	102	63.4
2017 Base	92	63.0
2017 Cumulative + Project	92	63.0
2038 Base	93	63.0
2038 Cumulative + Project	93	63.0

Avalon North of Harry Bridges		(dBA)
Existing	179	65.9
2017 Base	161	65.4
2017 Cumulative + Project	161	65.4
2038 Base	183	66.0
2038 Cumulative + Project	190	66.1

Mobile Source Noise Levels - Midday

Harry Bridges West of Fries	TOT. # VEH.	ROW CNEL (dBA)
Existing	997	73.3
2017 Base	1499	75.1
2017 Cumulative + Project	1667	75.5
2038 Base	2419	77.2
2038 Cumulative + Project	2548	77.4

Harry Bridges East of Avalon		(dBA)
Existing	1256	74.3
2017 Base	1358	74.7
2017 Cumulative + Project	1500	75.1
2038 Base	2128	76.6
2038 Cumulative + Project	2362	77.1

Fries North of Harry Bridges		(dBA)
Existing	102	63.4
2017 Base	92	63.0
2017 Cumulative + Project	92	63.0
2038 Base	93	63.0
2038 Cumulative + Project	93	63.0

Avalon North of Harry Bridges		(dBA)
Existing	433	69.7
2017 Base	358	68.9
2017 Cumulative + Project	358	68.9
2038 Base	579	71.0
2038 Cumulative + Project	598	71.1

APPENDIX C

Traffic Report
Fehr & Peers

February 2014

DRAFT
AVALON AND FRIES STREETS SEGMENTS CLOSURE

PROJECT TRAFFIC REPORT

LOS ANGELES, CALIFORNIA

FEBRUARY 2014

PREPARED FOR

AECOM

PREPARED BY

FEHR & PEERS

DRAFT
TRAFFIC STUDY
FOR THE
AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT

February 2014

Prepared for:

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Ref: SM12-2556.00

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1. Introduction

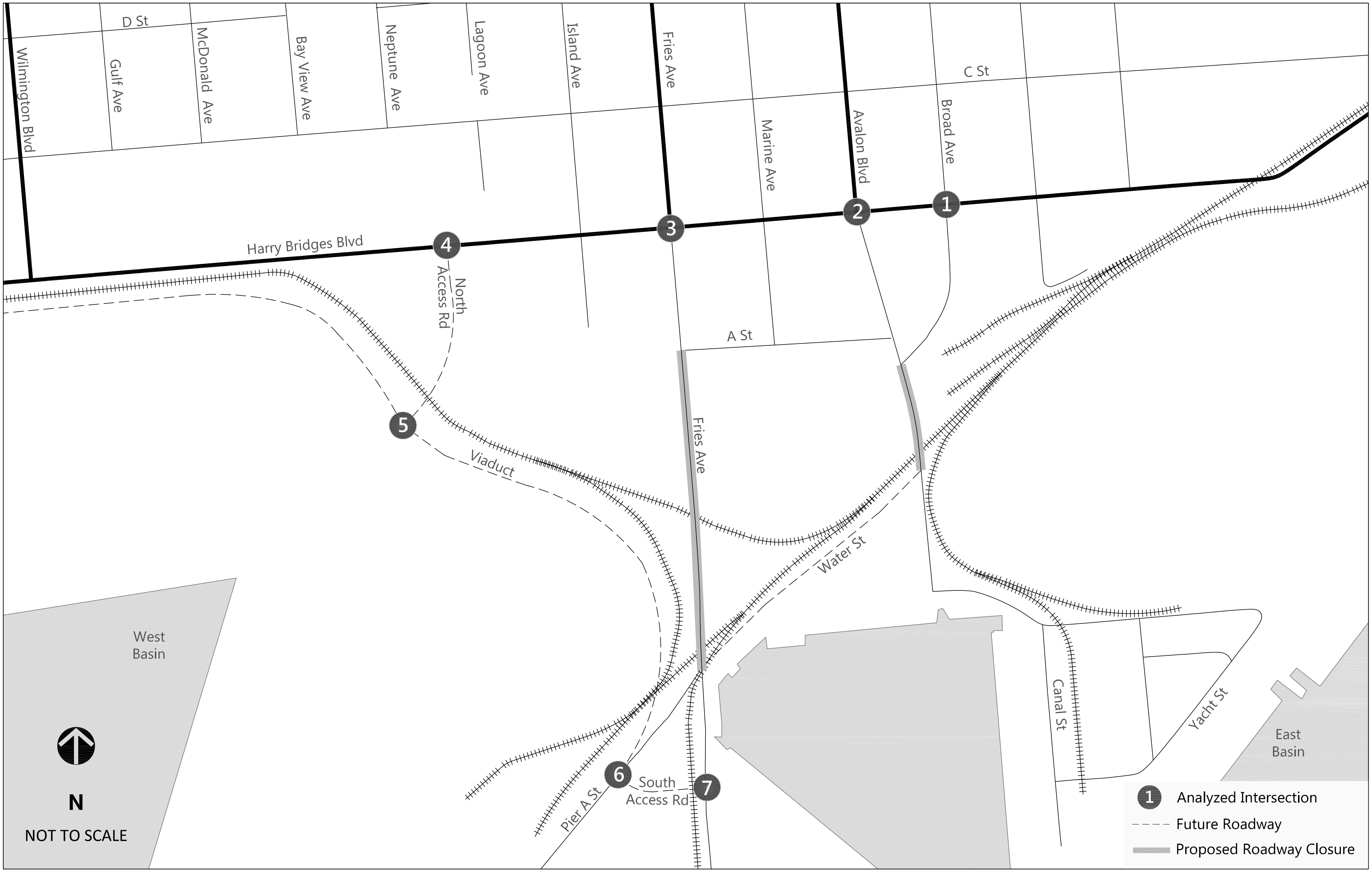
Fehr & Peers conducted a traffic study to evaluate the potential traffic impacts of the proposed closure of Fries Avenue and Avalon Boulevard between Water Street and "A" Street within the Port of Los Angeles due to operational changes with train assembly in the vicinity and the requirement to comply with CPUC regulations regarding duration of railroad-related roadway blockages. This report identifies the base data and assumptions, explains the methodologies used, and summarizes the findings of the study. The traffic impact analysis conducted for this report includes analysis of existing (2012) conditions, interim year (2017) conditions and cumulative (2038) conditions.

Project Description

Due to operational changes associated with train assembly in the vicinity of the Avalon Boulevard and Fries Street grade crossings, it may not be possible to meet the requirement to comply with CPUC General Order 135, which limits grade crossing blockages due to stopped or switching train cars to 10 minutes. For this reason, the Port of Los Angeles proposes to close segments of two streets to public vehicular circulation:

- Fries Avenue between A Street and Pier A Street (closing two grade crossings and approximately 1,337 feet of street to the public); and
- Avalon Boulevard between south of Broad Avenue and south of the existing grade crossing (closing one grade crossing and approximately 438 feet of street to the public).
- The currently planned lane configuration at two new intersections along the South Wilmington Grade Separation will be modified slightly, resulting in a second westbound left-turn lane from Harry Bridges Boulevard onto the North Access Road; from the North Access Road toward the relocated TraPac gate a second southbound right-turn lane will be provided and the eastbound approach will be modified to provide one left-turn lane and one left/through lane.

The affected street segments and the limits of the proposed closures are depicted in Figure 1. The construction schedule for the closures is tied to the opening of the South Wilmington Grade Separation (SWGS, shown in Figure 1) Project, which is scheduled to be completed in December 2014 and open in January 2015. Previous studies assumed that the construction of the SWGS would occur, but that it would be constructed slightly east of where it is now being built, aligned with Fries Avenue. The SWGS, currently under construction, connects with Harry Bridges Boulevard between Neptune Avenue and Lagoon Avenue. The SWGS will provide unobstructed access to the waterfront, and will carry the traffic that now traverses the street segments that are proposed for closure including traffic related to the nearby terminals. This traffic study analyzes the impacts of the proposed project.



FEHR & PEERS

Nov 04, 2013

STUDY AREA AND ANALYZED INTERSECTIONS

FIGURE 1

Study Scope

The scope of work for this study was developed in conjunction with staff of the Port of Los Angeles and the Los Angeles Department of Transportation (LADOT). The base assumptions and technical methodologies were discussed as part of the study approach. The study analyzes potential project-related traffic impacts on the adjacent street system for Interim Year (2017) and Cumulative conditions (2038). Because the project is conditioned upon the completion of the ongoing South Wilmington Grade Separation Project, which changes the traffic flow in the area and is under construction, existing (2012) plus project analysis is not presented. The following traffic scenarios were analyzed for the weekday AM peak hour, midday peak hour and PM peak hour:

- Existing (Year 2012) Conditions – The analysis of existing Year 2012 traffic conditions provides existing baseline information at the time the analysis was begun. The existing conditions analysis includes an assessment of streets, traffic volumes, and operating conditions. Because the proposed project would not be implemented by the Port of Los Angeles until after the SWGS is completed, however, this study does not include analysis of a strict Existing plus Project scenario. Rather, potential project impacts are assessed against projected conditions under two future baselines: a near-term interim year (2017) and cumulative (2038) conditions. Section 15151 of the CEQA Guidelines states that "An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences." In the decision on the Neighbors for Smart Rail v. Exposition Metro Line (S202828 - 8.5.13.) case, the California Supreme Court agreed with the plaintiff that existing conditions should normally serve as the baseline but allowed that other baselines may be used under certain circumstances. The court stated that "A departure from this norm can be justified by substantial evidence that an analysis based on existing conditions would tend to be misleading or without information value to the EIR users." For this project, analysis of potential project impacts against existing conditions would not provide meaningful information to the public or to the decision-makers because the proposed closure of the subject portions of Fries Avenue and Avalon Boulevard, which are the two access routes to the Mormon Island area of the Port, would not be implemented until the SWGS has been completed and the main gate to the TraPac Terminal has been relocated. At that time, traffic patterns in the immediate vicinity will differ from those that now prevail. Thus, analysis of potential project impacts against the existing baseline would not be meaningful.

- Cumulative (2017) Conditions and Cumulative (2038) Conditions – Future traffic conditions are projected without the proposed project in 2017 and in 2038. While the proposed project is planned for construction in 2016, the following year was chosen for analysis because that is the closest horizon year for which projections from the Port's travel demand forecasting model are available and because if offers a more conservative estimation of traffic volumes in the area.. The objective of this phase of analysis is to project future traffic growth and operating conditions that could be expected to result from ambient growth and known cumulative projects in the vicinity. These traffic forecasts are used to establish future operating conditions without implementation of the project that provide the basis for determining project impacts.

- Cumulative (2017) plus Project Conditions and Cumulative (2038) plus Project Conditions – This is an analysis of future traffic conditions with traffic shifts expected from the proposed project in future years 2017 and 2038. The objective of this analysis is to develop the traffic forecasts of the proposed project that are then used to identify potential impacts.

The traffic study assesses potential project impacts during the weekday AM, midday and PM peak hours.

As illustrated in Figure 1, seven intersections were identified for analysis:

1. Harry Bridges Boulevard & Broad Avenue (signalized) – Existing
2. Harry Bridges Boulevard & Avalon Boulevard (signalized) – Existing
3. Harry Bridges Boulevard & Fries Avenue (signalized) – Existing
4. Harry Bridges Boulevard & North Access Road (signalized) – Future
5. North Access Road & TraPac Access/Viaduct (signalized) – Future
6. South Access Road & Pier A Street/Viaduct (signalized) – Future
7. South Access Road & Fries Avenue (all-way stop-controlled) – Future

The unsignalized future intersection was analyzed to determine whether it would meet traffic signal warrants in accordance with LADOT policies and procedures.

Organization of Report

This report is divided into six chapters, including this introduction. Chapter 2 describes the existing conditions in the study area, including a summary of existing traffic volumes and an assessment of operating conditions. The methodologies used to develop traffic forecasts for the cumulative base and cumulative plus project and the forecasts themselves are included in Chapter 3. Chapter 4 presents an assessment of potential intersection traffic impacts associated with the proposed project. The results of the regional transportation system analysis are provided in Chapter 5. Chapter 6 summarizes the key findings and conclusions of the study. Appendices to this report include details of the technical analysis.

2. Existing Conditions

A comprehensive data collection effort was undertaken to develop a detailed description of existing conditions in the study area. The assessment of conditions relevant to this study includes an inventory of the street and highway systems, traffic volumes on these facilities, and operating conditions at key intersections. A detailed description of these elements in presented in this chapter.

Existing Highway and Street System

The project site is inside the Port of Los Angeles. Primary regional access to the project area is provided by the Harbor Freeway (I-110), located approximately one-half mile west of Avalon Boulevard. Local access to the project site is provided by a well-defined grid of arterial and collector roads. There is no public transit service that operates on the portions of Avalon Boulevard or Fries Avenue that are proposed for closure. The primary roadway facilities in the project study area are:

- <u>Harry Bridges Boulevard</u> – Harry Bridges Boulevard is classified as a Major Class I Highway that runs east-west approximately one-quarter mile north of the proposed street closures. This four-lane arterial links Figueroa Street and John S. Gibson Boulevard with Alameda Street, and provides a connection for local and regional travel to the community of Wilmington and parts of the Port of Los Angeles. Other than the Wilmington Waterfront Park, which lies on the north side of Harry Bridges Boulevard for several blocks, the adjoining land uses are industrial.

- <u>Avalon Boulevard</u> – Avalon Boulevard provides north-south access between the community and the Port of Los Angeles. North of Harry Bridges Boulevard it is classified as a Major Highway Class II; between Harry Bridges Boulevard and the boundary between the Wilmington community plan area and the Port of Los Angles is classified as a Collector street. North of A Street, Avalon Boulevard provides four travel lanes with bicycle lanes and is adjoined by a mix of land uses. South of A Street, it provides two travel lanes through industrial land uses except for the Banning's Landing community center, which lies on Water Street at the southern terminus of Avalon Boulevard.

- <u>Broad Avenue</u> – Broad Avenue is classified as a Secondary Highway that provides north-south access between the community and the Port of Los Angeles. North of A Street, Broad Avenue provides four travel lanes with bicycle lanes and, near the project site, is lined with a mix of commercial and industrial land uses. South of Harry Bridges Boulevard Broad Avenue curves westward and joins with Avalon Boulevard. It provides two travel lanes near the project site. A future park, the Avalon Triangle Park, is planned by the Port in the area bounded by Harry Bridges Boulevard, Avalon Boulevard and Broad Avenue.

- <u>A Street</u> – A Street is classified as a Secondary Highway that provides east-west access for two blocks between Avalon Boulevard and Fries Avenue. It is a two-lane roadway with industrial land uses.

- Pier A Street/Water Street – Pier A Street and Water Street are two-lane roadways within the Port of Los Angeles which connect with each other and provide access to Banning's Landing and the adjacent waterfront area near the southern terminus of Avalon Boulevard. Near Fries Avenue, Water Street becomes Pier A Street and provides access to heavy industrial uses and terminals.

Diagrams of the existing lane configurations at the analyzed intersections are provided in Appendix A.

Existing Traffic Volumes and Levels of Service

This section presents the existing peak hour turning movement traffic volumes for the analyzed intersections, describes the methodology used to assess the traffic conditions at each intersection, and analyzes the resulting operating conditions at each, indicating volume-to-capacity (V/C) ratios and level of service (LOS).

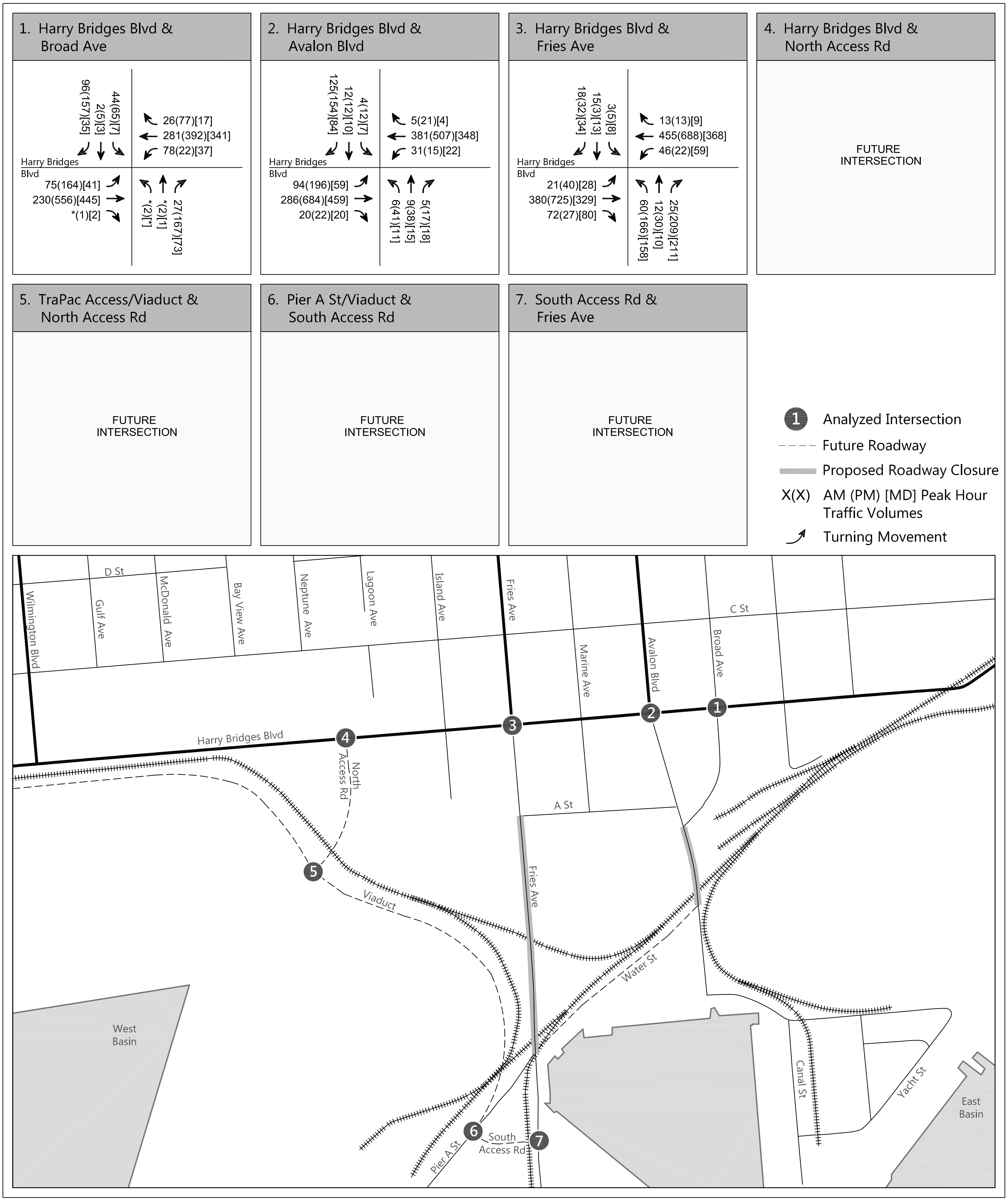
Existing Traffic Volumes

New classified traffic counts were conducted during the weekday morning peak (between 7:00 and 10:00 AM), midday and afternoon peak periods (between 4:00 and 7:00 PM) in November 2012 (existing Intersections 1, 2 and 3). Vehicle counts for the study intersections include the classification of passenger cars and large trucks. A Passenger Car Equivalent (PCE) factor of 2.0 was applied to semi-tractor/trailer combinations and a PCE factor of 1.1 was applied to smaller trucks to convert the traffic counts in to PCEs. The existing weekday AM, midday and OM peak hour traffic volumes at the analyzed intersections (the highest one-hour volume observed during each of the analyzed peak periods) are presented in Figure 2. Traffic count data sheets are provided in Appendix B.

Level of Service Methodology

LOS is a qualitative measure used to describe the condition of traffic flow, ranging from excellent "free-flow" conditions at LOS A to overloaded "stop-and-go" conditions at LOS F. LOS D is typically considered to be the minimum desirable level of service in urban areas.

Consistent with the *Traffic Study Policies and Procedures* (LADOT, June 2013), this study used the Critical Movement Analysis (CMA) method of intersection capacity calculation to analyze the LOS at the existing and future signalized intersections. The CMA methodology determines the V/C ratio of an intersection based on the number of approach lanes, the traffic signal phasing and the traffic volumes. The V/C ratio is then used to find the corresponding LOS based on the definitions in Table 1. All three analyzed intersections are currently controlled by traffic signals and are controlled by the City's Automated Traffic Surveillance and Control (ATSAC) system. In accordance with LADOT procedures, a capacity increase of 10% was applied to reflect the benefits of ATSAC and Adaptive Traffic Control Systems (ATCS). The CMA worksheet developed by LADOT was used to implement the CMA methodology in this study.



EXISTING CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

FIGURE 2

FEHR PEERS

Nov 07, 2013

TABLE 1
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

Level of Service	Intersection Capacity Utilization	Definition
A	0.000-0.600	EXCELLENT. No Vehicle waits longer than one red light and no approach phase is fully used.
B	0.601-0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701-0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801-0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901-1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Source: *Transportation Research Circular No. 212, Interim Materials on Highway Capacity,* Transportation Research Board, 1980.

The "All-Way Stop-Controlled" methodology from Highway Capacity Manual was used to determine the average vehicle control delay (in seconds) for the all-way stop-controlled study intersection (Study Intersection 7). The two-way stop-controlled methodology relates intersection LOS to the average delay experienced by motorists traveling through the intersection as a whole. The corresponding levels of service are defined by the list in Table 2.

Existing Peak Hour Levels of Service

The existing weekday peak hour turning movement volumes presented in Figure 2 were used in conjunction with the LOS methodology described above to determine existing operating conditions at each of the study intersections. LOS calculation worksheets are included in Appendix C.

Table 3 summarizes the existing weekday peak hour V/C ratios and corresponding LOS at the three existing study intersections, and indicates that each is currently operating at a good level of service during each analyzed peak hour (LOS A).

TABLE 2
LEVEL OF SERVICE DEFINITIONS FOR STOP-CONTROLLED INTERSECTIONS

Level of Service	Average Control Delay (seconds/vehicle)
A	≤ 10.0
B	> 10.0 and ≤ 15.0
C	> 15.0 and ≤ 25.0
D	> 25.0 and ≤ 35.0
E	> 35.0 and ≤ 50.0
F	> 50.0

Source: *Highway Capacity Manual,* Transportation Research Board, 2000.

TABLE 3
EXISTING INTERSECTION LEVEL OF SERVICE ANALYSIS

NO.	INTERSECTION	PEAK HOUR	V/C	LOS
1	Harry Bridges Boulevard & Broad Avenue *Signalized*	AM	0.092	A
		MD	0.115	A
		PM	0.287	A
2	Harry Bridges Boulevard & Avalon Boulevard *Signalized*	AM	0.168	A
		MD	0.131	A
		PM	0.298	A
3	Harry Bridges Boulevard & Fries Avenue *Signalized*	AM	0.116	A
		MD	0.176	A
		PM	0.292	A

Note: A v/c credit of 0.100 has been applied to reflect the combined benefits of ATSAC and ATCS at these intersections

3. Traffic Projections

Traffic conditions for the cumulative analysis years were estimated by adding traffic that would be associated with regional traffic growth and traffic increases resulting from increases in Port throughput to baseline conditions in the Port area. Local traffic growth was forecast based on a computerized traffic analysis tool known as the Port Area Travel Demand Model, which is based on the SCAG 2012 Regional Transportation Plan model. The Port Area Travel Demand Model includes regional traffic growth as well as growth for the Port and the local area, and supplements the growth factors described below.

Background traffic growth occurs as a result of regional growth in employment, population, schools, and other activities. Most of the past, present, and reasonably foreseeable future projects are covered by the growth forecasts of the Port Area Travel Demand Model. Other local projects are not included in the SCAG Regional Model and were thus separately accounted for in the Port Travel Demand Model (e.g., the San Pedro Waterfront Project). All Port and Port of Long Beach projected container and non-container terminal traffic growth are included in the Port Travel Demand Model.

The background future intersection traffic volumes (which account for cumulative non-project growth) were developed based on SCAG socioeconomic projections for the years 2017 and 2035, with amendments as reflected in the Port Area Travel Demand Model. The forecast traffic volumes used in this study were developed by Raju Associates, Inc. in coordination with Port staff.

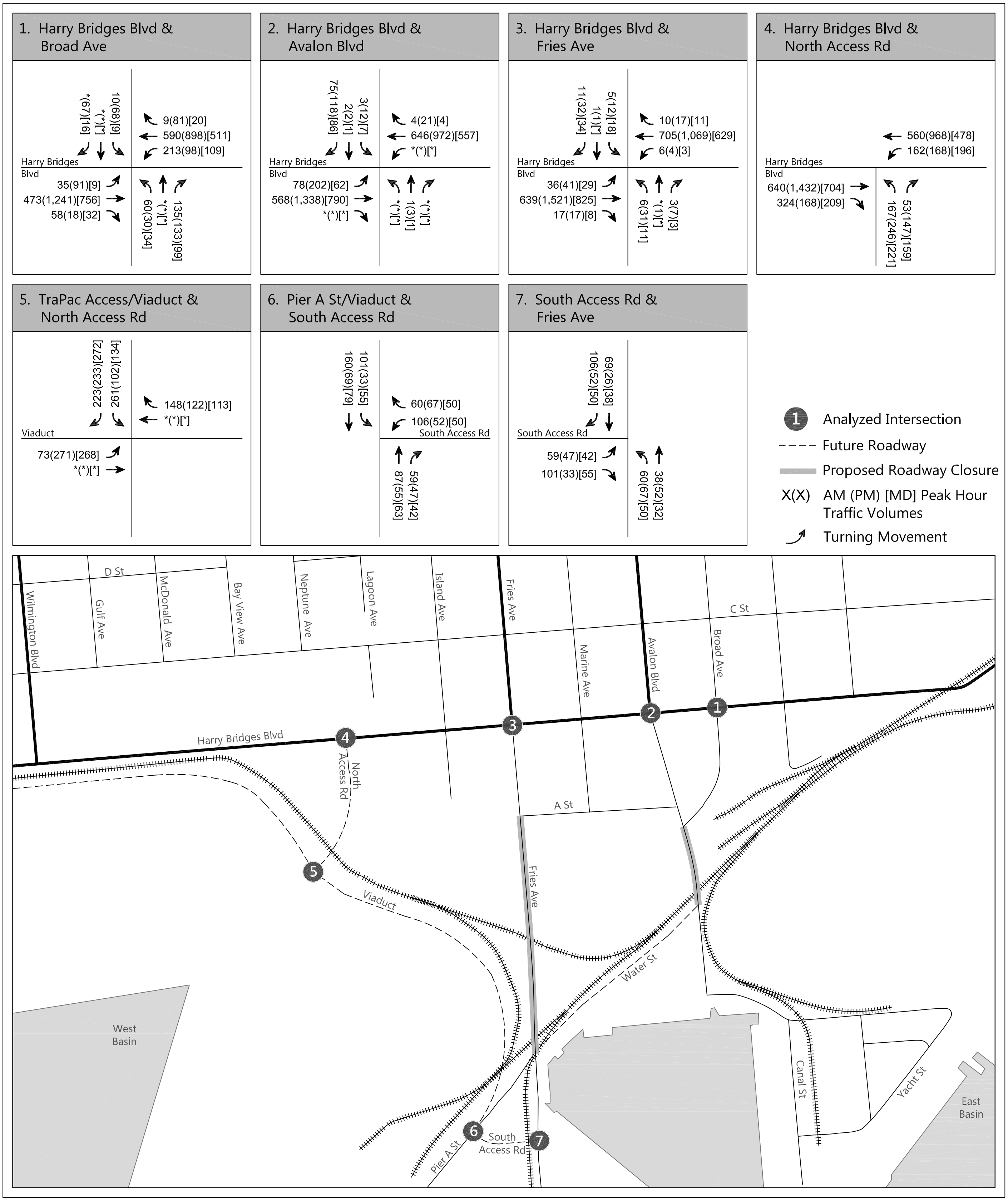
The local street network in the Port Area Travel Demand Model was modified to represent conditions with the proposed project in place for each horizon year and run to develop cumulative plus project traffic forecasts. The proposed project would not generate new traffic on the surrounding street system but would result in localized traffic shifts around the project site. Forecast traffic volumes for Cumulative (2017) conditions and Cumulative (2017) plus project conditions are presented in Figures 3 and 4, respectively. Forecast traffic volumes for Cumulative (2038) conditions and Cumulative (2038) plus project conditions are presented in Figures 5 and 6, respectively.

Future Street Improvements

The South Wilmington Grade Separation (SWGS) project is current under construction and will create an unobstructed access route between the Wilmington community and the regional street network and the areas of the Port south of Harry Bridges Boulevard. Four new intersections will be created once this background project is completed (Study Intersections 4 through 7). The planned lane configuration of each is shown in Appendix A.

As part of the proposed project, changes would be made to two of these four new intersections.

- As currently planned, the westbound approach to the future intersection of Harry Bridges Boulevard & North Access Road (Study Intersection 4) will provide one left-turn lane and two through lanes. As part of the proposed project, if approved, that intersection would be modified to include a second westbound left-turn lane.



CUMULATIVE (2017) BASE CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

FEHR & PEERS

Dec 17, 2013
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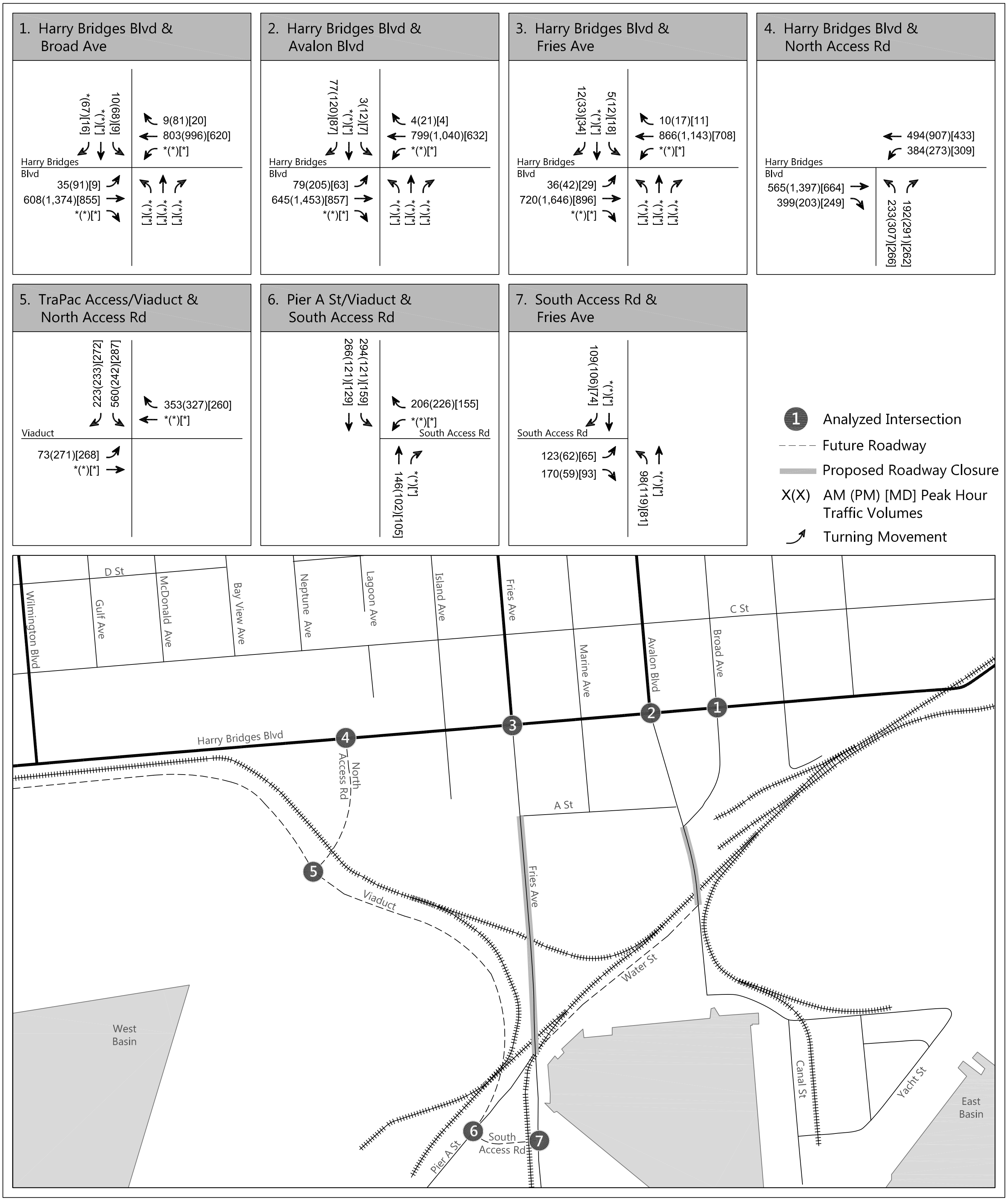
FIGURE 3



CUMULATIVE (2017) PLUS PROJECT CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

FEHR & PEERS

Dec 17, 2013
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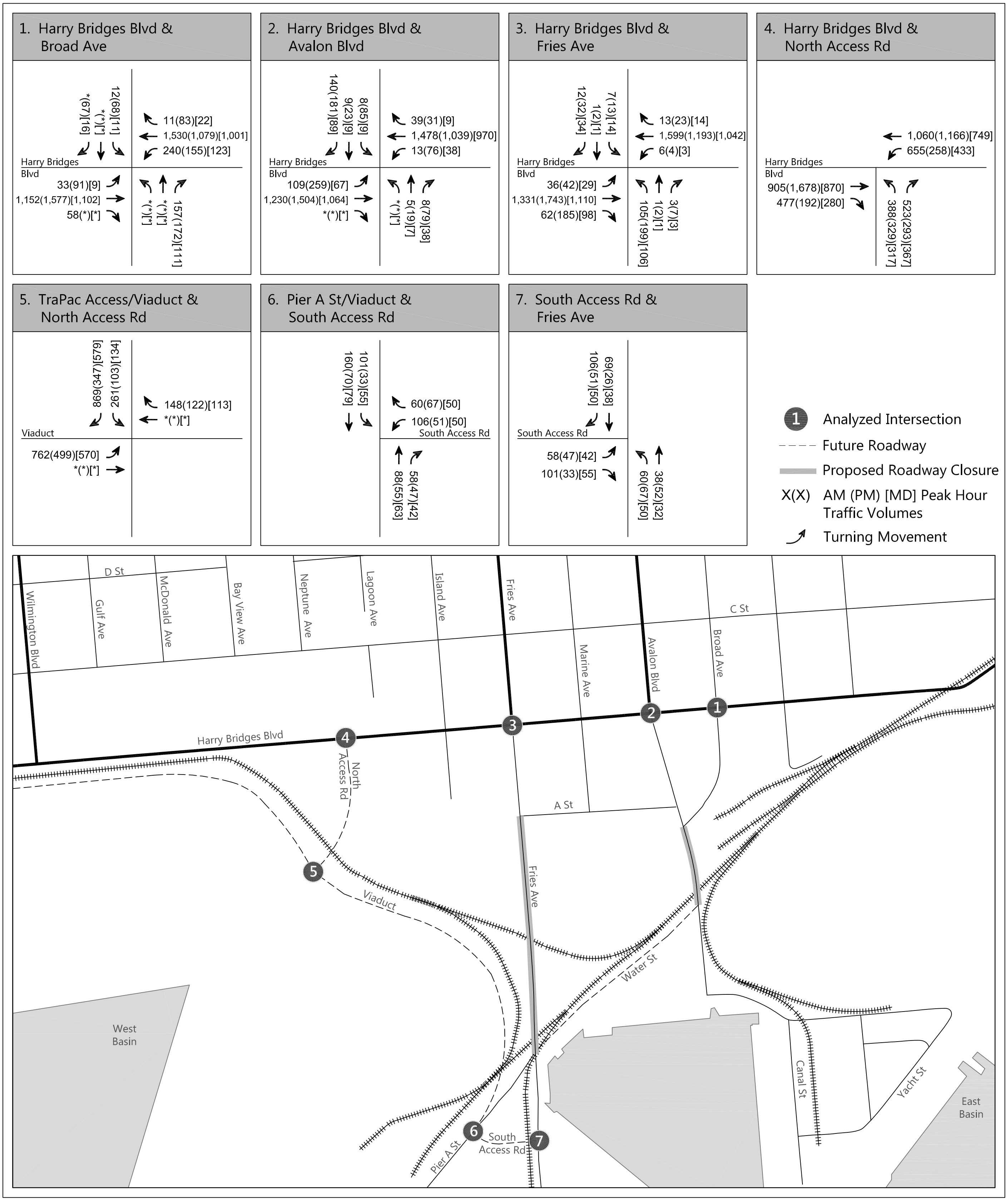
FIGURE 4



CUMULATIVE (2038) BASE CONDITIONS PEAK HOUR TRAFFIC VOLUMES

FIGURE 5

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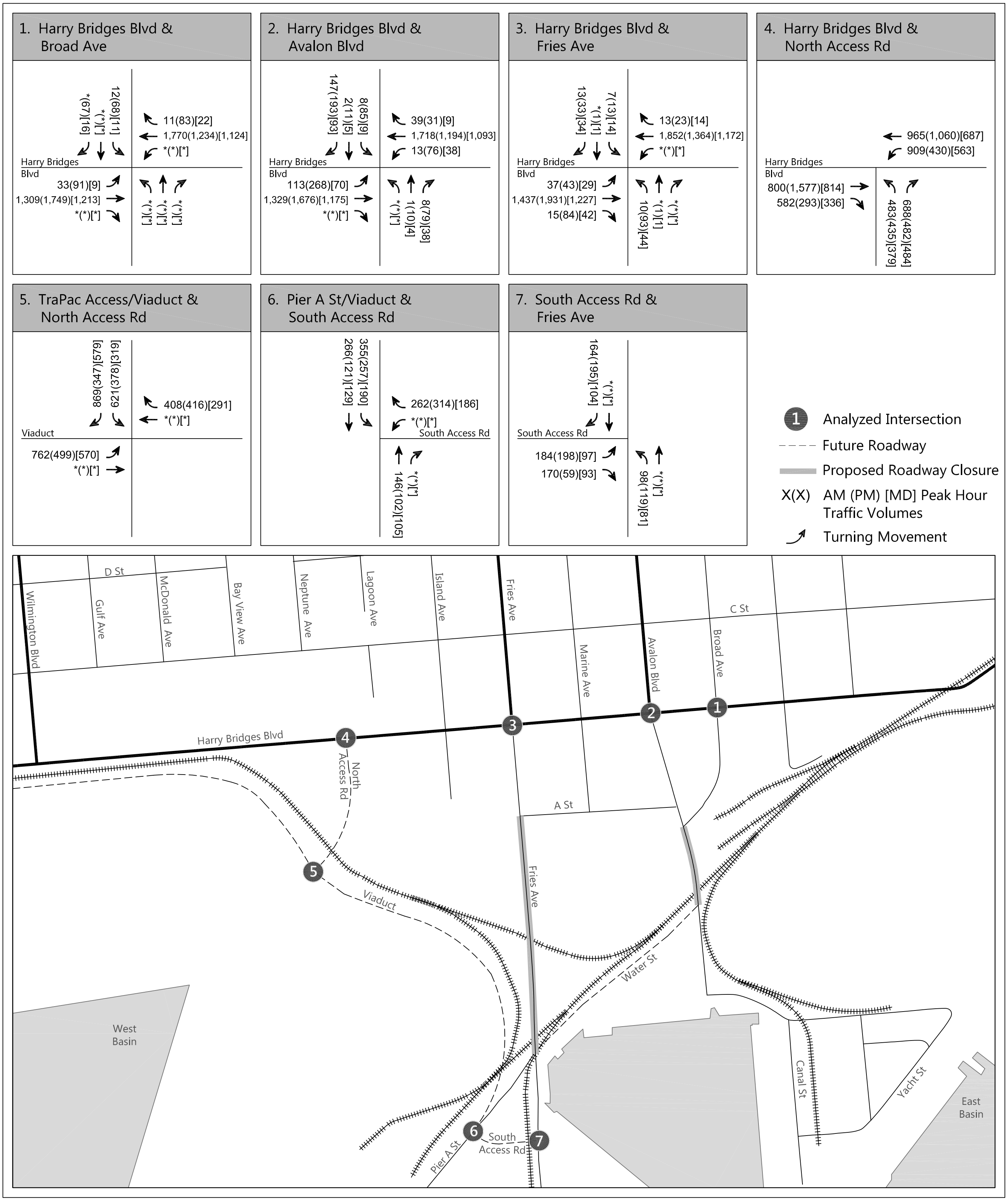

CUMULATIVE (2038) PLUS PROJECT CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

FEHR & PEERS

Dec 17, 2013
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FIGURE 6

- As currently planned, the southbound approach to the future intersection of North Access Road & TraPac Access/Viaduct (Study Intersection 5) will provide one left-turn lane and one right-turn. As part of the proposed project, if approved, that intersection would be modified to include a second southbound right-turn lane. In addition, the eastbound approach would be modified from the currently-planned configuration of one left-turn lane, one shared through/left-turn lane and one through lane to instead provide one left-turn lane and one shared through/left-turn lane.

Wilmington Waterfront Development

This project is generally bounded by Lagoon Avenue, Broad Avenue, C Street and the waterfront area near Banning's Landing. The project involves a variety of pedestrian-oriented features and a waterfront promenade, enhancement of the Avalon Boulevard commercial corridor, commercial/industrial retail development, open space, and transportation enhancements and improvements. Following is list of the key elements of the proposed project:

- Development of a 10-acre raised park space on an expansive land bridge for pedestrians and cyclists over active railroad lines to connect A Street with the water's edge and approximately 5 additional acres of other pedestrian-oriented features such as parks, plazas, and sidewalk enhancements;

- Development of a waterfront promenade and piers, with commercial retail/restaurant components and enhancement of the Avalon Boulevard Corridor to support commercial, industrial, and retail development; and

- Improvement of traffic circulation on Avalon Boulevard, Broad Avenue, A Street, and Water Street.

    - Avalon Boulevard north of A Street would be straightened and the short segment between A Street and Broad Avenue would be vacated and incorporated into new parks and open space.

    - Broad Avenue would be realigned to create a more direct route between the waterfront and Harry Bridges Boulevard and Avalon Boulevard would no longer be the primary vehicular access route to the waterfront.

    - Water Street would be relocated to an alignment north of its current location. Currently Pier A Street becomes Water Street as its alignment changes from southwest-northeast to west-east adjacent to the water. The new alignment will maintain the southwest-northeast alignment as Water Street would connect to Broad Avenue approximately 1,000 feet north of its current intersection with Avalon Boulevard.

I-110 and C Street Interchange Improvements

This project will improve the flow of traffic from the I-110 ramps at C Street by consolidating two closely-spaced intersections and facilitating heavy right-turn volumes with free-flowing turn lanes. As part of the improvement, C Street would be terminated in a cul-de-sac east of Figueroa Street and would no longer intersect with Figueroa Street. Harry Bridges Boulevard would be re-aligned to intersect with Figueroa Street across from the existing I-110 ramps. Also part of the improvement would be the construction of a northbound I-110 off-ramp to Harry Bridges Boulevard that would be grade-separated over Figueroa Street/John S. Gibson Boulevard with eastbound Harry Bridges Boulevard east of the consolidated intersection. The existing TraPac Terminal gate aligned with Figueroa Street will be relocated and accessed from the SWGS.

4. Level of Service and Significant Impact Analysis

This section presents an analysis of the existing and future, without and with project volumes to determine the potential traffic impacts of the proposed project on the operating conditions of the surrounding street system. The traffic impact analysis for 2017 and 2038 compares the projected LOS at each study intersection under Future plus Project conditions to the Future Base conditions to estimate the incremental increase in the V/C ratio caused by the proposed project. This provides the information needed to assess the potential impact of the project using significance criteria established by LADOT. Detailed LOS calculations are included in Appendix C.

Criteria for Determination of Significant Traffic Impact

All study intersections are in the City of Los Angeles. Significance criteria established by the City of Los Angeles was used to assess the potential for significant project impacts at the study intersections.

The City of Los Angeles has established threshold criteria to determine significant traffic impact of a proposed project in its jurisdiction. Under the LADOT guidelines, an intersection would be significantly impacted with an increase in V/C ratio equal to or greater than 0.04, or an increase of 6.0 seconds in delay for intersections projected to operate at LOS C after the addition of project traffic. Stricter thresholds of significance apply to intersections projected to operate at LOS D, E or F after the addition of project traffic. Intersections operating at LOS A or B after the addition of the project traffic are not considered significantly impacted regardless of the project related increase in V/C ratio or delay. The following summarizes the impact criteria:

LOS	***Final V/C Ratio***	***Project-related Increase in V/C***
C	>0.700 - 0.800	equal to or greater than 0.040
D	>0.800 - 0.900	equal to or greater than 0.020
E or F	>0.900	equal to or greater than 0.010

LOS	***Final Delay***	***Project-related Increase in V/C***
C	>20 - 35	equal to or greater than 6.0 seconds
D	>35 - 55	equal to or greater than 4.0 seconds
E	>55 - 80	equal to or greater than 2.5 seconds
F	>80	equal to or greater than 2.5 seconds

Level of Service Analysis

Cumulative (2017) Traffic Conditions and Cumulative (2017) plus Project Traffic Conditions

Future (year 2017) base traffic projections presented in Figures 3 and 4 were analyzed to establish future (2017) base operating conditions without and with the project. The results of this analysis, presented in Table 4, show that the study intersections would continue to operate at acceptable (good) levels of service (LOS A or B). The traffic shifts due to the proposed project would result in minor V/C improvements where Harry Bridges Boulevard intersects with Broad Avenue and where it intersects with the North Access Road (Study Intersections 1 and 4). At the other study intersections, small increases in V/C would occur due to traffic shifted from the streets that are proposed for closure.

Cumulative (2038) Traffic Conditions and Cumulative (2038) plus Project Traffic Conditions

Future (year 2038) base traffic projections presented in Figures 5 and 6 were analyzed to establish future (2038) base operating conditions without and with the project. The results of this analysis, presented in Table 5, show that the study intersections would continue to operate at acceptable (good) levels of service (LOS A, B or C). The traffic shifts due to the proposed project would result in minor V/C improvements where Harry Bridges Boulevard intersects with Broad Avenue and with Fries Avenue (Study Intersections 1 and 3). Changes to the SWGS where the North Access Road intersects with Harry Bridges Boulevard (Study Intersection 4) would also result in small improvements to V/C. At the other study intersections, small increases in V/C would occur due to traffic shifted from the streets that are proposed for closure.

Project Intersection Impacts Years 2017 and 2038

To determine whether significant impacts would occur at the study intersections, the results of this analysis were compared and assessed against the impact criteria described above. As shown in Tables 4 and 5, using the City of Los Angeles criteria for determination of significant traffic impacts the proposed project would not result in any significant impacts under either future analysis year 2017 or 2038. Based on good levels of service and relatively low projected traffic volumes projected for South Access Road & Fries Avenue (Study Intersection 7), this intersection would not meet traffic signal warrant thresholds in any of the peak hours analyzed.

Intersection Mitigation Measures

The aforementioned traffic impact analysis determined that the proposed project will not result in any significant traffic impacts. As such, no mitigation measures are needed.

TABLE 4

FUTURE (YEAR 2017) INTERSECTION LEVEL OF SERVICE ANALYSIS

NO.	INTERSECTION	PEAK HOUR	FUTURE (YEAR 2017)		FUTURE + PROJECT (YEAR 2017)		Project Increase	Significant Project Impact
			V/C or Delay	LOS	V/C or Delay	LOS	VC or Delay	
1	Harry Bridges Boulevard & Broad Avenue *Signalized*	AM	0.240	A	0.198	A	-0.042	NO
		MD	0.261	A	0.193	A	-0.067	NO
		PM	0.481	A	0.403	A	-0.077	NO
2	Harry Bridges Boulevard & Avalon Boulevard *Signalized*	AM	0.218	A	0.276	A	0.058	NO
		MD	0.227	A	0.253	A	0.025	NO
		PM	0.413	A	0.442	A	0.029	NO
3	Harry Bridges Boulevard & Fries Avenue *Signalized*	AM	0.164	A	0.216	A	0.052	NO
		MD	0.198	A	0.212	A	0.014	NO
		PM	0.439	A	0.457	A	0.018	NO
4	North Access Road & Harry Bridges Boulevard *Signalized*	AM	0.303	A	0.336	A	0.034	NO
		MD	0.370	A	0.355	A	-0.015	NO
		PM	0.615	B	0.614	B	-0.001	NO
5	North Access Road & TraPac Access/Viaduct *Signalized*	AM	0.113	A	0.347	A	0.234	NO
		MD	0.161	A	0.259	A	0.097	NO
		PM	0.153	A	0.289	A	0.137	NO
6	South Access Road & Pier A Street Viaduct *Signalized*	AM	0.139	A	0.302	A	0.164	NO
		MD	0.073	A	0.158	A	0.085	NO
		PM	0.071	A	0.179	A	0.108	NO
7	Fries Avenue & South Access Road *All-way stop-controlled*	AM	8.1 secs	A	8.7 secs	A	0.6 secs	NO
		MD	7.7 secs	A	8.0 secs	A	0.3 secs	NO
		PM	7.9 secs	A	8.3 secs	A	0.4 secs	NO

Note: A v/c credit of 0.100 has been applied to reflect the combined benefits of ATSAC and ATCS at these intersections

TABLE 5

FUTURE (YEAR 2038) INTERSECTION LEVEL OF SERVICE ANALYSIS

NO.	INTERSECTION	PEAK HOUR	FUTURE (YEAR 2038)		FUTURE + PROJECT (YEAR 2038)		Project Increase	Significant Project Impact
			V/C	LOS	V/C	LOS	VC or Delay	
1	Harry Bridges Boulevard & Broad Avenue	AM	0.477	A	0.520	A	0.043	NO
	Signalized	MD	0.390	A	0.313	A	-0.077	NO
		PM	0.638	B	0.529	A	-0.109	NO
2	Harry Bridges Boulevard & Avalon Boulevard	AM	0.579	A	0.673	B	0.094	NO
	Signalized	MD	0.355	A	0.397	A	0.042	NO
		PM	0.594	A	0.656	B	0.063	NO
3	Harry Bridges Boulevard & Fries Avenue	AM	0.528	A	0.549	A	0.021	NO
	Signalized	MD	0.356	A	0.353	A	-0.003	NO
		PM	0.624	B	0.614	B	-0.010	NO
4	North Access Road & Harry Bridges Boulevard	AM	0.827	D	0.718	C	-0.109	NO
	Signalized	MD	0.631	B	0.549	A	-0.082	NO
		PM	0.797	C	0.792	C	-0.005	NO
5	North Access Road & TraPac Access/Viaduct	AM	0.631	B	0.633	B	0.002	NO
	Signalized	MD	0.421	A	0.391	A	-0.031	NO
		PM	0.270	A	0.470	A	0.200	NO
6	South Access Road & Pier A Street Viaduct	AM	0.139	A	0.384	A	0.246	NO
	Signalized	MD	0.073	A	0.201	A	0.128	NO
		PM	0.071	A	0.336	A	0.266	NO
7	Fries Avenue & South Access Road	AM	8.1 secs	A	9.4 secs	A	1.3 secs	NO
	All-way stop-controlled	MD	7.7 secs	A	8.3 secs	A	0.6 secs	NO
		PM	7.9 secs	A	9.7 secs	A	1.8 secs	NO

Note: A v/c credit of 0.100 has been applied to reflect the combined benefits of ATSAC and ATCS at these intersections

5. Congestion Management Program Analysis

This section presents the CMP transportation impact analysis for the proposed project. This analysis was conducted in accordance with the transportation impact analysis (TIA) procedures outlined in the 2010 Congestion Management Program for Los Angeles County (Los Angeles County Metropolitan Transportation Authority, October 2010). The CMP requires that, when an environmental impact report is prepared for a project, traffic and transit impact analyses be conducted for select regional facilities based on the quantity of project traffic expected to use these facilities.

CMP Traffic and Transit Impact Analysis

The CMP guidelines require that the first issue to be addressed is the determination of the geographic scope of the study area. The criteria for determining the study area for CMP arterial monitoring intersections and for freeway monitoring locations are the following:

- All CMP arterial monitoring intersections where the proposed project will add 50 or more trips during either the morning or evening weekday peak hours of adjacent street traffic.

- All CMP mainline freeway monitoring locations where the proposed project will add 150 or more trips, in either direction, during either of the weekday peak hours.

The project is not expected to generate any new trips on the roadway system but is intended rather to better accommodate projected future trips in the project area. It would result in localized traffic shifts which would not extend to the nearest CMP arterial monitoring stations. Those intersections, located approximately two miles north of the project site, are Figueroa Street & Pacific Coast Highway and Alameda Street & Pacific Coast Highway. Based on the projections shown in Chapter 3, the proposed project would not alter traffic volumes or patterns through these arterial monitoring stations, no further analysis of CMP arterial intersections is required and CMP arterial intersection impacts are considered to be less than significant.

Similarly the CMP mainline freeway monitoring location nearest to the project site is I-110 south of C Street, approximately one-half mile to the west. As is the case with arterial monitoring intersections, the localized traffic shifts that would occur if the proposed project were implemented would not extend to the freeway monitoring location and no further CMP freeway analysis is required.

6. Summary and Conclusions

Fehr & Peers conducted a traffic study to analyze the potential for traffic impacts resulting from the proposed closure of Fries Avenue and Avalon Boulevard between Water Street and “A” Street within the Port of Los Angeles. The need for the project is related to operational changes with train assembly in the vicinity and the requirement to comply with CPUC regulations regarding the duration of railroad-related roadway blockages. The key findings and conclusions of the study are summarized below:

- The proposed project would close portions of Fries Avenue and Avalon Boulevard to vehicular traffic, including the highway-railroad grade crossings that lie south of A Street, and would modify the currently-planned design of two intersections on the South Wilmington Grade Separation that is currently under construction. That grade separation project would provide alternative access to the area now served by the streets planned for closure. As part of the project, minor changes would be made to the planned lane configuration at two future intersections on the South Wilmington Grade Separation.

- The project would not generate new traffic on the surrounding streets but rather would result in localized shifts of the traffic that is forecast to be present if the project were not implemented. Shifts are forecast to occur in response to frequent operations at the crossings that would result in traffic redirecting to the under construction SWGS which will provide a new route between the Wilmington community and the regional street network and the areas of the Port south of Harry Bridges Boulevard. Some minor localized shifts in traffic due to the street segment closures are also forecast to occur.

- Detailed intersection capacity and operation analyses were conducted for existing (2012) conditions at three intersections near the project site and at seven intersections under future (2017 and 2038) conditions for weekday morning, midday and evening peak hours. Using the City of Los Angeles’ significant impact criteria, it is determined that the project will not result in any significant impacts. The project would also not result in CMP-related impacts on any arterial or freeway monitoring locations. The future intersection of South Access Road & Fries Avenue is projected to operate acceptably as planned, with all-way stop control, and would not require signalization. Because no significant traffic impacts would occur, no traffic mitigation measures are necessary.

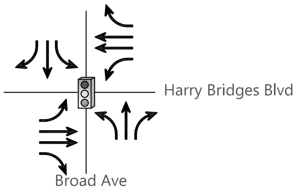
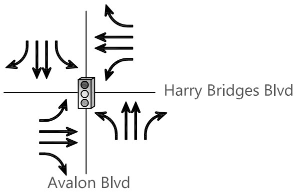
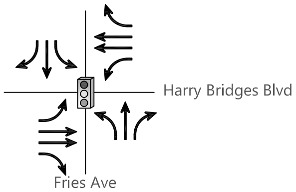
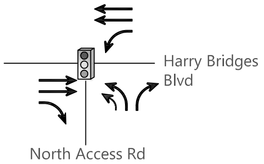
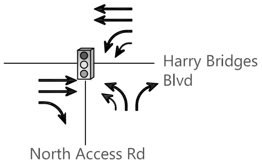
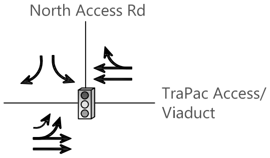
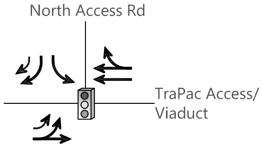
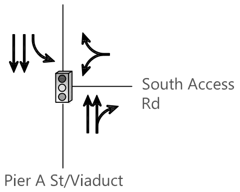
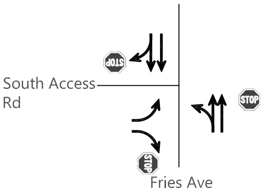
REFERENCES

Congestion Management Program for Los Angeles County, Los Angeles County Metropolitan Transportation Authority, October 2010.

Traffic Study Policies and Procedures, Los Angeles Department of Transportation, June, 2013.

Transportation Research Circular No. 212, Interim Materials on Highway Capacity, Transportation Research Board, 1980.

APPENDIX A:
INTERSECTION LANE CONFIGURATIONS

	EXISTING CONDITIONS	FUTURE CONDITIONS	FUTURE WITH PROJECT CONDITIONS
1. Broad Ave & Harry Bridges Blvd		Same as Existing	Same as Existing
2. Avalon Blvd & Harry Bridges Blvd		Same as Existing	Same as Existing
3. Fries Ave & Harry Bridges Blvd		Same as Existing	Same as Existing
4. North Access Rd & Harry Bridges Blvd	Does Not Exist		
5. North Access Rd & TraPac Access/Viaduct	Does Not Exist		
6. Pier A St/Viaduct & South Access Rd	Does Not Exist		Same as Future
7. Fries Ave & South Access Rd	Does Not Exist		Same as Future

FEHR & PEERS

INTERSECTION LANE CONFIGURATIONS

APPENDIX A

Dec 17, 2013
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APPENDIX B:
TRAFFIC COUNTS

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

TOTALS

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	2	0	4	0	1	1	3	96	21	19	28	1	176
6:15 AM	5	0	4	0	1	3	3	131	31	19	59	0	256
6:30 AM	3	1	4	0	5	9	5	149	36	14	68	0	294
6:45 AM	2	0	0	0	3	4	3	86	14	23	129	3	267
7:00 AM	8	5	8	0	2	8	1	89	15	15	90	2	243
7:15 AM	15	5	5	2	6	7	2	57	14	11	163	1	288
7:30 AM	19	0	3	0	3	8	3	94	16	7	118	8	279
7:45 AM	12	4	5	0	2	3	5	118	26	9	93	3	280
8:00 AM	14	3	12	1	4	0	11	111	16	19	81	1	273
8:15 AM	31	1	26	0	4	2	6	100	12	14	77	3	276
8:30 AM	45	3	44	0	1	2	7	60	18	18	75	2	275
8:45 AM	41	2	42	1	3	7	9	60	12	16	76	1	270

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	197	24	157	4	35	54	58	1151	231	184	1057	25	3177
APPROACH %'s :	52.12%	6.35%	41.53%	4.30%	37.63%	58.06%	4.03%	79.93%	16.04%	14.53%	83.49%	1.97%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	60	12	25	3	15	18	21	380	72	46	455	13	1120
PEAK HR FACTOR :		0.836			0.600			0.794			0.734		0.972

PCE Factors :	
Car	1.0
Motorcycle	1.0
Bus	2.0
Bobtail	1.1
Tractor	1.1
Tractor -Trailor	2.0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

TOTALS

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	40	4	62	1	5	5	7	74	15	11	80	1	305
2:15 PM	42	3	52	3	1	5	8	94	22	17	87	3	337
2:30 PM	24	1	32	0	6	9	5	68	23	18	91	2	279
2:45 PM	52	2	65	4	1	15	8	93	20	13	110	3	386
3:00 PM													0
3:15 PM													0
3:30 PM													0
3:45 PM													0
4:00 PM													0
4:15 PM													0
4:30 PM													0
4:45 PM													0
5:00 PM													0
5:15 PM													0
5:30 PM													0
5:45 PM													0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	158	10	211	8	13	34	28	329	80	59	368	9	1307
APPROACH %'s :	41.69%	2.64%	55.67%	14.55%	23.64%	61.82%	6.41%	75.29%	18.31%	13.53%	84.40%	2.06%	

PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	158	10	211	8	13	34	28	329	80	59	368	9	1307
PEAK HR FACTOR :		0.796			0.688			0.881			0.865		0.847

PCE Factors :	
Car	1.0
Motorcycle	1.0
Bus	2.0
Bobtail	1.1
Tractor	1.1
Tractor -Trailor	2.0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

TOTALS

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
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	43	5	72	1	1	5	8	175	9	3	140	7	469
4:15 PM	67	16	63	0	2	7	11	184	6	5	168	0	529
4:30 PM	41	6	58	1	0	10	8	206	5	3	148	6	492
4:45 PM	15	3	16	3	0	10	13	160	7	11	232	0	470
5:00 PM	15	4	21	1	1	6	9	88	7	8	241	4	405
5:15 PM	12	1	13	0	1	10	2	62	5	10	149	1	266
5:30 PM	19	2	34	3	0	8	4	65	8	12	151	0	306
5:45 PM	17	0	18	0	1	5	3	51	9	11	80	0	195

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	229	37	295	9	6	61	58	991	56	63	1309	18	3132
APPROACH %'s :	40.82%	6.60%	52.58%	11.84%	7.89%	80.26%	5.25%	89.68%	5.07%	4.53%	94.17%	1.29%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	166	30	209	5	3	32	40	725	27	22	688	13	1960
PEAK HR FACTOR :		0.693			0.769			0.904			0.744		0.926

PCE Factors :	
Car	1.0
Motorcycle	1.0
Bus	2.0
Bobtail	1.1
Tractor	1.1
Tractor -Trailor	2.0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001 **Day:** TUESDAY

TOTALS

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	2	0	4	0	1	1	3	96	21	19	27	1	175
6:15 AM	5	0	3	0	1	3	3	131	31	19	55	0	251
6:30 AM	3	1	4	0	5	9	5	146	36	14	58	0	281
6:45 AM	2	0	0	0	3	4	3	81	13	20	121	3	250
7:00 AM	8	5	7	0	2	8	1	86	15	13	79	1	225
7:15 AM	15	5	4	1	6	7	2	55	13	9	152	1	270
7:30 AM	17	0	3	0	3	8	3	90	16	6	111	8	265
7:45 AM	12	4	5	0	2	3	5	112	23	9	84	3	262
8:00 AM	14	3	9	1	4	0	11	107	12	17	68	1	247
8:15 AM	24	1	17	0	4	2	6	95	10	12	67	3	241
8:30 AM	31	3	25	0	1	2	7	58	17	15	63	2	224
8:45 AM	29	2	26	1	3	7	9	57	10	13	65	1	223

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	162	24	107	3	35	54	58	1114	217	166	950	24	2914
APPROACH %'s :	55.29%	8.19%	36.52%	3.26%	38.04%	58.70%	4.18%	80.20%	15.62%	14.56%	83.33%	2.11%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	58	12	21	2	15	18	21	364	64	41	415	13	1044
PEAK HR FACTOR :	0.875			0.625			0.802			0.724			0.967

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

TOTALS

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	28	4	38	1	5	5	7	64	14	7	59	1	233
2:15 PM	31	3	34	3	1	5	8	78	18	12	65	3	261
2:30 PM	21	1	25	0	6	9	4	60	17	11	82	2	238
2:45 PM	36	2	38	4	1	15	8	79	17	9	91	2	302
3:00 PM	30	2	41	2	3	7	3	91	15	6	75	1	276
3:15 PM	40	9	44	5	7	5	4	94	23	10	81	2	324
3:30 PM	15	2	45	3	4	8	12	138	24	5	71	1	328
3:45 PM	28	2	40	1	3	7	12	164	14	6	74	1	352
4:00 PM	36	5	44	1	1	5	8	164	9	3	126	6	408
4:15 PM	61	16	42	0	2	6	11	178	6	3	158	0	483
4:30 PM	33	6	38	1	0	10	8	194	5	2	130	5	432
4:45 PM	14	3	13	2	0	10	13	149	6	7	212	0	429
5:00 PM	15	4	21	1	1	6	9	80	5	5	224	3	374
5:15 PM	10	1	9	0	1	10	2	58	5	6	140	1	243
5:30 PM	17	2	22	2	0	8	4	59	6	8	144	0	272
5:45 PM	14	0	13	0	1	5	3	50	9	8	66	0	169
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	429	62	507	26	36	121	116	1700	193	108	1798	28	5124
APPROACH %'s :	42.99%	6.21%	50.80%	14.21%	19.67%	66.12%	5.77%	84.62%	9.61%	5.58%	92.97%	1.45%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	144	30	137	4	3	31	40	685	26	15	626	11	1752
PEAK HR FACTOR :		0.653			0.792			0.907			0.744		0.907

CONTROL :

ITM Peak Hour Summary

Prepared by:

NDS

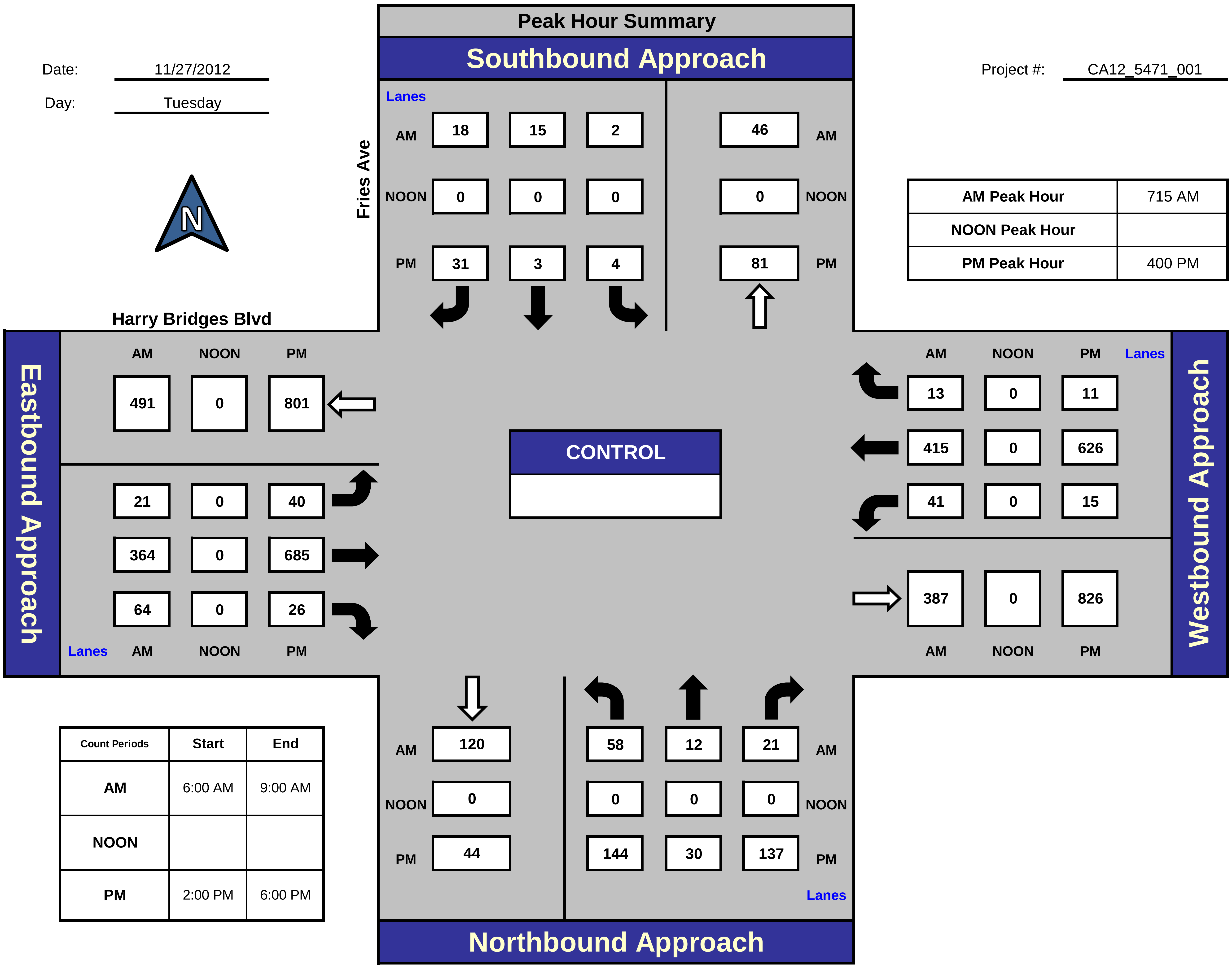
Fries Ave and Harry Bridges Blvd , City of Los Angeles

Date: 11/27/2012

Day: Tuesday

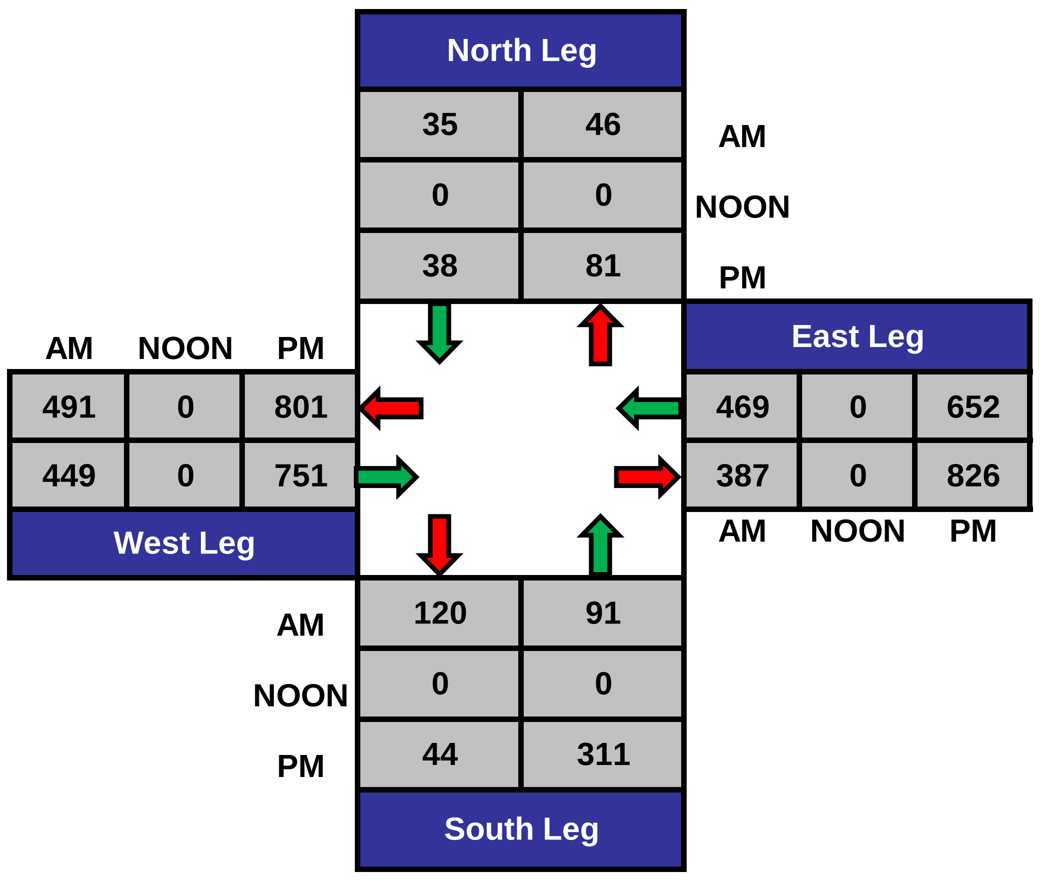
Project #: CA12_5471_001

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	400 PM

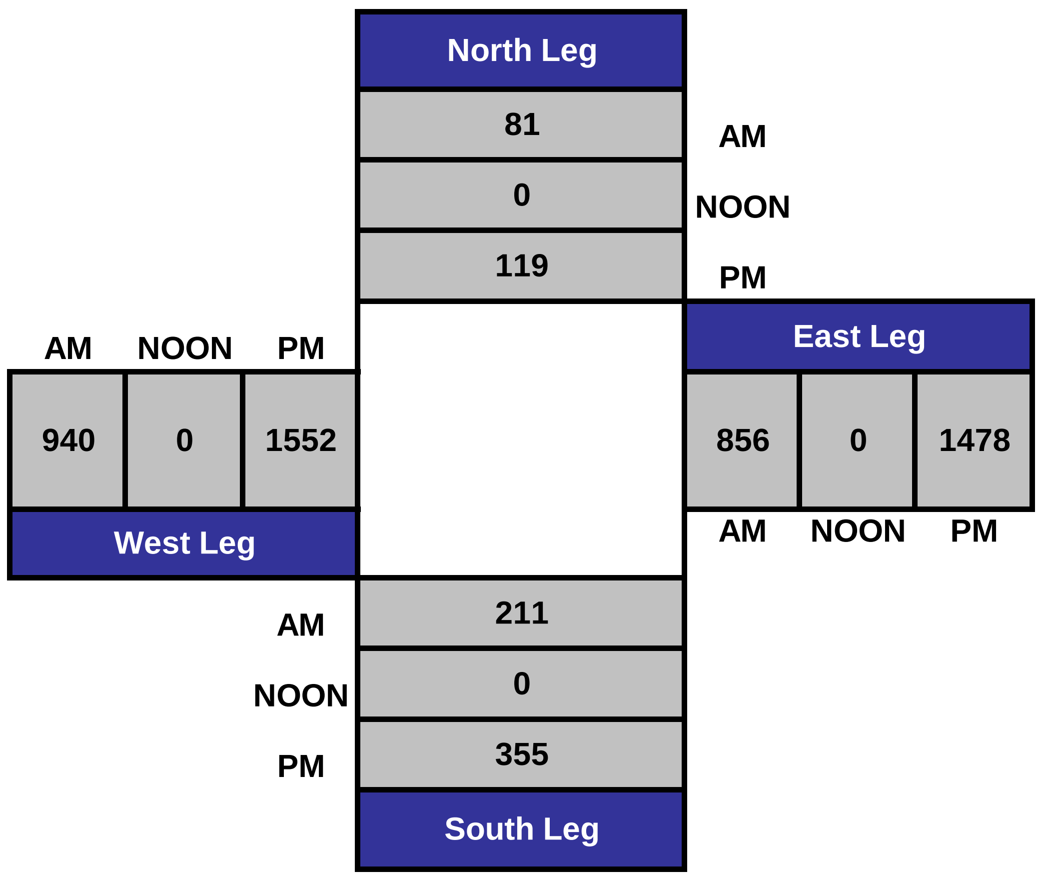


Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON		
PM	2:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001 **Day:** TUESDAY

Passenger Cars

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	2	0	4	0	1	1	3	94	21	19	26	1	172
6:15 AM	4	0	2	0	1	3	3	130	30	19	47	0	239
6:30 AM	2	1	4	0	5	9	5	141	36	14	43	0	260
6:45 AM	2	0	0	0	3	3	3	76	11	15	110	3	226
7:00 AM	8	5	6	0	2	8	1	76	15	10	65	0	196
7:15 AM	13	5	3	0	6	7	2	51	12	6	137	1	243
7:30 AM	14	0	3	0	3	8	3	82	15	5	98	8	239
7:45 AM	11	4	4	0	2	3	5	101	18	7	67	3	225
8:00 AM	12	2	5	0	4	0	9	99	8	11	45	1	196
8:15 AM	13	1	4	0	4	2	6	87	7	9	49	3	185
8:30 AM	10	3	2	0	1	2	7	52	16	12	42	1	148
8:45 AM	9	2	6	1	3	7	8	48	8	8	47	1	148

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	100	23	43	1	35	53	55	1037	197	135	776	22	2477
APPROACH %'s :	60.24%	13.86%	25.90%	1.12%	39.33%	59.55%	4.27%	80.45%	15.28%	14.47%	83.17%	2.36%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	50	11	15	0	15	18	19	333	53	29	347	13	903
PEAK HR FACTOR :		0.905			0.635			0.817			0.675		0.929

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001 **Day:** TUESDAY

Passenger Cars

City: City of Los Angeles **Date:** 11/27/2012

PM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	12	3	3	1	5	5	7	48	12	2	33	1	132
2:15 PM	17	3	10	3	1	5	8	50	11	5	38	2	153
2:30 PM	11	1	9	0	6	9	2	49	7	1	69	2	166
2:45 PM	15	2	3	4	1	15	8	57	12	4	65	1	187
3:00 PM	8	1	11	1	3	7	2	70	10	0	60	1	174
3:15 PM	11	9	10	4	6	4	4	72	18	4	51	2	195
3:30 PM	3	1	13	2	4	8	12	103	20	2	56	1	225
3:45 PM	10	2	4	1	3	7	12	139	13	2	57	1	251
4:00 PM	22	4	8	1	1	5	8	140	9	2	99	4	303
4:15 PM	48	15	12	0	2	5	11	159	6	0	139	0	397
4:30 PM	16	6	12	1	0	10	8	175	5	0	106	4	343
4:45 PM	13	3	9	1	0	10	13	131	5	2	183	0	370
5:00 PM	12	4	16	1	1	6	8	67	1	1	191	1	309
5:15 PM	4	1	1	0	1	10	2	53	5	-1	118	1	195
5:30 PM	6	2	3	1	0	8	4	52	4	1	130	0	211
5:45 PM	7	0	5	0	1	5	3	48	8	4	44	0	125
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	215	57	129	21	35	119	112	1413	146	29	1439	21	3736
APPROACH %'s :	53.62%	14.21%	32.17%	12.00%	20.00%	68.00%	6.70%	84.56%	8.74%	1.95%	96.64%	1.41%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	99	28	41	3	3	30	40	605	25	4	527	8	1413
PEAK HR FACTOR :		0.560			0.818			0.891			0.728		0.890

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

Motorcycles

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM								0	0		0		0
6:15 AM								0	1		0		1
6:30 AM								0	0		0		0
6:45 AM								0	0		0		0
7:00 AM								3	0		0		3
7:15 AM								1	0		0		1
7:30 AM								0	1		1		2
7:45 AM								1	0		0		1
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

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	5	2	0	1	0	8
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	71.43%	28.57%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	2	1	0	1	0	4
PEAK HR FACTOR :	0.000			0.000			0.750			0.250			0.929

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001 **Day:** TUESDAY

Motorcycles

City: City of Los Angeles **Date:** 11/27/2012

PM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM		0	0	0				0		0	1		1
2:15 PM		0	1	0				0		0	0		1
2:30 PM		0	0	0				0		0	0		0
2:45 PM		0	0	0				0		0	0		0
3:00 PM		1	0	0				0		0	0		1
3:15 PM		0	0	0				0		0	0		0
3:30 PM		1	0	1				2		1	1		6
3:45 PM		0	1	0				0		0	0		1
4:00 PM		1	0	0				0		0	0		1
4:15 PM		0	0	0				3		0	1		4
4:30 PM		0	0	0				0		0	0		0
4:45 PM		0	0	0				2		0	1		3
5:00 PM		0	1	0				1		0	2		4
5:15 PM		0	0	0				0		0	0		0
5:30 PM		0	0	0				1		0	0		1
5:45 PM		0	0	0				0		0	0		0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	3	3	1	0	0	0	9	0	1	6	0	23
APPROACH %'s :	0.00%	50.00%	50.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	14.29%	85.71%	0.00%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	5	0	0	2	0	8
PEAK HR FACTOR :	0.250			0.000			0.417			0.500			0.890

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001
Day: TUESDAY

Buses

City: City of Los Angeles
Date: 11/27/2012

AM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM													0
6:15 AM													0
6:30 AM													0
6:45 AM													0
7:00 AM													0
7:15 AM													0
7:30 AM													0
7:45 AM													0
8:00 AM													0
8:15 AM													0
8:30 AM													0
8:45 AM													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 :	715 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		0.929

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

Buses

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM						0							0
2:15 PM						0							0
2:30 PM						0							0
2:45 PM						0							0
3:00 PM						0							0
3:15 PM						1							1
3:30 PM						0							0
3:45 PM						0							0
4:00 PM						0							0
4:15 PM						0							0
4:30 PM						0							0
4:45 PM						0							0
5:00 PM						0							0
5:15 PM						0							0
5:30 PM						0							0
5:45 PM						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	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 :	400 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		0.890

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

Bobtails

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	0	0	0	0		0	0	1	0	0	0		1
6:15 AM	1	0	0	0		0	0	1	0	0	3		5
6:30 AM	1	0	0	0		0	0	2	0	0	2		5
6:45 AM	0	0	0	0		1	0	0	1	1	1		4
7:00 AM	0	0	0	0		0	0	2	0	1	2		5
7:15 AM	2	0	0	0		0	0	1	0	0	3		6
7:30 AM	1	0	0	0		0	0	1	0	0	3		5
7:45 AM	1	0	1	0		0	0	1	1	0	1		5
8:00 AM	1	1	0	1		0	2	3	0	0	1		9
8:15 AM	1	0	0	0		0	0	1	1	0	1		4
8:30 AM	1	0	0	0		0	0	1	0	0	2		4
8:45 AM	0	0	0	0		0	1	1	0	1	3		6

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	1	1	1	0	1	3	15	3	3	22	0	59
APPROACH %'s :	81.82%	9.09%	9.09%	50.00%	0.00%	50.00%	14.29%	71.43%	14.29%	12.00%	88.00%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	5	1	1	1	0	0	2	6	1	0	8	0	25
PEAK HR FACTOR :	0.875			0.250			0.450			0.667			0.929

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

Bobtails

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	0	1	1	0			0	1	1	1	2	0	7
2:15 PM	0	0	1	0			0	6	1	1	0	1	10
2:30 PM	0	0	0	0			1	2	0	1	3	0	7
2:45 PM	0	0	0	0			0	4	0	0	2	0	6
3:00 PM	0	0	0	0			1	1	0	2	3	0	7
3:15 PM	0	0	0	1			0	1	0	1	2	0	5
3:30 PM	0	0	0	0			0	5	0	0	2	0	7
3:45 PM	1	0	0	0			0	0	0	0	1	0	2
4:00 PM	0	0	0	0			0	5	0	0	4	0	9
4:15 PM	0	0	1	0			0	1	0	0	3	0	5
4:30 PM	0	0	0	0			0	1	0	0	0	0	1
4:45 PM	0	0	0	0			0	1	0	0	0	0	1
5:00 PM	0	0	0	0			1	4	1	0	0	1	7
5:15 PM	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
5:45 PM	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 :	1	1	3	1	0	0	3	32	3	6	23	2	75
APPROACH %'s :	20.00%	20.00%	60.00%	100.00%	0.00%	0.00%	7.89%	84.21%	7.89%	19.35%	74.19%	6.45%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	8	0	0	7	0	16
PEAK HR FACTOR :	0.250			0.000			0.400			0.438			0.890

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

Tractors

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	0		0					1	0	0	0	0	1
6:15 AM	0		0					0	0	0	1	0	1
6:30 AM	0		0					0	0	0	4	0	4
6:45 AM	0		0					0	0	1	2	0	3
7:00 AM	0		0					3	0	0	1	0	4
7:15 AM	0		0					0	0	1	2	0	3
7:30 AM	0		0					4	0	0	3	0	7
7:45 AM	0		0					3	1	2	8	0	14
8:00 AM	1		1					2	0	4	10	0	18
8:15 AM	3		5					2	0	1	8	0	19
8:30 AM	7		5					3	0	0	8	1	24
8:45 AM	9		4					6	0	1	5	0	25

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	20	0	15	0	0	0	0	24	1	10	52	1	123
APPROACH %'s :	57.14%	0.00%	42.86%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	96.00%	4.00%	15.87%	82.54%	1.59%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	0	1	0	0	0	0	9	1	7	23	0	42
PEAK HR FACTOR :	0.250			0.000			0.625			0.536			0.929

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

Tractors

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	4	0	11					6	0	0	3	0	24
2:15 PM	3	0	5					7	2	1	6	0	24
2:30 PM	8	0	10					1	4	2	1	0	26
2:45 PM	6	0	9					5	2	1	6	0	29
3:00 PM	12	0	10					10	2	0	8	0	42
3:15 PM	12	0	12					10	0	2	7	0	43
3:30 PM	7	0	12					8	1	0	5	0	33
3:45 PM	6	0	13					5	0	0	3	0	27
4:00 PM	8	0	9					9	0	1	10	1	38
4:15 PM	8	1	9					10	0	1	6	0	35
4:30 PM	10	0	7					7	0	1	7	0	32
4:45 PM	0	0	1					5	0	1	9	0	16
5:00 PM	3	0	4					1	1	1	16	0	26
5:15 PM	5	0	4					1	0	3	14	0	27
5:30 PM	10	0	8					0	0	3	8	0	29
5:45 PM	4	0	3					1	1	1	9	0	19

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	106	1	127	0	0	0	0	86	13	18	118	1	470
APPROACH %'s :	45.30%	0.43%	54.27%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	86.87%	13.13%	13.14%	86.13%	0.73%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	26	1	26	0	0	0	0	31	0	4	32	1	121
PEAK HR FACTOR :		0.736			0.000			0.775			0.771		0.890

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001 **Day:** TUESDAY

Tractor Trailers

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	0		0	0				0	0	0	1	0	1
6:15 AM	0		1	0				0	0	0	4	0	5
6:30 AM	0		0	0				3	0	0	9	0	12
6:45 AM	0		0	0				5	1	3	8	0	17
7:00 AM	0		1	0				2	0	2	11	1	17
7:15 AM	0		1	1				2	1	2	10	0	17
7:30 AM	2		0	0				3	0	1	6	0	12
7:45 AM	0		0	0				6	3	0	8	0	17
8:00 AM	0		3	0				3	4	2	12	0	24
8:15 AM	7		8	0				5	2	2	9	0	33
8:30 AM	13		18	0				2	1	3	11	0	48
8:45 AM	11		16	0				2	2	3	10	0	44

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	33	0	48	1	0	0	0	33	14	18	99	1	247
APPROACH %'s :	40.74%	0.00%	59.26%	100.00%	0.00%	0.00%	0.00%	70.21%	29.79%	15.25%	83.90%	0.85%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	2	0	4	1	0	0	0	14	8	5	36	0	70
PEAK HR FACTOR :	0.500			0.250			0.611			0.732			0.929

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_001

Day: TUESDAY

Tractor Trailers

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Fries Ave			Fries Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	12		23	0	0	0	0	9	1	4	20	0	69
2:15 PM	11		17	0	0	0	0	15	4	5	21	0	73
2:30 PM	2		6	0	0	0	1	8	6	7	9	0	39
2:45 PM	15		26	0	0	0	0	13	3	4	18	1	80
3:00 PM	10		20	1	0	0	0	10	3	4	4	0	52
3:15 PM	17		22	0	1	0	0	11	5	3	21	0	80
3:30 PM	5		20	0	0	0	0	20	3	2	7	0	57
3:45 PM	11		22	0	0	0	0	20	1	4	13	0	71
4:00 PM	6		27	0	0	0	0	10	0	0	13	1	57
4:15 PM	5		20	0	0	1	0	5	0	2	9	0	42
4:30 PM	7		19	0	0	0	0	11	0	1	17	1	56
4:45 PM	1		3	1	0	0	0	10	1	4	19	0	39
5:00 PM	0		0	0	0	0	0	7	2	3	15	1	28
5:15 PM	1		4	0	0	0	0	4	0	4	7	0	20
5:30 PM	1		11	1	0	0	0	6	2	4	6	0	31
5:45 PM	3		5	0	0	0	0	1	0	3	13	0	25
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	107	0	245	3	1	1	1	160	31	54	212	4	819
APPROACH %'s :	30.40%	0.00%	69.60%	60.00%	20.00%	20.00%	0.52%	83.33%	16.15%	20.00%	78.52%	1.48%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	19	0	69	1	0	1	0	36	1	7	58	2	194
PEAK HR FACTOR :	0.667			0.500			0.841			0.728			0.890

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA__

Day: TUESDAY

TOTALS

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	0	1	2	0	4	7	24	57	8	5	42	1	151
6:15 AM	0	1	4	3	8	22	38	91	8	12	55	2	244
6:30 AM	3	0	2	2	6	29	40	105	4	8	58	1	258
6:45 AM	5	3	0	2	3	55	14	67	6	7	92	1	255
7:00 AM	5	3	1	2	3	30	13	68	6	4	65	2	202
7:15 AM	2	2	1	1	1	42	11	50	3	7	127	1	248
7:30 AM	1	3	0	1	2	37	25	74	5	6	86	1	241
7:45 AM	2	0	1	1	4	26	24	89	5	10	81	3	246
8:00 AM	1	4	3	1	5	20	34	73	7	8	87	0	243
8:15 AM	8	2	3	0	2	17	18	90	11	11	68	1	231
8:30 AM	4	6	4	1	2	17	16	83	4	8	77	3	225
8:45 AM	5	2	3	1	0	19	10	93	4	1	63	0	201

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	36	27	24	15	40	321	267	940	71	87	901	16	2745
APPROACH %'s :	41.38%	31.03%	27.59%	3.99%	10.64%	85.37%	20.89%	73.55%	5.56%	8.67%	89.74%	1.59%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	6	9	5	4	12	125	94	286	20	31	381	5	978
PEAK HR FACTOR :		0.625			0.801			0.847			0.772		0.986

PCE Factors :

Car	1.0
Motorcycle	1.0
Bus	2.0
Bobtail	1.1
Tractor	1.1
Tractor -Trailor	2.0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA__ **Day:** TUESDAY

TOTALS

City: City of Los Angeles **Date:** 11/27/2012

PM

NS/EW Streets:	Avalon blvd			Avalon blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	3	5	3	0	3	13	9	123	7	8	70	0	244
2:15 PM	5	3	6	3	5	17	14	122	7	1	91	0	274
2:30 PM	2	5	6	3	2	21	19	78	2	5	89	4	236
2:45 PM	1	2	3	1	0	33	17	136	4	8	98	0	303
3:00 PM													0
3:15 PM													0
3:30 PM													0
3:45 PM													0
4:00 PM													0
4:15 PM													0
4:30 PM													0
4:45 PM													0
5:00 PM													0
5:15 PM													0
5:30 PM													0
5:45 PM													0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	11	15	18	7	10	84	59	459	20	22	348	4	1057
APPROACH %'s :	25.00%	34.09%	40.91%	6.93%	9.90%	83.17%	10.97%	85.32%	3.72%	5.88%	93.05%	1.07%	

PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	11	15	18	7	10	84	59	459	20	22	348	4	1057
PEAK HR FACTOR :		0.786			0.743			0.857			0.882		0.872

PCE Factors :	
Car	1.0
Motorcycle	1.0
Bus	2.0
Bobtail	1.1
Tractor	1.1
Tractor -Trailor	2.0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA__

Day: TUESDAY

TOTALS

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
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	26	21	6	5	4	22	46	173	9	5	100	5	422
4:15 PM	4	7	5	5	5	44	55	172	7	6	111	2	423
4:30 PM	6	4	3	1	1	29	56	209	3	1	121	6	440
4:45 PM	5	6	3	1	2	59	39	130	3	3	175	8	434
5:00 PM	6	5	1	7	1	66	13	98	3	3	173	5	381
5:15 PM	6	1	2	7	2	32	18	61	2	1	108	2	242
5:30 PM	1	0	0	5	1	32	10	84	4	6	120	1	264
5:45 PM	1	1	0	1	3	19	18	51	5	1	68	1	169

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	55	45	20	32	19	303	255	978	36	26	976	30	2775
APPROACH %'s :	45.83%	37.50%	16.67%	9.04%	5.37%	85.59%	20.09%	77.07%	2.84%	2.52%	94.57%	2.91%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	41	38	17	12	12	154	196	684	22	15	507	21	1719
PEAK HR FACTOR :		0.453			0.718			0.841			0.730		0.977

PCE Factors :	
Car	1.0
Motorcycle	1.0
Bus	2.0
Bobtail	1.1
Tractor	1.1
Tractor -Trailor	2.0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002

Day: TUESDAY

TOTALS

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	0	1	2	0	4	7	24	56	8	5	41	1	149
6:15 AM	0	1	4	2	8	21	38	89	8	12	50	2	235
6:30 AM	3	0	2	2	6	29	39	103	4	7	48	1	244
6:45 AM	5	3	0	2	3	55	14	63	5	6	79	1	236
7:00 AM	5	3	1	2	3	29	13	66	6	3	53	2	186
7:15 AM	2	2	1	1	1	42	11	45	3	6	115	1	230
7:30 AM	1	3	0	1	2	37	25	72	3	6	79	1	230
7:45 AM	1	0	1	1	3	26	24	82	5	7	73	3	226
8:00 AM	1	4	2	1	4	20	34	68	6	6	70	0	216
8:15 AM	7	2	2	0	2	17	18	79	8	9	57	1	202
8:30 AM	4	4	3	1	2	17	16	62	4	7	62	3	185
8:45 AM	3	2	2	1	0	19	10	73	3	1	51	0	165

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	32	25	20	14	38	319	266	858	63	75	778	16	2504
APPROACH %'s :	41.56%	32.47%	25.97%	3.77%	10.24%	85.98%	22.41%	72.28%	5.31%	8.63%	89.53%	1.84%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	5	9	4	4	10	125	94	267	17	25	337	5	902
PEAK HR FACTOR :		0.643			0.790			0.851			0.752		0.980

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002 **Day:** TUESDAY

TOTALS

City: City of Los Angeles **Date:** 11/27/2012

PM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	3	5	2	0	3	13	9	90	5	5	45	0	180
2:15 PM	3	3	5	3	5	16	14	92	4	1	65	0	211
2:30 PM	2	5	5	3	2	21	19	64	1	5	72	3	202
2:45 PM	1	2	3	1	0	31	17	98	4	7	77	0	241
3:00 PM	4	0	2	2	1	14	28	105	2	2	59	2	221
3:15 PM	1	4	4	0	3	18	23	115	2	12	71	2	255
3:30 PM	3	4	4	0	6	22	40	132	4	3	50	2	270
3:45 PM	1	0	5	1	5	16	40	142	6	7	59	2	284
4:00 PM	26	21	6	5	4	22	46	135	8	5	84	5	367
4:15 PM	3	7	5	4	5	44	55	142	7	6	99	2	379
4:30 PM	6	4	3	1	1	29	56	176	3	1	100	6	386
4:45 PM	5	6	3	1	2	59	39	112	2	3	149	8	389
5:00 PM	6	5	1	7	1	66	13	90	2	2	151	5	349
5:15 PM	5	1	1	7	2	32	18	52	2	1	96	2	219
5:30 PM	1	0	0	5	1	32	10	66	4	4	109	1	233
5:45 PM	1	1	0	1	3	19	18	44	4	1	51	1	144

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	71	68	49	41	44	454	445	1655	60	65	1337	41	4330
APPROACH %'s :	37.77%	36.17%	26.06%	7.61%	8.16%	84.23%	20.60%	76.62%	2.78%	4.50%	92.65%	2.84%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	40	38	17	11	12	154	196	565	20	15	432	21	1521
PEAK HR FACTOR :		0.448			0.714			0.831			0.731		0.978

CONTROL :

ITM Peak Hour Summary

Prepared by:

Avalon Blvd and Harry Bridges Blvd , City of Los Angeles

Date: 11/27/2012

Day: Tuesday

Project #: CA12_5471_002

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	400 PM

N

Avalon Blvd

Harry Bridges Blvd

Peak Hour Summary

Southbound Approach

Lanes

AM	125	10	4	108	AM
NOON	0	0	0	0	NOON
PM	154	12	11	255	PM
	↲	↓	↳	⇧	

Eastbound Approach

	AM	NOON	PM
⇦	467	0	626
↱	94	0	196
→	267	0	565
↴	17	0	20
Lanes	AM	NOON	PM

CONTROL

Westbound Approach

	AM	NOON	PM	Lanes
↰	5	0	21	
←	337	0	432	
↲	25	0	15	
⇨	275	0	593	
	AM	NOON	PM	

Northbound Approach

	⇩	↰	↑	↱	
AM	52	5	9	4	AM
NOON	0	0	0	0	NOON
PM	47	40	38	17	PM
					Lanes

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON		
PM	2:00 PM	6:00 PM

Total Ins & Outs

North Leg

	↓	↑
AM	139	108
NOON	0	0
PM	177	255

West Leg

	AM	NOON	PM
←	467	0	626
→	378	0	781

East Leg

	AM	NOON	PM
←	367	0	468
→	275	0	593

South Leg

	↓	↑
AM	52	18
NOON	0	0
PM	47	95

Total Volume Per Leg

North Leg

AM	247
NOON	0
PM	432

West Leg

AM	NOON	PM
845	0	1407

East Leg

AM	NOON	PM
642	0	1061

South Leg

AM	70
NOON	0
PM	142

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002 **Day:** TUESDAY

Passenger Cars

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	0	1	2	0	3	7	24	54	8	5	39	1	144
6:15 AM	0	1	4	0	8	20	38	86	7	12	40	2	218
6:30 AM	3	0	1	2	6	29	38	100	4	6	33	1	223
6:45 AM	5	3	0	2	3	55	14	58	4	5	59	1	209
7:00 AM	5	3	1	2	3	28	13	60	6	2	36	2	161
7:15 AM	2	2	1	1	1	41	10	40	3	3	98	1	203
7:30 AM	1	3	0	1	2	37	25	65	1	4	66	1	206
7:45 AM	0	0	1	1	2	26	24	69	5	4	56	3	191
8:00 AM	1	4	1	1	3	20	34	59	4	3	39	0	169
8:15 AM	6	2	1	0	2	17	18	61	5	5	38	1	156
8:30 AM	4	1	2	1	2	17	16	34	4	5	39	3	128
8:45 AM	1	2	1	1	0	18	10	40	2	1	32	0	108

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	28	22	15	12	35	315	264	726	53	55	575	16	2116
APPROACH %'s :	43.08%	33.85%	23.08%	3.31%	9.67%	87.02%	25.31%	69.61%	5.08%	8.51%	89.01%	2.48%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	4	9	3	4	8	124	93	233	13	14	259	5	769
PEAK HR FACTOR :		0.667			0.791			0.865			0.681		0.933

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002

Day: TUESDAY

Passenger Cars

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	2	5	1	0	3	12	9	40	3	2	12	0	89
2:15 PM	1	2	4	3	4	14	13	46	1	1	32	0	121
2:30 PM	2	5	4	3	2	20	19	38	0	2	48	2	145
2:45 PM	1	2	2	1	0	29	16	47	4	6	50	0	158
3:00 PM	4	0	1	2	1	14	27	54	1	0	38	2	144
3:15 PM	0	4	2	0	3	18	23	56	2	6	36	2	152
3:30 PM	2	4	3	0	6	20	40	63	4	2	36	2	182
3:45 PM	0	0	2	1	5	16	40	78	5	2	37	1	187
4:00 PM	26	21	6	5	4	22	45	80	6	4	55	5	279
4:15 PM	2	6	5	3	5	44	55	94	7	4	82	2	309
4:30 PM	6	4	2	1	1	29	56	127	3	0	72	6	307
4:45 PM	4	6	3	1	2	59	39	85	1	3	113	8	324
5:00 PM	6	5	1	7	1	66	13	73	1	1	108	4	286
5:15 PM	4	1	0	7	1	32	18	38	2	1	69	1	174
5:30 PM	1	0	0	5	1	32	10	38	4	2	89	1	183
5:45 PM	1	1	0	1	3	19	18	32	3	0	23	1	102
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	62	66	36	40	42	446	441	989	47	36	900	37	3142
APPROACH %'s :	37.80%	40.24%	21.95%	7.58%	7.95%	84.47%	29.86%	66.96%	3.18%	3.70%	92.50%	3.80%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	38	37	16	10	12	154	195	386	17	11	322	21	1219
PEAK HR FACTOR :		0.429			0.710			0.804			0.714		0.941

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002

Day: TUESDAY

Motorcycles

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM					1		0	0			0		1
6:15 AM					0		0	1			1		2
6:30 AM					0		0	0			0		0
6:45 AM					0		0	0			1		1
7:00 AM					0		0	1			2		3
7:15 AM					0		1	0			1		2
7:30 AM					0		0	1			2		3
7:45 AM					0		0	1			0		1
8:00 AM					0		0	0			0		0
8:15 AM					0		0	0			0		0
8:30 AM					0		0	0			0		0
8:45 AM					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	1	4	0	0	7	0	13
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	20.00%	80.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	2	0	0	3	0	6
PEAK HR FACTOR :	0.000			0.000			0.750			0.375			0.933

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002 **Day:** TUESDAY

Motorcycles

City: City of Los Angeles **Date:** 11/27/2012

PM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM					0	1		0			1		2
2:15 PM					0	0		0			0		0
2:30 PM					0	0		0			0		0
2:45 PM					0	0		0			0		0
3:00 PM					0	0		0			0		0
3:15 PM					0	0		0			0		0
3:30 PM					0	1		3			1		5
3:45 PM					0	0		1			0		1
4:00 PM					0	0		0			0		0
4:15 PM					0	0		1			0		1
4:30 PM					0	0		2			0		2
4:45 PM					0	0		3			1		4
5:00 PM					0	0		2			2		4
5:15 PM					1	0		0			0		1
5:30 PM					0	0		1			0		1
5:45 PM					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	2	0	13	0	0	5	0	21
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	33.33%	66.67%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	6	0	0	1	0	7
PEAK HR FACTOR :	0.000			0.000			0.500			0.250			0.941

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002

Day: TUESDAY

Buses

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM													0
6:15 AM													0
6:30 AM													0
6:45 AM													0
7:00 AM													0
7:15 AM													0
7:30 AM													0
7:45 AM													0
8:00 AM													0
8:15 AM													0
8:30 AM													0
8:45 AM													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 :	715 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		0.933

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002

Day: TUESDAY

Buses

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM													0
2:15 PM													0
2:30 PM													0
2:45 PM													0
3:00 PM													0
3:15 PM													0
3:30 PM													0
3:45 PM													0
4:00 PM													0
4:15 PM													0
4:30 PM													0
4:45 PM													0
5:00 PM													0
5:15 PM													0
5:30 PM													0
5:45 PM													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 :	400 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			0.941

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002 **Day:** TUESDAY

Bobtails

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM		0		0		0		0	0		0		0
6:15 AM		0		1		0		0	1		3		5
6:30 AM		0		0		0		1	0		1		2
6:45 AM		0		0		0		0	0		5		5
7:00 AM		0		0		0		1	0		2		3
7:15 AM		0		0		1		0	0		1		2
7:30 AM		0		0		0		0	0		1		1
7:45 AM		0		0		0		3	0		0		3
8:00 AM		0		0		0		2	1		2		5
8:15 AM		0		0		0		0	0		1		1
8:30 AM		1		0		0		0	0		2		3
8:45 AM		0		0		1		1	0		2		4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	0	1	0	2	0	8	2	0	20	0	34
APPROACH %'s :	0.00%	100.00%	0.00%	33.33%	0.00%	66.67%	0.00%	80.00%	20.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	5	1	0	4	0	11
PEAK HR FACTOR :		0.000			0.250			0.500			0.500		0.933

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002

Day: TUESDAY

Bobtails

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	1	0			0	0	0	2	0	0	4	0	7
2:15 PM	0	1			1	0	1	6	0	0	2	0	11
2:30 PM	0	0			0	1	0	1	0	1	3	0	6
2:45 PM	0	0			0	0	1	1	0	0	2	0	4
3:00 PM	0	0			0	0	1	1	0	0	2	0	4
3:15 PM	0	0			0	0	0	2	0	2	1	0	5
3:30 PM	1	0			0	0	0	4	0	0	0	0	5
3:45 PM	0	0			0	0	0	0	0	0	0	1	1
4:00 PM	0	0			0	0	1	3	1	1	4	0	10
4:15 PM	0	1			0	0	0	1	0	0	0	0	2
4:30 PM	0	0			0	0	0	1	0	0	0	0	1
4:45 PM	0	0			0	0	0	0	0	0	0	0	0
5:00 PM	0	0			0	0	0	2	0	0	1	0	3
5:15 PM	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
5:45 PM	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 :	2	2	0	0	1	1	4	24	1	4	19	1	59
APPROACH %'s :	50.00%	50.00%	0.00%	0.00%	50.00%	50.00%	13.79%	82.76%	3.45%	16.67%	79.17%	4.17%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	1	0	0	0	0	1	5	1	1	4	0	13
PEAK HR FACTOR :	0.250			0.000			0.350			0.250			0.941

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002 **Day:** TUESDAY

Tractors

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM			0					1		0	1		2
6:15 AM			0					0		0	1		1
6:30 AM			1					0		0	5		6
6:45 AM			0					1		0	2		3
7:00 AM			0					2		0	1		3
7:15 AM			0					0		2	3		5
7:30 AM			0					4		2	3		9
7:45 AM			0					3		0	10		13
8:00 AM			0					2		1	14		17
8:15 AM			0					8		2	8		18
8:30 AM			0					8		1	7		16
8:45 AM			0					14		0	6		20

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	1	0	0	0	0	43	0	8	61	0	113
APPROACH %'s :	0.00%	0.00%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	100.00%	0.00%	11.59%	88.41%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	9	0	5	30	0	44
PEAK HR FACTOR :	0.000			0.000			0.563			0.583			0.933

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002

Day: TUESDAY

Tractors

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	0		0			0		17		0	4	0	21
2:15 PM	0		0			1		12		0	6	0	19
2:30 PM	0		0			0		12		2	5	0	19
2:45 PM	0		1			0		14		0	5	0	20
3:00 PM	0		0			0		19		1	10	0	30
3:15 PM	0		1			0		21		1	10	0	33
3:30 PM	0		0			1		20		0	4	0	25
3:45 PM	0		1			0		19		1	5	0	26
4:00 PM	0		0			0		16		0	11	0	27
4:15 PM	0		0			0		18		2	6	0	26
4:30 PM	0		1			0		15		1	8	0	25
4:45 PM	1		0			0		7		0	10	0	18
5:00 PM	0		0			0		6		0	20	1	27
5:15 PM	0		0			0		6		0	17	1	24
5:30 PM	0		0			0		10		0	10	0	20
5:45 PM	0		0			0		6		1	12	0	19

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	4	0	0	2	0	218	0	9	143	2	379
APPROACH %'s :	20.00%	0.00%	80.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	5.84%	92.86%	1.30%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	1	0	1	0	0	0	0	56	0	3	35	0	96
PEAK HR FACTOR :		0.500			0.000			0.778			0.864		0.941

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002 **Day:** TUESDAY

Tractor Trailers

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	0	0	0	0	0	0	0	1	0	0	1		2
6:15 AM	0	0	0	1	0	1	0	2	0	0	5		9
6:30 AM	0	0	0	0	0	0	1	2	0	1	9		13
6:45 AM	0	0	0	0	0	0	0	4	1	1	12		18
7:00 AM	0	0	0	0	0	1	0	2	0	1	12		16
7:15 AM	0	0	0	0	0	0	0	5	0	1	12		18
7:30 AM	0	0	0	0	0	0	0	2	2	0	7		11
7:45 AM	1	0	0	0	1	0	0	6	0	3	7		18
8:00 AM	0	0	1	0	1	0	0	5	1	2	15		25
8:15 AM	1	0	1	0	0	0	0	10	3	2	10		27
8:30 AM	0	2	1	0	0	0	0	20	0	1	14		38
8:45 AM	2	0	1	0	0	0	0	18	1	0	11		33

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	2	4	1	2	2	1	77	8	12	115	0	228
APPROACH %'s :	40.00%	20.00%	40.00%	20.00%	40.00%	40.00%	1.16%	89.53%	9.30%	9.45%	90.55%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	0	1	0	2	0	0	18	3	6	41	0	72
PEAK HR FACTOR :		0.500			0.500			0.875			0.691		0.933

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_002

Day: TUESDAY

Tractor Trailers

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Avalon Blvd			Avalon Blvd			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	0		1	0		0		31	2	3	24	0	61
2:15 PM	2		1	0		1		28	3	0	25	0	60
2:30 PM	0		1	0		0		13	1	0	16	1	32
2:45 PM	0		0	0		2		36	0	1	20	0	59
3:00 PM	0		1	0		0		31	1	1	9	0	43
3:15 PM	1		1	0		0		36	0	3	24	0	65
3:30 PM	0		1	0		0		42	0	1	9	0	53
3:45 PM	1		2	0		0		44	1	4	17	0	69
4:00 PM	0		0	0		0		36	1	0	14	0	51
4:15 PM	1		0	1		0		28	0	0	11	0	41
4:30 PM	0		0	0		0		31	0	0	20	0	51
4:45 PM	0		0	0		0		17	1	0	25	0	43
5:00 PM	0		0	0		0		7	1	1	20	0	29
5:15 PM	1		1	0		0		8	0	0	10	0	20
5:30 PM	0		0	0		0		17	0	2	10	0	29
5:45 PM	0		0	0		0		6	1	0	16	0	23

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	0	9	1	0	3	0	411	12	16	270	1	729
APPROACH %'s :	40.00%	0.00%	60.00%	25.00%	0.00%	75.00%	0.00%	97.16%	2.84%	5.57%	94.08%	0.35%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	1	0	0	1	0	0	0	112	2	0	70	0	186
PEAK HR FACTOR :	0.250			0.250			0.770			0.700			0.941

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA__ **Day:** TUESDAY

TOTALS

City: City of Los Angeles **Date:** 11/27/2012

PM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
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	57	0	0	22	43	144	0	8	91	21	386
4:15 PM	0	0	53	25	3	48	48	131	0	11	68	22	409
4:30 PM	2	2	38	9	1	17	49	168	0	2	111	19	418
4:45 PM	0	0	19	31	1	70	24	113	1	1	122	15	397
5:00 PM	0	0	18	26	1	57	7	95	0	8	118	4	334
5:15 PM	0	0	16	19	1	24	7	65	0	4	91	1	228
5:30 PM	1	0	16	3	0	40	3	84	0	2	81	1	231
5:45 PM	0	0	9	0	0	11	8	48	0	0	63	0	139

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	2	226	113	7	289	189	848	1	36	745	83	2542
APPROACH %'s :	1.30%	0.87%	97.84%	27.63%	1.71%	70.66%	18.21%	81.70%	0.10%	4.17%	86.23%	9.61%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	2	2	167	65	5	157	164	556	1	22	392	77	1610
PEAK HR FACTOR :		0.750			0.556			0.831			0.889		0.963

PCE Factors :	
Car	1.0
Motorcycle	1.0
Bus	2.0
Bobtail	1.1
Tractor	1.1
Tractor -Trailor	2.0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA__

Day: TUESDAY

TOTALS

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	0	0	5	1	0	7	37	27	0	9	46	12	144
6:15 AM	0	0	4	5	0	18	52	42	0	25	46	18	210
6:30 AM	0	0	4	3	0	8	53	57	0	22	60	14	221
6:45 AM	0	0	3	18	1	29	10	59	0	24	69	7	220
7:00 AM	0	0	11	11	0	14	6	68	0	17	60	3	190
7:15 AM	0	0	9	12	1	45	6	46	0	15	92	2	228
7:30 AM	0	0	7	4	0	28	11	59	2	7	65	0	183
7:45 AM	1	0	3	1	1	19	18	72	0	11	76	1	203
8:00 AM	0	0	12	4	0	7	15	60	1	13	89	3	204
8:15 AM	0	0	11	0	0	17	12	81	0	11	62	2	196
8:30 AM	0	1	8	4	1	16	4	78	1	12	68	0	193
8:45 AM	0	1	11	0	0	5	3	95	0	7	62	1	185

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2	88	63	4	213	227	744	4	173	795	63	2377
APPROACH %'s :	1.10%	2.20%	96.70%	22.50%	1.43%	76.07%	23.28%	76.31%	0.41%	16.78%	77.11%	6.11%	

PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	0	27	44	2	96	75	230	0	78	281	26	859
PEAK HR FACTOR :		0.614			0.612			0.693			0.883		0.942

PCE Factors :

Car	1.0
Motorcycle	1.0
Bus	2.0
Bobtail	1.1
Tractor	1.1
Tractor -Trailor	2.0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA__

Day: TUESDAY

TOTALS

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	0	1	29	2	0	7	10	114	0	5	70	5	243
2:15 PM	0	0	17	1	1	8	11	127	0	13	86	8	272
2:30 PM	0	0	8	2	2	11	7	71	2	12	86	3	204
2:45 PM	0	0	19	2	0	9	13	133	0	7	99	1	283
3:00 PM													0
3:15 PM													0
3:30 PM													0
3:45 PM													0
4:00 PM													0
4:15 PM													0
4:30 PM													0
4:45 PM													0
5:00 PM													0
5:15 PM													0
5:30 PM													0
5:45 PM													0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	73	7	3	35	41	445	2	37	341	17	1002
APPROACH %'s :	0.00%	1.35%	98.65%	15.56%	6.67%	77.78%	8.40%	91.19%	0.41%	9.37%	86.33%	4.30%	

PEAK HR START TIME :	200 PM												TOTAL
PEAK HR VOL :	0	1	73	7	3	35	41	445	2	37	341	17	1002
PEAK HR FACTOR :		0.617			0.750			0.836			0.923		0.885

PCE Factors :	
Car	1.0
Motorcycle	1.0
Bus	2.0
Bobtail	1.1
Tractor	1.1
Tractor -Trailor	2.0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003 **Day:** TUESDAY

TOTALS

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM	0	0	4	1	0	7	37	26	0	8	45	12	140
6:15 AM	0	0	3	5	0	18	52	39	0	24	41	18	200
6:30 AM	0	0	3	3	0	7	52	56	0	20	50	14	205
6:45 AM	0	0	3	18	1	29	10	55	0	19	55	7	197
7:00 AM	0	0	10	11	0	14	6	66	0	17	47	3	174
7:15 AM	0	0	8	12	1	45	6	41	0	14	78	2	207
7:30 AM	0	0	5	4	0	28	11	57	2	7	57	0	171
7:45 AM	1	0	3	1	1	19	18	65	0	10	65	1	184
8:00 AM	0	0	12	4	0	7	15	54	1	12	70	3	178
8:15 AM	0	0	8	0	0	17	12	69	0	10	49	2	167
8:30 AM	0	1	7	4	1	16	4	56	1	8	52	0	150
8:45 AM	0	1	8	0	0	5	3	74	0	7	50	1	149

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2	74	63	4	212	226	658	4	156	659	63	2122
APPROACH %'s :	1.30%	2.60%	96.10%	22.58%	1.43%	75.99%	25.45%	74.10%	0.45%	17.77%	75.06%	7.18%	

PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	0	24	44	2	95	74	218	0	70	230	26	783
PEAK HR FACTOR :		0.600			0.608			0.676			0.867		0.946

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003 | **Day:** TUESDAY

TOTALS

City: City of Los Angeles | **Date:** 11/27/2012

PM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	0	1	22	2	0	7	10	80	0	4	42	5	173
2:15 PM	0	0	15	1	1	8	11	96	0	12	60	8	212
2:30 PM	0	0	8	2	2	11	7	57	1	8	68	3	167
2:45 PM	0	0	15	2	0	8	13	95	0	5	78	1	217
3:00 PM	0	0	23	0	1	9	17	94	0	5	61	3	213
3:15 PM	0	0	17	2	1	5	23	93	0	10	73	9	233
3:30 PM	0	0	12	4	0	14	27	113	0	10	44	12	236
3:45 PM	0	0	13	1	1	8	51	94	0	10	58	11	247
4:00 PM	0	0	54	0	0	22	43	106	0	8	75	21	329
4:15 PM	0	0	51	25	3	48	48	100	0	9	56	22	362
4:30 PM	2	2	36	9	1	17	49	135	0	2	90	19	362
4:45 PM	0	0	17	31	1	70	24	95	1	1	96	15	351
5:00 PM	0	0	16	26	1	56	7	87	0	7	96	4	300
5:15 PM	0	0	15	19	1	24	7	55	0	3	79	1	204
5:30 PM	1	0	14	3	0	40	3	66	0	2	68	1	198
5:45 PM	0	0	6	0	0	10	8	41	0	0	47	0	112

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	3	334	127	13	357	348	1407	2	96	1091	135	3916
APPROACH %'s :	0.88%	0.88%	98.24%	25.55%	2.62%	71.83%	19.81%	80.08%	0.11%	7.26%	82.53%	10.21%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	2	2	158	65	5	157	164	436	1	20	317	77	1404
PEAK HR FACTOR :		0.750			0.556			0.817			0.924		0.970

CONTROL :

ITM Peak Hour Summary

Prepared by:

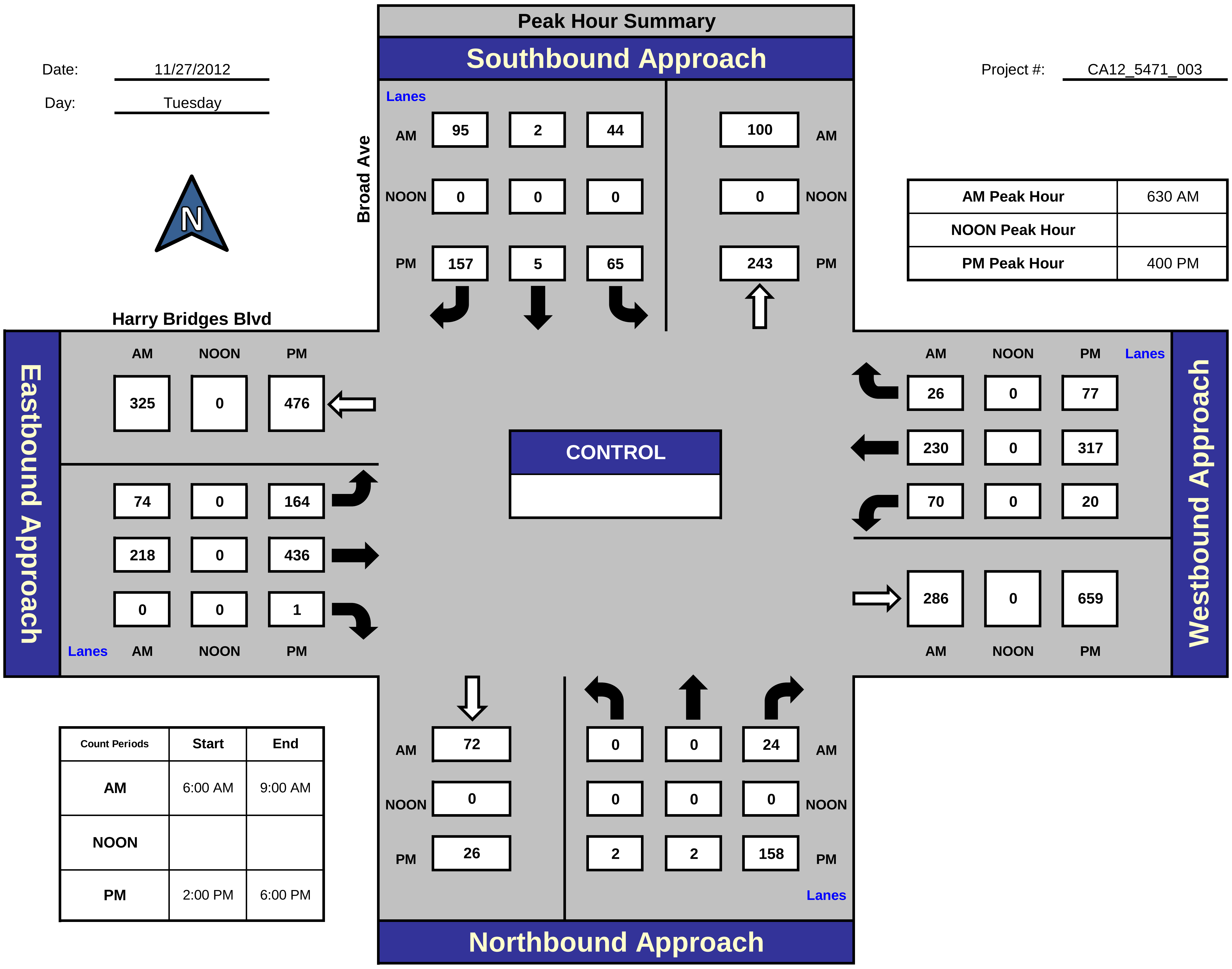
Broad Ave and Harry Bridges Blvd , City of Los Angeles

Date: 11/27/2012

Day: Tuesday

Project #: CA12_5471_003

AM Peak Hour	630 AM
NOON Peak Hour	
PM Peak Hour	400 PM



Peak Hour Summary

Southbound Approach

	↲	↓	↳	⇧
AM	95	2	44	100
NOON	0	0	0	0
PM	157	5	65	243

Eastbound Approach

	AM	NOON	PM
⇦	325	0	476
↱	74	0	164
→	218	0	436
↴	0	0	1

Westbound Approach

	AM	NOON	PM
↰	26	0	77
←	230	0	317
↙	70	0	20
⇨	286	0	659

Northbound Approach

	⇩	↰	↑	↱
AM	72	0	0	24
NOON	0	0	0	0
PM	26	2	2	158

CONTROL

Count Periods	Start	End
AM	6:00 AM	9:00 AM
NOON		
PM	2:00 PM	6:00 PM

Total Ins & Outs

North Leg

	⇩	⇧
AM	141	100
NOON	0	0
PM	227	243

West Leg

	AM	NOON	PM
←	325	0	476
→	292	0	601

East Leg

	AM	NOON	PM
←	326	0	414
→	286	0	659

South Leg

	⇩	⇧
AM	72	24
NOON	0	0
PM	26	162

Total Volume Per Leg

	North Leg	West Leg	East Leg	South Leg
AM	241	617	612	96
NOON	0	0	0	0
PM	470	1077	1073	188

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003 **Day:** TUESDAY

Passenger Cars

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
6:00 AM	0	0	3	1	0	7	37	24	0	7	44	12	135
6:15 AM	0	0	2	5	0	18	52	34	0	23	31	18	183
6:30 AM	0	0	2	3	0	5	51	53	0	18	36	14	182
6:45 AM	0	0	3	18	1	29	10	50	0	13	34	7	165
7:00 AM	0	0	7	10	0	14	6	60	0	15	29	3	144
7:15 AM	0	0	6	12	1	44	6	36	0	11	57	1	174
7:30 AM	0	0	3	4	0	26	11	50	2	7	44	0	147
7:45 AM	1	0	3	1	1	19	18	52	0	9	45	1	150
8:00 AM	0	0	10	3	0	7	15	44	1	9	36	2	127
8:15 AM	0	0	5	0	0	17	12	49	0	7	26	1	117
8:30 AM	0	1	6	3	1	16	3	28	0	2	27	0	87
8:45 AM	0	1	4	0	0	5	3	40	0	6	31	0	90

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2	54	60	4	207	224	520	3	127	440	59	1701
APPROACH %'s :	1.75%	3.51%	94.74%	22.14%	1.48%	76.38%	29.99%	69.61%	0.40%	20.29%	70.29%	9.42%	

PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	0	18	43	2	92	73	199	0	57	156	25	665
PEAK HR FACTOR :	0.643			0.601			0.654			0.862			0.913

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003 **Day:** TUESDAY

Passenger Cars

City: City of Los Angeles **Date:** 11/27/2012

PM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM	0	1	13	2	0	6	10	29	0	2	7	4	74
2:15 PM	0	0	13	1	1	8	11	49	0	10	27	8	128
2:30 PM	0	0	4	2	2	9	6	32	0	3	42	3	103
2:45 PM	0	0	10	2	0	7	13	43	0	1	50	1	127
3:00 PM	0	0	19	0	1	9	17	43	0	2	39	2	132
3:15 PM	0	0	9	2	1	4	23	32	0	7	33	9	120
3:30 PM	0	0	10	3	0	14	27	43	0	4	29	12	142
3:45 PM	0	0	9	1	1	8	51	27	0	5	30	11	143
4:00 PM	0	0	48	0	0	22	43	51	0	8	45	21	238
4:15 PM	0	0	45	25	3	48	47	52	0	7	37	22	286
4:30 PM	2	2	33	8	1	17	47	87	0	2	61	19	279
4:45 PM	0	0	15	31	1	70	23	69	1	1	60	13	284
5:00 PM	0	0	14	26	1	53	7	70	0	6	54	4	235
5:15 PM	0	0	14	19	1	24	7	40	0	2	51	1	159
5:30 PM	1	0	12	3	0	40	3	38	0	1	46	1	145
5:45 PM	0	0	3	0	0	9	8	29	0	0	19	0	68

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	3	271	125	13	348	343	734	1	61	630	131	2663
APPROACH %'s :	1.08%	1.08%	97.83%	25.72%	2.67%	71.60%	31.82%	68.09%	0.09%	7.42%	76.64%	15.94%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	2	2	141	64	5	157	160	259	1	18	203	75	1087
PEAK HR FACTOR :		0.755			0.554			0.784			0.902		0.950

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003

Day: TUESDAY

Motorcycles

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM						0		0		0	0		0
6:15 AM						0		1		0	1		2
6:30 AM						0		0		0	0		0
6:45 AM						0		0		0	1		1
7:00 AM						0		1		0	2		3
7:15 AM						1		0		0	0		1
7:30 AM						1		1		0	1		3
7:45 AM						0		1		0	0		1
8:00 AM						0		0		1	0		1
8:15 AM						0		0		0	0		0
8:30 AM						0		0		0	0		0
8:45 AM						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	2	0	4	0	1	5	0	12
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	16.67%	83.33%	0.00%	

PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	1	0	0	3	0	5
PEAK HR FACTOR :	0.000			0.250			0.250			0.375			0.913

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003

Day: TUESDAY

Motorcycles

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM			0			0	0	0			1		1
2:15 PM			0			0	0	0			0		0
2:30 PM			0			0	0	0			0		0
2:45 PM			0			0	0	0			0		0
3:00 PM			0			0	0	0			0		0
3:15 PM			0			0	0	0			0		0
3:30 PM			0			0	0	3			1		4
3:45 PM			0			0	0	1			0		1
4:00 PM			1			0	0	0			0		1
4:15 PM			0			0	1	0			0		1
4:30 PM			0			0	2	0			0		2
4:45 PM			0			0	1	2			1		4
5:00 PM			0			1	0	2			1		4
5:15 PM			0			0	0	0			0		0
5:30 PM			0			0	0	1			0		1
5:45 PM			0			0	0	0			0		0

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	1	0	0	1	4	9	0	0	4	0	19
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	30.77%	69.23%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	0	1	0	0	0	4	2	0	0	1	0	8
PEAK HR FACTOR :	0.250			0.000			0.500			0.250			0.950

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003

Day: TUESDAY

Buses

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM													0
6:15 AM													0
6:30 AM													0
6:45 AM													0
7:00 AM													0
7:15 AM													0
7:30 AM													0
7:45 AM													0
8:00 AM													0
8:15 AM													0
8:30 AM													0
8:45 AM													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 :	630 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		0.913

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003

Day: TUESDAY

Buses

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM													0
2:15 PM													0
2:30 PM													0
2:45 PM													0
3:00 PM													0
3:15 PM													0
3:30 PM													0
3:45 PM													0
4:00 PM													0
4:15 PM													0
4:30 PM													0
4:45 PM													0
5:00 PM													0
5:15 PM													0
5:30 PM													0
5:45 PM													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 :	400 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		0.950

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003

Day: TUESDAY

Bobtails

City: City of Los Angeles

Date: 11/27/2012

AM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM			0	0		0		0	0	0	0	0	0
6:15 AM			0	0		0		1	0	0	3	0	4
6:30 AM			0	0		0		1	0	0	1	0	2
6:45 AM			0	0		0		0	0	1	5	0	6
7:00 AM			0	1		0		1	0	2	2	0	6
7:15 AM			1	0		0		0	0	2	3	1	7
7:30 AM			0	0		1		0	0	0	0	0	1
7:45 AM			0	0		0		3	0	0	0	0	3
8:00 AM			2	1		0		2	0	0	2	1	8
8:15 AM			0	0		0		0	0	0	1	0	1
8:30 AM			0	1		0		0	1	1	2	0	5
8:45 AM			1	0		0		1	0	0	2	1	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	4	3	0	1	0	9	1	6	21	3	48
APPROACH %'s :	0.00%	0.00%	100.00%	75.00%	0.00%	25.00%	0.00%	90.00%	10.00%	20.00%	70.00%	10.00%	

PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	0	1	1	0	0	0	2	0	5	11	1	21
PEAK HR FACTOR :	0.250			0.250			0.500			0.708			0.913

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003 **Day:** TUESDAY

Bobtails

City: City of Los Angeles **Date:** 11/27/2012

PM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM			1	0		1	0	2		1	3	0	8
2:15 PM			0	0		0	0	6		1	2	0	9
2:30 PM			2	0		2	0	1		0	2	0	7
2:45 PM			0	0		0	0	1		0	2	0	3
3:00 PM			1	0		0	0	0		0	2	1	4
3:15 PM			2	0		0	0	2		0	3	0	7
3:30 PM			0	0		0	0	4		0	0	0	4
3:45 PM			1	0		0	0	0		0	1	0	2
4:00 PM			1	0		0	0	3		0	5	0	9
4:15 PM			1	0		0	0	1		0	0	0	2
4:30 PM			0	1		0	0	1		0	0	0	2
4:45 PM			0	0		0	0	0		0	0	2	2
5:00 PM			0	0		0	0	2		0	1	0	3
5:15 PM			0	0		0	0	0		0	0	0	0
5:30 PM			0	0		0	0	0		0	0	0	0
5:45 PM			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	9	1	0	3	0	23	0	2	21	3	62
APPROACH %'s :	0.00%	0.00%	100.00%	25.00%	0.00%	75.00%	0.00%	100.00%	0.00%	7.69%	80.77%	11.54%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	0	2	1	0	0	0	5	0	0	5	2	15
PEAK HR FACTOR :	0.500			0.250			0.417			0.350			0.950

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003 **Day:** TUESDAY

Tractors

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM			0			0	0	1		0	0	0	1
6:15 AM			0			0	0	0		0	1	0	1
6:30 AM			0			1	0	1		0	4	0	6
6:45 AM			0			0	0	1		0	2	0	3
7:00 AM			2			0	0	2		0	1	0	5
7:15 AM			0			0	0	0		0	5	0	5
7:30 AM			0			0	0	4		0	5	0	9
7:45 AM			0			0	0	3		0	10	0	13
8:00 AM			0			0	0	2		1	15	0	18
8:15 AM			0			0	0	9		2	10	1	22
8:30 AM			0			0	1	7		1	8	0	17
8:45 AM			0			0	0	14		1	6	0	21

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	2	0	0	1	1	44	0	5	67	1	121
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	2.22%	97.78%	0.00%	6.85%	91.78%	1.37%	

PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	0	2	0	0	1	0	4	0	0	12	0	19
PEAK HR FACTOR :	0.250			0.250			0.500			0.600			0.913

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003 **Day:** TUESDAY

Tractors

City: City of Los Angeles **Date:** 11/27/2012

PM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM			1			0	0	17		0	4	1	23
2:15 PM			0			0	0	12		0	6	0	18
2:30 PM			2			0	1	11		1	7	0	22
2:45 PM			1			0	0	15		2	6	0	24
3:00 PM			1			0	0	19		2	10	0	32
3:15 PM			2			0	0	22		0	11	0	35
3:30 PM			0			0	0	20		2	4	0	26
3:45 PM			0			0	0	20		2	6	0	28
4:00 PM			1			0	0	16		0	11	0	28
4:15 PM			3			0	0	18		0	8	0	29
4:30 PM			1			0	0	16		0	9	0	26
4:45 PM			0			0	0	7		0	10	0	17
5:00 PM			0			1	0	6		0	20	0	27
5:15 PM			0			0	0	6		0	18	0	24
5:30 PM			0			0	0	10		1	10	0	21
5:45 PM			0			0	0	6		0	13	0	19

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	12	0	0	1	1	221	0	10	153	1	399
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.45%	99.55%	0.00%	6.10%	93.29%	0.61%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	0	5	0	0	0	0	57	0	0	38	0	100
PEAK HR FACTOR :	0.417			0.000			0.792			0.864			0.950

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003 **Day:** TUESDAY

Tractor Trailers

City: City of Los Angeles **Date:** 11/27/2012

AM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
6:00 AM			1			0	0	1		1	1		4
6:15 AM			1			0	0	3		1	5		10
6:30 AM			1			1	1	1		2	9		15
6:45 AM			0			0	0	4		5	13		22
7:00 AM			1			0	0	2		0	13		16
7:15 AM			1			0	0	5		1	13		20
7:30 AM			2			0	0	2		0	7		11
7:45 AM			0			0	0	6		1	10		17
8:00 AM			0			0	0	6		1	17		24
8:15 AM			3			0	0	11		1	12		27
8:30 AM			1			0	0	21		4	15		41
8:45 AM			3			0	0	19		0	11		33

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	14	0	0	1	1	81	0	17	126	0	240
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	1.22%	98.78%	0.00%	11.89%	88.11%	0.00%	

PEAK HR START TIME :	630 AM												TOTAL
PEAK HR VOL :	0	0	3	0	0	1	1	12	0	8	48	0	73
PEAK HR FACTOR :	0.750			0.250			0.650			0.778			0.913

CONTROL :

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA12_5471_003

Day: TUESDAY

Tractor Trailers

City: City of Los Angeles

Date: 11/27/2012

PM

NS/EW Streets:	Broad Ave			Broad Ave			Harry Bridges Blvd			Harry Bridges Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:													
2:00 PM			7	0		0		32	0	1	27		67
2:15 PM			2	0		0		29	0	1	25		57
2:30 PM			0	0		0		13	1	4	17		35
2:45 PM			4	0		1		36	0	2	20		63
3:00 PM			2	0		0		32	0	1	10		45
3:15 PM			4	0		1		37	0	3	26		71
3:30 PM			2	1		0		43	0	4	10		60
3:45 PM			3	0		0		46	0	3	21		73
4:00 PM			3	0		0		36	0	0	14		53
4:15 PM			2	0		0		29	0	2	11		44
4:30 PM			2	0		0		31	0	0	20		53
4:45 PM			2	0		0		17	0	0	25		44
5:00 PM			2	0		1		7	0	1	20		31
5:15 PM			1	0		0		9	0	1	10		21
5:30 PM			2	0		0		17	0	0	12		31
5:45 PM			3	0		1		6	0	0	15		25

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	41	1	0	4	0	420	1	23	283	0	773
APPROACH %'s :	0.00%	0.00%	100.00%	20.00%	0.00%	80.00%	0.00%	99.76%	0.24%	7.52%	92.48%	0.00%	

PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	0	9	0	0	0	0	113	0	2	70	0	194
PEAK HR FACTOR :		0.750			0.000			0.785			0.720		0.950

CONTROL :

APPENDIX C:
LEVEL OF SERVICE WORKSHEETS

EXISTING (2012)

Moving LA Forward

Level of Service Worksheet
(Circular 212 Method)

I/S #: 1

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Broad Ave **East-West Street:** Harry Bridges Blvd
Scenario: EXISTING CONDITIONS
Count Date: **Analyst:** **Date:**

	AM				PM			
No. of Phases				2				2
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	1	**0**	2	1	2
	Left-Through		0			0	
	Through	0	1	0	2	1	2
	Through-Right		0			0	
	Right	27	1	0	167	1	**156**
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	44	1	44	65	1	**65**
	Left-Through		0			0	
	Through	2	1	2	5	1	5
	Through-Right		0			0	
	Right	96	1	**59**	157	1	75
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	75	1	**75**	164	1	**164**
	Left-Through		0			0	
	Through	230	2	115	556	2	278
	Through-Right		0			0	
	Right	0	1	0	1	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	78	1	78	22	1	22
	Left-Through		0			0	
	Through	281	2	**141**	392	2	**196**
	Through-Right		0			0	
	Right	26	1	4	77	1	45
	Left-Through-Right		0			0	
	Left-Right		0			0	

	AM		PM	
CRITICAL VOLUMES	*North-South:*	59	*North-South:*	221
	East-West:	216	*East-West:*	360
	SUM:	275	*SUM:*	581
VOLUME/CAPACITY *(V/C)* RATIO:		0.183		0.387
V/C LESS ATSAC/ATCS ADJUSTMENT:		**0.092**		**0.287**
LEVEL OF SERVICE (LOS):		**A**		**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 1

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Broad Ave **East-West Street:** Harry Bridges Blvd
Scenario: EXISTING CONDITIONS
Count Date: **Analyst:** **Date:**

	MD						
No. of Phases				2			2
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	1	0			**0**
	Left-Through		0				
	Through	1	1	1			0
	Through-Right		0				
	Right	73	1	**55**			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	7	1	**7**			0
	Left-Through		0				
	Through	3	1	3			**0**
	Through-Right		0				
	Right	35	1	15			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	41	1	41			0
	Left-Through		0				
	Through	445	2	**223**			**0**
	Through-Right		0				
	Right	2	1	2			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	37	1	**37**			**0**
	Left-Through		0				
	Through	341	2	171			0
	Through-Right		0				
	Right	17	1	14			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	62		*North-South:*	0
			East-West:	260		*East-West:*	0
			SUM:	322		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.215			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.115**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

LADOT
Moving LA Forward

Level of Service Worksheet
(Circular 212 Method)

CITY OF LOS ANGELES FOUNDED 1781

I/S #: 2

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Avalon Blvd **East-West Street:** Harry Bridges Blvd
Scenario: EXISTING CONDITIONS
Count Date: **Analyst:** **Date:**

	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--*	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	6	1	**6**	41	1	**41**
	Left-Through		0			0	
	Through	9	2	5	38	2	19
	Through-Right		0			0	
	Right	5	1	0	17	1	10
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	4	1	4	12	1	12
	Left-Through		0			0	
	Through	12	2	6	12	2	6
	Through-Right		0			0	
	Right	125	1	**78**	154	1	**56**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	94	1	**94**	196	1	**196**
	Left-Through		0			0	
	Through	286	2	143	684	2	342
	Through-Right		0			0	
	Right	20	1	17	22	1	2
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	31	1	31	15	1	15
	Left-Through		0			0	
	Through	381	2	**191**	507	2	**254**
	Through-Right		0			0	
	Right	5	1	3	21	1	15
	Left-Through-Right		0			0	
	Left-Right		0			0	

	AM		PM	
CRITICAL VOLUMES	*North-South:*	84	*North-South:*	97
	East-West:	285	*East-West:*	450
	SUM:	369	*SUM:*	547
VOLUME/CAPACITY *(V/C)* RATIO:		0.268		0.398
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.168		0.298
LEVEL OF SERVICE (LOS):		A		A

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 2

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT

North-South Street: Avalon Blvd **East-West Street:** Harry Bridges Blvd

Scenario: EXISTING CONDITIONS

Count Date: **Analyst:** **Date:**

	MD							
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--*	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	11	1	**11**			**0**
	Left-Through		0				
	Through	15	2	8			0
	Through-Right		0				
	Right	18	1	7			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	7	1	7			0
	Left-Through		0				
	Through	10	2	5			**0**
	Through-Right		0				
	Right	84	1	**55**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	59	1	59			0
	Left-Through		0				
	Through	459	2	**230**			**0**
	Through-Right		0				
	Right	20	1	15			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	22	1	**22**			**0**
	Left-Through		0				
	Through	348	2	174			0
	Through-Right		0				
	Right	4	1	1			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	66		*North-South:*	0
			East-West:	252		*East-West:*	0
			SUM:	318		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.231			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.131**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #:	3

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Fries Ave **East-West Street:** Harry Bridges Blvd
Scenario: EXISTING CONDITIONS
Count Date: **Analyst:** **Date:**

	AM				PM			
No. of Phases				2				2
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	60	1	**60**	166	1	166
	Left-Through		0			0	
	Through	12	1	12	30	1	30
	Through-Right		0			0	
	Right	25	1	2	209	1	**198**
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	3	1	3	5	1	**5**
	Left-Through		0			0	
	Through	15	1	**15**	3	1	3
	Through-Right		0			0	
	Right	18	1	8	32	1	12
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	21	1	**21**	40	1	40
	Left-Through		0			0	
	Through	380	2	190	725	2	**363**
	Through-Right		0			0	
	Right	72	1	42	27	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	46	1	46	22	1	**22**
	Left-Through		0			0	
	Through	455	2	**228**	688	2	344
	Through-Right		0			0	
	Right	13	1	12	13	1	11
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	75		*North-South:*	203
			East-West:	249		*East-West:*	385
			SUM:	324		*SUM:*	588
VOLUME/CAPACITY *(V/C)* RATIO:				0.216			0.392
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.116			0.292
LEVEL OF SERVICE (LOS):				A			A

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 3

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT

North-South Street: Fries Ave **East-West Street:** Harry Bridges Blvd

Scenario: EXISTING CONDITIONS

Count Date: **Analyst:** **Date:**

		MD					
No. of Phases				2			2
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**	158	1	158			**0**
	Left-Through		0				
	Through	10	1	10			0
	Through-Right		0				
	Right	211	1	**182**			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	**Left**	8	1	**8**			0
	Left-Through		0				
	Through	13	1	13			**0**
	Through-Right		0				
	Right	34	1	20			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	**Left**	28	1	28			0
	Left-Through		0				
	Through	329	2	**165**			**0**
	Through-Right		0				
	Right	80	1	1			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	**Left**	59	1	**59**			**0**
	Left-Through		0				
	Through	368	2	184			0
	Through-Right		0				
	Right	9	1	5			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			***North-South:***	190		***North-South:***	0
			East-West:	224		***East-West:***	0
			SUM:	414		***SUM:***	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.276			0.000
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**				**0.176**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

FUTURE (2017)

LADOT
Moving LA Forward

Level of Service Worksheet
(Circular 212 Method)

CITY OF LOS ANGELES
FOUNDED 1781

I/S #: 1

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Broad Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

	AM				PM			
No. of Phases				2				2
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**	60	1	**60**	30	1	30
	Left-Through		0			0	
	Through	0	1	0	0	1	0
	Through-Right		0			0	
	Right	135	1	29	133	1	**84**
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	**Left**	10	1	10	68	1	**68**
	Left-Through		0			0	
	Through	0	1	**0**	0	1	0
	Through-Right		0			0	
	Right	0	1	0	67	1	22
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	**Left**	35	1	35	91	1	91
	Left-Through		0			0	
	Through	473	2	**237**	1241	2	**621**
	Through-Right		0			0	
	Right	58	1	28	18	1	3
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	**Left**	213	1	**213**	98	1	**98**
	Left-Through		0			0	
	Through	590	2	295	898	2	449
	Through-Right		0			0	
	Right	9	1	4	81	1	47
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			***North-South:***	60		***North-South:***	152
			East-West:	450		***East-West:***	719
			SUM:	510		***SUM:***	871
VOLUME/CAPACITY *(V/C)* RATIO:				0.340			0.581
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**				**0.240**			**0.481**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 1

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Broad Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

		MD					
No. of Phases				2			2
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**	34	1	34			**0**
	Left-Through		0				
	Through	0	1	0			0
	Through-Right		0				
	Right	99	1	**45**			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	**Left**	9	1	**9**			0
	Left-Through		0				
	Through	0	1	0			**0**
	Through-Right		0				
	Right	16	1	12			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	**Left**	9	1	9			0
	Left-Through		0				
	Through	756	2	**378**			**0**
	Through-Right		0				
	Right	32	1	15			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	**Left**	109	1	**109**			**0**
	Left-Through		0				
	Through	511	2	256			0
	Through-Right		0				
	Right	20	1	16			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			***North-South:***	54		***North-South:***	0
			East-West:	487		***East-West:***	0
			SUM:	541		***SUM:***	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.361			0.000
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**				**0.261**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #: 2

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Avalon Blvd **East-West Street:** Harry Bridges Blvd
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

	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--*	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	1	**0**	0	1	**0**
	Left-Through		0			0	
	Through	1	2	1	3	2	2
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	**Left**	3	1	3	12	1	12
	Left-Through		0			0	
	Through	2	2	1	2	2	1
	Through-Right		0			0	
	Right	75	1	**36**	118	1	**17**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	**Left**	78	1	**78**	202	1	**202**
	Left-Through		0			0	
	Through	568	2	284	1338	2	669
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	**Left**	0	1	0	0	1	0
	Left-Through		0			0	
	Through	646	2	**323**	972	2	**486**
	Through-Right		0			0	
	Right	4	1	3	21	1	15
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			***North-South:***	36		***North-South:***	17
			East-West:	401		***East-West:***	688
			SUM:	437		***SUM:***	705
VOLUME/CAPACITY *(V/C)* RATIO:				0.318			0.513
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**				**0.218**			**0.413**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Moving LA Forward

Level of Service Workheet
(Circular 212 Method)

I/S #:
2

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Avalon Blvd **East-West Street:** Harry Bridges Blvd
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

	MD							
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--*	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	1	**0**			**0**
	Left-Through		0				
	Through	1	2	1			0
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	7	1	7			0
	Left-Through		0				
	Through	1	2	1			**0**
	Through-Right		0				
	Right	86	1	**55**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	62	1	62			0
	Left-Through		0				
	Through	790	2	**395**			**0**
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	0	1	**0**			**0**
	Left-Through		0				
	Through	557	2	279			0
	Through-Right		0				
	Right	4	1	1			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	55		*North-South:*	0
			East-West:	395		*East-West:*	0
			SUM:	450		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.327			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.227**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 3

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Fries Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

	AM				PM			
No. of Phases				2				2
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	6	1	**6**	31	1	**31**
	Left-Through		0			0	
	Through	0	1	0	1	1	1
	Through-Right		0			0	
	Right	3	1	0	7	1	5
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	5	1	5	12	1	12
	Left-Through		0			0	
	Through	1	1	**1**	1	1	1
	Through-Right		0			0	
	Right	11	1	0	32	1	**12**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	36	1	**36**	41	1	41
	Left-Through		0			0	
	Through	639	2	320	1521	2	**761**
	Through-Right		0			0	
	Right	17	1	14	17	1	2
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	6	1	6	4	1	**4**
	Left-Through		0			0	
	Through	705	2	**353**	1069	2	535
	Through-Right		0			0	
	Right	10	1	8	17	1	11
	Left-Through-Right		0			0	
	Left-Right		0			0	

	AM		PM	
CRITICAL VOLUMES	*North-South:*	7	*North-South:*	43
	East-West:	389	*East-West:*	765
	SUM:	396	*SUM:*	808
VOLUME/CAPACITY *(V/C)* RATIO:		0.264		0.539
V/C LESS ATSAC/ATCS ADJUSTMENT:		**0.164**		**0.439**
LEVEL OF SERVICE (LOS):		**A**		**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #: 3

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Fries Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

		MD					
No. of Phases				2			2
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	11	1	**11**			**0**
	Left-Through		0				
	Through	0	1	0			0
	Through-Right		0				
	Right	3	1	2			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	18	1	18			0
	Left-Through		0				
	Through	0	1	0			**0**
	Through-Right		0				
	Right	34	1	**20**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	29	1	29			0
	Left-Through		0				
	Through	825	2	**413**			**0**
	Through-Right		0				
	Right	8	1	3			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	3	1	**3**			**0**
	Left-Through		0				
	Through	629	2	315			0
	Through-Right		0				
	Right	11	1	2			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	31		*North-South:*	0
			East-West:	416		*East-West:*	0
			SUM:	447		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.298			0.000
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**				**0.198**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 4

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** Harry Bridges Blvd
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

	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--* 3 *EB--* 3	*SB--* *WB--*	0 0	*NB--* 3 *EB--* 3	*SB--* *WB--*	0 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	167	2	**92**	246	2	**135**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	53	1	0	147	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	640	2	**320**	1432	2	**716**
	Through-Right		0			0	
	Right	324	1	232	168	1	33
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	162	1	**162**	168	1	**168**
	Left-Through		0			0	
	Through	560	2	280	968	2	484
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	

	AM		PM	
CRITICAL VOLUMES	*North-South:*	92	*North-South:*	135
	East-West:	482	*East-West:*	884
	SUM:	574	*SUM:*	1019
VOLUME/CAPACITY *(V/C)* RATIO:		0.403		0.715
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**		**0.303**		**0.615**
LEVEL OF SERVICE (LOS):		**A**		**B**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #: 4

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** Harry Bridges Blvd
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

	MD					
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--* 3	*SB--*	0	*NB--* 3	*SB--*	0
	EB-- 3	*WB--*	0	*EB--* 3	*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	221	2	**122**			**0**
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	159	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	0	0	0			0
	Left-Through		0				
	Through	0	0	**0**			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	0	0	0			0
	Left-Through		0				
	Through	704	2	**352**			**0**
	Through-Right		0				
	Right	209	1	87			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	196	1	**196**			**0**
	Left-Through		0				
	Through	478	2	239			0
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	122		*North-South:*	0
			East-West:	548		*East-West:*	0
			SUM:	670		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.470			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.370**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #: 5

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** TraPac Access/Viaduct
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

		MD					
	No. of Phases			2			2
	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**
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	**Left**	134	1	134			0
	Left-Through		0				
	Through	0	0	0			**0**
	Through-Right		0				
	Right	272	1	**199**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	**Left**	268	1	**147**			0
	Left-Through		1				
	Through	0	1	0			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	**Left**	0	0	0			**0**
	Left-Through		0				
	Through	0	1	0			0
	Through-Right		1				
	Right	113	0	**46**			0
	Left-Through-Right		0				
	Left-Right		0				
	CRITICAL VOLUMES		*North-South:*	199		*North-South:*	0
			East-West:	193		*East-West:*	0
			SUM:	392		*SUM:*	0
	VOLUME/CAPACITY *(V/C)* RATIO:			0.261			0.000
	***V/C* LESS ATSAC/ATCS ADJUSTMENT:**			**0.161**			**0.000**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 5

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT

North-South Street: North Access Rd **East-West Street:** TraPac Access/Viaduct

Scenario: 2017 CONDITIONS

Count Date: **Analyst:** **Date:**

	AM	PM
No. of Phases	2	2
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 *EB--* 0 *WB--* 0	*NB--* 0 *SB--* 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	261	1	**261**	102	1	102
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	223	1	203	233	1	**159**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	73	1	**40**	271	1	**149**
	Left-Through		1			1	
	Through	0	1	0	0	1	0
	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	0	1	0	0	1	0
	Through-Right		1			1	
	Right	148	0	**18**	122	0	**71**
	Left-Through-Right		0			0	
	Left-Right		0			0	

		AM		PM
CRITICAL VOLUMES	*North-South:*	261	*North-South:*	159
	East-West:	58	*East-West:*	220
	SUM:	319	*SUM:*	379
VOLUME/CAPACITY *(V/C)* RATIO:		0.213		0.253
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.113		0.153
LEVEL OF SERVICE (LOS):		A		A

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 6

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: South Access Rd **East-West Street:** Pier A St/Viaduct
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

	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--	3	NB--	0	SB--	3
	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	87	1	**73**	55	1	**51**
	Through-Right		1			1	
	Right	59	0	59	47	0	47
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	101	1	**101**	33	1	**33**
	Left-Through		0			0	
	Through	160	2	80	69	2	35
	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	106	0	106	52	0	52
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	60	0	**166**	67	0	**119**
	Left-Through-Right		0			0	
	Left-Right		1			1	

	AM		PM	
CRITICAL VOLUMES	*North-South:*	174	*North-South:*	84
	East-West:	166	*East-West:*	119
	SUM:	340	*SUM:*	203
VOLUME/CAPACITY *(V/C)* RATIO:		0.239		0.142
V/C LESS ATSAC/ATCS ADJUSTMENT:		**0.139**		**0.071**
LEVEL OF SERVICE (LOS):		**A**		**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 6

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: South Access Rd **East-West Street:** Pier A St/Viaduct
Scenario: 2017 CONDITIONS
Count Date: **Analyst:** **Date:**

	MD						
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	3	*SB--*	*NB--*	0	3
	EB--	0	0	*WB--*	*EB--*	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**
	Left-Through		0				
	Through	63	1	**53**			0
	Through-Right		1				
	Right	42	0	42			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	55	1	**55**			0
	Left-Through		0				
	Through	79	2	40			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	0	0	**0**			0
	Left-Through		0				
	Through	0	0	0			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	50	0	50			**0**
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	50	0	**100**			0
	Left-Through-Right		0				
	Left-Right		1				
CRITICAL VOLUMES			*North-South:*	108		*North-South:*	0
			East-West:	100		*East-West:*	0
			SUM:	208		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.146			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.073**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

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                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.129
Loss Time (sec):       0                Average Delay (sec/veh):         8.1
Optimal Cycle:         0                Level Of Service:                  A
********************************************************************************
Street Name:           Fries Avenue                   South Access Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     60   38     0     0   69   106    59    0   101     0    0     0
Growth Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  60   38     0     0   69   106    59    0   101     0    0     0
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   60   38     0     0   69   106    59    0   101     0    0     0
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  60   38     0     0   69   106    59    0   101     0    0     0
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  60   38     0     0   69   106    59    0   101     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:  635  696     0     0  706   819   620    0   781     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.09 0.05  xxxx  xxxx 0.10  0.13  0.10 xxxx  0.13  xxxx xxxx  xxxx
Crit Moves: ****                        ****             ****
Delay/Veh:   8.8  8.0   0.0   0.0  8.2   7.6   8.9  0.0   7.7   0.0  0.0   0.0
Delay Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  8.8  8.0   0.0   0.0  8.2   7.6   8.9  0.0   7.7   0.0  0.0   0.0
LOS by Move:   A    A     *     *    A     A     A    *     A     *    *     *
ApproachDel:       8.5              7.8              8.2           xxxxxx
Delay Adj:        1.00             1.00             1.00            xxxxx
ApprAdjDel:        8.5              7.8              8.2           xxxxxx
LOS by Appr:         A                A                A                *
AllWayAvgQ:  0.1  0.1   0.0   0.0  0.1   0.1   0.1  0.0   0.1   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):        0.075
Loss Time (sec):       0                Average Delay (sec/veh):        7.7
Optimal Cycle:         0                Level Of Service:                 A
********************************************************************************
Street Name:           Fries Avenue                    South Access Road
Approach:      North Bound       South Bound        East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      50   32     0     0   38    50    42    0    55     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   50   32     0     0   38    50    42    0    55     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    50   32     0     0   38    50    42    0    55     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   50   32     0     0   38    50    42    0    55     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   50   32     0     0   38    50    42    0    55     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:   669  737     0     0  737   861   653    0   833     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.04  xxxx  xxxx 0.05  0.06  0.06 xxxx  0.07  xxxx xxxx  xxxx
Crit Moves:  ****                        ****             ****
Delay/Veh:    8.4  7.7   0.0   0.0  7.8   7.0   8.4  0.0   7.2   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   8.4  7.7   0.0   0.0  7.8   7.0   8.4  0.0   7.2   0.0  0.0   0.0
LOS by Move:    A    A     *     *    A     A     A    *     A     *    *     *
ApproachDel:       8.1              7.3              7.7           xxxxxx
Delay Adj:        1.00             1.00             1.00            xxxxx
ApprAdjDel:        8.1              7.3              7.7           xxxxxx
LOS by Appr:         A                A                A                *
AllWayAvgQ:   0.1  0.0   0.0   0.0  0.1   0.1   0.1  0.0   0.1   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):        0.099
Loss Time (sec):       0                Average Delay (sec/veh):        7.9
Optimal Cycle:         0                Level Of Service:                 A
********************************************************************************
Street Name:           Fries Avenue                   South Access Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L - T - R        L - T - R        L - T - R        L - T - R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      67   52     0     0   26    52    47    0    33     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   67   52     0     0   26    52    47    0    33     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    67   52     0     0   26    52    47    0    33     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   67   52     0     0   26    52    47    0    33     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   67   52     0     0   26    52    47    0    33     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:   677  746     0     0  738   863   643    0   817     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.07  xxxx  xxxx 0.04  0.06  0.07 xxxx  0.04  xxxx xxxx  xxxx
Crit Moves:  ****                        ****  ****
Delay/Veh:    8.5  7.8   0.0   0.0  7.7   7.1   8.6  0.0   7.1   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   8.5  7.8   0.0   0.0  7.7   7.1   8.6  0.0   7.1   0.0  0.0   0.0
LOS by Move:    A    A     *     *    A     A     A    *     A     *    *     *
ApproachDel:       8.2              7.3              8.0            xxxxxx
Delay Adj:        1.00             1.00             1.00            xxxxx
ApprAdjDel:        8.2              7.3              8.0            xxxxxx
LOS by Appr:         A                A                A                *
AllWayAvgQ:   0.1  0.1   0.0   0.0  0.0   0.1   0.1  0.0   0.0   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

FUTURE (2017) PLUS PROJECT

LADOT
Moving LA Forward

Level of Service Worksheet
(Circular 212 Method)

I/S #:	**PROJECT TITLE:**	AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT		
1	**North-South Street:**	Broad Ave	**East-West Street:**	Harry Bridges Blvd
	Scenario:	2017 + PROJECT CONDITIONS		
	Count Date:		**Analyst:**	**Date:**

	AM				PM			
No. of Phases				2				2
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	1	0	0	1	0
	Left-Through		0			0	
	Through	0	1	**0**	0	1	**0**
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	**Left**	10	1	**10**	68	1	**68**
	Left-Through		0			0	
	Through	0	1	0	0	1	0
	Through-Right		0			0	
	Right	0	1	0	67	1	22
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	**Left**	35	1	**35**	91	1	91
	Left-Through		0			0	
	Through	608	2	304	1374	2	**687**
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	**Left**	0	1	0	0	1	**0**
	Left-Through		0			0	
	Through	803	2	**402**	996	2	498
	Through-Right		0			0	
	Right	9	1	4	81	1	47
	Left-Through-Right		0			0	
	Left-Right		0			0	

	AM		PM	
CRITICAL VOLUMES	***North-South:***	10	***North-South:***	68
	East-West:	437	***East-West:***	687
	SUM:	447	***SUM:***	755
VOLUME/CAPACITY *(V/C)* RATIO:		0.298		0.503
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**		**0.198**		**0.403**
LEVEL OF SERVICE (LOS):		**A**		**A**

Version: 1i Beta; 8/4/2011

LADOT
Moving LA Forward

Level of Service Workheet
(Circular 212 Method)

CITY OF LOS ANGELES
FOUNDED 1781

I/S #: 1

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Broad Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	MD							
No. of Phases				2				2
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	1	**0**			**0**
	Left-Through		0				
	Through	0	1	0			0
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	9	1	9			0
	Left-Through		0				
	Through	0	1	0			**0**
	Through-Right		0				
	Right	16	1	**12**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	9	1	9			0
	Left-Through		0				
	Through	855	2	**428**			**0**
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	0	1	**0**			**0**
	Left-Through		0				
	Through	620	2	310			0
	Through-Right		0				
	Right	20	1	16			0
	Left-Through-Right		0				
	Left-Right		0				

CRITICAL VOLUMES	*North-South:*	12	*North-South:*	0
	East-West:	428	*East-West:*	0
	SUM:	440	*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:		0.293		0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:		**0.193**		**0.000**
LEVEL OF SERVICE (LOS):		**A**		**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #: 2

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Avalon Blvd **East-West Street:** Harry Bridges Blvd
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

		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--* 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	1	**0**	0	1	**0**
	Left-Through		0			0	
	Through	0	2	0	0	2	0
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	3	1	3	12	1	12
	Left-Through		0			0	
	Through	0	2	0	0	2	0
	Through-Right		0			0	
	Right	77	1	**38**	120	1	**18**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	79	1	**79**	205	1	205
	Left-Through		0			0	
	Through	645	2	323	1453	2	**727**
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	1	0	0	1	**0**
	Left-Through		0			0	
	Through	799	2	**400**	1040	2	520
	Through-Right		0			0	
	Right	4	1	3	21	1	15
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	38		*North-South:*	18
			East-West:	479		*East-West:*	727
			SUM:	517		*SUM:*	745
	VOLUME/CAPACITY *(V/C)* RATIO:			0.376			0.542
	***V/C* LESS ATSAC/ATCS ADJUSTMENT:**			**0.276**			**0.442**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Version: 1i Beta; 8/4/2011

LADOT
Moving LA Forward

Level of Service Worksheet
(Circular 212 Method)

CITY OF LOS ANGELES
FOUNDED 1781

I/S #: 2

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Avalon Blvd **East-West Street:** Harry Bridges Blvd
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	MD							
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--*	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	1	**0**			**0**
	Left-Through		0				
	Through	0	2	0			0
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	7	1	7			0
	Left-Through		0				
	Through	0	2	0			**0**
	Through-Right		0				
	Right	87	1	**56**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	63	1	63			0
	Left-Through		0				
	Through	857	2	**429**			**0**
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	0	1	**0**			**0**
	Left-Through		0				
	Through	632	2	316			0
	Through-Right		0				
	Right	4	1	1			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	56		*North-South:*	0
			East-West:	429		*East-West:*	0
			SUM:	485		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.353			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.253**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #: 3

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Fries Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	AM			PM		
No. of Phases			2			2
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	1	0	0	1	**0**
	Left-Through		0			0	
	Through	0	1	**0**	0	1	0
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	5	1	**5**	12	1	12
	Left-Through		0			0	
	Through	0	1	0	0	1	0
	Through-Right		0			0	
	Right	12	1	0	33	1	**12**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	36	1	**36**	42	1	42
	Left-Through		0			0	
	Through	720	2	360	1646	2	**823**
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	1	0	0	1	**0**
	Left-Through		0			0	
	Through	866	2	**433**	1143	2	572
	Through-Right		0			0	
	Right	10	1	8	17	1	11
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	5		*North-South:*	12
			East-West:	469		*East-West:*	823
			SUM:	474		*SUM:*	835
VOLUME/CAPACITY *(V/C)* RATIO:				0.316			0.557
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.216**			**0.457**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 3

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Fries Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

		MD					
	No. of Phases			2			2
	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	1	**0**			**0**
	Left-Through		0				
	Through	0	1	0			0
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	18	1	18			0
	Left-Through		0				
	Through	0	1	0			**0**
	Through-Right		0				
	Right	34	1	**20**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	29	1	29			0
	Left-Through		0				
	Through	896	2	**448**			**0**
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	0	1	**0**			**0**
	Left-Through		0				
	Through	708	2	354			0
	Through-Right		0				
	Right	11	1	2			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			***North-South:***	20		***North-South:***	0
			East-West:	448		***East-West:***	0
			SUM:	468		***SUM:***	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.312			0.000
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**				**0.212**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 4

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** Harry Bridges Blvd
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

		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-- 3	SB--	0	NB-- 3	SB--	0
		EB-- 3	WB--	0	EB-- 3	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	233	2	**128**	307	2	**169**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	192	1	0	291	1	141
	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	565	2	**283**	1397	2	**699**
	Through-Right		0			0	
	Right	399	1	271	203	1	34
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	384	2	**211**	273	2	**150**
	Left-Through		0			0	
	Through	494	2	247	907	2	454
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	128		*North-South:*	169
			East-West:	494		*East-West:*	849
			SUM:	622		*SUM:*	1018
	VOLUME/CAPACITY (*V/C*) RATIO:			0.436			0.714
	***V/C* LESS ATSAC/ATCS ADJUSTMENT:**			**0.336**			**0.614**
	LEVEL OF SERVICE (LOS):			**A**			**B**

Version: 1i Beta; 8/4/2011

LADOT
Moving LA Forward

Level of Service Workheet
(Circular 212 Method)

CITY OF LOS ANGELES
FOUNDED 1781

I/S #: 4

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** Harry Bridges Blvd
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	MD							
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--*	3	*SB--*	0	*NB--*	3	*SB--*	0
	EB--	3	*WB--*	0	*EB--*	3	*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	266	2	**146**			**0**
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	262	1	92			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	0	0	0			0
	Left-Through		0				
	Through	0	0	**0**			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	0	0	0			0
	Left-Through		0				
	Through	664	2	**332**			**0**
	Through-Right		0				
	Right	249	1	103			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	309	2	**170**			**0**
	Left-Through		0				
	Through	433	2	217			0
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				

CRITICAL VOLUMES	*North-South:*	146	*North-South:*	0
	East-West:	502	*East-West:*	0
	SUM:	648	*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:		0.455		0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.355		0.000
LEVEL OF SERVICE (LOS):		A		A

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #: 5

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** TraPac Access/Viaduct
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	AM	PM
No. of Phases	2	2
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 *EB--* 0 *WB--* 0	*NB--* 0 *SB--* 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	560	1	**560**	242	1	**242**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	223	2	105	233	2	60
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	73	1	**37**	271	1	**136**
	Left-Through		1			1	
	Through	0	0	37	0	0	136
	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	0	1	0	0	1	0
	Through-Right		1			1	
	Right	353	0	**73**	327	0	**206**
	Left-Through-Right		0			0	
	Left-Right		0			0	

		AM		PM
CRITICAL VOLUMES	*North-South:*	560	*North-South:*	242
	East-West:	110	*East-West:*	342
	SUM:	670	*SUM:*	584
VOLUME/CAPACITY *(V/C)* RATIO:		0.447		0.389
V/C LESS ATSAC/ATCS ADJUSTMENT:		**0.347**		**0.289**
LEVEL OF SERVICE (LOS):		**A**		**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 5

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** TraPac Access/Viaduct
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

		MD					
No. of Phases				2			2
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**
	Left-Through		0				
	Through	0	0	**0**			0
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	287	1	**287**			0
	Left-Through		0				
	Through	0	0	0			**0**
	Through-Right		0				
	Right	272	2	83			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	268	1	**134**			0
	Left-Through		1				
	Through	0	0	134			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	0	0	0			**0**
	Left-Through		0				
	Through	0	1	0			0
	Through-Right		1				
	Right	260	0	**117**			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	287		*North-South:*	0
			East-West:	251		*East-West:*	0
			SUM:	538		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.359			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.259**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet

(Circular 212 Method)

I/S #:
6

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: South Access Rd **East-West Street:** Pier A St/Viaduct
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	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--*	3	*NB--*	0	*SB--*	3
	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	146	1	**73**	102	1	**51**
	Through-Right		1			1	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	294	1	**294**	121	1	**121**
	Left-Through		0			0	
	Through	266	2	133	121	2	61
	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	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	206	0	**206**	226	0	**226**
	Left-Through-Right		0			0	
	Left-Right		1			1	

	AM		PM	
CRITICAL VOLUMES	*North-South:*	367	*North-South:*	172
	East-West:	206	*East-West:*	226
	SUM:	573	*SUM:*	398
VOLUME/CAPACITY *(V/C)* RATIO:		0.402		0.279
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.302		0.179
LEVEL OF SERVICE (LOS):		A		A

Version: 1i Beta; 8/4/2011

LADOT
Moving LA Forward

Level of Service Workheet
(Circular 212 Method)

I/S #: 6

PROJECT TITLE: AVALON AND FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: South Access Rd **East-West Street:** Pier A St/Viaduct
Scenario: 2017 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

		MD					
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--*	3	*NB--* 0	*SB--*	3
		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**
	Left-Through		0				
	Through	105	1	**53**			0
	Through-Right		1				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	159	1	**159**			0
	Left-Through		0				
	Through	129	2	65			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	0	0	**0**			0
	Left-Through		0				
	Through	0	0	0			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	0	0	0			**0**
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	155	0	**155**			0
	Left-Through-Right		0				
	Left-Right		1				
CRITICAL VOLUMES			*North-South:*	212		*North-South:*	0
			East-West:	155		*East-West:*	0
			SUM:	367		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.258			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.158**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

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                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):        0.210
Loss Time (sec):       0                Average Delay (sec/veh):        8.7
Optimal Cycle:         0                Level Of Service:                 A
********************************************************************************
Street Name:               Fries Avenue                  South Access Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        0  1  1  0  0   0  0  1  1  0   1  0  0  0  1   0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      98     0     0     0     0   109   123     0   170     0     0     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   98     0     0     0     0   109   123     0   170     0     0     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:    98     0     0     0     0   109   123     0   170     0     0     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   98     0     0     0     0   109   123     0   170     0     0     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:   98     0     0     0     0   109   123     0   170     0     0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  1.00  0.00  0.00  1.00  1.00  1.00  0.00  1.00  0.00  0.00  0.00
Final Sat.:   601   654     0     0   653   750   638     0   810     0     0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.16  0.00  xxxx  xxxx  0.00  0.15  0.19  xxxx  0.21  xxxx  xxxx  xxxx
Crit Moves:  ****                          ****              ****
Delay/Veh:    9.6   0.0   0.0   0.0   0.0   8.0   9.5   0.0   8.1   0.0   0.0   0.0
Delay Adj:   1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   9.6   0.0   0.0   0.0   0.0   8.0   9.5   0.0   8.1   0.0   0.0   0.0
LOS by Move:    A     *     *     *     *     A     A     *     A     *     *     *
ApproachDel:        9.6               8.0               8.7             xxxxxx
Delay Adj:         1.00              1.00              1.00              xxxxx
ApprAdjDel:         9.6               8.0               8.7             xxxxxx
LOS by Appr:          A                 A                 A                  *
AllWayAvgQ:   0.2   0.0   0.0   0.0   0.0   0.2   0.2   0.0   0.2   0.0   0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.125
Loss Time (sec):       0                Average Delay (sec/veh):         8.0
Optimal Cycle:         0                Level Of Service:                  A
********************************************************************************
Street Name:           Fries Avenue                   South Access Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      81    0     0     0    0    74    65    0    93     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   81    0     0     0    0    74    65    0    93     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    81    0     0     0    0    74    65    0    93     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   81    0     0     0    0    74    65    0    93     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   81    0     0     0    0    74    65    0    93     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:   650  712     0     0  709   823   657    0   840     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.00  xxxx  xxxx 0.00  0.09  0.10 xxxx  0.11  xxxx xxxx  xxxx
Crit Moves:  ****                        ****             ****
Delay/Veh:    8.9  0.0   0.0   0.0  0.0   7.3   8.6  0.0   7.4   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   8.9  0.0   0.0   0.0  0.0   7.3   8.6  0.0   7.4   0.0  0.0   0.0
LOS by Move:    A    *     *     *    *     A     A    *     A     *    *     *
ApproachDel:       8.9              7.3              7.9           xxxxxx
Delay Adj:        1.00             1.00             1.00            xxxxx
ApprAdjDel:        8.9              7.3              7.9           xxxxxx
LOS by Appr:         A                A                A                *
AllWayAvgQ:   0.1  0.0   0.0   0.0  0.0   0.1   0.1  0.0   0.1   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

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                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.181
Loss Time (sec):       0                Average Delay (sec/veh):         8.3
Optimal Cycle:         0                Level Of Service:                  A
********************************************************************************
Street Name:           Fries Avenue                  South Access Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     119    0     0     0    0   106    62    0    59     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  119    0     0     0    0   106    62    0    59     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   119    0     0     0    0   106    62    0    59     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  119    0     0     0    0   106    62    0    59     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  119    0     0     0    0   106    62    0    59     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:   658  723     0     0  718   836   631    0   799     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.18 0.00  xxxx  xxxx 0.00  0.13  0.10 xxxx  0.07  xxxx xxxx  xxxx
Crit Moves:  ****                        ****  ****
Delay/Veh:    9.2  0.0   0.0   0.0  0.0   7.5   8.8  0.0   7.4   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   9.2  0.0   0.0   0.0  0.0   7.5   8.8  0.0   7.4   0.0  0.0   0.0
LOS by Move:    A    *     *     *    *     A     A    *     A     *    *     *
ApproachDel:       9.2              7.5              8.1           xxxxxx
Delay Adj:        1.00             1.00             1.00            xxxxx
ApprAdjDel:        9.2              7.5              8.1           xxxxxx
LOS by Appr:         A                A                A                *
AllWayAvgQ:   0.2  0.0   0.0   0.0  0.0   0.1   0.1  0.0   0.1   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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FUTURE (2038)

Level of Service Worksheet
(Circular 212 Method)

I/S #: 1

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Broad Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

	AM				PM			
No. of Phases				2				2
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	1	0	0	1	0
	Left-Through		0			0	
	Through	0	1	0	0	1	0
	Through-Right		0			0	
	Right	157	1	**37**	172	1	**95**
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	12	1	**12**	68	1	**68**
	Left-Through		0			0	
	Through	0	1	0	0	1	0
	Through-Right		0			0	
	Right	0	1	0	67	1	22
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	33	1	33	91	1	91
	Left-Through		0			0	
	Through	1152	2	**576**	1577	2	**789**
	Through-Right		0			0	
	Right	58	1	58	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	240	1	**240**	155	1	**155**
	Left-Through		0			0	
	Through	1530	2	765	1079	2	540
	Through-Right		0			0	
	Right	11	1	5	83	1	49
	Left-Through-Right		0			0	
	Left-Right		0			0	

	AM		PM	
CRITICAL VOLUMES	*North-South:*	49	*North-South:*	163
	East-West:	816	*East-West:*	944
	SUM:	865	*SUM:*	1107
VOLUME/CAPACITY *(V/C)* RATIO:		0.577		0.738
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**		**0.477**		**0.638**
LEVEL OF SERVICE (LOS):		**A**		**B**

Version: 1i Beta; 8/4/2011

LADOT
Moving LA Forward

Level of Service Workheet
(Circular 212 Method)

I/S #: 1

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Broad Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

	MD					
No. of Phases			2			2
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	1	0			**0**
	Left-Through		0				
	Through	0	1	0			0
	Through-Right		0				
	Right	111	1	**50**			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	11	1	**11**			0
	Left-Through		0				
	Through	0	1	0			**0**
	Through-Right		0				
	Right	16	1	12			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	9	1	9			0
	Left-Through		0				
	Through	1102	2	**551**			**0**
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	123	1	**123**			**0**
	Left-Through		0				
	Through	1001	2	501			0
	Through-Right		0				
	Right	22	1	17			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	61		*North-South:*	0
			East-West:	674		*East-West:*	0
			SUM:	735		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.490			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.390			0.000
LEVEL OF SERVICE (LOS):				A			A

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #: 2

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Avalon Blvd **East-West Street:** Harry Bridges Blvd
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

		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--* 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	1	**0**	0	1	0
	Left-Through		0			0	
	Through	5	2	3	19	2	10
	Through-Right		0			0	
	Right	8	1	2	79	1	**41**
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	8	1	8	85	1	**85**
	Left-Through		0			0	
	Through	9	2	5	23	2	12
	Through-Right		0			0	
	Right	140	1	**86**	181	1	52
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	109	1	**109**	259	1	259
	Left-Through		0			0	
	Through	1230	2	615	1504	2	**752**
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	13	1	13	76	1	**76**
	Left-Through		0			0	
	Through	1478	2	**739**	1039	2	520
	Through-Right		0			0	
	Right	39	1	35	31	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	86		*North-South:*	126
			East-West:	848		*East-West:*	828
			SUM:	934		*SUM:*	954
	VOLUME/CAPACITY *(V/C)* RATIO:			0.679			0.694
	***V/C* LESS ATSAC/ATCS ADJUSTMENT:**			**0.579**			**0.594**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 2

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Avalon Blvd **East-West Street:** Harry Bridges Blvd
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

	MD							
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--*	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	1	**0**			**0**
	Left-Through		0				
	Through	7	2	4			0
	Through-Right		0				
	Right	38	1	19			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	9	1	9			0
	Left-Through		0				
	Through	9	2	5			**0**
	Through-Right		0				
	Right	89	1	**56**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	67	1	67			0
	Left-Through		0				
	Through	1064	2	**532**			**0**
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	38	1	**38**			**0**
	Left-Through		0				
	Through	970	2	485			0
	Through-Right		0				
	Right	9	1	5			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	56		*North-South:*	0
			East-West:	570		*East-West:*	0
			SUM:	626		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.455			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.355			0.000
LEVEL OF SERVICE (LOS):				A			A

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 3

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Fries Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

	AM	PM
No. of Phases	2	2
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 *EB--* 0 *WB--* 0	*NB--* 0 *SB--* 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	105	1	**105**	199	1	**199**
	Left-Through		0			0	
	Through	1	1	1	2	1	2
	Through-Right		0			0	
	Right	3	1	0	7	1	5
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	7	1	7	13	1	13
	Left-Through		0			0	
	Through	1	1	**1**	2	1	2
	Through-Right		0			0	
	Right	12	1	0	32	1	**11**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	36	1	**36**	42	1	42
	Left-Through		0			0	
	Through	1331	2	666	1743	2	**872**
	Through-Right		0			0	
	Right	62	1	10	185	1	86
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	6	1	6	4	1	**4**
	Left-Through		0			0	
	Through	1599	2	**800**	1193	2	597
	Through-Right		0			0	
	Right	13	1	10	23	1	17
	Left-Through-Right		0			0	
	Left-Right		0			0	

		AM		PM
CRITICAL VOLUMES	*North-South:*	106	*North-South:*	210
	East-West:	836	*East-West:*	876
	SUM:	942	*SUM:*	1086
VOLUME/CAPACITY *(V/C)* RATIO:		0.628		0.724
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.528		0.624
LEVEL OF SERVICE (LOS):		A		B

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 3

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: Fries Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

		MD					
No. of Phases				2			2
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**	106	1	**106**			**0**
	Left-Through		0				
	Through	1	1	1			0
	Through-Right		0				
	Right	3	1	2			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	**Left**	14	1	14			0
	Left-Through		0				
	Through	1	1	1			**0**
	Through-Right		0				
	Right	34	1	**20**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	**Left**	29	1	29			0
	Left-Through		0				
	Through	1110	2	**555**			**0**
	Through-Right		0				
	Right	98	1	45			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	**Left**	3	1	**3**			**0**
	Left-Through		0				
	Through	1042	2	521			0
	Through-Right		0				
	Right	14	1	7			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			***North-South:***	126		***North-South:***	0
			East-West:	558		***East-West:***	0
			SUM:	684		***SUM:***	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.456			0.000
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**				**0.356**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 4

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** Harry Bridges Blvd
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

	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--*	3	*SB--*	0	*NB--*	3	*SB--*	0
	EB--	3	*WB--*	0	*EB--*	3	*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	388	2	**213**	329	2	**181**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	523	1	0	293	1	35
	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	905	2	**453**	1678	2	**839**
	Through-Right		0			0	
	Right	477	1	264	192	1	11
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	655	1	**655**	258	1	**258**
	Left-Through		0			0	
	Through	1060	2	530	1166	2	583
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	213		*North-South:*	181
			East-West:	1108		*East-West:*	1097
			SUM:	1321		*SUM:*	1278
VOLUME/CAPACITY *(V/C)* RATIO:				0.927			0.897
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**				**0.827**			**0.797**
LEVEL OF SERVICE (LOS):				**D**			**C**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #: 4

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** Harry Bridges Blvd
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

		MD					
	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--* 3	*SB--*	0	*NB--* 3	*SB--*	0
		EB-- 3	*WB--*	0	*EB--* 3	*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**	317	2	**174**			**0**
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	367	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	**Left**	0	0	0			0
	Left-Through		0				
	Through	0	0	**0**			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	**Left**	0	0	0			0
	Left-Through		0				
	Through	870	2	**435**			**0**
	Through-Right		0				
	Right	280	1	106			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	**Left**	433	1	**433**			**0**
	Left-Through		0				
	Through	749	2	375			0
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
	CRITICAL VOLUMES		***North-South:***	174		***North-South:***	0
			East-West:	868		***East-West:***	0
			SUM:	1042		***SUM:***	0
	VOLUME/CAPACITY *(V/C)* RATIO:			0.731			0.000
	***V/C* LESS ATSAC/ATCS ADJUSTMENT:**			**0.631**			**0.000**
	LEVEL OF SERVICE (LOS):			**B**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 5

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** TraPac Access/Viaduct
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

		AM			PM		
	No. of Phases			2			2
	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	261	1	261	103	1	103
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	869	1	**660**	347	1	**210**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	762	1	**419**	499	1	**274**
	Left-Through		1			1	
	Through	0	1	0	0	1	0
	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	0	1	0	0	1	0
	Through-Right		1			1	
	Right	148	0	**18**	122	0	**71**
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	660		*North-South:*	210
			East-West:	437		*East-West:*	345
			SUM:	1097		*SUM:*	555
	VOLUME/CAPACITY *(V/C)* RATIO:			0.731			0.370
	***V/C* LESS ATSAC/ATCS ADJUSTMENT:**			**0.631**			**0.270**
	LEVEL OF SERVICE (LOS):			**B**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Workheet
(Circular 212 Method)

I/S #: 5

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** TraPac Access/Viaduct
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

	MD					
No. of Phases			2			2
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
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	134	1	134			0
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	579	1	422			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	570	1	314			0
	Left-Through		1				
	Through	0	1	0			0
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	0	0	0			0
	Left-Through		0				
	Through	0	1	0			0
	Through-Right		1				
	Right	113	0	46			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	422		*North-South:*	0
			East-West:	360		*East-West:*	0
			SUM:	782		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.521			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.421			0.000
LEVEL OF SERVICE (LOS):				A			A

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 6

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT

North-South Street: South Access Rd **East-West Street:** Pier A St/Viaduct

Scenario: 2038 CONDITIONS

Count Date: **Analyst:** **Date:**

	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--* 3 *EB--* 0 *WB--* 0	*NB--* 0 *SB--* 3 *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	88	1	**73**	55	1	**51**
	Through-Right		1			1	
	Right	58	0	58	47	0	47
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	**Left**	101	1	**101**	33	1	**33**
	Left-Through		0			0	
	Through	160	2	80	70	2	35
	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**	106	0	106	51	0	51
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	60	0	**166**	67	0	**118**
	Left-Through-Right		0			0	
	Left-Right		1			1	

		AM		PM
CRITICAL VOLUMES	***North-South:***	174	***North-South:***	84
	East-West:	166	***East-West:***	118
	SUM:	340	***SUM:***	202
VOLUME/CAPACITY *(V/C)* RATIO:		0.239		0.142
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**		**0.139**		**0.071**
LEVEL OF SERVICE (LOS):		**A**		**A**

Version: 1i Beta; 8/4/2011

LADOT
Moving LA Forward

Level of Service Workheet
(Circular 212 Method)

CITY OF LOS ANGELES
FOUNDED 1781

I/S #: 6

PROJECT TITLE: AVALON & FRIES STREET SEGMENTS CLOSURE PROJECT
North-South Street: South Access Rd **East-West Street:** Pier A St/Viaduct
Scenario: 2038 CONDITIONS
Count Date: **Analyst:** **Date:**

	MD							
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--*	3	*NB--*	0	*SB--*	3
	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**
	Left-Through		0				
	Through	63	1	**53**			0
	Through-Right		1				
	Right	42	0	42			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	55	1	**55**			0
	Left-Through		0				
	Through	79	2	40			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	0	0	**0**			0
	Left-Through		0				
	Through	0	0	0			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	50	0	50			**0**
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	50	0	**100**			0
	Left-Through-Right		0				
	Left-Right		1				
CRITICAL VOLUMES			*North-South:*	108		*North-South:*	0
			East-West:	100		*East-West:*	0
			SUM:	208		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.146			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.073			0.000
LEVEL OF SERVICE (LOS):				A			A

Version: 1i Beta; 8/4/2011

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):        0.129
Loss Time (sec):        0                Average Delay (sec/veh):        8.1
Optimal Cycle:          0                Level Of Service:                 A
********************************************************************************
Street Name:             Fries Avenue                   South Access Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      60   38     0     0   69   106    58    0   101     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   60   38     0     0   69   106    58    0   101     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    60   38     0     0   69   106    58    0   101     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   60   38     0     0   69   106    58    0   101     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   60   38     0     0   69   106    58    0   101     0    0     0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:   636  697     0     0  706   819   620    0   781     0    0     0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.05  xxxx  xxxx 0.10  0.13  0.09 xxxx  0.13  xxxx xxxx  xxxx
Crit Moves:  ****                        ****              ****
Delay/Veh:    8.8  8.0   0.0   0.0  8.2   7.6   8.9  0.0   7.7   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   8.8  8.0   0.0   0.0  8.2   7.6   8.9  0.0   7.7   0.0  0.0   0.0
LOS by Move:    A    A     *     *    A     A     A    *     A     *    *     *
ApproachDel:       8.5              7.8              8.2            xxxxxx
Delay Adj:        1.00             1.00             1.00             xxxxx
ApprAdjDel:        8.5              7.8              8.2            xxxxxx
LOS by Appr:         A                A                A                 *
AllWayAvgQ:   0.1  0.1   0.0   0.0  0.1   0.1   0.1  0.0   0.1   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.075
Loss Time (sec):       0                Average Delay (sec/veh):         7.7
Optimal Cycle:         0                Level Of Service:                  A
********************************************************************************
Street Name:           Fries Avenue                   South Access Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      50   32     0     0   38    50    42    0    55     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   50   32     0     0   38    50    42    0    55     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    50   32     0     0   38    50    42    0    55     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   50   32     0     0   38    50    42    0    55     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   50   32     0     0   38    50    42    0    55     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:   669  737     0     0  737   861   653    0   833     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.04  xxxx  xxxx 0.05  0.06  0.06 xxxx  0.07  xxxx xxxx  xxxx
Crit Moves:  ****                        ****             ****
Delay/Veh:    8.4  7.7   0.0   0.0  7.8   7.0   8.4  0.0   7.2   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   8.4  7.7   0.0   0.0  7.8   7.0   8.4  0.0   7.2   0.0  0.0   0.0
LOS by Move:    A    A     *     *    A     A     A    *     A     *    *     *
ApproachDel:       8.1              7.3              7.7           xxxxxx
Delay Adj:        1.00             1.00             1.00            xxxxx
ApprAdjDel:        8.1              7.3              7.7           xxxxxx
LOS by Appr:         A                A                A                *
AllWayAvgQ:   0.1  0.0   0.0   0.0  0.1   0.1   0.1  0.0   0.1   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

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                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.099
Loss Time (sec):       0                Average Delay (sec/veh):         7.9
Optimal Cycle:         0                Level Of Service:                  A
********************************************************************************
Street Name:           Fries Avenue                   South Access Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      67   52     0     0   26    51    47    0    33     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   67   52     0     0   26    51    47    0    33     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    67   52     0     0   26    51    47    0    33     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   67   52     0     0   26    51    47    0    33     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   67   52     0     0   26    51    47    0    33     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:   677  747     0     0  738   863   644    0   818     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.07  xxxx  xxxx 0.04  0.06  0.07 xxxx  0.04  xxxx xxxx  xxxx
Crit Moves:  ****                        ****  ****
Delay/Veh:    8.5  7.8   0.0   0.0  7.7   7.0   8.6  0.0   7.1   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   8.5  7.8   0.0   0.0  7.7   7.0   8.6  0.0   7.1   0.0  0.0   0.0
LOS by Move:    A    A     *     *    A     A     A    *     A     *    *     *
ApproachDel:       8.2              7.3              8.0           xxxxxx
Delay Adj:        1.00             1.00             1.00            xxxxx
ApprAdjDel:        8.2              7.3              8.0           xxxxxx
LOS by Appr:         A                A                A                *
AllWayAvgQ:   0.1  0.1   0.0   0.0  0.0   0.1   0.1  0.0   0.0   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

FUTURE (2038) PLUS PROJECT

Level of Service Workheet
(Circular 212 Method)

I/S #: 1

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT
North-South Street: Broad Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2038 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	AM				PM			
No. of Phases				2				2
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	1	0	0	1	0
	Left-Through		0			0	
	Through	0	1	**0**	0	1	**0**
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	12	1	**12**	68	1	**68**
	Left-Through		0			0	
	Through	0	1	0	0	1	0
	Through-Right		0			0	
	Right	0	1	0	67	1	22
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	33	1	**33**	91	1	91
	Left-Through		0			0	
	Through	1309	2	655	1749	2	**875**
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	1	0	0	1	**0**
	Left-Through		0			0	
	Through	1770	2	**885**	1234	2	617
	Through-Right		0			0	
	Right	11	1	5	83	1	49
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	12		*North-South:*	68
			East-West:	918		*East-West:*	875
			SUM:	930		*SUM:*	943
VOLUME/CAPACITY *(V/C)* RATIO:				0.620			0.629
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.520**			**0.529**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

LADOT
Moving LA Forward

Level of Service Worksheet
(Circular 212 Method)

City of Los Angeles
Founded 1781

I/S #: 1

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT
North-South Street: Broad Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2038 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	MD					
No. of Phases			2			2
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	1	**0**			**0**
	Left-Through		0				
	Through	0	1	0			0
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	11	1	11			0
	Left-Through		0				
	Through	0	1	0			**0**
	Through-Right		0				
	Right	16	1	**12**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	9	1	9			0
	Left-Through		0				
	Through	1213	2	**607**			**0**
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	0	1	**0**			**0**
	Left-Through		0				
	Through	1124	2	562			0
	Through-Right		0				
	Right	22	1	17			0
	Left-Through-Right		0				
	Left-Right		0				

CRITICAL VOLUMES	*North-South:*	12	*North-South:*	0
	East-West:	607	*East-West:*	0
	SUM:	619	*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:		0.413		0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:		**0.313**		**0.000**
LEVEL OF SERVICE (LOS):		**A**		**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 2

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT
North-South Street: Avalon Blvd **East-West Street:** Harry Bridges Blvd
Scenario: 2038 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	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--*	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	1	**0**	0	1	0
	Left-Through		0			0	
	Through	1	2	1	10	2	5
	Through-Right		0			0	
	Right	8	1	2	79	1	**41**
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	8	1	8	85	1	**85**
	Left-Through		0			0	
	Through	2	2	1	11	2	6
	Through-Right		0			0	
	Right	147	1	**91**	193	1	59
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	113	1	**113**	268	1	268
	Left-Through		0			0	
	Through	1329	2	665	1676	2	**838**
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	13	1	13	76	1	**76**
	Left-Through		0			0	
	Through	1718	2	**859**	1194	2	597
	Through-Right		0			0	
	Right	39	1	35	31	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	

		AM		PM
CRITICAL VOLUMES	*North-South:*	91	*North-South:*	126
	East-West:	972	*East-West:*	914
	SUM:	1063	*SUM:*	1040
VOLUME/CAPACITY *(V/C)* RATIO:		0.773		0.756
V/C LESS ATSAC/ATCS ADJUSTMENT:		**0.673**		**0.656**
LEVEL OF SERVICE (LOS):		**B**		**B**

Version: 1i Beta; 8/4/2011

LADOT
Moving LA Forward

Level of Service Workheet
(Circular 212 Method)

CITY OF LOS ANGELES
FOUNDED 1781

I/S #: 2

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT
North-South Street: Avalon Blvd **East-West Street:** Harry Bridges Blvd
Scenario: 2038 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	MD							
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--*	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	1	**0**			**0**
	Left-Through		0				
	Through	4	2	2			0
	Through-Right		0				
	Right	38	1	19			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	9	1	9			0
	Left-Through		0				
	Through	5	2	3			**0**
	Through-Right		0				
	Right	93	1	**58**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	70	1	70			0
	Left-Through		0				
	Through	1175	2	**588**			**0**
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	38	1	**38**			**0**
	Left-Through		0				
	Through	1093	2	547			0
	Through-Right		0				
	Right	9	1	5			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	58		*North-South:*	0
			East-West:	626		*East-West:*	0
			SUM:	684		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.497			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.397**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

CITY OF LOS ANGELES FOUNDED 1781

I/S #: 3

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT
North-South Street: Fries Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2038 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

		AM			PM		
	No. of Phases			2			2
	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	10	1	**10**	93	1	**93**
	Left-Through		0			0	
	Through	0	1	0	1	1	1
	Through-Right		0			0	
	Right	0	1	0	0	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	7	1	7	13	1	13
	Left-Through		0			0	
	Through	0	1	**0**	1	1	1
	Through-Right		0			0	
	Right	13	1	0	33	1	**12**
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	37	1	**37**	43	1	43
	Left-Through		0			0	
	Through	1437	2	719	1931	2	**966**
	Through-Right		0			0	
	Right	15	1	10	84	1	38
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	0	1	0	0	1	**0**
	Left-Through		0			0	
	Through	1852	2	**926**	1364	2	682
	Through-Right		0			0	
	Right	13	1	10	23	1	17
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	10		*North-South:*	105
			East-West:	963		*East-West:*	966
			SUM:	973		*SUM:*	1071
	VOLUME/CAPACITY *(V/C)* RATIO:			0.649			0.714
	***V/C* LESS ATSAC/ATCS ADJUSTMENT:**			**0.549**			**0.614**
	LEVEL OF SERVICE (LOS):			**A**			**B**

Version: 1i Beta; 8/4/2011

LADOT
Moving LA Forward

Level of Service Worksheet
(Circular 212 Method)

CITY OF LOS ANGELES
FOUNDED 1781

I/S #: 3

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT
North-South Street: Fries Ave **East-West Street:** Harry Bridges Blvd
Scenario: 2038 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

		MD					
	No. of Phases			2			2
	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**	44	1	**44**			**0**
	Left-Through		0				
	Through	1	1	1			0
	Through-Right		0				
	Right	0	1	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	**Left**	14	1	14			0
	Left-Through		0				
	Through	1	1	1			**0**
	Through-Right		0				
	Right	34	1	**20**			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	**Left**	29	1	**29**			0
	Left-Through		0				
	Through	1227	2	614			**0**
	Through-Right		0				
	Right	42	1	20			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	**Left**	0	1	0			**0**
	Left-Through		0				
	Through	1172	2	**586**			0
	Through-Right		0				
	Right	14	1	7			0
	Left-Through-Right		0				
	Left-Right		0				
	CRITICAL VOLUMES		***North-South:***	64		***North-South:***	0
			East-West:	615		***East-West:***	0
			SUM:	679		***SUM:***	0
	VOLUME/CAPACITY *(V/C)* RATIO:			0.453			0.000
	***V/C* LESS ATSAC/ATCS ADJUSTMENT:**			**0.353**			**0.000**
	LEVEL OF SERVICE (LOS):			**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 4

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** Harry Bridges Blvd
Scenario: 2038 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	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--* 3 *SB--* 0 *EB--* 3 *WB--* 0	*NB--* 3 *SB--* 0 *EB--* 3 *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	483	2	**266**	435	2	239
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	688	1	188	482	1	**245**
	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	800	2	**400**	1577	2	**789**
	Through-Right		0			0	
	Right	582	1	316	293	1	54
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	909	2	**500**	430	2	**237**
	Left-Through		0			0	
	Through	965	2	483	1060	2	530
	Through-Right		0			0	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES			*North-South:*	266		*North-South:*	245
			East-West:	900		*East-West:*	1026
			SUM:	1166		*SUM:*	1271
VOLUME/CAPACITY *(V/C)* RATIO:				0.818			0.892
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.718			0.792
LEVEL OF SERVICE (LOS):				C			C

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 4

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT

North-South Street: North Access Rd **East-West Street:** Harry Bridges Blvd

Scenario: 2038 + PROJECT CONDITIONS

Count Date: **Analyst:** **Date:**

	MD							
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--*	3	*SB--*	0	*NB--*	3	*SB--*	0
	EB--	3	*WB--*	0	*EB--*	3	*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	379	2	**208**			**0**
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	484	1	174			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	0	0	0			0
	Left-Through		0				
	Through	0	0	**0**			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	0	0	0			0
	Left-Through		0				
	Through	814	2	**407**			**0**
	Through-Right		0				
	Right	336	1	128			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	563	2	**310**			**0**
	Left-Through		0				
	Through	687	2	344			0
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	208		*North-South:*	0
			East-West:	717		*East-West:*	0
			SUM:	925		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.649			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				**0.549**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

I/S #: 5

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** TraPac Access/Viaduct
Scenario: 2038 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

		AM			PM		
	No. of Phases			2			2
	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	621	1	**621**	378	1	**378**
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	869	2	288	347	2	66
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	762	1	**381**	499	1	**250**
	Left-Through		1			1	
	Through	0	0	381	0	0	250
	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	0	1	0	0	1	0
	Through-Right		1			1	
	Right	408	0	**98**	416	0	**227**
	Left-Through-Right		0			0	
	Left-Right		0			0	
	CRITICAL VOLUMES		*North-South:*	621		*North-South:*	378
			East-West:	479		*East-West:*	477
			SUM:	1100		*SUM:*	855
	VOLUME/CAPACITY *(V/C)* RATIO:			0.733			0.570
	***V/C* LESS ATSAC/ATCS ADJUSTMENT:**			**0.633**			**0.470**
	LEVEL OF SERVICE (LOS):			**B**			**A**

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Level of Service Workheet
(Circular 212 Method)

I/S #: 5

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT
North-South Street: North Access Rd **East-West Street:** TraPac Access/Viaduct
Scenario: 2038 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	MD					
No. of Phases			2			2
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**
	Left-Through		0				
	Through	0	0	**0**			0
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	Left	319	1	**319**			0
	Left-Through		0				
	Through	0	0	0			**0**
	Through-Right		0				
	Right	579	2	176			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	Left	570	1	**285**			0
	Left-Through		1				
	Through	0	0	285			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	Left	0	0	0			**0**
	Left-Through		0				
	Through	0	1	0			0
	Through-Right		1				
	Right	291	0	**132**			0
	Left-Through-Right		0				
	Left-Right		0				
CRITICAL VOLUMES			*North-South:*	319		*North-South:*	0
			East-West:	417		*East-West:*	0
			SUM:	736		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.491			0.000
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.391			0.000
LEVEL OF SERVICE (LOS):				A			A

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Level of Service Worksheet
(Circular 212 Method)

I/S #: 6

PROJECT TITLE: AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT
North-South Street: South Access Rd **East-West Street:** Pier A St/Viaduct
Scenario: 2038 + PROJECT CONDITIONS
Count Date: **Analyst:** **Date:**

	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--*	3	*NB--*	0	*SB--*	3
	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	146	1	**73**	102	1	**51**
	Through-Right		1			1	
	Right	0	0	0	0	0	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	355	1	**355**	257	1	**257**
	Left-Through		0			0	
	Through	266	2	133	121	2	61
	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	0	0	0	0	0	0
	Left-Through		0			0	
	Through	0	0	0	0	0	0
	Through-Right		0			0	
	Right	262	0	**262**	314	0	**314**
	Left-Through-Right		0			0	
	Left-Right		1			1	

	AM		PM	
CRITICAL VOLUMES	*North-South:*	428	*North-South:*	308
	East-West:	262	*East-West:*	314
	SUM:	690	*SUM:*	622
VOLUME/CAPACITY *(V/C)* RATIO:		0.484		0.436
V/C LESS ATSAC/ATCS ADJUSTMENT:		**0.384**		**0.336**
LEVEL OF SERVICE (LOS):		**A**		**A**

Version: 1i Beta; 8/4/2011

Level of Service Worksheet
(Circular 212 Method)

LADOT
Moving LA Forward

CITY OF LOS ANGELES
FOUNDED 1781

I/S #:	**PROJECT TITLE:**	AVALON AND FRIED STREET SEGMENTS CLOSURE PROJECT		
6	**North-South Street:**	South Access Rd	**East-West Street:**	Pier A St/Viaduct
	Scenario:	2038 + PROJECT CONDITIONS		
	Count Date:		**Analyst:**	**Date:**

		MD					
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--*	3	*NB--* 0	*SB--*	3
		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**
	Left-Through		0				
	Through	105	1	**53**			0
	Through-Right		1				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
SOUTHBOUND	**Left**	190	1	**190**			0
	Left-Through		0				
	Through	129	2	65			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
EASTBOUND	**Left**	0	0	**0**			0
	Left-Through		0				
	Through	0	0	0			**0**
	Through-Right		0				
	Right	0	0	0			0
	Left-Through-Right		0				
	Left-Right		0				
WESTBOUND	**Left**	0	0	0			**0**
	Left-Through		0				
	Through	0	0	0			0
	Through-Right		0				
	Right	186	0	**186**			0
	Left-Through-Right		0				
	Left-Right		1				
CRITICAL VOLUMES			*North-South:*	243		*North-South:*	0
			East-West:	186		*East-West:*	0
			SUM:	429		*SUM:*	0
VOLUME/CAPACITY *(V/C)* RATIO:				0.301			0.000
***V/C* LESS ATSAC/ATCS ADJUSTMENT:**				**0.201**			**0.000**
LEVEL OF SERVICE (LOS):				**A**			**A**

Version: 1i Beta; 8/4/2011

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                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.296
Loss Time (sec):       0               Average Delay (sec/veh):         9.4
Optimal Cycle:         0               Level Of Service:                  A
********************************************************************************
Street Name:           Fries Avenue                   South Access Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      98    0     0     0    0   164   184    0   170     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   98    0     0     0    0   164   184    0   170     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    98    0     0     0    0   164   184    0   170     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   98    0     0     0    0   164   184    0   170     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   98    0     0     0    0   164   184    0   170     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:   575  622     0     0  629   719   621    0   780     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.00  xxxx  xxxx 0.00  0.23  0.30 xxxx  0.22  xxxx xxxx  xxxx
Crit Moves:  ****                        ****  ****
Delay/Veh:    9.9  0.0   0.0   0.0  0.0   8.8  10.6  0.0   8.3   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   9.9  0.0   0.0   0.0  0.0   8.8  10.6  0.0   8.3   0.0  0.0   0.0
LOS by Move:    A    *     *     *    *     A     B    *     A     *    *     *
ApproachDel:       9.9              8.8              9.5           xxxxxx
Delay Adj:        1.00             1.00             1.00            xxxxx
ApprAdjDel:        9.9              8.8              9.5           xxxxxx
LOS by Appr:         A                A                A                *
AllWayAvgQ:   0.2  0.0   0.0   0.0  0.0   0.3   0.4  0.0   0.3   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         0.150
Loss Time (sec):       0                Average Delay (sec/veh):         8.3
Optimal Cycle:         0                Level Of Service:                  A
********************************************************************************
Street Name:           Fries Avenue                   South Access Road
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      81    0     0     0    0   104    97    0    93     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   81    0     0     0    0   104    97    0    93     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    81    0     0     0    0   104    97    0    93     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   81    0     0     0    0   104    97    0    93     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   81    0     0     0    0   104    97    0    93     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:   633  693     0     0  693   804   647    0   823     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.00  xxxx  xxxx 0.00  0.13  0.15 xxxx  0.11  xxxx xxxx  xxxx
Crit Moves:  ****                        ****  ****
Delay/Veh:    9.0  0.0   0.0   0.0  0.0   7.7   9.1  0.0   7.5   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   9.0  0.0   0.0   0.0  0.0   7.7   9.1  0.0   7.5   0.0  0.0   0.0
LOS by Move:    A    *     *     *    *     A     A    *     A     *    *     *
ApproachDel:       9.0              7.7              8.3           xxxxxx
Delay Adj:        1.00             1.00             1.00            xxxxx
ApprAdjDel:        9.0              7.7              8.3           xxxxxx
LOS by Appr:         A                A                A                *
AllWayAvgQ:   0.1  0.0   0.0   0.0  0.0   0.1   0.2  0.0   0.1   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #1 Int # 7 - Fries Avenue & South Access Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):          0.327
Loss Time (sec):       0                Average Delay (sec/veh):          9.7
Optimal Cycle:         0                Level Of Service:                   A
********************************************************************************
Street Name:           Fries Avenue                    South Access Road
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  1  0  0    0  0  1  1  0    1  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     119    0     0     0    0   195   198    0    59     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  119    0     0     0    0   195   198    0    59     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   119    0     0     0    0   195   198    0    59     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  119    0     0     0    0   195   198    0    59     0    0     0
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  119    0     0     0    0   195   198    0    59     0    0     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.00  0.00  0.00 1.00  1.00  1.00 0.00  1.00  0.00 0.00  0.00
Final Sat.:   593  644     0     0  650   749   605    0   753     0    0     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.00  xxxx  xxxx 0.00  0.26  0.33 xxxx  0.08  xxxx xxxx  xxxx
Crit Moves:  ****                        ****  ****
Delay/Veh:   10.0  0.0   0.0   0.0  0.0   8.9  11.1  0.0   7.6   0.0  0.0   0.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  10.0  0.0   0.0   0.0  0.0   8.9  11.1  0.0   7.6   0.0  0.0   0.0
LOS by Move:    A    *     *     *    *     A     B    *     A     *    *     *
ApproachDel:      10.0              8.9             10.3           xxxxxx
Delay Adj:        1.00             1.00             1.00            xxxxx
ApprAdjDel:       10.0              8.9             10.3           xxxxxx
LOS by Appr:         A                A                B                *
AllWayAvgQ:   0.2  0.0   0.0   0.0  0.0   0.3   0.4  0.0   0.1   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```