04-ALA-880-PM 17.2/18.6
EA 04-0Q290
Project ID: 0418000068
August 2019

Project Study Report-Project Development Support (PSR-PDS)

To

Request Approval for Locally Funded Project to Proceed to the Project Approval and Environmental Document Phase (PA&ED)

On Route 880

Between 0.4 mile south of Winton Avenue Overcrossing

And 0.1 mile north of A Street Undercrossing

APPROVAL RECOMMENDED:

GARY HUISINGH, Deputy Executive Director of Projects, Alameda County Transportation Commission, PROJECT SPONSOR, Accepts Risks Identified in this PSR-PDS and Attached Risk Register

APPROVAL RECOMMENDED:

VAL IGNACIO, Caltrans Regional Project Manager

APPROVAL RECOMMENDED:

JEAN C.R. FINNEY, Deputy District Director, Transportation Planning and Local Assistance

APPROVED:

TONY TAVARES, District Director

10/3/19

Date

Vicinity Map

This project study report-project development support has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

8/9/19

REGISTERED CIVIL ENGINEER — *DATE*

Kimley-Horn and Associates, Inc. for Alameda CTC

REGISTERED PROFESSIONAL ENGINEER
Prasanna Muthireddy
No. C78942
Exp. 03/31/20
CIVIL
STATE OF CALIFORNIA

Reviewed by: Celia McCuaig

CELIA MCCUAIG, *Office Chief*
Office of Advance Planning

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1. INTRODUCTION

Project Description

The Winton Avenue and "A" Street (A Street) interchanges along the Interstate 880 (I-880) corridor were constructed in 1968 and 1952 respectively and have seen no significant operational and multimodal access improvements over the years. However, the city of Hayward (City) where these interchanges are located, has experienced major expansion since the interchanges were first built. As a result, both interchanges experience traffic operational issues, access issues, and lack complete streets features and comfortable environments for bicyclists and pedestrians. Additionally, there are no auxiliary lanes between the closely spaced Winton Avenue and A Street interchanges along I-880, resulting in merge/weave issues.

Alameda County Transportation Commission (Alameda CTC) and the City propose to provide interchange improvements at the Winton Avenue and A Street interchanges in the city of Hayward along the I-880 corridor. The I-880 Interchange Improvements (Winton Avenue and A Street) Project (project) would include:

- Reconfiguring the I-880 interchanges at Winton Avenue and A Street to enhance access to the surrounding residential, retail and commercial land uses
- Providing comfortable pedestrian and bicycle access at both interchanges
- Providing northbound and southbound auxiliary lanes along the main line between the A Street interchange and the Winton Avenue interchange
- Modifying signals and reconfiguring intersections to improve traffic flow, reduce congestion, and make intersections accessible and safer for pedestrians and cyclists

The proposed build alternative would consist of one preferred alternative at each interchange, along with auxiliary lanes on I-880, collectively to be considered the project. This PSR-PDS proposes two build alternatives (W1 and W2) at the I-880/Winton Avenue interchange, three build alternatives (A1, A2 and A3) for the I-880/A Street interchange, and one build alternative for auxiliary lanes on I-880 between Winton Avenue and A Street. One preferred build alternative at each of the interchange will be selected in the PA&ED phase.

Freeway Improvements: Auxiliary Lanes

The project proposes to reconstruct and restripe the existing outside shoulder of I-880 along the main line between A Street and Winton Avenue to provide auxiliary lanes, one in each direction of travel. The traffic impacts of the proposed auxiliary lanes vs reduction in the outside shoulder widths will be evaluated and compared in the next phase of the project.

Interchange Improvements:

Alternative W1: Winton-Direct Access: Converts full cloverleaf interchange to partial cloverleaf interchange; constructs two traffic signals at the I-880 ramp intersections; provides direct access to La Playa Drive from Winton Avenue; reconstructs sidewalks and bridge railing; and provides buffered Class IV bikeways within the project area.

Alternative W2: Winton-Triple Left: Converts full cloverleaf interchange to partial cloverleaf interchange; constructs two traffic signals at the I-880 ramp intersections; widens Winton Avenue to provide three left turn lanes at Southland Drive; reconstructs sidewalks and bridge railing; and provides buffered Class IV bikeways within the project area.

Alternative A1: A Street-Roundabout: Converts intersection control from traffic signals to two-lane double roundabouts at the I-880 ramp intersections and converts the outside bays of the existing undercrossing structure into a combined bicycle and pedestrian facility.

Alternative A2: A Street-Widening: Proposes widening of A Street; constructs new I-880 bridge structure to accommodate widening of A Street; and constructs new signals or two-lane double roundabouts at the I-880 ramp intersections.

Alternative A3: A Street-Single Point Urban Interchange (SPUI): Proposes a SPUI; widens A Street; and proposes a new I-880 bridge structure to accommodate the SPUI.

The scope, schedule, and support costs necessary to complete needed studies and work during the Project Approval and Environmental Document (PA&ED) phase for the project are identified within this PSR-PDS. The range of total construction costs, capital outlay support costs (for PA&ED, PS&E, right of way and construction management), and capital outlay right of way costs for the alternatives are listed in the table below. Anticipated sources of funding include federal, state, and local funds.

Table 1-1: Project Summary

Project Limits	04-ALA-880 PM 17.2/18.6
Number of Alternatives	<u>Interchange Improvements:</u> Winton Ave: 2 Build Alternatives A Street: 3 Build Alternatives <u>Freeway Improvements:</u> 1 Build Alternative (excluding No Build)
Capital Outlay Support Estimate for PA&ED	$700,000 - $4,100,000

Table 1-1: Project Summary

Escalated Capital Outlay Construction Cost Range	$71,800,000 - $174,500,000
Capital Outlay Right of Way Cost Range	$8,300,000 - $9,900,000
Funding Source	Federal, state, regional and local
Type of Facility	10-lane freeway
Number of Structures	Winton Ave Interchange: no structures A Street Interchange: construct new structure I-880 mainline: no structures
Anticipated Environmental Determination or Document	CEQA - Initial Study/Mitigated Negative Declaration (IS/MND) NEPA - Environmental Assessment/Finding of No Significant Impact (EA/FONSI)
Legal Description	In Alameda County, from 0.4 miles south of Winton Ave overcrossing to 0.1 miles north of A Street undercrossing.
Project Development Category	Category 3

The remaining capital outlay support, right of way, and construction components of the project are preliminary estimates and are not suitable for programming purposes. The intent of this PSR-PDS is to request approval of the project to proceed into the PA&ED phase. A project report will serve as approval of the “selected” alternative and as the formal programming document for the remaining support and capital components of the project. A project report will also program construction and right of way costs. Caltrans is providing Quality Management Assessment (QMA) for the project, and it is anticipated that Caltrans would be the lead agency for required National Environmental Policy Act (NEPA) approval and California Environmental Quality Act (CEQA) approval.

2. BACKGROUND

The existing Winton Avenue interchange has a four-quadrant cloverleaf interchange configuration with freeway ramps running freely without intersection controls onto Winton Avenue. The interchange was constructed in 1968 and has seen no significant operational and multimodal improvements over the past 51 years. The four quadrant configuration experiences merge-weave operational issues for vehicular traffic while the free-running ramps create uncomfortable conditions for bicycle and pedestrian traffic.

The land use at the southwestern quadrant of the interchange is comprised of retail and office commercial while the remaining quadrants are mostly residential. The interchange provides access to major retail centers (Southland Mall and Winton Shopping Center), Chabot College, Hayward Airport, office and industrial parks to the west; and city and county services and facilities, Hayward School District Office and other schools to the east.

Winton Avenue is an existing four-lane minor arterial with a raised median. Winton Avenue is currently designated as a Class III bike route and has 4-foot sidewalks with a 6-foot landscape area separating pedestrians from the vehicular traffic. Winton Avenue section between the I-880 loop ramps is a median separated six-lane facility with no shoulders and 7-foot sidewalks on both sides.

The short weaving distance for traffic entering Southland Drive from southbound off-ramp and westbound Winton Avenue causes congestion along westbound Winton Avenue, resulting in queuing along the southbound off-ramp which in turn affects freeway operations. The City periodically requires the use of barricades on Winton Avenue to minimize this short weave and the resulting congestion.

The existing A Street interchange has a Compact Diamond Interchange configuration with two closely spaced signalized intersections at the crossing of the I-880 ramp terminals. The interchange was constructed in 1952 and the undercrossing bridge structure was widened in 1991 to accommodate widening of I-880. The interchange provides access to Hayward Airport, office and industrial parks to the west; and city and county services and facilities, businesses, residences and a school to the east. The interchange is surrounded by a mix of land uses including parcels designated as general commercial and residential. A Street currently is a four-lane principal arterial with narrow lane widths and no shoulders and has Class II bike lanes outside of the I-880 ramp intersections. A Street between the I-880 ramp intersections lacks a bike lane connection and has no shoulders. Within the project limits, A Street has a 5-foot sidewalk on both sides of the road. The ramp intersections along A Street are closely spaced with Arbor Avenue and Happyland Avenue on the east and South Garden on the west.

The A Street interchange currently experiences high traffic volumes. These high volumes combined with tightly spaced ramp intersections and the Arbor Avenue, Happyland Avenue, South Garden Avenue intersections cause congestion during peak periods in both directions. The Compact Diamond Interchange configuration and narrow lane widths complicate truck turning maneuvers especially at the left turns. Vehicular queues in the two adjacent left turn lanes (one in each direction) between the ramp intersections cause operational issues.

Currently, there are five Alameda County Transit (AC Transit) routes that utilize Winton Avenue and A Street within the project limits. Routes numbered 60, 86, and M currently run on Winton Avenue; however, there are no existing stops within the project limits. There are two AC Transit routes currently running along A Street. Route number 83 has three stops within the project limits as listed below:

1. Westbound side of A Street between Arbor Avenue and Happyland Avenue;
2. Eastbound side of A Street between Happyland Avenue and Fuller Avenue; and
3. Southeast corner of Victory Drive/A Street intersection.

Route number 93 has no existing stops within the project limits. The proposed improvements under all viable alternatives would maintain the existing transit facilities. The proposed pedestrian and bicycle facilities would provide improved accessibility and connectivity to the AC Transit routes currently operating within the project limits.

I-880 within the project limits is currently a ten-lane freeway with four general purpose lanes and one High Occupancy Vehicle (HOV) lane in each direction. The I-880 Express Lanes project is currently in construction and converts the HOV lane into an express lane. The configuration of I-880 within the project limits after completion of the Express Lanes project includes 4-foot inside shoulders, an 11- to 12-foot express lane, 4- to 8-foot buffer and four general purpose lanes with 11- to 12-foot lane widths and 18 feet wide outside shoulders. The Winton Avenue and A Street interchanges are spaced about 0.8 miles along I-880 and do not have auxiliary lanes between the on-and off-ramps, resulting in merge-weave issues in this section.

The Alameda CTC is the implementing agency working in partnership with the City and Caltrans for completion of the PSR-PDS document for Winton Avenue and A Street interchange improvements along I-880. The proposed interchange improvements are intended to improve traffic operations at the ramp intersections, improve safety for pedestrians and bicyclists, and improve access to retail and commercial facilities in and around the interchange area. Auxiliary lanes are proposed on I-880 between the Winton Avenue and A Street on- and off-ramps to improve merge-weave operations between the interchanges.

The Central Alameda County Local Alternative Transportation Improvement Program (LATIP) was approved by the California Transportation Commission in May 2010. The proposed project is included in LATIP as Project M: I-880 /West A Street Interchange, Project N: I-880 /West Winton Avenue Interchange and Project D: I-880 Auxiliary lanes between Paseo Grande to Winton Avenue. The project is also recognized in Alameda CTC’s 2014 Transportation Expenditure Plan under I-880 Local Access and Safety program. Alameda CTC initiated project scoping and environmental clearance for the project to enable the project to pursue funding for subsequent phases as part of the project delivery.

The City is a part of the project development process and has been consulted throughout the development of this document to ensure that Context Sensitive Solutions have been developed and proposed design solutions are consistent with local community values, character, and contextual setting as envisioned by the City. Furthermore, the project is also consistent with the City’s 2040 General Plan.

3. PURPOSE AND NEED

Purpose

The purpose of the project is to:

- Improve merge/weave operations along the segment of I-880 between Winton Avenue and A Street interchanges.
- Improve traffic operations, safety and accessibility to the Southland Mall and other retail and commercial land uses at Winton Avenue.

- Improve traffic operations and safety at A Street interchange.
- Prioritize multimodal transportation infrastructure at the Winton Avenue and A Street interchanges, including Complete Streets features such as bike lanes and pedestrian friendly design to enhance mobility and safety.

Need

Capacity and Transportation Demand

The I-880/Winton Avenue interchange currently operates at or over capacity. The following are several key existing issues identified at the I-880/Winton Avenue Interchange:

- The interchange has a four-quadrant cloverleaf configuration with ramps running freely onto Winton Avenue without intersection control such as a traffic light or roundabout, making it inadequate for its multi modal access and weaving issues.
- The existing Winton Ave and A Street interchanges are less than 1 mile apart with no auxiliary lanes between the interchanges in either direction. This results in merge-weave issues between the interchanges on the mainline in both northbound and southbound directions.
- The current interchange does not provide comfortable environment for bicyclists and pedestrians because of the free-running ramps at uncontrolled intersections from the freeway onto Winton Avenue. There is a lack of desirable bicycle and pedestrian facilities with narrow sidewalks, no shoulders and with bicycles having to share the traffic lanes with vehicular traffic.
- The queue of vehicles heading to Southland Mall via westbound Winton Avenue at the Southland Drive left-turn lane creates congestion and queues along Winton Avenue, Southland Drive, and the I-880 southbound off-ramp.

Growing congestion at the I-880/Winton Avenue interchange has constrained accessibility to the Southland Mall, forcing vehicles to divert to the surrounding street network. Diversion of Winton Avenue traffic onto the local street network may result in the following quality of life impacts to the local community:

- Increased delay experienced by local travelers and commuters
- Potential economic loss for local businesses, trucking, and delivery companies as a result of increased recurring congestion
- Reduced air quality as a result of traffic congestion

Similarly, the I-880/A Street interchange experiences congestion and several other key traffic operational issues:

- Congestion during peak periods affects both directions of I-880, generating additional trips on the local roadway network from vehicles diverting around the freeway traffic.

- Vehicle queues in left-turn lanes along A Street under the mainline cause operational issues.
- The existing undercrossing lacks bicycle and pedestrian infrastructure, resulting in inadequate access for bicyclists and pedestrians.

Interchange Deficiencies

The I-880/Winton Avenue interchange lacks signalization and the I-880/A Street interchange lacks signal optimization at the ramp intersections. Both interchanges also lack optimized intersection configurations to accommodate multimodal access and truck turning maneuvers.

Accessibility to Local Destinations

The I-880/Winton Avenue and A Street Interchanges both provide access to important destinations adjacent to the I-880 freeway including Hayward Executive Airport and the Southland Mall. Southland Mall is a highly frequented shopping mall bordered by I-880 to the east and Winton Avenue to the north.

Under the current configuration, vehicles traveling northbound and southbound on I-880 towards Southland Mall exit at Winton Avenue and are impeded by high levels of congestion.

The current I-880/Winton Avenue and I-880/A Street interchanges create long traffic queues of vehicles waiting to enter or exit the freeway during peak periods. Congestion and delay in the study area adversely affects connectivity to the Southland Mall and local residential streets.

Modal Interrelationships and System Linkages

There are currently no bike lanes along either Winton Avenue or A Street where the roadways cross I-880. The Winton Avenue interchange includes high-speed free-flowing ramps (no stop sign or traffic signal) that makes it difficult for pedestrians and bicyclists to cross at these ramps. Cyclists wishing to cross I-880 must share the road with vehicles traveling at significantly higher speeds. The sidewalks lining Winton Avenue and A Street are narrow, and do not provide a buffer between pedestrians and vehicles traveling along these roads. There is a need for Complete Streets features such as bike lanes and pedestrian friendly paths to enhance mobility and safety.

The I-880/Winton Avenue and I-880/A Street interchanges are identified by the City as corridors that need enhanced bicycle and pedestrian improvements to improve the multi-modal connectivity between the east and west sides of I-880. The City is in the process of updating their bicycle/pedestrian master plans. The updated plan will likely include plans to connect the proposed Winton Avenue and A Street Complete Street Features into the City’s network of bicycle lanes.

Approval of this document represents approval of the purpose and need and of the range of alternatives to be studied. Approval of this document does not signify approval of a conceptual alternative.

4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT

A Traffic Engineering Performance Assessment (TEPA) for the project was developed using available traffic data and is detailed in Attachment F. The proposed project improvements will upgrade I-880/Winton Avenue and I-880/A Street interchanges to reduce congestion, improve operations, enhance safety and provide facility for all modes of transportation. This proposed project will consider improvements to enhance operations, safety, and access to the Southland Mall and provide facility for all modes of transportation at the I-880/Winton Avenue and I-880/A Street interchanges.

The intent of the TEPA is to identify existing deficiencies and their causes and recommend future implementations to improve overall traffic conditions. The TEPA analysis focused on localized traffic issues based on readily available information and data; and assumed that a larger scale traffic engineering study with more detailed traffic analyses will be performed during the Project Approval and Environmental Document (PA&ED) phase. The following provides a summary of preliminary assessment and key findings of TEPA.

Based on the preliminary analysis conducted under existing conditions, A Street/I-880 northbound ramps and A Street/I-880 southbound ramps are operating at LOS F during the a.m., and p.m. peak hour. It is projected that this situation will worsen as regional traffic is projected to grow. Due to the significant volume of vehicles exiting I-880 onto A Street during peak hours of travel and the close proximity of the ramp intersections, significant queues and delays are observed at these intersections.

The I-880/Winton Avenue interchange operation study limit is bordered by the Winton Avenue/Santa Clara Street and Winton Avenue/Southland Drive intersections. These intersections operate within the acceptable LOS D/E under existing conditions. Due to heavy left and through movement volumes at these intersections, queues build up across the Winton Avenue overcrossing and onto I-880. This situation will worsen with the expected regional traffic growth. The existing uncontrolled off- and on-ramps make it difficult for bicycles and pedestrians to traverse through the interchange area.

In addition to the above, the intersections of A Street/Happyland Driveway, Hesperian Boulevard/Winton Avenue, and Jackson Street/Santa Clara Street are operating at an unacceptable level of service during the a.m. and p.m. peak periods.

Based on the preliminary findings of the TEPA the following is recommended.

- Traffic Forecasting & Modeling:

1. Alameda CTC travel demand model will be used during the Project Approval and Environmental Document (PA&ED) phase of the project for projecting future traffic demands and vehicle miles travel (VMT) for the project. The travel demand model should incorporate the changes in the land use and committed transportation infrastructure projects.

- Traffic Analysis:
  1. Freeway operation analysis, including the mainline, merge, and diverge analysis will be conducted under the PA&ED phase of the project.
  2. Traffic signal operation analysis for existing and future traffic conditions will be conducted under the PA&ED phase of the project to determine the ultimate lane configurations at the study intersections to serve the projected demand under the opening year (2025) and design year (2045). The operations analysis will take into account ramp metering and pertaining storage requirements and make recommendations for lane configurations.
- Safety:
  1. Safety analysis including accident analysis will be conducted under the PA&ED phase of the project. At minimum, our collision data analysis will result in identifying the following:
     a. Percent of all crashes by type and location
     b. Severity of all crashes by location
     c. Violation factors by crash type and severity
     d. Percent of all crashes by mode involved
     e. Crash severity by movement preceding the crash
     f. Percent of all crashes by type and severity at intersection and roadway segments
     g. Yearly trends by crash types and severity
     h. Percent of fatal and severe injury crashes by type, location, roadway segments and lighting conditions
     i. Top three highest occurring crash types
     j. Top five locations with highest number of fatal and severe injury crashes

It is recommended that monitoring stations be provided at all off-ramps within the project limits. A preliminary Transportation Management Plan (TMP) data sheet has been prepared to address traffic impacts from staged construction, detours, and specific traffic handling concerns during the construction of the project. The TMP data sheet for each alternative is included in Attachment K and presents preliminary information related to construction related traffic impacts, TMP elements, and preliminary cost estimates for TMP elements. Conceptual stage construction plans, ramp closure charts and detour plans for ramp closures will be included in the PA&ED phase TMP.

5. DEFICIENCIES

As described in the previous sections, the project deficiencies at the Winton Avenue and A Street interchanges and the portion of I-880 between the two interchanges are mainly operational resulting in inadequate multimodal accommodation. Increased future traffic demands within the project limits are expected to worsen these deficiencies.

Winton Avenue Interchange

The major traffic operational issue at Winton Avenue is the weaving of vehicles heading to Southland Mall from the southbound off-ramp and the westbound Winton Avenue. This weaving movement creates congestion along westbound Winton Avenue and forces vehicles to divert to the surrounding street network, resulting in queuing along the southbound off-ramp, affecting freeway operations and disruption to local neighborhood traffic. To minimize disturbance to the residences in the vicinity, the City utilizes barricades to prevent southbound off-ramp traffic to merge with westbound Winton Avenue traffic entering the Southland Mall during increased seasonal activities and holidays. The existing full cloverleaf interchange (Type L-10) causes weaving movement operational deficiencies at the on- and off-ramps resulting in congestion on the mainline.

The current interchange with the free-running ramps at uncontrolled intersections from the freeway onto Winton Avenue creates an undesirable bicycle and pedestrian crossing environment. The design speed for Winton Avenue is 40mph while the posted speed is 35mph. Pedestrians and bicyclists must cautiously look for fast-moving vehicles when crossing the ramps along Winton Avenue. The I-880 overcrossing bridge structure has no shoulders to provide separation for pedestrians from the fast-moving vehicular traffic, adding to the inadequate multimodal accommodation. The community southeast of the Winton Avenue interchange has expressed the need for a longer soundwall at the northbound off-ramp terminal.

Existing vertical clearance at the Winton Avenue southbound and northbound loop ramps does not meet standard requirements. Fixing this existing non-standard clearance is not included as part of this project since it does not directly meet the purpose and need for the project. Further discussion on this subject will ensue in the PA&ED phase as part of the design standard decision document preparation and approval.

A Street Interchange

A Street interchange is a Compact Diamond Interchange (Type L-1) with I-880 going over A Street. The A Street undercrossing structure has an existing nonstandard vertical clearance of 14 feet and 7 inches. The A Street roadway cross section under the bridge has two through lanes without shoulders, a short left turning pocket and 5-foot sidewalk in each direction. Existing ramp intersections are spaced about 290 feet apart. The short spacing between the ramp intersections only allows for short and narrow adjacent left turn lanes in both directions. Congestion at this interchange results in long vehicular queues beyond the interchange causing operational deficiencies in both directions. A Street is a designated truck route with a significant truck volume as it provides access to the industrial uses in this area. Trucks using the

A Street interchange experience difficulty in maneuvering the tight turns at the ramp intersections. The proposed alternatives at A Street intend to improve this truck turning movement by introducing roundabouts that accommodate these movements or by replacing the bridge to allow improved lane geometry. The lack of shoulders and narrow sidewalks on A Street results in inadequate pedestrian and bicycle facilities in this area. Bicyclists must ride in the traffic lane on this segment of A Street which makes bicycling undesirable due to the narrow lanes, no shoulders and high traffic volumes. There is an existing pedestrian crosswalk equipped with a Rectangular Rapid Flashing Beacon at the intersection of A Street and Happyland Avenue. The project intends to improve visibility at this crossing.

I-880 Between A Street and Winton Avenue

The existing interchange spacing between Winton Avenue and A Street along I-880 is approximately 0.8 miles with no auxiliary lanes. This nonstandard spacing provides for short weaving distance between the on- and off-ramps of the interchanges resulting in operational deficiency on the freeway. The project proposes to construct auxiliary lanes in both directions within the existing outside shoulder widths, to address this deficiency, which would result in nonstandard lane and shoulder widths in both directions. The proposed nonstandard features are listed in Table 7-1. The proposed auxiliary lanes will be analyzed in the PA&ED phase to evaluate and compare between operational improvements, safety, enforcement and emergency needs.

Freeway, ramp and local road collision data is summarized in Attachment F, TEPA.

6. CORRIDOR AND SYSTEM COORDINATION

6A. Corridor Overview

Interstate 880 (I-880) is a south-north route, approximately 42 miles long, and runs through Santa Clara and Alameda Counties. The corridor begins at the I-880/I-280 interchange in the City of San Jose and terminates in the City of Oakland at Grand Avenue. The route provides direct connections to major freeways I-80, I-980, I-238, I-580, I-680, I-280, State Route (SR) 17 and US 101. The corridor also intersects SR 82, SR 237, SR 262, SR 84, SR 92, and SR 112. I-880 connects the San Francisco-Oakland Bay Bridge with Silicon Valley, serving the Port of Oakland, Oakland International Airport, San Jose's Mineta International Airport, and about ten East and South Bay Area cities along the way. Continuing as SR 17, the freeway connects the Bay Area to Santa Cruz.

The portion of I-880 within the project limits is an eight-lane freeway with an additional HOV lane in each direction.

Future Projects

The following projects within the vicinity of EA 0Q290K are included in the State Highway Operation and Protection Program (SHOPP) and other funding programs.

SHOPP is the State's "fix-it-first" program that funds the repair and preservation of the State Highway System (SHS), safety improvements, and some highway operational improvements.

Table 6-1: SHOPP Projects Located in the Vicinity

PROJ ID	EA	County Route	Post Mile	Funding Source/ Program Year	Legal Description	Work Description	Current Phase
04100 00068	2K170	ALA 880	15.6/ 26.5	2018 SHOPP/ 2021/22	IN HAYWARD, SAN LEANDRO, AND OAKLAND, AT TENNYSON ROAD OVERCROSSING (OC) NO. 33-0236 (PM 15.65), WASHINGTON AVENUE OC NO. 33-0166 (PM 20.82), AND DAMON SLOUGH SOUTHBOUND ONRAMP NO. 33-0412K (PM 26.53); ALSO ON ROUTE 77 IN OAKLAND, AT SAN LEANDRO	Upgrade various bridge rails, including Tennyson Road and Washington Avenue overcrossings	0_PAED
04160 00001	4J730	ALA 880	20.9	2018 SHOPP/ 2019/20	IN SAN LEANDRO, AT THE SOUTHBOUND ROUTE 880/238 CONNECTOR OFFRAMP TO WASHINGTON AVENUE.	Reconstruct and signalize off ramp 880/238 connector to Washington Avenue.	1_PSE
04160 00036	4J980	ALA 880	R0.9/ 24.8	2018 SHOPP/ 2020/21	IN OAKLAND, UNION CITY, AND FREMONT, AND ON ROUTE 80 IN BERKELEY (PM 4.7) AT VARIOUS LOCATIONS; ALSO IN SANTA CLARA COUNTY, IN MILPITAS AT PM 8.9.	Construct permanent Best Management Practices (BMPs) to achieve Statewide NPDES permit compliance units (CUs) for trash capture.	0_PAED

The Metropolitan Transportation Commission (MTC) is responsible for the Bay Area's Regional Transportation Plan (RTP), a state-mandated, integrated long-range transportation and land use plan. MTC's Plan Bay Area (PBA), adopted in July 2013 and updated in July 2017, serves as the San Francisco Bay Area's RTP and Sustainable Communities Strategy (SCS) that promotes walk and bike-friendly mixed-use commercial and residential development. MTC is currently undertaking the Horizon Initiative, a scenario planning exercise that will shape Play Bay Area 2050, the next RTP/SCS update. The following projects are located within the vicinity of EA 0Q290K.

Table 6-2: MTC's PBA 2040 Projects Located in the Vicinity

County & Route	Sponsor	RTPID	Description	Cost*	Project Completion Date*
ALA 880	City of Hayward	17-01-0024	Reconstruct interchange to widen A Street from 5 lanes to 6 lanes and add bike lanes and provide additional lane capacity for potential future freeway widening. Project also involves modifying signals and reconfiguring intersections to improve truck-turning maneuvers.	$54M	2023
ALA 880	City of Hayward	17-01-0041	This project proposes to modify the existing Winton Avenue/I-880 cloverleaf interchange to a partial cloverleaf interchange, implement Complete Street per Caltrans HDM and provide direct access to Southland Mall.	$41M	2020
ALA 880	City of Hayward	17-01-0036	The project would reconstruct the SR-92/Clawiter Rd interchange to create the SR-92/Whitesell St interchange, addressing truck traffic access needs by: reconfiguring Clawiter/SR 92 interchange, creating new access to SR 92 at Whitesell St, and consolidating access for these two local roads.	$62M	2023
SCL/ALA 880	MTC	17-10-0052	Express lane on I-880 in Alameda County from Lewelling Blvd to SR 237 Direct Connector in northbound direction, Hegenberger Rd to SR 237 Direct Connector in the southbound direction-convert existing HOV lanes to express lanes.	$79M	2019/20
ALA 880	MTC	17-10-0057	I-880 Northbound express lane from Lewelling Blvd to Hegenberger Road and reconstruct bridges at Davis Street and Marina Boulevard - widen to add an express lane and reconstruct bridges.	$221M	2025

The list of projects shown in Tables 6-1 and 6-2 may not be inclusive of all projects listed in the 2018 SHOPP and MTC's RTP. Further coordination with Office of System & Regional Planning will be conducted in the PA&ED phase to obtain the full list of relevant projects within the project vicinity.

Complete Streets

A Complete Street is a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users. All transportation improvements (new and retrofit) are viewed as opportunities to improve safety, mobility and access for all travelers, including transit users, bicyclists and pedestrians. This project Purpose and Need is consistent with the goals of Complete Streets and Caltrans Deputy Directive 64-R2. Improvements to local roads at the A Street and Winton Avenue interchanges have considered all modes of transportation—pedestrians, bicyclists, transit, and motorists—by implementing Caltrans Complete Streets Policies. Such improvements include improved sidewalks and bike lanes and consideration for more pedestrian and bicycle friendly ramp intersection geometry to support and enhance the larger bicycle and pedestrian network in the area through improved connectivity. The City is in the process of developing an update to their 2007 Bicycle Master Plan. The project improvements are proposed to be consistent with the forthcoming Bicycle Master Plan Update. Specifics of multimodal improvements proposed as part of this project are detailed in Section 7A.

Climate Change

Sea level rise (SLR) is an integral part of climate change discussions, the effects of which will have impacts on all modes of transportation located near the coast. Screening criteria are used to assess whether an individual project will potentially be impacted by SLR. The project is not located on the coast, nor is it located in an area vulnerable to SLR according to available mapping. Therefore, the build alternatives would not be impacted by SLR.

However, the design life of the project is anticipated to extend beyond the year 2030, and therefore it is difficult to predict with certainly how the project may or may not be affected by SLR at some point during the project's lifespan. Despite this possibility, the project would provide needed interchange improvements that would reduce congestion and improve accessibility and safety at the Winton Avenue and A Street interchanges. One of the responsibilities of transportation development located near the coast is to ensure that reliable transportation routes are available. In consideration of these factors, the project does not warrant further consideration of SLR.

To the extent a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, greenhouse gas emissions may be reduced. As the purpose of the project is to relieve existing and projected future traffic congestion, the project could result in carbon dioxide (CO2) emission reductions. The interchange improvements are freeway operational improvements that would not increase capacity of I 880, generate additional trips, or increase VMT.

7. ALTERNATIVES

This PSR-PDS considers a No-Build Alternative along with two build alternatives (W1 and W2) at the I-880/Winton Avenue interchange and three build alternatives (A1, A2 and A3) for the I-880/A Street interchange viable for project. The selected build alternatives at each interchange along with an alternative to provide one auxiliary lane in each direction on I-880 would collectively be considered a single Build Alternative for evaluation in the environmental documentation.

Alternatives will continue to be defined based on input from the community and stakeholders during the PA&ED phase in order to incorporate Context Sensitive Solutions (CSS) that integrate and balance community, aesthetic, multimodal and environmental values with transportation safety, maintenance, and performance goals.

7A. Viable Alternatives

No Build Alternative

Under the No-Build Alternative, the existing transportation facilities within the project area would remain unchanged, except for planned and programmed improvements being implemented as separate projects by other entities to convert the I-880 northbound and southbound high occupancy vehicle (HOV) lanes to express lanes and median barrier replacement.

Build Alternatives

Although the range of build alternatives (ALTs) outlined below satisfy the purpose and need, the individual ALTs would not individually meet all elements of the project's purpose and need and are subject to further study during the PA/ED phase.

No approval, either implied or expressly granted, has been tendered regarding these build alternatives. As noted in the risk registry, there are risks associated with these alternatives. These risks will be further evaluated and resolved in the PA&ED phase to ensure there are no fatal flaws carrying any of these alternatives to subsequent project phases. Plans and typical sections for each build alternative are provided in Attachments B and C, respectively.

The build alternative would consist of site preparation including necessary excavation and grading. Standard stormwater Best Management Practices (BMPs) would be implemented during construction to eliminate water pollution and excessive erosion and/or sedimentation during and after construction activities. Attachment J of this document outlines the stormwater data, stormwater treatment, construction and permanent BMPs, and stormwater quality documentation.

Preliminary geotechnical investigations to include subsurface soil and groundwater conditions and geologic and seismic aspects of the project will be conducted during the PA&ED phase, and a Preliminary Geotechnical Report will be prepared to document the geotechnical findings and to provide preliminary geotechnical recommendations for further evaluation of the proposed build alternatives during the PA&ED phase.

I-880 Mainline Alternative: Auxiliary Lane on I-880

This alternative proposes to construct one auxiliary lane each in northbound and southbound directions, between A Street and Winton Avenue Interchanges to improve weaving operations between the on- and off-ramps. This segment of I-880 is fully built-out with soundwalls in both directions which limit the ability to widen the freeway. The auxiliary lanes are thus proposed by means of reduction in outside shoulder width to less than the recommended standards.

This alternative includes the following improvements:

- Constructing one 12-foot auxiliary lane each in the northbound and southbound directions;
- Reconstructing the outside shoulders with a pavement section capable of handling traffic;
- Reconfiguring on- and off-ramp connections to mainline between Winton Avenue and A Street to accommodate the proposed outside auxiliary lanes; and
- Overlaying portion of existing asphalt surface layer on mainline, between on-ramp nose and off-ramp gores in both northbound and southbound directions.

This alternative does not require any right of way acquisition.

The proposed auxiliary lanes will introduce nonstandard Boldface design features related to outside shoulder widths between the Winton Avenue interchange and A Street interchange. Various lane configurations will be studied in the PA&ED phase to determine the optimal lane configuration.

I-880/Winton Avenue Interchange

Alternative W1: Direct Access to La Playa Drive

This alternative proposes to convert the existing I-880/Winton Avenue interchange from a full cloverleaf to a partial cloverleaf interchange; construct two traffic signals at the I-880 ramp intersections; provide direct access to La Playa Drive from southbound off-ramp; reconstruct sidewalks and bridge railing; and provide Class IV bikeways within the project area.

This alternative includes the following improvements:

- Providing a direct access connection to La Playa Drive from Winton Avenue at the southbound ramps intersection;
- Removal of the existing I-880 southbound loop off-ramp and northbound loop off-ramp;
- Constructing traffic signals, one each at the southbound and northbound I-880 ramp intersections with Winton Avenue;
- Widening portion of Winton Avenue between Southland Drive and Santa Clara Street (except on the overcrossing) to allow for buffered Class IV bikeways in both directions;
- Constructing buffered Class IV bikeways in both directions of Winton Avenue, between Southland Drive and Santa Clara Street;
- Constructing 10-foot sidewalk between southland Drive and Santa Clara Street in both directions;
- Replacing existing 5-foot sidewalk with a new 10-foot sidewalk and replacing existing railing in both directions along the Winton Avenue overcrossing;

- Replacing concrete median between Southland Drive and the I-880 southbound ramps intersection;
- Overlaying existing asphalt surface layer on Winton Avenue between Southland Drive and Santa Clara Street;
- Widening to add new HOV preferential lanes on the two northbound on-ramps and the southbound loop on-ramp;
- Widening to add lanes on both the northbound and southbound diagonal off-ramps;
- Installing new ramp metering at the entrance ramp locations.
- Potential extension of soundwall at the southeast quadrant of Winton Avenue interchange.

The proposed improvements under this alternative require Federal Highway Administration (FHWA) review and action for access control modification for both the loop ramp removals, as well as for the proposed direct access connection to La Playa Drive, which is privately owned by the Southland Mall property. Per Caltrans Highway Design Manual Section 504.8, a direct connection cannot be provided to a private street. Thus, La Playa Drive would have to be converted to a public street for this alternative, which would require right of way acquisitions. Initial feedback from the City on this conversion generally supports progressing this alternative into the PA&ED phase. Viability of converting La Playa Drive to a public street is to be determined as the project moves forward and requires coordination between the City, Southland Mall ownership, FHWA and Caltrans.

This alternative requires a sliver of acquisition along eastbound Winton Avenue between Southland Drive and the I-880 southbound ramps intersection to allow for the proposed widening, along with right of way acquisition along La Playa Drive. Class IV bikeways are proposed in both directions of Winton Avenue within the project limits. Bike lane treatments at intersections will be evaluated in coordination with stakeholders and the most appropriate kind will be recommended in the PA&ED phase.

Winton Avenue interchange experiences high peak hour traffic volumes for the I-880 southbound on-ramp and might require three lanes, two general purpose and one HOV for ramp metering operations. At the ramp intersections, the design will strive to balance between required lane geometry and decreasing pedestrian and bicycle exposure and crossing distance. traffic forecasting and operations analysis will be performed as part of the PA&ED phase and decisions related to ramp storage requirements and related geometry, lane configurations and lengths will also be made at that time.

As shown in Table 7-1, this alternative proposes two new nonstandard Boldface design features. The construction of the direct access connection to La Playa Drive would require exceptions to 504.3(3) - Distance Between Ramp Intersection and Local Road Intersection, and 504.8 - Access Control. There are existing exceptions to design standards within the project limits, which are also summarized in Table 7-1.

Alternative W2: Triple Left at Southland Drive

This alternative proposes converting the existing I-880/Winton Avenue interchange from a full cloverleaf interchange to partial cloverleaf interchange; constructing two traffic signals at the I-880 ramp intersections; widening Winton Avenue to provide three left turn lanes at Southland Drive; reconstructing sidewalks and bridge railing; and adding buffered Class IV bikeways within the project area.

This alternative includes the following improvements:

- Widening portion of Winton Avenue between Southland Drive and the I-880 southbound ramps intersection to allow for a third left turn lane to Southland Drive;

The set of improvements listed below are the same as in Alternative W1.

- Removing the existing I-880 southbound loop off-ramp and northbound loop off-ramp;
- Constructing traffic signals, one each at the southbound and northbound I-880 ramp intersections with Winton Avenue;
- Widening portion of Winton Avenue between Southland Drive and Santa Clara Street to construct buffered Class IV bikeways in both directions of Winton Avenue within project limits;
- Constructing 10-foot sidewalk between Southland Drive and Santa Clara Street in both directions;
- Replacing existing 5-foot sidewalk with a new 10-foot sidewalk and replacing existing railing in both directions along the Winton Avenue overcrossing;
- Replacing concrete median between 400 feet west of Southland Drive and the I-880 southbound ramps intersection;
- Overlaying existing asphalt surface layer on Winton Avenue between 400 feet west of Southland Drive and Santa Clara Street;
- Widening to add new HOV preferential lanes on the two northbound on-ramps and the southbound loop on-ramp;
- Widening to add lanes on both the northbound and southbound diagonal off-ramps;
- Installing new ramp metering at the entrance ramp locations; and
- Potential extension of soundwall at the southeast quadrant of Winton Avenue interchange.

This alternative requires a sliver of acquisition along eastbound Winton Avenue between Southland Drive and the I-880 southbound ramps intersection to allow for the proposed widening. Bike lane treatments at intersections will be evaluated in coordination with stakeholders and the most appropriate kind will be recommended in the PA&ED phase.

Winton Avenue interchange experiences high peak hour traffic volumes for the I-880 southbound on-ramp and might require three lanes, two general purpose and one

HOV for ramp metering operations. At the ramp intersections, the design will strive to achieve as few lanes as possible in order to decrease pedestrian and bicycle exposure and crossing distance. A traffic forecasting and operations analysis will be performed as part of the PA&ED phase and decisions related to ramp storage requirements and related geometry, lane configurations and lengths will also be made at that time.

This alternative does not propose any new nonstandard design features. There are existing exceptions to design standards within the project limits which are summarized in Table 7-1.

I-880/A Street Interchange

Alternative A1: Roundabout

This alternative proposes converting the existing I-880/ A Street ramp terminal intersections to two-lane double roundabouts to improve traffic operations. New shared pedestrian and bike paths are also constructed in both directions between the ramp intersections. This alternative maintains access to all local streets near the interchange and maintains the existing I-880 bridge structure over A Street.

This alternative includes the following improvements:

- Constructing two-lane double roundabouts at the northbound and southbound ramp intersections;
- Widening A Street to conform to roundabouts at both the ramp intersections;
- Constructing a 12-foot wide Class I shared pedestrian and bicycle paths in both directions along the outer spans of A Street undercrossing;
- Reconstructing concrete median between Garden Avenue and Happyland Avenue;
- Widening portion of A Street between Garden Avenue and Happyland Avenue to allow for bike lanes in both directions;
- Constructing Class II bike lanes in both directions of A Street, between Garden Avenue and Happyland Avenue, except for the A Street undercrossing;
- Reconstructing 10-foot sidewalks between Garden Avenue and Happyland Avenue in both directions;
- Reconfiguring lanes on southbound off-ramp and northbound off-ramp;
- Overlaying existing asphalt surface layer on A Street between Garden Avenue and Happyland Avenue; and
- Improving visibility and safety at the pedestrian crosswalk at Happyland Avenue with installation of pedestrian High-Intensity Activated crossWalK beacon (HAWK) signal.

This alternative requires a significant right of way acquisition at the southeast corner of the A Street/S Garden Avenue intersection due to proposed widening. This acquisition requires the demolition of two existing commercial buildings. Additional right of way acquisition is required at the southwest corner of the A Street/Happyland Avenue intersection.

Traffic operations analysis will be performed for this alternative in the PA&ED phase to check its compatibility with ramp metering operations. If the analysis results show that adequate ramp queue storage is not available, the metering queue will back-up to the roundabout and clog the roundabout operation, making this alternative non-viable. A viable alternative for this interchange would provide adequate storage for ramp metering operation.

This alternative does not propose any new nonstandard design features. There are existing exceptions to design standards within the project limits which are summarized in Table 7-1.

Alternative A2: Compact Diamond Interchange

This alternative proposes widening A Street under I-880 to improve traffic operations. This would require demolishing and constructing a new bridge structure along I-880 over A Street. New bike lanes and sidewalks are also proposed to improve bicycle and pedestrian access and safety.

This alternative includes the following improvements:

- Widening A Street to include one full left turn lane in each direction between the I-880 ramp intersections;
- Constructing new I-880 bridge structure with standard vertical clearance at A Street;
- Reconstructing mainline between the northbound and southbound ramp gores to allow for standard vertical clearance at the A Street undercrossing;
- Installing new traffic signals, one each at the southbound and northbound I-880 ramp intersections with A Street;
- Reconstructing concrete median between Garden Avenue and Happyland Avenue;
- Constructing Class II bike lanes and 10-foot sidewalks in both directions of A Street, between Garden Avenue and Happyland Avenue;
- Reconfiguring the S Garden Avenue intersection to become right-in/right-out only;
- Providing for U-turn at the Victory Avenue/A Street intersection;
- Overlaying existing asphalt surface layer on A Street between Garden Avenue and Happyland Avenue; and
- Improving visibility and safety at the pedestrian crosswalk at Happyland Avenue with installation of pedestrian HAWK signal.

This alternative requires right of way acquisition at four locations along A Street.

This alternative does not propose any new nonstandard design features. There are existing exceptions to design standards within the project limits which are summarized in Table 7-1.

Alternative A3: Single Point Urban Interchange (SPUI)

This alternative proposes converting the existing I-880/A Street interchange from a Compact Diamond Interchange configuration to a SPUI configuration to improve traffic operations and bicycle and pedestrian access and safety. This would require demolishing and constructing a new bridge structure along I-880 over A Street to accommodate SPUI. This alternative modifies access for Arbor Avenue and Garden Avenue to and from A Street.

This alternative includes the following improvements:

- Widening A Street from Victory Drive to Fuller Avenue to allow for SPUI, new bike lanes and sidewalks in both directions;
- Constructing a new I-880 bridge structure with standard vertical clearance at A Street;
- Reconstructing mainline profile between the northbound and southbound ramp gores to allow for standard vertical clearance at the A Street undercrossing;
- Realigning all four on- and off-ramps to new SPUI configuration;
- Demolishing traffic signals, one each at the southbound and northbound I-880 ramp intersections with A Street;
- Constructing one new traffic signal at the SPUI intersection;
- Reconfiguring Arbor Avenue to a dead-end street;
- Reconstructing concrete median between Victory Drive and Fuller Avenue;
- Constructing Class II bike lanes in both directions of A Street, between Victory Drive and Fuller Avenue;
- Constructing 10-foot sidewalks between Victory Drive and Fuller Avenue in both directions;
- Reconfiguring the S Garden Avenue intersection to become right-in/right-out only;
- Revising U-turn restrictions at the Victory Avenue/A Street intersection;
- Overlaying existing asphalt surface layer on A Street between Victory Drive and Fuller Avenue; and
- Improving visibility and safety at the pedestrian crosswalk at Happyland Avenue with installation of pedestrian HAWK signal.

This alternative requires a significant right of way acquisition at the northeast corner of the A Street/Garden Avenue intersection due to proposed widening. This acquisition requires the demolition of one existing commercial building. An additional sliver of right of way acquisition is required along A Street at multiple locations.

This alternative does not propose any new nonstandard design features. There are existing exceptions to design standards within the project limits which are summarized in Table 7-1.

Design Standards Risk Assessment

The table below identifies the exceptions to Boldface (B) and Underlined (U) type design standards that are associated with each viable alternative and provides a risk assessment for each exception.

Table 7-1: Design Standards Risk Assessment

Alternative	Design Standard from Highway Design Manual Tables 82.1A & 82.1 (E) – Existing Exception (P) - Proposed Exception	Location/ Description	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High,)	Justification for Probability Rating
Mainline	B: 301.1 Lane Width Standard: 12’ (P/E)	a. 11’ wide – lanes on southbound and northbound between Winton Avenue and A Street L = 3670’ *Existing lane width: varies 11’-12’*	Medium	Narrow lanes tend to have higher accident rates; narrowing the shoulders can significantly increase them.
Mainline	B: 302.1 Left Shoulder Width (E) Standard: 10’	a. 2’– 4’ wide - southbound shoulder between Winton Avenue and A Street L = 7000’ b. 2’– 6’ - northbound shoulder between Winton Avenue and A Street L = 7000’	High	Existing Bay Area drivers already experience narrow inside and outside shoulders.
Aux Lanes	B: 302.1 Right Shoulder Width (P) Standard: 10’	a. 1.5’– 4’ wide - southbound shoulder between Winton Avenue and A Street L = 1500’ *Existing: 13.5’ – 18’* b. 8’ wide - northbound shoulder between	Very Low Low	Near elimination of useful outside shoulder combined with narrow lanes and narrow inside shoulder indicates increased operational,

Table 7-1: Design Standards Risk Assessment

Alternative	Design Standard from Highway Design Manual Tables 82.1A & 82.1 (E) – Existing Exception (P) - Proposed Exception	Location/ Description	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High,)	Justification for Probability Rating
		Winton Avenue and A Street L = 1430' *Existing: 18'*		maintenance, and accident issues.
Mainline	B: 305.1(3) Median Width (E) Standard: 22'	a. 6'–8' Between Winton Avenue and A Street L = 7000'	Medium	Existing condition but above average collision history in roadway segment. Analysis required.
A Street	B: 308.1 Right Shoulder Width (P) Adjacent Lateral Obstruction (E) Standard: 5'	a. No shoulder provided on A Street at the undercrossing. L = 175'	Medium	Existing condition
Aux Lanes	B: 309.1(3)(a) Horizontal Clearance (P) Standard: 10'	a. 1.5'– 4' wide - southbound outside shoulder between Winton Avenue and A Street L = 1500'	Very Low	Near elimination of useful outside shoulder combined with narrow lanes and narrow inside shoulder indicates increased operational, maintenance, and accident issues.
W1, W2	B: 309.2(1)(a) Vertical Clearance (E) Standard: 16' 6"	a. 14' 8" - southbound loop on-ramp at Winton Avenue b. 14' 9" - northbound loop on-ramp at Winton Avenue	Medium Medium	- Currently well below standard. - Bridge rail replacement may reduce further (MASH compliant barriers are thicker which may result in an effective bridge width increase and a decrease in

Table 7-1: Design Standards Risk Assessment

Alternative	Design Standard from Highway Design Manual Tables 82.1A & 82.1 (E) – Existing Exception (P) - Proposed Exception	Location/ Description	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High,)	Justification for Probability Rating
				clearance from any cross slope.)
A1, A2, A3	B: 309.2(1)(c) Vertical Clearance (E) Standard: 15’	a. 14’ 7” - eastbound A Street undercrossing b. 14’ 7” - westbound A Street undercrossing	High	- Near standard - Opportunities to correct
A1, A2, A3	U: 403.3 Angle of Intersection (E) Standard: not less than 75 degrees	a. 67° - A Street at I-880	High	Existing feature but alternatives provide opportunities to mitigate
Mainline	B: 501.3 Interchange Spacing (E) Standard: minimum one mile	a. 4775’ - SR 92 to Winton Avenue b. 4010’ - Winton Avenue to A Street	High Medium	Existing standard interchanges Operational challenges currently with an above average collision history.
W1	B: 504.3(3) Distance Between Ramp Intersection and Local Road Intersection (P) Standard: minimum 400’	a. 30’ - Direct connection from La Playa Drive to southbound ramp intersection at Winton. *Existing: 400’*	Low	-Very close proximity - Potential operational issues - Other solutions
A1, A2, A3	B: 504.3(3) Distance Between Ramp Intersection and Local Road Intersection (E) Standard: minimum 400’	a. 30’ - S Garden Avenue to southbound ramp intersection *Existing: 30’* b. 30’ - Arbor Avenue to northbound ramp intersection c. 210’ - Happyland Avenue to northbound ramp intersection	High	- Existing - Can be mitigated through signal timing

Table 7-1: Design Standards Risk Assessment

Alternative	Design Standard from Highway Design Manual Tables 82.1A & 82.1 (E) – Existing Exception (P) - Proposed Exception	Location/ Description	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High,)	Justification for Probability Rating
Mainline	B: 504.7 Minimum Weave Length (E) Standard: minimum 2000’	a. 1500’- southbound direction between Winton Avenue and A Street b. 1430’- northbound direction Winton Avenue and A Street	Medium	Limited by interchange spacing
W1	B: 504.8 Access Control (P) Standard: extend at least 50’ beyond the end of the curb return, ramp radius, or taper.	a. < 50’- Direct connection to La Playa Drive to Winton Avenue interchange *Existing: 50’*	Low	- Leads to a private drive - Operational concerns with signals and location within Winton and ramps intersection
A1, A2, A3	B: 504.8 Access Control (E) Standard: extend at least 50’ beyond the end of the curb return, ramp radius, or taper.	a. < 50’ - S Garden Avenue to A Street interchange b. < 50’ - Arbor Avenue to A Street interchange	High	Existing

The detailed studies of the proposed alternatives would include development of design standard decision document during the PA&ED phase.

Aesthetic Treatments/Architectural Features

Within the project area, there are existing architectural features along the median barrier (oak leaves stenciled on both sides of the median barrier). To provide a consistent corridor aesthetic, additional oak leaf aesthetic treatment shall be added to the median barriers within the length of the project limits, where existing median barrier is impacted by the proposed improvements. As part of this project, the existing architectural features will be enhanced with the addition of new stenciled oak leaves (pre-approved concepts to be provided by D-4 Caltrans Office of Landscape Architecture). Additionally, new overpass railing/fencing, slope paving, and other architectural features are to be in line with other features along the corridor (ex: see I-

880/Davis Street and Marina Blvd interchanges for existing architectural features within the local context).

7B. Alternatives Considered but Determined Not Viable

The following alternatives were developed during the course of study or identified through stakeholder interaction. The alternatives were evaluated and have been removed from further study. A brief description of each alternative and the reason it was removed from consideration as a viable alternative are provided below.

Winton Avenue: Couplet

This alternative proposes converting the existing I-880/Winton Avenue intersection from a clover leaf to a partial clover leaf, controls ramp turning movements at signalized intersections, improves access to Southland Mall by converting Southland Drive and Southland Place into one-way streets that act as a couplet, and improves bicycle and pedestrian access and safety. This alternative has the potential to disturb the traffic circulation for the Southland Mall property, as well as other parcels between Southland Place and Southland Drive. Stakeholder representatives from Southland Mall, Wells Fargo Bank and the City met on February 7, 2019, and this alternative was not well received as it did not align with the future development goals of the Southland Mall property and moves traffic further away from current entrance. For these reasons, a group consensus by those attending the meeting considered not to pursue this as a viable alternative.

Winton Avenue: Separated Left

This alternative proposes converting the existing I-880/Winton Avenue intersection from a clover leaf to a partial clover leaf, controls ramp turning movements at signalized intersections, reduces weaving along Winton Avenue, and improves bicycle and pedestrian access and safety. This alternative proposes separating westbound through traffic from Winton Avenue and westbound right-turn traffic from the southbound I-880 off-ramp to reduce weaving between Southland Drive and the I-880 southbound ramp intersection. This requires the reconstruction of this section with two channelizing concrete medians as well as significant signing to orient drivers into the appropriate travel lanes. This alternative did not receive support from the City and other stakeholders due to the complexity of the design, difficulty in regulating traffic, drivability, and safety concerns related to driver confusion. Therefore, this alternative is not being further considered as a viable alternative in this PSR-PDS.

Winton Avenue: Displaced Left

This alternative proposes converting the existing I-880/Winton Avenue intersection from a clover leaf to a partial clover leaf, controls ramp turning movements at signalized intersections, reduces weaving along Winton Avenue, improves access to Southland Mall, and improves bicycle and pedestrian access and safety. This alternative proposes creating a left-turn lane at the proposed I-880 southbound ramp/Winton Avenue intersection dedicated for westbound traffic going to Southland Mall. At the same time, right-turn westbound traffic from the I-880 southbound off-ramp would be forced to travel on Winton Avenue beyond Southland Place, as the left turn movement at that intersection is removed. This alternative poses several negative impacts. It would require major reconfiguration of Winton Avenue between Southland Drive and the I-880 interchange, as well as significant signage, public outreach and time for drivers to understand the proper use of the design. This displaced left configuration would also be a non-standard design because its typical application is between intersections. Additionally, this alternative requires significant right of way acquisition, increasing the overall project cost. For these reasons, it is not being further considered as a viable alternative in this PSR-PDS.

8. RIGHT OF WAY

A Conceptual Cost Estimate - Right of Way Component sheet for each viable alternative has been prepared based on available information and are included in Attachment H. Right of Way land surveys are to be conducted and mapping prepared for use in the next phase of the project.

Winton Avenue Alternatives

Right of Way acquisitions for both the Winton Avenue alternatives are needed along eastbound Winton Avenue between Southland Drive and the I-880 southbound ramps intersection to allow for the proposed widening. Two parcels will be affected, and the total area of impact ranges from approximately 6,800 square feet (S.F.) to 16,300 S.F. Right of Way costs for converting La Playa Drive to a public street have not been taken into account in this phase of the project.

A Street Alternatives

Alternative A1 requires a significant acquisition at the southeast corner of the A Street/S Garden Avenue due to proposed widening. This acquisition requires the demolition of existing commercial building. Additional right of way acquisition is required at the southwest corner of the A Street/Happyland Avenue intersection. The total area of impact is approximately 10,700 S.F.

Alternative A2 requires a sliver of right of way acquisition at four locations along A Street. The total area of impact is approximately 8,700 S.F.

Alternative A3 requires a significant acquisition at the northeast corner of the A Street/Garden Avenue to allow for the proposed widening. This acquisition requires the demolition of one existing commercial building. An additional sliver of right of way acquisition is required along A Street at multiple locations. The total area of impact is approximately 22,600 S.F.

I-880 Auxiliary Lane Alternative

This alternative does not require any right of way acquisition.

Utilities

It is anticipated that the action alternatives would have impacts requiring relocation of utilities along the corridor. Identified impacts are based on the collection of available as-built information. For preliminary planning and estimating purposes, where impacts or conflicts of utilities with the proposed improvements were observed, the utility was assumed to be relocated or replaced in-kind.

For the Winton Avenue alternatives, anticipated utility relocations include PG&E overhead distribution/transmission electric lines and street lights at Southland Drive. Additionally, several sewer and telecommunication manholes would need to be adjusted to final grade. For the A Street alternatives, preliminary utility relocations include street lights, lighting fixtures, luminaires, and existing traffic signals at the southbound and northbound ramp intersections. Additionally, several sewer and telecommunication manholes would need to be adjusted to final grade. The auxiliary lane alternative would not require any utility removals or relocations.

During the PA&ED phase of the Project, the design team would confirm impacts with the utility owners through the utility verification process. Positive location as prescribed in Chapter 17 of the Project Development Procedures Manual will be performed, as required, either prior to or concurrent with the Design phase.

Railroad

Railroad crossings are not within the project limits. Railroad coordination and agreements are not required for any of the viable alternatives. Railroad coordination and agreements would not be required for any of the viable alternatives.

Highway Planting

This section of I-880 (PM 17.2-18.6) does not have scenic designation, but it does fall under Classified Landscaped Freeway Designation. Classified Landscaped Freeways require planting within 2 years of roadway work completion to be funded by the roadway contract with a 3-year plant establishment period. Proposed project costs and funding information take this requirement into account. Reclaimed water will be the water source for the highway planting.

9. STAKEHOLDER INVOLVEMENT

Several stakeholders for this project are identified as part of the Public Engagement Plan (Plan) that is developed as part of this project. The Plan is developed to help ensure that Alameda CTC, in partnership with the City and Caltrans, communicates key project benefits and concerns proactively and are positioned to achieve stronger ties, understanding, and communication with the public and with partner agencies. This Plan aims to inform the public and key stakeholders by enhancing communications and outreach around key project milestones. Several stakeholders are identified in the Plan and include public agencies/organizations such as Hayward City

Council, AC Transit; bicycle and pedestrian advocacy groups; emergency service providers; local businesses; local residents; and the motoring public.

The list presented below identifies various project events that led to the current development of the PSR-PDS:

- Multiple meetings with the City to present preliminary alternatives and gather input.
- City of Hayward Economic Development Division meeting with representatives of commercial/Southland Mall ownership and Alameda CTC held on February 7, 2019.
- A Bicycle and Pedestrian Stakeholder Input Meeting was held in Hayward on May 23, 2019. The input received during this meeting will be considered during the PA/ED phase.
- A Local Agency Stakeholder Input Meeting was held in Hayward on June 19, 2019. The input received during this meeting will be considered during the PA/ED phase.
- A Business Stakeholder Input Meeting was held in Hayward on June 25, 2019. The input received during this meeting will be considered during the PA/ED phase.

The Environmental Document will be circulated for public review during the PA&ED phase.

10. ENVIRONMENTAL COMPLIANCE

The project team completed a Preliminary Environmental Analysis Report (PEAR) to identify the potential environmental impacts of the proposed project. A summary of the preliminary environmental analysis is provided below.

The project is in an area with urban and commercial character and so there is a low potential for the project improvements to result in significant impacts. The anticipated level of environmental documentation under CEQA for all build alternatives in addition to the no-build alternative will be an Initial Study (IS) with a Mitigated Negative Declaration (MND). The National Environmental Policy Act (NEPA) document would be a routine Environmental Assessment with proposed Finding of No Significant Impact (EA/FONSI). A risk was identified that as a result of new VMT guidelines, the project might no longer qualify for an IS under CEQA, but rather requires an Environmental Impact Report (EIR). The appropriate environmental document for the project will be determined in the PA&ED phase in consultation with Caltrans environmental team.

As discussed in the PEAR, implementation of the project could trigger concerns related to construction-period traffic, noise, and pollutant emissions; temporary impacts to water quality; exposure to hazardous materials during construction; wetland impacts; and impacts to cultural resources.

The following technical reports should be prepared during the PA&ED phase to analyze potential environmental impacts under all three alternatives:

- Community Impact Assessment
- Visual Impact Assessment
- Archaeological Survey Report
- Historic Resources Evaluation Report
- Historic Properties Survey Report
- Location Hydraulic Study
- Water Quality Assessment Report
- Preliminary Geotechnical Report
- Paleontological Evaluation Report
- Initial Site Assessment
- Air Quality Study with Greenhouse Gas Emissions Analysis
- Noise Study Report
- Natural Environment Study
- Wetland Delineation Report

It is anticipated that the following regulatory permits/approvals would be required for project components that propose alterations to water crossings or impacts to adjacent natural habitat. As project improvements would include areas outside of Caltrans' right of way, local ordinances of the City and possibly Alameda County would apply in those areas.

- San Francisco Bay RWQCB 401 Water Quality Certification permit
- U. S. Army Corps of Engineers (USACE) Section 404 permit
- Protected tree pruning or removal permit per city of Hayward Tree Preservation Ordinance Section 10-15.20

11. FUNDING

The project scoping and PA&ED phases have been funded from the local tax measure funding. It is anticipated that the subsequent project phases would seek funding from a combination of federal, state, regional and local funding sources, including Senate Bill 1 (SB1) and LATIP. Individual projects with independent utility and logical termini, if identified for this project, may proceed when funding sufficient to implement a project is identified. It has been determined that this project is eligible for Federal-aid funding. This PSR-PDS serves as a scoping document to program for the next phase of the Project.

Capital Outlay Project Estimate

A programming-level cost estimate was developed for the project improvement alternatives to help define the scope of work and identify viable project alternatives. The estimated total construction cost for the project ranges from approximately $72 million to $175 million and includes one build alternative for Winton Avenue and one build alternative at A Street interchange along with mainline auxiliary lane improvements. Similarly, the total right of way cost ranges from approximately $8 million to $10 million. The range of project costs is based on potential project alternatives and major areas of risk, with appropriate consideration for contingency. Estimated costs are subject to change as new and more detailed information becomes available.

The Capital Outlay Project Estimate is included as Attachment D and the Right of Way Conceptual Cost Estimate Component is included as Attachment H.

Table 11-1: Estimated Project Costs

	Range of Estimate*		**STIP Funds**		**Other Funds**	
	Construction	**Right of Way**	**Construction**	**Right of Way**	**Construction**	**Right of Way**
Alternative W1	$48M	$2M	$13M	$2M	$35M	$0M
Alternative W2	$43M	$3M	$13M	$2M	$30M	$1M
Alternative A1	$20M	$6M	$11M	$2M	$9M	$4M
Alternative A2	$62M	$2M	$13M	$2M	$49M	$0M
Alternative A3	$119M	$9M	$13M	$2M	$106M	$7M
Auxiliary Lanes on I-880	$8M	$0M	$7M	$0M	$0M	$0M

* Costs shown are escalated values, per Attachment D.

The level of detail available to develop these capital outlay project estimates is only accurate to within the above ranges and is useful for long-range planning purposes only. The capital outlay project estimates should not be used to program or commit State-programmed capital outlay funds.

Capital Outlay Support Estimate

The total of PA&ED, PS&E, right of way, and construction capital outlay support costs is estimated to range from $27 million to $59.7 million. Separate future cooperative agreements for the PA&ED, PS&E and construction phases of the project would be prepared between Caltrans and the lead agency before those phases begin.

12. DELIVERY SCHEDULE

Table 12-1: Project Schedule

Project Milestones		**Scheduled Delivery Date (Month/Day/Year)**
PID Approval	M015	09/20/2019
Begin Environmental	M020	07/22/2019

DPR Approval & Circulate DED Externally	M120	11/09/2020
Complete PA & ED	M200	07/01/2021

The anticipated funding fiscal year for construction is 2024/25.

13. RISKS

A risk register has been created as part of the PSR-PDS and is included as Attachment G. The risk register is an assessment of potential risks and project impacts that may occur in subsequent phases and would be updated throughout the project development process. In accordance with the Caltrans Risk Management Handbook, a Level 3 risk register is required for projects with estimated costs above $100 million. A quantitative assessment has been prepared for identified risks and assignment of cost and schedule impacts are based on risk evaluation for this phase of the project. As additional studies are completed as part of the PA&ED phase, a more detailed and quantitative approach to define and describe the risks can be completed.

In summary, the main risks are as follows:

- Design risks include approval of design exceptions for nonstandard features and additional aesthetic requirements.
- Environmental risks include delay of public comments and change in the type of environmental document to EIR from IS/MND.
- Project management risks include lack of funding and unplanned scope changes.
- Organizational risks include lack of stakeholder support.
- Construction risks include cultural or paleontological resources found during construction, interference with other projects in the vicinity and weather impacts.
- Right of way risks include additional right of way acquisitions and/or easements.

14. EXTERNAL AGENCY COORDINATION

The project requires the following coordination:

<u>Federal Highway Administration</u>
This project is considered to be a delegated project in accordance with the current Stewardship and Oversight Agreement signed between FHWA and Caltrans on May 28, 2015. New access/access modification proposed on the Interstate System requires FHWA approval.

<u>US Army Corps of Engineers</u>
Department of the Army Permit for:
Clean Water Act Section 404

Regional Water Quality Control Board
Clean Water Act Section 401
Water Quality Certification

Local Agency
Agreements with Caltrans

Other
City of Hayward – Tree Removal Permit
City of Hayward – Development Permit – Planning Division
City of Hayward – Encroachment Permit
City of Hayward – Grading & Clearing Permit

15. PROJECT REVIEWS

Field Review__________________________TBD____________Date_____________
District Maintenance ____________________Leah Budu________Date _____________
District Traffic Safety Engineer ___________Bahman Zarechian_Date _____________
Headquarters Project Delivery Coordinator _Robert Effinger____Date _____________
Project Manager ________________________Val Ignacio_______Date _____________
FHWA ________________________________Lanh Phan________Date _____________
District Safety Review __________________Haixiong Xu______Date _____________
Constructability Review _________________Robert Kobal_____Date _____________
Other ____Date _____________

16. PROJECT PERSONNEL

Table 16-1: Project Personnel

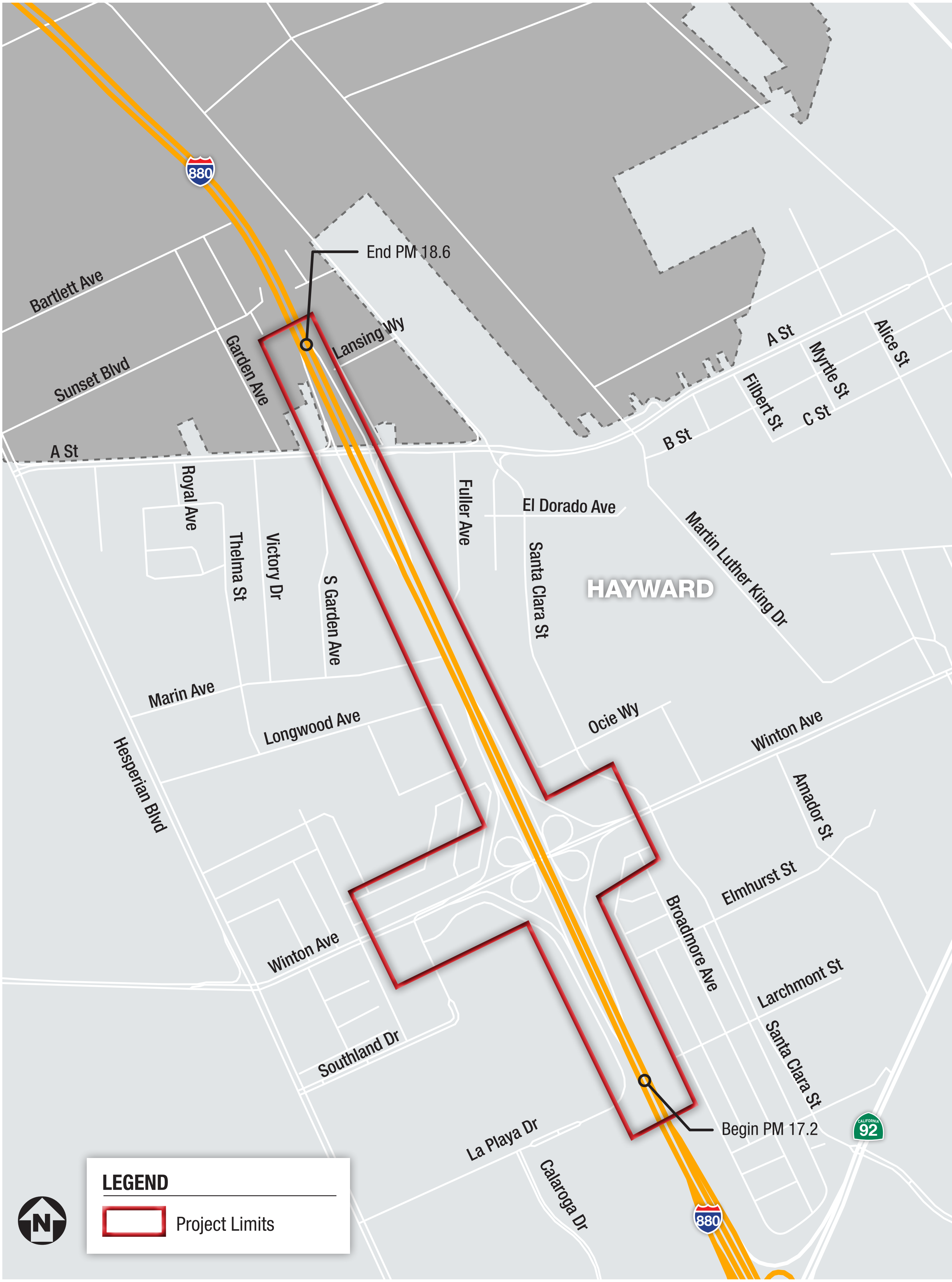
Name	Role	Phone
Val Ignacio	Caltrans Project Manager	(510) 286-5086
Mimy Hew	Caltrans Advance Planning Branch Chief	(510) 286-5578
Kan Wong	Caltrans Advance Planning Project Engineer	(510) 286-5549
Morteza Azimi	Caltrans Alameda Design Chief	(510) 286-5157
Albert Zepeda	Caltrans Senior Design Engineer	(510) 286-5160
Thomas Rosevear	Caltrans Senior Environmental Planner	(510) 286-5360
Bach-Yen Nguyen	Caltrans District Design Liaison	(510) 286-4928
Peter Lau	Caltrans Highway Operations Branch Chief	(510) 286-6157
Bahman Zarechian	Caltrans Traffic Safety Branch Chief	(510) 286-4422
Julie McDaniel	Caltrans Airspace, Utilities, Local Prog. & Training Chief	(510) 286-5404
Gary Sidhu	Alameda County Transportation Commission- Project Manager	(510) 208-7414
Fred Kelley	City of Hayward, Engineering Division Manager	(415) 778-5206
Parag Mehta	Kimley-Horn – Project Manager	(925) 965-7703
Prasanna Muthireddy	Kimley-Horn – Project Engineer	(925) 215-1565

17. ATTACHMENTS

A. Location Map
B. Preliminary Layouts
C. Typical Cross-Sections
D. Cost Estimate
E. Preliminary Environmental Analysis Report (PEAR)
F. Traffic Engineering Performance Assessment (TEPA)
G. Risk Register
H. Right of Way Conceptual Cost Estimate Component
I. Transportation Planning Scoping Information Sheet
J. Storm Water Data Report
K. Transportation Management Plan Data Sheet (TMP)

Attachment A

Location Map



880
End PM 18.6
Bartlett Ave
Sunset Blvd
Garden Ave
Lansing Wy
A St
Royal Ave
Thelma St
Victory Dr
S Garden Ave
Fuller Ave
El Dorado Ave
Santa Clara St
HAYWARD
Martin Luther King Dr
A St
Myrtle St
Alice St
Filbert St
C St
B St
Marin Ave
Longwood Ave
Hesperian Blvd
Ocie Wy
Winton Ave
Amador St
Elmhurst St
Broadmore Ave
Winton Ave
Larchmont St
Santa Clara St
Southland Dr
La Playa Dr
Calaroga Dr
Begin PM 17.2
92
880
LEGEND
Project Limits
N

Attachment B

Preliminary Layouts

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Ala	880	17.2 – 18.6		–

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

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ALAMEDA CTC
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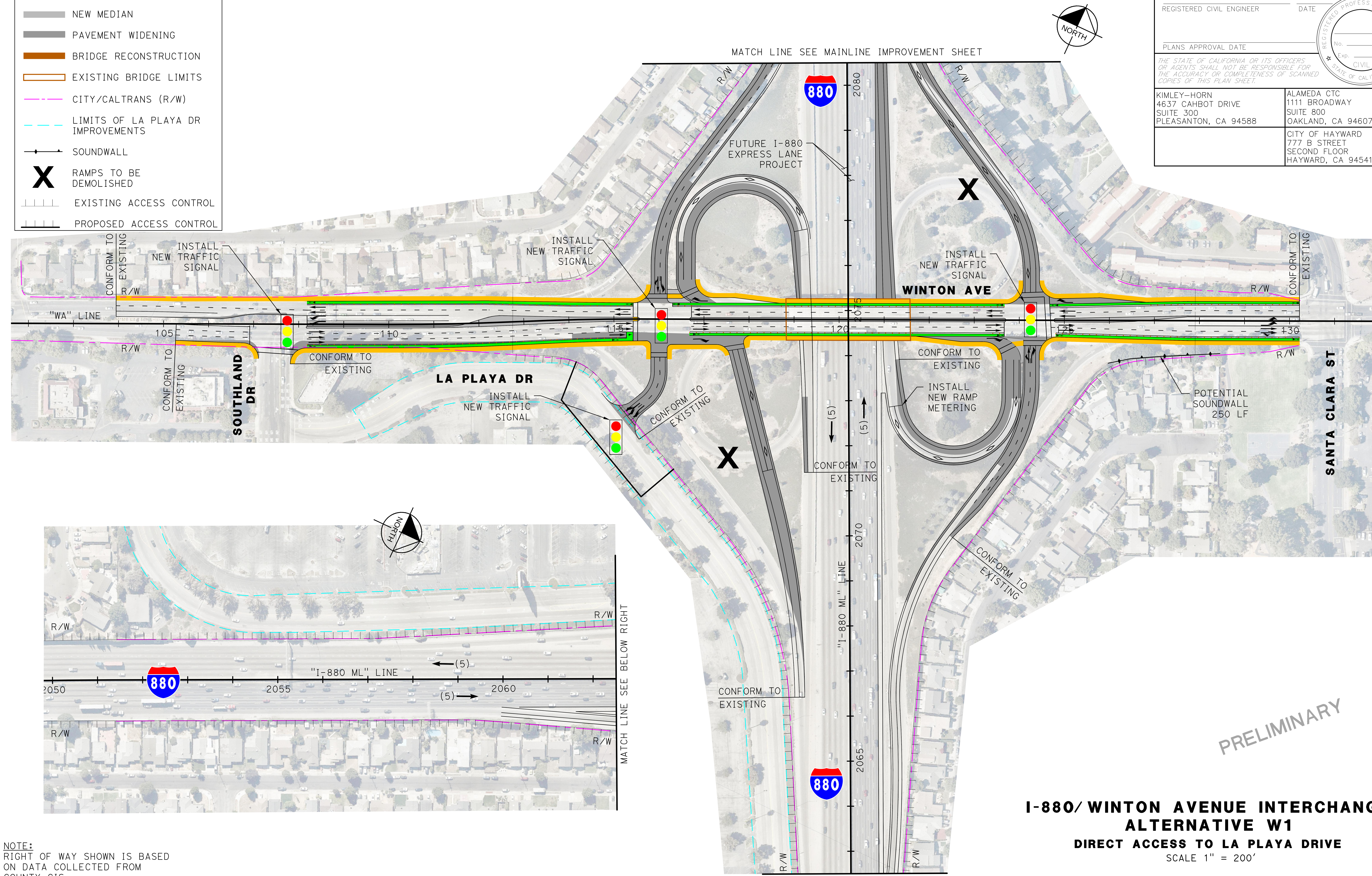
SUITE 800
OAKLAND, CA 94607

CITY OF HAYWARD
777 B STREET
SECOND FLOOR
HAYWARD, CA 94541

LEGEND
- SIDEWALK
- BIKE LANE
- NEW MEDIAN
- PAVEMENT WIDENING
- BRIDGE RECONSTRUCTION
- EXISTING BRIDGE LIMITS
- CITY/CALTRANS (R/W)
- LIMITS OF LA PLAYA DR IMPROVEMENTS
- SOUNDWALL
- X RAMPS TO BE DEMOLISHED
- EXISTING ACCESS CONTROL
- PROPOSED ACCESS CONTROL



NOTE:
RIGHT OF WAY SHOWN IS BASED ON DATA COLLECTED FROM COUNTY GIS.

I-880/ WINTON AVENUE INTERCHANGE
ALTERNATIVE W1
DIRECT ACCESS TO LA PLAYA DRIVE
SCALE 1" = 200'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR — CALCULATED-DESIGNED BY — CHECKED BY — REVISED BY — DATE REVISED

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Ala	880	17.2 – 18.6		–

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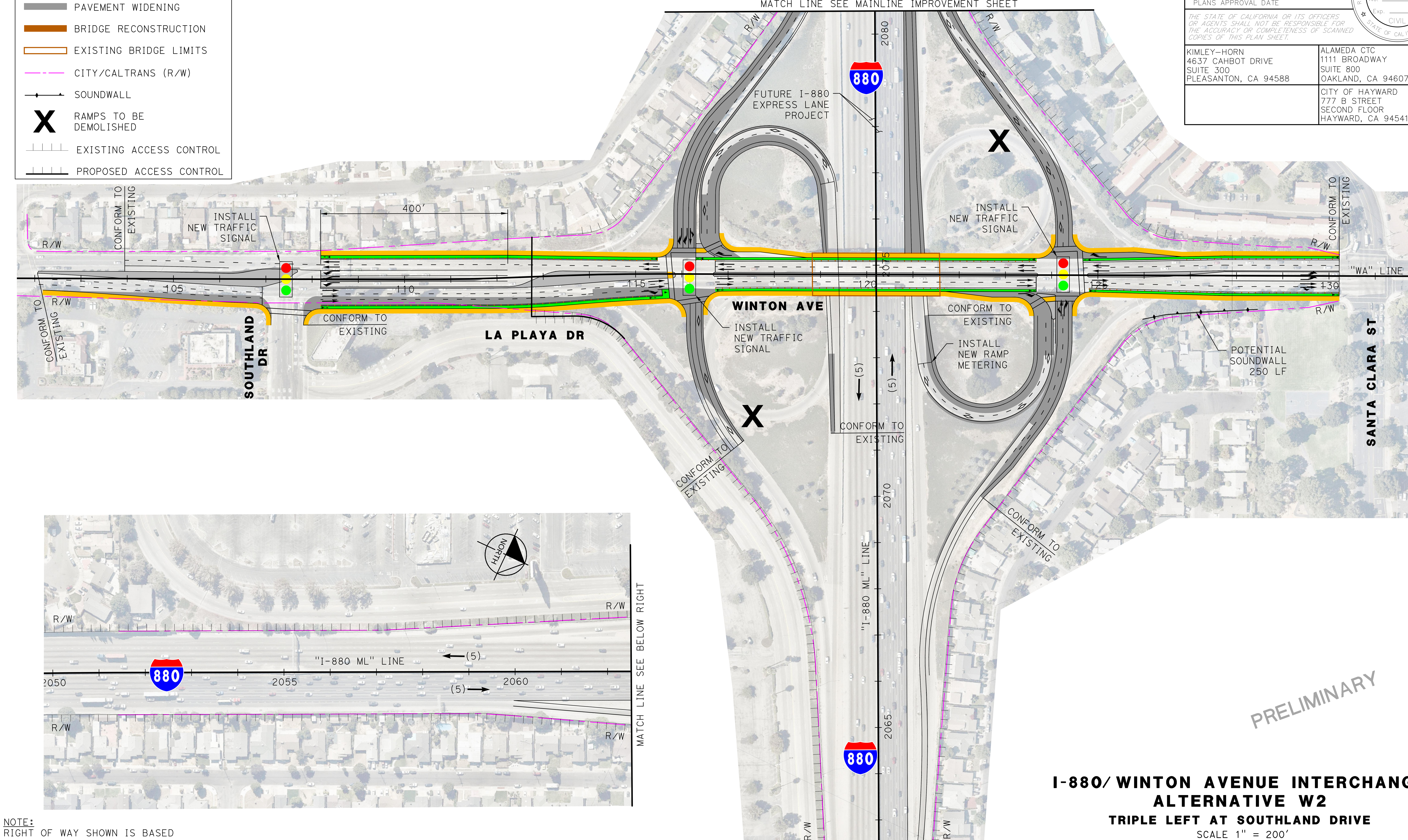
SECOND FLOOR
HAYWARD, CA 94541

LEGEND

- SIDEWALK
- BIKE LANE
- NEW MEDIAN
- PAVEMENT WIDENING
- BRIDGE RECONSTRUCTION
- EXISTING BRIDGE LIMITS
- CITY/CALTRANS (R/W)
- SOUNDWALL
- X RAMPS TO BE DEMOLISHED
- EXISTING ACCESS CONTROL
- PROPOSED ACCESS CONTROL



NOTE:
RIGHT OF WAY SHOWN IS BASED ON DATA COLLECTED FROM COUNTY GIS.

PRELIMINARY

I-880/ WINTON AVENUE INTERCHANGE
ALTERNATIVE W2
TRIPLE LEFT AT SOUTHLAND DRIVE
SCALE 1" = 200'

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UNIT –
PROJECT NUMBER AND PHASE

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4	Ala	880	17.2 – 18.6		–

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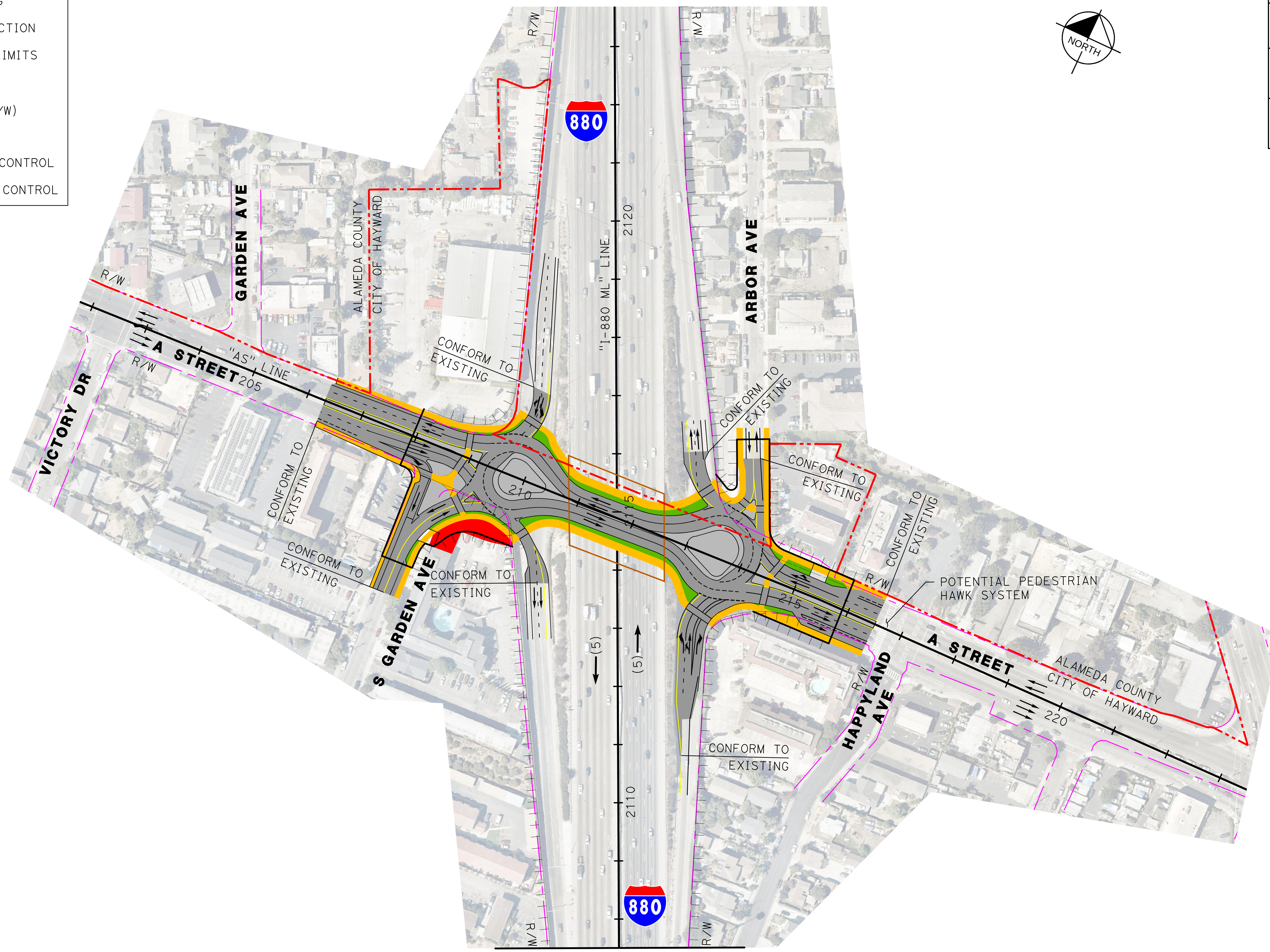
SUITE 800
OAKLAND, CA 94607

CITY OF HAYWARD
777 B STREET
SECOND FLOOR
HAYWARD, CA 94541

LEGEND

- SIDEWALK
- LANDSCAPE
- NEW MEDIAN
- PAVEMENT WIDENING
- BRIDGE RECONSTRUCTION
- EXISTING BRIDGE LIMITS
- PROPERTY IMPACTS
- CITY/CALTRANS (R/W)
- CITY BOUNDARY
- EXISTING ACCESS CONTROL
- PROPOSED ACCESS CONTROL

HAWK: HIGH INTENSITY ACTIVATED CROSSWALK



MATCH LINE SEE MAINLINE IMPROVEMENT SHEET

PRELIMINARY

I-880/ A STREET INTERCHANGE ALTERNATIVE A1

ROUNDABOUT

SCALE 1" = 200'

NOTE:
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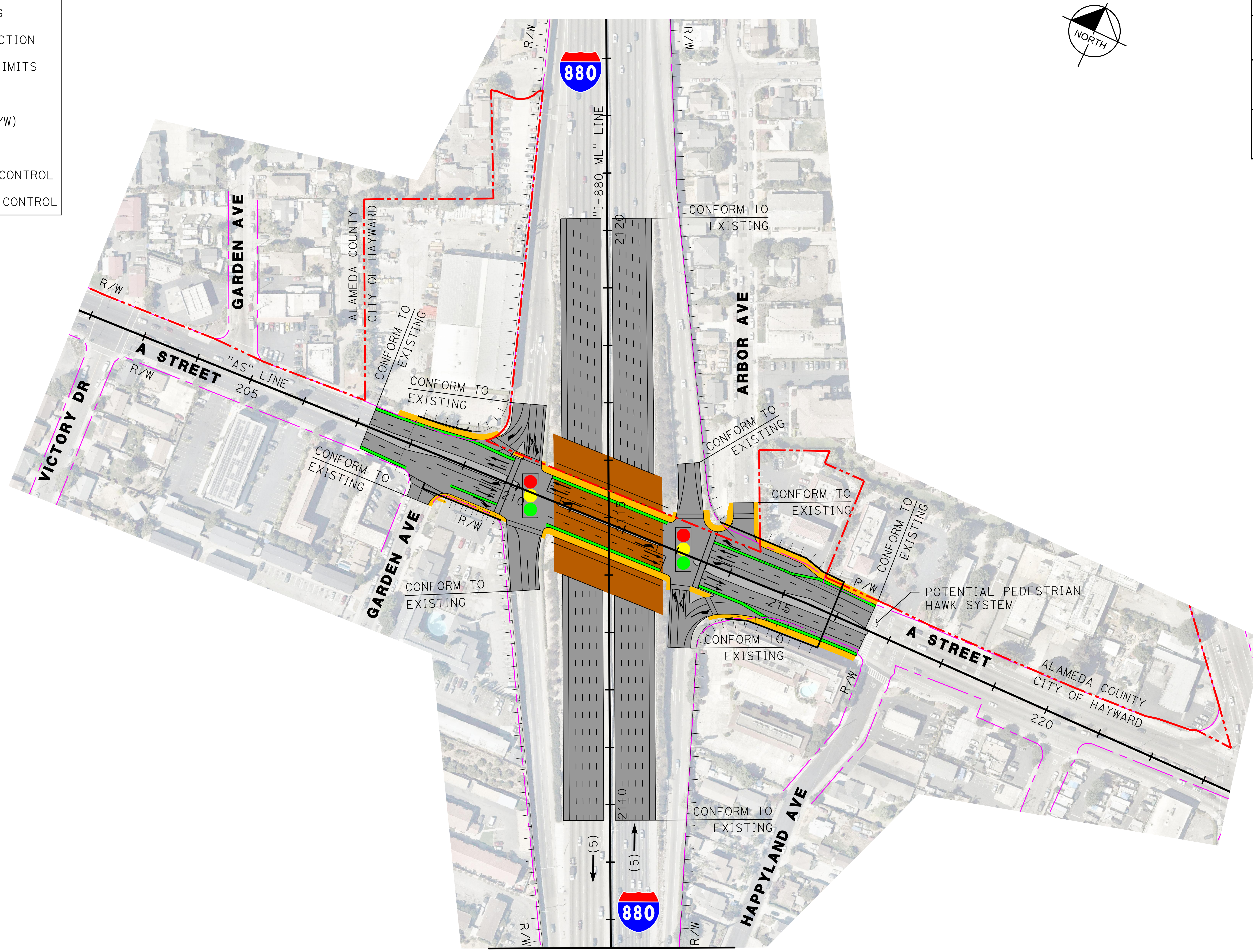
SECOND FLOOR
HAYWARD, CA 94541

LEGEND
- SIDEWALK
- BIKE LANE
- NEW MEDIAN
- PAVEMENT WIDENING
- BRIDGE RECONSTRUCTION
- EXISTING BRIDGE LIMITS
- PROPERTY IMPACTS
- CITY/CALTRANS (R/W)
- CITY BOUNDARY
- EXISTING ACCESS CONTROL
- PROPOSED ACCESS CONTROL

HAWK: HIGH INTENSITY ACTIVATED CROSSWALK



MATCH LINE SEE MAINLINE IMPROVEMENT SHEET

PRELIMINARY

I-880/ A STREET INTERCHANGE
ALTERNATIVE A2
TIGHT URBAN DIAMOND INTERCHANGE
SCALE 1" = 200'

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0 1 2 3
UNIT –
PROJECT NUMBER AND PHASE

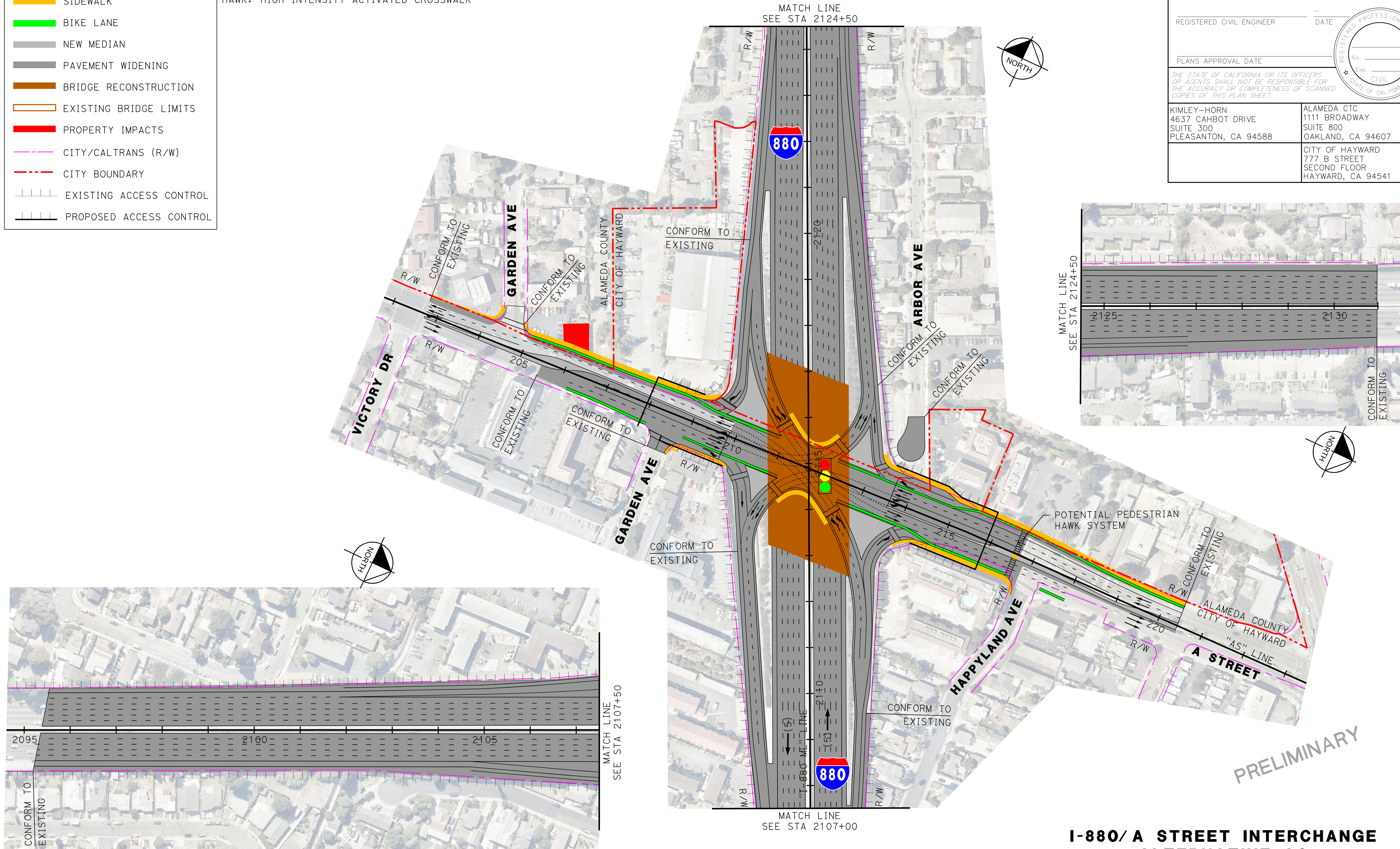
I-880/A STREET INTERCHANGE ALTERNATIVE A3

SINGLE POINT URBAN INTERCHANGE

SCALE 1" = 200'

LEGEND
- SIDEWALK
- BIKE LANE
- NEW MEDIAN
- PAVEMENT WIDENING
- BRIDGE RECONSTRUCTION
- EXISTING BRIDGE LIMITS
- PROPERTY IMPACTS
- CITY/CALTRANS (R/W)
- CITY BOUNDARY
- EXISTING ACCESS CONTROL
- PROPOSED ACCESS CONTROL

HAWK: HIGH INTENSITY ACTIVATED CROSSWALK



NOTE:
RIGHT OF WAY SHOWN IS BASED ON DATA COLLECTED FROM COUNTY GIS.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Ala	880	17.2 – 18.6		–

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UNIT –
PROJECT NUMBER AND PHASE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Ala	880	17.2 – 18.6		–

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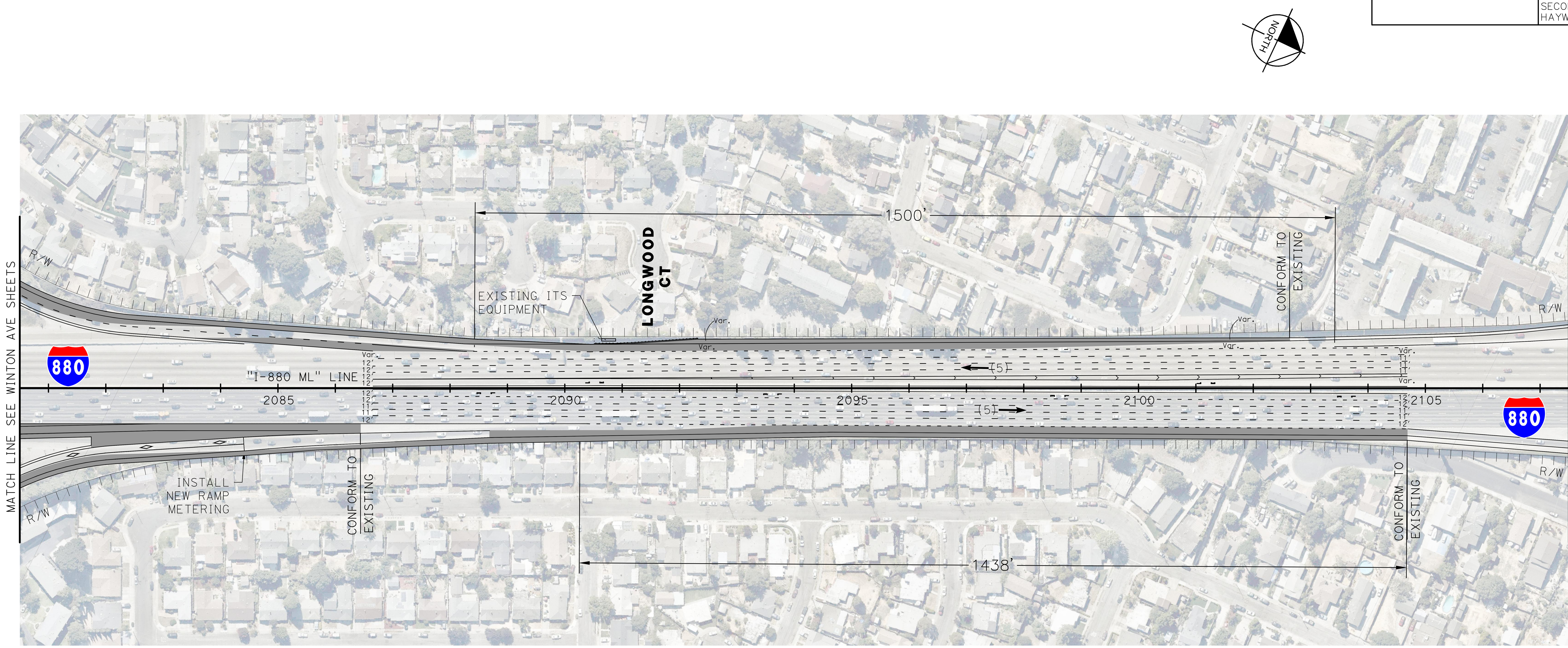
CITY OF HAYWARD
777 B STREET
SECOND FLOOR
HAYWARD, CA 94541

LEGEND
- SIDEWALK
- BIKE LANE
- NEW MEDIAN
- PAVEMENT WIDENING
- BRIDGE RECONSTRUCTION
- EXISTING BRIDGE LIMITS
- CALTRANS (R/W)



PRELIMINARY

I-880 MAINLINE IMPROVEMENTS

NORTHBOUND AND SOUTHBOUND AUXILIARY LANES

SCALE 1" = 200'

NOTE:
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LAST REVISION

Attachment C

Typical Cross-Sections

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Ala	880	17.2 – 18.6		–

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

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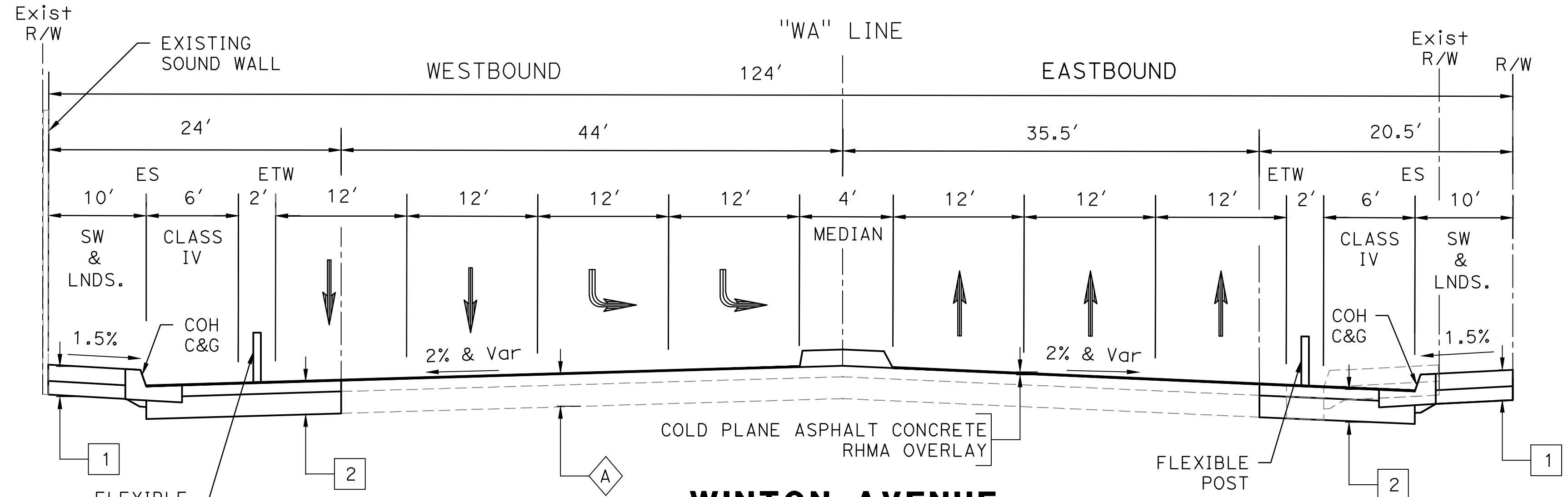
SUITE 800
OAKLAND, CA 94607

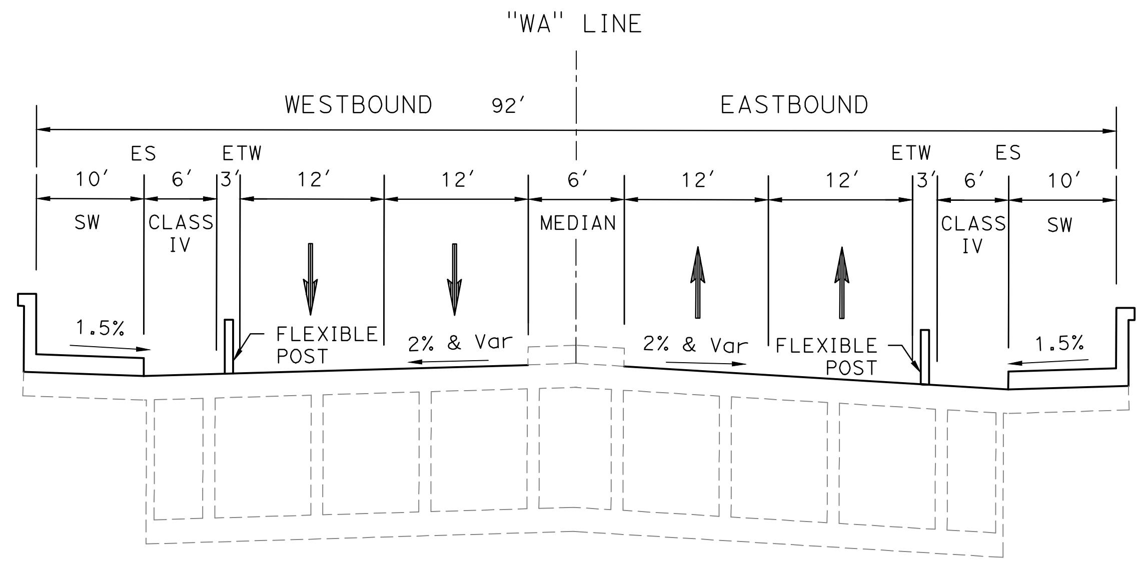
CITY OF HAYWARD
777 B STREET
SECOND FLOOR
HAYWARD, CA 94541

LEGEND:

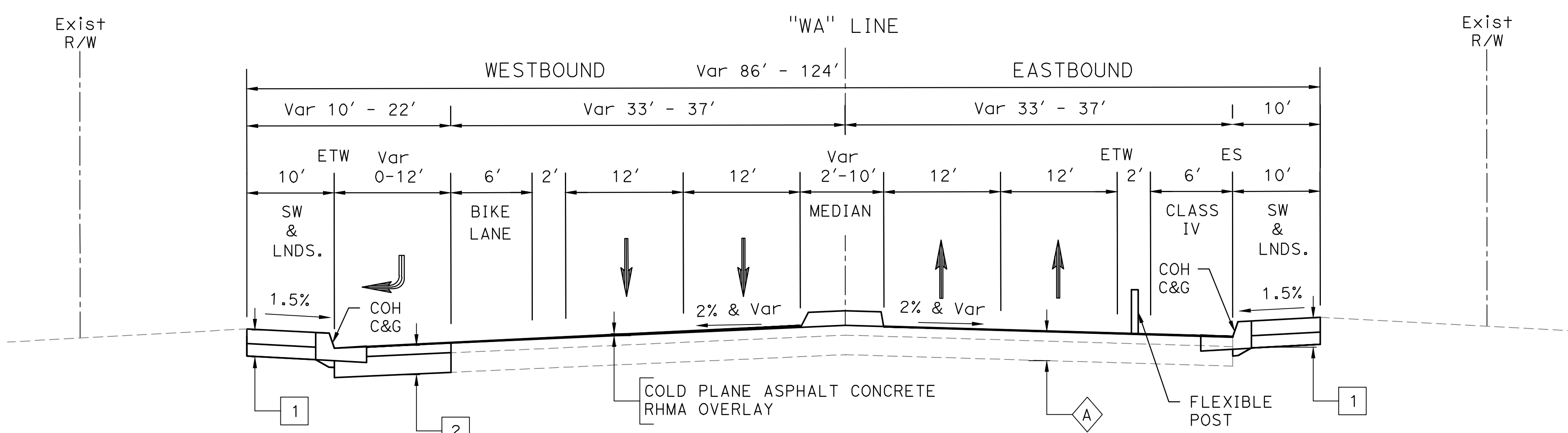
S.U.P - SHARED USE PATH
COH - CITY OF HAYWARD
LNDS - LANDSCAPE
TBD - TO BE DETERMINED
B.L. - BIKE LANE
C&G - CURB AND GUTTER



WINTON AVENUE
SOUTHLAND DRIVE TO SOUTHBOUND RAMP INTERSECTION



WINTON AVENUE
OVERCROSSING



WINTON AVENUE
NORTHBOUND RAMP INTERSECTION TO SANTA CLARA STREET

PROPOSED PAVEMENT STRUCTURAL SECTIONS (PRELIMINARY)

1 — TBD

2 — TBD

3 — TBD

4 — TBD

EXISTING PAVEMENT STRUCTURAL SECTIONS

A — TBD
D — TBD
B — TBD
E — TBD
C — TBD

PRELIMINARY

ALTERNATIVE W1
I-880/ WINTON AVE INTERCHANGE
DIRECT ACCESS TO LA PLAYA DR
TYPICAL SECTIONS

NO SCALE

X-01

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CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY — CHECKED BY

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Ala	880	17.2 – 18.6		–

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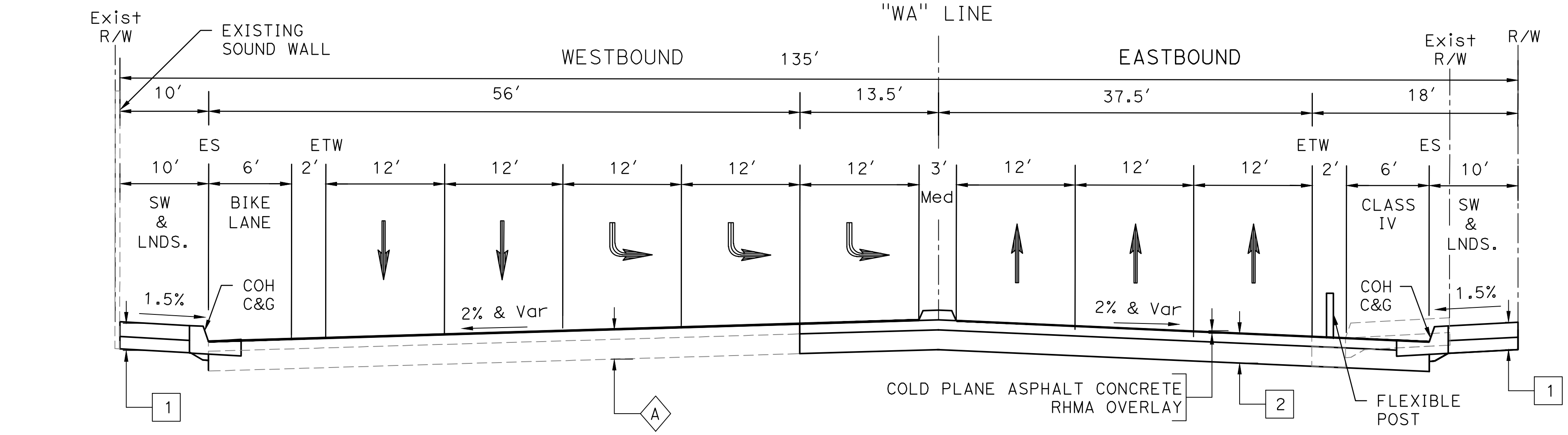
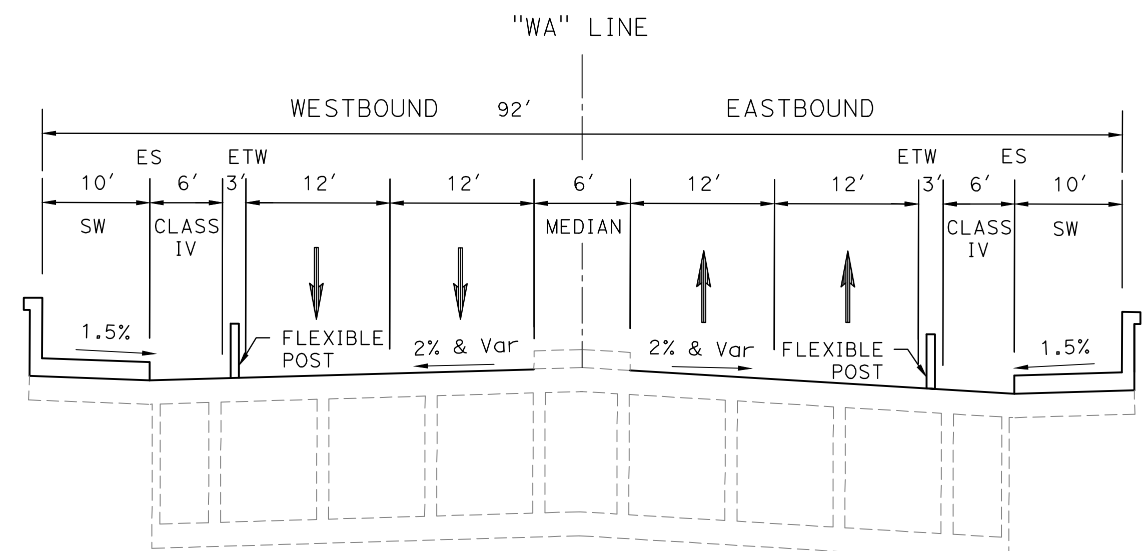
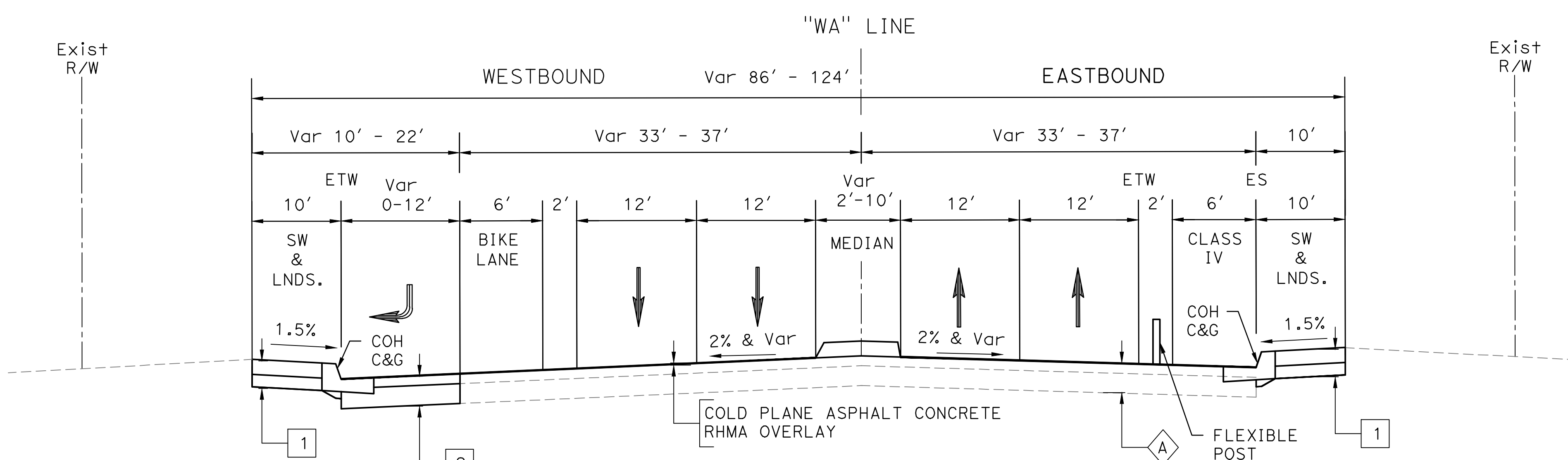
777 B STREET
SECOND FLOOR
HAYWARD, CA 94541



WINTON AVENUE
SOUTHLAND DRIVE TO SOUTHBOUND RAMP INTERSECTION



WINTON AVENUE
OVERCROSSING



WINTON AVENUE
NORTHBOUND RAMP INTERSECTION TO SANTA CLARA STREET

PRELIMINARY

ALTERNATIVE W2
I-880/ WINTON AVE INTERCHANGE
THREE LEFT TURN LANES
TYPICAL SECTIONS

NO SCALE

X-01

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Caltrans

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CHECKED BY

REVISED BY

DATE REVISED

PATH => k:\bay_rdwy\197185001 - i 880 winton astreet ic - pm\08 cadd\psr-pds sheets\typical sections

LAST REVISION 02-28-17

DATE PLOTTED => May 21, 2019
TIME PLOTTED => 4:22:28 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Ala	880	17.2 – 18.6		–

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

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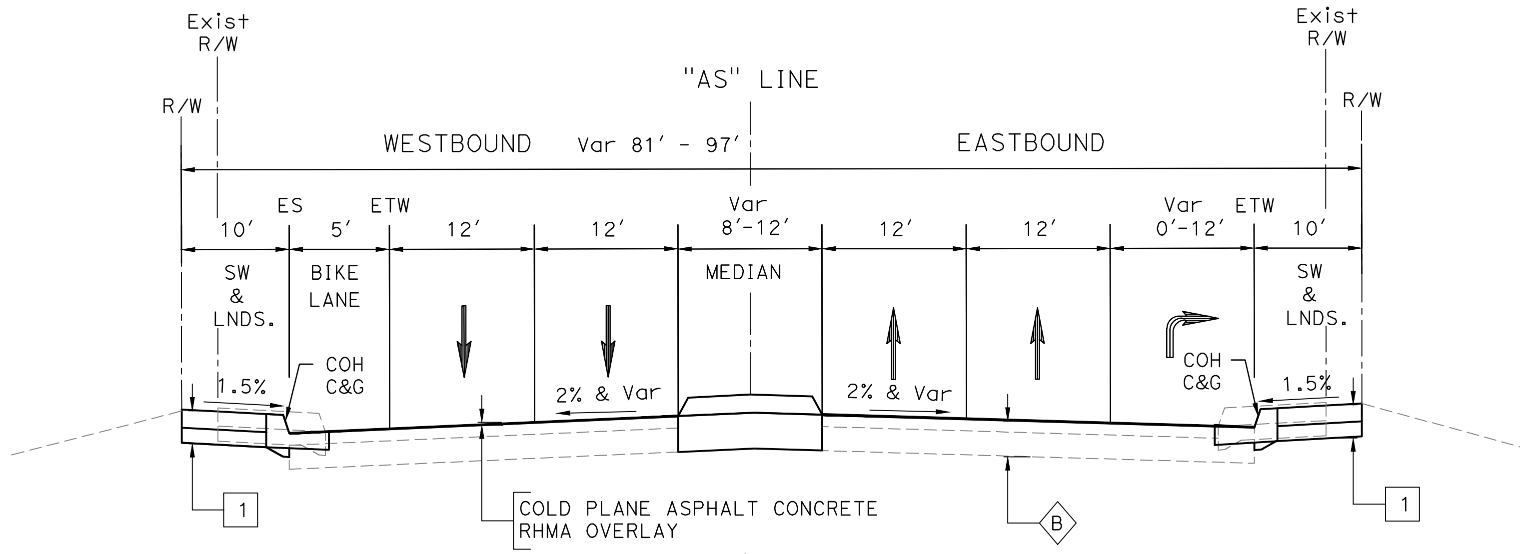
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

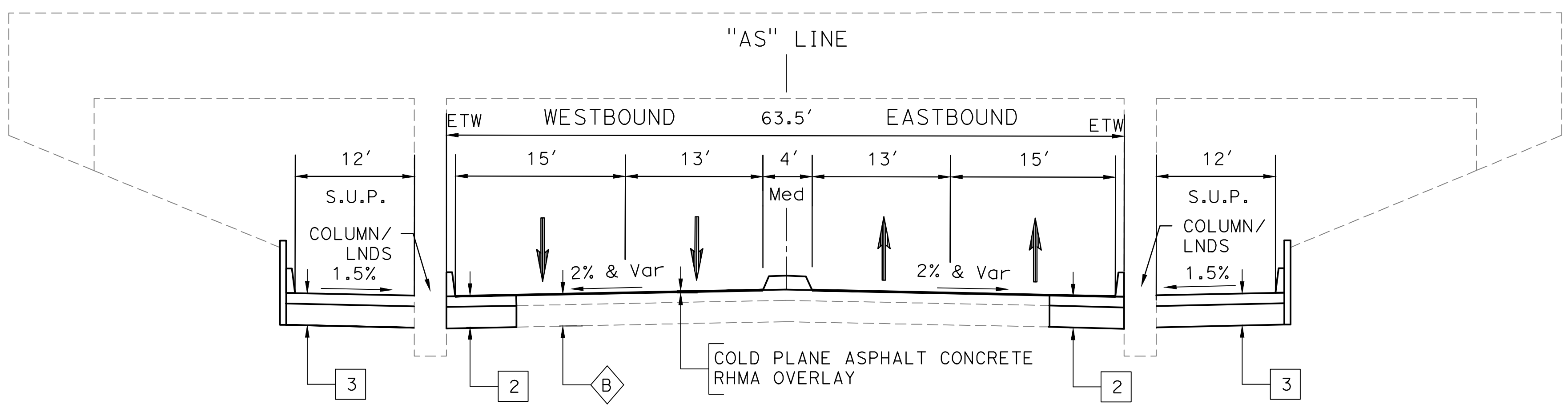
KIMLEY-HORN
4637 CHABOT DRIVE
SUITE 300
PLEASANTON, CA 94588

ALAMEDA CTC
1111 BROADWAY
SUITE 800
OAKLAND, CA 94607

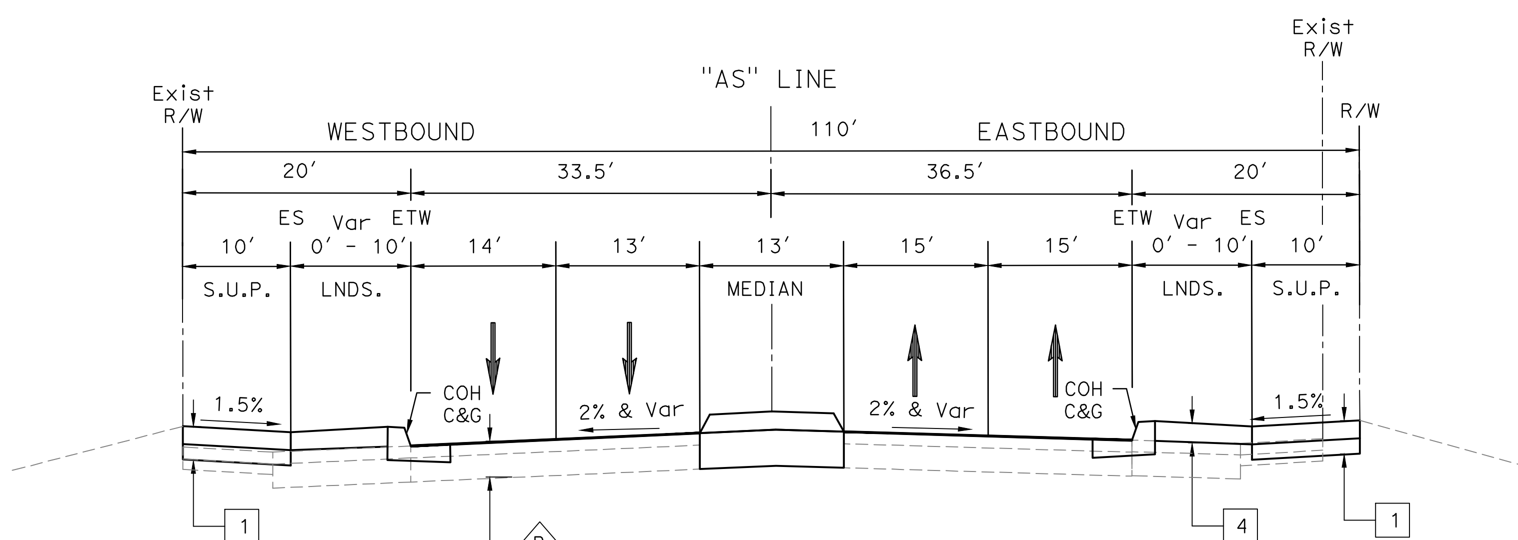
CITY OF HAYWARD
777 B STREET
SECOND FLOOR
HAYWARD, CA 94541



A STREET
GARDEN AVENUE TO SOUTHBOUND RAMP INTERSECTION



A STREET
UNDERCROSSING



A STREET
NORTHBOUND RAMP INTERSECTION TO HAPPYLAND AVENUE

PRELIMINARY

ALTERNATIVE A1
I-880/A STREET INTERCHANGE ROUNDABOUT TYPICAL SECTIONS

NO SCALE

X-01

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR
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CHECKED BY
REVISED BY
DATE REVISED

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LAST REVISION 02-28-17
DATE PLOTTED => May 21, 2019
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DGN FILE => x-01-alt 4
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT –
PROJECT NUMBER AND PHASE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Ala	880	17.2 – 18.6		–

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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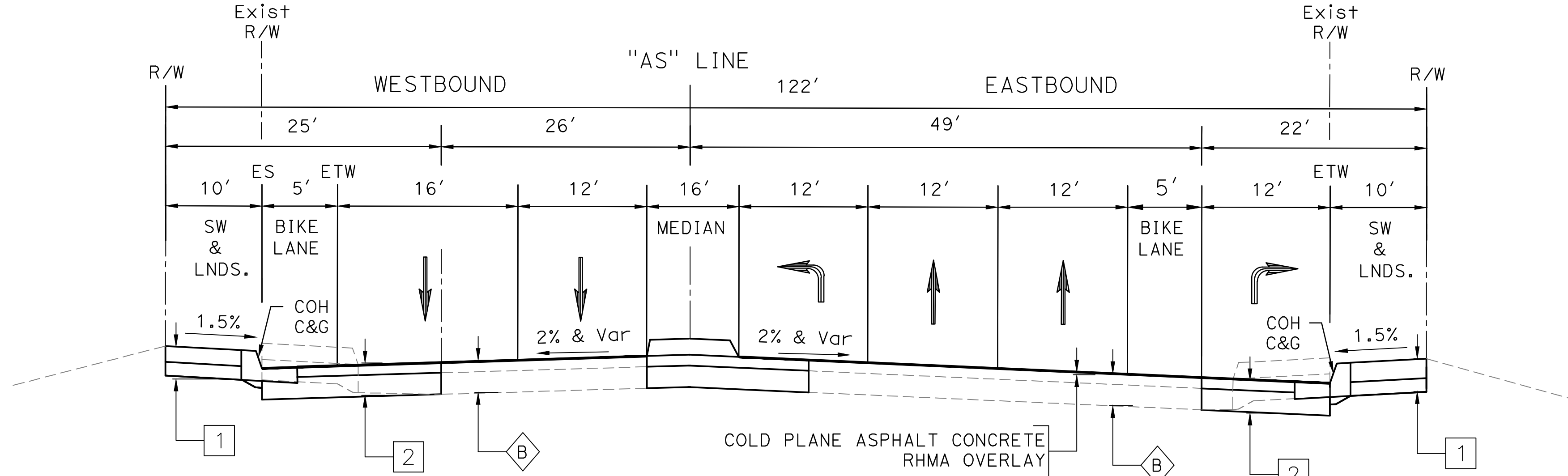

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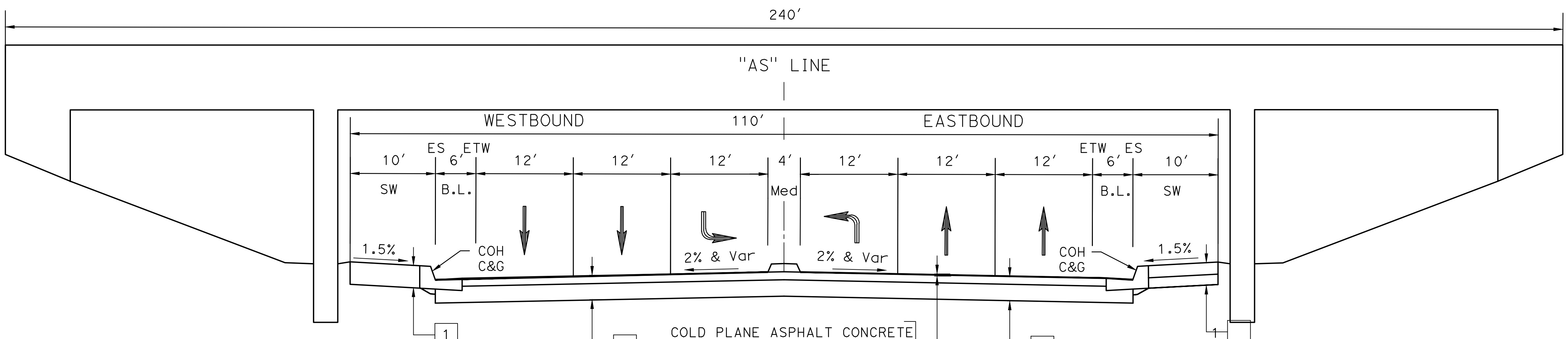
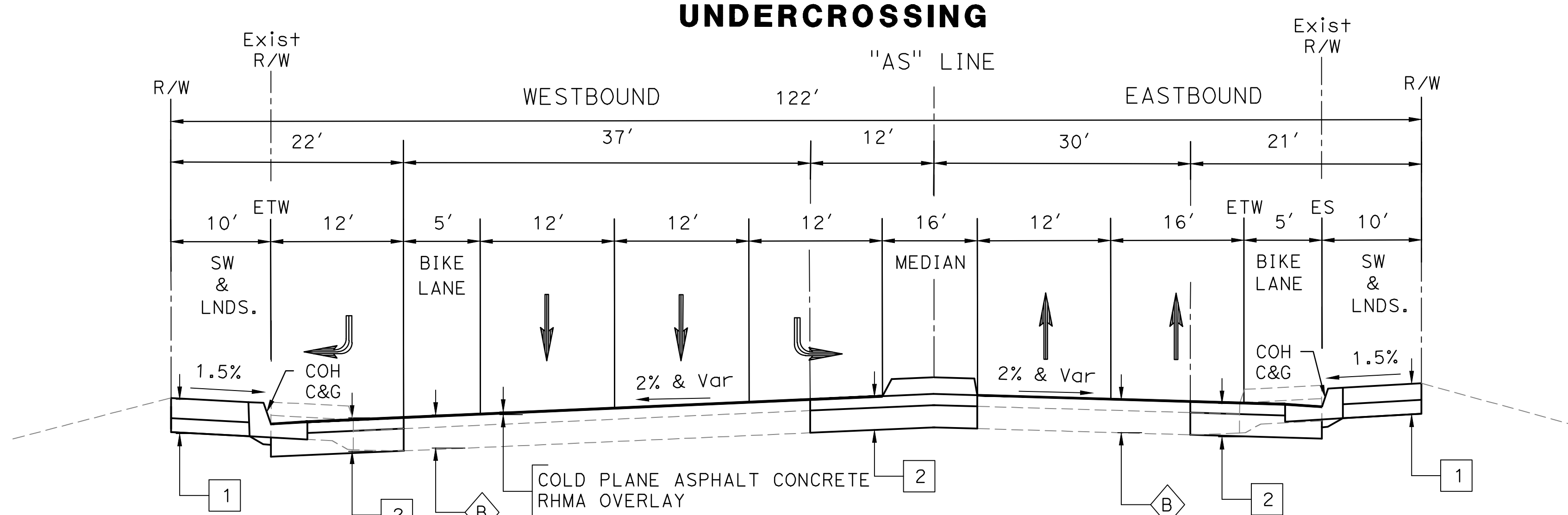
GARDEN AVENUE TO SOUTHBOUND RAMP INTERSECTION



A STREET
UNDERCROSSING



A STREET
NORTHBOUND RAMP INTERSECTION TO HAPPYLAND AVENUE

PRELIMINARY

ALTERNATIVE A2
I-880/A STREET INTERCHANGE
TIGHT URBAN DIAMOND INTERCHANGE
TYPICAL SECTIONS

NO SCALE

X-01

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
Caltrans

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Ala	880	17.2 – 18.6		–

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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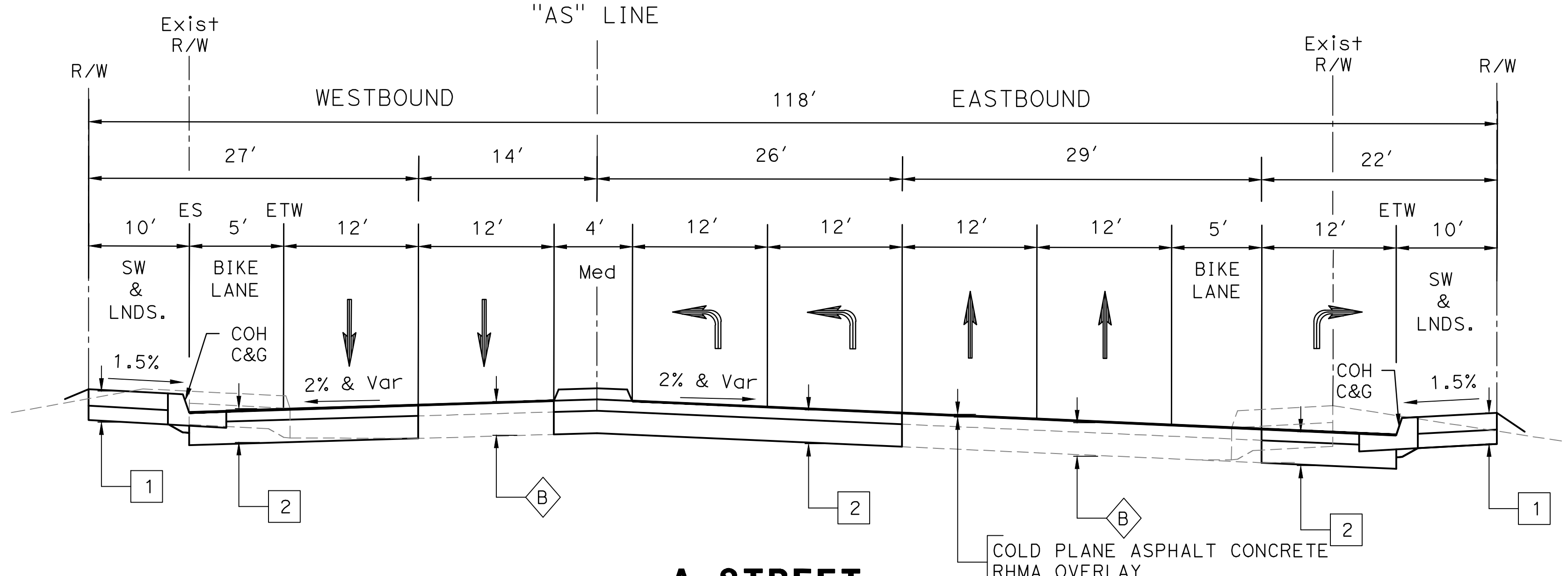
OAKLAND, CA 94607

CITY OF HAYWARD
777 B STREET
SECOND FLOOR
HAYWARD, CA 94541



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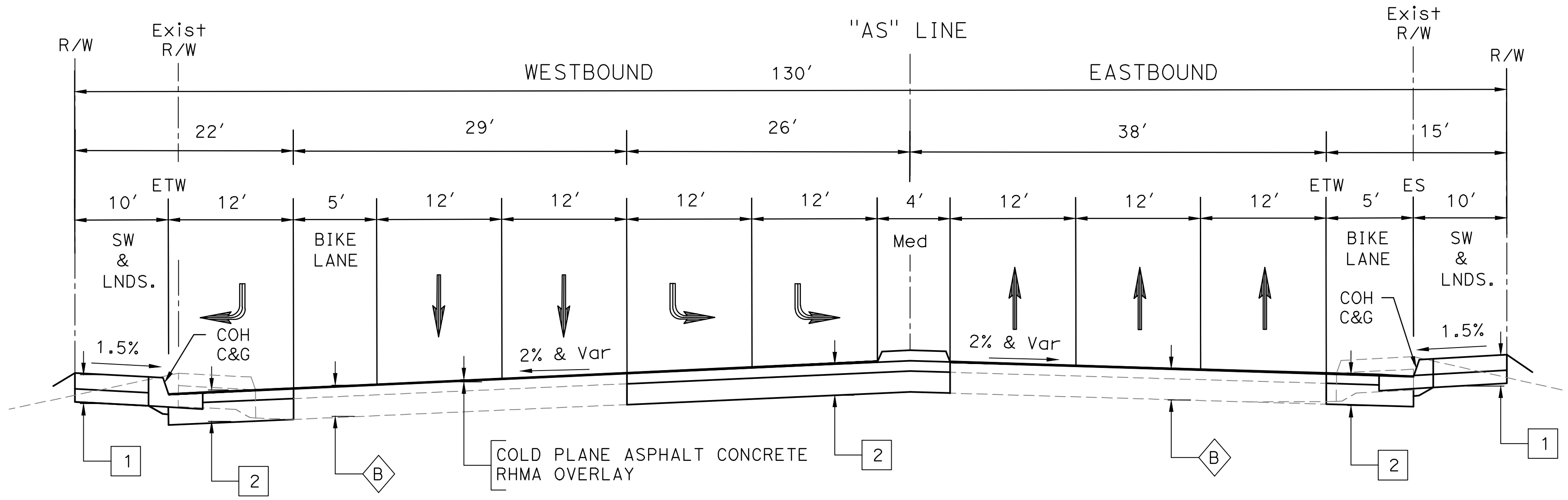

A STREET
NORTHBOUND RAMP INTERSECTION TO HAPPYLAND AVENUE

PRELIMINARY

ALTERNATIVE A3
I-880/A STREET INTERCHANGE
SINGLE POINT URBAN INTERCHANGE
TYPICAL SECTIONS

NO SCALE

X-01

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR
CALCULATED-DESIGNED BY | CHECKED BY
REVISED BY | DATE REVISED

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DATE PLOTTED => May 21, 2019
TIME PLOTTED => 4:23:14 PM
LAST REVISION 02-28-17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	Ala	880	17.2 – 18.6		–

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

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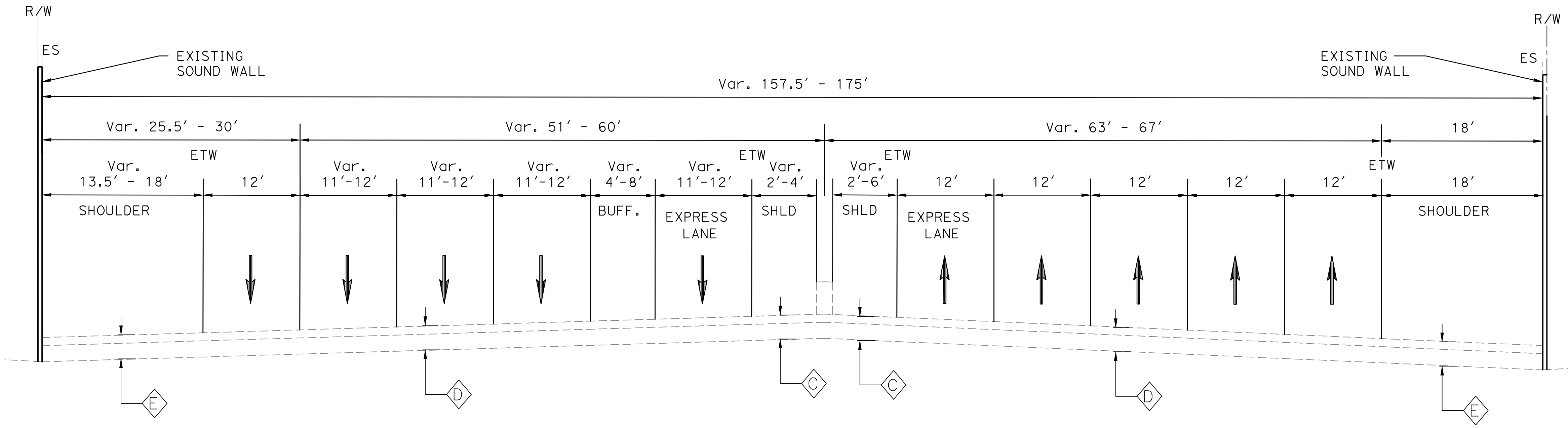
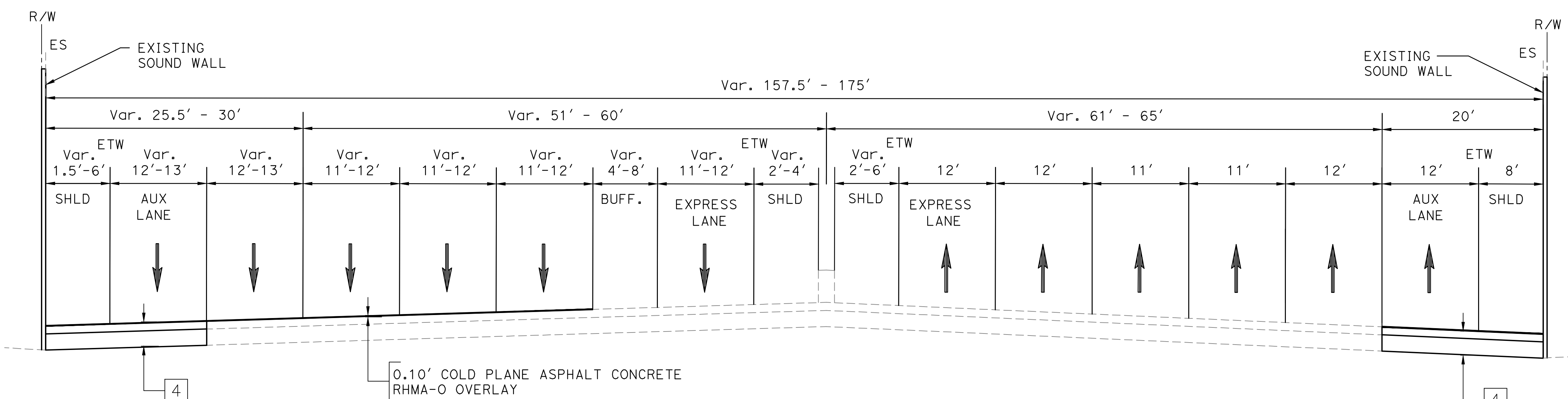


I-880 MAINLINE
WINTON AVENUE TO A STREET
EXISTING

EXISTING STRUCTURAL SECTIONS

A
- 0.10' OGAC
- 0.65' AC
- 0.25' ATPB
- 0.70' CTB
- 1.25' AS

B
- 0.10' OGAC
- 0.35' AC
- 0.65' PCC
- 0.35' CTB
- 0.80' AS



I-880 MAINLINE
WINTON AVENUE TO A STREET
PROPOSED

PRELIMINARY

MAINLINE IMPROVEMENTS AUXILIARY LANES TYPICAL SECTIONS

NO SCALE

X-01

LAST REVISION 02-28-17 | DATE PLOTTED => July 29, 2019 | TIME PLOTTED => 5:30:17 PM

REVISED BY | DATE REVISED | CALCULATED–DESIGNED BY | CHECKED BY | CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

Caltrans

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Attachment D

Cost Estimate

PROJECT

PSR-PDS COST ESTIMATE

EA: 04-0Q290 PID: 0418000068

EA: 04-0Q290

PID: 0418000068

District-County-Route: 04-ALA-880

PM: 17.2/18.6

Type of Estimate : PSR-PDS

Program Code :

Project Limits : I-880 Winton Avenue Interchange

Project Description: Interchange Improvements

Scope : Convert full cloverlead interchange to partial cloverleaf; widen Winton Avenue, Provide bike lanes; Provide direct access to Southland Mall; Improve sidewalk safety; Construct traffic signals.

Alternative : Alternative W1 : Direct connection to La Playa Dr.

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost (2019)		Escalated Cost (2024)	
TOTAL ROADWAY COST	$	38,800,000	$	47,800,000
TOTAL STRUCTURES COST	$	-	$	-
SUBTOTAL CONSTRUCTION COST	$	38,800,000	$	47,800,000
TOTAL RIGHT OF WAY COST	$	1,600,000	$	1,600,000
TOTAL CAPITAL OUTLAY COSTS	**$**	**40,400,000**	**$**	**49,400,000**
PA/ED SUPPORT	$	4,100,000	$	4,100,000
PS&E SUPPORT	$	6,100,000	$	6,100,000
RIGHT OF WAY SUPPORT	$	400,000	$	400,000
CONSTRUCTION SUPPORT	$	5,900,000	$	5,900,000
TOTAL SUPPORT COST	**$**	**16,500,000**	**$**	**16,500,000**
TOTAL PROJECT COST	**$**	**56,900,000**	**$**	**65,900,000**

If Project has been programmed enter Programmed Amount

	Month	/	Year
Date of Estimate (Month/Year)	6	/	2019
Estimated Construction Start (Month/Year)	4	/	2024
Number of Working Days =			390
Estimated Mid-Point of Construction (Month/Year)	1	/	2025
Estimated Construction End (Month/Year)	10	/	2025
Number of Plant Establishment Days			

Estimated Project Schedule

PID Approval	6/1/2019
PA/ED Approval	10/1/2021
PS&E	10/31/2023
RTL	12/30/2023
Begin Construction	4/8/2024

Reviewed by District O.E. or Cost Estimate Certifier

Office Engineer / Cost Estimate Certifier	**Date**	**Phone**
	xx/xx/xxxx	(xxx) xxx-xxxx

Approved by Project Manager

Project Manager	**Date**	**Phone**
	xx/xx/xxxx	(xxx) xxx-xxxx

I. ROADWAY ITEMS SUMMARY

	Section	Cost
1	**Earthwork**	$ 1,808,000
2	**Pavement Structural Section**	$ 2,898,800
3	**Drainage**	$ 706,100
4	**Specialty Items**	$ 4,800,000
5	**Environmental**	$ 5,054,400
6	**Traffic Items**	$ 4,787,200
7	**Detours**	$ 50,000
8	**Minor Items**	$ 2,010,500
9	**Roadway Mobilization**	$ 2,211,500
10	**Supplemental Work**	$ 1,155,800
11	**State Furnished**	$ 3,317,300
12	**Time-Related Overhead**	$ 2,211,500
13	**Roadway Contingency**	$ 7,752,800

TOTAL ROADWAY ITEMS	**$ 38,763,900**

Estimate Prepared By :

Name and Title Date Phone

Estimate Reviewed By :

Name and Title Date Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

EA: 04-0Q290 PID: 0418000068

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	16,300	x	60.00	=	$	978,000
152320	Lead Compliance Plan	LS		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198001	Imported Borrow	CY	11,000	x	30.00	=	$	330,000
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
16010X	Clearing & Grubbing	LS		x		=	$	-
170101	Develop Water Supply	LS		x		=	$	-
210130	Duff	ACRE		x		=	$	-
XXXXXX	Site Preparation	LS	1	x	500,000	=	$	500,000

TOTAL EARTHWORK SECTION ITEMS $ 1,808,000

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement	CY		x		=	$	-
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	4,100	x	110.00	=	$	451,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	5,700	x	150.00	=	$	855,000
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		=	$	-
260203	Class 2 Aggregate Base	CY	5,400	x	60.00	=	$	324,000
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY	4,800	x	30.00	=	$	144,000
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
397005	Tack Coat	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover (Seal)	TON		x		=	$	-
731530	Minor Concrete (C&G)	LF	3,000	x	60.00	=	$	180,000
731502	Minor Concrete (Miscellaneous Construction)	CY	700	x	800.00	=	$	560,000
394071	Place Hot Mix Asphalt Dike (Type X)	LF	1,800	x	5.00	=	$	9,000
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY	4,200	x	30.00	=	$	126,000
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
153121	Remove Concrete	CY	400	x	200.00	=	$	80,000
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD		x		=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD	33,800	x	5.00	=	$	169,000
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON	4	x	200.00	=	$	800
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-
XXXXXX		Unit		x		=	$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS $ 2,898,800

EA: 04-0Q290 PID: 0418000068

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
15080X	Remove Culvert	EA/LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
155232	Sand Backfill	CY		x		=	$	-
15020X	Abandon Culvert	EA/LF		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
510501	Minor Concrete	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
5105XX	Minor Concrete (Type XX)	CY		x		=	$	-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF		x		=	$	-
6411XX	XX" Plastic Pipe	LF		x		=	$	-
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF		x		=	$	-
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF		x		=	$	-
68XXXX	XX" Plastic Pipe (Edge Drain)	LF		x		=	$	-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Th	LF		x		=	$	-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF		x		=	$	-
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF		x		=	$	-
7050XX	XX" Steel Flared End Section	EA		x		=	$	-
703233	Grated Line Drain	LF		x		=	$	-
72XXXX	Rock Slope Protection (Type and Method)	CY/TON		x		=	$	-
72901X	Rock Slope Protection Fabric (Class X)	SQYD		x		=	$	-
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
XXXXXX	Additional Drainage (15% of Section 1 and 2)	LS	1	x	706,020.00	=	$	706,020

TOTAL DRAINAGE ITEMS	**$**	**706,100**

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
080050	Progress Schedule (Critical Path Method)	LS		x		=	$	-
582001	Sound Wall (Masonry Block)	SQFT	3,000	x	100.00	=	$	300,000
510530	Minor Concrete (Wall)	CY		x		=	$	-
15325X	Remove Sound Wall	LF/LS		x		=	$	-
070030	Lead Compliance Plan	LS		x		=	$	-
141120	Treated Wood Waste	LB		x		=	$	-
153221	Remove Concrete Barrier	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Section	EA		x		=	$	-
8000XX	Chain Link Fence (Type XX)	LF		x		=	$	-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA		x		=	$	-
832001	Metal Beam Guard Railing	LF		x		=	$	-
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA		x		=	$	-
4906XX	CIDH Concrete Piling (Insert Diameter)	LF		x		=	$	-
839XXX	Crash Cushion (Insert Type)	EA		x		=	$	-
83XXXX	Concrete Barrier (Insert Type)	LF		x		=	$	-
520103	Bar Reinforced Steel (Retaining Wall)	LB		x		=	$	-
510060	Structural Concrete, Retaining Wall	CY		x		=	$	-
513553	Retaining Wall (Masonry Wall)	SQFT		x		=	$	-
511035	Architectural Treatment	LS	1	x	1,500,000.00	=	$	1,500,000
598001	Anti-Graffiti Coating	SQFT		x		=	$	-
203070	Rock Stain	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$	-
83954X	Transition Railing (Type X)	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
83958X	End Anchor Assembly (Type X)	EA		x		=	$	-
XXXXXX	La Playa Dr Improvements	LS	1	x	3,000,000.00	=	$	3,000,000

TOTAL SPECIALTY ITEMS	**$**	**4,800,000**

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Environmental Mitigation	LS	1	x	100,000.00	=	$	100,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-

Subtotal Environmental Mitigation $ *100,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
200001	Highway Planting	LS	1	x	1,500,000.00	=	$	1,500,000
20XXXX	Irrigation System	LS		x		=	$	-
204099	Plant Establishment Work	LS		x		=	$	-
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	SQFT/SQYD		x		=	$	-
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA		x		=	$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-overs)	LF		x		=	$	-

Subtotal Landscape and Irrigation $ *1,500,000*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-
210350	Fiber Rolls	LS		x		=	$	-
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	SQFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT		x		=	$	-
210600	Compost	SQFT		x		=	$	-
210011A	Erosion Control	LS	1	x	500000	=	$	500,000

Subtotal Erosion Control $ *500,000*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS		x		=	$	-
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	100,000.00	=	$	100,000
130330	Storm Water Annual Report	EA		x		=	$	-
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-
130301A	On-Site Stormwater Treatment BMP	ACRE	4	x	200,000.00	=	$	800,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	4	x	250,000.00	=	$	1,000,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-
130640	Temporary Fiber Roll	LF		x		=	$	-
130900	Temporary Concrete Washout	LS		x		=	$	-
130710	Temporary Construction Entrance	EA		x		=	$	-
130610	Temporary Check Dam	LF		x		=	$	-
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	748,000.00	=	$	748,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	306,387.00	=	$	306,387

Subtotal NPDES $ *2,954,387*

TOTAL ENVIRONMENTAL $ 5,054,400

Supplemental Work for NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$	50,000

Subtotal Supplemental Work for NDPS $ *50,000*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

EA: 04-0Q290 PID: 0418000068

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS		x		=	$	-
860201	Signal and Lighting (Per Signal)	EA	4	x	500,000.00	=	$	2,000,000
860990	Closed Circuit Television System	LS		x		=	$	-
86110X	Ramp Metering System (Location X)	LS	2	x	100,000.00	=	$	200,000
86070X	Interconnection Conduit and Cable	LF/LS		x		=	$	-
5602XX	Furnish Sign Structure (Type X)	LB		x		=	$	-
5602XX	Install Sign Structure (Type X)	LB		x		=	$	-
498040	XX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
8609XX	Traffic Monitoring Station (Type X)	LS		x		=	$	-
15075X	Remove Sign Structure	EA/LS		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
860090	Maintain Existing Traffic Management System Elements Duri	LS		x		=	$	-
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Misc Electrical	Unit	1	x	100,000.00	=	$	100,000

Subtotal Traffic Electrical *$* *2,300,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA		x		=	$	-
566012	Roadside Sign - Two Post	EA		x		=	$	-
5602XX	Furnish Sign	SQFT		x		=	$	-
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF		x		=	$	-
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF		x		=	$	-
150712	Remove Painted Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA		x		=	$	-
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF	46,600	x	5.00	=	$	233,000
846012	Thermoplastic Crosswalk and Pavement Marking (Enhanced Wet Night Visibility)	SQFT	5,400	x	10.00	=	$	54,000
120090	Construction Area Signs	LS	1	x	50,000.00	=	$	50,000
84XXXX	Permanent Signage	LS	1	x	75,000.00	=	$	75,000

Subtotal Traffic Signing and Striping *$* *412,000*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
12865X	Portable Changeable Message Signs (8 signs at $360 EA)	DAY	390	x	$ 2,880	=	$	1,123,200
XXXXXX	Traffic Management Plan	LS	1	x	$ 200,000	=	$	200,000

Subtotal Traffic Management Plan *$* *1,323,200*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA		x		=	$	-
12016X	Channelizer (Type X)	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA		x		=	$	-
120100	Traffic Control System	LS	1	x	252,000.00	=	$	252,000
129110	Temporary Crash Cushion	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
XXXXXX	Traffic Handling	LS	1	x	500,000.00	=	$	500,000

Subtotal Stage Construction and Traffic Handling *$* *752,000*

TOTAL TRAFFIC ITEMS **$** **4,787,200**

EA: 04-0Q290 PID: 0418000068

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)		Cost
190101	Roadway Excavation	CY		x		=	$ -
19801X	Imported Borrow	CY/TON		x		=	$ -
390132	Hot Mix Asphalt (Type A)	TON		x		=	$ -
26020X	Class 2 Aggregate Base	TON/CY		x		=	$ -
250401	Class 4 Aggregate Subbase	CY		x		=	$ -
130620	Temporary Drainage Inlet Protection	EA		x		=	$ -
129000	Temporary Railing (Type K)	LF		x		=	$ -
128601	Temporary Signal System	LS		x		=	$ -
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$ -
80010X	Temporary Fence (Type X)	LF		x		=	$ -
XXXXXX	Detour Items	LS	1	x	50,000	=	$ 50,000

* Includes constructing, maintaining, and removal

TOTAL DETOURS $ 50,000

SUBTOTAL SECTIONS 1 through 7 $ 20,104,500

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items				
ADA Items (Ped railing replacement)			1.0%	$ 201,045
8B - Bike Path Items				
Bike Path Items			1.0%	$ 201,045
8C - Other Minor Items				
Other Minor Items			8.0%	$ 1,608,360
Total of Section 1-7	$ 20,104,500	x	10.0%	= $ 2,010,450

TOTAL MINOR ITEMS $ 2,010,500

SECTIONS 9: MOBILIZATION

Item code						
999990	Total Section 1-8	$ 22,115,000	x	10%	=	$ 2,211,500

TOTAL MOBILIZATION $ 2,211,500

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)		Cost
066670	Payment Adjustments For Price Index Fluctuations	LS		x		=	$ -
066094	Value Analysis	LS		x		=	$ -
066070	Maintain Traffic	LS		x		=	$ -
066919	Dispute Resolution Board	LS		x		=	$ -
066921	Dispute Resolution Advisor	LS		x		=	$ -
066015	Federal Trainee Program	LS		x		=	$ -
066610	Partnering	LS		x		=	$ -
066204	Remove Rock and Debris	LS		x		=	$ -
066222	Locate Existing Crossover	LS		x		=	$ -
XXXXXX	Some Item	Unit		x		=	$ -

Cost of ***NPDES*** *Supplemental Work specified in Section 5D* = $ 50,000

Total Section 1-8 $ 22,115,000 5% = $ 1,105,750

TOTAL SUPPLEMENTAL WORK $ 1,155,800

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS		x		=	$0
066063	Traffic Management Plan - Public Information	LS		x		=	$0
066901	Water Expenses	LS		x		=	$0
8609XX	Traffic Monitoring Station (X)	LS		x		=	$0
066841	Traffic Controller Assembly	LS		x		=	$0
066840	Traffic Signal Controller Assembly	LS		x		=	$0
066062	COZEEP Contract	LS		x		=	$0
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS		x		=	$0
066916	Annual Construction General Permit Fee	LS		x		=	$0
XXXXXX	Some Item	LS		x		=	$0
	Total Section 1-8	$	22,115,000		15%	= $	3,317,250

TOTAL STATE FURNISHED **$3,317,300**

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization	$22,115,000	(used to calculate TRO)
Total Construction Cost (excluding TRO and Contingency)	$28,799,600	(used to check if project is greater than $5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **10%**

Item code		Unit	Quantity		Unit Price ($)		Cost
090100	Time-Related Overhead	WD	390	X	$5,671	=	$2,211,500

TOTAL TIME-RELATED OVERHEAD **$2,211,500**

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

Total Section 1-12	$	31,011,100	x	**25%**	=	$7,752,775

TOTAL CONTINGENCY **$7,752,800**

EA: 04-0Q290 PID: 0418000068

II. STRUCTURE ITEMS

	Bridge 1		Bridge 2		
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Bridge Name	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Bridge Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

	Building 1				
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Building Name	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Building Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES		**$0**
TOTAL COST OF BUILDINGS		**$0**
Structures Mobilization Percentage	10%	**$0**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

Structures Contingency Percentage	10%	**$0**

TOTAL COST OF STRUCTURES	**$0**

Estimate Prepared By: ______________________________ ______________________________

XXXXXXXXXXXXXXXXX ------ Division of Structures Date

EA: 04-0Q290 PID: 0418000068

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1) Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees		$	680,000
	A2) SB-1210		$	0
B)	Acquisition of Offsite Mitigation		$	
C)	C1) Utility Relocation (Local Agency Share)		$	367,500
	C2) Potholing (Design Phase)		$	0
D)	Railroad Acquisition		$	0
E)	Clearance / Demolition		$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)		$	0
G)	Title and Escrow		$	100,000
H)	Environmental Review		$	0
I)	Condemnation Settlements	0%	$	0
J)	Design Appreciation Factor	0%	$	0
K)	Utility Relocation (Construction Cost)		$	367,500

L)	**TOTAL RIGHT OF WAY ESTIMATE**	**$1,515,000**
M)	**TOTAL R/W ESTIMATE: Escalated**	**$1,590,750**
N)	**RIGHT OF WAY SUPPORT**	**$400,000**

Support Cost Estimate Prepared By ______________________
Project Coordinator[1] Phone

Utility Estimate Prepared By ______________________
Utility Coordinator[2] Phone

R/W Acquisition Estimate Prepared By ______________________
Right of Way Estimator[3] Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

PROJECT

PSR-PDS COST ESTIMATE

EA: 04-0Q290 PID: 0418000068

EA: 04-0Q290

PID: 0418000068

District-County-Route: 04-ALA-880

PM: 17.2/18.6

Type of Estimate : PSR-PDS

Program Code :

Project Limits : I-880 Winton Avenue Interchange

Project Description: Interchange Improvments

Scope : Convert full cloverlead interchange to partial cloverleaf; widen Winton Avenue, Provide bike lanes; Provide access to Southland Mall; Improve sidewalk safety; Construct traffic signals.

Alternative : Alternative W2: Triple Left Turn at Southland Dr.

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost (2019)		Escalated Cost (2024)	
TOTAL ROADWAY COST	$	33,200,000	$	43,400,000
TOTAL STRUCTURES COST	$	-	$	-
SUBTOTAL CONSTRUCTION COST	$	33,200,000	$	43,400,000
TOTAL RIGHT OF WAY COST	$	2,500,000	$	2,600,000
TOTAL CAPITAL OUTLAY COSTS	$	35,700,000	$	46,000,000
PA/ED SUPPORT	$	3,600,000	$	3,600,000
PS&E SUPPORT	$	5,400,000	$	5,400,000
RIGHT OF WAY SUPPORT	$	700,000	$	700,000
CONSTRUCTION SUPPORT	$	5,000,000	$	5,000,000
TOTAL SUPPORT COST	$	14,700,000	$	14,700,000
TOTAL PROJECT COST	$	50,400,000	$	60,700,000

If Project has been programmed enter Programmed Amount

	Month	/	Year
Date of Estimate (Month/Year)	6	/	2019
Estimated Construction Start (Month/Year)	4	/	2024
Number of Working Days =			390
Estimated Mid-Point of Construction (Month/Year)	1	/	2025
Estimated Construction End (Month/Year)	10	/	2025
Number of Plant Establishment Days			

Estimated Project Schedule

PID Approval	6/1/2019
PA/ED Approval	10/1/2021
PS&E	10/31/2023
RTL	12/30/2023
Begin Construction	4/8/2024

Reviewed by District O.E. or Cost Estimate Certifier

Office Engineer / Cost Estimate Certifier	Date	Phone
	xx/xx/xxxx	(xxx) xxx-xxxx

Approved by Project Manager

Project Manager	Date	Phone
	xx/xx/xxxx	(xxx) xxx-xxxx

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	**Earthwork**	$	1,376,000
2	**Pavement Structural Section**	$	3,710,300
3	**Drainage**	$	763,000
4	**Specialty Items**	$	1,800,000
5	**Environmental**	$	5,319,500
6	**Traffic Items**	$	4,169,200
7	**Detours**	$	50,000
8	**Minor Items**	$	1,718,800
9	**Roadway Mobilization**	$	1,890,700
10	**Supplemental Work**	$	995,400
11	**State Furnished**	$	2,836,100
12	**Time-Related Overhead**	$	1,890,700
13	**Roadway Contingency**	$	6,630,000

TOTAL ROADWAY ITEMS	**$**	**33,149,700**

Estimate Prepared By :

Name and Title Date Phone

Estimate Reviewed By :

Name and Title Date Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

EA: 04-0Q290 PID: 0418000068

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	14,600	x	60.00	=	$	876,000
152320	Lead Compliance Plan	LS		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198001	Imported Borrow	CY/TON		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
16010X	Clearing & Grubbing	LS/ACRE		x		=	$	-
170101	Develop Water Supply	LS		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
210130	Duff	ACRE		x		=	$	-
XXXXXX	Site Preparation	LS	1	x	500,000	=	$	500,000

TOTAL EARTHWORK SECTION ITEMS $ 1,376,000

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement	CY		x		=	$	-
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	5,500	x	110.00	=	$	605,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	6,200	x	150.00	=	$	930,000
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		=	$	-
260203	Class 2 Aggregate Base	CY	10,800	x	60.00	=	$	648,000
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY	10,800	x	30.00	=	$	324,000
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
397005	Tack Coat	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover (Seal)	TON		x		=	$	-
731530	Minor Concrete (C&G)	LF	3,000	x	60.00	=	$	180,000
731502	Minor Concrete (Miscellaneous Construction)	CY	800	x	800.00	=	$	640,000
394071	Place Hot Mix Asphalt Dike (Type X)	LF	1,800	x	5.00	=	$	9,000
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY	3,300	x	30.00	=	$	99,000
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
153121	Remove Concrete	CY	700	x	200.00	=	$	140,000
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD		x		=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD	26,900	x	5.00	=	$	134,500
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON	4	x	200.00	=	$	800
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-
XXXXXX		Unit		x		=	$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS $ 3,710,300

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
15080X	Remove Culvert	EA/LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
155232	Sand Backfill	CY		x		=	$	-
15020X	Abandon Culvert	EA/LF		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
510501	Minor Concrete	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
5105XX	Minor Concrete (Type XX)	CY		x		=	$	-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF		x		=	$	-
6411XX	XX" Plastic Pipe	LF		x		=	$	-
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF		x		=	$	-
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF		x		=	$	-
68XXXX	XX" Plastic Pipe (Edge Drain)	LF		x		=	$	-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Th	LF		x		=	$	-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF		x		=	$	-
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF		x		=	$	-
7050XX	XX" Steel Flared End Section	EA		x		=	$	-
703233	Grated Line Drain	LF		x		=	$	-
72XXXX	Rock Slope Protection (Type and Method)	CY/TON		x		=	$	-
72901X	Rock Slope Protection Fabric (Class X)	SQYD		x		=	$	-
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
XXXXXX	Additional Drainage (15% of Section 1 and 2)	LS	1	x	762,945.00	=	$	762,945

TOTAL DRAINAGE ITEMS $ 763,000

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
080050	Progress Schedule (Critical Path Method)	LS		x		=	$	-
582001	Sound Wall (Masonry Block)	SQFT	3,000	x	100.00	=	$	300,000
510530	Minor Concrete (Wall)	CY		x		=	$	-
15325X	Remove Sound Wall	LF/LS		x		=	$	-
070030	Lead Compliance Plan	LS		x		=	$	-
141120	Treated Wood Waste	LB		x		=	$	-
153221	Remove Concrete Barrier	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Section	EA		x		=	$	-
8000XX	Chain Link Fence (Type XX)	LF		x		=	$	-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA		x		=	$	-
832001	Metal Beam Guard Railing	LF		x		=	$	-
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA		x		=	$	-
4906XX	CIDH Concrete Piling (Insert Diameter)	LF		x		=	$	-
839XXX	Crash Cushion (Insert Type)	EA		x		=	$	-
83XXXX	Concrete Barrier (Insert Type)	LF		x		=	$	-
520103	Bar Reinforced Steel (Retaining Wall)	LB		x		=	$	-
510060	Structural Concrete, Retaining Wall	CY		x		=	$	-
513553	Retaining Wall (Masonry Wall)	SQFT		x		=	$	-
511035	Architectural Treatment	LS	1	x	1,500,000.00	=	$	1,500,000
598001	Anti-Graffiti Coating	SQFT		x		=	$	-
203070	Rock Stain	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$	-
83954X	Transition Railing (Type X)	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
83958X	End Anchor Assembly (Type X)	EA		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

TOTAL SPECIALTY ITEMS $ 1,800,000

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Environmental Mitigation	LS	1	x	100,000.00	=	$	100,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-
							Subtotal Environmental Mitigation	*$ 100,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
20001	Highway Planting	LS	1	x	1,500,000.00	=	$	1,500,000
20XXXX	Irrigation System	LS		x		=	$	-
204099	Plant Establishment Work	LS		x		=	$	-
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	;QFT/SQYD		x		=	$	-
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA		x		=	$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-	LF		x		=	$	-
							Subtotal Landscape and Irrigation	*$ 1,500,000*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-
210350	Fiber Rolls	LF		x		=	$	-
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	;QFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT		x		=	$	-
210600	Compost	SQFT		x		=	$	-
210011A	Erosion Control	LS	1	x	500000	=	$	500,000
							Subtotal Erosion Control	*$ 500,000*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS		x		=	$	-
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	100,000.00	=	$	100,000
130330	Storm Water Annual Report	EA		x		=	$	-
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-
130301A	On-Site Stormwater Treatment BMP	ACRE	5	x	200,000.00	=	$	1,000,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	5	x	250,000.00	=	$	1,250,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-
130640	Temporary Fiber Roll	LF		x		=	$	-
130900	Temporary Concrete Washout	LS		x		=	$	-
130710	Temporary Construction Entrance	EA		x		=	$	-
130610	Temporary Check Dam	LF		x		=	$	-
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	640,000.00	=	$	640,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	229,479.00	=	$	229,479
							Subtotal NPDES	*$ 3,219,479*

TOTAL ENVIRONMENTAL	**$ 5,319,500**

Supplemental Work for NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$	50,000
							Subtotal Supplemental Work for NDPS	*$ 50,000*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

EA: 04-0Q290 PID: 0418000068

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS		x		=	$	-
860201	Signal and Lighting (Per Signal)	EA	3	x	500,000.00	=	$	1,500,000
860990	Closed Circuit Television System	LS		x		=	$	-
86110X	Ramp Metering System (Location X)	LS	2	x	100,000.00	=	$	200,000
86070X	Interconnection Conduit and Cable	LF/LS		x		=	$	-
5602XX	Furnish Sign Structure (Type X)	LB		x		=	$	-
5602XX	Install Sign Structure (Type X)	LB		x		=	$	-
498040	XX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
8609XX	Traffic Monitoring Station (Type X)	LS		x		=	$	-
15075X	Remove Sign Structure	EA/LS		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
860090	Maintain Existing Traffic Management System Elements Dur	LS		x		=	$	-
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Misc Electrical	Unit	1	x	100,000.00	=	$	100,000

Subtotal Traffic Electrical *$ 1,800,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA		x		=	$	-
566012	Roadside Sign - Two Post	EA		x		=	$	-
5602XX	Furnish Sign	SQFT		x		=	$	-
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF		x		=	$	-
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF		x		=	$	-
150712	Remove Painted Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA		x		=	$	-
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF	44,800	x	5.00	=	$	224,000
846012	Thermoplastic Crosswalk and Pavement Marking (Enhanced Wet Night Visibility)	SQFT	4,500	x	10.00	=	$	45,000
120090	Construction Area Signs	LS	1	x	50,000.00	=	$	50,000
84XXXX	Permanent Signage	LS	1	x	75,000.00	=	$	75,000

Subtotal Traffic Signing and Striping *$ 394,000*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
12865X	Portable Changeable Message Signs (8 signs at $360 EA)	DAY	390	x	$ 2,880	=	$	1,123,200
XXXXXX	Traffic Management Plan	LS	1	x	$ 200,000	=	$	200,000

Subtotal Traffic Management Plan *$ 1,323,200*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA		x		=	$	-
12016X	Channelizer (Type X)	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA		x		=	$	-
120100	Traffic Control System	LS	1	x	252,000.00	=	$	252,000
129110	Temporary Crash Cushion	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
XXXXXX	Traffic Handling	LS	1	x	400,000.00	=	$	400,000

Subtotal Stage Construction and Traffic Handling *$ 652,000*

TOTAL TRAFFIC ITEMS $ 4,169,200

EA: 04-0Q290 PID: 0418000068

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)		Cost
190101	Roadway Excavation	CY		x		=	$ -
19801X	Imported Borrow	CY/TON		x		=	$ -
390132	Hot Mix Asphalt (Type A)	TON		x		=	$ -
26020X	Class 2 Aggregate Base	TON/CY		x		=	$ -
250401	Class 4 Aggregate Subbase	CY		x		=	$ -
130620	Temporary Drainage Inlet Protection	EA		x		=	$ -
129000	Temporary Railing (Type K)	LF		x		=	$ -
128601	Temporary Signal System	LS		x		=	$ -
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$ -
80010X	Temporary Fence (Type X)	LF		x		=	$ -
XXXXXX	Detour Items	LS	1	x	50,000	=	$ 50,000

* Includes constructing, maintaining, and removal

TOTAL DETOURS $ 50,000

SUBTOTAL SECTIONS 1 through 7 $ 17,188,000

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items						
ADA Items				1.0%		$ 171,880
8B - Bike Path Items						
Bike Path Items				1.0%		$ 171,880
8C - Other Minor Items						
Other Minor Items				8.0%		$ 1,375,040
Total of Section 1-7	$ 17,188,000	x		10.0%	=	$ 1,718,800

TOTAL MINOR ITEMS $ 1,718,800

SECTIONS 9: MOBILIZATION

Item code						
999990	Total Section 1-8	$ 18,906,800	x	10%	=	$ 1,890,680

TOTAL MOBILIZATION $ 1,890,700

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)		Cost
066670	Payment Adjustments For Price Index Fluctuations	LS		x		=	$ -
066094	Value Analysis	LS		x		=	$ -
066070	Maintain Traffic	LS		x		=	$ -
066919	Dispute Resolution Board	LS		x		=	$ -
066921	Dispute Resolution Advisor	LS		x		=	$ -
066015	Federal Trainee Program	LS		x		=	$ -
066610	Partnering	LS		x		=	$ -
066204	Remove Rock and Debris	LS		x		=	$ -
066222	Locate Existing Crossover	LS		x		=	$ -
XXXXXX	Some Item	Unit		x		=	$ -

Cost of ***NPDES*** *Supplemental Work specified in Section 5D*			=	$ 50,000
Total Section 1-8	$ 18,906,800	5%	=	$ 945,340

TOTAL SUPPLEMENTAL WORK $ 995,400

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS		x		=	$0
066063	Traffic Management Plan - Public Information	LS		x		=	$0
066901	Water Expenses	LS		x		=	$0
8609XX	Traffic Monitoring Station (X)	LS		x		=	$0
066841	Traffic Controller Assembly	LS		x		=	$0
066840	Traffic Signal Controller Assembly	LS		x		=	$0
066062	COZEEP Contract	LS		x		=	$0
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS		x		=	$0
066916	Annual Construction General Permit Fee	LS		x		=	$0
XXXXXX	Some Item	Unit		x		=	$0
	Total Section 1-8	$	18,906,800		15%	= $	2,836,020

TOTAL STATE FURNISHED	$2,836,100

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization	$18,906,800	(used to calculate TRO)
Total Construction Cost (excluding TRO and Contingency)	$24,629,000	(used to check if project is greater than $5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **10%**

Item code		Unit	Quantity		Unit Price ($)		Cost
090100	Time-Related Overhead	WD	390	X	$4,848	=	$1,890,700

TOTAL TIME-RELATED OVERHEAD	$1,890,700

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)
Total recommended percentages includes any quantified risk based contingency from the risk register.

Total Section 1-12	$	26,519,700	x	**25%**	=	$6,629,925

TOTAL CONTINGENCY	$6,630,000

EA: 04-0Q290 PID: 0418000068

II. STRUCTURE ITEMS

	Bridge 1		Bridge 2		
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Bridge Name	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Bridge Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

	Building 1				
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Building Name	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Building Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES		**$0**
TOTAL COST OF BUILDINGS		**$0**
Structures Mobilization Percentage	10%	**$0**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

Structures Contingency Percentage	10%	**$0**
TOTAL COST OF STRUCTURES		**$0**

Estimate Prepared By: ______________________________ ______________________________

XXXXXXXXXXXXXXXX ------ Division of Structures Date

EA: 04-0Q290 PID: 0418000068

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees		$	1,630,000
	A2)	SB-1210		$	0
B)		Acquisition of Offsite Mitigation		$	0
C)	C1)	Utility Relocation (Local Agency Share)		$	372,000
	C2)	Potholing (Design Phase)		$	0
D)		Railroad Acquisition		$	0
E)		Clearance / Demolition		$	0
F)		Relocation Assistance (RAP and/or Last Resort Housing Costs)		$	0
G)		Title and Escrow		$	100,000
H)		Environmental Review		$	0
I)		Condemnation Settlements	0%	$	0
J)		Design Appreciation Factor	0%	$	0
K)		Utility Relocation (Construction Cost)		$	372,000

L) **TOTAL RIGHT OF WAY ESTIMATE** **$2,474,000**

M) **TOTAL R/W ESTIMATE: Escalated** **$2,597,700**

N) **RIGHT OF WAY SUPPORT** **$625,000**

Support Cost Estimate Prepared By	Project Coordinator[1]	Phone
Utility Estimate Prepared By	Utility Coordinator[2]	Phone
R/W Acquisition Estimate Prepared By	Right of Way Estimator[3]	Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

PROJECT

PSR-PDS COST ESTIMATE

EA: 04-0Q290 PID: 0418000068

EA: **04-0Q290**

PID: **0418000068**

District-County-Route: 04-ALA-880

PM: 17.2/18.6

Type of Estimate : PSR-PDS

Program Code :

Project Limits : I-880 A Street Interchange

Project Description: Interchange Improvements

Scope : Implement Complete Streets features such as bike lanes and pedestrian friendly paths. Provide improvements that can accommodate planned future freeway widening. Modifying signals and reconfiguring intersections to improve truck turning maneuvers.

Alternative : Alternative A1 : Roundabouts

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost (2019)		Escalated Cost (2024)	
TOTAL ROADWAY COST	**$**	**16,400,000**	**$**	**20,200,000**
TOTAL STRUCTURES COST	**$**	**-**	**$**	**-**
SUBTOTAL CONSTRUCTION COST	**$**	**16,400,000**	**$**	**20,200,000**
TOTAL RIGHT OF WAY COST	**$**	**5,500,000**	**$**	**5,700,000**
TOTAL CAPITAL OUTLAY COSTS	**$**	**21,900,000**	**$**	**25,900,000**
PA/ED SUPPORT	**$**	**2,200,000**	**$**	**2,200,000**
PS&E SUPPORT	**$**	**3,300,000**	**$**	**3,300,000**
RIGHT OF WAY SUPPORT	**$**	**1,400,000**	**$**	**1,400,000**
CONSTRUCTION SUPPORT	**$**	**2,500,000**	**$**	**2,500,000**
TOTAL SUPPORT COST	**$**	**9,400,000**	**$**	**9,400,000**
TOTAL PROJECT COST	**$**	**31,300,000**	**$**	**35,300,000**

If Project has been programmed enter Programmed Amount

	Month	/	Year
Date of Estimate (Month/Year)	6	/	2019
Estimated Construction Start (Month/Year)	4	/	2024
Number of Working Days =			390
Estimated Mid-Point of Construction (Month/Year)	1	/	2025
Estimated Construction End (Month/Year)	10	/	2025
Number of Plant Establishment Days			

Estimated Project Schedule	
PID Approval	6/1/2019
PA/ED Approval	10/1/2021
PS&E	10/31/2023
RTL	12/30/2023
Begin Construction	4/8/2024

Reviewed by District O.E. or Cost Estimate Certifier

	xx/xx/xxxx	(xxx) xxx-xxxx
Office Engineer / Cost Estimate Certifier	**Date**	**Phone**

Approved by Project Manager

	xx/xx/xxxx	(xxx) xxx-xxxx
Project Manager	**Date**	**Phone**

I. ROADWAY ITEMS SUMMARY

	Section	Cost
1	**Earthwork**	$ 920,000
2	**Pavement Structural Section**	$ 1,273,700
3	**Drainage**	$ 548,500
4	**Specialty Items**	$ 2,073,500
5	**Environmental**	$ 1,560,500
6	**Traffic Items**	$ 2,051,200
7	**Detours**	$ 50,000
8	**Minor Items**	$ 847,800
9	**Roadway Mobilization**	$ 932,600
10	**Supplemental Work**	$ 516,300
11	**State Furnished**	$ 1,398,800
12	**Time-Related Overhead**	$ 932,600
13	**Roadway Contingency**	$ 3,276,400

TOTAL ROADWAY ITEMS	**$ 16,381,900**

Estimate Prepared By :

Name and Title Date Phone

Estimate Reviewed By :

Name and Title Date Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

EA: 04-0Q290 PID: 0418000068

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	7,000	x	60.00	=	$	420,000
152320	Lead Compliance Plan	LS		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
16010X	Clearing & Grubbing	LS/ACRE		x		=	$	-
170101	Develop Water Supply	LS		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
210130	Duff	ACRE		x		=	$	-
XXXXXX	Site Preperation	LS	1	x	500,000	=	$	500,000

TOTAL EARTHWORK SECTION ITEMS $ 920,000

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement	CY		x		=	$	-
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	500	x	110.00	=	$	55,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	1,543	x	150.00	=	$	231,450
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		=	$	-
260203	Class 2 Aggregate Base	CY	1,600	x	60.00	=	$	96,000
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY	600	x	30.00	=	$	18,000
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
397005	Tack Coat	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover (Seal)	TON		x		=	$	-
731530	Minor Concrete (C&G)	LF	2,200	x	60.00	=	$	132,000
731502	Minor Concrete (Miscellaneous Construction)	CY	700	x	800.00	=	$	560,000
394071	Place Hot Mix Asphalt Dike (Type X)	LF	560	x	5.00	=	$	2,800
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
153121	Remove Concrete	CY	600	x	200.00	=	$	120,000
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD		x		=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD	11,600	x	5.00	=	$	58,000
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON	2	x	200.00	=	$	400
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS $ 1,273,700

EA: 04-0Q290 PID: 0418000068

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)		Cost
15080X	Remove Culvert	EA/LF		x		=	$ -
150820	Modify Inlet	EA		x		=	$ -
155232	Sand Backfill	CY		x		=	$ -
15020X	Abandon Culvert	EA/LF		x		=	$ -
152430	Adjust Inlet	LF		x		=	$ -
155003	Cap Inlet	EA		x		=	$ -
510501	Minor Concrete	CY		x		=	$ -
510502	Minor Concrete (Minor Structure)	CY		x		=	$ -
5105XX	Minor Concrete (Type XX)	CY		x		=	$ -
620XXX	XX" Alternative Pipe Culvert (Type X)	LF		x		=	$ -
6411XX	XX" Plastic Pipe	LF		x		=	$ -
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF		x		=	$ -
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF		x		=	$ -
68XXXX	XX" Plastic Pipe (Edge Drain)	LF		x		=	$ -
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Th	LF		x		=	$ -
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF		x		=	$ -
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF		x		=	$ -
7050XX	XX" Steel Flared End Section	EA		x		=	$ -
703233	Grated Line Drain	LF		x		=	$ -
72XXXX	Rock Slope Protection (Type and Method)	CY/TON		x		=	$ -
72901X	Rock Slope Protection Fabric (Class X)	SQYD		x		=	$ -
721420	Concrete (Ditch Lining)	CY		x		=	$ -
721430	Concrete (Channel Lining)	CY		x		=	$ -
750001	Miscellaneous Iron and Steel	LB		x		=	$ -
XXXXXX	Additional Drainage (25% of Section 1 and 2)	LS	1	x	548,425.00	=	$ 548,425

TOTAL DRAINAGE ITEMS $ 548,500

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)		Cost
080050	Progress Schedule (Critical Path Method)	LS		x		=	$ -
582001	Sound Wall (Masonry Block)	SQFT		x		=	$ -
510530	Minor Concrete (Wall)	CY		x		=	$ -
15325X	Remove Sound Wall	LF/LS		x		=	$ -
070030	Lead Compliance Plan	LS		x		=	$ -
141120	Treated Wood Waste	LB		x		=	$ -
153221	Remove Concrete Barrier	LF		x		=	$ -
150662	Remove Metal Beam Guard Railing	LF		x		=	$ -
150668	Remove Flared End Section	EA		x		=	$ -
8000XX	Chain Link Fence (Type XX)	LF		x		=	$ -
80XXXX	XX" Chain Link Gate (Type CL-6)	EA		x		=	$ -
832001	Metal Beam Guard Railing	LF		x		=	$ -
839301	Single Thrie Beam Barrier	LF		x		=	$ -
839310	Double Thrie Beam Barrier	LF		x		=	$ -
839521	Cable Railing	LF		x		=	$ -
8395XX	Terminal System (Type CAT)	EA		x		=	$ -
839585	Alternative Flared Terminal System	EA		x		=	$ -
839584	Alternative In-line Terminal System	EA		x		=	$ -
4906XX	CIDH Concrete Piling (Insert Diameter)	LF		x		=	$ -
839XXX	Crash Cushion (Insert Type)	EA		x		=	$ -
83XXXX	Concrete Barrier (Insert Type)	LF		x		=	$ -
520103	Bar Reinforced Steel (Retaining Wall)	LB		x		=	$ -
510060	Structural Concrete, Retaining Wall	CY		x		=	$ -
475010A	Retaining Wall	SQFT	3,500	x	150.00	=	$ 525,000
511035	Architectural Treatment	LS	1	x	1,000,000.00	=	$ 1,000,000
598001	Anti-Graffiti Coating	SQFT		x		=	$ -
203070	Rock Stain	SQFT		x		=	$ -
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$ -
83954X	Transition Railing (Type X)	EA		x		=	$ -
597601	Prepare and Stain Concrete	SQFT		x		=	$ -
839561	Rail Tensioning Assembly	EA		x		=	$ -
83958X	End Anchor Assembly (Type X)	EA		x		=	$ -
XXXXXX	25% of Section 1 and 2	LS	1	x	548,425.00	=	$ 548,425

TOTAL SPECIALTY ITEMS $ 2,073,500

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Environmental Mitigation	LS	1	x	50,000.00	=	$	50,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-

Subtotal Environmental Mitigation $ 50,000

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
20001	Highway Planting	LS	1	x	300,000.00	=	$	300,000
20XXXX	Irrigation System	LS		x		=	$	-
204099	Plant Establishment Work	LS		x		=	$	-
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	;QFT/SQYD		x		=	$	-
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA		x		=	$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-	LF		x		=	$	-

Subtotal Landscape and Irrigation $ 300,000

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-
210350	Fiber Rolls	LS		x		=	$	-
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	;QFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT		x		=	$	-
210600	Compost	SQFT		x		=	$	-
210011A	Erosion Control	LS	1	x	200000	=	$	200,000

Subtotal Erosion Control $ 200,000

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS		x		=	$	-
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	100,000.00	=	$	100,000
130330	Storm Water Annual Report	EA		x		=	$	-
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-
130301A	On-Site Stormwater Treatment BMP	ACRE	1	x	200,000.00	=	$	200,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	1	x	250,000.00	=	$	250,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-
130640	Temporary Fiber Roll	LF		x		=	$	-
130900	Temporary Concrete Washout	LS		x		=	$	-
130710	Temporary Construction Entrance	EA		x		=	$	-
130610	Temporary Check Dam	LF		x		=	$	-
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	316,000.00	=	$	316,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	144,471.00	=	$	144,471

Subtotal NPDES $ 1,010,471

TOTAL ENVIRONMENTAL $ 1,560,500

Supplemental Work for NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$	50,000

Subtotal Supplemental Work for NDPS $ 50,000

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

EA: 04-0Q290 PID: 0418000068

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS		x		=	$	-
860201	Signal and Lighting	LS		x		=	$	-
860990	Closed Circuit Television System	LS		x		=	$	-
86110X	Ramp Metering System (Location X)	LS		x		=	$	-
86070X	Interconnection Conduit and Cable	LF/LS		x		=	$	-
5602XX	Furnish Sign Structure (Type X)	LB		x		=	$	-
5602XX	Install Sign Structure (Type X)	LB		x		=	$	-
498040	XX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
8609XX	Traffic Monitoring Station (Type X)	LS		x		=	$	-
15075X	Remove Sign Structure	EA/LS		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
860090	Maintain Existing Traffic Management System Elements During Construction	LS		x		=	$	-
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Misc Electrical	LS	1	x	150,000.00	=	$	150,000

Subtotal Traffic Electrical $ *150,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA		x		=	$	-
566012	Roadside Sign - Two Post	EA		x		=	$	-
5602XX	Furnish Sign	SQFT		x		=	$	-
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF		x		=	$	-
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF		x		=	$	-
150712	Remove Painted Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA		x		=	$	-
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF	8,800	x	5.00	=	$	44,000
846012	Thermoplastic Crosswalk and Pavement Marking (Enhanced Wet Night Visibility)	SQFT	3,200	x	10.00	=	$	32,000
120090	Construction Area Signs	LS	1	x	50,000.00	=	$	50,000
84XXXX	Permanent Signage	LS	1	x	50,000.00	=	$	50,000

Subtotal Traffic Signing and Striping $ *176,000*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
12865X	Portable Changeable Message Signs (8 signs at $360 EA)	DAY	390	x	$ 2,880	=	$	1,123,200
XXXXXX	Traffic Management Plan	LS	1	x	$ 150,000	=	$	150,000

Subtotal Traffic Management Plan $ *1,273,200*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA		x		=	$	-
12016X	Channelizer (Type X)	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA		x		=	$	-
120100	Traffic Control System	LS	1	x	252,000.00	=	$	252,000
129110	Temporary Crash Cushion	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
XXXXXX	Traffic Handling	LS	1	x	200,000.00	=	$	200,000

Subtotal Stage Construction and Traffic Handling $ *452,000*

TOTAL TRAFFIC ITEMS $ 2,051,200

EA: 04-0Q290 PID: 0418000068

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)		Cost
190101	Roadway Excavation	CY		x		=	$ -
19801X	Imported Borrow	CY/TON		x		=	$ -
390132	Hot Mix Asphalt (Type A)	TON		x		=	$ -
26020X	Class 2 Aggregate Base	TON/CY		x		=	$ -
250401	Class 4 Aggregate Subbase	CY		x		=	$ -
130620	Temporary Drainage Inlet Protection	EA		x		=	$ -
129000	Temporary Railing (Type K)	LF		x		=	$ -
128601	Temporary Signal System	LS		x		=	$ -
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$ -
80010X	Temporary Fence (Type X)	LF		x		=	$ -
XXXXXX	Detour Items	LS	1	x	50,000	=	$ 50,000

* Includes constructing, maintaining, and removal

TOTAL DETOURS $ 50,000

SUBTOTAL SECTIONS 1 through 7 $ 8,477,400

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items				
ADA Items			1.0%	$ 84,774
8B - Bike Path Items				
Bike Path Items			1.0%	$ 84,774
8C - Other Minor Items				
Other Minor Items			8.0%	$ 678,192
Total of Section 1-7	$ 8,477,400	x	10.0%	= $ 847,740

TOTAL MINOR ITEMS $ 847,800

SECTIONS 9: MOBILIZATION

Item code						
999990	Total Section 1-8	$ 9,325,200	x	10%	=	$ 932,520

TOTAL MOBILIZATION $ 932,600

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)		Cost
066670	Payment Adjustments For Price Index Fluctuations	LS		x		=	$ -
066094	Value Analysis	LS		x		=	$ -
066070	Maintain Traffic	LS		x		=	$ -
066919	Dispute Resolution Board	LS		x		=	$ -
066921	Dispute Resolution Advisor	LS		x		=	$ -
066015	Federal Trainee Program	LS		x		=	$ -
066610	Partnering	LS		x		=	$ -
066204	Remove Rock and Debris	LS		x		=	$ -
066222	Locate Existing Crossover	LS		x		=	$ -
XXXXXX	Some Item	Unit		x		=	$ -

Cost of ***NPDES*** *Supplemental Work specified in Section 5D* = $ 50,000

Total Section 1-8 $ 9,325,200 5% = $ 466,260

TOTAL SUPPLEMENTAL WORK $ 516,300

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS		x		=	$0
066063	Traffic Management Plan - Public Information	LS		x		=	$0
066901	Water Expenses	LS		x		=	$0
8609XX	Traffic Monitoring Station (X)	LS		x		=	$0
066841	Traffic Controller Assembly	LS		x		=	$0
066840	Traffic Signal Controller Assembly	LS		x		=	$0
066062	COZEEP Contract	LS		x		=	$0
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS		x		=	$0
066916	Annual Construction General Permit Fee	LS		x		=	$0
XXXXXX	Some Item	Unit		x		=	$0
	Total Section 1-8	$	9,325,200		15%	=	$ 1,398,780

TOTAL STATE FURNISHED	**$1,398,800**

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization	$9,325,200	(used to calculate TRO)
Total Construction Cost (excluding TRO and Contingency)	$12,172,900	(used to check if project is greater than $5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **10%**

Item code		Unit	Quantity		Unit Price ($)		Cost
090100	Time-Related Overhead	WD	390	X	$2,391	=	$932,600

TOTAL TIME-RELATED OVERHEAD	**$932,600**

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)
Total recommended percentages includes any quantified risk based contingency from the risk register.

Total Section 1-12	$	13,105,500	x	**25%**	=	$3,276,375

TOTAL CONTINGENCY	**$3,276,400**

EA: 04-0Q290 PID: 0418000068

II. STRUCTURE ITEMS

	Bridge 1		Bridge 2		
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Bridge Name	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Bridge Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

	Building 1				
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Building Name	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Building Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES		**$0**
TOTAL COST OF BUILDINGS		**$0**
Structures Mobilization Percentage	10%	**$0**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

Structures Contingency Percentage	10%	**$0**
TOTAL COST OF STRUCTURES		**$0**

Estimate Prepared By: ______________________ ______________________

XXXXXXXXXXXXXXXX ------ Division of Structures   Date

EA: 04-0Q290 PID: 0418000068

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees	$	5,070,000
	A2)	SB-1210	$	0
B)		Acquisition of Offsite Mitigation	$	0
C)	C1)	Utility Relocation (Local Agency Share)	$	123,000
	C2)	Potholing (Design Phase)	$	0
D)		Railroad Acquisition	$	0
E)		Clearance / Demolition	$	0
F)		Relocation Assistance (RAP and/or Last Resort Housing Costs)	$	0
G)		Title and Escrow	$	100,000
H)		Environmental Review	$	0
I)		Condemnation Settlements 0%	$	0
J)		Design Appreciation Factor 0%	$	0
K)		Utility Relocation (Construction Cost)	$	123,000

L) **TOTAL RIGHT OF WAY ESTIMATE** **$5,416,000**

M) **TOTAL R/W ESTIMATE: Escalated** **$5,686,800**

N) **RIGHT OF WAY SUPPORT** **$1,375,000**

Support Cost Estimate Prepared By ______________________
Project Coordinator[1] Phone

Utility Estimate Prepared By ______________________
Utility Coordinator[2] Phone

R/W Acquisition Estimate Prepared By ______________________
Right of Way Estimator[3] Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

PROJECT

PSR-PDS COST ESTIMATE

EA: 04-0Q290 PID: 0418000068

EA: 04-0Q290

PID: 0418000068

District-County-Route: 04-ALA-880

PM: 17.2/18.6

Type of Estimate : PSR-PDS

Program Code :

Project Limits : I-880 A Street Interchange

Project Description: Interchange Improvements

Scope : Implement Complete Streets features such as bike lanes and pedestrian friendly paths.Eliminate existing nonstandard clearance at I-880/A Street and provide improvements that can accommodate planned future freeway widening and ultimate widening along A Street. Modifying signals and reconfiguring intersections to improve truck turning maneuvers.

Alternative : Alternative A2 : Tight Urban Diamond Interchange

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost (2019)		Escalated Cost (2024)	
TOTAL ROADWAY COST	$	29,800,000	$	39,000,000
TOTAL STRUCTURES COST	$	17,900,000	$	23,400,000
SUBTOTAL CONSTRUCTION COST	$	47,700,000	$	62,400,000
TOTAL RIGHT OF WAY COST	$	1,300,000	$	1,300,000
TOTAL CAPITAL OUTLAY COSTS	**$**	**49,000,000**	**$**	**63,700,000**
PA/ED SUPPORT	$	4,900,000	$	4,900,000
PS&E SUPPORT	$	7,400,000	$	7,400,000
RIGHT OF WAY SUPPORT	$	400,000	$	400,000
CONSTRUCTION SUPPORT	$	7,200,000	$	7,200,000
TOTAL SUPPORT COST	**$**	**19,900,000**	**$**	**19,900,000**
TOTAL PROJECT COST	**$**	**68,900,000**	**$**	**83,600,000**

If Project has been programmed enter Programmed Amount

	Month	/	Year
Date of Estimate (Month/Year)	6	/	2019
Estimated Construction Start (Month/Year)	4	/	2024
Number of Working Days =			520
Estimated Mid-Point of Construction (Month/Year)	4	/	2025
Estimated Construction End (Month/Year)	4	/	2026
Number of Plant Establishment Days			

Estimated Project Schedule

PID Approval	6/1/2019
PA/ED Approval	10/1/2021
PS&E	10/31/2023
RTL	12/30/2023
Begin Construction	4/8/2024

Reviewed by District O.E. or Cost Estimate Certifier	**Office Engineer / Cost Estimate Certifier**	xx/xx/xxxx **Date**	(xxx) xxx-xxxx **Phone**
Approved by Project Manager	**Project Manager**	xx/xx/xxxx **Date**	(xxx) xxx-xxxx **Phone**

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	**Earthwork**	$	1,745,800
2	**Pavement Structural Section**	$	2,019,900
3	**Drainage**	$	753,200
4	**Specialty Items**	$	3,376,600
5	**Environmental**	$	3,206,900
6	**Traffic Items**	$	4,047,100
7	**Detours**	$	50,000
8	**Minor Items**	$	1,520,000
9	**Roadway Mobilization**	$	1,672,000
10	**Supplemental Work**	$	886,000
11	**State Furnished**	$	2,508,000
12	**Time-Related Overhead**	$	1,996,800
13	**Roadway Contingency**	$	5,945,600

TOTAL ROADWAY ITEMS	**$**	**29,727,900**

Estimate Prepared By :

Name and Title　　Date　　Phone

Estimate Reviewed By :

Name and Title　　Date　　Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

EA: 04-0Q290 PID: 0418000068

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	17,429	x	60.00	=	$	1,045,740
152320	Lead Compliance Plan	LS		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
16010X	Clearing & Grubbing	LS/ACRE		x		=	$	-
170101	Develop Water Supply	LS		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
210130	Duff	ACRE		x		=	$	-
XXXXXX	Site Preperation	LS	1	x	700,000	=	$	700,000

TOTAL EARTHWORK SECTION ITEMS	$	1,745,800

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement	CY		x		=	$	-
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	4,600	x	110.00	=	$	506,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	3,069	x	150.00	=	$	460,350
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		=	$	-
260203	Class 2 Aggregate Base	CY	5,300	x	60.00	=	$	318,000
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY	5,300	x	30.00	=	$	159,000
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
397005	Tack Coat	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover (Seal)	TON		x		=	$	-
731530	Minor Concrete (C&G)	LF	2,200	x	60.00	=	$	132,000
731502	Minor Concrete (Miscellaneous Construction)	CY	400	x	800.00	=	$	320,000
39407X	Place Hot Mix Asphalt Dike (Type X)	LF		x		=	$	-
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
153121	Remove Concrete	CY	400	x	200.00	=	$	80,000
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD		x		=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD	8,900	x	5.00	=	$	44,500
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS	$	2,019,900

EA: 04-0Q290 PID: 0418000068

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
15080X	Remove Culvert	EA/LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
155232	Sand Backfill	CY		x		=	$	-
15020X	Abandon Culvert	EA/LF		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
510501	Minor Concrete	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
5105XX	Minor Concrete (Type XX)	CY		x		=	$	-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF		x		=	$	-
6411XX	XX" Plastic Pipe	LF		x		=	$	-
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF		x		=	$	-
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF		x		=	$	-
68XXXX	XX" Plastic Pipe (Edge Drain)	LF		x		=	$	-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Th	LF		x		=	$	-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF		x		=	$	-
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF		x		=	$	-
7050XX	XX" Steel Flared End Section	EA		x		=	$	-
703233	Grated Line Drain	LF		x		=	$	-
72XXXX	Rock Slope Protection (Type and Method)	CY/TON		x		=	$	-
72901X	Rock Slope Protection Fabric (Class X)	SQYD		x		=	$	-
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
XXXXXX	Additional Drainage (20% of Section 1 and 2)	LS	1	x	753,140.00	=	$	753,140

TOTAL DRAINAGE ITEMS $ 753,200

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
080050	Progress Schedule (Critical Path Method)	LS		x		=	$	-
582001	Sound Wall (Masonry Block)	SQFT		x		=	$	-
510530	Minor Concrete (Wall)	CY		x		=	$	-
15325X	Remove Sound Wall	LF/LS		x		=	$	-
070030	Lead Compliance Plan	LS		x		=	$	-
141120	Treated Wood Waste	LB		x		=	$	-
153221	Remove Concrete Barrier	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Section	EA		x		=	$	-
8000XX	Chain Link Fence (Type XX)	LF		x		=	$	-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA		x		=	$	-
832001	Metal Beam Guard Railing	LF		x		=	$	-
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA		x		=	$	-
4906XX	CIDH Concrete Piling (Insert Diameter)	LF		x		=	$	-
839XXX	Crash Cushion (Insert Type)	EA		x		=	$	-
83XXXX	Concrete Barrier (Insert Type)	LF		x		=	$	-
520103	Bar Reinforced Steel (Retaining Wall)	LB		x		=	$	-
510060	Structural Concrete, Retaining Wall	CY		x		=	$	-
513553	Retaining Wall (Masonry Wall)	SQFT		x		=	$	-
511035	Architectural Treatment	LS	1	x	3,000,000.00	=	$	3,000,000
598001	Anti-Graffiti Coating	SQFT		x		=	$	-
203070	Rock Stain	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$	-
83954X	Transition Railing (Type X)	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
83958X	End Anchor Assembly (Type X)	EA		x		=	$	-
XXXXXX	10% of Section 1 and 2	LS	1	x	376,570.00	=	$	376,570

TOTAL SPECIALTY ITEMS $ 3,376,600

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Environmental Mitigation	LS	1	x	100,000.00	=	$	100,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-

Subtotal Environmental Mitigation *$* *100,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
200001	Highway Planting	LS	1	x	300,000.00	=	$	300,000
20XXXX	Irrigation System	LS		x		=	$	-
204099	Plant Establishment Work	LS		x		=	$	-
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	;QFT/SQYD		x		=	$	-
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA		x		=	$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-	LF		x		=	$	-

Subtotal Landscape and Irrigation *$* *300,000*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-
210350	Fiber Rolls	LS		x		=	$	-
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	;QFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT		x		=	$	-
210600	Compost	SQFT		x		=	$	-
210011A	Erosion Control	LS	1	x	200000	=	$	200,000

Subtotal Erosion Control *$* *200,000*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS		x		=	$	-
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	100,000.00	=	$	100,000
130330	Storm Water Annual Report	EA		x		=	$	-
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-
130301A	On-Site Stormwater Treatment BMP	ACRE	3	x	200,000.00	=	$	600,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	3	x	250,000.00	=	$	750,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-
130640	Temporary Fiber Roll	LF		x		=	$	-
130900	Temporary Concrete Washout	LS		x		=	$	-
130710	Temporary Construction Entrance	EA		x		=	$	-
130610	Temporary Check Dam	LF		x		=	$	-
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	920,000.00	=	$	920,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	236,865.00	=	$	236,865

Subtotal NPDES *$* *2,606,865*

TOTAL ENVIRONMENTAL $ 3,206,900

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$	50,000

Subtotal Supplemental Work for NDPS *$* *50,000*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

EA: 04-0Q290 PID: 0418000068

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS		x		=	$	-
860201	Signal and Lighting (Per Signal)	EA	2	x	500,000.00	=	$	1,000,000
860990	Closed Circuit Television System	LS		x		=	$	-
86110X	Ramp Metering System (Location X)	LS		x		=	$	-
86070X	Interconnection Conduit and Cable	LF/LS		x		=	$	-
5602XX	Furnish Sign Structure (Type X)	LB		x		=	$	-
5602XX	Install Sign Structure (Type X)	LB		x		=	$	-
498040	XX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
8609XX	Traffic Monitoring Station (Type X)	LS		x		=	$	-
15075X	Remove Sign Structure	EA/LS		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
860090	Maintain Existing Traffic Management System Elements During Construction	LS		x		=	$	-
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Misc Electrical	LS	1	x	250,000.00	=	$	250,000

Subtotal Traffic Electrical *$* *1,250,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA		x		=	$	-
566012	Roadside Sign - Two Post	EA		x		=	$	-
5602XX	Furnish Sign	SQFT		x		=	$	-
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF		x		=	$	-
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF		x		=	$	-
150712	Remove Painted Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA		x		=	$	-
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF	16,100	x	5.00	=	$	80,500
846012	Thermoplastic Crosswalk and Pavement Marking (Enhanced Wet Night Visibility)	SQFT	5,500	x	10.00	=	$	55,000
120090	Construction Area Signs	LS	1	x	50,000.00	=	$	50,000
84XXXX	Permanent Signage	LS	1	x	50,000.00	=	$	50,000

Subtotal Traffic Signing and Striping *$* *235,500*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
12865X	Portable Changeable Message Signs (8 signs at $360 EA)	DAY	520	x	$ 2,880	=	$	1,497,600
XXXXXX	Traffic Management Plan	LS	1	x	$ 400,000	=	$	400,000

Subtotal Traffic Management Plan *$* *1,897,600*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA		x		=	$	-
12016X	Channelizer (Type X)	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA		x		=	$	-
120100	Traffic Control System	LS	1	x	364,000.00	=	$	364,000
129110	Temporary Crash Cushion	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
XXXXXX	Other Traffic Handling	LS	1	x	300,000.00	=	$	300,000

Subtotal Stage Construction and Traffic Handling *$* *664,000*

TOTAL TRAFFIC ITEMS **$** **4,047,100**

EA: 04-0Q290 PID: 0418000068

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON		x		=	$	-
26020X	Class 2 Aggregate Base	TON/CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
128601	Temporary Signal System	LS		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
80010X	Temporary Fence (Type X)	LF		x		=	$	-
XXXXXX	Detour Items	LS	1	x	50,000	=	$	50,000

* Includes constructing, maintaining, and removal

TOTAL DETOURS $ 50,000

SUBTOTAL SECTIONS 1 through 7 $ 15,199,500

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items						
ADA Items				1.0%	$	151,995
8B - Bike Path Items						
Bike Path Items				1.0%	$	151,995
8C - Other Minor Items						
Other Minor Items				8.0%	$	1,215,960
Total of Section 1-7	$	15,199,500	x	10.0%	= $	1,519,950

TOTAL MINOR ITEMS $ 1,520,000

SECTIONS 9: MOBILIZATION

Item code								
999990	Total Section 1-8	$	16,719,500	x	10%	=	$	1,671,950

TOTAL MOBILIZATION $ 1,672,000

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)			Cost
066670	Payment Adjustments For Price Index Fluctuations	LS		x		=	$	-
066094	Value Analysis	LS		x		=	$	-
066070	Maintain Traffic	LS		x		=	$	-
066919	Dispute Resolution Board	LS		x		=	$	-
066921	Dispute Resolution Advisor	LS		x		=	$	-
066015	Federal Trainee Program	LS		x		=	$	-
066610	Partnering	LS		x		=	$	-
066204	Remove Rock and Debris	LS		x		=	$	-
066222	Locate Existing Crossover	LS		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

*Cost of **NPDES** Supplemental Work specified in Section 5D*				=	$	50,000
Total Section 1-8	$	16,719,500	5%	=	$	835,975

TOTAL SUPPLEMENTAL WORK $ 886,000

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS		x		=	$0
066063	Traffic Management Plan - Public Information	LS		x		=	$0
066901	Water Expenses	LS		x		=	$0
8609XX	Traffic Monitoring Station (X)	LS		x		=	$0
066841	Traffic Controller Assembly	LS		x		=	$0
066840	Traffic Signal Controller Assembly	LS		x		=	$0
066062	COZEEP Contract	LS		x		=	$0
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS		x		=	$0
066916	Annual Construction General Permit Fee	LS		x		=	$0
XXXXXX	Some Item	Unit		x		=	$0
	Total Section 1-8	$	16,719,500		15%	= $	2,507,925

TOTAL STATE FURNISHED **$2,508,000**

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization	$33,278,770	(used to calculate TRO)
Total Construction Cost (excluding TRO and Contingency)	$39,618,560	(used to check if project is greater than $5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **6%**

Item code		Unit	Quantity		Unit Price ($)		Cost
090100	Time-Related Overhead	WD	520	X	$3,840	=	$1,996,800

TOTAL TIME-RELATED OVERHEAD **$1,996,800**

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)
Total recommended percentages includes any quantified risk based contingency from the risk register.

Total Section 1-12	$	23,782,300	x	**25%**	=	$5,945,575

TOTAL CONTINGENCY **$5,945,600**

EA: 04-0Q290 PID: 0418000068

II. STRUCTURE ITEMS

	Bridge 1		Bridge 2		
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Bridge Name	xxxxxxxxxxxxxxxxxxx		Demolition of Exisitng		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	203 LF		168 LF		0 LF
Total Bridge Length (Feet)	238 LF		157 LF		0 LF
Total Area (Square Feet)	48314 SQFT		26376 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$250		$25		$0
COST OF EACH	**$12,078,500**		**$659,400**		**$0**

	Building 1				
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Building Name	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Building Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES		**$12,737,900**
TOTAL COST OF BUILDINGS		**$0**
Structures Mobilization Percentage	10%	**$1,273,790**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

Structures Contingency Percentage	30%	**$3,821,370**
TOTAL COST OF STRUCTURES		**$17,833,060**

Estimate Prepared By: ______________________________ ______________________________

XXXXXXXXXXXXXXXX ------ Division of Structures Date

EA: 04-0Q290 PID: 0418000068

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1) Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees		$	870,000
	A2) SB-1210		$	0
B)	Acquisition of Offsite Mitigation		$	0
C)	C1) Utility Relocation (Local Agency Share)		$	116,000
	C2) Potholing (Design Phase)		$	0
D)	Railroad Acquisition		$	0
E)	Clearance / Demolition		$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)		$	0
G)	Title and Escrow		$	100,000
H)	Environmental Review		$	0
I)	Condemnation Settlements	0%	$	0
J)	Design Appreciation Factor	0%	$	0
K)	Utility Relocation (Construction Cost)		$	116,000

L)	**TOTAL RIGHT OF WAY ESTIMATE**	**$1,202,000**
M)	**TOTAL R/W ESTIMATE: Escalated**	**$1,262,100**
N)	**RIGHT OF WAY SUPPORT**	**$325,000**

Support Cost Estimate Prepared By ______________________________
Project Coordinator[1] Phone

Utility Estimate Prepared By ______________________________
Utility Coordinator[2] Phone

R/W Acquisition Estimate Prepared By ______________________________
Right of Way Estimator[3] Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

PROJECT

PSR-PDS COST ESTIMATE

EA: 04-0Q290 PID: 0418000068

EA: **04-0Q290**

PID: **0418000068**

District-County-Route: 04-ALA-880

PM: 17.2/18.6

Type of Estimate : PSR-PDS

Program Code :

Project Limits : I-880 A Street Interchange

Project Description: Interchange Improvements

Scope : Implement Complete Streets features such as bike lanes and pedestrian friendly paths.Eliminate existing nonstandard clearance at I-880/A Street and provide improvements that can accommodate planned future freeway widening. Modifying signals and reconfiguring intersections to improve truck turning maneuvers.

Alternative : Alternative A3 : Single Point Urban Interchange

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost (2019)	Escalated Cost (2024)
TOTAL ROADWAY COST	$ 51,400,000	$ 67,200,000
TOTAL STRUCTURES COST	$ 39,200,000	$ 51,300,000
SUBTOTAL CONSTRUCTION COST	$ 90,600,000	$ 118,500,000
TOTAL RIGHT OF WAY COST	$ 7,900,000	$ 8,300,000
TOTAL CAPITAL OUTLAY COSTS	**$ 98,500,000**	**$ 126,800,000**
PA/ED SUPPORT	$ 9,900,000	$ 9,900,000
PS&E SUPPORT	$ 14,800,000	$ 14,800,000
RIGHT OF WAY SUPPORT	$ 2,000,000	$ 2,000,000
CONSTRUCTION SUPPORT	$ 13,600,000	$ 13,600,000
TOTAL SUPPORT COST	**$ 40,300,000**	**$ 40,300,000**
TOTAL PROJECT COST	**$ 139,000,000**	**$ 168,000,000**

If Project has been programmed enter Programmed Amount

	Month	/	Year
Date of Estimate (Month/Year)	6	/	2019
Estimated Construction Start (Month/Year)	4	/	2024
Number of Working Days =			520
Estimated Mid-Point of Construction (Month/Year)	4	/	2025
Estimated Construction End (Month/Year)	4	/	2026
Number of Plant Establishment Days			

Estimated Project Schedule

PID Approval	6/1/2019
PA/ED Approval	10/1/2021
PS&E	10/31/2023
RTL	12/30/2023
Begin Construction	4/8/2024

Reviewed by District O.E. or Cost Estimate Certifier		xx/xx/xxxx	(xxx) xxx-xxxx
	Office Engineer / Cost Estimate Certifier	**Date**	**Phone**
Approved by Project Manager		xx/xx/xxxx	(xxx) xxx-xxxx
	Project Manager	**Date**	**Phone**

I. ROADWAY ITEMS SUMMARY

	Section	Cost
1	**Earthwork**	$ 2,380,000
2	**Pavement Structural Section**	$ 6,807,500
3	**Drainage**	$ 1,837,500
4	**Specialty Items**	$ 5,918,800
5	**Environmental**	$ 5,206,400
6	**Traffic Items**	$ 3,781,100
7	**Detours**	$ 50,000
8	**Minor Items**	$ 2,598,200
9	**Roadway Mobilization**	$ 2,858,000
10	**Supplemental Work**	$ 1,479,000
11	**State Furnished**	$ 4,287,000
12	**Time-Related Overhead**	$ 3,894,900
13	**Roadway Contingency**	$ 10,274,600
	TOTAL ROADWAY ITEMS	**$ 51,373,000**

Estimate Prepared By :

Name and Title　Date　Phone

Estimate Reviewed By :

Name and Title　Date　Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

EA: 04-0Q290 PID: 0418000068

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	23,000	x	60.00	=	$	1,380,000
152320	Lead Compliance Plan	LS		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
16010X	Clearing & Grubbing	LS/ACRE		x		=	$	-
170101	Develop Water Supply	LS		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
210130	Duff	ACRE		x		=	$	-
XXXXXX	Site Preperation	LS	1	x	1,000,000	=	$	1,000,000

TOTAL EARTHWORK SECTION ITEMS $ 2,380,000

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement	CY		x		=	$	-
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	20,500	x	110.00	=	$	2,255,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	10,600	x	150.00	=	$	1,590,000
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		=	$	-
260203	Class 2 Aggregate Base	CY	22,500	x	60.00	=	$	1,350,000
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY	24,100	x	30.00	=	$	723,000
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
397005	Tack Coat	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover (Seal)	TON		x		=	$	-
731530	Minor Concrete (C&G)	LF	4,000	x	60.00	=	$	240,000
731502	Minor Concrete (Miscellaneous Construction)	CY	600	x	800.00	=	$	480,000
394071	Place Hot Mix Asphalt Dike (Type X)	LF	1,430	x	5.00	=	$	7,150
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
153121	Remove Concrete	CY	400	x	200.00	=	$	80,000
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD		x		=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD	16,300	x	5.00	=	$	81,500
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON	4	x	200.00	=	$	800
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS $ 6,807,500

EA: 04-0Q290 PID: 0418000068

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
15080X	Remove Culvert	EA/LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
155232	Sand Backfill	CY		x		=	$	-
15020X	Abandon Culvert	EA/LF		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
510501	Minor Concrete	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
5105XX	Minor Concrete (Type XX)	CY		x		=	$	-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF		x		=	$	-
6411XX	XX" Plastic Pipe	LF		x		=	$	-
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF		x		=	$	-
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF		x		=	$	-
68XXXX	XX" Plastic Pipe (Edge Drain)	LF		x		=	$	-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Th	LF		x		=	$	-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF		x		=	$	-
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF		x		=	$	-
7050XX	XX" Steel Flared End Section	EA		x		=	$	-
703233	Grated Line Drain	LF		x		=	$	-
72XXXX	Rock Slope Protection (Type and Method)	CY/TON		x		=	$	-
72901X	Rock Slope Protection Fabric (Class X)	SQYD		x		=	$	-
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
XXXXXX	Additional Drainage (20% of Section 1 and 2)	LS	1	x	1,837,500.00	=	$	1,837,500

TOTAL DRAINAGE ITEMS	**$**	**1,837,500**

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
080050	Progress Schedule (Critical Path Method)	LS		x		=	$	-
582001	Sound Wall (Masonry Block)	SQFT		x		=	$	-
510530	Minor Concrete (Wall)	CY		x		=	$	-
15325X	Remove Sound Wall	LF/LS		x		=	$	-
070030	Lead Compliance Plan	LS		x		=	$	-
141120	Treated Wood Waste	LB		x		=	$	-
153221	Remove Concrete Barrier	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Section	EA		x		=	$	-
8000XX	Chain Link Fence (Type XX)	LF		x		=	$	-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA		x		=	$	-
832001	Metal Beam Guard Railing	LF		x		=	$	-
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA		x		=	$	-
4906XX	CIDH Concrete Piling (Insert Diameter)	LF		x		=	$	-
839XXX	Crash Cushion (Insert Type)	EA		x		=	$	-
83XXXX	Concrete Barrier (Insert Type)	LF		x		=	$	-
520103	Bar Reinforced Steel (Retaining Wall)	LB		x		=	$	-
510060	Structural Concrete, Retaining Wall	CY		x		=	$	-
513553	Retaining Wall (Masonry Wall)	SQFT		x		=	$	-
511035	Architectural Treatment	LS	1	x	5,000,000.00	=	$	5,000,000
598001	Anti-Graffiti Coating	SQFT		x		=	$	-
203070	Rock Stain	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$	-
83954X	Transition Railing (Type X)	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
83958X	End Anchor Assembly (Type X)	EA		x		=	$	-
XXXXXX	10% of Section 1 and 2	LS	1	x	918,750.00	=	$	918,750

TOTAL SPECIALTY ITEMS	**$**	**5,918,800**

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Environmental Mitigation	LS	1	x	100,000.00	=	$	100,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-

Subtotal Environmental Mitigation $ 100,000

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
20001	Highway Planting	LS	1	x	300,000.00	=	$	300,000
20XXXX	Irrigation System	LS		x		=	$	-
204099	Plant Establishment Work	LS		x		=	$	-
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	;QFT/SQYD		x		=	$	-
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA		x		=	$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-overs)	LF		x		=	$	-

Subtotal Landscape and Irrigation $ 300,000

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-
210350	Fiber Rolls	LF		x		=	$	-
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	QFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT		x		=	$	-
210600	Compost	SQFT		x		=	$	-
210011A	Erosion Control	LS	1	x	200000	=	$	200,000

Subtotal Erosion Control $ 200,000

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS		x		=	$	-
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	100,000.00	=	$	100,000
130330	Storm Water Annual Report	EA		x		=	$	-
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-
130301A	On-Site Stormwater Treatment BMP	ACRE	5	x	200,000.00	=	$	1,000,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	5	x	250,000.00	=	$	1,250,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-
130640	Temporary Fiber Roll	LF		x		=	$	-
130900	Temporary Concrete Washout	LS		x		=	$	-
130710	Temporary Construction Entrance	EA		x		=	$	-
130610	Temporary Check Dam	LF		x		=	$	-
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	1,748,000.00	=	$	1,748,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	508,314.00	=	$	508,314

Subtotal NPDES $ 4,606,314

TOTAL ENVIRONMENTAL $ 5,206,400

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$	50,000

Subtotal Supplemental Work for NDPS $ 50,000

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

EA: 04-0Q290 PID: 0418000068

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS		x		=	$	-
860201	Signal and Lighting (Per Signal)	EA	1	x	500,000.00	=	$	500,000
860990	Closed Circuit Television System	LS		x		=	$	-
86110X	Ramp Metering System (Location X)	LS		x		=	$	-
86070X	Interconnection Conduit and Cable	LF/LS		x		=	$	-
5602XX	Furnish Sign Structure (Type X)	LB		x		=	$	-
5602XX	Install Sign Structure (Type X)	LB		x		=	$	-
498040	XX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
8609XX	Traffic Monitoring Station (Type X)	LS		x		=	$	-
15075X	Remove Sign Structure	EA/LS		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
860090	Maintain Existing Traffic Management System Elements Durii	LS		x		=	$	-
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Misc Electrical	LS	1	x	250,000.00	=	$	250,000

Subtotal Traffic Electrical $ *750,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA		x		=	$	-
566012	Roadside Sign - Two Post	EA		x		=	$	-
5602XX	Furnish Sign	SQFT		x		=	$	-
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF		x		=	$	-
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF		x		=	$	-
150712	Remove Painted Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA		x		=	$	-
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF	24,900	x	5.00	=	$	124,500
846012	Thermoplastic Crosswalk and Pavement Marking (Enhanced Wet Night Visibility)	SQFT	4,500	x	10.00	=	$	45,000
120090	Construction Area Signs	LS	1	x	50,000.00	=	$	50,000
84XXXX	Permanent Signage	LS	1	x	50,000.00	=	$	50,000

Subtotal Traffic Signing and Striping $ *269,500*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
12865X	Portable Changeable Message Signs (8 signs at $360 EA)	DAY	520	x	$ 2,880	=	$	1,497,600
XXXXXX	Traffic Management Plan	LS	1	x	$ 400,000	=	$	400,000

Subtotal Traffic Management Plan $ *1,897,600*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA		x		=	$	-
12016X	Channelizer (Type X)	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA		x		=	$	-
120100	Traffic Control System	LS	1	x	364,000.00	=	$	364,000
129110	Temporary Crash Cushion	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
XXXXXX	Other Traffic Handling	LS	1	x	500,000.00	=	$	500,000

Subtotal Stage Construction and Traffic Handling $ *864,000*

TOTAL TRAFFIC ITEMS $ 3,781,100

EA: 04-0Q290 PID: 0418000068

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)		Cost
190101	Roadway Excavation	CY		x		=	$ -
19801X	Imported Borrow	CY/TON		x		=	$ -
390132	Hot Mix Asphalt (Type A)	TON		x		=	$ -
26020X	Class 2 Aggregate Base	TON/CY		x		=	$ -
250401	Class 4 Aggregate Subbase	CY		x		=	$ -
130620	Temporary Drainage Inlet Protection	EA		x		=	$ -
129000	Temporary Railing (Type K)	LF		x		=	$ -
128601	Temporary Signal System	LS		x		=	$ -
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$ -
80010X	Temporary Fence (Type X)	LF		x		=	$ -
XXXXXX	Detour Items	LS	1	x	50,000	=	$ 50,000

* Includes constructing, maintaining, and removal

TOTAL DETOURS $ 50,000

SUBTOTAL SECTIONS 1 through 7 $ 25,981,300

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items					
ADA Items			1.0%		$ 259,813
8B - Bike Path Items					
Bike Path Items			1.0%		$ 259,813
8C - Other Minor Items					
Other Minor Items			8.0%		$ 2,078,504
Total of Section 1-7	$ 25,981,300	x	10.0%	=	$ 2,598,130

TOTAL MINOR ITEMS $ 2,598,200

SECTIONS 9: MOBILIZATION

Item code						
999990	Total Section 1-8	$ 28,579,500	x	10%	=	$ 2,857,950

TOTAL MOBILIZATION $ 2,858,000

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)		Cost
066670	Payment Adjustments For Price Index Fluctuations	LS		x		=	$ -
066094	Value Analysis	LS		x		=	$ -
066070	Maintain Traffic	LS		x		=	$ -
066919	Dispute Resolution Board	LS		x		=	$ -
066921	Dispute Resolution Advisor	LS		x		=	$ -
066015	Federal Trainee Program	LS		x		=	$ -
066610	Partnering	LS		x		=	$ -
066204	Remove Rock and Debris	LS		x		=	$ -
066222	Locate Existing Crossover	LS		x		=	$ -
XXXXXX	Some Item	Unit		x		=	$ -

Cost of ***NPDES*** *Supplemental Work specified in Section 5D* = $ 50,000

Total Section 1-8 $ 28,579,500 5% = $ 1,428,975

TOTAL SUPPLEMENTAL WORK $ 1,479,000

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS		x		=	$0
066063	Traffic Management Plan - Public Information	LS		x		=	$0
066901	Water Expenses	LS		x		=	$0
8609XX	Traffic Monitoring Station (X)	LS		x		=	$0
066841	Traffic Controller Assembly	LS		x		=	$0
066840	Traffic Signal Controller Assembly	LS		x		=	$0
066062	COZEEP Contract	LS		x		=	$0
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS		x		=	$0
066916	Annual Construction General Permit Fee	LS		x		=	$0
XXXXXX	Some Item	Unit		x		=	$0
	Total Section 1-8	$	28,579,500		15%	= $	4,286,925

TOTAL STATE FURNISHED **$4,287,000**

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization	$64,914,097	(used to calculate TRO)
Total Construction Cost (excluding TRO and Contingency)	$76,333,066	(used to check if project is greater than $5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **6%**

Item code		Unit	Quantity		Unit Price ($)		Cost
090100	Time-Related Overhead	WD	520	X	$7,490	=	$3,894,900

TOTAL TIME-RELATED OVERHEAD **$3,894,900**

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

Total Section 1-12	$	41,098,400	x	**25%**	=	$10,274,600

TOTAL CONTINGENCY **$10,274,600**

EA: 04-0Q290 PID: 0418000068

II. STRUCTURE ITEMS

E

	Bridge 1		Bridge 2		Retaining Wall (SE&NE)
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Bridge Name	xxxxxxxxxxxxxxxxxxx		Demolition of Exisitng		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		Type 1SWBP
Width (Feet) [out to out]	191 LF		168 LF		N/A LF
Total Bridge Length (Feet)	415 LF		157 LF		3356 LF
Total Area (Square Feet)	79265 SQFT		26376 SQFT		26848 SQFT
Structure Depth (Feet)	0 LF		0 LF		8 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$250		$25		$230
COST OF EACH	**$19,816,250**		**$659,400**		**$6,175,040**

	Retaining Wall (SE&NE)		Retaining Wall (SW&NW)		Retaining Wall (SW&NW)
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Building Name	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	N/A		Type 1SWBP		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	N/A LF		N/A LF		N/A LF
Total Building Length (Feet)	866 LF		3195 LF		538 LF
Total Area (Square Feet)	8660 SQFT		31950 SQFT		5380 SQFT
Structure Depth (Feet)	10 LF		10 LF		10 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$150		$230		$150
COST OF EACH	**$1,299,000**		**$7,348,500**		**$807,000**

TOTAL COST OF BRIDGES		**$26,650,690**
TOTAL COST OF BUILDINGS		**$1,299,000**
Structures Mobilization Percentage	10%	**$2,794,969**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

Structures Contingency Percentage	30%	**$8,384,907**

TOTAL COST OF STRUCTURES	**$39,129,566**

Estimate Prepared By: ______________________ ______________________

XXXXXXXXXXXXXXXX ------ Division of Structures Date

EA: 04-0Q290 PID: 0418000068

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees	$	7,260,000
	A2)	SB-1210	$	0
B)		Acquisition of Offsite Mitigation	$	0
C)	C1)	Utility Relocation (Local Agency Share)	$	226,000
	C2)	Potholing (Design Phase)	$	0
D)		Railroad Acquisition	$	0
E)		Clearance / Demolition	$	0
F)		Relocation Assistance (RAP and/or Last Resort Housing Costs)	$	0
G)		Title and Escrow	$	100,000
H)		Environmental Review	$	0
I)		Condemnation Settlements 0%	$	0
J)		Design Appreciation Factor 0%	$	0
K)		Utility Relocation (Construction Cost)	$	226,000

L) **TOTAL RIGHT OF WAY ESTIMATE** **$7,812,000**

M) **TOTAL R/W ESTIMATE: Escalated** **$8,202,600**

N) **RIGHT OF WAY SUPPORT** **$1,975,000**

Support Cost Estimate Prepared By ____________________
Project Coordinator[1] Phone

Utility Estimate Prepared By ____________________
Utility Coordinator[2] Phone

R/W Acquisition Estimate Prepared By ____________________
Right of Way Estimator[3] Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

PROJECT

PSR-PDS COST ESTIMATE

EA: 04-0Q290 PID: 0418000068

EA: 04-0Q290

PID: 0418000068

District-County-Route: 04-ALA-880

PM: 17.2/18.6

Type of Estimate : PSR-PDS

Program Code :

Project Limits : I-880 ML: Winton Avenue Interchange to A Street Interchange

Project Description: Interchange Improvements

Scope : Add Auxiliary lanes on both SB and NB I-880 between Winton Ave and A Street

Alternative : Mainline Improvements - Aux Lanes

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost (2019)	Escalated Cost (2024)
TOTAL ROADWAY COST	$ 6,800,000	$ 8,200,000
TOTAL STRUCTURES COST	$ -	$ -
SUBTOTAL CONSTRUCTION COST	$ 6,800,000	$ 8,200,000
TOTAL RIGHT OF WAY COST	$ -	$ -
TOTAL CAPITAL OUTLAY COSTS	**$ 6,800,000**	**$ 8,200,000**
PA/ED SUPPORT	$ 700,000	$ 700,000
PS&E SUPPORT	$ 1,100,000	$ 1,100,000
RIGHT OF WAY SUPPORT	$ -	$ -
CONSTRUCTION SUPPORT	$ 1,100,000	$ 1,100,000
TOTAL SUPPORT COST	**$ 2,900,000**	**$ 2,900,000**
TOTAL PROJECT COST	**$ 9,700,000**	**$ 11,100,000**

If Project has been programmed enter Programmed Amount

	Month	/	Year
Date of Estimate (Month/Year)	6	/	2019
Estimated Construction Start (Month/Year)	6	/	2024
Number of Working Days =			130
Estimated Mid-Point of Construction (Month/Year)	10	/	2024
Estimated Construction End (Month/Year)	1	/	2025
Number of Plant Establishment Days			

Estimated Project Schedule

PID Approval	6/1/2019
PA/ED Approval	10/1/2021
PS&E	10/31/2023
RTL	12/30/2023
Begin Construction	6/8/2024

Reviewed by District O.E. or Cost Estimate Certifier

Office Engineer / Cost Estimate Certifier	**Date**	**Phone**
	xx/xx/xxxx	(xxx) xxx-xxxx

Approved by Project Manager

Project Manager	**Date**	**Phone**
	xx/xx/xxxx	(xxx) xxx-xxxx

I. ROADWAY ITEMS SUMMARY

	Section	Cost
1	**Earthwork**	$ 490,000
2	**Pavement Structural Section**	$ 762,500
3	**Drainage**	$ 187,900
4	**Specialty Items**	$ -
5	**Environmental**	$ 765,300
6	**Traffic Items**	$ 1,230,700
7	**Detours**	$ 50,000
8	**Minor Items**	$ 348,700
9	**Roadway Mobilization**	$ 383,600
10	**Supplemental Work**	$ 241,800
11	**State Furnished**	$ 575,300
12	**Time-Related Overhead**	$ 383,600
13	**Roadway Contingency**	$ 1,354,900

TOTAL ROADWAY ITEMS	**$ 6,774,300**

Estimate Prepared By :

Name and Title Date Phone

Estimate Reviewed By :

Name and Title Date Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

EA: 04-0Q290 PID: 0418000068

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	4,000	x	60.00	=	$	240,000
152320	Lead Compliance Plan	LS		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
16010X	Clearing & Grubbing	LS/ACRE		x		=	$	-
170101	Develop Water Supply	LS		x		=	$	-
19801X	Imported Borrow	CY/TON		x		=	$	-
210130	Duff	ACRE		x		=	$	-
XXXXXX	Site Prepration	LS	1	x	250,000	=	$	250,000

TOTAL EARTHWORK SECTION ITEMS $ 490,000

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement	CY		x		=	$	-
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
404092	Seal Pavement Joint	LF		x		=	$	-
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	2,100	x	110.00	=	$	231,000
390137	Rubberized Hot Mix Asphalt (Open Graded)	TON	2,100	x	150.00	=	$	315,000
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		=	$	-
260203	Class 2 Aggregate Base	CY	1,700	x	60.00	=	$	102,000
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY	1,600	x	30.00	=	$	48,000
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
397005	Tack Coat	TON		x		=	$	-
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover (Seal)	TON		x		=	$	-
731530	Minor Concrete (Textured Paving)	CY		x		=	$	-
731502	Minor Concrete (Miscellaneous Construction)	CY		x		=	$	-
39407X	Place Hot Mix Asphalt Dike (Type X)	LF		x		=	$	-
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
15312X	Remove Concrete	LF/CY/LS		x		=	$	-
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD		x		=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD	13,300	x	5.00	=	$	66,500
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS $ 762,500

EA: 04-0Q290 PID: 0418000068

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
15080X	Remove Culvert	EA/LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
155232	Sand Backfill	CY		x		=	$	-
15020X	Abandon Culvert	EA/LF		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
510501	Minor Concrete	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
5105XX	Minor Concrete (Type XX)	CY		x		=	$	-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF		x		=	$	-
6411XX	XX" Plastic Pipe	LF		x		=	$	-
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF		x		=	$	-
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF		x		=	$	-
68XXXX	XX" Plastic Pipe (Edge Drain)	LF		x		=	$	-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Th	LF		x		=	$	-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF		x		=	$	-
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF		x		=	$	-
7050XX	XX" Steel Flared End Section	EA		x		=	$	-
703233	Grated Line Drain	LF		x		=	$	-
72XXXX	Rock Slope Protection (Type and Method)	CY/TON		x		=	$	-
72901X	Rock Slope Protection Fabric (Class X)	SQYD		x		=	$	-
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
XXXXXX	Additional Drainage (15% of Section 1 and 2)	LS	1	x	187,875.00	=	$	187,875

TOTAL DRAINAGE ITEMS $ 187,900

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
080050	Progress Schedule (Critical Path Method)	LS		x		=	$	-
582001	Sound Wall (Masonry Block)	SQFT		x		=	$	-
510530	Minor Concrete (Wall)	CY		x		=	$	-
15325X	Remove Sound Wall	LF/LS		x		=	$	-
070030	Lead Compliance Plan	LS		x		=	$	-
141120	Treated Wood Waste	LB		x		=	$	-
153221	Remove Concrete Barrier	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF		x		=	$	-
150668	Remove Flared End Section	EA		x		=	$	-
8000XX	Chain Link Fence (Type XX)	LF		x		=	$	-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA		x		=	$	-
832001	Metal Beam Guard Railing	LF		x		=	$	-
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA		x		=	$	-
4906XX	CIDH Concrete Piling (Insert Diameter)	LF		x		=	$	-
839XXX	Crash Cushion (Insert Type)	EA		x		=	$	-
83XXXX	Concrete Barrier (Insert Type)	LF		x		=	$	-
520103	Bar Reinforced Steel (Retaining Wall)	LB		x		=	$	-
510060	Structural Concrete, Retaining Wall	CY		x		=	$	-
513553	Retaining Wall (Masonry Wall)	SQFT		x		=	$	-
511035	Architectural Treatment	SQFT		x		=	$	-
598001	Anti-Graffiti Coating	SQFT		x		=	$	-
203070	Rock Stain	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$	-
83954X	Transition Railing (Type X)	EA		x		=	$	-
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
839561	Rail Tensioning Assembly	EA		x		=	$	-
83958X	End Anchor Assembly (Type X)	EA		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

TOTAL SPECIALTY ITEMS $ -

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)		Cost
	Biological Mitigation	LS		x		=	$ -
130670	Temporary Reinforced Silt Fence	LF		x		=	$ -
141000	Temporary Fence (Type ESA)	LF		x		=	$ -
					Subtotal Environmental Mitigation		*$ -*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)		Cost
200001	Highway Planting	LS	1	x	50,000.00	=	$ 50,000
20XXXX	Irrigation System	LS		x		=	$ -
204099	Plant Establishment Work	LS		x		=	$ -
204101	Extend Plant Establishment Work	LS		x		=	$ -
20XXXX	Follow-up Landscape Project	LS		x		=	$ -
150685	Remove Irrigation Facility	LS		x		=	$ -
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$ -
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$ -
21011X	Imported Topsoil (X)	CY/TON		x		=	$ -
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	SQFT/SQYD		x		=	$ -
200122	Weed Germination	SQYD		x		=	$ -
208304	Water Meter	EA		x		=	$ -
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$ -
20890X	Extend X" Conduit (Use for Extension of Irrigation x-	LF		x		=	$ -
					Subtotal Landscape and Irrigation		*$ 50,000*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)		Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$ -
210350	Fiber Rolls	LF		x		=	$ -
210360	Compost Sock	LF		x		=	$ -
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$ -
21025X	Bonded Fiber Matrix	SQFT/ACRE		x		=	$ -
210300	Hydromulch	SQFT		x		=	$ -
210420	Straw	SQFT		x		=	$ -
210430	Hydroseed	SQFT		x		=	$ -
210600	Compost	SQFT		x		=	$ -
210630	Incorporate Materials	SQFT		x		=	$ -
					Subtotal Erosion Control		*$ -*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)		Cost
130300	Prepare SWPPP	LS		x		=	$ -
130200	Prepare WPCP	LS		x		=	$ -
130100	Job Site Management	LS	1	x	100,000.00	=	$ 100,000
130330	Storm Water Annual Report	EA		x		=	$ -
130310	Rain Event Action Plan (REAP)	EA		x		=	$ -
130320	Storm Water Sampling and Analysis Day	EA		x		=	$ -
130301A	On-Site Stormwater Treatment BMP	ACRE	1	x	200,000.00	=	$ 200,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	1	x	250,000.00	=	$ 250,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$ -
130640	Temporary Fiber Roll	LF		x		=	$ -
130900	Temporary Concrete Washout	LS		x		=	$ -
130710	Temporary Construction Entrance	EA		x		=	$ -
130610	Temporary Check Dam	LF		x		=	$ -
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	122,000.00	=	$ 122,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$ -
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	43,212.00	=	$ 43,212
					Subtotal NPDES		*$ 715,212*

TOTAL ENVIRONMENTAL	**$ 765,300**

Supplemental Work for NPDES

Item code		Unit	Quantity		Unit Price ($)		Cost
066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$ -
066596	Additional Water Pollution Control**	LS		x		=	$ -
066597	Storm Water Sampling and Analysis***	LS		x		=	$ -
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$ 50,000
					Subtotal Supplemental Work for NDPS		*$ 50,000*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

EA: 04-0Q290 PID: 0418000068

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS		x		=	$	-
860201	Signal and Lighting	LS		x		=	$	-
860990	Closed Circuit Television System	LS		x		=	$	-
86110X	Ramp Metering System (Location X)	LS		x		=	$	-
86070X	Interconnection Conduit and Cable	LF/LS		x		=	$	-
5602XX	Furnish Sign Structure (Type X)	LB		x		=	$	-
5602XX	Install Sign Structure (Type X)	LB		x		=	$	-
498040	XX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
8609XX	Traffic Monitoring Station (Type X)	LS		x		=	$	-
15075X	Remove Sign Structure	EA/LS		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
860090	Maintain Existing Traffic Management System Elements Duri	LS		x		=	$	-
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Misc electrical	Unit	1	x	150,000.00	=	$	150,000

Subtotal Traffic Electrical $ *150,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA		x		=	$	-
566012	Roadside Sign - Two Post	EA		x		=	$	-
5602XX	Furnish Sign	SQFT		x		=	$	-
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF		x		=	$	-
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF		x		=	$	-
150712	Remove Painted Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA		x		=	$	-
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night Visibility)	LF	10,500	x	5.00	=	$	52,500
846012	Thermoplastic Crosswalk and Pavement Marking (Enhanced Wet Night Visibility)	SQFT		x		=	$	-
120090	Construction Area Signs	LS	1	x	50,000.00	=	$	50,000
84XXXX	Permanent Pavement Delineation	LS		x		=	$	-

Subtotal Traffic Signing and Striping $ *102,500*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
12865X	Portable Changeable Message Signs (4 signs at $360 EA)	DAY	130	x	$ 1,440	=	$	187,200
XXXXXX	Traffic Management Plan	LS	1	x	$ 200,000	=	$	200,000

Subtotal Traffic Management Plan $ *387,200*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA		x		=	$	-
12016X	Channelizer (Type X)	EA		x		=	$	-
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA		x		=	$	-
120100	Traffic Control System	LS	1	x	91,000.00	=	$	91,000
129110	Temporary Crash Cushion	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
XXXXXX	Traffic Handling	Unit	1	x	500,000.00	=	$	500,000

Subtotal Stage Construction and Traffic Handling $ *591,000*

TOTAL TRAFFIC ITEMS $ 1,230,700

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SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)		Cost
190101	Roadway Excavation	CY		x		=	$ -
19801X	Imported Borrow	CY/TON		x		=	$ -
390132	Hot Mix Asphalt (Type A)	TON		x		=	$ -
26020X	Class 2 Aggregate Base	TON/CY		x		=	$ -
250401	Class 4 Aggregate Subbase	CY		x		=	$ -
130620	Temporary Drainage Inlet Protection	EA		x		=	$ -
129000	Temporary Railing (Type K)	LF		x		=	$ -
128601	Temporary Signal System	LS		x		=	$ -
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$ -
80010X	Temporary Fence (Type X)	LF		x		=	$ -
XXXXXX	Detour Items	LS	1	x	50,000	=	$ 50,000

* Includes constructing, maintaining, and removal

TOTAL DETOURS $ 50,000

SUBTOTAL SECTIONS 1 through 7 $ 3,486,400

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items						
ADA Items				0.0%		$ -
8B - Bike Path Items						
Bike Path Items				0.0%		$ -
8C - Other Minor Items						
Other Minor Items				10.0%		$ 348,640
Total of Section 1-7	$	3,486,400	x	10.0%	=	$ 348,640

TOTAL MINOR ITEMS $ 348,700

SECTIONS 9: MOBILIZATION

Item code							
999990	Total Section 1-8	$	3,835,100	x	10%	=	$ 383,510

TOTAL MOBILIZATION $ 383,600

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)		Cost
066670	Payment Adjustments For Price Index Fluctuations	LS		x		=	$ -
066094	Value Analysis	LS		x		=	$ -
066070	Maintain Traffic	LS		x		=	$ -
066919	Dispute Resolution Board	LS		x		=	$ -
066921	Dispute Resolution Advisor	LS		x		=	$ -
066015	Federal Trainee Program	LS		x		=	$ -
066610	Partnering	LS		x		=	$ -
066204	Remove Rock and Debris	LS		x		=	$ -
066222	Locate Existing Crossover	LS		x		=	$ -
XXXXXX	Some Item	Unit		x		=	$ -

*Cost of **NPDES** Supplemental Work specified in Section 5D* = $ 50,000

Total Section 1-8	$	3,835,100	5%	=	$ 191,755

TOTAL SUPPLEMENTAL WORK $ 241,800

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS		x		=	$0
066063	Traffic Management Plan - Public Information	LS		x		=	$0
066901	Water Expenses	LS		x		=	$0
8609XX	Traffic Monitoring Station (X)	LS		x		=	$0
066841	Traffic Controller Assembly	LS		x		=	$0
066840	Traffic Signal Controller Assembly	LS		x		=	$0
066062	COZEEP Contract	LS		x		=	$0
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS		x		=	$0
066916	Annual Construction General Permit Fee	LS		x		=	$0
XXXXXX	Some Item	Unit		x		=	$0
	Total Section 1-8	$	3,835,100		15%	= $	575,265

TOTAL STATE FURNISHED	**$575,300**

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization	$3,835,100	(used to calculate TRO)
Total Construction Cost (excluding TRO and Contingency)	$5,035,800	(used to check if project is greater than $5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **10%**

Item code		Unit	Quantity		Unit Price ($)		Cost
090100	Time-Related Overhead	WD	130	X	$2,951	=	$383,600

TOTAL TIME-RELATED OVERHEAD	**$383,600**

Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)
Total recommended percentages includes any quantified risk based contingency from the risk register.

Total Section 1-12	$	5,419,400	x	**25%**	=	$1,354,850

TOTAL CONTINGENCY	**$1,354,900**

EA: 04-0Q290 PID: 0418000068

II. STRUCTURE ITEMS

	Bridge 1		Bridge 2		
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Bridge Name	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Bridge Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

	Building 1				
DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Building Name	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total Building Length (Feet)	0 LF		0 LF		0 LF
Total Area (Square Feet)	0 SQFT		0 SQFT		0 SQFT
Structure Depth (Feet)	0 LF		0 LF		0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx		xxxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0		$0		$0
COST OF EACH	**$0**		**$0**		**$0**

TOTAL COST OF BRIDGES	**$0**
TOTAL COST OF BUILDINGS	**$0**

Structures Mobilization Percentage 10% **$0**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

Structures Contingency Percentage 10% **$0**

TOTAL COST OF STRUCTURES	**$0**

Estimate Prepared By: ______________________________ ______________________________

XXXXXXXXXXXXXXXX ------ Division of Structures Date

EA: 04-0Q290 PID: 0418000068

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way data sheet.

A)	A1) Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees		$	
	A2) SB-1210		$	0
B)	Acquisition of Offsite Mitigation		$	0
C)	C1) Utility Relocation (Local Agency Share)		$	0
	C2) Potholing (Design Phase)		$	0
D)	Railroad Acquisition		$	0
E)	Clearance / Demolition		$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)		$	0
G)	Title and Escrow		$	
H)	Environmental Review		$	0
I)	Condemnation Settlements	0%	$	0
J)	Design Appreciation Factor	0%	$	0
K)	Utility Relocation (Construction Cost)		$	0

L)	**TOTAL RIGHT OF WAY ESTIMATE**	**$0**
M)	**TOTAL R/W ESTIMATE: Escalated**	**$0**
N)	**RIGHT OF WAY SUPPORT**	**$0**

Support Cost Estimate Prepared By ______________________
Project Coordinator[1] Phone

Utility Estimate Prepared By ______________________
Utility Coordinator[2] Phone

R/W Acquisition Estimate Prepared By ______________________
Right of Way Estimator[3] Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

Attachment E

Preliminary Environmental Analysis Report (PEAR)

PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

1. Project Information

District 4	County ALA	Route 880	PM PM 17.1/18.5	EA 04-0Q290
Project Title: I-880 Interchange Improvements (Winton Avenue/A Street) Project				
Project Manager Val P. Ignacio			Phone # (510) 286-5086	
Project Engineer Prasanna Muthireddy, Kimley Horn			Phone # (925) 398-4855	
Environmental Office Chief/Manager Stefan Galvez, Environmental Office Chief			Phone # (510) 867-6785	
PEAR Preparer Brianna Bohonok, Circlepoint			Phone # (510) 285-6733	

2. Project Description

Alameda County Transportation Commission (Alameda CTC) proposes to provide interchange improvements at the Winton Avenue and A Street interchanges in the City of Hayward along the Interstate 880 (I-880) corridor. The I-880 Interchange Improvements (Winton Avenue and A Street) Project (project) would include:

- Reconfiguring the I-880 interchanges at Winton Avenue and A Street to enhance access to the surrounding residential, retail, and commercial land uses
- Providing comfortable pedestrian and bicycle access at both interchanges
- Providing northbound and southbound auxiliary lanes along the main line between the A Street interchange and the Winton Avenue interchange
- Modifying signals and reconfiguring intersections to improve traffic flow, reduce congestion, and make intersections accessible and safer for pedestrians and cyclists

Key Project Features

Interchange and Local Road Improvements

A range of ramp and local street improvements at the Winton Avenue and A Street interchanges are being considered to improve traffic operations and bicycle and pedestrian access and safety on the local street network and within the project area.

Project improvements would include new intersection control devices at the ramp intersections and local streets. At the Winton Avenue interchange, a range of alternatives are being considered to improve traffic operations and address circulation needs. The range of alternative improvements include increasing the number of turn lanes, adding a direct access to Southland Mall and conversions to one-way streets. Intersection control at the Winton Avenue ramps would eliminate the free flow of traffic from the mainline onto local streets. At the A Street interchange, the range of alternative improvements include changes to intersection control at the ramps, addition of sidewalks along A Street under the existing bridge, addition of a raised medians on A Street, and widening of A Street. Depending on the alternative selected, on and off ramps would be modified to accommodate the project improvements.

Structures

The existing bridge structure at Winton Avenue would remain in place. The bridge at Winton Ave would require sidewalk reconstruction and railing modifications. The bridge at A Street will be modified to allow for bicycle and pedestrian access in the two outside bays of the bridge. These outside bays of the bridge are currently unused and are filled with dirt embankment. Depending on the alternative selected at A Street, the existing I-880 bridge structure may be removed and reconstructed to allow for improvement of interchange traffic operations.

Other Improvements

Other improvements would include the addition of complete streets features on Winton Avenue and A Street. These improvements would include bike lanes and sidewalks or shared multi-use paths in both directions of travel (east and west). Additionally, the existing outside shoulder along the main line between A Street and Winton Avenue is proposed to be restriped to provide auxiliary lanes, one in each direction of travel.

An existing sound wall along Winton Avenue, on the eastern side of the interchange, would be reviewed for the feasibility of extending to provide additional noise attenuation. The sound wall runs along the northbound off ramp of I-880 and ends just after the off ramp merges with Winton Avenue.

Purpose and Need

Purpose

The purpose of the project is to:

- Improve merge/weave operations along the segment of I-880 between Winton Avenue and A Street interchanges.
- Improve traffic operations, safety and accessibility to the Southland Mall and other retail and commercial land uses at Winton Avenue.
- Improve traffic operations and safety at A Street interchange.
- Prioritize multimodal transportation infrastructure at the Winton Avenue and A Street interchanges, including Complete Streets features such as bike lanes and pedestrian friendly design to enhance mobility and safety.

Need

<u>Capacity and Transportation Demand</u>

The I-880/Winton Avenue interchange currently operates at or over capacity. The following are several key existing issues identified at the I-880/Winton Avenue Interchange:

- The interchange has a four-quadrant cloverleaf configuration with ramps running freely onto Winton Avenue without intersection control such as a traffic light or roundabout, making it inadequate for its multi modal access and weaving issues.
- The existing Winton Ave and A Street interchanges are less than 1 mile apart with no auxiliary lanes between the interchanges in either direction. This results in merge-weave issues between the interchanges on the mainline in both northbound and southbound directions.
- The current interchange does not provide comfortable environment for bicyclists and pedestrians because of the free-running ramps at uncontrolled intersections from the freeway onto Winton Avenue. There is a lack of desirable bicycle and pedestrian facilities with narrow sidewalks, no shoulders and with bicycles having to share the traffic lanes with vehicular traffic.
- The queue of vehicles heading to Southland Mall via westbound Winton Avenue at the Southland Drive left-turn lane creates congestion and queues along Winton Avenue, Southland Drive, and the I-880 southbound off-ramp.

Growing congestion at the I-880/Winton Avenue interchange has constrained accessibility to the Southland Mall, forcing vehicles to divert to the surrounding street network. Diversion of Winton Avenue traffic onto the local street network may result in the following quality of life impacts to the local community:

- Increased delay experienced by local travelers and commuters
- Potential economic loss for local businesses, trucking, and delivery companies as a result of increased recurring congestion
- Reduced air quality as a result of traffic congestion

Similarly, the I-880/A Street interchange experiences congestion and several other key traffic operational issues:

- Congestion during peak periods affects both directions of I-880, generating additional trips on the local roadway network from vehicles diverting around the freeway traffic.
- Vehicle queues in left-turn lanes along A Street under the mainline cause operational and safety issues.
- The existing undercrossing lacks bicycle and pedestrian infrastructure, resulting in inadequate access for bicyclists and pedestrians.

Interchange Deficiencies

The I-880/Winton Avenue interchange lacks signalization and the I-880/A Street interchange lacks signal optimization at the ramp intersections. Both interchanges also lack optimized intersection configurations to accommodate safe multimodal access and truck turning maneuvers.

Accessibility to Local Destinations

The I-880/Winton Avenue and A Street Interchanges both provide access to important destinations adjacent to the I-880 freeway including Hayward Executive Airport and the Southland Mall. Southland Mall is a highly frequented shopping mall bordered by I-880 to the east and Winton Avenue to the north.

Under the current configuration, vehicles traveling northbound and southbound on I-880 towards Southland Mall exit at Winton Avenue and are impeded by high levels of congestion.

The current I-880/Winton Avenue and I-880/A Street interchanges create long traffic queues of vehicles waiting to enter or exit the freeway during peak periods. Congestion and delay in the study area adversely affects connectivity to the Southland Mall and local residential streets.

Modal Interrelationships and System Linkages

There are currently no bike lanes along either Winton Avenue or A Street where the roadways cross I-880. The Winton Avenue interchange includes high-speed free-flowing ramps (no stop sign or traffic signal) that makes it difficult for pedestrians and bicyclists to cross at these ramps. Cyclists wishing to cross I-880 must share the road with vehicles traveling at significantly higher speeds. The sidewalks lining Winton Avenue and A Street are narrow, and do not provide a buffer between pedestrians and vehicles traveling along these roads. There is a need for Complete Streets features such as bike lanes and pedestrian friendly paths to enhance mobility and safety.

The I-880/Winton Avenue and I-880/A Street interchanges are identified by the City as corridors that need enhanced bicycle and pedestrian improvements to improve the multi-modal connectivity between the east and west sides of I-880. The City is in the process of updating their bicycle/pedestrian master plans. The updated plan will likely include plans to connect the proposed Winton Avenue and A Street Complete Street Features into the City's network of bicycle lanes.

Approval of this document represents approval of the purpose and need and of the range of alternatives to be studied. Approval of this document does not signify approval of a conceptual alternative.

Description of work

This section provides a discussion of build alternatives under consideration and the No Build Alternative.

Alternatives

This Preliminary Environmental Analysis Report (PEAR) considers a No-Build Alternative along with two build alternatives at the I-880/Winton Avenue interchange and three build alternatives for the I-880/A Street interchange. The selected build alternatives at each interchange along with an alternative to provide one auxiliary lane in each direction on I-880 would collectively be considered a single Build Alternative for evaluation in the environmental documentation. Improvements at the two interchanges in addition to mainline improvements along I-880 constitute the "project". However, should it be determined through further study that the I-880/Winton Avenue interchange improvements, the I-880/A Street interchange improvements, or the auxiliary lanes, have independent utility, the interchanges or auxiliary lanes may be separated into independent, standalone projects during the PA/ED phase.

No Build Alternative

Under the No-Build Alternative, the existing transportation facilities within the project area would remain unchanged, except for planned and programmed improvements to convert the northbound and southbound high occupancy vehicle (HOV) lanes to express lanes. No other transportation projects are planned within the project limits.

Build Alternatives

Although the range of build alternatives (ALTs) outlined below satisfy the purpose and need, the individual ALTs would not individually meet all elements of the project's purpose and need and are subject to further study during the PA/ED phase.

No approval, either implied or expressly granted, has been tendered regarding these build alternatives. As noted in the risk registry, there is considerable risk within this range of build alternatives. These risks will be further evaluated and resolved in the PA/ED phase. Plans and typical sections for each build alternative are provided in **Attachments B and C** of the PSR-PDS, respectively.

<u>Mainline Improvements: Auxiliary Lanes</u>
The existing outside shoulder of I-880 along the main line between A Street and Winton Avenue would be reconstructed and restriped to provide auxiliary lanes, one in each direction of travel. This would not require widening the mainline or right-of-way acquisitions.

<u>I-880/Winton Avenue Interchange</u>

Alternative W1 – Direct Access to Southland Mall
ALT W1 would include converting the existing I-880/Winton Avenue intersection from a clover leaf to a partial clover leaf, improvements to the interchange and local roads, and the addition of bicycle and pedestrian facilities. ALT W1 would include the following improvements:

- Demolish the existing southbound off ramp and northbound off ramp
- Provide a connection to La Playa Drive from Winton Avenue
    - Convert La Playa Drive to a public street
    - Improvements to La Playa Drive to meet Caltrans/City road standards
- Implement two traffic signals at the I-880/ Winton Avenue interchange, one on the western side and one on the eastern side
- Widen Winton Avenue between Southland Drive and the I-880 interchange to allow for buffered bike lanes in both directions; this would require a small right-of-way acquisition on the south side of Winton Avenue

- Construct two Class IV Bikeways along the north and south side of Winton Avenue, between Southland Drive and Santa Clara Street
- Extension of the existing sound wall (the feasibility of this will be evaluated during PA/ED)

Alternative W2 – Triple Left at Southland Drive
ALT W2 would include converting the existing I-880/Winton Avenue intersection from a clover leaf to a partial clover leaf, improvements to the interchange and local roads, and the addition of bicycle and pedestrian facilities. ALT W2 would include the following improvements:

- Demolish the existing southbound off ramp and northbound off ramp
- Widen Winton Avenue between Southland Drive and the I-880 interchange to allow for three left turn lanes at Southland Drive in the westbound direction and Class IV Bikeways in both directions. This would require right-of-way acquisition on the south side of Winton Avenue
- Implement two traffic signals at the I-880/ Winton Avenue interchange and one traffic signal at the Winton Avenue/Southland Drive intersection
- Construct two Class IV Bikeways along the north and south side of Winton Avenue, between Southland Drive and Santa Clara Street
- Extension of the existing sound wall (the feasibility of this will be evaluated during PA/ED)

<u>I-880/A Street Interchange</u>

Alternative A1 - Roundabout
ALT A1 would retain the existing I-880 bridge structure over A Street and would modify the interchange configuration from an uncontrolled tight diamond to a tight diamond with roundabouts. This alternative would maintain existing access to all local streets near the interchange. ALT A1 would include the following improvements:

- Allow for construction of two Class I shared pedestrian and bicycle paths along unused areas of right-of-way under the existing A Street underpass between S Garden Avenue and Happyland Avenue;
- Construct roundabouts at the ramp intersections and widen A Street to reconfigure; this will require right-of way acquisition including demolition of two existing commercial buildings
- Reconfigure A Street approaching S Garden Avenue to Happyland Avenue, S Garden Avenue, and Arbor Avenue to allow for implementation of roundabouts on the western and eastern sides of the interchange

Alternative A2 – Tight Urban Diamond Interchange
ALT A2 would retain the existing I-880/A Street tight diamond configuration. The I-880 bridge over A Street would be demolished and reconstructed to allow for A Street to be widened underneath. ALT A2 would include the following improvements:

- Widen A Street under the I-880 overpass to allow for dedicated left turn lanes in each direction, separated Class II bike lanes, and wider sidewalks
- Add Class II Bike lanes on A Street to the east and west of the interchange, between Garden Avenue and Happyland Avenue; this would require right-of-way acquisition

- Modify the intersection of S Garden Avenue and A Street to a right turn in/right turn out only intersection
- Improve pedestrian access at the intersection of Happyland Avenue and A Street
- Revise U-Turn restrictions at the intersection of Victory Avenue and A Street

Alternative A3
ALT A3 would require full reconstruction of the interchange and construction on the main line to convert from a tight diamond to a single-point urban interchange. A new bridge over A Street would be constructed. ALT A3 would include the following improvements:

- Reconfigure A Street from Victory Avenue to Fuller Avenue, including the addition of a signalized intersection under the I-880 bridge
- Widen A Street from Garden Avenue to Happyland Avenue to allow for Class II bike lanes; this would require right-of-way acquisition and the demolition of one commercial building
- Modify the intersection of S Garden Avenue and A Street to a right turn in/right turn out only intersection
- Improve pedestrian access at the intersection of Happyland Avenue and A Street
- Revise U-Turn restrictions at the intersection of Victory Avenue and A Street
- Remove access to Arbor Avenue from A Street; create cul-de-sac at the new terminus of Arbor Avenue

3. *Anticipated Environmental Approval*

Check the anticipated environmental determination or document for the proposed project in the table below.

CEQA		NEPA	
Environmental Determination			
Statutory Exemption	☐		
Categorical Exemption	☐	Categorical Exclusion	☐
Environmental Document			
Initial Study (IS) or Focused IS with proposed Negative Declaration (ND) or Mitigated ND	☒	Routine Environmental Assessment with proposed Finding of No Significant Impact	☒
		Complex Environmental Assessment with proposed Finding of No Significant Impact	☐
Environmental Impact Report	☐	Environmental Impact Statement	☐

CEQA Lead Agency (if determined):	Caltrans
Estimated length of time (months) to obtain environmental approval:	18-24 months
Estimated person hours to complete identified tasks:	1,927

4. Special Environmental Considerations

The build alternatives have the potential to impact sensitive environmental resources, as described below.

Due to the urban and commercial character of the project area, there is a low potential for the project improvements to result in significant impacts to visual quality. Other potential effects of the build alternatives are anticipated to include construction-period increases in traffic (traffic detours and roadway closures), noise, and pollutant emissions from equipment. Additionally, shallow soils within 30 feet of the edge of pavement in highway corridors built before the 1980s have the potential to be contaminated with aerially deposited lead from historical car emissions. Therefore, construction could encounter contaminated soils.

The California Native Diversity Database (CNDDB, 2019) was utilized to determine what special-status species could occur in the project area. The project area contains very little habitat for special-status plant species due to the high degree of disturbance associated with a highly urban area, nor is there suitable habitat for special status wildlife species in such a heavily trafficked area.

Effects to potential undocumented cultural resources, such as subsurface Native American, and archaeological resources; could occur, if such resources are present. A preliminary screening analysis indicates much of the project site has a high potential to contain buried prehistoric archeological resources. While no known cultural resources are present in the project area, there could be undocumented Native American and archaeological resources encountered during construction.

Based on a preliminary screening of historic records and field surveys, seven historic structures potentially eligible for listing in the National Register of Historic Places (NRHP) are located near the project site. For built resources identified in the Area of Potential Effect (APE) the documentation would include an evaluation for the resource's eligibility for the NRHP and/or California Register of Historic Places (CRHR). Although the majority of the built historic resources have previously been found not to be eligible for listing in the NRHP or the CRHR, three of the identified resources are now subject to reevaluation to determine if they are historic resources protected under Section 106. The anticipated consultation and certification processes are explained in more detail below.

- Section 106 of the National Historic Preservation Act (NHPA): the build alternatives would require that potential effects to cultural resources be assessed under Section 106. This would involve consultation with Native Americans and investigations (literature and field work) to determine if any NRHP eligible resources are present and could be adversely affected. If NRHP eligible built resources are present, a Section 4(f) evaluation may be required.
- Section 4(f) of the Department of Transportation Act (49 U.S.C 303): There are several parks and recreational facilities that occur within 0.5-mile of the project footprint. The environmental document will include a discussion of Resources Evaluated to the Requirements of Section 4(f), which will include properties for which it is has been determined that Section 4(f) does not apply and properties for which Section 4(f) does apply but there is no use.

<u>I-880/Winton Avenue Interchange</u>

The I-880/Winton Avenue Interchange is located in a highly urbanized area surrounded by commercial and residential land uses. The build alternatives at the I-880/Winton Avenue interchange would not result in any displacement of residences or businesses. Biological resources in the project area are expected to be limited to mature native and non-native trees and two small potential jurisdictional wetland areas that have developed due to blocked drainage ditches. Both of these small areas are located on the east side of the northbound Winton Avenue off-ramp.

I-880/A Street Interchange and Auxiliary Lanes

The I-880/A Street interchange is located in a highly urbanized area surrounded by commercial and residential land uses. ALT A1 and ALT A3 at the I-880/A Street interchange would require acquisition and demolition of commercial businesses. This is described in more detail below. Sulfur Creek is the main aquatic feature in the project area and jurisdictional waters are expected to be limited to this waterway.

5. Anticipated Environmental Commitments

This PEAR considers the proposed improvements to the I-880/Winton Avenue and I-880/A Street interchanges as a single project. However, should it be determined, through further study, that the I-880/Winton Avenue Interchange and the I-880/A Street Interchange improvements have independent utility, the project may be separated into independent, standalone projects during the PA/ED phase. Section 8, Technical Summaries, summarizes potential environmental affects by interchange, in the event that the improvements at either interchange can move forward independently. Where there are no differences in the existing environmental considerations and technical review required for a resource topic (i.e. geological risks), the Technical Summaries discuss the requirements for the project, inclusive of both interchanges.

Impacts to environmentally sensitive resources could occur as a result of the project; however, it is anticipated that, based on existing conditions and proposed build alternatives, impacts could be mitigated to a less-than-significant level. In this case, the anticipated environmental document for the project would be a Mitigated Negative Declaration/Finding of No Significant Impact (MND/FONSI). It is anticipated that the appropriate level of environmental documentation to be prepared during the PA/ED phase of project development would be an Initial Study/Environmental Assessment (IS/EA) to satisfy both California Environmental Quality Act (CEQA) and NEPA requirements.

No individual Section 4(f) determination or Section 7 consultation is anticipated. The project would not result in significant visual resource impacts as the proposed structures (i.e., new elevated ramps and new overcrossing) would replace existing structures of similar mass and height. Lastly, there does not appear to be numerous cumulative issues or high mitigation costs associated with the project, as the proposed improvements would not likely result in significant unavoidable impacts. For these reasons, it is anticipated that Caltrans District 4 Office of Environmental Analysis will make the class of build determination that the NEPA environmental document type for this project would be a routine EA.

It is expected that the environmental technical reports and IS/EA would take approximately 18 to 24 months to prepare and process for final adoption/approval of the MND/FONSI, including time for review by the environmental division staff within Caltrans. This timeline does not include permitting by federal or state resource agencies, if required.

Both the I-880/Winton Avenue and I-880/A Street interchanges are identified improvements in the Alameda County Transportation Commission (Alameda CTC) Measure BB Transportation Expenditure Plan (TEP).

6. Permits and Approvals

It is anticipated that the following regulatory permits/approvals would be required for project components that propose alterations to water crossings or impacts to adjacent natural habitat. As project improvements would include areas outside of Caltrans' right-of-way, local ordinances of the City of Hayward would apply in those areas.

- San Francisco Bay RWQCB 401 Water Quality Certification permit
- U. S. Army Corps of Engineers (USACE) Section 404 permit
- Protected tree pruning or removal permit. City of Hayward Tree Preservation Ordinance Section 10-15.20.

Water Quality: All build alternatives will be required to comply with Caltrans' National Pollutant Discharge Elimination System (NPDES) permit during construction. The NPDES permit includes measures that would be taken by the project to reduce or avoid runoff that would affect local storm water quality. Preparation and adoption of a Storm Water Pollution Prevention Program (SWPPP) would be required. Additionally, the project would be required to file a Notice of Intent (NOI) to be covered under the State NPDES General Construction Permit for discharges of storm water association with construction activity.

Cultural Resources:

All build alternatives have the potential to impact undocumented cultural resources. ALTs W1 through A3 would require preparation of an APE map, Historic Property Survey Report (HPSR), Archeological Survey Report (ASR), and a Historic Resource Evaluation Report (HRER). These cultural resources studies will identify and evaluate archeological and historical resources within the APE. Consultation with the State Historic Preservation Office (SHPO) is needed in accordance with Section 106 of the NHPA and the programmatic agreement (PA). In addition, if NRHP eligible built resources are impacted by the build alternatives, a Section 4(f) evaluation will be required.

Biological Resources:

A Natural Environmental Study – Minimal Impacts (NES-MI) would be required to comply with the Federal Highway Administration requirements to satisfy both NEPA and CEQA. The NES-MI would evaluate impacts to biological resources habitats, as well as recommend avoidance and minimization measures (AMMs) and Best Management Practices (BMPs) to assess these sensitive resources. Further, according to the California Native Diversity Database (CNDDB) records search conducted for the project, the project area contains very little habitat for special-status plant species or special-status wildlife species due to the high degree of disturbance associated with a highly urban area. Therefore, no federally listed species or state species of special concern are expected to occur near the project.

There are two aquatic features in the project area that could potentially be delineated as wetlands designated as waters of the U.S. Prior to the preparation of the NES-MI, an aquatic resources delineation will be necessary in order to determine if these aquatic features are jurisdictional waters of the U.S. and State. If these aquatic features are determined to be protected wetlands and if impacts to wetlands or waters of the U.S. are identified, coordination with the US Army Corps of Engineers for a Clean Water Act (CWA) Section 401 Certification and CWA Section 404 Nationwide Permit would be required. There are also multiple, mature native and non-native landscape trees in the project area, for which compliance with the City of Hayward tree ordinance would be required. The project would congruently need to acquire a tree removal permit from the City of Hayward.

7. Level of Effort: Risks and Assumptions

Risk management is the systematic process of identifying and planning for issues that, were they to occur, could have a positive or negative effect on the project objectives, including the timeline and/or budget for project implementation. Initial phases of project development include developing and regularly reviewing a risk management matrix prepared for the project. This PEAR is designed to provide an evaluation of the level of technical study and environmental documentation that would be required for the project.

The discussion of PEAR technical summaries below is based on windshield surveys of the environmental study area, existing public data, and technical reports prepared for other projects in the region. The summaries evaluate the potential environmental risks associated with the build alternatives. Based on this information, the process of attaining full project approval would take approximately 18 to 24 months to complete.

Attachment C of this PEAR provides a sample schedule of the environmental review process for the project.

The following assumptions were made when evaluating the project:

- The community would be generally supportive of the need for the project.
- Hazardous materials could be encountered in the soils along this freeway corridor.
- Undocumented Native American and cultural resources could potentially be encountered during construction.
- Undocumented paleontological resources could potentially be encountered during construction.
- Section 4(f) resources may be present in the vicinity of the environmental study area. There may be parks, recreational facilities, and cultural resources in the environmental study area subject to Section 4(f) evaluation. However, it is anticipated that the build alternatives would not result in a Section 4(f) use.

In addition to the risks identified in **Attachment G** of the PSR-PDS, the appropriate level of environmental document required to clear the project under CEQA has been identified as a project risk with the potential to negatively impact at least one project objective: scope, cost, or schedule. As a result of new Vehicle Miles Traveled (VMT) guidelines, the project may no longer qualify for an IS under CEQA and may instead require preparation of an Environmental Impact Report (EIR). The appropriate level of environmental document for the project will be determined during the PA/ED phase, in consultation with Caltrans local assistance team.

8. PEAR Technical Summaries

8.1 Land Use:

I-880/Winton Avenue Interchange
The area surrounding the I-880/Winton Avenue interchange is built-up urban land. Southland Mall lies adjacent to the interchange. Hayward Executive Airport is located less than 0.5 miles to the west. In the vicinity of Winton Avenue there is single family, medium density, and high density residential zones interspersed with commercial and retail land use zones. None of the build alternatives for the I-880/Winton Avenue interchange would result in residential or business displacements.

I-880/A Street Interchange
The I-880/A Street interchange is located north of the I-880/Winton Avenue interchange. It lies directly on the border of the City of Hayward and San Leandro. The Hayward Executive Airport is

located 0.5 miles west of the I-880/A Street interchange. In the vicinity of A Street there are residential zones interspersed with commercial and retail land use zones. The immediate surrounding parcels are zoned for commercial use.[1] None of the build alternatives for the A Street interchange would result in residential displacements for the A Street interchange. However, ALT A1 and A3 would require the acquisition and demolition of commercial uses to allow for the expansion of right-of-way. ALT A1 would require right-of-way take that would involve the demolition of a commercial building on the corner of South Garden Avenue and A Street. ALT A3 would require the demolition of one commercial building along the north side of A Street between Garden Avenue and I-880.

All Build Alternatives

All build alternatives would require preparation of a Community Impact Assessment (CIA) to document the project's consistency with local and regional planning documents, and to document any temporary or permanent land acquisitions. There is no difference in the technical reporting requirements between the build alternatives.

Section 4(f) of the Department of Transportation Act of 1966 is a policy that analyzes the potential effects of the project on parks, recreational facilities, wildlife and waterfowl refuges, and cultural resources within approximately 0.5 miles of all project alternatives. There are several potential Section 4(f) resources within 0.5 miles of the I-880/Winton Avenue and I-880/A Street interchanges. Potential park and recreation resources protected under Section 4(f) are listed in the Table 1 below.

Table 1. Potential Park and Recreation Resources

I-880/A Street Interchange	
Cannery Park	East of the project footprint
Centennial Park	East of the project footprint
I-880/Winton Avenue Interchange	
Birchfield Park	South of the project footprint
Longwood Park	West of the project footprint
Park Elementary School	Southeast of the project footprint

Source: Circlepoint, 2019

Three parks are located within the Winton Avenue 0.5-mile radius: Birchfield Park to the southeast, Centennial Park to the northeast, and Longwood Park to the northwest (Longwood Park also lies within a 0.5-mile radius of the I-880/A Street Interchange). There is a school playground associated with Park Elementary School past Birchfield Park to the southeast, outside of the project footprint. The playing field associated with Royal Sunset High School and Cannery Park fall within the boundaries of the I-880/A Street interchange. Additionally, Sulfur Creek Wildlife Education and Rehabilitation Center is located 2.5 miles east of the project site. Given the distance and intervening development, no direct or indirect effects to this refuge and would occur from the build alternatives.

[1] City of Hayward Zoning Map. Accessed December 27, 2018 https://www.hayward-ca.gov/sites/default/files/documents/Zoning%2042x70%20161118.pdf

The CIA will include a discussion of Resources Evaluated to the Requirements of Section 4(f). It is anticipated that a “no use” determination will be made for all the build alternatives (this includes properties for which it has been determined that Section 4(f) does not apply and properties for which Section 4(f) does apply, but there is no use).

8.2 Growth:

The build alternatives include freeway operational improvements that would relieve freeway and interchange congestion, provide additional lane capacity for potential future freeway widening, improve truck turning maneuvers, and enhance safety. These improvements would not increase the capacity of I-880 itself, create new access to local communities, or induce growth. As such, there would be no difference in the level of growth analysis required between the two interchanges. This will be documented in the CIA, and no further analysis is required.[2] There is no difference in the technical reporting requirements between the build alternatives.

8.3 Farmlands/Timberlands:

According to the California Farmland Mapping and Monitoring Program (FMMP), there are no farmlands or timberlands in the areas surrounding the I-880/Winton Avenue or the I-880/A Street interchanges.[3] There is no difference in the technical reporting requirements between the build alternatives. No further analysis is required.

8.4 Community Impacts:

I-880/Winton Avenue Interchange

As noted in **Section 8.1, Land Use**, ALT W1 and ALT W2 would occur mostly within the currently designated Caltrans ROW. No residential or commercial displacements would occur.

I-880/A Street Interchange

As noted in **Section 8.1, Land Use**, ALT A1, A2, and A3 would occur mostly within the currently designated Caltrans ROW, but ALT A1 and ALT A3 would require commercial displacements along A Street. This will warrant analysis in the CIA specific to these build alternatives.

All Build Alternatives

The project is intended to improve mobility and enhance community connectivity. While the build alternatives would appear to have limited operational effects to local communities, community facilities, or public utilities such as overhead lines or pipelines, temporary impacts could occur during construction. Impacts to existing public utilities or proposed utility utilities would be required to comply with the provisions of Buy America and the Project Development Procedures Manual (PDPM). A CIA should be prepared to evaluate construction-period effects as well as confirm economic effects and impacts to community cohesion would be minimal. In addition, the CIA will include an environmental justice evaluation. There is no difference in the technical reporting requirements between the build alternatives.

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[2] This assessment is consistent with 2006 Caltrans/EPA guidance entitled Guidance for Preparers of Growth-Related, Indirect Impact Analyses, which adopts a two-phase approach to the evaluation of growth-related impacts. The first phase, called “first cut screening,” is designed to help the environmental planner determine if there is potential for growth-related effects and whether further analysis is necessary. This first-cut screening will be included as part of the CIA report.

[3] California Department of Conservation Farmland Mapping and Monitoring Program. “Alameda County Important Farmland 2016” accessed on December 27, 2018: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/ala16.pdf

8.5 Visual/Aesthetics:

The project area is not within a designated state scenic highway; however, the I-880 freeway is designated as a County scenic highway.[4] Within the project limits, the I-880 corridor is also listed as a Classified Landscaped Freeway.[5] The quantity of roadside vegetation that would ultimately be removed under the project would be determined during final project design and would serve as the basis for determining the amount of replacement planting to be provided under the project. However, within the project area, existing landscaping is limited and mainly occurs within the interchange on- and off-ramp configurations. Replacement planting/landscaping would be designed in accordance with Caltrans requirements during the final design phases and would be approved by Caltrans.

Where landscape trees and shrubs would be removed, replacement plantings would be required. The Office of Landscape Architecture would be consulted in the design phase to determine replacement requirements, once tree and shrub removal quantities are known. Loss of highway planting is anticipated. Vegetation loss in any designated Landscape Freeway areas is not allowed to result in any of these areas losing their landscape freeway status. Replacement highway planting and irrigation would be funded by Alameda CTC. Construction staging areas would be located away from existing plantings and irrigation equipment. Irrigation crossovers could be implemented where sign foundations are proposed; therefore, sign locations may need to be adjusted in the design phase to avoid conflicts with the existing crossovers. Any existing irrigation facilities removed or impacted by project construction would be repaired to ensure the irrigation systems are functional to support the existing planting Minor pruning of trees and shrubs is permitted upon approval by the Resident Engineer and the Office of Landscape Architecture.

While the project would introduce new or modified roadway elements to the area, they would not substantially change the character of the area, which is dominated by freeway interchange facilities and commercial and residential development. The project elements would replace existing ramps and bridge structures of similar mass and height (depending on the build alternatives selected). To reduce the visual impact of any new sound walls or retaining walls, aesthetic treatments consisting of color, texture and/or patterning would be applied to reduce visual impacts. The aesthetic treatment would be context sensitive to the location and be compatible with existing walls in the project area.

A questionnaire was completed to preliminarily determine the level of Visual Impact Assessment (VIA) required for the project. The project scored 12 out of 30 points, indicating that negligible visual changes to the environment are proposed and a brief memorandum is the appropriate level of documentation. However, to fully assess impacts to all potentially affected viewer groups (drivers and people living near the study area), a Minor VIA would be prepared for all build alternatives to assess new ramp configurations and if extension of the existing sound wall is found to be feasible and reasonable. There is no difference in the technical reporting requirements between the build alternatives.

8.6 Cultural Resources:

A records search of the California Historical Resources Information System (CHRIS) was conducted at the Northwestern Information Center (NWIC) on January 18, 2019. The records search included the project footprint plus a one-quarter mile buffer surrounding the project limits.

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[4] City of Hayward General Plan, 2014.

[5] California Department of Transportation. Classified "Landscaped Freeways". Accessed on January 26, 2018: http://www.dot.ca.gov/design/lap/livability/docs/class_ls_fwy_01122018_.pdf and https://postmile.dot.ca.gov/PMQT/PostmileQueryTool.html?

No previously recorded archaeological resources were identified within the project footprint or records search buffer.

Although no previously recorded archaeological resources have been identified within in the project area, there is a high-to-highest potential for unidentified prehistoric resources in the majority of the project study area (approximately 67 percent of the project footprint) There is also a potential for historic-era archaeological resources to occur within the northern portion of the project area.

NRHP criteria state that a property usually must be at least 50 years old to be considered for historic significance, in order to ensure that sufficient time has passed to gain an adequate historic perspective for its evaluation. A review of structures potentially over 50 years in age was conducted. This review identified the existing bridge structures at the I-880/Winton and I-880/A Street interchanges. These structures are Category 5, i.e., determined “not eligible” for listing in the NRHP based on documentation in the Caltrans’ “Structure Maintenance & Investigations: Historical Significance – State Agency Bridges”, prepared in September 2018.

Aside from the bridge structures, there are seven potential built environment resources which would be evaluated, four of which are within or intersect with the project footprint. Although the majority of these built historic resources have previously been determined not eligible for listing in the NRHP or the CRHR, three of the identified resources are now subject to reevaluation as they had not reached 50 years of age when first evaluated. Such resources would require reevaluation to determine if they are historic resources protected under Section 106.

In fulfillment of NHPA requirements under Section 106, an APE map would be prepared for all build alternatives, encompassing both the temporary and permanent project footprint. A HPSR would be prepared as the summary document for cultural resources studies that would include an ASR and a HRER. For the cultural resources identified in the APE the documentation would include an evaluation for the resource’s eligibility for the NRHP/CRHR. Evaluations of historical archaeological resources and built environment resources would be presented in the HRER.

If no cultural resources are determined eligible for the National Register, Section 106 are then fulfilled. If any identified resources are determined eligible for the National Register, a Finding of Effect (FOE) would be prepared to document the potential effects on the resource(s). If it is determined that there would be an adverse effect on the resource(s), a Memorandum of Agreement (MOA) and Historic Property Treatment Plan would be prepared to document mitigation measures agreed upon by the project proponent, Caltrans, and the State Historic Preservation Officer. Consulting Native American parties would also be invited to concur on the MOA, as appropriate.

The need for an Extended Phase I survey to complete identification of archeological resources within the APE is dependent upon where project-related ground disturbances are planned in relationship to areas of high sensitivity for buried sites. The possible need for Extended Phase I testing will be determined as part of the ASR efforts. Given the high-to-highest potential for unidentified prehistoric resources, an Extended Phase I survey would likely be needed. There is no difference in the technical reporting requirements between the build alternatives.

California Assembly Bill 52 (AB 52) is intended to recognize and protect tribal cultural resources. Under AB 52, the CEQA Lead Agency must notify California Native American Tribes within 14 days of the decision to undertake a project. California Native American Tribes include both federally and non-federally recognized tribes in California. Under AB 52, tribes have 30 days to request consultation about any tribal cultural resources in the project area. The build alternatives would be required to conduct AB 52 outreach and consultation, if requested.

All build alternatives have the potential to affect cultural resources that are located within or adjacent to the project footprint. As previously discussed in Section 8.2, cultural resources are also eligible for protection under Section 4(f) of the Department of Transportation Act. Information gathered as part of the cultural resources documentation and FOE would be used to prepare the Section 4(f) evaluation that is appended to the environmental document.

8.7 Hydrology and Floodplain:

I-880/Winton Avenue Interchange

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), the I-880/Winton Avenue interchange is split between two flood map boundaries both of which are designated as Zone X, which represent areas of minimal flood hazard. Zone X is defined as areas determined to be outside of the 500-year floodplain. Given this, improvements at this interchange would not warrant a detailed study or designation as base floodplain.[6]

I-880/A Street Interchange

Parts of both the eastern and western sides of the I-880/A Street interchange are located within 0.2 miles of Sulfur Creek and a 500-year (0.2 percent annual chance) floodplain. In a two percent annual chance flood zone, for every 100 years, there will likely be two years in which a flood event occurs. The project is not expected to change the land use of the project area or adjacent surroundings, or proposed fill in a floodplain.

A Location Hydraulic Study (LHS) is a preliminary study of base floodplain encroachments by the project, and will be performed by a registered engineer with hydraulic expertise to assess potential impacts to Sulfur Creek. If, based on the results of the LHS, either: 1) a significant encroachment on a floodplain, 2) an inconsistency with existing watershed and floodplain management programs, or 3) uncertainty as to what impacts would occur exists, then a Floodplain Evaluation Report will be prepared. If no encroachment or impacts to the floodplain will occur, then a Summary Floodplain Encroachment Report will be prepared. Based on the findings of these efforts, the environmental document will incorporate appropriate mitigation measures related to construction in and near the floodplain. There is no difference in the technical reporting requirements between the build alternatives.

8.8 Water Quality and Storm Water Runoff:

The project must comply with the Caltrans Statewide NPDES Permit. Temporary and permanent BMPs that are required to comply with the permit will be presented in the project Water Quality Assessment Report during the PA/ED phase. There would be no difference in the level of initial water quality documentation required between build alternatives.

All of the build alternatives would result in a soil disturbance of one acre or more for construction purposes. As such, the project must comply with the Statewide Construction General Permit; the Caltrans NPDES Permit references the Construction General Permit for regulation of stormwater discharges from all Caltrans construction projects. For those build alternatives that would also result in the addition of one acre or more of impervious area, measures to provide permanent stormwater treatment and mitigate for hydromodification impacts to receiving waterbodies would need to be incorporated into the project design. The stormwater treatment measures would be required to be designed in accordance with the Caltrans Project Planning and Design Guide, and the hydromodification analysis and mitigation measures would need to be in compliance with the San Francisco Bay Regional Water Quality Control Board Municipal NPDES Permit. As a matter of law, implementation of any build alternative would require the incorporation of design BMPs, as

[6] Federal Emergency Management Agency, 2009, "Flood Map Service Center." Accessed on January 7, 2019: https://msc.fema.gov/portal/search?AddressQuery=southland%20mall%20hayward#searchresultsanchor

well as temporary BMPs to prevent effects to water quality during construction (such as excessive erosion or sedimentation, and trash control).[7] These BMPs are outlined in both Caltrans' Storm Water Management Plan (SWMP) and would be incorporated into the SWPPP. Incorporation of the measures outlined in the SWPPP would ensure that build alternatives would not adversely affect water quality in local waterways. Refer to Section 8.15, Biological Environment, for a discussion of potential effects to local waterways.

8.9 Geology, Soils, Seismic and Topography:

The project is located approximately two miles west of the Southern Hayward section of the Hayward Fault Zone.[8] According to the United States Geological Survey (USGS), the likelihood for the project area to experience damage from natural earthquakes is high.[9] A preliminary geotechnical report would be prepared to evaluate the potential for each of the build alternatives to result in impacts related to existing soil and/or seismic conditions. There is no difference in the technical reporting requirements between the build alternatives.

Prior to final design, field explorations will be required to fully document and evaluate subsoil conditions, groundwater conditions, and corrosion potential. Slope stability that would be potentially affected by the proposed alternatives should be analyzed so slope maintenance and protections are considered. Recommendations for foundation, embankment, and retained wall constructions will be made. The findings of these field explorations and detail study will be incorporated into the environmental document.

The project would be designed in accordance with the Caltrans' 2017 Deterministic Peak Ground Acceleration (PGA) map and ARS Online. During the PS&E phase of the project, additional data should be collected to confirm site conditions and as the basis for appropriate mitigation measures. Each of the proposed interchange improvement areas would have roughly the same risks associated with geology, soils, seismic, and topography as they all propose modified or new elevated ramp structures.

8.10 Paleontology:

Based on the sensitivity of the project area to contain paleontological resources, there is the potential for ground-disturbing work to encounter buried paleontological resources. Interchange improvements that would be constructed in deeper sediments not previously disturbed by the construction of the existing freeway infrastructure (i.e., bridge piers and foundations) have the greatest potential to encounter undocumented paleontological resources. Because the build alternatives include ground disturbing work, there is no difference in the technical reporting requirements between the build alternatives, as described below.

A Paleontological Evaluation Report (PER) will be prepared to: (1) identify any known paleontological resources that exist in the study area; (2) determine Caltrans' legal responsibilities; (3) decide the necessity for involving other agencies and/or stakeholders; (4) determine whether the resource can be avoided; and (5) determine the significance of the resource. If unrecorded paleontological resources are discovered within the environmental study area, construction monitoring by a qualified paleontologist may be required, and a curation program prepared for the project to create protocols for how to protect any resources discovered during construction, thus delaying project schedule and adding monitoring costs.

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[7] In line with the parameters of the Section 401 the project's design requirement for stormwater treatment measures would be informed by Alameda County Stormwater Technical Guidance (2017).

[8] http://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=db287853794f4555b8e93e42290e9716

[9] https://earthquake.usgs.gov/hazards/induced/images/ProbDamageEQ_2017.pdf

8.11 Hazardous Waste/Materials:

Disturbance of contaminated materials during construction could adversely impact human health and the environment. An Initial Site Assessment (ISA) would be prepared for all alternatives to better identify the areas with the highest risks for soil and groundwater contamination, and whether those areas are located in close proximity to where construction activities would occur. Additionally, standard specifications and avoidance measures will be identified in the ISA to document proper equipment siting and management protocols that prevent the inadvertent release/spill of hazardous materials during project construction. There is no difference in the technical reporting requirements between the build alternatives.

Shallow soils within 30 feet of the edge of pavement in highway corridors built before the 1980s have the potential to be contaminated with aerially deposited lead from historical car emissions. Since all of the build alternatives would be constructed within a freeway corridor built in the 1950s, an investigation for heavy metals/aerially deposited lead would be required, but may be deferred until the final design phase of the project. Further, there is potential for asbestos to occur in bridge rail linings and other bridge structure materials. An assessment of the potential for disturbing asbestos containing materials during project construction will be required.

I-880/Winton Avenue Interchange

According to the California State Water Resources Control Board GeoTracker, there is one Leaking Underground Storage Tank (LUST) cleanup site located adjacent to La Playa Drive, near the intersection of La Playa and Southland Drive. LUST cleanup sites indicate the potential for hazardous materials to have infiltrated the soil and groundwater in the areas where construction activities would occur. The ISA will identify the level of potential risk of hazardous material exposure associated with this release site.

I-880/A Street Interchange

According to the California State Water Resources Control Board GeoTracker, there are two LUST cleanup sites adjacent to A Street west of the A Street/I-880 Interchange. The ISA will identify the level of potential risk of hazardous material exposure associated with these release sites.

8.12 Air Quality:

The existing I-880/Winton Avenue and I-880/A Street interchanges experience high levels of traffic congestion, which is associated with poor local air quality conditions. Stop and go traffic typically contributes to poor air quality. The build alternatives are intended to reduce future traffic congestion and delay within the study area, which in turn should result in improved air quality. However, each build alternative could cause minor shifts in traffic patterns which could result in localized air quality impacts. There is no difference in the technical reporting requirements between the build alternatives.

An Air Quality Study will be prepared for all build alternatives to evaluate potential air quality impacts both in the near term and over the project planning horizon. As part of this analysis, the study will include a mobile source air toxics (MSAT) screening evaluation as well as a carbon monoxide hotspot analysis.

The project must conform to the Bay Area Air Quality Management District (BAAQMD)'s 2017 Clean Air Plan (CAP). The CAP is based on regional population, housing, and employment projections compiled by the Association of Bay Area Governments (ABAG). These projections cover the years 2017 through 2050. A project is considered to conflict with or obstruct implementation of a regional air quality plan if it would be inconsistent with the CAP's regional growth assumptions in terms of population, employment, or regional growth in VMT. As such, the Air Quality Study should include modeling and documentation of the project's conformity with ABAG projections.

Because the build alternatives would affect highway operations, regional interagency consultation to discuss and gain consensus on conformity issues will be required, as defined by the Interagency Consultation requirements in the U.S. Environmental Protection Agency (EPA) Conformity Rule at 40 CFR 93.105. The project will require completion of FHWA's Transportation Conformity and NEPA Assumption Questions and Answers forms, as well as the Conformity Analysis Documentation checklist. The project is not exempt per 40 CFR 93.126, therefore, a project-level emissions assessment is required. If the project is determined to be a project of air quality concern (POAC), then a hot spot analysis for carbon monoxide (CO) and particulate matter (PM) will also be required. The project is exempt per 40 CFR 93.127 from a regional emissions analysis as it is an intersection reconfiguration project.

Additionally, the San Francisco Bay Area is designated as nonattainment for the 24-hour $PM_{2.5}$ standard. If the build alternatives are considered to require further evaluation of $PM_{2.5}$, a $PM_{2.5}$ hot-spot evaluation should be included as part of the Air Quality Study to ensure conformity with the Clean Air Act.

Construction of the build alternatives would require earth movement, pavement removal, installation of new pavement, and other associated activities. The Air Quality Study will include a quantification of construction period emissions for criteria pollutants, including that produced by construction equipment and fugitive dust. Avoidance measures, including but not limited to standard BMPs established by BAAQMD, would be incorporated into the recommendations of the report in order to reduce construction emissions. Demolition of existing structures at the I-880/A Street interchange would be subject to BAAQMD Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing). This Rule is intended to limit the disturbance of asbestos-containing waste material generated or handled during demolition activities. By complying with BAAQMD Regulation 11, Rule 2, the project would be minimizing the release of airborne asbestos emissions, and the likelihood of potential impacts associated with demolition activities would be low.

8.13 Noise and Vibration:

All of the build alternatives would include the construction of new roadway infrastructure that could potentially change existing noise patterns and affect sensitive receptors in the vicinity of the project. For example, traffic could be shifted closer to adjacent noise sensitive land uses, thus increasing the ambient noise environment in those areas. There is no difference in the technical reporting requirements between the build alternatives; however, evaluation of an extension of the existing noise wall would be required at the I-880/Winton Avenue interchange only. As each of the alternatives propose to add through traffic lanes, this is considered a Type I project.

A Noise Study Report (NSR) will be prepared to determine the full extent of noise impacts associated with the build alternatives. Should substantial noise increases be identified, abatement measures would be considered in terms of both feasibility and reasonableness, weighing cost to construct against the number of benefitted receivers. Because the implementation of the build alternatives is likely to require substantial construction activity over a period of many months, the NSR will include a construction noise assessment that evaluates potential noise and vibration effects and, if warranted, propose appropriate measures to minimize temporary impacts. The NSR will comply with the Traffic Noise Analysis Protocol (TNAP) per Caltrans' SER guidelines.

I-880/Winton Avenue Interchange
ALT W1 and ALT W2 would include the construction of new infrastructure associated with the I-880/Winton Avenue interchange that could change existing noise patterns and adversely affect both existing and planned sensitive receptors in the vicinity of the interchange. As mentioned in Section **8.1 Land Use**, there are several residential areas located in the immediate vicinity of the I-880/Winton Avenue interchange. Extension of the existing sound wall along the border of the interchange would provide a barrier between residential areas and operational noise. The NSR will include an evaluation of the existing sound wall's effectiveness at reducing freeway noise at these residences. Should the analysis show an existing noise environment above acceptable levels for residential land uses, the project may be required to provide additional noise abatement options.

I-880/A Street Interchange
Existing noise-sensitive receptors near the I-880/A Street interchange include residential uses north of A Street along I-880. These uses are separated from A Street by several commercial developments. There are also existing sound walls along the on and off ramps at this interchange. The existing sound walls provide a barrier between sensitive receptors and noise that would be associated with the build alternatives. The NSR will include an evaluation of the sound wall's existing effectiveness at reducing freeway noise at these residences. Should the analysis show an existing noise environment above acceptable levels for residential land uses, the project may be required to provide additional noise abatement options.

8.14 **Energy and Climate Change**:

To the extent a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors, greenhouse gas emissions may be reduced. As the purpose of the project is to relieve existing and projected future traffic congestion, the project could result in carbon dioxide (CO_2) emission reductions. The interchange improvements are freeway operational improvements that would not increase capacity of I-880, generate additional trips, or increase VMT. The environmental document will include a qualitative discussion regarding the operation of the project relative to greenhouse gas emission and climate change effects and a greenhouse gas study will be required per Executive Order B-30-15. The analysis will be prepared in accordance with the Caltrans' most current guidance at the time the environmental document is prepared. There is no difference in the technical reporting requirements between the build alternatives.

Sea level rise (SLR) is an integral part of climate change discussions, the effects of which will have impacts on all modes of transportation located near the coast. Screening criteria are used to assess whether an individual project will potentially be impacted by SLR. The project is not located on the coast, nor is it located in an area vulnerable to SLR according to available mapping. Therefore, the build alternatives would not be impacted by SLR.

However, the design life of the project is anticipated to extend beyond the year 2030, and therefore it is difficult to predict with certainly how the project may or may not be affected by SLR at some point during the project's lifespan. Despite this possibility, the project would provide needed interchange improvements that would reduce congestion and improve accessibility and safety at the Winton Avenue and A Street interchanges. One of the responsibilities of transportation development located near the coast is to ensure that reliable transportation routes are available. In consideration of these factors, the project does not warrant further consideration of SLR.

8.15 **Biological Environment**:

For the purposes of this preliminary assessment of biological resources, a conservative biological study area (BSA) was established that encompasses the maximum project footprint (all build alternatives). The information below presents the preliminary findings from the biological database reviews and literature research that was conducted for the project in February 2019.

A NES-MI would be required to comply with the FHWA's requirements to satisfy NEPA. The NES-MI would also extensively detail all construction-related impacts to the biological resources that may be associated with the project under CEQA. The NES-MI would evaluate impacts to biological resources habitats, as well as recommend avoidance and minimization measures (AMMs) and BMPs to assess these sensitive resources. There is no difference in the technical reporting requirements between the build alternatives.

The BSA is largely characterized by developed and disturbed lands, along with a channelized stream (Sulphur Creek). The CNDDB was utilized to determine what special status species could occur in the BSA. This database search found that the BSA contains very little habitat for special-status plant species due to the high degree of disturbance associated with a highly urban area. Further, the CNDDB search determined that there is no suitable habitat for special status wildlife species in such a heavily trafficked area. Therefore, no federally listed species or state species of special concern are expected to occur in the BSA.

Prior to the preparation of the NES-MI, an aquatic resources delineation will be necessary in order to determine if the aquatic features described above are jurisdictional waters of the U.S. and State. A tree survey will also be required as it is likely that some trees will be removed in order to construct the project. Tree removal would require compliance with the City of Hayward Tree Removal Permit per Municipal Code Article 15 (Tree Preservation).

I-880/Winton Avenue Interchange
Aquatic features within the BSA include two small drainage features that could be determined to be jurisdictional wetlands by the US Army Corps of Engineers. One potential wetland containing two small areas is located on the east side of the northbound Winton Avenue off-ramp. There is a drainage ditch that appears to be blocked and has been ponding water for a sufficient period of time to allow emergent wetland vegetation to grow. However, this possible wetland contains no potential habitat for special status wildlife. A wetland delineation would be required for this area. If impacts to wetlands or waters of the U.S. are identified, coordination with the US Army Corps of Engineers for a CWA Section 401 Certification and CWA Section 404 Permit would be required.

There are multiple, mature native and non-native landscape trees in the project area at the I-880/Winton Avenue interchange. The City of Hayward tree ordinance requires construction projects to map and label all "protected" trees within the project area. Labels must include species, size, and health. A tree survey would be conducted for both interchanges. Trees to be removed or preserved must be shown on the site and grading plans. A tree removal permit will be issued as part of the building or grading permit. In addition, an arborist report is required if more than three trees are involved.

I-880/A Street Interchange
There are no aquatic features or wetlands near the I-880/A Street interchange. As mentioned above, a tree survey would be conducted for both interchanges in order to comply with the City of Hayward tree ordinance.

8.16 Cumulative Impacts:

Cumulative impacts occur as a result of the combined actions of multiple projects. Even when an individual project would not result in significant impacts, the project in combination with other related projects may result in a cumulative impact. If so, it must be determined whether the project's contribution to the cumulative impact would be cumulatively considerable.

In 2005, Caltrans in conjunction with FHWA and the U.S. EPA developed a guidance document entitled Guidance for Preparers of Cumulative Impact Analysis. Cumulative impacts related to the build alternatives would be identified using Caltrans' eight-step process outlined in this guidance document (as incorporated into the IS/EA annotated outline). If a project will not cause direct or indirect impacts on a resource, it will not contribute to a cumulative impact on that resource and need not be further evaluated. Similarly, the project's contribution to the cumulative impact analysis is the net impact. If the project's avoidance, minimization and/or mitigation fully offset the impact(s) on a resource, there is no contribution to cumulative impact on that resource. There is no difference in the technical reporting requirements between the build alternatives.

8.17 Context Sensitive Solutions:

Caltrans uses Context Sensitive Solutions (CSS) to integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. CSS are reached through a collaborative, interdisciplinary approach involving all stakeholders, engaged through early coordination with agencies as well as early outreach to the community.

The build alternatives have been proposed in part because of the issue of context sensitivity. Each build alternative would meet the purpose and need of the project, but would achieve this through varying levels of intensity related to construction activities and alterations to existing infrastructure. As such, all alternatives would be carried through the environmental documents to clearly demonstrate the pros and cons of each relative to context sensitivity. There is no difference in the technical reporting requirements between the build alternatives.

9. Summary Statement for PID

Caltrans will serve as the CEQA and NEPA lead agency under its assumption of responsibility pursuant to 23 U.S. Code 327. It is expected that the environmental technical reports and the IS/EA would take approximately 18-24 months (see **Attachment C**) to prepare and process for final adoption/approval of the MND/FONSI, including time for coordination with Alameda CTC, Hayward, and the environmental division staff within Caltrans; but does not include time for obtaining permits from federal or state resource agencies, if needed. It is anticipated that multiple environmental studies and reports will be required for this project. Key issues include property acquisitions and one displacement of commercial property; potential impacts to cultural resources; and noise impacts. Of the build alternatives, ALT W1 and ALT W2 would have similar levels of effect to the existing environment. ALT A1 and ALT A3 have the greatest potential to result in effects to the environment, as they would include the most intensive changes to the existing environment.

See **Attachment A** of this PEAR, for the complete list of environmental studies and reports that would be prepared for this project.

As a result of new VMT guidelines, the project may no longer qualify for an IS under CEQA and may instead require preparation of an EIR. The appropriate level of environmental document for the project will be determined during the PA/ED phase, in consultation with Caltrans local assistance team.

10. Disclaimer

This PEAR provides information to support programming of the project. It is not an environmental determination or document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in the PID. The estimates and conclusions in the PEAR are approximate and are based on cursory analyses of probable effects. A reevaluation of the PEAR will be needed for changes in project scope or alternatives, or in environmental laws, regulations, or guidelines.

11. List of Preparers

Cultural Resources specialist Naomi Scher and David Hyde, Far Western	Date: 2/4/19
Biologist Analette Ochoa and Sandra Etchell, WRECO	Date: 2/6/19
Community Impacts specialist Juliet Martin	Date: 2/12/19
Noise and Vibration specialist Juliet Martin	Date: 2/12/19
Air Quality specialist Juliet Martin	Date: 2/12/19
Paleontology specialist/liaison Juliet Martin	Date: 2/12/19
Water Quality specialist Analette Ochoa and Sandra Etchell, WRECO	Date: 2/6/19
Hydrology and Floodplain specialist Analette Ochoa and Sandra Etchell, WRECO	Date: 2/6/19
Hazardous Waste/Materials specialist Juliet Martin	Date: 2/12/19
Visual/Aesthetics specialist Juliet Martin	Date: 2/12/19
Energy and Climate Change specialist Juliet Martin	Date: 2/12/19
Other:	Date:
PEAR Preparer (Name and Title) Brianna Bohonok, Senior Project Manager	Date:

12. Review and Approval

I confirm that environmental cost, scope, and schedule have been satisfactorily completed and that the PEAR meets all Caltrans requirements. Also, if the project is scoped as a routine EA, complex EA, or EIS, I verify that the HQ DEA Coordinator has concurred in the Class of Action.

______________________________ Date: 8/13/2019
Environmental Branch Chief

______________________________ Date: 8/19/2019
Project Manager

ATTACHMENTS:

Attachment A: PEAR Environmental Studies Checklist
Attachment B: Estimated Resources by WBS Code
Attachment C: Schedule (Gantt Chart)

Attachment A: PEAR Environmental Studies Checklist

Rev. 08/2018

Environmental Studies for PA&ED Checklist

	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Land Use	☐	☐	☒	L	CIA
Wild and Scenic River Consistency	☒	☐	☐	L	
Coastal Management Plan	☒	☐	☐	L	
Growth	☐	☐	☒	L	CIA
Farmlands/Timberlands	☒	☐	☐	L	
Community Impacts	☐	☐	☒	L	CIA
Community Character and Cohesion	☐	☐	☒	L	CIA
Relocations	☐	☐	☒	L	
Environmental Justice	☐	☐	☒	L	CIA
Utilities/Emergency Services	☐	☐	☒	L	CIA
Visual/Aesthetics	☐	☐	☒	L	VIA
Cultural Resources:	☐	☐	☒	M	ASR, HRER, HPSR
Archaeological Survey Report	☐	☐	☒	M	ASR
Historic Resources Evaluation Report	☐	☐	☒	M	HRER
Historic Property Survey Report	☐	☐	☒	M	HPSR
Historic Resource Compliance Report	☒	☐	☐	L	
Section 106 / PRC 5024 & 5024.5	☐	☐	☒	M	HPSR
Native American Coordination	☐	☒	☐	L	Letters to Tribes
Finding of Effect	☒	☐	☐	L	
Data Recovery Plan	☒	☐	☐	L	
Memorandum of Agreement	☒	☐	☐	L	
Other:	☐	☐	☐	L	
Hydrology and Floodplain	☐	☐	☒	L	LHS
Water Quality and Stormwater Runoff	☐	☐	☒	L	WQR
Geology, Soils, Seismic and Topography	☐	☐	☒	L	PGR
Paleontology	☐	☐	☒	L	
PER	☐	☐	☒	L	PER
PMP	☒	☐	☐	L	
Hazardous Waste/Materials:	☐	☐	☐	L	
ISA (Additional)	☐	☐	☒	L	ISA
PSI	☒	☐	☐	L	
Other:	☐	☐	☐	L	
Air Quality	☐	☐	☒	L	AQ Study w/ GHG Analysis
Noise and Vibration	☐	☐	☒	L	NSR
Energy	☒	☐	☐	L	DED
Climate Change and Sea Level Rise	☒	☐	☐	L	DED
Biological Environment	☐	☐	☒	L	NES, WDR
Fish Passage	☒	☐	☐	L	
Wildlife Connectivity	☒	☐	☐	L	
Natural Environment Study	☐	☐	☒	L	NES, WDR
Biological Assessment Section 7:	☒	☐	☐	L	
Formal	☒	☐	☐	L	
Informal	☒	☐	☐	L	

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
No effect	☒	☐	☐	L	
Section 10	☒	☐	☐	L	
USFWS Consultation	☒	☐	☐	L	
NMFS Consultation	☒	☐	☐	L	
Species of Concern (CNPS, USFS, BLM, S, F)	☒	☐	☐	L	
Wetlands & Other Waters/Delineation	☐	☐	☒	L	WDS
404(b)(1) Alternatives Analysis	☒	☐	☐	L	
Invasive Species	☒	☐	☐	L	
HMMP	☒	☐	☐	L	
CDFW Consistency Determination	☒	☐	☐	L	
2081	☒	☐	☐	L	
Other:	☐	☐	☐	L	
Cumulative Impacts	☐	☒	☐	L	DED
Context Sensitive Solutions	☒	☐	☐	L	DED
Section 4(f) Evaluation	☐	☐	☒	L	CIA
Permits:					
401 Certification Coordination	☐	☐	☒	L	
404 Permit Coordination, IP, NWP, or LOP	☐	☐	☒	L	If impacts to wetlands or waters of the U.S. are identified, coordination for CWA Section 401 Certification and CWA Section 404 Permit would be required for all Build Alternatives.
1602 Agreement Coordination	☒	☐	☐	L	
Local Coastal Development Permit Coordination	☒	☐	☐	L	
State Coastal Development Permit Coordination	☒	☐	☐	L	
NPDES Coordination	☐	☐	☒	L	NPDES Permit
TRPA	☒	☐	☐	L	
BCDC	☒	☐	☐	L	

ATTACHMENT B - Resources by WBS Code
PERT Calculation

Project ID: 0418000068
EA: 04-0Q290
Description: I-880 Interchange Improvements (Winton Avenue/A Street) Project

WBS Task Activity Code	Division Chief	Office Chief	Senior	Generalist	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	ECL	Steward-ship	Noise/Air	Support Svcs	Design	Hydraulics	Landscape	Planning	Right of Way	Surveys	Total
Assigned Unit																				
Preform Project Management																				
100.10.05 – PA&ED Initiation & Planning	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.10.10 – PA&ED Execution & Control	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.10.15 – PA&ED Close Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.10.20 – PA&ED Project Shelving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.10.25 – PA&ED Project Unshelving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.10.30 – PA&ED Admin Record & Legal Chlg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.10.35 – PA&ED Coop Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.10.99 – PA&ED Other Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.15.05 – PS&E Initiation & Planning	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.15.10 – PS&E Execution & Control	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.15.15 – PS&E Close Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.15.20 – PS&E Project Shelving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.15.25 – PS&E Project Unshelving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.15.30 – PS&E Admin Record & Legal Chlg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.15.35 – PS&E Coop Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.15.99 – PS&E Other Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.20.05 – Const Initiation & Planning	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.20.10 – Const Execution & Control	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.20.15 – Const Close Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.20.20 – Const Project Shelving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.20.25 – Const Project Unshelving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.20.30 – Const Admin Record	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.20.35 – Const Coop Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.20.99 – Const Other Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.25.05 – R/W Initiation & Planning	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.25.10 – R/W Execution & Control	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.25.15 – R/W Close Out	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.25.20 – R/W Project Shelving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.25.25 – R/W Project Unshelving	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.25.30 – R/W Admin Record	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.25.35 – R/W Coop Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.25.50 – R/W Coop for Relinquishment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100.25.99 – R/W Other Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Project Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perform Preliminary Engineering and Draft Project Report																				
160.05.05 – Approved PID Review	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.05.10 – Geotechnical Information Review	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.05.20 – Traffic Data & Forecasts Review	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.05.30 – Project Scope Review	-	-	13	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53
160.05.35 – Project Cost Estimate Review	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.10.20 – Value Analysis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.10.25 – Hydraulics/Hydrology Study	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.10.30 – Hwy Planting Des Concepts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.15.20 – Draft Project Report	-	-	27	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80
160.15.25 – Draft PR Circ, Review & Approval	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.30.05 – Maps for ESR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.30.10 – Surveys/Maps for Env Studies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.30.15 – Prop Acc Rights for Env/Eng Studies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160.40 – NEPA Assignment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Perform Prelim Eng & Draft PR	-	-	40	93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	133

Perform Environmental Studies and Prepare Draft Environmental Document - Task Management Activities

165.05.05 – Project Information Review	-	-	40	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93
165.05.10 – Pub & Agency Scoping Process	-	-	27	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80
165.05.15 – Alts for Further Study	-	-	20	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47
165.05.99 – Other Env Scoping	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.10.15 – CIA, Land Use & Growth	-	-	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
165.10.20 – VIA and Scenic Resource Eval	-	-	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
165.10.25 – Noise Study	-	-	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
165.10.30 – Air Quality Study	-	-	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
165.10.35 – Water Quality Studies	-	-	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
165.10.40 – Energy Studies	-	-	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
165.10.45 – Sum Geotech Report	-	-	5	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
165.10.55 – Draft R/W Relocation Impact Eval	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.10.60 – Location Hydraulic & Floodplain	-	-	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
165.10.65 – Paleontology Study	-	-	5	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
165.10.70 – Wild & Scenic Rivers Coordination	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.10.75 – Env Commitments Record	-	-	5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
165.10.80 – HW ISA/Investigations	-	-	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
165.10.85 – Preliminary HW Site Investigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.10.99 – Other Env Studies	-	-	13	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
165.15.05 – Biological Assessment	-	-	11	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
165.15.10 – Wetlands Study	-	-	11	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
165.15.15 – Resource Agency Coord	-	-	11	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
165.15.20 – NES Report	-	-	11	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
165.15.99 – Other Biological Studies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.05.05 – APE/Study Area Map	-	-	5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
165.20.05.10 – NA Consultation	-	-	5	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32
165.20.05.15 – Records & Literature Search	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.05.20 – Field Survey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.05.25 – ASR	-	-	13	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
165.20.05.99 – Other Archy Survey Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.10.05 – Native American Consultation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.10.10 – Extended Phase 1 Proposal	-	-	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
165.20.10.15 – XP1 Field Investigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.10.20 – XP1 Materials & Analysis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.10.25 – Extended Phase I Report	-	-	11	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37
165.20.10.99 – Other Phase I Archy Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.15.05 – NA Consultation	-	-	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
165.20.15.10 – Phase II Proposal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.15.15 – Field Investigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.15.20 – Materials Analysis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.15.25 – Phase II Report	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.15.99 – Other Phase II Archy Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.20.05 – Prelim APE/Study Area Maps - AH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.20.10 – Hist Res Eval Rpt - Archy	-	-	5	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
165.20.20.15 – Hist Res Eval Rpt - Arch	-	-	5	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19
165.20.20.20 – Bridge Evaluation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.20.99 – Other H & A Study Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.25.05 – Final APE/Study Area Maps	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
165.20.25.10 – PRC 5024.5 Consult	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.25.15 – HPSR/HRCR	-	-	5	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
165.20.25.20 – Finding of Effect	-	-	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
165.20.25.25 – Archy Data Rec Pln/Treatment Pln	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.25.30 – MOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.20.25.99 – Other Cult Res Comp Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.25.05 – Draft ED Analysis	-	-	27	80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	107
165.25.10 – Section 4(f)/6(f) Evaluation	-	-	13	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
165.25.15 – CE/CE Determination	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.25.20 – Env Quality Control & Other Reviews	-	-	13	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40
165.25.25 – Approval to Circ Resolution	-	-	7	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
165.25.30 – Env Coordination	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
165.25.99 – Other DED Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

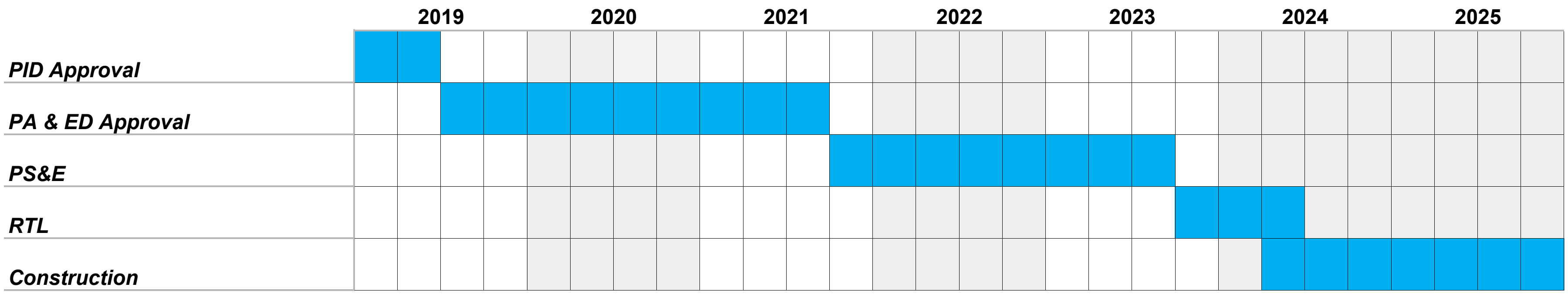
165.30 – NEPA Assignment	-	-	5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
Total Perform Env Studies & Prepare DED	-	-	375	791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,165
Obtain Permits, Licenses, Agreements, and Certifications (PLACs) and Route Adoptions during PA&ED Component - Task Management Activities																				
170.05 – Required PLACs	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
170.10.05 – USACE 404/Section 10 Permit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170.10.10 – US Forest Service PLACs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170.10.15 – US Coast Guard PLACs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170.10.20 – DFW 1600/2080.1/2081 Permit(s)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170.10.25 – Coastal Zone Development Permit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170.10.30 – Local Agency Concurrence/PLACs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170.10.40 – Waste Discharge (NPDES) Permit(s)	-	-	8	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
170.10.45 – USFWS/NMFService Approval	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170.10.50 – RWQCB 401 Permit	-	-	8	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
170.10.60 – Updated ECR	-	-	5	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
170.10.95 – Other Permits	-	-	8	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
170.45 – MOU from TERO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170.55 – NEPA Assignment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obtain PLACS & Rte Adoptions during PA&ED	-	-	29	49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79
Circulate Draft Environmental Document and Select Preferred Project Alternative - Task Management Activities																				
175.05.05 – Master Dist & Invitation Lists	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175.05.10 – Notices Pub Hear & DED Avail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175.05.15 – DED Pub & Circulation	-	-	20	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60
175.05.20 – Fed Consistency Det (Coastal)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175.05.99 – Other DED Circulation Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175.10.05 – Need for Pub Hearing Determination	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175.10.10 – Pub Hearing Logistics	-	-	11	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
175.10.15 – Displays for Pub Hearing	-	-	11	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
175.10.20 – 2nd Notice Pub Hear & Avail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175.10.25 – Map Display & Hearing Plan	-	-	5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
175.10.30 – Display Pub Hear Maps	-	-	11	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21
175.10.35 – Public Hearing	-	-	21	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48
175.10.40 – Record of Public Hearing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175.10.99 – Other Pub Hearing Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
175.15 – Public Hearing Responses & Corr	-	-	20	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60
175.20 – Project Preferred Alternative	-	-	13	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33
175.25 – NEPA Assignment	-	-	3	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
Total Circ DED & Select Preferred Proj Alt	-	-	115	179	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	293
Prepare and Approve Project Report and Final Environmental Document																				
180.05.10 – Approved Project Rep	-	-	8	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35
180.05.15 – Updated Stormwater Data Report	-	-	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
180.10.05.05 – Draft FED Review	-	-	16	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56
180.10.05.10 – Revised Draft FED	-	-	11	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31
180.10.05.15 – Section 4(f)/6(f) Evaluation	-	-	11	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27
180.10.05.20 – Findings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.10.05.25 – Statement of Overriding Consid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.10.05.30 – CEQA Certification	-	-	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
180.10.05.35 – FHWA Approval	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.10.05.40 – Section 106 Cons & MOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.10.05.45 – Section 7 Consultation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.10.05.50 – Final Section 4(f)/6(f) Statement	-	-	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
180.10.05.55 – Floodplain Only PAF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.10.05.60 – Wetlands Only PAF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.10.05.65 – Sec 404 Permit Compliance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.10.05.70 – Mitigation Measures	-	-	11	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24
180.10.10 – Public Dist & Resp to Comments	-	-	7	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
180.10.15 – Final R/W Relo Impact Document	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.10.99 – Other FED Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.15.05 – ROD (NEPA)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.15.10 – NOD (CEQA)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.15.20 – Env Commitments Record	-	-	7	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17

180.15.99 – Other Complete ED Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180.20 – NEPA Assignment	-	-	5	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
Total Prep and Approve PR & FED	-	-	87	169	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256
Prepare Base Maps and Plan Sheets for PS&E Development																			
185.05.05 – Project Concept Review	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
185.05.10 – Updated Project Information	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
185.15.20 – Value Analysis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Prep Base Maps & Plan Sheets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Right of Way Property Management and Excess Land																			
195.40.25 – Property Maint & Rehab (non-rental)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
195.40.35 – Transfer of Prop to Clear Status	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
195.45.05 – Excess Lands Inventory	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
195.45.20 – Prop Disp Units less than $15 K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
195.45.25 – Prop Disp Units $15 K -$500 K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
195.45.30 – Prop Disp Units over $500 K	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total RW Property Mgmt and Excess Land	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obtain Permits, Licenses, Agreements, and Certifications (PLACs) during PS&E Component - Task Management Activities																			
205.05 – PLACs Determination	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.05 – USACE 404/10 Permit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.10 – US Forest Service PLACs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.15 – US Coast Guard PLACs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.20 – DFW 1600/2080.1/2080 Permit(s)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.25 – Coastal Development Permit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.30 – Local Agency Concurrence/PLACs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.40 – Waste Discharge (NPDES) Permit(s)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.45 – USFWS/NMFS Approval	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.50 – RWQCB 401 Permit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.60 – Updated ECR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.10.95 – Other PLACs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.45 – MOU from TERO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
205.55 – NEPA Assignment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PLACs during PS&E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prepare Draft PS&E																			
230.05.45 – Noise Barrier Plans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.05.65 – Water Pollution Control Plans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.05.70.10 – Site Ready for Site Investigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.10.05 – Hwy Planting Plans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.10.15 – Plant List	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.35.10 – Hwy Planting Specs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.35.35 – Water Pollution Control Specs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.35.40 – Erosion Control Specs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.40.35 – Water Pollution Control Qty & Est	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.60 – Updated Proj Info for PS&E Package	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.60.05 - Updated Storm Water Data Report	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.60.10 – Other Reviews/Updates Proj Info	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
230.90 – NEPA Assignment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Prepare Draft PS&E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mitigate Environmental Impacts and Clean-up Hazardous Waste - Task Management Actitivities																			
235.05.05 – Hist Structures Mitigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.05.10 – Archy & Cultural Mitigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.05.15 – Biological Mitigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.05.20 – Env Mitigation R/W work	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.05.25 – Paleontology Mitigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.05.99 - Other Env Mitigation Products	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.10.05 – Right or Permit for HW Site Inv	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.10.10 – Haz Waste Sites Survey	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.10.15 – Detailed HW Site Investigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.15 – HW Management Plan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

235.20 – HW PS&E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.25 – HW Clean-up	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.30 – Hazardous Materials Disclosure Doc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.35 – Long Term Mitigation Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.40 – Updated ECR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
235.45 – NEPA Assignment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Mit Env Impacts & Clean-up HW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Post Right of Way Certification Work																				
245.75 – Right of Way Clearance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Post RW Clearance Work	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Circulate, Review and Prepare Final District PS&E Package																				
255.05 – Circ. & Rev. Draft Dist PS&E Package	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
255.10.25 – Updated Technical Reports	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
255.15 – Environmental Reevaluation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
255.20.05 – Review Plans for Stds Completion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
255.40 – Resident Engineer's Pending File	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
255.45 – NEPA Assignment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Circ, Rev and Prepare Final Dist PS&E Pkg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Contract Bid Documents "Ready to List"																				
260.75 - Env Cert at RTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Contract Bid Documents "RTL"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Construction Engineering and General Contract Administration																				
270.15 – Construction Stakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
270.33 – Construction Inspection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
270.66 – Technical Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Const Engineering & Gen Contract Admin.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Administration of Permits, Licenses, Agreements, and Certifications (PLACs) and Environmental Stewardship																				
280.10 – PLAC Compliance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
280.40 – PLAC Violations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
280.50 – Other Environmental Compliance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
280.60 – Other Environmental Violations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
280.70 – Updated ECR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
280.75 – Environmental Reevaluation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
280.80 – Updated PLACs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Admin of PLACs and Env Stewardship	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Change Order Administration																				
285.05 – Change Order (CO) Process	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
285.10.15 – Other Functional Support	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Change Order Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resolve Contract Claims																				
290.40 – Potential Claim Record	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Resolve Contract Claims	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accept Contract/Prepare Final Construction Estimate and Final Report																				
295.35 – Certificate of Environmental Compliance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
295.40 – Long Term Env Mit/Mont after CCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Accept Contract	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Project Hours	-	-	645	1,281	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,927

Attachment C: Schedule (Gantt Chart)

Proposed Overall Project Schedule (if funding is available):



Attachment F

Traffic Engineering Performance Assessment (TEPA)

Draft Traffic Engineering Performance Assessment

I – 880 Interchange Improvements
(Winton Avenue/A Street)
ALA 880 PM 17.2/18.5

Alameda County, CA

July 17, 2019

TJKM

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Tables

Figures

Appendices

TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT

This document summarizes the Traffic Engineering Performance Assessment (TEPA) for Interstate 880 (I-880)/Winton Avenue/A Street interchange improvements in the City of Hayward. The intent of this TEPA is to identify existing deficiencies and their causes and recommend future implementations to improve overall traffic conditions. The TEPA analysis focuses on localized traffic issues based on readily available information and data; it is assumed that a larger scale traffic engineering study with more detailed traffic analyses will be performed during the Project Approval and Environmental Document (PA&ED) phase. The following provides a summary of preliminary assessment and key findings of TEPA.

Documentation of the Traffic Engineering Performance Assessment

1. District: 4
2. County: Alameda County Transportation Commission
3. Route: Interstate 880
4. Post Mile: ALA 880 PM 17.2/18.5
5. Facility Type: Interchange
6. Project Type: Interchange improvements at I-880/Winton Avenue and I-880/A Street
7. Targeted System User: Passenger vehicles, Trucks, Buses, Bicyclists, Pedestrians and High occupant vehicles (HOV)
8. Key Transportation Agencies: Alameda CTC, City of Hayward, Caltrans

Purpose and Need

This Traffic Engineering Performance Assessment (TEPA) is for the Project Study Report – Project Development Support (PSR-PDS) phase of the I-880/Winton Avenue/A Street Interchange Improvements in the City of Hayward. The proposed project will upgrade I-880/Winton Avenue and I-880/A Street interchanges to relieve congestion, improve operations, enhance safety and provide needed capacity for all modes of transportation. This project will consider improvements to enhance operations, safety, and access to the Southland Mall for all modes of transportation at the I-880/Winton Avenue and I-880/A Street interchanges. It will also involve modifying signals and reconfiguring intersections to improve truck-turning maneuvers.

To determine impacts/mitigations from the project, the following study intersections will be evaluated:

1. Hesperian Boulevard/A Street
2. A Street/Royal Avenue
3. A Street/Victory Drive
4. A Street/Garden Avenue
5. A Street/S. Garden Avenue
6. A Street/I-880 Southbound Ramps*
7. A Street/I-880 Northbound Ramps*
8. A Street/Arbor Avenue
9. A Street/Happyland Driveway

10. A Street/Santa Clara Street-Hathaway Avenue
11. Hesperian Boulevard/Winton Avenue
12. Winton Avenue/Southland Place-Stonewall Avenue
13. Winton Avenue/Southland Drive
14. Winton Avenue/Santa Clara Street
15. Southland Drive/La Playa Drive
16. Hesperian Boulevard/Southland Drive
17. Hesperian Boulevard/La Playa Drive
18. A Street/Fuller Avenue

Notes:
*Study intersections are under the jurisdiction of Caltrans.
All other study intersections are under the jurisdiction of City of Hayward.

Assessment Approach, Data & Major Assumptions

- Traffic Forecasting & Modeling:
  1. Alameda CTC travel demand model will be used during the Project Approval and Environmental Document (PA&ED) phase of the project for projecting future traffic demands for the project. The travel demand model would have to incorporate the changes in the land use and committed transportation infrastructure projects.
- Traffic Analysis:
  1. Freeway operation analysis, including the mainline, merge, and diverge analysis will be conducted under the PA&ED phase of the project.
  2. Traffic signal operation analysis for existing and future traffic conditions will be conducted under the PA&ED phase of the project to determine the ultimate lane configurations at the study intersections to serve the projected demand under the opening year (Year 2025) and design year (Year 2045).
- Safety:
  1. Safety analysis including accident analysis will be conducted under the PA&ED phase of the project. At minimum, our collision data analysis will result in identifying the following:
     a. Percent of all crashes by type and location
     b. Severity of all crashes by location
     c. Violation factors by crash type and severity
     d. Percent of all crashes by mode involved
     e. Crash severity by movement preceding the crash
     f. Percent of all crashes by type and severity at intersection and roadway segments
     g. Yearly trends by crash types and severity
     h. Percent of fatal and several injury crashes by type, location, roadway segments and lighting conditions
     i. Top three highest occurring crash types
     j. Top five locations with highest number of fatal and severe injury crashes

The above mentioned collision data will be used for the development of specific improvements.

- Existing Traffic Volumes:

1. Annual Average Daily Traffic (AADT) – based on Caltrans 2016 data, I-880 in the immediate vicinity of the project carries approximately 240,000 vehicles per day.
2. Percentage of Trucks – based on Caltrans 2016 data, I-880 carries approximately 7% truck traffic within the vicinity of the project.

Preliminary Assessment Findings

The purpose of the TEPA process is to produce findings related to existing performance deficiencies and expected performance outcomes (benefits and impacts).

Project Study Limits

Freeway operation analysis will include I-880 freeway mainline analysis between Hesperian Boulevard and State Route 92 (SR 92). Traffic operational analysis will be conducted for the following study segments:

1. Interstate 880, between Hesperian Boulevard and State Route 92
2. Winton Avenue, between Santa Clara Street and Southland Place
3. A Street, between Santa Clara Street and Royal Avenue

Interstate 880 (I-880) is a ten –to- eight-lane freeway running in the north-south direction within project vicinity. In the immediate vicinity of the project, I-880 provides four mixed-flow lanes in both directions, and one HOV lane in each direction with a posted speed limit of 65 mph. As one of the major freeways in the San Francisco Bay Area, it provides access to Oakland and San Francisco to the north and San Jose to the south.

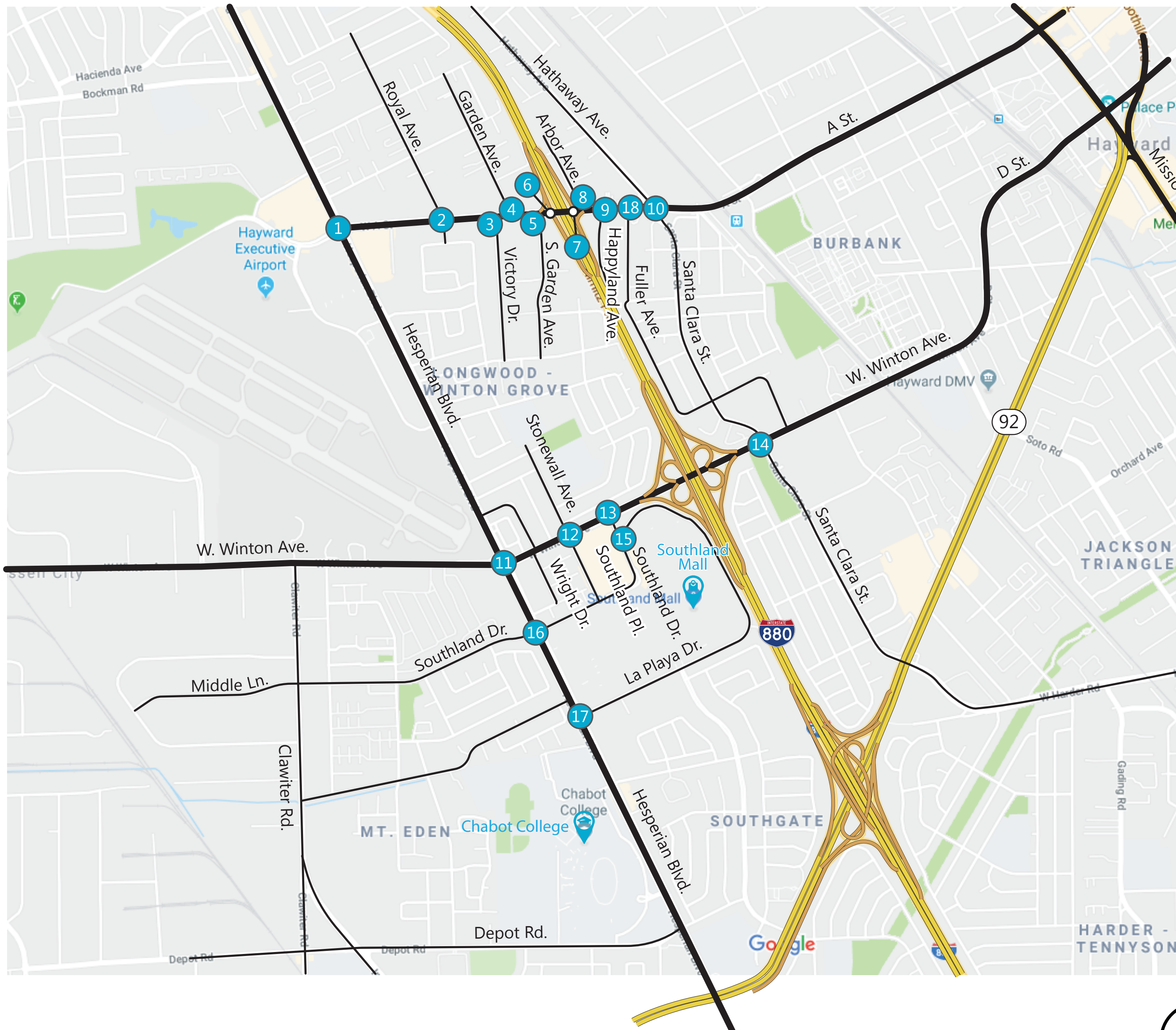
A Street is an east-west arterial roadway that extends from Hesperian Boulevard to the west and Grove Way to the east. A Street serves a mix of commercial and residential land uses in the project study area. Within the vicinity of the project, A Street features four travel lanes (two lanes in each direction) between Hesperian Boulevard and Santa Clara Street. A Street provides primary access to the Hayward Executive Airport and I-880. A Street has continuous sidewalks on both sides of the road and crosswalks at all intersections within the vicinity of the project. Class II Bike lanes are provided on A Street between Hesperian Boulevard and Santa Clara Street.

Winton Avenue is an east-west arterial roadway that extends from Depot Road to the west and Jackson Street to the east. Winton Avenue serves a mix of industrial, commercial, and residential land uses. Within the vicinity of the project, Winton Avenue features five travel lanes (three lanes in the eastbound direction and two lanes in the westbound direction) between Hesperian Boulevard and the I-880 Southbound Ramps and four travel lanes (two lanes in each direction) between I-880 Southbound Ramps and Santa Clara Street. Winton Avenue provides primary access to I-880 and secondary access to the Southland Mall. Winton Avenue has continuous sidewalks on both sides of the road and crosswalks at all intersections within the vicinity of the project. Class III Bike Route is provided on Winton Avenue between Southland Drive and Santa Clara Street.

Traffic Data Collection

TJKM collected 24-hour bi-directional traffic volume tube counts for seven days along Winton Avenue and A Street during December 2018. The average daily traffic (ADT) data collected was analyzed to estimate the weekday a.m., and p.m. peak periods for intersection turning movement counts (TMC) data collection. TJKM collected the TMC, when schools within the vicinity of the study intersections were in session. The TMC for vehicles, pedestrians, and bicycles were collected for the a.m. (7:00 a.m. – 9:00 a.m.), and p.m. peak periods (4:00 p.m. – 6:00 p.m.). **Appendix A** includes all the data sheets for the collected vehicle, bicycle and pedestrian counts. **Figure 1** illustrates the project vicinity area.

Vicinity Map



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X Study Intersections

Existing Intersection Operational Analysis and Performance

The existing operations of the study intersections were evaluated for the highest one-hour volume during the weekday morning and evening peak periods. **Figures 2a & 2b** illustrates the existing conditions lane geometry, traffic control and peak hour traffic volumes at the study intersections. Intersection capacity and LOS were determined using the SYNCHRO (Version 9) signalized intersection analysis software program based on the theory and methodologies contained in the HCM (**Table 1**). For the purposes of this study, a deficiency is defined as LOS E or worse.

Table 1: Level of Service Criteria for Signalized Intersections

Level of Service	*Control Delay per Vehicle*
A	<10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80

Source: 2010 Highway Capacity Manual

The results of the LOS analysis for Existing Conditions based on the data collected within the study area are summarized in **Table 2**. LOS work sheets are provided in **Appendix B**.

Table 2: Intersection Level of Service Analysis – Existing Conditions

#	Study Intersections	Control	Peak Hour[1]	Existing	
				Delay[2]	LOS[3]
1	Hesperian Boulevard/A Street	Signal	AM	33.4	C
			PM	45.9	D
2	A Street/Royal Avenue	Signal	AM	18.7	B
			PM	17.2	B
3	A Street/Victory Drive	Signal	AM	8.5	A
			PM	9.9	A
4	A Street/Garden Avenue	Two-Way Stop	AM	18.2	C
			PM	20.7	C
5	A Street/S. Garden Avenue	Two-Way Stop	AM	19.1	C
			PM	21.7	C
6	A Street/I-880 Southbound Ramps	Signal	AM	**176.4**	**F**
			PM	**123.4**	**F**
7	A Street/I-880 Northbound Ramps	Signal	AM	**116.1**	**F**
			PM	**173.6**	**F**
8	A Street/Arbor Avenue	One-Way Stop	AM	16.1	C
			PM	15.2	C
9	A Street/Happyland Driveway	Two-Way Stop	AM	**66.9**	**F**
			PM	**74.4**	**F**
10	A Street/Santa Clara Street-Hathaway Avenue	Signal	AM	37.8	D
			PM	39.7	D
11	Hesperian Boulevard/Winton Avenue	Signal	AM	**73.0**	**E**
			PM	**74.3**	**E**
12	Winton Avenue/Southland Place-Stonewall Avenue	Signal	AM	22.0	C
			PM	45.7	D
13	Winton Avenue/Southland Drive	Signal	AM	1.2	A
			PM	**70.7**	**E**
14	Winton Avenue/Santa Clara Street	Signal	AM	**70.1**	**E**
			PM	42.6	D
15	Southland Drive/La Playa Drive	Two-Way Stop	AM	N/A*	
			PM	N/A*	
16	Hesperian Boulevard/Southland Drive	Signal	AM	38.6	D
			PM	54.8	D
17	Hesperian Boulevard/La Playa Drive	Signal	AM	10.8	B
			PM	15.0	B
18	A Street/Fuller Avenue	One-Way Stop	AM	19.1	C
			PM	22.2	C

Notes: [1]AM – morning peak hour, PM – evening peak hour
[2]Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop controlled intersections.
[3]LOS – Level of Service
*Intersection Sign configuraton not allowed in HCM analysis.
Bold text indicates intersection operates at a deficient level of service.

Under existing conditions, A Street/I-880 Northbound Ramps and A Street/I-880 Southbound Ramps were operating at LOS F during the a.m., and p.m. peak hour. It is anticipated that this situation will worsen as regional traffic is projected to grow. Currently, minor approaches/streets that intersect with A Street are signalized within the vicinity of the project. Due to the significant volume of vehicles exiting I-880 onto A Street during peak hours of travel and the close proximity of the interchange ramp intersections, there are significant queues and delays at these intersections.

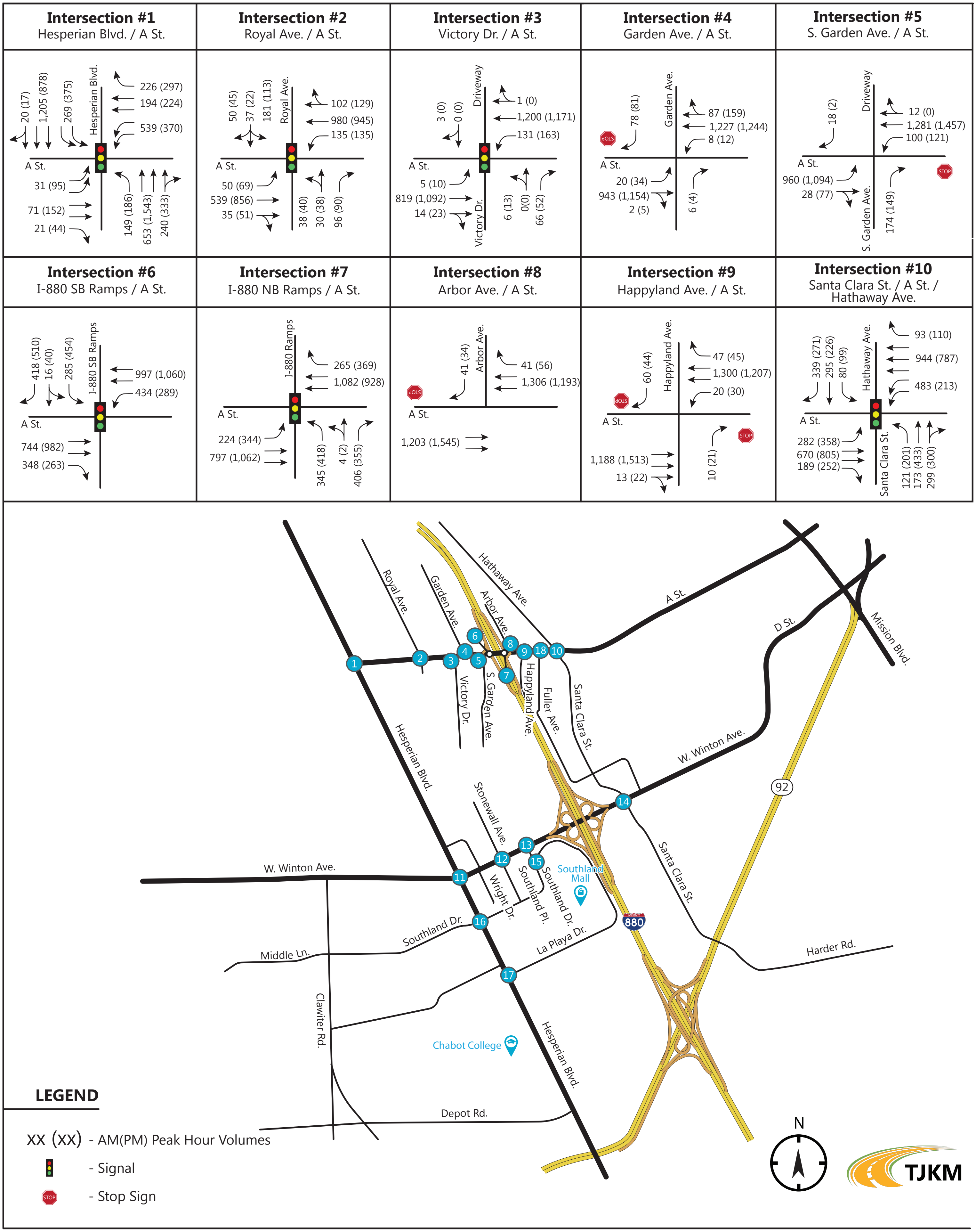
The I-880/Winton Avenue interchange is bordered by the Winton Avenue/Santa Clara Street and Winton Avenue/Southland Drive intersections which were evaluated as the ramp intersections for the purposes of this report. These intersections operate within the acceptable LOS D/E under existing conditions. Due to heavy left and through movement volumes at these intersections, queues build up across the Winton Avenue overpass and onto I-880. This situation will worsen with the expected regional traffic growth. The existing uncontrolled off ramps make it difficult for bicycles and pedestrians to traverse through the interchange area.

In addition to the above, the intersections of A Street/Happyland Driveway and Hesperian Boulevard/Winton Avenue are operating at an unacceptable level of service during the a.m., and p.m. peak periods.

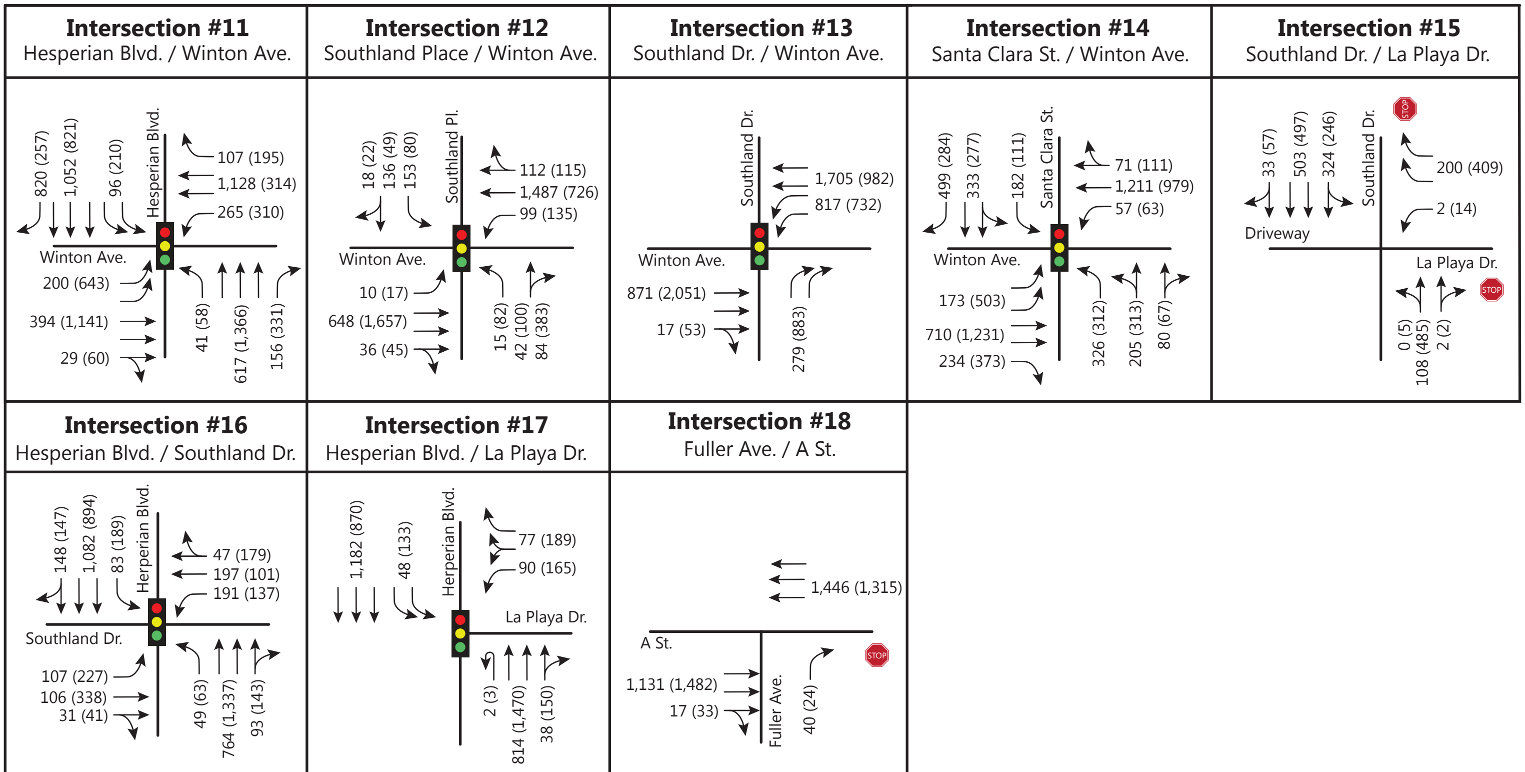
Existing Freeway and Ramps

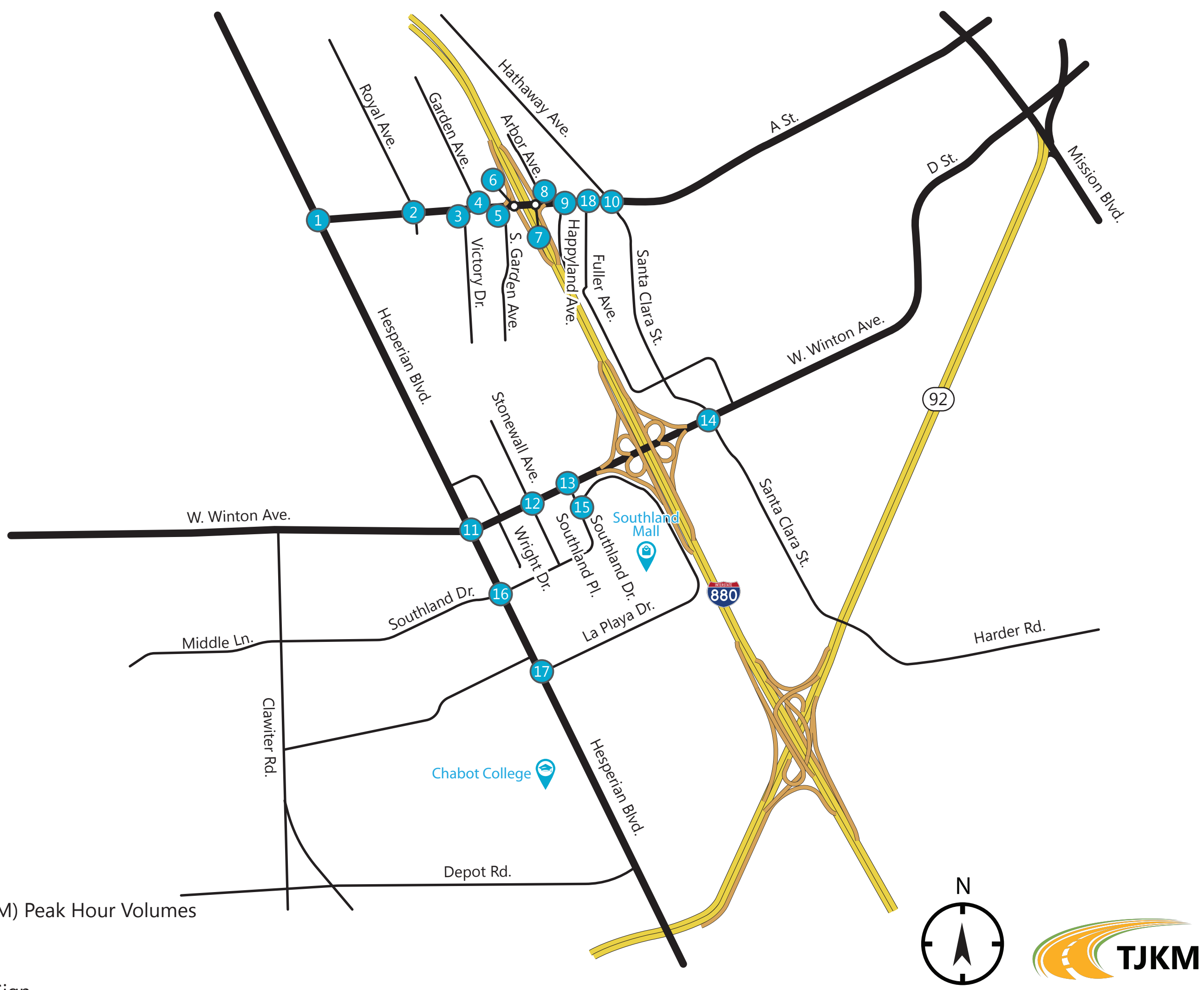
TJKM collected the existing traffic counts along the freeway mainline segments and ramps within the study area from Caltrans (2008-2018) data and the traffic volumes include the HOV lane and general purpose lanes volumes along the freeway mainline segments. **Appendix C** includes Caltrans data. **Figures 3a & 3b** illustrates the freeway mainline and ramp volumes.

Existing Lane Geometries & Turning Movement Volumes



Existing Lane Geometries & Turning Movement Volumes





LEGEND

XX (XX) - AM(PM) Peak Hour Volumes

- Signal

- Stop Sign

Figure 2b

Freeway and Ramp Counts - AM Peak Period (6:00 AM - 10:00 AM)

N

Hesperian Blvd

6 - 7 AM	297
7 - 8 AM	505
8 - 9 AM	485
9 - 10 AM	474

Mainline-NB	
6 - 7 AM	7,463
7 - 8 AM	7,326
8 - 9 AM	7,523
9 - 10 AM	7,332

I-880 NB

6 - 7 AM	572
7 - 8 AM	739
8 - 9 AM	604
9 - 10 AM	487

A Street

6 - 7 AM	325
7 - 8 AM	494
8 - 9 AM	571
9 - 10 AM	565

Mainline-NB	
6 - 7 AM	7,216
7 - 8 AM	7,081
8 - 9 AM	7,490
9 - 10 AM	7,410

6 - 7 AM	647
7 - 8 AM	964
8 - 9 AM	833
9 - 10 AM	819

Winton Avenue

6 - 7 AM	411
7 - 8 AM	466
8 - 9 AM	589
9 - 10 AM	598

I-880 NB

Mainline-NB	
6 - 7 AM	6,980
7 - 8 AM	6,583
8 - 9 AM	7,246
9 - 10 AM	7,189

From SR 92

6 - 7 AM	456
7 - 8 AM	491
8 - 9 AM	441
9 - 10 AM	373

SR 92

I-880 SB

6 - 7 AM	698
7 - 8 AM	853
8 - 9 AM	685
9 - 10 AM	569

Mainline-SB	
6 - 7 AM	7,699
7 - 8 AM	7,446
8 - 9 AM	8,126
9 - 10 AM	8,043

6 - 7 AM	752
7 - 8 AM	1,003
8 - 9 AM	896
9 - 10 AM	907

6 - 7 AM	680
7 - 8 AM	697
8 - 9 AM	658
9 - 10 AM	558

Mainline-SB	
6 - 7 AM	7,627
7 - 8 AM	7,140
8 - 9 AM	7,888
9 - 10 AM	7,694

6 - 7 AM	762
7 - 8 AM	745
8 - 9 AM	1,108
9 - 10 AM	1,203

I-880 SB

6 - 7 AM	426
7 - 8 AM	744
8 - 9 AM	732
9 - 10 AM	637

Mainline-SB	
6 - 7 AM	7,291
7 - 8 AM	7,139
8 - 9 AM	7,512
9 - 10 AM	7,128

To SR 92

6 - 7 AM	2,203
7 - 8 AM	2,968
8 - 9 AM	2,206
9 - 10 AM	2,619

TJKM

Freeway and Ramp Counts - PM Peak Period (3:00 PM - 7:00 PM)

N

Hesperian Blvd

A Street

Winton Avenue

SR 92

I-880 NB

3 - 4 PM	689
4 - 5 PM	678
5 - 6 PM	636
6 - 7 PM	666

Mainline-NB	
3 - 4 PM	8,548
4 - 5 PM	8,751
5 - 6 PM	8,936
6 - 7 PM	8,749

3 - 4 PM	735
4 - 5 PM	752
5 - 6 PM	756
6 - 7 PM	605

3 - 4 PM	863
4 - 5 PM	836
5 - 6 PM	792
6 - 7 PM	837

Mainline-NB	
3 - 4 PM	8,676
4 - 5 PM	8,835
5 - 6 PM	8,972
6 - 7 PM	8,981

3 - 4 PM	1,366
4 - 5 PM	1,529
5 - 6 PM	1,660
6 - 7 PM	1,183

3 - 4 PM	605
4 - 5 PM	510
5 - 6 PM	511
6 - 7 PM	549

Mainline-NB	
3 - 4 PM	7,915
4 - 5 PM	7,816
5 - 6 PM	7,823
6 - 7 PM	8,347

From SR 92

3 - 4 PM	510
4 - 5 PM	511
5 - 6 PM	513
6 - 7 PM	494

I-880 SB

3 - 4 PM	670
4 - 5 PM	660
5 - 6 PM	689
6 - 7 PM	657

Mainline-SB	
3 - 4 PM	8,515
4 - 5 PM	8,343
5 - 6 PM	8,881
6 - 7 PM	7,103

3 - 4 PM	788
4 - 5 PM	856
5 - 6 PM	978
6 - 7 PM	731

3 - 4 PM	598
4 - 5 PM	544
5 - 6 PM	534
6 - 7 PM	527

Mainline-SB	
3 - 4 PM	8,325
4 - 5 PM	8,031
5 - 6 PM	8,437
6 - 7 PM	6,899

3 - 4 PM	986
4 - 5 PM	871
5 - 6 PM	825
6 - 7 PM	885

3 - 4 PM	744
4 - 5 PM	696
5 - 6 PM	658
6 - 7 PM	527

Mainline-SB	
3 - 4 PM	8,083
4 - 5 PM	7,856
5 - 6 PM	8,270
6 - 7 PM	6,541

To SR 92

3 - 4 PM	1,942
4 - 5 PM	2,050
5 - 6 PM	2,165
6 - 7 PM	1,895

TJKM

Figure 3b

Accident Data and Analysis

Freeway Mainline and Ramp Collision Analysis

Accident data on the freeway mainline and ramps were obtained from California State's Traffic Accident Surveillance and Analysis System (TASAS) for a period of three years from January 2015 to December 2017. **Table 3** summarizes the number of collisions that were reported along the freeway mainline and ramps during the three-year analysis period. The collision rates were compared with the statewide average collision rates with similar characteristics.

Table 3: Freeway Mainline and Ramp Collision Analysis

#	Study Segment (Post Mile)	Number of Collisions			Collision Rate					
					Actual			State Average		
		Total	Fatal (Victims)	Fatal + Injury (Victims)	Total	Fatal	Fatal + Injury	Total	Fatal	Fatal+ Injury
1	I-880 between A Street and Winton Avenue (16.958/19.261)	1260	4	357	**1.83**	**0.006**	**0.519**	1.14	0.005	0.360
2	I-880 Northbound Off-Ramp to A Street (18.228)	6	0	4	**2.52**	0.000	**1.678**	0.92	0.004	0.346
3	I-880 Northbound On-Ramp from A Street (18.478)	8	0	2	**4.10**	0.000	**1.026**	0.60	0.004	0.346
4	I-880 Southbound Off-Ramp to A Street (18.482)	33	0	13	**10.68**	0.000	**4.208**	0.92	0.004	0.346
5	I-880 Southbound On-Ramp from A Street (18.246)	4	0	1	**1.93**	0.000	**0.483**	0.60	0.004	0.346
6	I-880 Northbound Off-Ramp to Winton Avenue EB (17.486)	4	0	2	**6.02**	0.000	**3.011**	0.92	0.004	0.346
7	I-880 Northbound Off-Ramp to Winton Avenue WB (17.485)	0	0	0	0.00	0.000	0.000	0.93	0.004	0.324
8	I-880 Northbound On-Ramp from Winton Avenue EB (17.723)	0	0	0	0.00	0.000	0.000	0.92	0.004	0.346
9	I-880 Northbound On-Ramp from Winton Avenue WB (17.724)	16	0	5	**7.59**	0.000	**2.373**	0.71	0.004	0.324
10	I-880 Southbound Off-Ramp to Winton Avenue EB (17.728)	0	0	0	0.00	0.000	0.000	0.93	0.004	0.324
11	I-880 Southbound Off-Ramp to Winton Avenue WB (17.727)	13	0	5	**5.38**	0.000	**2.071**	0.92	0.004	0.346
12	I-880 Southbound On-Ramp from Winton Avenue EB (17.483)	7	0	2	**3.53**	0.000	**1.007**	0.92	0.004	0.346
13	I-880 Southbound On-Ramp from Winton Avenue WB (17.484)	0	0	0	0.00	0.000	0.000	0.71	0.004	0.324
Total		**1351**	**4**	**391**						

Notes:
Source: Caltrans District 4 Traffic Accident Surveillance and Analysis System (TASAS) data.
Results in **bold** indicate locations where accident rate exceeds the state average.
For Freeway Mainline Segment, Actual Accident Rates and Statewide Average Rates expressed in million vehicle miles (MVM)
For Ramp Segments, Actual Accident Rates and Statewide Average Rates expressed in million vehicle (MV)

With reference to the TASAS data, a total of 1,260 accidents with 4 fatal and 357 injuries were reported on freeway mainline within our study area during the three-year study period. The total accident rate of 1.83 accidents per million vehicle miles (MVM) is higher than the statewide average of 1.14 accidents per MVM for similar types of facilities. The mainline fatality rate of 0.006 accidents per MVM is higher than the statewide average of 0.005 accidents per MVM.

The primary collision factor is rear-end, accounting for 68.5 percent of overall accidents, 22.3 percent is sideswipe. Other collision factors include hit object (6.6%), and broad-side (1%).

There were 91 accidents recorded on the I-880 Winton Avenue and A Street ramps during the three-year study period. Of the 91 accidents, 33 accidents were recorded on the I-880 Southbound Off-Ramp to A Street with the total accident rate of 10.68 accidents per Million Vehicles (MV), which is higher than the statewide average of 0.92 accidents per MV for similar types of facilities. The fatal plus injury rate of 4.208 accidents per MV is also significantly higher than the statewide average of 0.346 accidents per MV.

Corridor Collision Analysis

Accident data on the corridor were obtained from Transportation Injury Mapping System (TIMS) for a period of three years from January 2015 to December 2017. **Table 4** summarizes the number of collisions that were reported along the corridor during the three-year analysis period. The collision rates along corridor were compared with the statewide average collision rates for roadways with similar characteristics.

Table 4: Corridor Collision Analysis

#	Study Segment	Number of Collisions			Collisions Rate					
					Actual			State Average		
		Total	Fatal (Victims)	Fatal+ Injury (Victims)	Total	Fatal	Fatal+ Injury	Total	Fatal	Fatal+ Injury
1	A Street between Santa Clara Street and Arbor Avenue	10	0	12	1.41	0.00	**1.69**	1.71	0.005	0.453
2	A Street between South Garden Avenue and Royal Avenue	7	0	7	0.75	0.00	**0.75**	1.71	0.005	0.453
3	A Street between Royal Avenue and Hesperian Boulevard	7	1	10	0.98	**0.14**	**1.40**	1.71	0.005	0.453
4	West Winton Avenue between Santa Clara Street and I-880 SB Ramps	5	0	5	0.34	0.00	0.34	1.25	0.011	0.630
5	West Winton Avenue between I-880 SB Ramps and Southland Drive	7	0	7	0.77	0.00	**0.77**	1.71	0.005	0.453
6	West Winton Avenue between Southland Drive and Hesperian Boulevard	9	0	10	0.89	0.00	**0.98**	1.25	0.011	0.630
7	Southland Drive between La Playa and Southland Place	4	0	4	1.23	0.00	**1.23**	1.98	0.007	0.429

#	Study Segment	Number of Collisions			Collisions Rate					
					Actual			State Average		
		Total	Fatal (Victims)	Fatal+ Injury (Victims)	Total	Fatal	Fatal+ Injury	Total	Fatal	Fatal+ Injury
8	La Playa between Southland Drive and Sears Driveway	1	0	1	0.46	0.00	**0.46**	3.73	0.01	0.143

Notes:

Source: Transportation Injury Mapping System (TIMS) data.

Results in bold indicate locations where accident rate exceeds the state average

Scope of Future Traffic Engineering, Activities and Task

Traffic Forecasting

For the purpose of conducting the traffic operational analysis for the project, future year travel demand forecast will be conducted during the PA&ED phase of the project. Future year demand and vehicle miles traveled (VMT) forecast will be conducted using Alameda CTC travel demand model based on the consensus build between the stakeholders of the project. The travel demand model will be updated to incorporate the changes in the transportation infrastructure within the study area and land uses based on the City of Hayward General Plan and Specific Plans (if any).

Freeway and Ramp Capacity and Operational Analysis

Detailed operational analysis will be conducted for existing conditions, opening year (2025) conditions and design year (2045) conditions for No-Build and Build alternatives. The detailed operation analysis will include evaluation of freeway mainline, interchanges, arterial and intersection traffic operations with No-Build and Build alternatives. Freeway Operational analysis will include evaluation of freeway mainline traffic operations, merge and diverge analysis for the ramps, interchange improvements and ramp metering operations under all study scenarios. With respect to the ramp metering, the freeway traffic operations evaluation under project alternatives will include an estimate of queue storage requirements under peak conditions and potential additional analysis work to adjust ramp meter operation, if necessary as per 2017 Ramp Metering Design Manual (RMDM). Freeway and ramps traffic operational analysis will be conducted using VISSIM micro-simulation model. Operational analysis will be conducted for a period of 4 hours. Operational analysis hours for the a.m. and p.m. peak periods will be determined in consultation with City and Caltrans Staff. Entrance ramp HOV preferential lanes will be provided whenever ramp meters are installed.

Traffic operational analysis at the study intersections on A Street will include roundabout traffic control. The study intersections on Winton Avenue will include the direct connection to Southland Mall and also widening of road for additional storage. The traffic analysis will evaluate the impacts to the local street network on A Street and Winton Avenue. The traffic analysis will also evaluate the impacts on I-880 traffic interchanges east and west of A Street and Winton Avenue to identify potential bottlenecks and measures. Traffic operational analysis will be conducted using Synchro/SimTraffic or Sidra as applicable.

Pedestrian and Bicycles Improvement Analysis

Pedestrian and bicycle improvements including but not limited to: dedicated and shared-use paths will also be evaluated using HCS software.

Roundabout & Interchange Configuration

Intersection Control Evaluation (ICE) will be prepared during the PA&ED phase of the project to evaluate the effectiveness of the following:

- Roundabout
- Proposed Interchange Configurations

Traffic Impacts during Construction

The traffic impacts during construction for each alternative will be evaluated and mitigated. Special attention will be paid to the performance of non-standard geometric features, if any.

TEPA Findings and Recommendations

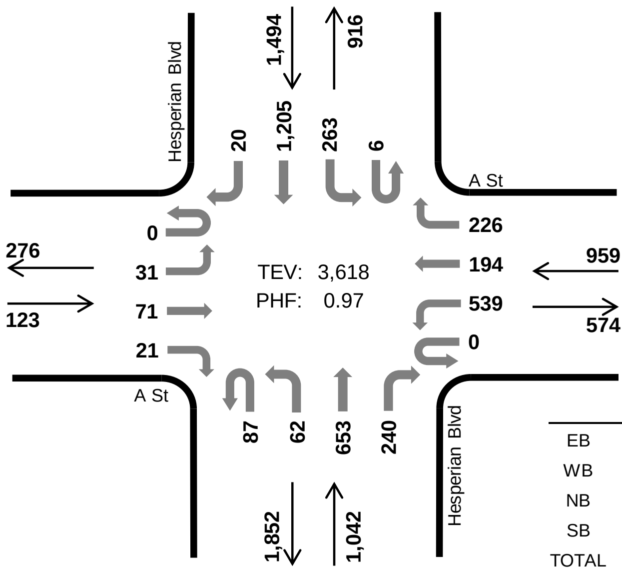
This TEPA presents the current study area performance deficiencies associated with the project and is used as a tool to determine the scope of the traffic analysis that will be produced during the PA&ED phase of the project.

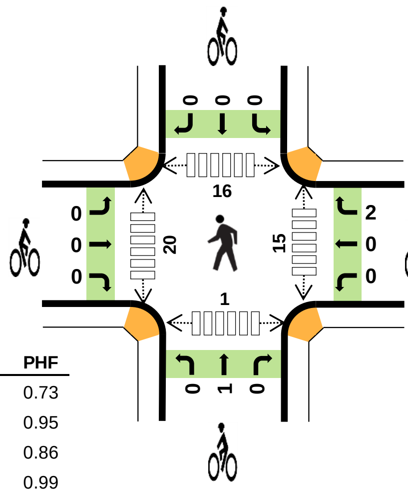
Appendix A – Traffic Counts Sheets

Hesperian Blvd
A St

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour





	HV %:	PHF
EB	3.3%	0.73
WB	3.6%	0.95
NB	4.5%	0.86
SB	1.9%	0.99
TOTAL	3.2%	0.97

Two-Hour Count Summaries

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Hesperian Blvd Northbound UT	LT	TH	RT	Hesperian Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	7	13	4	0	147	23	32	7	9	82	36	0	41	283	1	685	0
7:15 AM	0	12	14	6	0	123	22	44	8	5	97	34	0	51	308	5	729	0
7:30 AM	0	5	11	6	0	130	39	67	11	2	140	31	1	74	308	4	829	0
7:45 AM	**0**	**2**	**14**	**5**	**0**	**135**	**46**	**72**	**11**	**12**	**167**	**51**	**1**	**55**	**306**	**8**	**885**	3,128
8:00 AM	**0**	**6**	**12**	**4**	**0**	**144**	**55**	**44**	**29**	**12**	**146**	**67**	**1**	**96**	**281**	**1**	**898**	3,341
8:15 AM	**0**	**6**	**26**	**6**	**0**	**126**	**42**	**57**	**35**	**21**	**176**	**70**	**2**	**63**	**294**	**7**	**931**	3,543
8:30 AM	**0**	**17**	**19**	**6**	**0**	**134**	**51**	**53**	**12**	**17**	**164**	**52**	**2**	**49**	**324**	**4**	**904**	**3,618**
8:45 AM	0	10	20	4	0	132	41	52	6	19	112	38	4	61	308	4	811	3,544
Count Total	0	65	129	41	0	1,071	319	421	119	97	1,084	379	11	490	2,412	34	6,672	0
Peak Hour All	**0**	**31**	**71**	**21**	**0**	**539**	**194**	**226**	**87**	**62**	**653**	**240**	**6**	**263**	**1,205**	**20**	**3,618**	**0**
Peak Hour HV	**0**	**1**	**2**	**1**	**0**	**21**	**5**	**9**	**1**	**0**	**28**	**18**	**0**	**9**	**20**	**0**	**115**	**0**
Peak Hour HV%	**-**	**3%**	**3%**	**5%**	**-**	**4%**	**3%**	**4%**	**1%**	**0%**	**4%**	**8%**	**0%**	**3%**	**2%**	**0%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	1	7	7	3	*18*	0	0	0	0	*0*	6	5	5	0	*16*
7:15 AM	0	9	9	7	*25*	0	0	0	0	*0*	5	3	5	0	*13*
7:30 AM	1	7	6	6	*20*	0	0	1	0	*1*	4	2	3	0	*9*
7:45 AM	**1**	**7**	**13**	**6**	***27***	**0**	**1**	**1**	**0**	***2***	**3**	**5**	**6**	**0**	*14*
8:00 AM	**2**	**7**	**12**	**9**	***30***	**0**	**0**	**0**	**0**	***0***	**3**	**2**	**1**	**0**	*6*
8:15 AM	**0**	**8**	**6**	**9**	***23***	**0**	**1**	**0**	**0**	***1***	**7**	**6**	**6**	**0**	*19*
8:30 AM	**1**	**13**	**16**	**5**	***35***	**0**	**0**	**0**	**0**	***0***	**2**	**7**	**3**	**1**	***13***
8:45 AM	1	11	11	7	*30*	0	0	0	1	*1*	3	6	4	0	*13*
Count Total	7	69	80	52	*208*	0	2	2	1	*5*	33	36	33	1	*103*
Peak Hour	**4**	**35**	**47**	**29**	***115***	**0**	**2**	**1**	**0**	***3***	**15**	**20**	**16**	**1**	***52***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Hesperian Blvd				Hesperian Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	1	0	6	0	1	0	1	2	4	0	0	3	0	18	0
7:15 AM	0	0	0	0	0	6	0	3	0	0	6	3	0	3	3	1	25	0
7:30 AM	0	0	0	1	0	6	0	1	0	0	4	2	0	1	5	0	20	0
7:45 AM	**0**	**0**	**0**	**1**	**0**	**4**	**1**	**2**	**0**	**0**	**7**	**6**	**0**	**3**	**3**	**0**	**27**	90
8:00 AM	**0**	**1**	**1**	**0**	**0**	**5**	**1**	**1**	**1**	**0**	**8**	**3**	**0**	**4**	**5**	**0**	**30**	102
8:15 AM	**0**	**0**	**0**	**0**	**0**	**6**	**1**	**1**	**0**	**0**	**5**	**1**	**0**	**0**	**9**	**0**	**23**	100
8:30 AM	**0**	**0**	**1**	**0**	**0**	**6**	**2**	**5**	**0**	**0**	**8**	**8**	**0**	**2**	**3**	**0**	**35**	**115**
8:45 AM	0	0	1	0	0	5	2	4	0	1	9	1	0	4	3	0	30	118
Count Total	0	1	3	3	0	44	7	18	1	2	49	28	0	17	34	1	208	0
Peak Hour	**0**	**1**	**2**	**1**	**0**	**21**	**5**	**9**	**1**	**0**	**28**	**18**	**0**	**9**	**20**	**0**	**115**	**0**

Two-Hour Count Summaries - Bikes

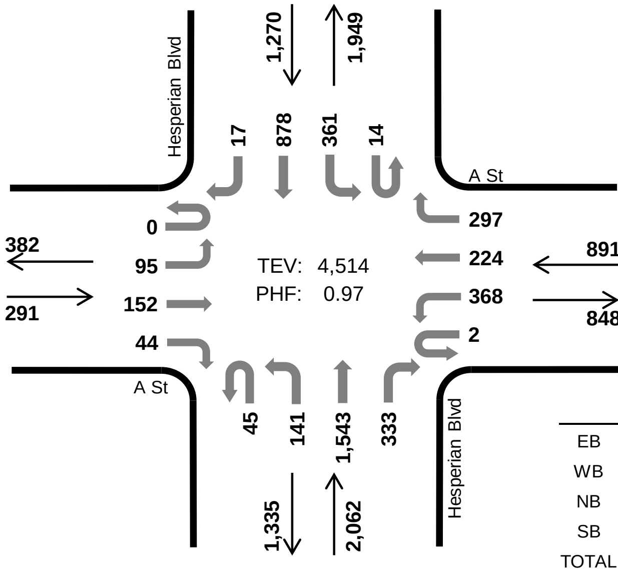
Interval Start	A St			A St			Hesperian Blvd			Hesperian Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	3
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
8:15 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Count Total	0	0	0	0	0	2	0	2	0	0	1	0	5	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

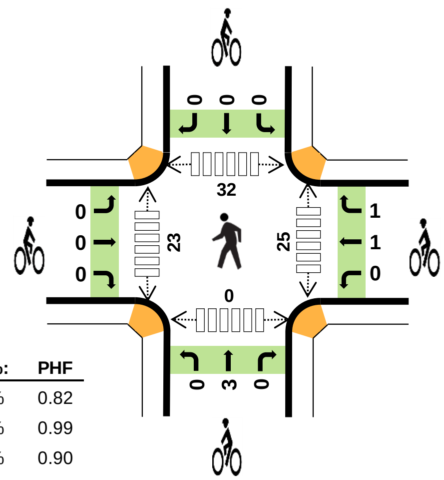
Hesperian Blvd
A St

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Peak Hour



	HV %:	PHF
EB	1.7%	0.82
WB	3.0%	0.99
NB	0.9%	0.90
SB	1.7%	0.93
TOTAL	1.6%	0.97



Two-Hour Count Summaries

Interval Start		A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Hesperian Blvd Northbound UT	LT	TH	RT	Hesperian Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	20	35	9	0	78	44	66	8	22	374	92	5	81	211	1	1,046	0
4:15 PM		0	13	38	5	0	88	50	63	14	33	380	80	2	68	168	9	1,011	0
4:30 PM		0	14	40	14	0	84	46	60	8	40	404	82	2	78	205	4	1,081	0
4:45 PM		0	12	52	8	0	94	60	67	13	36	367	93	6	97	237	7	1,149	4,287
5:00 PM		**0**	**29**	**47**	**13**	**0**	**86**	**63**	**74**	**11**	**36**	**357**	**86**	**5**	**100**	**222**	**1**	**1,130**	4,371
5:15 PM		**0**	**23**	**21**	**16**	**1**	**113**	**52**	**60**	**9**	**36**	**375**	**91**	**3**	**82**	**252**	**3**	**1,137**	4,497
5:30 PM		**0**	**20**	**38**	**8**	**0**	**92**	**51**	**75**	**12**	**33**	**369**	**75**	**6**	**98**	**201**	**6**	**1,084**	4,500
5:45 PM		**0**	**23**	**46**	**7**	**1**	**77**	**58**	**88**	**13**	**36**	**442**	**81**	**0**	**81**	**203**	**7**	**1,163**	**4,514**
Count Total		0	154	317	80	2	712	424	553	88	272	3,068	680	29	685	1,699	38	8,801	0
Peak Hour	**All**	**0**	**95**	**152**	**44**	**2**	**368**	**224**	**297**	**45**	**141**	**1,543**	**333**	**14**	**361**	**878**	**17**	**4,514**	**0**
	HV	**0**	**0**	**5**	**0**	**0**	**21**	**4**	**2**	**0**	**0**	**9**	**9**	**0**	**5**	**17**	**0**	**72**	**0**
	HV%	**-**	**0%**	**3%**	**0%**	**0%**	**6%**	**2%**	**1%**	**0%**	**0%**	**1%**	**3%**	**0%**	**1%**	**2%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	1	6	12	4	*23*	0	0	0	0	*0*	11	1	8	0	*20*
4:15 PM	1	9	6	8	*24*	0	0	0	0	*0*	5	1	8	0	*14*
4:30 PM	3	7	4	5	*19*	0	0	1	0	*1*	6	3	5	0	*14*
4:45 PM	2	8	8	8	*26*	0	0	1	0	*1*	3	2	2	1	*8*
5:00 PM	**1**	**6**	**6**	**5**	***18***	**0**	**0**	**0**	**0**	***0***	**9**	**1**	**5**	**0**	*15*
5:15 PM	**1**	**7**	**5**	**7**	***20***	**0**	**1**	**0**	**0**	***1***	**5**	**10**	**5**	**0**	*20*
5:30 PM	**1**	**6**	**3**	**6**	***16***	**0**	**1**	**3**	**0**	***4***	**4**	**4**	**14**	**0**	*22*
5:45 PM	**2**	**8**	**4**	**4**	***18***	**0**	**0**	**0**	**0**	***0***	**7**	**8**	**8**	**0**	***23***
Count Total	12	57	48	47	*164*	0	2	5	0	*7*	50	30	55	1	*136*
Peak Hour	**5**	**27**	**18**	**22**	***72***	**0**	**2**	**3**	**0**	***5***	**25**	**23**	**32**	**0**	***80***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Hesperian Blvd				Hesperian Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	1	0	6	0	0	0	1	8	3	0	1	3	0	23	0
4:15 PM	0	0	1	0	0	7	1	1	1	0	5	0	0	2	6	0	24	0
4:30 PM	0	0	2	1	0	4	1	2	0	0	2	2	0	0	5	0	19	0
4:45 PM	0	0	2	0	0	8	0	0	0	1	6	1	0	1	7	0	26	92
5:00 PM	**0**	**0**	**1**	**0**	**0**	**4**	**2**	**0**	**0**	**0**	**3**	**3**	**0**	**1**	**4**	**0**	**18**	87
5:15 PM	**0**	**0**	**1**	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**2**	**3**	**0**	**1**	**6**	**0**	**20**	83
5:30 PM	**0**	**0**	**1**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**3**	**3**	**0**	**16**	80
5:45 PM	**0**	**0**	**2**	**0**	**0**	**5**	**2**	**1**	**0**	**0**	**2**	**2**	**0**	**0**	**4**	**0**	**18**	**72**
Count Total	0	0	10	2	0	46	6	5	1	2	30	15	0	9	38	0	164	0
Peak Hour	**0**	**0**	**5**	**0**	**0**	**21**	**4**	**2**	**0**	**0**	**9**	**9**	**0**	**5**	**17**	**0**	**72**	**0**

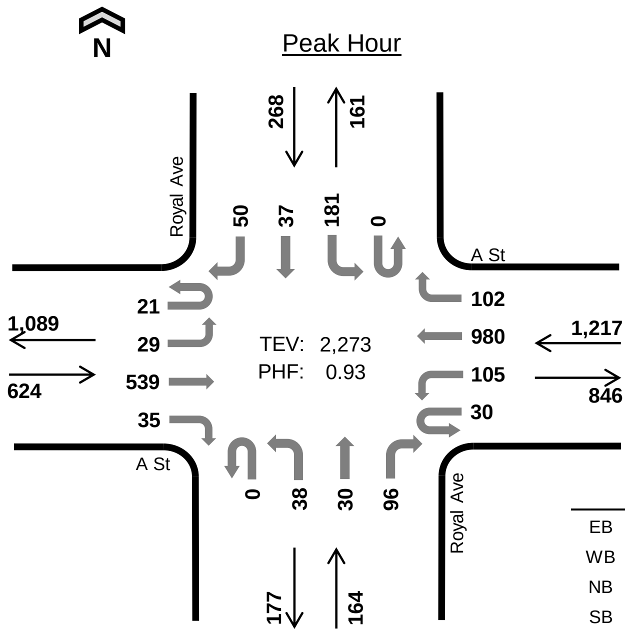
Two-Hour Count Summaries - Bikes

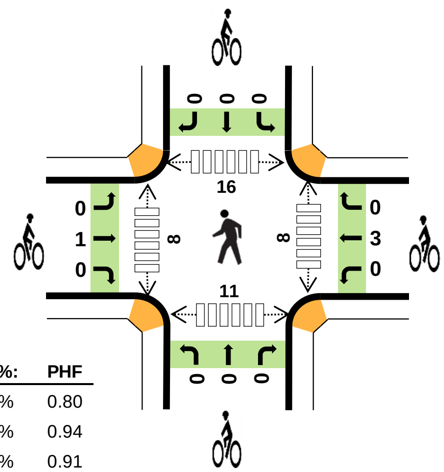
Interval Start	A St			A St			Hesperian Blvd			Hesperian Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:30 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**4**	6
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
Count Total	0	0	0	0	1	1	0	5	0	0	0	0	7	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**5**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Royal Ave
A St

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	4.3%	0.80
WB	3.6%	0.94
NB	3.0%	0.91
SB	1.5%	0.88
TOTAL	3.5%	0.93

Two-Hour Count Summaries

Interval Start		A St Eastbound				A St Westbound				Royal Ave Northbound				Royal Ave Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		2	6	93	9	3	8	190	8	0	4	2	33	0	30	6	14	408	0
7:15 AM		2	1	111	4	3	23	182	16	0	10	4	33	0	53	8	6	456	0
7:30 AM		7	3	117	8	3	17	213	19	0	9	4	29	0	58	12	11	510	0
7:45 AM		**4**	**7**	**105**	**7**	**7**	**29**	**268**	**18**	**0**	**12**	**8**	**25**	**0**	**48**	**17**	**9**	**564**	1,938
8:00 AM		**5**	**7**	**171**	**12**	**8**	**38**	**225**	**24**	**0**	**13**	**8**	**23**	**0**	**50**	**12**	**14**	**610**	2,140
8:15 AM		**4**	**7**	**139**	**11**	**8**	**13**	**243**	**35**	**0**	**9**	**8**	**19**	**0**	**45**	**5**	**13**	**559**	2,243
8:30 AM		**8**	**8**	**124**	**5**	**7**	**25**	**244**	**25**	**0**	**4**	**6**	**29**	**0**	**38**	**3**	**14**	**540**	**2,273**
8:45 AM		3	6	121	9	4	14	227	11	0	8	2	29	0	28	6	9	477	2,186
Count Total		35	45	981	65	43	167	1,792	156	0	69	42	220	0	350	69	90	4,124	0
Peak Hour	**All**	**21**	**29**	**539**	**35**	**30**	**105**	**980**	**102**	**0**	**38**	**30**	**96**	**0**	**181**	**37**	**50**	**2,273**	**0**
	HV	**0**	**2**	**21**	**4**	**0**	**6**	**37**	**1**	**0**	**0**	**0**	**5**	**0**	**3**	**0**	**1**	**80**	**0**
	HV%	**0%**	**7%**	**4%**	**11%**	**0%**	**6%**	**4%**	**1%**	**-**	**0%**	**0%**	**5%**	**-**	**2%**	**0%**	**2%**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	7	6	0	0	*13*	0	0	0	1	*1*	4	2	3	2	*11*
7:15 AM	7	14	1	1	*23*	0	3	0	0	*3*	0	0	2	5	*7*
7:30 AM	4	8	0	1	*13*	0	2	1	1	*4*	0	2	3	4	*9*
7:45 AM	**7**	**8**	**1**	**2**	***18***	**0**	**2**	**0**	**0**	***2***	**0**	**4**	**4**	**3**	*11*
8:00 AM	**8**	**10**	**1**	**0**	***19***	**1**	**1**	**0**	**0**	***2***	**4**	**3**	**4**	**1**	*12*
8:15 AM	**1**	**12**	**2**	**0**	***15***	**0**	**0**	**0**	**0**	***0***	**4**	**0**	**2**	**4**	*10*
8:30 AM	**11**	**14**	**1**	**2**	***28***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**6**	**3**	*10*
8:45 AM	4	15	3	1	*23*	0	1	0	0	*1*	0	1	3	4	*8*
Count Total	49	87	9	7	*152*	1	9	1	2	*13*	12	13	27	26	*78*
Peak Hour	**27**	**44**	**5**	**4**	***80***	**1**	**3**	**0**	**0**	***4***	**8**	**8**	**16**	**11**	***43***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Royal Ave				Royal Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	7	0	0	0	6	0	0	0	0	0	0	0	0	0	13	0
7:15 AM	0	0	7	0	0	2	9	3	0	0	1	0	0	1	0	0	23	0
7:30 AM	0	0	4	0	0	0	7	1	0	0	0	0	0	1	0	0	13	0
7:45 AM	**0**	**2**	**3**	**2**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**18**	67
8:00 AM	**0**	**0**	**8**	**0**	**0**	**2**	**7**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**19**	73
8:15 AM	**0**	**0**	**0**	**1**	**0**	**1**	**11**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**15**	65
8:30 AM	**0**	**0**	**10**	**1**	**0**	**3**	**11**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**28**	**80**
8:45 AM	0	0	4	0	0	4	11	0	0	0	0	3	0	1	0	0	23	85
Count Total	0	2	43	4	0	12	70	5	0	0	1	8	0	6	0	1	152	0
Peak Hour	**0**	**2**	**21**	**4**	**0**	**6**	**37**	**1**	**0**	**0**	**0**	**5**	**0**	**3**	**0**	**1**	**80**	**0**

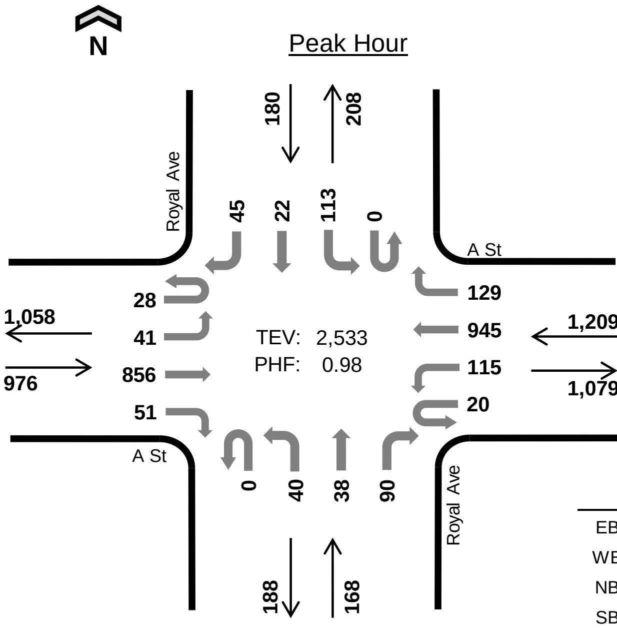
Two-Hour Count Summaries - Bikes

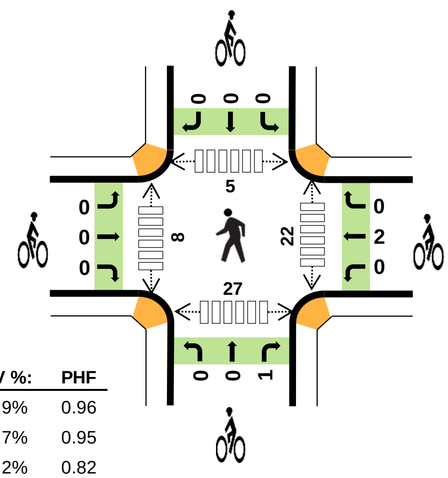
Interval Start	A St			A St			Royal Ave			Royal Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:15 AM	0	0	0	0	3	0	0	0	0	0	0	0	3	0
7:30 AM	0	0	0	1	1	0	0	1	0	0	1	0	4	0
7:45 AM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	10
8:00 AM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	11
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	8
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	3
Count Total	0	1	0	1	8	0	0	1	0	0	2	0	13	0
Peak Hour	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Royal Ave
A St

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	1.9%	0.96
WB	2.7%	0.95
NB	1.2%	0.82
SB	0.0%	0.75
TOTAL	2.1%	0.98

Two-Hour Count Summaries

Interval Start		A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Royal Ave Northbound UT	LT	TH	RT	Royal Ave Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		7	19	228	8	11	25	202	29	0	7	10	23	0	39	8	8	624	0
4:15 PM		4	14	208	10	3	18	200	27	0	9	12	18	0	30	6	7	566	0
4:30 PM		6	21	196	11	6	17	211	26	0	6	3	24	0	36	4	7	574	0
4:45 PM		5	12	236	15	7	22	231	13	0	8	8	27	0	37	2	13	636	2,400
5:00 PM		**7**	**7**	**215**	**14**	**4**	**38**	**225**	**28**	**0**	**10**	**7**	**34**	**0**	**23**	**6**	**14**	**632**	2,408
5:15 PM		**10**	**21**	**213**	**8**	**5**	**21**	**232**	**40**	**0**	**12**	**12**	**22**	**0**	**23**	**5**	**8**	**632**	2,474
5:30 PM		**7**	**8**	**202**	**11**	**6**	**34**	**231**	**26**	**0**	**9**	**11**	**15**	**0**	**41**	**7**	**12**	**620**	2,520
5:45 PM		**4**	**5**	**226**	**18**	**5**	**22**	**257**	**35**	**0**	**9**	**8**	**19**	**0**	**26**	**4**	**11**	**649**	**2,533**
Count Total		50	107	1,724	95	47	197	1,789	224	0	70	71	182	0	255	42	80	4,933	0
Peak Hour	**All**	**28**	**41**	**856**	**51**	**20**	**115**	**945**	**129**	**0**	**40**	**38**	**90**	**0**	**113**	**22**	**45**	**2,533**	**0**
	HV	**0**	**0**	**19**	**0**	**0**	**1**	**30**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**54**	**0**
	HV%	**0%**	**0%**	**2%**	**0%**	**0%**	**1%**	**3%**	**2%**	**-**	**3%**	**3%**	**0%**	**-**	**0%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	3	6	2	0	*11*	0	0	1	0	*1*	0	1	2	4	*7*
4:15 PM	4	8	0	2	*14*	2	0	0	0	*2*	1	0	1	5	*7*
4:30 PM	4	9	0	0	*13*	0	0	0	1	*1*	2	1	2	1	*6*
4:45 PM	3	7	0	0	*10*	0	0	0	1	*1*	4	7	5	3	*19*
5:00 PM	**5**	**3**	**0**	**0**	***8***	**0**	**0**	**1**	**0**	***1***	**10**	**1**	**3**	**6**	*20*
5:15 PM	**3**	**10**	**1**	**0**	***14***	**0**	**2**	**0**	**0**	***2***	**5**	**1**	**1**	**6**	*13*
5:30 PM	**7**	**11**	**0**	**0**	***18***	**0**	**0**	**0**	**0**	***0***	**3**	**3**	**0**	**7**	*13*
5:45 PM	**4**	**9**	**1**	**0**	***14***	**0**	**0**	**0**	**0**	***0***	**4**	**3**	**1**	**8**	***16***
Count Total	33	63	4	2	*102*	2	2	2	2	*8*	29	17	15	40	*101*
Peak Hour	**19**	**33**	**2**	**0**	***54***	**0**	**2**	**1**	**0**	***3***	**22**	**8**	**5**	**27**	***62***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Royal Ave Northbound UT	LT	TH	RT	Royal Ave Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	3	0	0	1	5	0	0	0	0	2	0	0	0	0	11	0
4:15 PM	0	0	4	0	0	0	8	0	0	0	0	0	0	1	0	1	14	0
4:30 PM	0	0	4	0	0	0	9	0	0	0	0	0	0	0	0	0	13	0
4:45 PM	0	0	3	0	0	0	7	0	0	0	0	0	0	0	0	0	10	48
5:00 PM	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	45
5:15 PM	**0**	**0**	**3**	**0**	**0**	**0**	**8**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**14**	45
5:30 PM	**0**	**0**	**7**	**0**	**0**	**1**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	50
5:45 PM	**0**	**0**	**4**	**0**	**0**	**0**	**9**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**54**
Count Total	0	0	33	0	0	2	59	2	0	1	1	2	0	1	0	1	102	0
Peak Hour	**0**	**0**	**19**	**0**	**0**	**1**	**30**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**54**	**0**

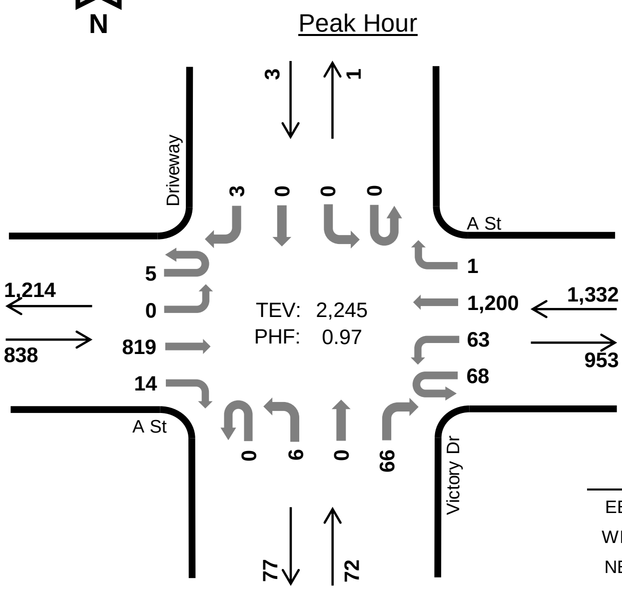
Two-Hour Count Summaries - Bikes

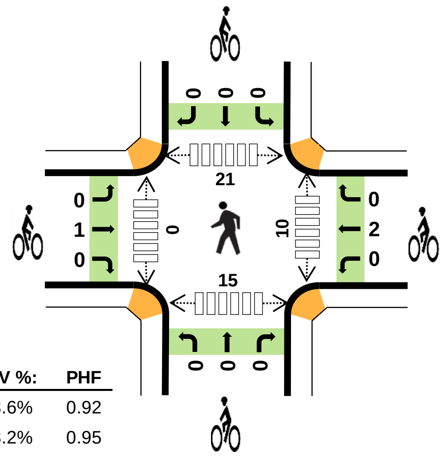
Interval Start	A St Eastbound LT	TH	RT	A St Westbound LT	TH	RT	Royal Ave Northbound LT	TH	RT	Royal Ave Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	5
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	5
5:15 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	5
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
Count Total	0	2	0	0	2	0	0	0	2	1	0	1	8	0
Peak Hour	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Victory Dr
A St

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	3.6%	0.92
WB	3.2%	0.95
NB	1.4%	0.69
SB	0.0%	0.38
TOTAL	3.3%	0.97

Two-Hour Count Summaries

Interval Start		A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Victory Dr Northbound UT	LT	TH	RT	Driveway Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM		0	0	163	1	15	14	201	0	0	5	0	25	0	0	0	0	424	0
7:15 AM		2	0	188	3	13	7	212	0	0	6	0	14	0	0	0	0	445	0
7:30 AM		3	0	223	2	20	13	251	0	0	4	0	14	0	0	0	1	531	0
7:45 AM		**1**	**0**	**179**	**2**	**18**	**18**	**315**	**0**	**0**	**2**	**0**	**24**	**0**	**0**	**0**	**1**	**560**	1,960
8:00 AM		**0**	**0**	**226**	**2**	**15**	**19**	**285**	**0**	**0**	**1**	**0**	**17**	**0**	**0**	**0**	**2**	**567**	2,103
8:15 AM		**2**	**0**	**221**	**5**	**20**	**16**	**297**	**1**	**0**	**2**	**0**	**16**	**0**	**0**	**0**	**0**	**580**	2,238
8:30 AM		**2**	**0**	**193**	**5**	**15**	**10**	**303**	**0**	**0**	**1**	**0**	**9**	**0**	**0**	**0**	**0**	**538**	**2,245**
8:45 AM		1	0	176	0	19	10	253	0	0	5	0	14	0	1	0	0	479	2,164
Count Total		11	0	1,569	20	135	107	2,117	1	0	26	0	133	0	1	0	4	4,124	0
Peak Hour	**All**	**5**	**0**	**819**	**14**	**68**	**63**	**1,200**	**1**	**0**	**6**	**0**	**66**	**0**	**0**	**0**	**3**	**2,245**	**0**
	HV	**0**	**0**	**30**	**0**	**0**	**1**	**42**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**74**	**0**
	HV%	**0%**	**-**	**4%**	**0%**	**0%**	**2%**	**4%**	**0%**	**-**	**0%**	**-**	**2%**	**-**	**-**	**-**	**0%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	8	6	1	0	*15*	0	0	0	0	*0*	2	0	2	6	*10*
7:15 AM	7	14	1	0	*22*	0	1	0	0	*1*	1	0	1	8	*10*
7:30 AM	8	11	0	0	*19*	0	1	0	0	*1*	1	0	6	5	*12*
7:45 AM	**6**	**7**	**0**	**0**	***13***	**0**	**2**	**0**	**0**	***2***	**2**	**0**	**3**	**3**	*8*
8:00 AM	**6**	**12**	**1**	**0**	***19***	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**9**	**4**	*14*
8:15 AM	**5**	**12**	**0**	**0**	***17***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**4**	**5**	*10*
8:30 AM	**13**	**12**	**0**	**0**	***25***	**0**	**0**	**0**	**0**	***0***	**6**	**0**	**5**	**3**	***14***
8:45 AM	8	16	2	0	*26*	0	0	0	0	*0*	1	0	4	3	*8*
Count Total	61	90	5	0	*156*	1	4	0	0	*5*	15	0	34	37	*86*
Peak Hour	**30**	**43**	**1**	**0**	***74***	**1**	**2**	**0**	**0**	***3***	**10**	**0**	**21**	**15**	***46***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Victory Dr Northbound UT	LT	TH	RT	Driveway Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	8	0	0	0	6	0	0	0	0	1	0	0	0	0	15	0
7:15 AM	0	0	7	0	0	0	14	0	0	0	0	1	0	0	0	0	22	0
7:30 AM	0	0	8	0	1	1	9	0	0	0	0	0	0	0	0	0	19	0
7:45 AM	**0**	**0**	**6**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	69
8:00 AM	**0**	**0**	**6**	**0**	**0**	**1**	**11**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**19**	73
8:15 AM	**0**	**0**	**5**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	68
8:30 AM	**0**	**0**	**13**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**74**
8:45 AM	0	0	8	0	0	1	15	0	0	0	0	2	0	0	0	0	26	87
Count Total	0	0	61	0	1	3	86	0	0	0	0	5	0	0	0	0	156	0
Peak Hour	**0**	**0**	**30**	**0**	**0**	**1**	**42**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**74**	**0**

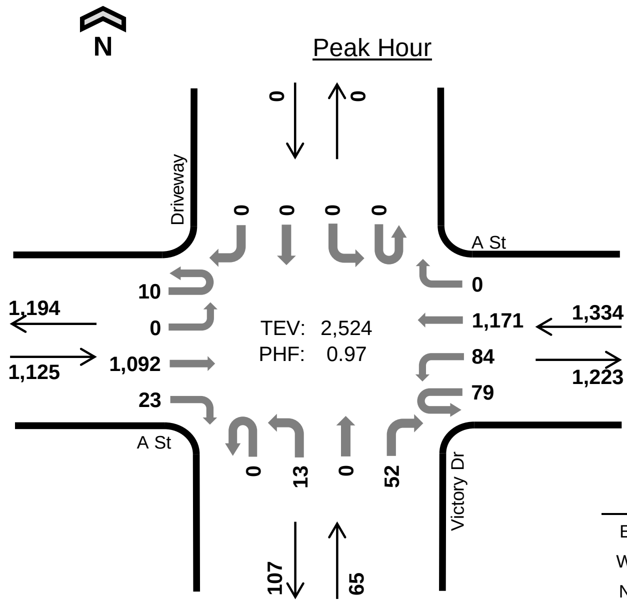
Two-Hour Count Summaries - Bikes

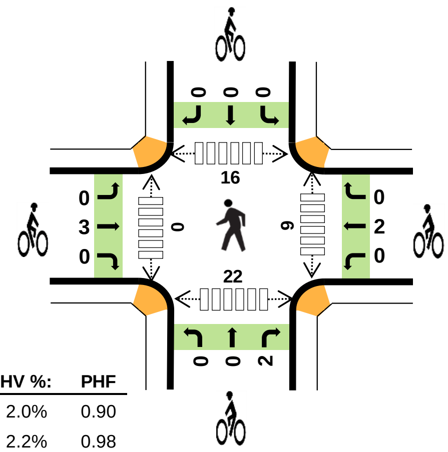
Interval Start	A St Eastbound LT	TH	RT	A St Westbound LT	TH	RT	Victory Dr Northbound LT	TH	RT	Driveway Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:45 AM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	4
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	1	0	0	4	0	0	0	0	0	0	0	5	0
Peak Hour	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Victory Dr
A St

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	2.0%	0.90
WB	2.2%	0.98
NB	0.0%	0.81
SB	-	-
TOTAL	2.0%	0.97

Two-Hour Count Summaries

Interval Start		A St				A St				Victory Dr				Driveway				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		1	0	286	3	15	16	270	1	0	4	0	14	0	0	0	0	610	0
4:15 PM		0	0	271	7	17	24	235	0	0	4	0	14	0	0	0	0	572	0
4:30 PM		0	0	246	4	17	17	263	0	0	0	0	15	0	0	0	0	562	0
4:45 PM		**3**	**0**	**300**	**8**	**17**	**22**	**283**	**0**	**0**	**4**	**0**	**11**	**0**	**0**	**0**	**0**	**648**	2,392
5:00 PM		**3**	**0**	**271**	**4**	**23**	**22**	**292**	**0**	**0**	**4**	**0**	**14**	**0**	**0**	**0**	**0**	**633**	2,415
5:15 PM		**1**	**0**	**268**	**6**	**17**	**25**	**297**	**0**	**0**	**2**	**0**	**10**	**0**	**0**	**0**	**0**	**626**	2,469
5:30 PM		**3**	**0**	**253**	**5**	**22**	**15**	**299**	**0**	**0**	**3**	**0**	**17**	**0**	**0**	**0**	**0**	**617**	**2,524**
5:45 PM		1	0	273	5	17	12	310	1	0	8	0	13	0	0	0	0	640	2,516
Count Total		12	0	2,168	42	145	153	2,249	2	0	29	0	108	0	0	0	0	4,908	0
Peak Hour	**All**	**10**	**0**	**1,092**	**23**	**79**	**84**	**1,171**	**0**	**0**	**13**	**0**	**52**	**0**	**0**	**0**	**0**	**2,524**	**0**
	HV	**0**	**0**	**22**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**0**
	HV%	**0%**	**-**	**2%**	**0%**	**0%**	**0%**	**2%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	8	0	0	*13*	1	0	0	0	*1*	2	0	6	3	*11*
4:15 PM	5	9	1	0	*15*	2	0	0	0	*2*	3	0	8	5	*16*
4:30 PM	5	10	0	0	*15*	0	0	0	0	*0*	2	0	6	4	*12*
4:45 PM	**6**	**7**	**0**	**0**	***13***	**1**	**0**	**0**	**0**	***1***	**2**	**0**	**7**	**6**	***15***
5:00 PM	**5**	**3**	**0**	**0**	***8***	**1**	**1**	**1**	**0**	***3***	**0**	**0**	**7**	**5**	***12***
5:15 PM	**4**	**10**	**0**	**0**	***14***	**1**	**1**	**1**	**0**	***3***	**6**	**0**	**1**	**7**	***14***
5:30 PM	**7**	**9**	**0**	**0**	***16***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**4**	***6***
5:45 PM	3	6	0	0	*9*	0	0	0	0	*0*	4	0	5	2	*11*
Count Total	40	62	1	0	*103*	6	2	2	0	*10*	20	0	41	36	*97*
Peak Hour	**22**	**29**	**0**	**0**	***51***	**3**	**2**	**2**	**0**	***7***	**9**	**0**	**16**	**22**	***47***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Victory Dr				Driveway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0	13	0
4:15 PM	0	0	5	0	0	1	8	0	0	0	0	1	0	0	0	0	15	0
4:30 PM	0	0	5	0	0	1	9	0	0	0	0	0	0	0	0	0	15	0
4:45 PM	**0**	**0**	**6**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	56
5:00 PM	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	51
5:15 PM	**0**	**0**	**4**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	50
5:30 PM	**0**	**0**	**7**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**51**
5:45 PM	0	0	3	0	0	0	6	0	0	0	0	0	0	0	0	0	9	47
Count Total	0	0	40	0	0	2	60	0	0	0	0	1	0	0	0	0	103	0
Peak Hour	**0**	**0**	**22**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**0**

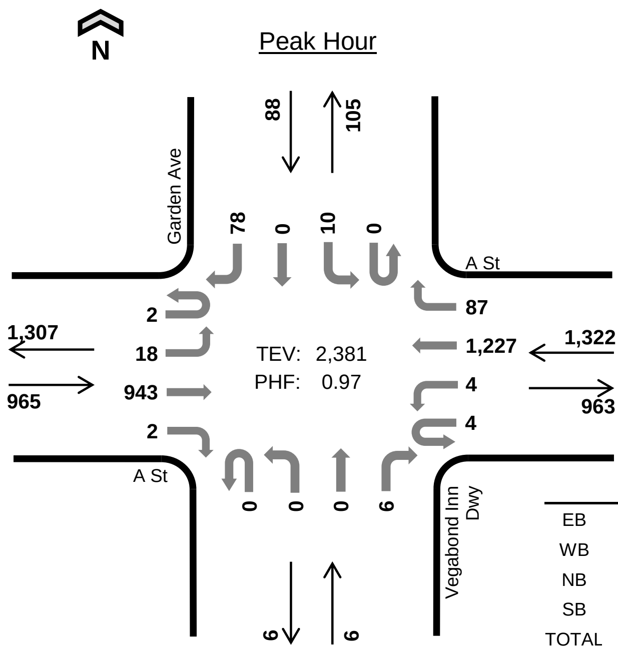
Two-Hour Count Summaries - Bikes

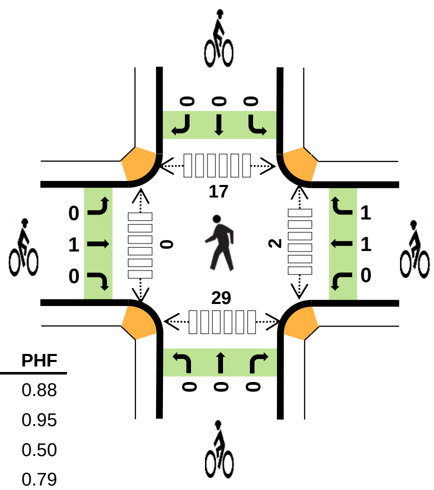
Interval Start	A St			A St			Victory Dr			Driveway			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:00 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	6
5:15 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	7
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Count Total	0	6	0	0	2	0	0	0	2	0	0	0	10	0
Peak Hour	**0**	**3**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**7**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Vegabond Inn Dwy
A St

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	3.2%	0.88
WB	3.7%	0.95
NB	0.0%	0.50
SB	1.1%	0.79
TOTAL	3.4%	0.97

Two-Hour Count Summaries

Interval Start		A St Eastbound				A St Westbound				Vegabond Inn Dwy Northbound				Garden Ave Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		1	1	201	0	0	1	226	19	0	2	0	2	0	5	0	23	481	0
7:15 AM		0	4	217	0	2	1	209	18	0	0	0	1	0	4	0	11	467	0
7:30 AM		0	1	241	0	0	0	260	15	0	0	0	1	0	5	0	25	548	0
7:45 AM		**0**	**3**	**221**	**0**	**0**	**1**	**326**	**18**	**0**	**0**	**0**	**3**	**0**	**4**	**0**	**18**	**594**	2,090
8:00 AM		**0**	**2**	**271**	**0**	**1**	**1**	**293**	**23**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**19**	**612**	2,221
8:15 AM		**1**	**10**	**229**	**2**	**3**	**2**	**318**	**24**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**16**	**607**	2,361
8:30 AM		**1**	**3**	**222**	**0**	**0**	**0**	**290**	**22**	**0**	**0**	**0**	**2**	**0**	**3**	**0**	**25**	**568**	**2,381**
8:45 AM		0	4	203	1	1	1	272	13	0	1	0	2	0	3	0	11	512	2,299
Count Total		3	28	1,805	3	7	7	2,194	152	0	3	0	12	0	27	0	148	4,389	0
Peak Hour	**All**	**2**	**18**	**943**	**2**	**4**	**4**	**1,227**	**87**	**0**	**0**	**0**	**6**	**0**	**10**	**0**	**78**	**2,381**	**0**
	HV	**0**	**0**	**31**	**0**	**0**	**0**	**44**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**81**	**0**
	HV%	**0%**	**0%**	**3%**	**0%**	**0%**	**0%**	**4%**	**6%**	**-**	**-**	**-**	**0%**	**-**	**0%**	**-**	**1%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	8	12	0	0	*20*	0	0	0	0	*0*	0	0	1	8	*9*
7:15 AM	10	13	0	1	*24*	0	1	0	0	*1*	0	0	2	13	*15*
7:30 AM	8	9	0	3	*20*	1	1	0	0	*2*	0	0	5	9	*14*
7:45 AM	**6**	**9**	**0**	**0**	***15***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**3**	**10**	*15*
8:00 AM	**10**	**9**	**0**	**1**	***20***	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**5**	**4**	*9*
8:15 AM	**1**	**14**	**0**	**0**	***15***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**3**	**5**	*8*
8:30 AM	**14**	**17**	**0**	**0**	***31***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**6**	**10**	***16***
8:45 AM	11	15	0	0	*26*	0	0	0	0	*0*	0	0	2	1	*3*
Count Total	68	98	0	5	*171*	2	4	0	0	*6*	2	0	27	60	*89*
Peak Hour	**31**	**49**	**0**	**1**	***81***	**1**	**2**	**0**	**0**	***3***	**2**	**0**	**17**	**29**	***48***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Vegabond Inn Dwy				Garden Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	8	0	0	0	9	3	0	0	0	0	0	0	0	0	20	0
7:15 AM	0	0	10	0	0	0	11	2	0	0	0	0	0	0	0	1	24	0
7:30 AM	0	0	8	0	0	0	8	1	0	0	0	0	0	1	0	2	20	0
7:45 AM	**0**	**0**	**6**	**0**	**0**	**0**	**8**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	79
8:00 AM	**0**	**0**	**10**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**20**	79
8:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	70
8:30 AM	**0**	**0**	**14**	**0**	**0**	**0**	**13**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**31**	**81**
8:45 AM	0	0	11	0	0	0	15	0	0	0	0	0	0	0	0	0	26	92
Count Total	0	0	68	0	0	0	87	11	0	0	0	0	0	1	0	4	171	0
Peak Hour	**0**	**0**	**31**	**0**	**0**	**0**	**44**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**81**	**0**

Two-Hour Count Summaries - Bikes

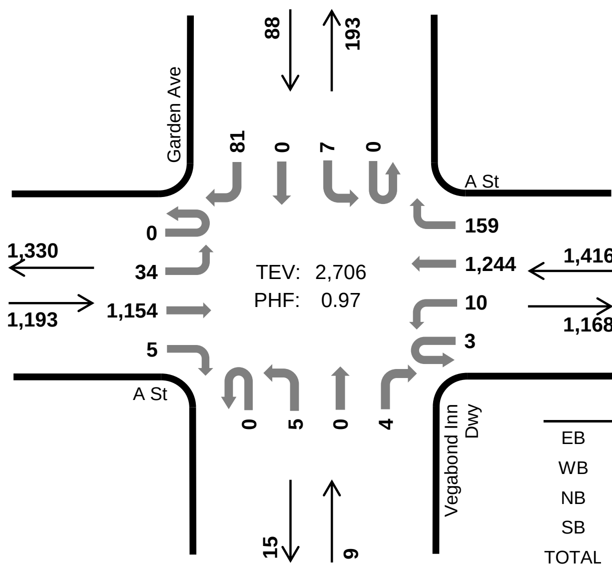
Interval Start	A St			A St			Vegabond Inn Dwy			Garden Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
8:00 AM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	5
8:15 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	2	0	0	3	1	0	0	0	0	0	0	6	0
Peak Hour	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

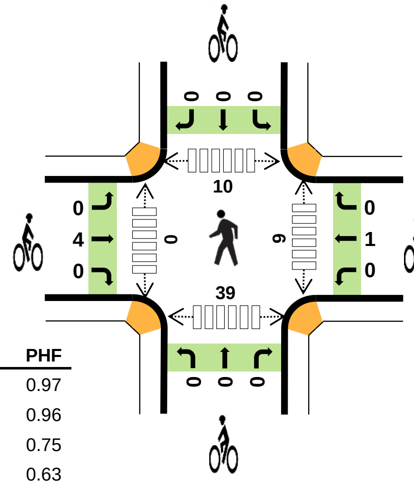
Vegabond Inn Dwy
A St

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Peak Hour



	HV %:	PHF
EB	1.6%	0.97
WB	2.1%	0.96
NB	0.0%	0.75
SB	0.0%	0.63
TOTAL	1.8%	0.97



Two-Hour Count Summaries

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Vegabond Inn Dwy Northbound UT	LT	TH	RT	Garden Ave Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	1	5	310	1	2	1	275	45	0	0	0	1	0	1	0	19	661	0
4:15 PM	0	13	280	1	1	0	265	38	0	1	0	0	1	4	0	20	624	0
4:30 PM	0	11	284	1	1	1	272	41	0	0	0	0	0	3	0	27	641	0
4:45 PM	0	6	308	0	0	2	299	37	0	0	0	1	0	4	0	14	671	2,597
5:00 PM	**0**	**7**	**302**	**0**	**0**	**2**	**323**	**41**	**0**	**3**	**0**	**0**	**0**	**3**	**0**	**16**	**697**	2,633
5:15 PM	**0**	**6**	**272**	**0**	**1**	**6**	**317**	**43**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**18**	**665**	2,674
5:30 PM	**0**	**9**	**291**	**2**	**0**	**1**	**285**	**34**	**0**	**2**	**0**	**1**	**0**	**4**	**0**	**31**	**660**	2,693
5:45 PM	**0**	**12**	**289**	**3**	**2**	**1**	**319**	**41**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**16**	**684**	**2,706**
Count Total	1	69	2,336	8	7	14	2,355	320	0	6	0	6	1	19	0	161	5,303	0
Peak Hour All	**0**	**34**	**1,154**	**5**	**3**	**10**	**1,244**	**159**	**0**	**5**	**0**	**4**	**0**	**7**	**0**	**81**	**2,706**	**0**
Peak Hour HV	**0**	**0**	**19**	**0**	**0**	**1**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**49**	**0**
Peak Hour HV%	**-**	**0%**	**2%**	**0%**	**0%**	**10%**	**2%**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	5	7	0	2	*14*	0	0	0	0	*0*	1	0	2	5	*8*
4:15 PM	6	8	0	0	*14*	2	0	0	0	*2*	2	0	9	15	*26*
4:30 PM	5	8	0	0	*13*	0	0	0	0	*0*	0	0	3	9	*12*
4:45 PM	5	7	0	0	*12*	1	0	0	0	*1*	1	0	6	7	*14*
5:00 PM	**5**	**4**	**0**	**0**	***9***	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**5**	**10**	*15*
5:15 PM	**4**	**11**	**0**	**0**	***15***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**3**	**10**	*13*
5:30 PM	**7**	**8**	**0**	**0**	***15***	**1**	**0**	**0**	**0**	***1***	**4**	**0**	**0**	**11**	*15*
5:45 PM	**3**	**7**	**0**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**5**	**0**	**2**	**8**	***15***
Count Total	40	60	0	2	*102*	7	1	0	0	*8*	13	0	30	75	*118*
Peak Hour	**19**	**30**	**0**	**0**	***49***	**4**	**1**	**0**	**0**	***5***	**9**	**0**	**10**	**39**	***58***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Vegabond Inn Dwy				Garden Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	4	0	0	0	7	0	0	0	0	0	0	0	0	2	14	0
4:15 PM	0	0	6	0	0	0	7	1	0	0	0	0	0	0	0	0	14	0
4:30 PM	0	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0	13	0
4:45 PM	0	0	5	0	0	0	7	0	0	0	0	0	0	0	0	0	12	53
5:00 PM	**0**	**0**	**5**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	48
5:15 PM	**0**	**0**	**4**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	49
5:30 PM	**0**	**0**	**7**	**0**	**0**	**1**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	51
5:45 PM	**0**	**0**	**3**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**49**
Count Total	0	1	39	0	0	1	58	1	0	0	0	0	0	0	0	2	102	0
Peak Hour	**0**	**0**	**19**	**0**	**0**	**1**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**49**	**0**

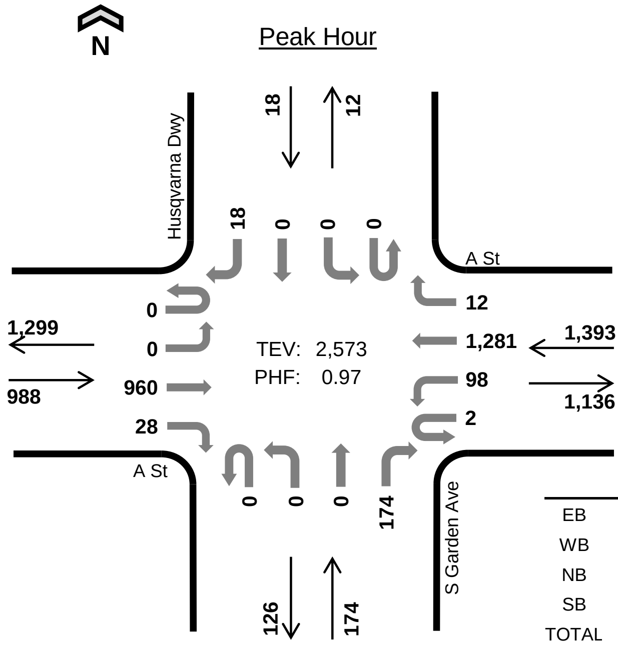
Two-Hour Count Summaries - Bikes

Interval Start	A St			A St			Vegabond Inn Dwy			Garden Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	3
5:00 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	5
5:15 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	5
5:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	6
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
Count Total	0	7	0	0	1	0	0	0	0	0	0	0	8	0
Peak Hour	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

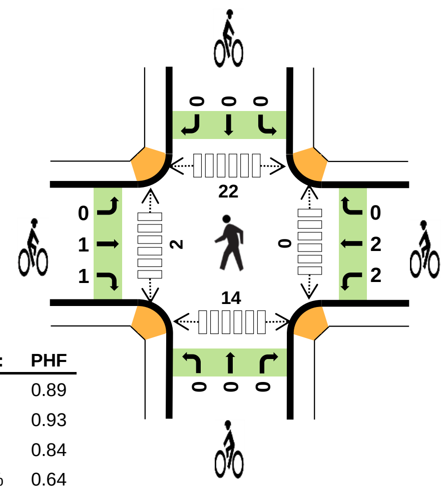
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S Garden Ave
A St

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	2.4%	0.89
WB	2.7%	0.93
NB	0.0%	0.84
SB	11.1%	0.64
TOTAL	2.5%	0.97



Two-Hour Count Summaries

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	S Garden Ave Northbound UT	LT	TH	RT	Husqvarna Dwy Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	202	3	0	23	242	5	0	0	0	45	0	0	0	5	525	0
7:15 AM	0	0	229	3	0	14	232	3	0	0	0	34	0	0	0	5	520	0
7:30 AM	**0**	**0**	**239**	**4**	**1**	**16**	**279**	**4**	**0**	**0**	**0**	**49**	**0**	**0**	**0**	**5**	**597**	0
7:45 AM	**0**	**0**	**219**	**8**	**1**	**25**	**342**	**2**	**0**	**0**	**0**	**52**	**0**	**0**	**0**	**4**	**653**	2,295
8:00 AM	**0**	**0**	**270**	**8**	**0**	**29**	**315**	**4**	**0**	**0**	**0**	**31**	**0**	**0**	**0**	**2**	**659**	2,429
8:15 AM	**0**	**0**	**232**	**8**	**0**	**28**	**345**	**2**	**0**	**0**	**0**	**42**	**0**	**0**	**0**	**7**	**664**	**2,573**
8:30 AM	0	0	219	10	0	16	314	4	0	0	0	32	0	0	0	0	595	2,571
8:45 AM	0	0	195	9	0	20	282	2	0	0	0	30	0	0	0	1	539	2,457
Count Total	0	0	1,805	53	2	171	2,351	26	0	0	0	315	0	0	0	29	4,752	0
Peak Hour All	**0**	**0**	**960**	**28**	**2**	**98**	**1,281**	**12**	**0**	**0**	**0**	**174**	**0**	**0**	**0**	**18**	**2,573**	**0**
Peak Hour HV	**0**	**0**	**23**	**1**	**0**	**0**	**38**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**64**	**0**
Peak Hour HV%	**-**	**-**	**2%**	**4%**	**0%**	**0%**	**3%**	**0%**	**-**	**-**	**-**	**0%**	**-**	**-**	**-**	**11%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	8	14	0	1	*23*	0	1	0	0	*1*	0	0	3	4	*7*
7:15 AM	10	14	1	1	*26*	0	1	0	0	*1*	0	1	1	5	*7*
7:30 AM	**7**	**8**	**0**	**1**	***16***	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**5**	**4**	*9*
7:45 AM	**6**	**7**	**0**	**1**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**5**	*7*
8:00 AM	**10**	**10**	**0**	**0**	***20***	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**10**	**0**	*11*
8:15 AM	**1**	**13**	**0**	**0**	***14***	**0**	**3**	**0**	**0**	***3***	**0**	**1**	**5**	**5**	***11***
8:30 AM	13	19	0	0	*32*	0	1	0	0	*1*	0	0	8	2	*10*
8:45 AM	10	17	1	0	*28*	0	1	0	0	*1*	0	0	4	1	*5*
Count Total	65	102	2	4	*173*	2	8	0	0	*10*	0	3	38	26	*67*
Peak Hour	**24**	**38**	**0**	**2**	***64***	**2**	**4**	**0**	**0**	***6***	**0**	**2**	**22**	**14**	***38***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				S Garden Ave				Husqvarna Dwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	8	0	0	0	12	2	0	0	0	0	0	0	0	1	23	0
7:15 AM	0	0	10	0	0	1	12	1	0	0	0	1	0	0	0	1	26	0
7:30 AM	**0**	**0**	**7**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**16**	0
7:45 AM	**0**	**0**	**5**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**14**	79
8:00 AM	**0**	**0**	**10**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	76
8:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**64**
8:30 AM	0	0	13	0	0	1	16	2	0	0	0	0	0	0	0	0	32	80
8:45 AM	0	0	10	0	0	2	15	0	0	0	0	1	0	0	0	0	28	94
Count Total	0	0	64	1	0	4	93	5	0	0	0	2	0	0	0	4	173	0
Peak Hour	**0**	**0**	**23**	**1**	**0**	**0**	**38**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**64**	**0**

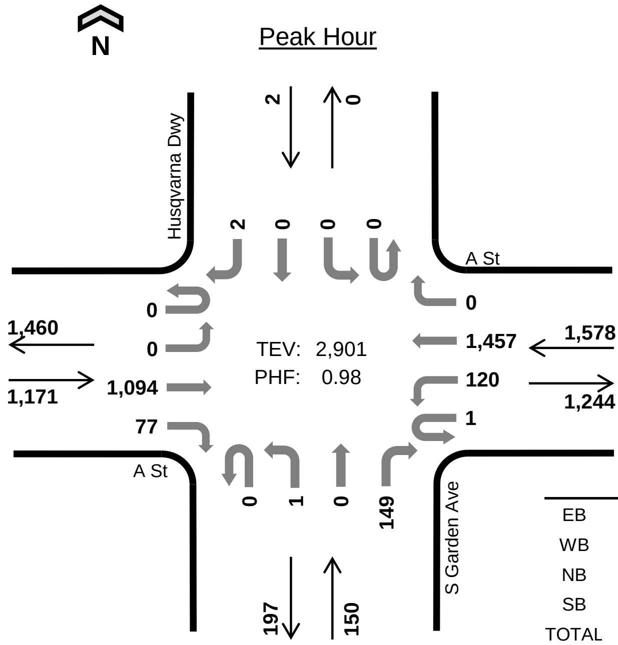
Two-Hour Count Summaries - Bikes

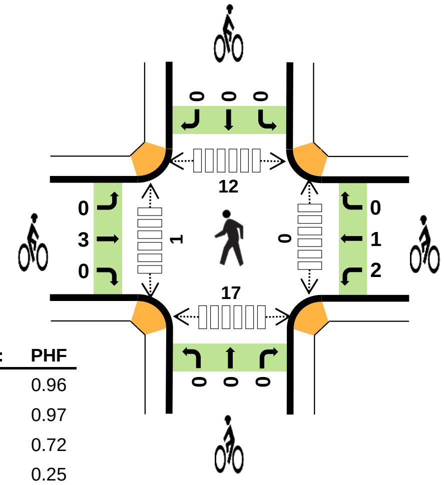
Interval Start	A St			A St			S Garden Ave			Husqvarna Dwy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1	0
7:30 AM	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
8:15 AM	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**6**
8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	1	5
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	6
Count Total	0	1	1	4	4	0	0	0	0	0	0	0	10	0
Peak Hour	**0**	**1**	**1**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S Garden Ave
A St

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	1.5%	0.96
WB	2.2%	0.97
NB	0.0%	0.72
SB	0.0%	0.25
TOTAL	1.8%	0.98

Two-Hour Count Summaries

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	S Garden Ave Northbound UT	LT	TH	RT	Husqvarna Dwy Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	292	22	0	24	334	3	0	0	0	35	0	0	0	6	716	0
4:15 PM	0	0	282	18	0	25	301	9	0	0	0	33	0	0	0	5	673	0
4:30 PM	0	0	277	19	1	27	312	4	0	0	0	32	0	0	0	11	683	0
4:45 PM	0	0	299	11	0	26	334	2	0	0	0	29	0	0	0	3	704	2,776
5:00 PM	**0**	**0**	**287**	**19**	**0**	**24**	**371**	**0**	**0**	**0**	**0**	**30**	**0**	**0**	**0**	**2**	**733**	2,793
5:15 PM	**0**	**0**	**255**	**20**	**0**	**34**	**370**	**0**	**0**	**0**	**0**	**52**	**0**	**0**	**0**	**0**	**731**	2,851
5:30 PM	**0**	**0**	**274**	**19**	**0**	**34**	**337**	**0**	**0**	**0**	**0**	**32**	**0**	**0**	**0**	**0**	**696**	2,864
5:45 PM	**0**	**0**	**278**	**19**	**1**	**28**	**379**	**0**	**0**	**1**	**0**	**35**	**0**	**0**	**0**	**0**	**741**	**2,901**
Count Total	0	0	2,244	147	2	222	2,738	18	0	1	0	278	0	0	0	27	5,677	0
Peak Hour All	**0**	**0**	**1,094**	**77**	**1**	**120**	**1,457**	**0**	**0**	**1**	**0**	**149**	**0**	**0**	**0**	**2**	**2,901**	**0**
Peak Hour HV	**0**	**0**	**18**	**0**	**0**	**1**	**33**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**52**	**0**
Peak Hour HV%	**-**	**-**	**2%**	**0%**	**0%**	**1%**	**2%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	5	9	1	1	*16*	0	0	0	0	*0*	0	1	5	3	*9*
4:15 PM	6	7	2	1	*16*	2	0	0	0	*2*	0	1	9	5	*15*
4:30 PM	3	8	0	0	*11*	0	0	1	0	*1*	0	0	4	5	*9*
4:45 PM	4	8	0	0	*12*	1	0	1	0	*2*	0	0	7	3	*10*
5:00 PM	**4**	**6**	**0**	**0**	***10***	**1**	**2**	**0**	**0**	***3***	**0**	**1**	**6**	**6**	*13*
5:15 PM	**4**	**13**	**0**	**0**	***17***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**3**	*3*
5:30 PM	**7**	**8**	**0**	**0**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**8**	*9*
5:45 PM	**3**	**7**	**0**	**0**	***10***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**5**	**0**	***5***
Count Total	36	66	3	2	*107*	6	3	2	0	*11*	0	3	37	33	*73*
Peak Hour	**18**	**34**	**0**	**0**	***52***	**3**	**3**	**0**	**0**	***6***	**0**	**1**	**12**	**17**	***30***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				S Garden Ave				Husqvarna Dwy				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	5	0	0	1	7	1	0	0	0	1	0	0	0	1	16	0
4:15 PM	0	0	6	0	0	0	7	0	0	0	0	2	0	0	0	1	16	0
4:30 PM	0	0	3	0	0	0	8	0	0	0	0	0	0	0	0	0	11	0
4:45 PM	0	0	4	0	0	0	7	1	0	0	0	0	0	0	0	0	12	55
5:00 PM	**0**	**0**	**4**	**0**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	49
5:15 PM	**0**	**0**	**4**	**0**	**0**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	50
5:30 PM	**0**	**0**	**7**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	54
5:45 PM	**0**	**0**	**3**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**52**
Count Total	0	0	36	0	0	2	62	2	0	0	0	3	0	0	0	2	107	0
Peak Hour	**0**	**0**	**18**	**0**	**0**	**1**	**33**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**52**	**0**

Two-Hour Count Summaries - Bikes

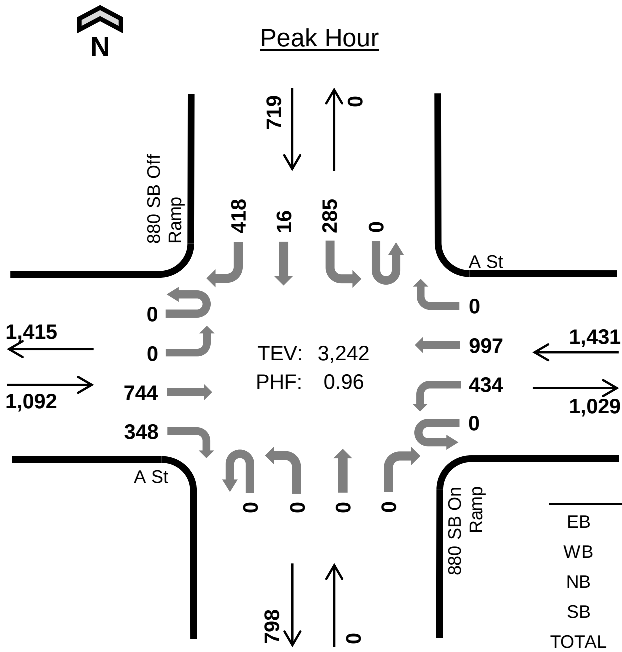
Interval Start	A St			A St			S Garden Ave			Husqvarna Dwy			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:45 PM	0	1	0	0	0	0	0	0	1	0	0	0	2	5
5:00 PM	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	8
5:15 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	8
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	7
5:45 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**
Count Total	0	6	0	2	1	0	0	0	2	0	0	0	11	0
Peak Hour	**0**	**3**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

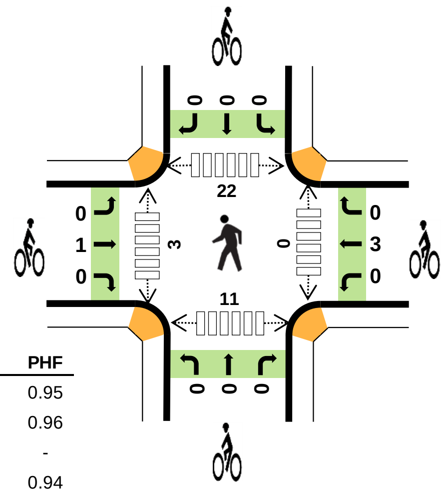
880 SB Ramp
A St

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour



	HV %:	PHF
EB	2.6%	0.95
WB	3.2%	0.96
NB	-	-
SB	4.7%	0.94
TOTAL	3.3%	0.96



Two-Hour Count Summaries

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	880 SB On Ramp Northbound UT	LT	TH	RT	880 SB Off Ramp Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	171	74	0	77	165	0	0	0	0	0	0	35	4	106	632	0
7:15 AM	0	0	179	75	0	110	170	0	0	0	0	0	0	41	2	73	650	0
7:30 AM	0	0	181	114	0	117	200	0	0	0	0	0	0	55	1	94	762	0
7:45 AM	**0**	**0**	**180**	**92**	**0**	**104**	**268**	**0**	**0**	**0**	**0**	**0**	**0**	**61**	**4**	**98**	**807**	2,851
8:00 AM	**0**	**0**	**210**	**76**	**0**	**116**	**233**	**0**	**0**	**0**	**0**	**0**	**0**	**82**	**4**	**105**	**826**	3,045
8:15 AM	**0**	**0**	**189**	**95**	**0**	**111**	**261**	**0**	**0**	**0**	**0**	**0**	**0**	**71**	**3**	**110**	**840**	3,235
8:30 AM	**0**	**0**	**165**	**85**	**0**	**103**	**235**	**0**	**0**	**0**	**0**	**0**	**0**	**71**	**5**	**105**	**769**	**3,242**
8:45 AM	0	0	156	77	0	104	201	0	0	0	0	0	0	56	8	107	709	3,144
Count Total	0	0	1,431	688	0	842	1,733	0	0	0	0	0	0	472	31	798	5,995	0
Peak Hour All	**0**	**0**	**744**	**348**	**0**	**434**	**997**	**0**	**0**	**0**	**0**	**0**	**0**	**285**	**16**	**418**	**3,242**	**0**
Peak Hour HV	**0**	**0**	**23**	**5**	**0**	**23**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**21**	**108**	**0**
Peak Hour HV%	**-**	**-**	**3%**	**1%**	**-**	**5%**	**2%**	**-**	**-**	**-**	**-**	**-**	**-**	**5%**	**0%**	**5%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	11	12	0	7	*30*	0	0	0	0	*0*	0	5	5	4	*14*
7:15 AM	10	14	0	6	*30*	0	0	0	0	*0*	0	0	2	1	*3*
7:30 AM	8	7	0	7	*22*	0	1	0	0	*1*	0	0	4	6	*10*
7:45 AM	**5**	**5**	**0**	**7**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**4**	*7*
8:00 AM	**7**	**9**	**0**	**6**	***22***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**6**	**2**	*8*
8:15 AM	**4**	**11**	**0**	**9**	***24***	**0**	**3**	**0**	**0**	***3***	**0**	**1**	**4**	**4**	*9*
8:30 AM	**12**	**21**	**0**	**12**	***45***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**9**	**1**	***12***
8:45 AM	11	25	0	9	*45*	0	1	0	0	*1*	0	0	5	0	*5*
Count Total	68	104	0	63	*235*	1	5	0	0	*6*	0	8	38	22	*68*
Peak Hour	**28**	**46**	**0**	**34**	***108***	**1**	**3**	**0**	**0**	***4***	**0**	**3**	**22**	**11**	***36***

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				880 SB On Ramp				880 SB Off Ramp				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	7	4	0	3	9	0	0	0	0	0	0	3	0	4	30	0
7:15 AM	0	0	9	1	0	3	11	0	0	0	0	0	0	3	0	3	30	0
7:30 AM	0	0	6	2	0	2	5	0	0	0	0	0	0	3	0	4	22	0
7:45 AM	**0**	**0**	**4**	**1**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**2**	**17**	99
8:00 AM	**0**	**0**	**6**	**1**	**0**	**3**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**2**	**22**	91
8:15 AM	**0**	**0**	**3**	**1**	**0**	**7**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**24**	85
8:30 AM	**0**	**0**	**10**	**2**	**0**	**11**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**8**	**45**	**108**
8:45 AM	0	0	9	2	0	12	13	0	0	0	0	0	0	5	1	3	45	136
Count Total	0	0	54	14	0	43	61	0	0	0	0	0	0	27	1	35	235	0
Peak Hour	**0**	**0**	**23**	**5**	**0**	**23**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**21**	**108**	**0**

Two-Hour Count Summaries - Bikes

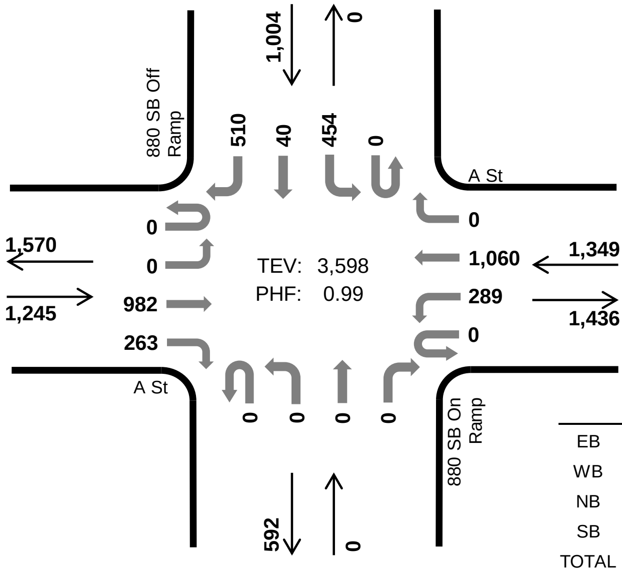
Interval Start	A St			A St			880 SB On Ramp			880 SB Off Ramp			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	1	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
8:15 AM	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	5
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	5
Count Total	0	1	0	1	4	0	0	0	0	0	0	0	6	0
Peak Hour	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

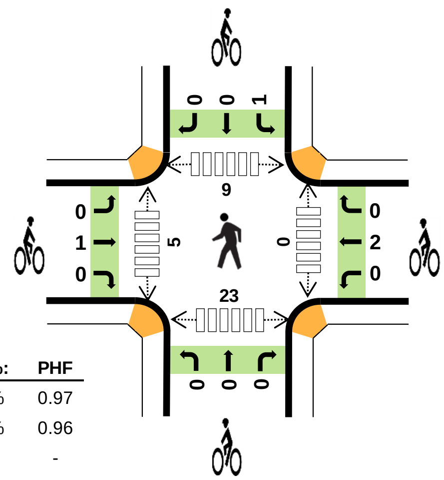
880 SB Ramp
A St

N

Peak Hour



Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	1.6%	0.97
WB	1.3%	0.96
NB	-	-
SB	3.3%	0.94
TOTAL	2.0%	0.99

Two-Hour Count Summaries

Interval Start		A St				A St				880 SB On Ramp				880 SB Off Ramp				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	255	71	0	70	229	0	0	0	0	0	0	97	3	127	852	0
4:15 PM		0	0	258	41	0	83	220	0	0	0	0	0	0	143	10	103	858	0
4:30 PM		0	0	227	80	0	89	239	0	0	0	0	0	0	108	11	104	858	0
4:45 PM		0	0	267	68	0	81	234	0	0	0	0	0	0	117	16	118	901	3,469
5:00 PM		**0**	**0**	**255**	**67**	**0**	**72**	**274**	**0**	**0**	**0**	**0**	**0**	**0**	**118**	**6**	**117**	**909**	3,526
5:15 PM		**0**	**0**	**242**	**68**	**0**	**78**	**275**	**0**	**0**	**0**	**0**	**0**	**0**	**104**	**9**	**132**	**908**	3,576
5:30 PM		**0**	**0**	**236**	**66**	**0**	**77**	**243**	**0**	**0**	**0**	**0**	**0**	**0**	**104**	**12**	**135**	**873**	3,591
5:45 PM		**0**	**0**	**249**	**62**	**0**	**62**	**268**	**0**	**0**	**0**	**0**	**0**	**0**	**128**	**13**	**126**	**908**	**3,598**
Count Total		0	0	1,989	523	0	612	1,982	0	0	0	0	0	0	919	80	962	7,067	0
Peak Hour	**All**	**0**	**0**	**982**	**263**	**0**	**289**	**1,060**	**0**	**0**	**0**	**0**	**0**	**0**	**454**	**40**	**510**	**3,598**	**0**
	HV	**0**	**0**	**17**	**3**	**0**	**8**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**1**	**23**	**71**	**0**
	HV%	**-**	**-**	**2%**	**1%**	**-**	**3%**	**1%**	**-**	**-**	**-**	**-**	**-**	**-**	**2%**	**3%**	**5%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	7	5	0	4	*16*	0	0	0	0	*0*	0	4	3	2	*9*
4:15 PM	8	3	0	11	*22*	0	0	0	0	*0*	0	4	9	2	*15*
4:30 PM	4	4	0	6	*14*	1	0	0	0	*1*	0	5	1	3	*9*
4:45 PM	3	4	0	6	*13*	1	0	0	0	*1*	0	2	7	6	*15*
5:00 PM	**5**	**1**	**0**	**8**	***14***	**0**	**2**	**0**	**1**	***3***	**0**	**0**	**6**	**9**	*15*
5:15 PM	**5**	**6**	**0**	**9**	***20***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**3**	**6**	*12*
5:30 PM	**7**	**5**	**0**	**10**	***22***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**7**	*7*
5:45 PM	**3**	**6**	**0**	**6**	***15***	**1**	**0**	**0**	**0**	***1***	**0**	**2**	**0**	**1**	*3*
Count Total	42	34	0	60	*136*	3	2	0	1	*6*	0	20	29	36	*85*
Peak Hour	**20**	**18**	**0**	**33**	***71***	**1**	**2**	**0**	**1**	***4***	**0**	**5**	**9**	**23**	***37***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	880 SB On Ramp Northbound UT	LT	TH	RT	880 SB Off Ramp Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	7	0	0	2	3	0	0	0	0	0	0	0	0	4	16	0
4:15 PM	0	0	8	0	0	2	1	0	0	0	0	0	0	3	1	7	22	0
4:30 PM	0	0	3	1	0	0	4	0	0	0	0	0	0	2	0	4	14	0
4:45 PM	0	0	3	0	0	1	3	0	0	0	0	0	0	1	1	4	13	65
5:00 PM	**0**	**0**	**4**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**5**	**14**	63
5:15 PM	**0**	**0**	**4**	**1**	**0**	**2**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**7**	**20**	61
5:30 PM	**0**	**0**	**6**	**1**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**6**	**22**	69
5:45 PM	**0**	**0**	**3**	**0**	**0**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**5**	**15**	**71**
Count Total	0	0	38	4	0	13	21	0	0	0	0	0	0	15	3	42	136	0
Peak Hour	**0**	**0**	**17**	**3**	**0**	**8**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**1**	**23**	**71**	**0**

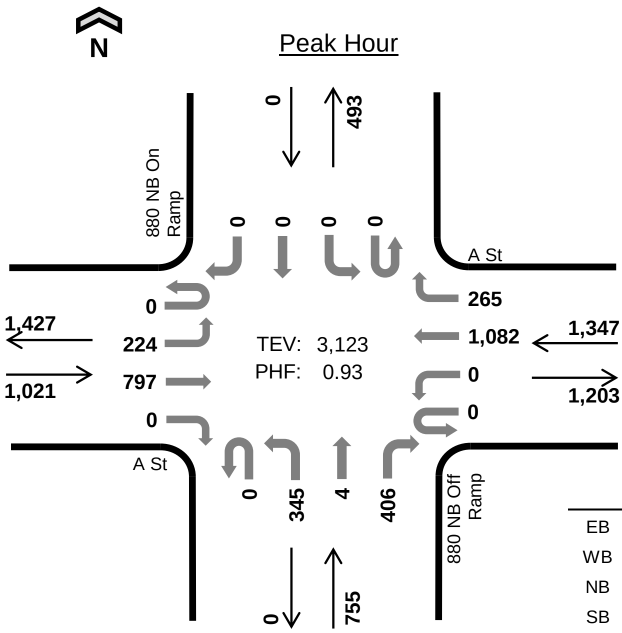
Two-Hour Count Summaries - Bikes

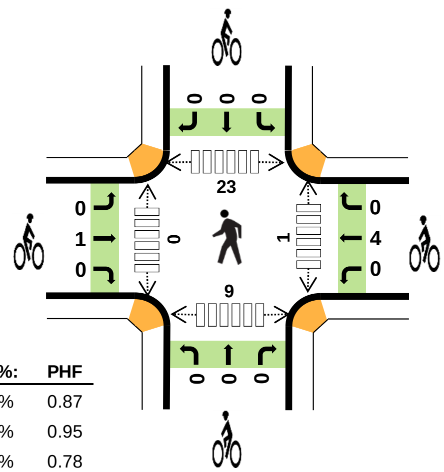
Interval Start	A St Eastbound LT	TH	RT	A St Westbound LT	TH	RT	880 SB On Ramp Northbound LT	TH	RT	880 SB Off Ramp Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	2
5:00 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	5
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
5:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
Count Total	0	3	0	0	2	0	0	0	0	1	0	0	6	0
Peak Hour	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

880 NB Ramp
A St

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	3.4%	0.87
WB	3.3%	0.95
NB	4.1%	0.78
SB	-	-
TOTAL	3.6%	0.93

Two-Hour Count Summaries

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	880 NB Off Ramp Northbound UT	LT	TH	RT	880 NB On Ramp Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	95	112	0	0	0	187	78	0	48	0	55	0	0	0	0	575	0
7:15 AM	0	104	125	0	0	0	234	87	0	46	2	51	0	0	0	0	649	0
7:30 AM	1	70	168	0	0	0	269	100	0	52	1	45	0	0	0	0	706	0
7:45 AM	**0**	**59**	**179**	**0**	**0**	**0**	**287**	**68**	**0**	**89**	**2**	**74**	**0**	**0**	**0**	**0**	**758**	2,688
8:00 AM	**0**	**53**	**240**	**0**	**0**	**0**	**271**	**65**	**0**	**78**	**1**	**106**	**0**	**0**	**0**	**0**	**814**	2,927
8:15 AM	**0**	**64**	**195**	**0**	**0**	**0**	**260**	**76**	**0**	**103**	**1**	**137**	**0**	**0**	**0**	**0**	**836**	3,114
8:30 AM	**0**	**48**	**183**	**0**	**0**	**0**	**264**	**56**	**0**	**75**	**0**	**89**	**0**	**0**	**0**	**0**	**715**	**3,123**
8:45 AM	0	56	154	0	0	0	243	67	0	57	0	74	0	0	0	0	651	3,016
Count Total	1	549	1,356	0	0	0	2,015	597	0	548	7	631	0	0	0	0	5,704	0
Peak Hour All	**0**	**224**	**797**	**0**	**0**	**0**	**1,082**	**265**	**0**	**345**	**4**	**406**	**0**	**0**	**0**	**0**	**3,123**	**0**
Peak Hour HV	**0**	**11**	**24**	**0**	**0**	**0**	**35**	**10**	**0**	**14**	**0**	**17**	**0**	**0**	**0**	**0**	**111**	**0**
Peak Hour HV%	**-**	**5%**	**3%**	**-**	**-**	**-**	**3%**	**4%**	**-**	**4%**	**0%**	**4%**	**-**	**-**	**-**	**-**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	10	16	7	0	*33*	1	1	0	0	*2*	0	0	4	4	*8*
7:15 AM	11	15	10	0	*36*	0	0	0	0	*0*	0	0	3	0	*3*
7:30 AM	11	12	1	0	*24*	2	0	0	0	*2*	2	0	4	5	*11*
7:45 AM	**8**	**7**	**5**	**0**	***20***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**4**	**3**	*7*
8:00 AM	**11**	**14**	**6**	**0**	***31***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**8**	**3**	*11*
8:15 AM	**3**	**8**	**11**	**0**	***22***	**0**	**3**	**0**	**0**	***3***	**1**	**0**	**6**	**2**	*9*
8:30 AM	**13**	**16**	**9**	**0**	***38***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**5**	**1**	*6*
8:45 AM	15	26	6	0	*47*	0	0	0	0	*0*	0	0	4	0	*4*
Count Total	82	114	55	0	*251*	4	5	0	0	*9*	3	0	38	18	*59*
Peak Hour	**35**	**45**	**31**	**0**	***111***	**1**	**4**	**0**	**0**	***5***	**1**	**0**	**23**	**9**	***33***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				880 NB Off Ramp				880 NB On Ramp				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	3	7	0	0	0	9	7	0	3	0	4	0	0	0	0	33	0
7:15 AM	0	3	8	0	0	0	9	6	0	5	1	4	0	0	0	0	36	0
7:30 AM	0	5	6	0	0	0	7	5	0	0	0	1	0	0	0	0	24	0
7:45 AM	**0**	**1**	**7**	**0**	**0**	**0**	**3**	**4**	**0**	**3**	**0**	**2**	**0**	**0**	**0**	**0**	**20**	113
8:00 AM	**0**	**4**	**7**	**0**	**0**	**0**	**9**	**5**	**0**	**2**	**0**	**4**	**0**	**0**	**0**	**0**	**31**	111
8:15 AM	**0**	**2**	**1**	**0**	**0**	**0**	**8**	**0**	**0**	**2**	**0**	**9**	**0**	**0**	**0**	**0**	**22**	97
8:30 AM	**0**	**4**	**9**	**0**	**0**	**0**	**15**	**1**	**0**	**7**	**0**	**2**	**0**	**0**	**0**	**0**	**38**	**111**
8:45 AM	0	3	12	0	0	0	21	5	0	4	0	2	0	0	0	0	47	138
Count Total	0	25	57	0	0	0	81	33	0	26	1	28	0	0	0	0	251	0
Peak Hour	**0**	**11**	**24**	**0**	**0**	**0**	**35**	**10**	**0**	**14**	**0**	**17**	**0**	**0**	**0**	**0**	**111**	**0**

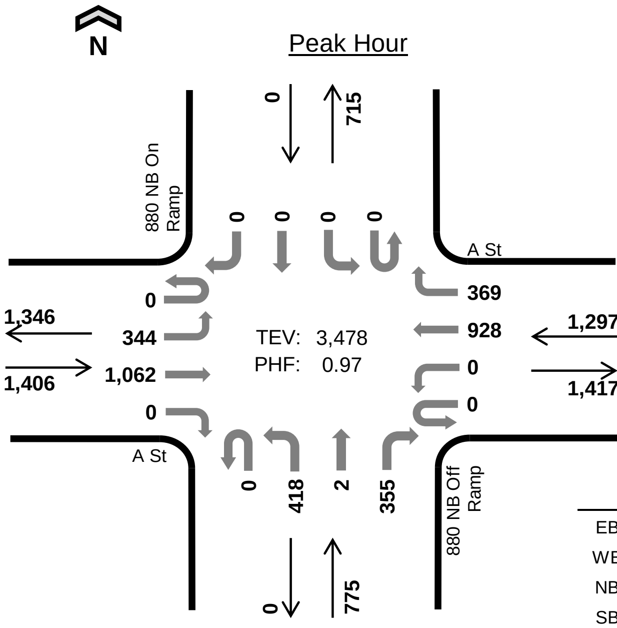
Two-Hour Count Summaries - Bikes

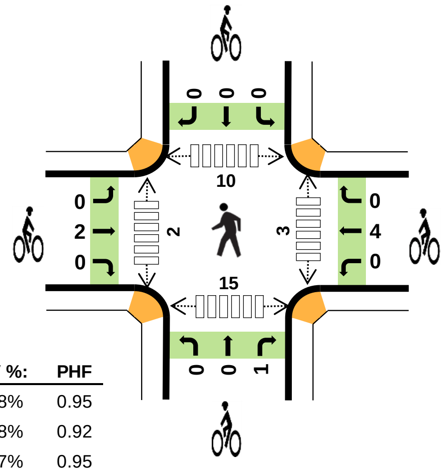
Interval Start	A St			A St			880 NB Off Ramp			880 NB On Ramp			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
8:15 AM	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	6
8:30 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	4	0	0	5	0	0	0	0	0	0	0	9	0
Peak Hour	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

880 NB Ramp
A St

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	1.8%	0.95
WB	1.8%	0.92
NB	2.7%	0.95
SB	-	-
TOTAL	2.0%	0.97

Two-Hour Count Summaries

Interval Start	A St				A St				880 NB Off Ramp				880 NB On Ramp				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	104	245	0	0	0	215	70	0	84	1	99	0	0	0	0	818	0
4:15 PM	0	94	312	0	0	0	219	66	0	77	1	114	0	0	0	0	883	0
4:30 PM	2	76	252	0	0	0	233	63	0	94	0	106	0	0	0	0	826	0
4:45 PM	0	91	284	0	0	0	241	81	0	72	0	96	0	0	0	0	865	3,392
5:00 PM	**0**	**75**	**286**	**0**	**0**	**0**	**241**	**83**	**0**	**98**	**1**	**95**	**0**	**0**	**0**	**0**	**879**	3,453
5:15 PM	**0**	**84**	**252**	**0**	**0**	**0**	**247**	**107**	**0**	**112**	**1**	**92**	**0**	**0**	**0**	**0**	**895**	3,465
5:30 PM	**0**	**93**	**247**	**0**	**0**	**0**	**219**	**91**	**0**	**98**	**0**	**78**	**0**	**0**	**0**	**0**	**826**	3,465
5:45 PM	**0**	**92**	**277**	**0**	**0**	**0**	**221**	**88**	**0**	**110**	**0**	**90**	**0**	**0**	**0**	**0**	**878**	**3,478**
Count Total	2	709	2,155	0	0	0	1,836	649	0	745	4	770	0	0	0	0	6,870	0
Peak Hour All	**0**	**344**	**1,062**	**0**	**0**	**0**	**928**	**369**	**0**	**418**	**2**	**355**	**0**	**0**	**0**	**0**	**3,478**	**0**
Peak Hour HV	**0**	**8**	**18**	**0**	**0**	**0**	**16**	**7**	**0**	**3**	**0**	**18**	**0**	**0**	**0**	**0**	**70**	**0**
Peak Hour HV%	**-**	**2%**	**2%**	**-**	**-**	**-**	**2%**	**2%**	**-**	**1%**	**0%**	**5%**	**-**	**-**	**-**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	8	1	0	*14*	0	0	0	0	*0*	1	1	3	3	*8*
4:15 PM	12	3	4	0	*19*	1	0	0	0	*1*	0	0	5	3	*8*
4:30 PM	4	5	7	0	*16*	1	0	0	0	*1*	0	0	2	4	*6*
4:45 PM	6	5	9	0	*20*	2	0	0	0	*2*	1	1	3	7	*12*
5:00 PM	**6**	**4**	**7**	**0**	***17***	**0**	**3**	**1**	**0**	***4***	**0**	**1**	**7**	**9**	*17*
5:15 PM	**6**	**5**	**5**	**0**	***16***	**1**	**0**	**0**	**0**	***1***	**2**	**1**	**2**	**0**	*5*
5:30 PM	**9**	**5**	**5**	**0**	***19***	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**0**	**6**	*7*
5:45 PM	**5**	**9**	**4**	**0**	***18***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**1**	**0**	*1*
Count Total	53	44	42	0	*139*	6	4	1	0	*11*	5	4	23	32	*64*
Peak Hour	**26**	**23**	**21**	**0**	***70***	**2**	**4**	**1**	**0**	***7***	**3**	**2**	**10**	**15**	***30***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				880 NB Off Ramp				880 NB On Ramp				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	2	3	0	0	0	6	2	0	0	0	1	0	0	0	0	14	0
4:15 PM	0	3	9	0	0	0	3	0	0	0	0	4	0	0	0	0	19	0
4:30 PM	0	1	3	0	0	0	2	3	0	2	0	5	0	0	0	0	16	0
4:45 PM	0	2	4	0	0	0	4	1	0	0	0	9	0	0	0	0	20	69
5:00 PM	**0**	**1**	**5**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**17**	72
5:15 PM	**0**	**2**	**4**	**0**	**0**	**0**	**4**	**1**	**0**	**2**	**0**	**3**	**0**	**0**	**0**	**0**	**16**	69
5:30 PM	**0**	**4**	**5**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**19**	72
5:45 PM	**0**	**1**	**4**	**0**	**0**	**0**	**6**	**3**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**18**	**70**
Count Total	0	16	37	0	0	0	31	13	0	5	0	37	0	0	0	0	139	0
Peak Hour	**0**	**8**	**18**	**0**	**0**	**0**	**16**	**7**	**0**	**3**	**0**	**18**	**0**	**0**	**0**	**0**	**70**	**0**

Two-Hour Count Summaries - Bikes

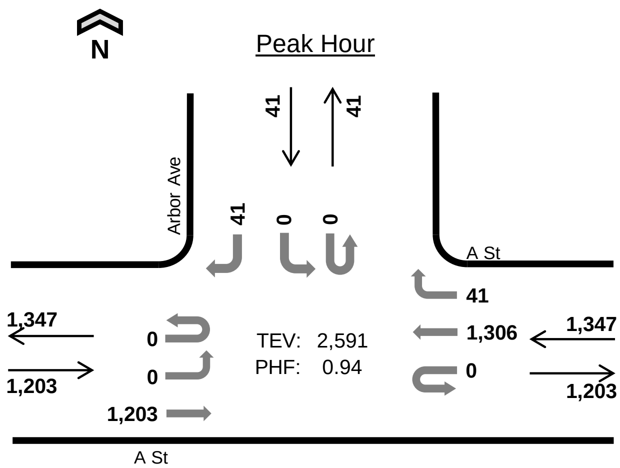
Interval Start	A St			A St			880 NB Off Ramp			880 NB On Ramp			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	4
5:00 PM	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**4**	8
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	8
5:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	8
5:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**7**
Count Total	0	6	0	0	4	0	0	0	1	0	0	0	11	0
Peak Hour	**0**	**2**	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**7**	**0**

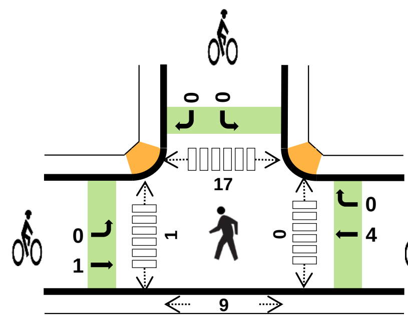
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Arbor Ave
A St

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour





	HV %:	PHF
EB	3.4%	0.87
WB	3.2%	0.96
NB	-	-
SB	4.9%	0.79
TOTAL	3.3%	0.94

Two-Hour Count Summaries

Interval Start		A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	0 Northbound UT	LT	TH	RT	Arbor Ave Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM		0	0	167	0	0	0	254	3	0	0	0	0	0	0	0	11	435	0
7:15 AM		0	0	176	0	0	0	310	5	0	0	0	0	0	0	0	11	502	0
7:30 AM		0	0	213	0	0	0	357	11	0	0	0	0	0	0	0	12	593	0
7:45 AM		**0**	**0**	**253**	**0**	**0**	**0**	**347**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**611**	2,141
8:00 AM		**0**	**0**	**346**	**0**	**0**	**0**	**326**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**689**	2,395
8:15 AM		**0**	**0**	**332**	**0**	**0**	**0**	**326**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**681**	2,574
8:30 AM		**0**	**0**	**272**	**0**	**0**	**0**	**307**	**18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**610**	**2,591**
8:45 AM		0	0	228	0	2	0	288	7	0	0	0	0	0	0	0	22	547	2,527
Count Total		0	0	1,987	0	2	0	2,515	67	0	0	0	0	0	0	0	97	4,668	0
Peak Hour	All	0	0	1,203	0	0	0	1,306	41	0	0	0	0	0	0	0	41	2,591	0
	HV	0	0	41	0	0	0	43	0	0	0	0	0	0	0	0	2	86	0
	HV%	-	-	3%	-	-	-	3%	0%	-	-	-	-	-	-	-	5%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	11	16	0	0	*27*	1	1	0	0	*2*	0	0	4	4	*8*
7:15 AM	12	15	0	0	*27*	0	0	0	0	*0*	0	0	2	0	*2*
7:30 AM	7	12	0	0	*19*	2	0	0	0	*2*	0	2	3	5	*10*
7:45 AM	**9**	**7**	**0**	**0**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**3**	*6*
8:00 AM	**11**	**12**	**0**	**2**	***25***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**4**	**3**	*7*
8:15 AM	**10**	**8**	**0**	**0**	***18***	**0**	**3**	**0**	**0**	***3***	**0**	**1**	**7**	**2**	*10*
8:30 AM	**11**	**16**	**0**	**0**	***27***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**3**	**1**	*4*
8:45 AM	14	28	0	1	*43*	0	0	0	0	*0*	0	0	3	0	*3*
Count Total	85	114	0	3	*202*	4	5	0	0	*9*	0	3	29	18	*50*
Peak Hr	**41**	**43**	**0**	**2**	***86***	**1**	**4**	**0**	**0**	***5***	**0**	**1**	**17**	**9**	***27***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				0				Arbor Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	11	0	0	0	16	0	0	0	0	0	0	0	0	0	27	0
7:15 AM	0	0	12	0	0	0	15	0	0	0	0	0	0	0	0	0	27	0
7:30 AM	0	0	7	0	0	0	12	0	0	0	0	0	0	0	0	0	19	0
7:45 AM	**0**	**0**	**9**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	89
8:00 AM	**0**	**0**	**11**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**25**	87
8:15 AM	**0**	**0**	**10**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	78
8:30 AM	**0**	**0**	**11**	**0**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**86**
8:45 AM	0	0	14	0	0	0	25	3	0	0	0	0	0	0	0	1	43	113
Count Total	0	0	85	0	0	0	111	3	0	0	0	0	0	0	0	3	202	0
Peak Hour	**0**	**0**	**41**	**0**	**0**	**0**	**43**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**86**	**0**

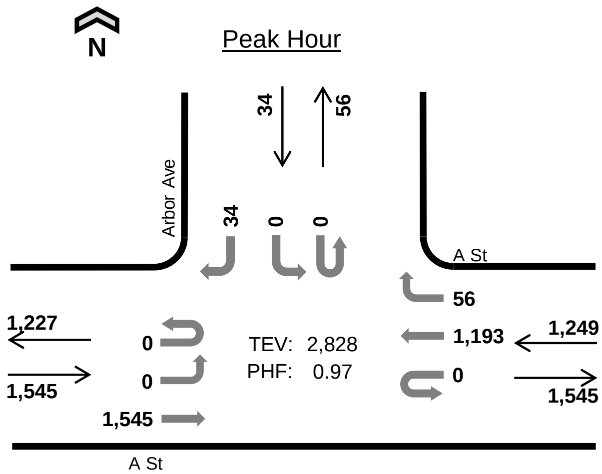
Two-Hour Count Summaries - Bikes

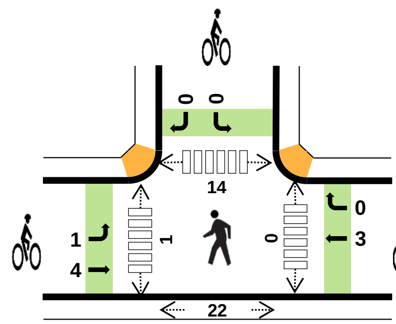
Interval Start	A St			A St			0			Arbor Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
8:15 AM	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	6
8:30 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	4	0	0	5	0	0	0	0	0	0	0	9	0
Peak Hour	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Arbor Ave
A St

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	3.0%	0.91
WB	1.5%	0.93
NB	-	-
SB	0.0%	0.71
TOTAL	2.3%	0.97

Two-Hour Count Summaries

Interval Start		A St				A St				0				Arbor Ave				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	344	0	0	0	278	7	0	0	0	0	0	0	0	7	636	0
4:15 PM		**0**	**0**	**426**	**0**	**0**	**0**	**273**	**15**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**726**	0
4:30 PM		**0**	**0**	**358**	**0**	**0**	**0**	**291**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**664**	0
4:45 PM		**0**	**0**	**380**	**0**	**0**	**0**	**312**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**724**	2,750
5:00 PM		**0**	**0**	**381**	**0**	**0**	**0**	**317**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**714**	**2,828**
5:15 PM		0	0	344	0	0	0	349	9	0	0	0	0	0	0	0	5	707	2,809
5:30 PM		0	0	325	0	0	0	304	14	0	0	0	0	0	0	0	6	649	2,794
5:45 PM		0	0	367	0	0	0	301	10	0	0	0	0	0	0	0	8	686	2,756
Count Total		0	0	2,925	0	0	0	2,425	96	0	0	0	0	0	0	0	60	5,506	0
Peak Hour	**All**	**0**	**0**	**1,545**	**0**	**0**	**0**	**1,193**	**56**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**34**	**2,828**	**0**
	HV	**0**	**0**	**46**	**0**	**0**	**0**	**17**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**65**	**0**
	HV%	**-**	**-**	**3%**	**-**	**-**	**-**	**1%**	**4%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	8	0	0	*12*	0	0	0	0	*0*	0	1	2	3	*6*
4:15 PM	**13**	**4**	**0**	**0**	***17***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**3**	**3**	*6*
4:30 PM	**8**	**5**	**0**	**0**	***13***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**4**	*4*
4:45 PM	**13**	**6**	**0**	**0**	***19***	**2**	**0**	**0**	**0**	***2***	**0**	**1**	**5**	**7**	*13*
5:00 PM	**12**	**4**	**0**	**0**	***16***	**1**	**3**	**0**	**0**	***4***	**0**	**0**	**6**	**8**	***14***
5:15 PM	7	5	0	0	*12*	1	0	0	0	*1*	0	2	5	0	*7*
5:30 PM	10	5	0	0	*15*	0	1	0	0	*1*	0	1	2	6	*9*
5:45 PM	7	9	0	0	*16*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	74	46	0	0	*120*	7	4	0	0	*11*	0	5	23	31	*59*
Peak Hr	**46**	**19**	**0**	**0**	***65***	**5**	**3**	**0**	**0**	***8***	**0**	**1**	**14**	**22**	***37***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				0				Arbor Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	4	0	0	0	8	0	0	0	0	0	0	0	0	0	12	0
4:15 PM	**0**	**0**	**13**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	0
4:30 PM	**0**	**0**	**8**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	0
4:45 PM	**0**	**0**	**13**	**0**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	61
5:00 PM	**0**	**0**	**12**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**65**
5:15 PM	0	0	7	0	0	0	5	0	0	0	0	0	0	0	0	0	12	60
5:30 PM	0	0	10	0	0	0	5	0	0	0	0	0	0	0	0	0	15	62
5:45 PM	0	0	7	0	0	0	9	0	0	0	0	0	0	0	0	0	16	59
Count Total	0	0	74	0	0	0	44	2	0	0	0	0	0	0	0	0	120	0
Peak Hour	**0**	**0**	**46**	**0**	**0**	**0**	**17**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**65**	**0**

Two-Hour Count Summaries - Bikes

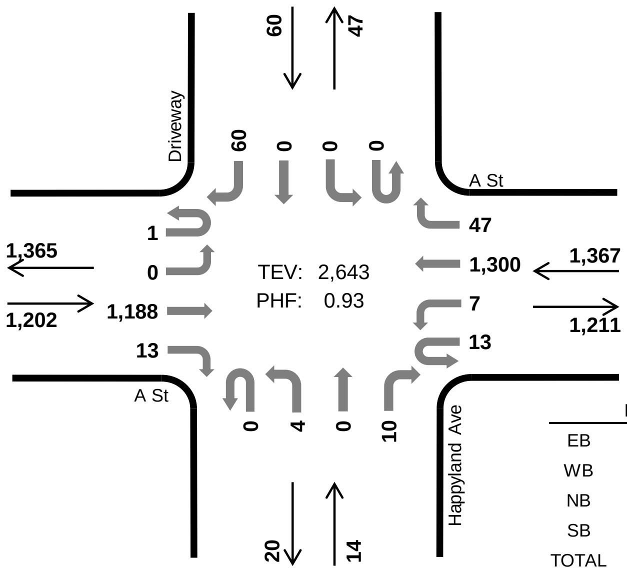
Interval Start	A St			A St			0			Arbor Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	4
5:00 PM	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**8**
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	8
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	8
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	7
Count Total	1	6	0	0	4	0	0	0	0	0	0	0	11	0
Peak Hour	**1**	**4**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

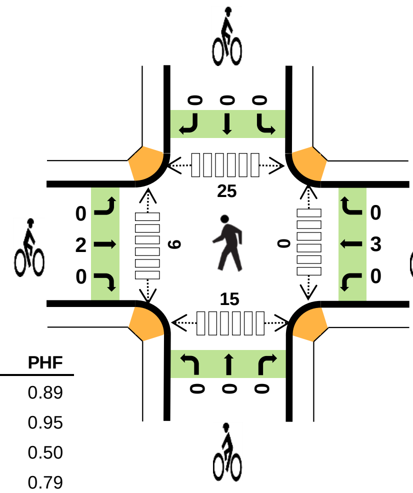
Happyland Ave
A St

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour



	HV %:	PHF
EB	3.3%	0.89
WB	3.4%	0.95
NB	0.0%	0.50
SB	3.3%	0.79
TOTAL	3.4%	0.93



Two-Hour Count Summaries

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Happyland Ave Northbound UT	LT	TH	RT	Driveway Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	1	1	164	2	0	0	263	6	0	3	0	1	0	2	0	7	450	0
7:15 AM	1	1	170	1	2	2	293	11	0	1	0	2	0	1	0	8	493	0
7:30 AM	0	0	208	0	4	1	339	13	0	3	0	8	0	2	0	8	586	0
7:45 AM	**0**	**0**	**256**	**0**	**1**	**0**	**345**	**12**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**16**	**632**	2,161
8:00 AM	**0**	**0**	**334**	**5**	**7**	**3**	**329**	**9**	**0**	**3**	**0**	**4**	**0**	**0**	**0**	**13**	**707**	2,418
8:15 AM	**0**	**0**	**328**	**6**	**2**	**1**	**322**	**12**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**12**	**685**	2,610
8:30 AM	**1**	**0**	**270**	**2**	**3**	**3**	**304**	**14**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**19**	**619**	**2,643**
8:45 AM	0	0	233	4	5	4	278	10	0	0	0	8	0	2	0	13	557	2,568
Count Total	3	2	1,963	20	24	14	2,473	87	0	11	0	29	0	7	0	96	4,729	0
Peak Hour All	**1**	**0**	**1,188**	**13**	**13**	**7**	**1,300**	**47**	**0**	**4**	**0**	**10**	**0**	**0**	**0**	**60**	**2,643**	**0**
Peak Hour HV	**0**	**0**	**40**	**0**	**0**	**0**	**46**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**89**	**0**
Peak Hour HV%	**0%**	**-**	**3%**	**0%**	**0%**	**0%**	**4%**	**2%**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**3%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	10	15	1	0	*26*	2	2	0	0	*4*	0	3	5	5	*13*
7:15 AM	13	15	0	1	*29*	0	1	0	0	*1*	0	0	1	0	*1*
7:30 AM	6	13	0	0	*19*	2	0	0	0	*2*	0	2	2	3	*7*
7:45 AM	**8**	**7**	**0**	**1**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**8**	**3**	*11*
8:00 AM	**12**	**12**	**0**	**0**	***24***	**1**	**0**	**0**	**0**	***1***	**0**	**3**	**5**	**6**	*14*
8:15 AM	**9**	**11**	**0**	**0**	***20***	**0**	**2**	**0**	**0**	***2***	**0**	**2**	**9**	**5**	*16*
8:30 AM	**11**	**17**	**0**	**1**	***29***	**1**	**1**	**0**	**0**	***2***	**0**	**1**	**3**	**1**	***5***
8:45 AM	13	32	0	1	*46*	0	0	0	0	*0*	0	0	3	0	*3*
Count Total	82	122	1	4	*209*	6	6	0	0	*12*	0	11	36	23	*70*
Peak Hour	**40**	**47**	**0**	**2**	***89***	**2**	**3**	**0**	**0**	***5***	**0**	**6**	**25**	**15**	***46***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Happyland Ave				Driveway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	10	0	0	0	15	0	0	1	0	0	0	0	0	0	26	0
7:15 AM	0	0	13	0	0	0	14	1	0	0	0	0	0	0	0	1	29	0
7:30 AM	0	0	6	0	0	0	13	0	0	0	0	0	0	0	0	0	19	0
7:45 AM	**0**	**0**	**8**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**16**	90
8:00 AM	**0**	**0**	**12**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	88
8:15 AM	**0**	**0**	**9**	**0**	**0**	**0**	**10**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	79
8:30 AM	**0**	**0**	**11**	**0**	**0**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**29**	**89**
8:45 AM	0	0	13	0	0	0	32	0	0	0	0	0	0	0	0	1	46	119
Count Total	0	0	82	0	0	0	120	2	0	1	0	0	0	0	0	4	209	0
Peak Hour	**0**	**0**	**40**	**0**	**0**	**0**	**46**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**89**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	A St			A St			Happyland Ave			Driveway			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	4	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	7
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
8:15 AM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	5
8:30 AM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**5**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	6	0	0	6	0	0	0	0	0	0	0	12	0
Peak Hour	**0**	**2**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

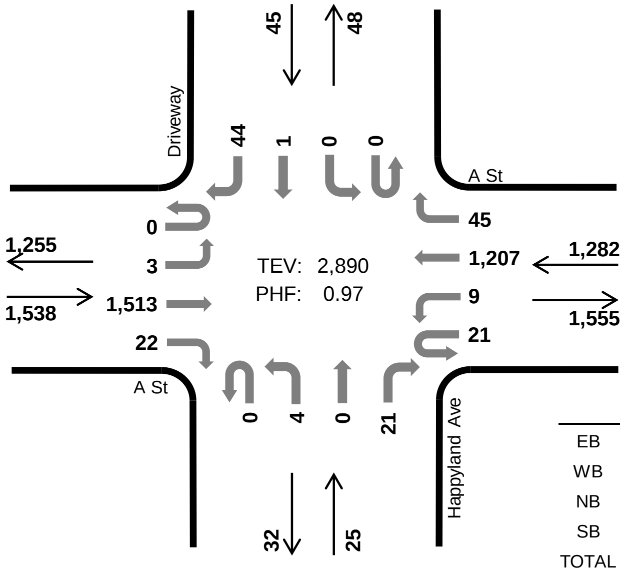
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

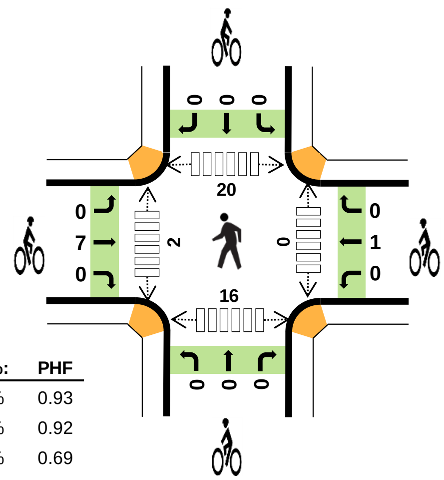
Happyland Ave
A St

N

Peak Hour

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	2.9%	0.93
WB	1.7%	0.92
NB	0.0%	0.69
SB	2.2%	0.87
TOTAL	2.3%	0.97

Two-Hour Count Summaries

Interval Start		A St				A St				Happyland Ave				Driveway				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		1	0	338	3	5	0	281	12	0	0	0	0	0	1	0	8	649	0
4:15 PM		**0**	**0**	**406**	**6**	**4**	**0**	**273**	**11**	**0**	**1**	**0**	**7**	**0**	**0**	**0**	**10**	**718**	0
4:30 PM		**0**	**0**	**363**	**2**	**6**	**4**	**287**	**14**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**13**	**693**	0
4:45 PM		**0**	**2**	**376**	**6**	**5**	**3**	**329**	**10**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**10**	**745**	2,805
5:00 PM		**0**	**1**	**368**	**8**	**6**	**2**	**318**	**10**	**0**	**2**	**0**	**7**	**0**	**0**	**1**	**11**	**734**	**2,890**
5:15 PM		1	0	346	5	5	1	335	7	0	1	0	5	0	1	0	8	715	2,887
5:30 PM		1	0	320	10	6	2	306	15	0	0	0	6	0	0	1	12	679	2,873
5:45 PM		0	0	360	2	2	4	287	17	0	0	0	6	0	0	0	14	692	2,820
Count Total		3	3	2,877	42	39	16	2,416	96	0	5	0	38	0	2	2	86	5,625	0
Peak Hour	**All**	**0**	**3**	**1,513**	**22**	**21**	**9**	**1,207**	**45**	**0**	**4**	**0**	**21**	**0**	**0**	**1**	**44**	**2,890**	**0**
	HV	**0**	**0**	**44**	**0**	**0**	**1**	**20**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**67**	**0**
	HV%	**-**	**0%**	**3%**	**0%**	**0%**	**11%**	**2%**	**2%**	**-**	**0%**	**-**	**0%**	**-**	**-**	**100%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	7	0	0	*11*	1	0	0	0	*1*	0	0	7	1	*8*
4:15 PM	**13**	**4**	**0**	**0**	***17***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**2**	**1**	*3*
4:30 PM	**5**	**5**	**0**	**0**	***10***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**3**	**3**	*6*
4:45 PM	**14**	**7**	**0**	**0**	***21***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**5**	**3**	*8*
5:00 PM	**12**	**6**	**0**	**1**	***19***	**2**	**1**	**0**	**0**	***3***	**0**	**2**	**10**	**9**	***21***
5:15 PM	7	3	0	0	*10*	1	0	0	0	*1*	0	2	3	1	*6*
5:30 PM	11	5	0	0	*16*	0	0	0	0	*0*	0	4	3	7	*14*
5:45 PM	5	9	0	0	*14*	0	0	0	0	*0*	0	2	3	3	*8*
Count Total	71	46	0	1	*118*	9	1	0	0	*10*	0	10	36	28	*74*
Peak Hour	**44**	**22**	**0**	**1**	***67***	**7**	**1**	**0**	**0**	***8***	**0**	**2**	**20**	**16**	***38***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Happyland Ave				Driveway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	4	0	0	0	7	0	0	0	0	0	0	0	0	0	11	0
4:15 PM	**0**	**0**	**13**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	0
4:30 PM	**0**	**0**	**5**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	0
4:45 PM	**0**	**0**	**14**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**21**	59
5:00 PM	**0**	**0**	**12**	**0**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**19**	**67**
5:15 PM	0	0	7	0	0	0	3	0	0	0	0	0	0	0	0	0	10	60
5:30 PM	0	0	11	0	0	0	5	0	0	0	0	0	0	0	0	0	16	66
5:45 PM	0	0	5	0	0	0	9	0	0	0	0	0	0	0	0	0	14	59
Count Total	0	0	71	0	0	1	44	1	0	0	0	0	0	0	1	0	118	0
Peak Hour	**0**	**0**	**44**	**0**	**0**	**1**	**20**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**67**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	A St			A St			Happyland Ave			Driveway			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	6
5:00 PM	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**8**
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	7
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	9	0	0	1	0	0	0	0	0	0	0	10	0
Peak Hour	**0**	**7**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**

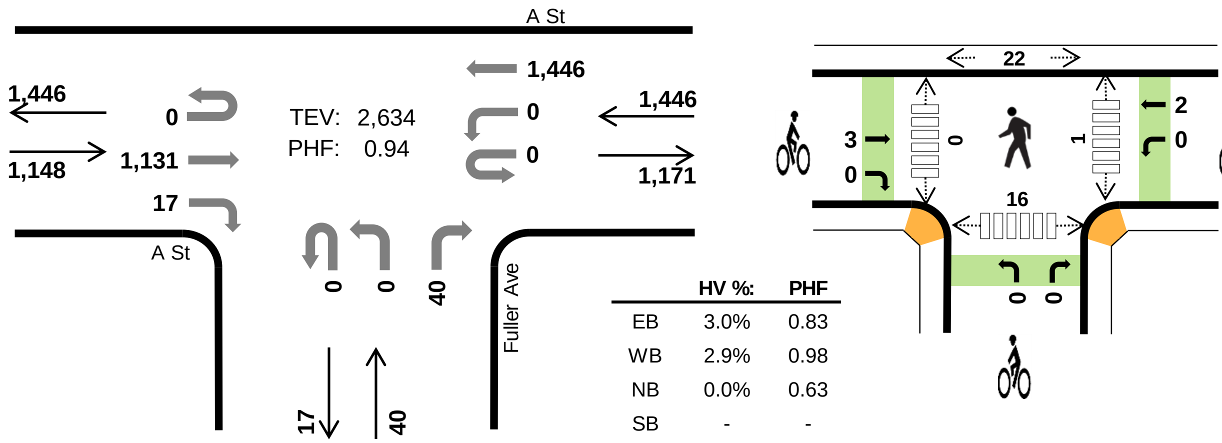
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Fuller Ave
A St

N

Peak Hour

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	3.0%	0.83
WB	2.9%	0.98
NB	0.0%	0.63
SB	-	-
TOTAL	2.9%	0.94

Two-Hour Count Summaries

Interval Start		A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Fuller Ave Northbound UT	LT	TH	RT	0 Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM		0	0	167	1	0	0	274	0	0	0	0	3	0	0	0	0	445	0
7:15 AM		0	0	180	3	0	0	323	0	0	0	0	5	0	0	0	0	511	0
7:30 AM		**0**	**0**	**221**	**3**	**0**	**0**	**370**	**0**	**0**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**610**	0
7:45 AM		**0**	**0**	**252**	**5**	**0**	**0**	**367**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**636**	2,202
8:00 AM		**0**	**0**	**341**	**4**	**0**	**0**	**347**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**700**	2,457
8:15 AM		**0**	**0**	**317**	**5**	**0**	**0**	**362**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**688**	**2,634**
8:30 AM		0	0	276	5	0	0	296	0	0	0	0	7	0	0	0	0	584	2,608
8:45 AM		0	0	233	7	0	0	292	0	0	0	0	4	0	0	0	0	536	2,508
Count Total		0	0	1,987	33	0	0	2,631	0	0	0	0	59	0	0	0	0	4,710	0
Peak Hour	**All**	**0**	**0**	**1,131**	**17**	**0**	**0**	**1,446**	**0**	**0**	**0**	**0**	**40**	**0**	**0**	**0**	**0**	**2,634**	**0**
	HV	**0**	**0**	**34**	**0**	**0**	**0**	**42**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**76**	**0**
	HV%	**-**	**-**	**3%**	**0%**	**-**	**-**	**3%**	**-**	**-**	**-**	**-**	**0%**	**-**	**-**	**-**	**-**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	10	16	0	0	*26*	2	2	0	0	*4*	0	0	1	5	*6*
7:15 AM	13	14	0	0	*27*	0	0	0	0	*0*	0	0	1	0	*1*
7:30 AM	**5**	**12**	**0**	**0**	***17***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**3**	**3**	*6*
7:45 AM	**10**	**8**	**0**	**0**	***18***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**8**	**2**	*10*
8:00 AM	**10**	**13**	**0**	**0**	***23***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**5**	**7**	*12*
8:15 AM	**9**	**9**	**0**	**0**	***18***	**0**	**2**	**0**	**0**	***2***	**1**	**0**	**6**	**4**	***11***
8:30 AM	11	21	0	0	*32*	1	1	0	0	*2*	0	0	4	3	*7*
8:45 AM	12	32	0	0	*44*	0	0	0	0	*0*	0	0	3	0	*3*
Count Total	80	125	0	0	*205*	6	5	0	0	*11*	1	0	31	24	*56*
Peak Hr	**34**	**42**	**0**	**0**	***76***	**3**	**2**	**0**	**0**	***5***	**1**	**0**	**22**	**16**	***39***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Fuller Ave Northbound UT	LT	TH	RT	0 Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	10	0	0	0	16	0	0	0	0	0	0	0	0	0	26	0
7:15 AM	0	0	12	1	0	0	14	0	0	0	0	0	0	0	0	0	27	0
7:30 AM	**0**	**0**	**5**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	0
7:45 AM	**0**	**0**	**10**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	88
8:00 AM	**0**	**0**	**10**	**0**	**0**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	85
8:15 AM	**0**	**0**	**9**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**76**
8:30 AM	0	0	11	0	0	0	21	0	0	0	0	0	0	0	0	0	32	91
8:45 AM	0	0	11	1	0	0	32	0	0	0	0	0	0	0	0	0	44	117
Count Total	0	0	78	2	0	0	125	0	0	0	0	0	0	0	0	0	205	0
Peak Hour	**0**	**0**	**34**	**0**	**0**	**0**	**42**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**76**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	A St Eastbound LT	TH	RT	A St Westbound LT	TH	RT	Fuller Ave Northbound LT	TH	RT	0 Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	4	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
8:15 AM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**5**
8:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	5
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	6	0	0	5	0	0	0	0	0	0	0	11	0
Peak Hour	**0**	**3**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

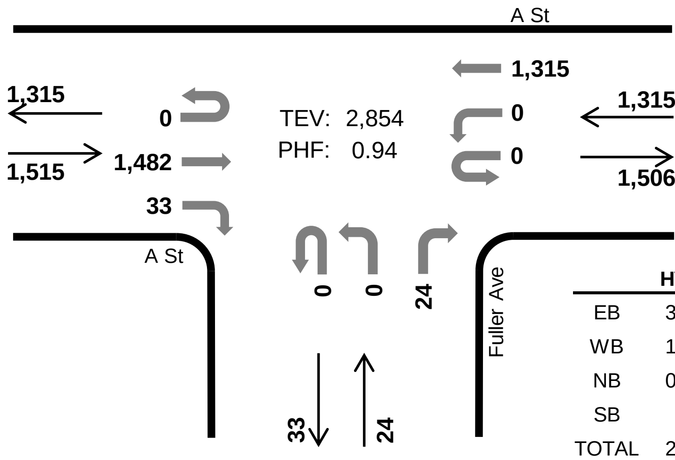
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Fuller Ave
A St

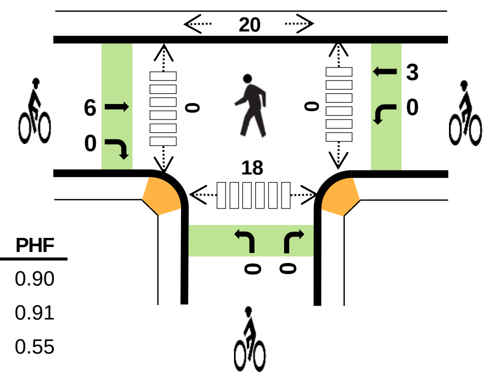
N

Peak Hour

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	3.0%	0.90
WB	1.7%	0.91
NB	0.0%	0.55
SB	-	-
TOTAL	2.4%	0.94



Two-Hour Count Summaries

Interval Start		A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Fuller Ave Northbound UT	LT	TH	RT	0 Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	0	314	2	0	0	293	0	0	0	0	9	0	0	0	0	618	0
4:15 PM		**0**	**0**	**411**	**8**	**0**	**0**	**284**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**708**	0
4:30 PM		**0**	**0**	**359**	**9**	**0**	**0**	**331**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**703**	0
4:45 PM		**0**	**0**	**380**	**11**	**0**	**0**	**360**	**0**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**762**	2,791
5:00 PM		**0**	**0**	**332**	**5**	**0**	**0**	**340**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**681**	**2,854**
5:15 PM		0	0	360	6	0	0	330	0	0	0	0	7	0	0	0	0	703	2,849
5:30 PM		0	0	317	10	0	0	326	0	0	0	0	4	0	0	0	0	657	2,803
5:45 PM		0	0	358	10	0	0	316	0	0	0	0	9	0	0	0	0	693	2,734
Count Total		0	0	2,831	61	0	0	2,580	0	0	0	0	53	0	0	0	0	5,525	0
Peak Hour	**All**	**0**	**0**	**1,482**	**33**	**0**	**0**	**1,315**	**0**	**0**	**0**	**0**	**24**	**0**	**0**	**0**	**0**	**2,854**	**0**
	HV	**0**	**0**	**44**	**1**	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**68**	**0**
	HV%	**-**	**-**	**3%**	**3%**	**-**	**-**	**2%**	**-**	**-**	**-**	**-**	**0%**	**-**	**-**	**-**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	4	7	0	0	*11*	1	0	0	0	*1*	0	0	5	0	*5*
4:15 PM	**13**	**4**	**0**	**0**	***17***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**2**	**5**	*7*
4:30 PM	**8**	**5**	**0**	**0**	***13***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**4**	**3**	*7*
4:45 PM	**14**	**9**	**0**	**0**	***23***	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**4**	**3**	*7*
5:00 PM	**10**	**5**	**0**	**0**	***15***	**1**	**3**	**0**	**0**	***4***	**0**	**0**	**10**	**7**	***17***
5:15 PM	8	4	0	0	*12*	2	0	0	0	*2*	0	0	1	3	*4*
5:30 PM	10	4	0	0	*14*	0	0	0	0	*0*	0	0	2	5	*7*
5:45 PM	6	8	0	0	*14*	0	0	0	0	*0*	0	0	2	2	*4*
Count Total	73	46	0	0	*119*	9	3	0	0	*12*	0	0	30	28	*58*
Peak Hr	**45**	**23**	**0**	**0**	***68***	**6**	**3**	**0**	**0**	***9***	**0**	**0**	**20**	**18**	***38***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Fuller Ave				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	4	0	0	0	7	0	0	0	0	0	0	0	0	0	11	0
4:15 PM	**0**	**0**	**13**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	0
4:30 PM	**0**	**0**	**8**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	0
4:45 PM	**0**	**0**	**13**	**1**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	64
5:00 PM	**0**	**0**	**10**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**68**
5:15 PM	0	0	8	0	0	0	4	0	0	0	0	0	0	0	0	0	12	63
5:30 PM	0	0	9	1	0	0	4	0	0	0	0	0	0	0	0	0	14	64
5:45 PM	0	0	6	0	0	0	8	0	0	0	0	0	0	0	0	0	14	55
Count Total	0	0	71	2	0	0	46	0	0	0	0	0	0	0	0	0	119	0
Peak Hour	**0**	**0**	**44**	**1**	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**68**	**0**

Two-Hour Count Summaries - Bikes

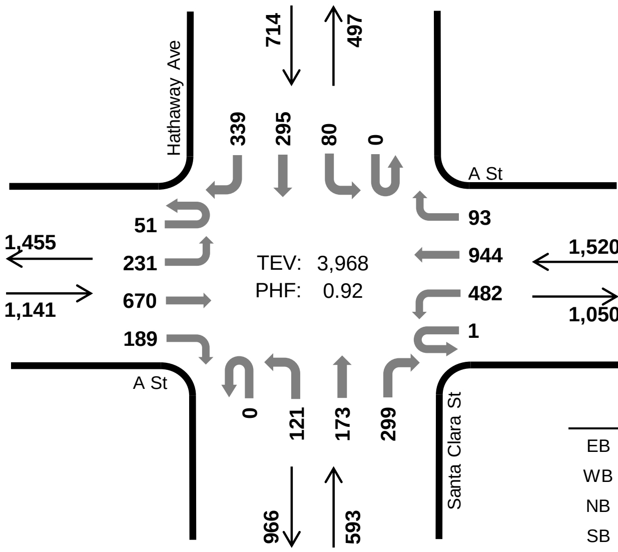
Interval Start	A St			A St			Fuller Ave			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	6
5:00 PM	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**9**
5:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	9
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Count Total	0	9	0	0	3	0	0	0	0	0	0	0	12	0
Peak Hour	**0**	**6**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**

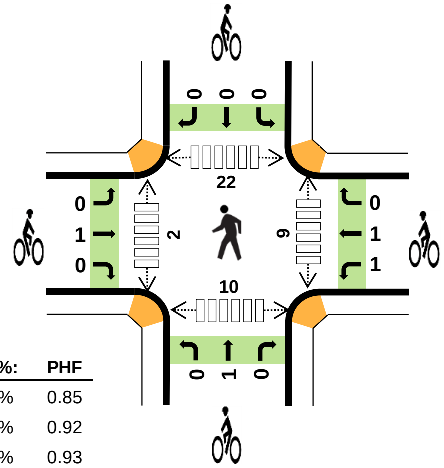
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Santa Clara St
A St

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM

Peak Hour





	HV %:	PHF
EB	2.8%	0.85
WB	1.7%	0.92
NB	2.4%	0.93
SB	4.1%	0.93
TOTAL	2.5%	0.92

Two-Hour Count Summaries

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Santa Clara St Northbound UT	LT	TH	RT	Hathaway Ave Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	6	44	93	23	0	54	171	8	1	18	25	18	0	6	70	68	605	0
7:15 AM	18	31	106	32	0	80	208	13	0	25	24	28	0	11	79	72	727	0
7:30 AM	**18**	**38**	**131**	**41**	**0**	**94**	**250**	**16**	**0**	**34**	**41**	**55**	**0**	**22**	**80**	**82**	**902**	0
7:45 AM	**14**	**44**	**161**	**38**	**0**	**119**	**252**	**27**	**0**	**30**	**45**	**78**	**0**	**17**	**61**	**81**	**967**	3,201
8:00 AM	**12**	**71**	**196**	**57**	**0**	**131**	**198**	**19**	**0**	**25**	**27**	**99**	**0**	**27**	**75**	**89**	**1,026**	3,622
8:15 AM	**7**	**78**	**182**	**53**	**1**	**138**	**244**	**31**	**0**	**32**	**60**	**67**	**0**	**14**	**79**	**87**	**1,073**	**3,968**
8:30 AM	18	63	160	41	0	96	186	25	0	15	30	26	0	16	85	85	846	3,912
8:45 AM	9	41	134	45	0	77	200	21	0	14	18	29	1	22	70	81	762	3,707
Count Total	102	410	1,163	330	1	789	1,709	160	1	193	270	400	1	135	599	645	6,908	0
Peak Hour All	**51**	**231**	**670**	**189**	**1**	**482**	**944**	**93**	**0**	**121**	**173**	**299**	**0**	**80**	**295**	**339**	**3,968**	**0**
Peak Hour HV	**1**	**12**	**18**	**1**	**0**	**6**	**18**	**2**	**0**	**3**	**3**	**8**	**0**	**3**	**6**	**20**	**101**	**0**
Peak Hour HV%	**2%**	**5%**	**3%**	**1%**	**0%**	**1%**	**2%**	**2%**	**-**	**2%**	**2%**	**3%**	**-**	**4%**	**2%**	**6%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	9	3	0	16	*28*	2	1	0	0	*3*	0	0	1	4	*5*
7:15 AM	10	9	2	9	*30*	0	0	0	0	*0*	0	1	0	4	*5*
7:30 AM	**5**	**8**	**6**	**5**	***24***	**0**	**0**	**1**	**0**	***1***	**1**	**1**	**1**	**0**	*3*
7:45 AM	**9**	**5**	**1**	**5**	***20***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**3**	**3**	*8*
8:00 AM	**11**	**10**	**2**	**7**	***30***	**1**	**1**	**0**	**0**	***2***	**5**	**0**	**10**	**5**	*20*
8:15 AM	**7**	**3**	**5**	**12**	***27***	**0**	**1**	**0**	**0**	***1***	**2**	**0**	**8**	**2**	*12*
8:30 AM	11	11	1	24	*47*	1	1	0	0	*2*	4	0	1	3	*8*
8:45 AM	12	13	2	38	*65*	0	0	0	0	*0*	2	0	3	2	*7*
Count Total	74	62	19	116	*271*	4	4	1	0	*9*	15	3	27	23	*68*
Peak Hour	**32**	**26**	**14**	**29**	***101***	**1**	**2**	**1**	**0**	***4***	**9**	**2**	**22**	**10**	***43***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Santa Clara St				Hathaway Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	6	2	1	0	1	2	0	0	0	0	0	0	2	1	13	28	0
7:15 AM	0	3	4	3	0	2	7	0	0	1	0	1	0	0	2	7	30	0
7:30 AM	**0**	**2**	**3**	**0**	**0**	**0**	**8**	**0**	**0**	**1**	**2**	**3**	**0**	**0**	**1**	**4**	**24**	0
7:45 AM	**1**	**2**	**6**	**0**	**0**	**2**	**2**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**4**	**20**	102
8:00 AM	**0**	**5**	**5**	**1**	**0**	**3**	**7**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**2**	**5**	**30**	104
8:15 AM	**0**	**3**	**4**	**0**	**0**	**1**	**1**	**1**	**0**	**1**	**1**	**3**	**0**	**2**	**3**	**7**	**27**	**101**
8:30 AM	0	1	8	2	0	1	9	1	0	0	1	0	0	2	8	14	47	124
8:45 AM	0	4	6	2	0	1	9	3	0	1	0	1	0	5	10	23	65	169
Count Total	1	26	38	9	0	11	45	6	0	5	4	10	0	12	27	77	271	0
Peak Hour	**1**	**12**	**18**	**1**	**0**	**6**	**18**	**2**	**0**	**3**	**3**	**8**	**0**	**3**	**6**	**20**	**101**	**0**

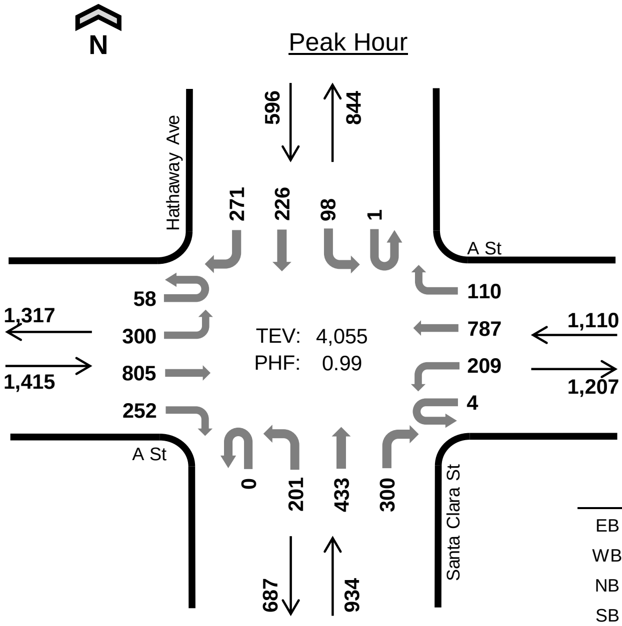
Two-Hour Count Summaries - Bikes

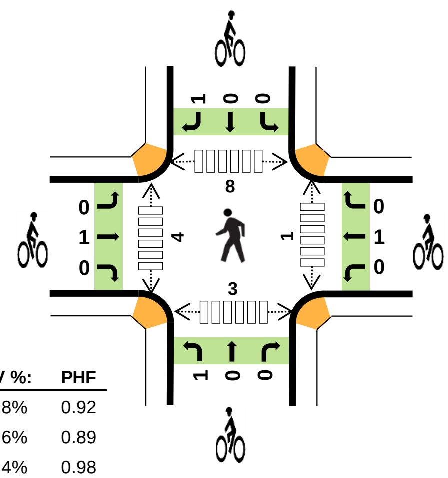
Interval Start	A St			A St			Santa Clara St			Hathaway Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	1	1	0	0	1	0	0	0	0	0	0	0	3	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:00 AM	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	3
8:15 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
8:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	2	5
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	1	2	1	1	2	1	0	1	0	0	0	0	9	0
Peak Hour	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Santa Clara St
A St

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	2.8%	0.92
WB	1.6%	0.89
NB	1.4%	0.98
SB	1.7%	0.87
TOTAL	2.0%	0.99

Two-Hour Count Summaries

Interval Start	A St Eastbound UT	LT	TH	RT	A St Westbound UT	LT	TH	RT	Santa Clara St Northbound UT	LT	TH	RT	Hathaway Ave Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	15	74	168	64	0	50	173	27	0	37	104	71	0	18	41	59	901	0
4:15 PM	18	93	238	77	0	37	174	27	0	37	110	72	0	12	56	63	1,014	0
4:30 PM	**16**	**73**	**172**	**69**	**0**	**43**	**189**	**28**	**0**	**36**	**114**	**86**	**0**	**37**	**66**	**69**	**998**	0
4:45 PM	**20**	**66**	**226**	**66**	**0**	**43**	**189**	**22**	**0**	**61**	**106**	**71**	**0**	**15**	**48**	**75**	**1,008**	3,921
5:00 PM	**12**	**85**	**165**	**62**	**4**	**85**	**193**	**30**	**0**	**50**	**103**	**80**	**0**	**26**	**60**	**66**	**1,021**	4,041
5:15 PM	**10**	**76**	**242**	**55**	**0**	**38**	**216**	**30**	**0**	**54**	**110**	**63**	**1**	**20**	**52**	**61**	**1,028**	**4,055**
5:30 PM	19	54	165	57	2	54	204	28	0	54	97	76	0	31	42	56	939	3,996
5:45 PM	22	88	188	63	1	52	168	28	0	52	109	74	0	27	60	66	998	3,986
Count Total	132	609	1,564	513	7	402	1,506	220	0	381	853	593	1	186	425	515	7,907	0
Peak Hour All	**58**	**300**	**805**	**252**	**4**	**209**	**787**	**110**	**0**	**201**	**433**	**300**	**1**	**98**	**226**	**271**	**4,055**	**0**
HV	**1**	**29**	**10**	**0**	**0**	**3**	**12**	**3**	**0**	**1**	**9**	**3**	**0**	**1**	**0**	**9**	**81**	**0**
HV%	**2%**	**10%**	**1%**	**0%**	**0%**	**1%**	**2%**	**3%**	**-**	**0%**	**2%**	**1%**	**0%**	**1%**	**0%**	**3%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	3	5	0	4	*12*	0	0	0	1	*1*	1	5	3	0	*9*
4:15 PM	15	6	4	1	*26*	0	0	0	0	*0*	0	3	2	2	*7*
4:30 PM	**5**	**4**	**1**	**3**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
4:45 PM	**15**	**5**	**5**	**4**	***29***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**2**	**2**	*6*
5:00 PM	**11**	**6**	**3**	**2**	***22***	**0**	**1**	**1**	**1**	***3***	**0**	**2**	**3**	**1**	*6*
5:15 PM	**9**	**3**	**4**	**1**	***17***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**3**	**0**	***3***
5:30 PM	8	5	8	2	*23*	0	1	0	0	*1*	1	5	3	0	*9*
5:45 PM	6	9	5	3	*23*	0	0	0	0	*0*	0	0	2	0	*2*
Count Total	72	43	30	20	*165*	1	2	1	2	*6*	3	17	18	5	*43*
Peak Hour	**40**	**18**	**13**	**10**	***81***	**1**	**1**	**1**	**1**	***4***	**1**	**4**	**8**	**3**	***16***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	A St				A St				Santa Clara St				Hathaway Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	2	0	0	0	5	0	0	0	0	0	0	0	2	2	12	0
4:15 PM	1	6	6	2	0	2	4	0	0	0	0	4	0	0	1	0	26	0
4:30 PM	**0**	**4**	**1**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	**13**	0
4:45 PM	**1**	**9**	**5**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**4**	**29**	80
5:00 PM	**0**	**9**	**2**	**0**	**0**	**2**	**3**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**2**	**22**	90
5:15 PM	**0**	**7**	**2**	**0**	**0**	**0**	**2**	**1**	**0**	**1**	**1**	**2**	**0**	**0**	**0**	**1**	**17**	**81**
5:30 PM	0	4	4	0	0	0	1	4	0	0	7	1	0	0	0	2	23	91
5:45 PM	0	5	1	0	0	1	5	3	0	1	4	0	0	0	0	3	23	85
Count Total	2	45	23	2	0	6	27	10	0	2	20	8	0	1	3	16	165	0
Peak Hour	**1**	**29**	**10**	**0**	**0**	**3**	**12**	**3**	**0**	**1**	**9**	**3**	**0**	**1**	**0**	**9**	**81**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	A St			A St			Santa Clara St			Hathaway Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**3**	3
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	1	0	0	1	1	1	0	0	0	1	1	6	0
Peak Hour	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**4**	**0**

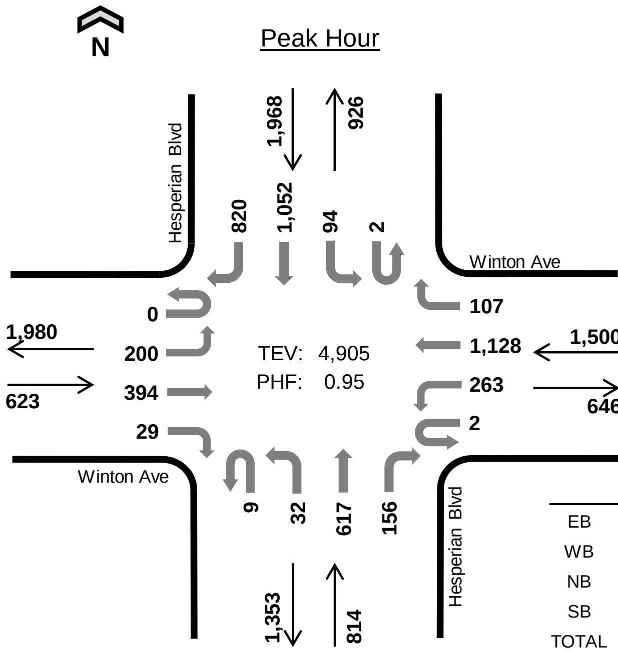
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

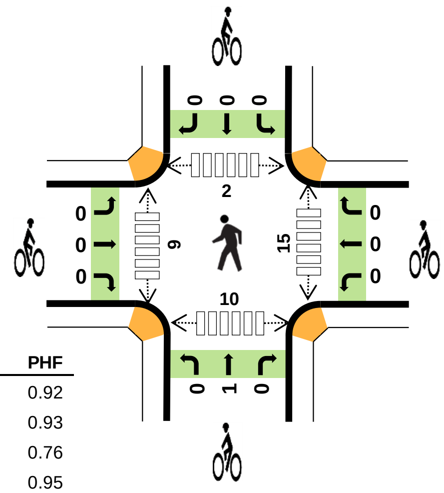
Project Manager: (415) 310-6469 project.manager.ca@idaxdata.com

Hesperian Blvd
Winton Ave

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM

Peak Hour





	HV %:	PHF
EB	26.8%	0.92
WB	5.1%	0.93
NB	2.3%	0.76
SB	2.5%	0.95
TOTAL	6.4%	0.95

Two-Hour Count Summaries

Interval Start		Winton Ave Eastbound				Winton Ave Westbound				Hesperian Blvd Northbound				Hesperian Blvd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	44	105	11	0	78	264	11	3	8	84	28	0	13	275	196	1,120	0
7:15 AM		**0**	**49**	**112**	**9**	**1**	**83**	**304**	**16**	**1**	**9**	**102**	**35**	**1**	**23**	**268**	**214**	**1,227**	0
7:30 AM		**0**	**49**	**93**	**6**	**0**	**63**	**296**	**18**	**2**	**4**	**114**	**38**	**0**	**21**	**251**	**189**	**1,144**	0
7:45 AM		**0**	**46**	**97**	**5**	**1**	**66**	**271**	**39**	**6**	**10**	**182**	**44**	**1**	**22**	**249**	**209**	**1,248**	4,739
8:00 AM		**0**	**56**	**92**	**9**	**0**	**51**	**257**	**34**	**0**	**9**	**219**	**39**	**0**	**28**	**284**	**208**	**1,286**	**4,905**
8:15 AM		1	73	101	7	0	59	247	22	1	8	186	39	2	42	229	187	1,204	4,882
8:30 AM		0	53	83	10	0	70	264	16	2	10	114	42	2	36	258	185	1,145	4,883
8:45 AM		0	44	105	14	1	115	215	20	2	12	134	30	2	26	265	167	1,152	4,787
Count Total		1	414	788	71	3	585	2,118	176	17	70	1,135	295	8	211	2,079	1,555	9,526	0
Peak Hour	**All**	**0**	**200**	**394**	**29**	**2**	**263**	**1,128**	**107**	**9**	**32**	**617**	**156**	**2**	**94**	**1,052**	**820**	**4,905**	**0**
	HV	**0**	**28**	**129**	**10**	**0**	**4**	**70**	**2**	**0**	**1**	**14**	**4**	**0**	**3**	**25**	**22**	**312**	**0**
	HV%	**-**	**14%**	**33%**	**34%**	**0%**	**2%**	**6%**	**2%**	**0%**	**3%**	**2%**	**3%**	**0%**	**3%**	**2%**	**3%**	**6%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	39	22	3	9	*73*	0	0	0	0	*0*	7	2	2	6	*17*
7:15 AM	**51**	**21**	**3**	**12**	***87***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**1**	**2**	*6*
7:30 AM	**36**	**13**	**7**	**10**	***66***	**0**	**0**	**0**	**0**	***0***	**3**	**1**	**0**	**5**	*9*
7:45 AM	**43**	**23**	**6**	**15**	***87***	**0**	**0**	**1**	**0**	***1***	**4**	**2**	**0**	**3**	*9*
8:00 AM	**37**	**19**	**3**	**13**	***72***	**0**	**0**	**0**	**0**	***0***	**5**	**6**	**1**	**0**	***12***
8:15 AM	34	31	9	15	*89*	0	0	0	0	*0*	3	1	1	2	*7*
8:30 AM	34	23	5	11	*73*	0	0	0	0	*0*	6	1	1	3	*11*
8:45 AM	41	34	4	8	*87*	0	0	0	0	*0*	3	0	0	1	*4*
Count Total	315	186	40	93	*634*	0	0	1	0	*1*	34	13	6	22	*75*
Peak Hour	**167**	**76**	**19**	**50**	***312***	**0**	**0**	**1**	**0**	***1***	**15**	**9**	**2**	**10**	***36***

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Winton Ave				Winton Ave				Hesperian Blvd				Hesperian Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	6	30	3	0	0	22	0	1	0	2	0	0	0	3	6	73	0
7:15 AM	**0**	**8**	**40**	**3**	**0**	**2**	**19**	**0**	**0**	**1**	**2**	**0**	**0**	**1**	**4**	**7**	**87**	0
7:30 AM	**0**	**6**	**28**	**2**	**0**	**0**	**13**	**0**	**0**	**0**	**4**	**3**	**0**	**0**	**6**	**4**	**66**	0
7:45 AM	**0**	**7**	**34**	**2**	**0**	**1**	**20**	**2**	**0**	**0**	**5**	**1**	**0**	**1**	**7**	**7**	**87**	313
8:00 AM	**0**	**7**	**27**	**3**	**0**	**1**	**18**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**8**	**4**	**72**	**312**
8:15 AM	0	5	27	2	0	3	26	2	0	1	6	2	0	3	4	8	89	314
8:30 AM	0	7	26	1	0	1	22	0	0	0	5	0	0	0	3	8	73	321
8:45 AM	0	5	35	1	0	4	30	0	0	1	3	0	0	0	2	6	87	321
Count Total	0	51	247	17	0	12	170	4	1	3	30	6	0	6	37	50	634	0
Peak Hour	**0**	**28**	**129**	**10**	**0**	**4**	**70**	**2**	**0**	**1**	**14**	**4**	**0**	**3**	**25**	**22**	**312**	**0**

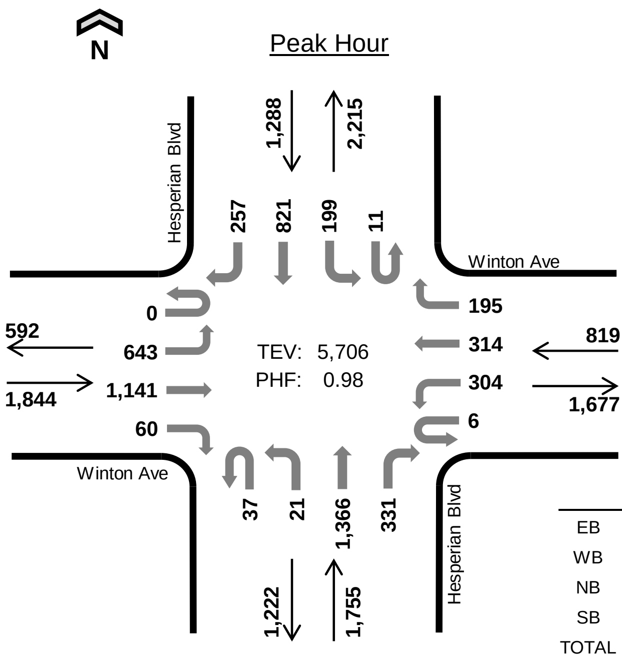
Two-Hour Count Summaries - Bikes

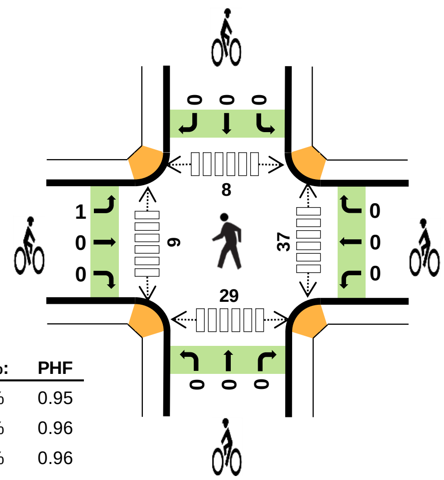
Interval Start	Winton Ave			Winton Ave			Hesperian Blvd			Hesperian Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Hesperian Blvd
Winton Ave

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	3.1%	0.95
WB	7.0%	0.96
NB	0.7%	0.96
SB	3.0%	0.95
TOTAL	2.9%	0.98

Two-Hour Count Summaries

Interval Start		Winton Ave Eastbound				Winton Ave Westbound				Hesperian Blvd Northbound				Hesperian Blvd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	143	257	14	1	62	80	59	11	5	375	78	1	45	187	46	1,364	0
4:15 PM		0	183	288	16	3	56	100	47	12	14	321	87	1	45	172	48	1,393	0
4:30 PM		**0**	**145**	**261**	**16**	**2**	**76**	**89**	**47**	**7**	**6**	**344**	**83**	**3**	**49**	**183**	**68**	**1,379**	0
4:45 PM		**0**	**166**	**307**	**12**	**1**	**75**	**89**	**41**	**13**	**5**	**320**	**84**	**3**	**45**	**221**	**70**	**1,452**	5,588
5:00 PM		**0**	**166**	**284**	**12**	**3**	**73**	**72**	**52**	**10**	**6**	**337**	**84**	**3**	**53**	**201**	**58**	**1,414**	5,638
5:15 PM		**0**	**166**	**289**	**20**	**0**	**80**	**64**	**55**	**7**	**4**	**365**	**80**	**2**	**52**	**216**	**61**	**1,461**	**5,706**
5:30 PM		0	175	289	16	1	86	45	50	5	3	319	75	3	51	189	45	1,352	5,679
5:45 PM		0	110	169	9	6	88	52	40	10	1	329	83	1	62	220	56	1,236	5,463
Count Total		0	1,254	2,144	115	17	596	591	391	75	44	2,710	654	17	402	1,589	452	11,051	0
Peak Hour	**All**	**0**	**643**	**1,141**	**60**	**6**	**304**	**314**	**195**	**37**	**21**	**1,366**	**331**	**11**	**199**	**821**	**257**	**5,706**	**0**
	HV	**0**	**14**	**42**	**2**	**0**	**4**	**52**	**1**	**0**	**2**	**9**	**2**	**0**	**2**	**8**	**28**	**166**	**0**
	HV%	**-**	**2%**	**4%**	**3%**	**0%**	**1%**	**17%**	**1%**	**0%**	**10%**	**1%**	**1%**	**0%**	**1%**	**1%**	**11%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	19	22	8	12	*61*	0	0	0	0	*0*	4	2	0	1	*7*
4:15 PM	20	31	3	10	*64*	0	0	0	0	*0*	5	5	4	4	*18*
4:30 PM	**13**	**15**	**4**	**8**	***40***	**1**	**0**	**0**	**0**	***1***	**9**	**2**	**2**	**3**	***16***
4:45 PM	**18**	**17**	**2**	**14**	***51***	**0**	**0**	**0**	**0**	***0***	**5**	**4**	**3**	**8**	***20***
5:00 PM	**12**	**16**	**4**	**8**	***40***	**0**	**0**	**0**	**0**	***0***	**7**	**2**	**2**	**5**	***16***
5:15 PM	**15**	**9**	**3**	**8**	***35***	**0**	**0**	**0**	**0**	***0***	**16**	**1**	**1**	**13**	***31***
5:30 PM	17	13	3	8	*41*	0	0	2	0	*2*	1	2	2	2	*7*
5:45 PM	12	5	2	9	*28*	0	0	0	0	*0*	7	1	0	4	*12*
Count Total	126	128	29	77	*360*	1	0	2	0	*3*	54	19	14	40	*127*
Peak Hour	**58**	**57**	**13**	**38**	***166***	**1**	**0**	**0**	**0**	***1***	**37**	**9**	**8**	**29**	***83***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Winton Ave Eastbound UT	LT	TH	RT	Winton Ave Westbound UT	LT	TH	RT	Hesperian Blvd Northbound UT	LT	TH	RT	Hesperian Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	4	15	0	0	2	20	0	0	0	6	2	0	0	5	7	61	0
4:15 PM	0	4	16	0	0	0	30	1	0	0	2	1	0	0	5	5	64	0
4:30 PM	**0**	**4**	**8**	**1**	**0**	**2**	**13**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**2**	**6**	**40**	0
4:45 PM	**0**	**5**	**13**	**0**	**0**	**1**	**16**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**3**	**10**	**51**	216
5:00 PM	**0**	**4**	**8**	**0**	**0**	**1**	**15**	**0**	**0**	**1**	**1**	**2**	**0**	**1**	**1**	**6**	**40**	195
5:15 PM	**0**	**1**	**13**	**1**	**0**	**0**	**8**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**6**	**35**	**166**
5:30 PM	0	2	15	0	0	0	13	0	0	1	1	1	0	0	3	5	41	167
5:45 PM	0	1	11	0	0	0	5	0	0	0	2	0	0	0	3	6	28	144
Count Total	0	25	99	2	0	6	120	2	0	3	20	6	0	2	24	51	360	0
Peak Hour	**0**	**14**	**42**	**2**	**0**	**4**	**52**	**1**	**0**	**2**	**9**	**2**	**0**	**2**	**8**	**28**	**166**	**0**

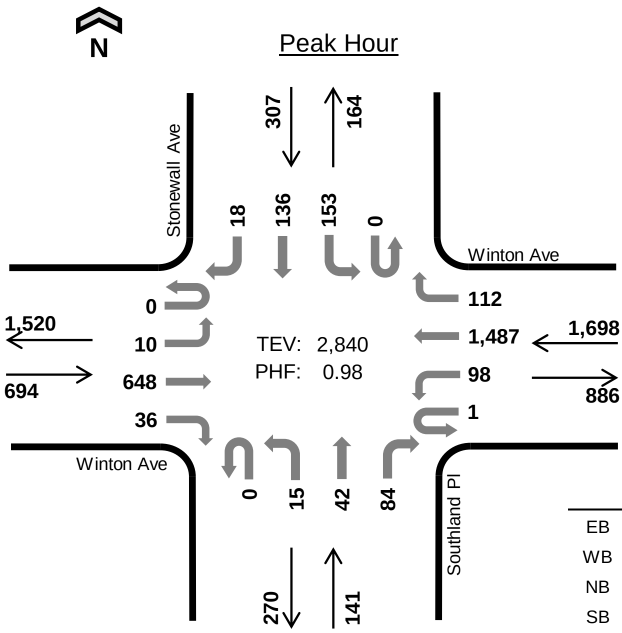
Two-Hour Count Summaries - Bikes

Interval Start	Winton Ave Eastbound LT	TH	RT	Winton Ave Westbound LT	TH	RT	Hesperian Blvd Northbound LT	TH	RT	Hesperian Blvd Southbound LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	1	0	0	0	0	0	0	2	0	0	0	0	3	0
Peak Hour	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

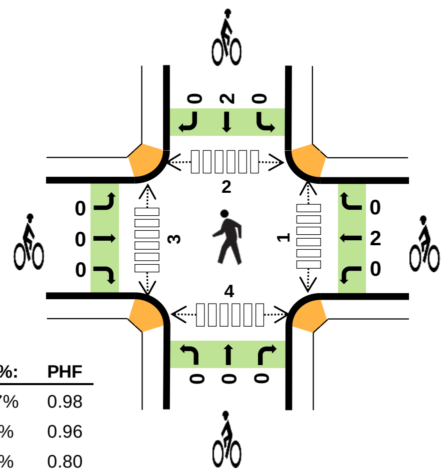
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Southland Pl
Winton Ave

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



	HV %:	PHF
EB	19.7%	0.98
WB	4.9%	0.96
NB	2.8%	0.80
SB	0.7%	0.76
TOTAL	8.0%	0.98



Two-Hour Count Summaries

Interval Start	Winton Ave Eastbound UT	LT	TH	RT	Winton Ave Westbound UT	LT	TH	RT	Southland Pl Northbound UT	LT	TH	RT	Stonewall Ave Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	3	146	8	1	16	363	8	0	1	1	11	0	23	12	7	600	0
7:15 AM	**0**	**0**	**165**	**12**	**0**	**30**	**392**	**8**	**0**	**3**	**3**	**26**	**0**	**27**	**28**	**0**	**694**	0
7:30 AM	**0**	**3**	**160**	**12**	**0**	**31**	**381**	**16**	**0**	**4**	**7**	**23**	**0**	**48**	**33**	**5**	**723**	0
7:45 AM	**0**	**2**	**165**	**6**	**1**	**19**	**355**	**25**	**0**	**3**	**11**	**17**	**0**	**43**	**51**	**7**	**705**	2,722
8:00 AM	**0**	**5**	**158**	**6**	**0**	**18**	**359**	**63**	**0**	**5**	**21**	**18**	**0**	**35**	**24**	**6**	**718**	**2,840**
8:15 AM	0	7	159	7	0	26	319	28	0	8	22	17	0	57	17	8	675	2,821
8:30 AM	0	1	153	7	0	23	345	13	0	3	6	21	0	41	18	5	636	2,734
8:45 AM	0	0	176	4	0	31	361	7	0	5	1	16	1	28	10	11	651	2,680
Count Total	0	21	1,282	62	2	194	2,875	168	0	32	72	149	1	302	193	49	5,402	0
Peak Hour All	**0**	**10**	**648**	**36**	**1**	**98**	**1,487**	**112**	**0**	**15**	**42**	**84**	**0**	**153**	**136**	**18**	**2,840**	**0**
Peak Hour HV	**0**	**0**	**136**	**1**	**0**	**3**	**79**	**2**	**0**	**0**	**0**	**4**	**0**	**1**	**1**	**0**	**227**	**0**
Peak Hour HV%	**-**	**0%**	**21%**	**3%**	**0%**	**3%**	**5%**	**2%**	**-**	**0%**	**0%**	**5%**	**-**	**1%**	**1%**	**0%**	**8%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	31	23	0	2	*56*	0	1	0	2	*3*	2	1	2	1	*6*
7:15 AM	**40**	**24**	**2**	**1**	***67***	**0**	**0**	**0**	**1**	***1***	**0**	**2**	**1**	**1**	*4*
7:30 AM	**33**	**15**	**1**	**1**	***50***	**0**	**1**	**0**	**1**	***2***	**0**	**1**	**0**	**3**	*4*
7:45 AM	**31**	**24**	**0**	**0**	***55***	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	*1*
8:00 AM	**33**	**21**	**1**	**0**	***55***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
8:15 AM	28	29	3	1	*61*	0	0	0	0	*0*	1	0	0	1	*2*
8:30 AM	29	25	1	1	*56*	0	0	0	2	*2*	0	0	0	0	*0*
8:45 AM	38	32	1	1	*72*	0	0	0	1	*1*	0	0	0	1	*1*
Count Total	263	193	9	7	*472*	0	3	0	7	*10*	4	4	4	7	*19*
Peak Hour	**137**	**84**	**4**	**2**	***227***	**0**	**2**	**0**	**2**	***4***	**1**	**3**	**2**	**4**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Winton Ave Eastbound				Winton Ave Westbound				Southland Pl Northbound				Stonewall Ave Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	29	1	0	0	21	2	0	0	0	0	0	1	1	0	56	0
7:15 AM	**0**	**0**	**39**	**1**	**0**	**0**	**24**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**67**	0
7:30 AM	**0**	**0**	**33**	**0**	**0**	**1**	**13**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**50**	0
7:45 AM	**0**	**0**	**31**	**0**	**0**	**2**	**21**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**55**	228
8:00 AM	**0**	**0**	**33**	**0**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**55**	**227**
8:15 AM	0	0	28	0	0	1	28	0	0	2	0	1	0	1	0	0	61	221
8:30 AM	0	0	29	0	0	0	23	2	0	0	0	1	0	1	0	0	56	227
8:45 AM	0	0	38	0	0	1	31	0	0	1	0	0	0	1	0	0	72	244
Count Total	0	1	260	2	0	5	182	6	0	3	0	6	0	5	2	0	472	0
Peak Hour	**0**	**0**	**136**	**1**	**0**	**3**	**79**	**2**	**0**	**0**	**0**	**4**	**0**	**1**	**1**	**0**	**227**	**0**

Two-Hour Count Summaries - Bikes

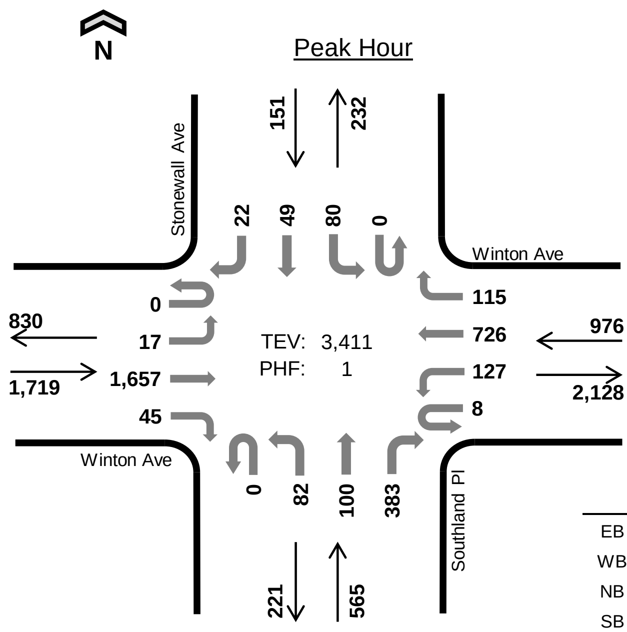
Interval Start	Winton Ave Eastbound			Winton Ave Westbound			Southland Pl Northbound			Stonewall Ave Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	1	0	0	0	0	0	2	0	3	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	0
7:30 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	0
7:45 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	7
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	3
Count Total	0	0	0	0	3	0	0	0	0	0	7	0	10	0
Peak Hour	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**4**	**0**

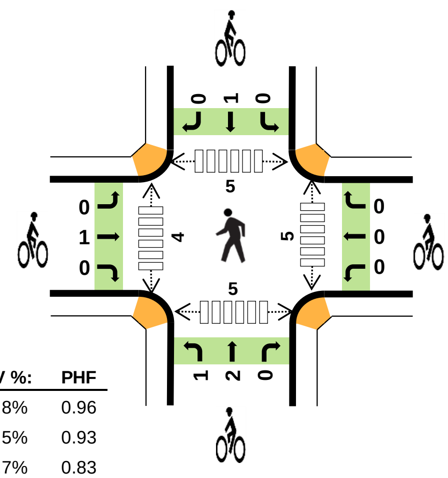
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Southland Pl
Winton Ave

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Peak Hour





	HV %:	PHF
EB	2.8%	0.96
WB	6.5%	0.93
NB	0.7%	0.83
SB	1.3%	0.86
TOTAL	3.4%	1.00

Two-Hour Count Summaries

Interval Start		Winton Ave Eastbound UT	LT	TH	RT	Winton Ave Westbound UT	LT	TH	RT	Southland Pl Northbound UT	LT	TH	RT	Stonewall Ave Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	6	398	11	0	27	189	24	0	22	33	94	0	13	14	8	839	0
4:15 PM		0	5	393	8	1	28	179	22	0	19	18	75	0	25	9	6	788	0
4:30 PM		**0**	**4**	**429**	**15**	**3**	**33**	**192**	**29**	**0**	**22**	**15**	**71**	**0**	**17**	**9**	**6**	**845**	0
4:45 PM		**0**	**2**	**419**	**9**	**3**	**34**	**193**	**22**	**0**	**12**	**26**	**94**	**0**	**20**	**18**	**4**	**856**	3,328
5:00 PM		**0**	**6**	**435**	**6**	**1**	**19**	**159**	**27**	**0**	**23**	**31**	**116**	**0**	**18**	**8**	**7**	**856**	3,345
5:15 PM		**0**	**5**	**374**	**15**	**1**	**41**	**182**	**37**	**0**	**25**	**28**	**102**	**0**	**25**	**14**	**5**	**854**	**3,411**
5:30 PM		0	9	405	11	2	44	151	26	0	24	25	93	0	15	15	3	823	3,389
5:45 PM		0	5	339	13	2	31	176	25	0	16	25	79	0	20	15	4	750	3,283
Count Total		0	42	3,192	88	13	257	1,421	212	0	163	201	724	0	153	102	43	6,611	0
Peak Hour	**All**	**0**	**17**	**1,657**	**45**	**8**	**127**	**726**	**115**	**0**	**82**	**100**	**383**	**0**	**80**	**49**	**22**	**3,411**	**0**
	HV	**0**	**0**	**48**	**0**	**0**	**2**	**60**	**1**	**0**	**1**	**1**	**2**	**0**	**1**	**0**	**1**	**117**	**0**
	HV%	**-**	**0%**	**3%**	**0%**	**0%**	**2%**	**8%**	**1%**	**-**	**1%**	**1%**	**1%**	**-**	**1%**	**0%**	**5%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	19	24	0	0	*43*	0	0	1	0	*1*	2	0	0	0	*2*
4:15 PM	17	31	0	0	*48*	0	0	1	0	*1*	0	0	2	3	*5*
4:30 PM	**9**	**18**	**0**	**1**	***28***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**3**	**1**	*7*
4:45 PM	**13**	**16**	**1**	**1**	***31***	**0**	**0**	**2**	**0**	***2***	**0**	**1**	**0**	**3**	*4*
5:00 PM	**12**	**17**	**2**	**0**	***31***	**1**	**0**	**0**	**1**	***2***	**1**	**1**	**0**	**1**	*3*
5:15 PM	**14**	**12**	**1**	**0**	***27***	**0**	**0**	**1**	**0**	***1***	**2**	**1**	**2**	**0**	*5*
5:30 PM	13	12	2	0	*27*	0	0	0	0	*0*	1	0	0	3	*4*
5:45 PM	13	7	2	0	*22*	0	0	0	0	*0*	1	0	0	0	*1*
Count Total	110	137	8	2	*257*	1	0	5	1	*7*	9	4	7	11	*31*
Peak Hour	**48**	**63**	**4**	**2**	***117***	**1**	**0**	**3**	**1**	***5***	**5**	**4**	**5**	**5**	***19***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Winton Ave				Winton Ave				Southland Pl				Stonewall Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	19	0	0	0	23	1	0	0	0	0	0	0	0	0	43	0
4:15 PM	0	0	17	0	0	0	31	0	0	0	0	0	0	0	0	0	48	0
4:30 PM	**0**	**0**	**9**	**0**	**0**	**0**	**17**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**28**	0
4:45 PM	**0**	**0**	**13**	**0**	**0**	**1**	**15**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**31**	150
5:00 PM	**0**	**0**	**12**	**0**	**0**	**0**	**17**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**31**	138
5:15 PM	**0**	**0**	**14**	**0**	**0**	**1**	**11**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**117**
5:30 PM	0	0	13	0	0	0	12	0	0	0	0	2	0	0	0	0	27	116
5:45 PM	0	0	13	0	0	0	7	0	0	0	0	2	0	0	0	0	22	107
Count Total	0	0	110	0	0	2	133	2	0	1	1	6	0	1	0	1	257	0
Peak Hour	**0**	**0**	**48**	**0**	**0**	**2**	**60**	**1**	**0**	**1**	**1**	**2**	**0**	**1**	**0**	**1**	**117**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Winton Ave			Winton Ave			Southland Pl			Stonewall Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**2**	4
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	5
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**5**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	1	0	0	0	0	1	4	0	0	1	0	7	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**1**	**0**	**5**	**0**

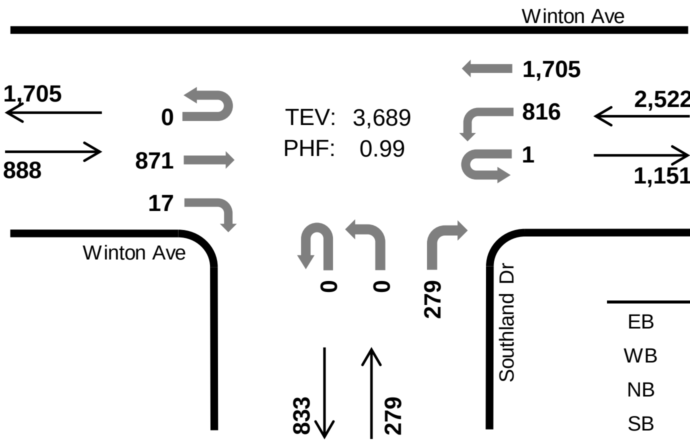
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

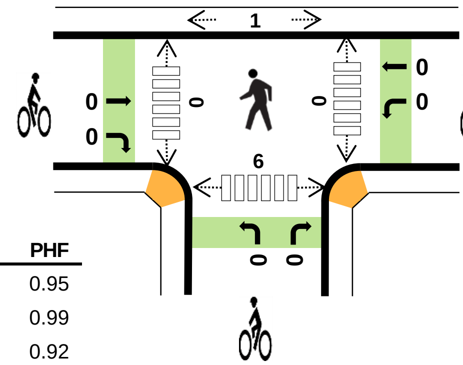
Southland Dr
Winton Ave

N

Peak Hour

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	15.9%	0.95
WB	4.0%	0.99
NB	5.0%	0.92
SB	-	-
TOTAL	7.0%	0.99

Two-Hour Count Summaries

Interval Start		Winton Ave				Winton Ave				Southland Dr				0				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	179	2	0	107	377	0	0	0	0	67	0	0	0	0	732	0
7:15 AM		**0**	**0**	**231**	**3**	**0**	**170**	**462**	**0**	**0**	**0**	**0**	**67**	**0**	**0**	**0**	**0**	**933**	0
7:30 AM		**0**	**0**	**218**	**1**	**0**	**202**	**420**	**0**	**0**	**0**	**0**	**60**	**0**	**0**	**0**	**0**	**901**	0
7:45 AM		**0**	**0**	**207**	**10**	**1**	**228**	**409**	**0**	**0**	**0**	**0**	**76**	**0**	**0**	**0**	**0**	**931**	3,497
8:00 AM		**0**	**0**	**215**	**3**	**0**	**216**	**414**	**0**	**0**	**0**	**0**	**76**	**0**	**0**	**0**	**0**	**924**	**3,689**
8:15 AM		0	0	238	7	0	179	374	0	0	0	0	86	0	0	0	0	884	3,640
8:30 AM		0	0	208	8	1	188	387	0	0	0	0	75	0	0	0	0	867	3,606
8:45 AM		0	0	190	4	0	194	375	0	0	0	0	67	0	0	0	0	830	3,505
Count Total		0	0	1,686	38	2	1,484	3,218	0	0	0	0	574	0	0	0	0	7,002	0
Peak Hour	**All**	**0**	**0**	**871**	**17**	**1**	**816**	**1,705**	**0**	**0**	**0**	**0**	**279**	**0**	**0**	**0**	**0**	**3,689**	**0**
	HV	**0**	**0**	**140**	**1**	**0**	**15**	**87**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**257**	**0**
	HV%	**-**	**-**	**16%**	**6%**	**0%**	**2%**	**5%**	**-**	**-**	**-**	**-**	**5%**	**-**	**-**	**-**	**-**	**7%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	31	27	3	0	*61*	0	1	0	0	*1*	0	0	2	1	*3*
7:15 AM	**44**	**30**	**2**	**0**	***76***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	*3*
7:30 AM	**34**	**23**	**2**	**0**	***59***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	*2*
7:45 AM	**29**	**24**	**6**	**0**	***59***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
8:00 AM	**34**	**25**	**4**	**0**	***63***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***
8:15 AM	33	36	4	0	*73*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	29	23	3	0	*55*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	36	36	2	0	*74*	0	0	0	0	*0*	0	0	0	1	*1*
Count Total	270	224	26	0	*520*	0	1	0	0	*1*	0	0	3	8	*11*
Peak Hr	**141**	**102**	**14**	**0**	***257***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**6**	*7*

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Winton Ave				Winton Ave				Southland Dr				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	31	0	0	7	20	0	0	0	0	3	0	0	0	0	61	0
7:15 AM	**0**	**0**	**43**	**1**	**0**	**4**	**26**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**76**	0
7:30 AM	**0**	**0**	**34**	**0**	**0**	**4**	**19**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**59**	0
7:45 AM	**0**	**0**	**29**	**0**	**0**	**3**	**21**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**59**	255
8:00 AM	**0**	**0**	**34**	**0**	**0**	**4**	**21**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**63**	**257**
8:15 AM	0	0	33	0	0	4	32	0	0	0	0	4	0	0	0	0	73	254
8:30 AM	0	0	29	0	0	3	20	0	0	0	0	3	0	0	0	0	55	250
8:45 AM	0	0	36	0	0	2	34	0	0	0	0	2	0	0	0	0	74	265
Count Total	0	0	269	1	0	31	193	0	0	0	0	26	0	0	0	0	520	0
Peak Hour	**0**	**0**	**140**	**1**	**0**	**15**	**87**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**257**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Winton Ave			Winton Ave			Southland Dr			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

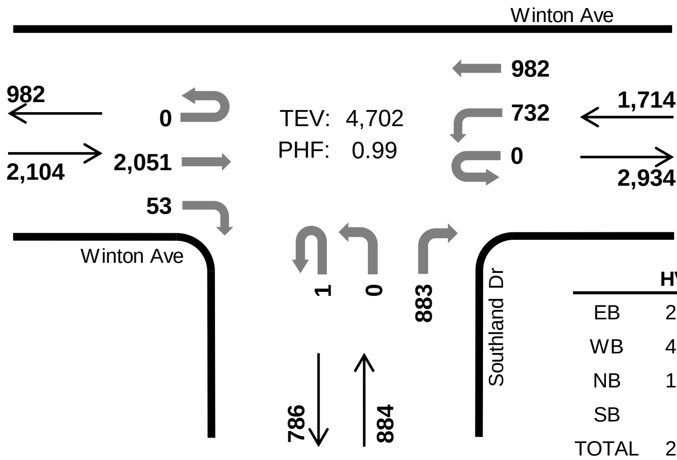
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

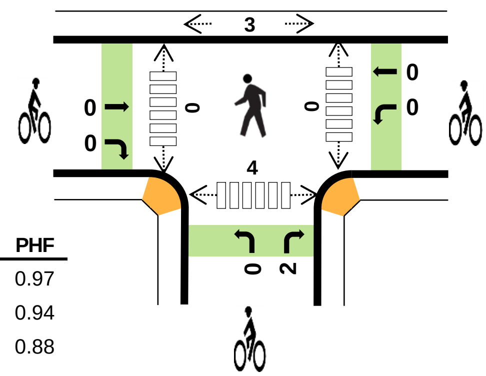
Southland Dr
Winton Ave

N

Peak Hour

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	2.4%	0.97
WB	4.3%	0.94
NB	1.1%	0.88
SB	-	-
TOTAL	2.8%	0.99

Two-Hour Count Summaries

Interval Start		Winton Ave Eastbound UT	LT	TH	RT	Winton Ave Westbound UT	LT	TH	RT	Southland Dr Northbound UT	LT	TH	RT	0 Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	0	487	8	0	149	230	0	0	0	0	231	0	0	0	0	1,105	0
4:15 PM		0	0	498	14	0	142	235	0	0	0	0	215	0	0	0	0	1,104	0
4:30 PM		**0**	**0**	**490**	**10**	**0**	**190**	**268**	**0**	**0**	**0**	**0**	**216**	**0**	**0**	**0**	**0**	**1,174**	0
4:45 PM		**0**	**0**	**532**	**12**	**0**	**177**	**248**	**0**	**0**	**0**	**0**	**209**	**0**	**0**	**0**	**0**	**1,178**	4,561
5:00 PM		**0**	**0**	**517**	**15**	**0**	**194**	**214**	**0**	**1**	**0**	**0**	**249**	**0**	**0**	**0**	**0**	**1,190**	4,646
5:15 PM		**0**	**0**	**512**	**16**	**0**	**171**	**252**	**0**	**0**	**0**	**0**	**209**	**0**	**0**	**0**	**0**	**1,160**	**4,702**
5:30 PM		0	0	488	14	0	204	224	0	0	0	0	224	0	0	0	0	1,154	4,682
5:45 PM		0	0	406	15	0	175	244	0	0	0	0	238	0	0	0	0	1,078	4,582
Count Total		0	0	3,930	104	0	1,402	1,915	0	1	0	0	1,791	0	0	0	0	9,143	0
Peak Hour	**All**	**0**	**0**	**2,051**	**53**	**0**	**732**	**982**	**0**	**1**	**0**	**0**	**883**	**0**	**0**	**0**	**0**	**4,702**	**0**
	HV	**0**	**0**	**50**	**1**	**0**	**7**	**66**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**134**	**0**
	HV%	**-**	**-**	**2%**	**2%**	**-**	**1%**	**7%**	**-**	**0%**	**-**	**-**	**1%**	**-**	**-**	**-**	**-**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	19	27	1	0	*47*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	17	33	1	0	*51*	0	0	0	0	*0*	0	0	1	2	*3*
4:30 PM	**10**	**22**	**2**	**0**	***34***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**0**	*3*
4:45 PM	**15**	**17**	**4**	**0**	***36***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**1**	*1*
5:00 PM	**11**	**21**	**2**	**0**	***34***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**2**	*2*
5:15 PM	**15**	**13**	**2**	**0**	***30***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**1**	***1***
5:30 PM	15	12	1	0	*28*	0	0	0	0	*0*	0	0	0	4	*4*
5:45 PM	18	11	1	0	*30*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	120	156	14	0	*290*	0	0	2	0	*2*	0	0	4	10	*14*
Peak Hr	**51**	**73**	**10**	**0**	***134***	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**3**	**4**	*7*

Project Manager: (415) 310-6469

project.manager.ca@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Winton Ave				Winton Ave				Southland Dr				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	18	1	0	1	26	0	0	0	0	1	0	0	0	0	47	0
4:15 PM	0	0	16	1	0	3	30	0	0	0	0	1	0	0	0	0	51	0
4:30 PM	**0**	**0**	**10**	**0**	**0**	**3**	**19**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**34**	0
4:45 PM	**0**	**0**	**14**	**1**	**0**	**1**	**16**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**36**	168
5:00 PM	**0**	**0**	**11**	**0**	**0**	**3**	**18**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**34**	155
5:15 PM	**0**	**0**	**15**	**0**	**0**	**0**	**13**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**30**	**134**
5:30 PM	0	0	15	0	0	2	10	0	0	0	0	1	0	0	0	0	28	128
5:45 PM	0	0	16	2	0	1	10	0	0	0	0	1	0	0	0	0	30	122
Count Total	0	0	115	5	0	14	142	0	0	0	0	14	0	0	0	0	290	0
Peak Hour	**0**	**0**	**50**	**1**	**0**	**7**	**66**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**134**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Winton Ave			Winton Ave			Southland Dr			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**2**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	0	2	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**

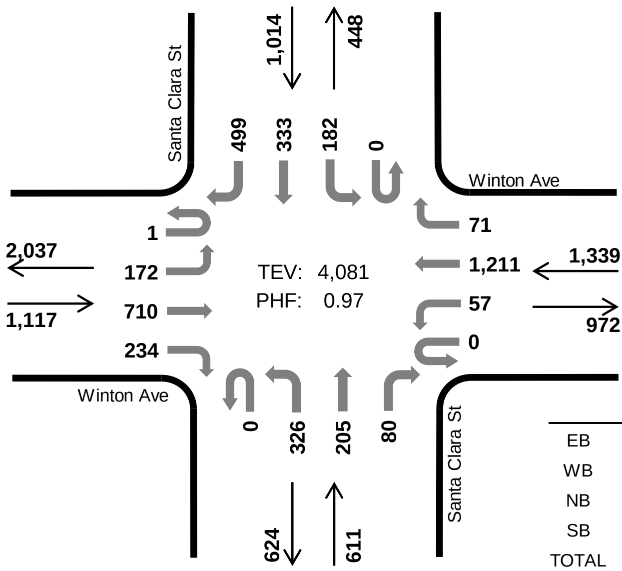
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

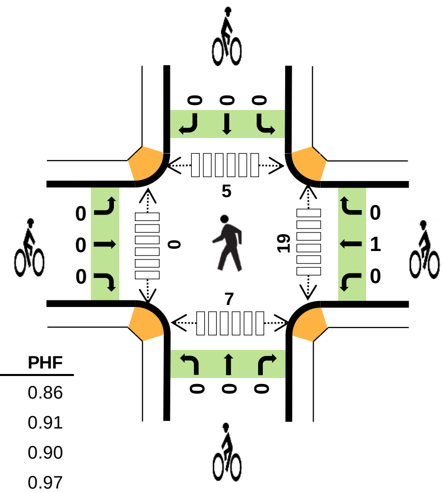
Santa Clara St
Winton Ave

N

Peak Hour

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM





	HV %:	PHF
EB	4.5%	0.86
WB	1.3%	0.91
NB	2.9%	0.90
SB	1.6%	0.97
TOTAL	2.5%	0.97

Two-Hour Count Summaries

Interval Start		Winton Ave Eastbound				Winton Ave Westbound				Santa Clara St Northbound				Santa Clara St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	16	106	29	0	14	289	10	0	55	18	6	0	22	75	87	727	0
7:15 AM		0	17	111	41	0	12	348	10	0	54	33	14	0	27	79	121	867	0
7:30 AM		**1**	**37**	**155**	**45**	**0**	**18**	**313**	**17**	**0**	**94**	**50**	**26**	**0**	**34**	**106**	**103**	**999**	0
7:45 AM		**0**	**34**	**177**	**57**	**0**	**14**	**337**	**15**	**0**	**85**	**54**	**26**	**0**	**45**	**74**	**138**	**1,056**	3,649
8:00 AM		**0**	**51**	**177**	**59**	**0**	**8**	**272**	**14**	**0**	**85**	**41**	**13**	**0**	**47**	**68**	**137**	**972**	3,894
8:15 AM		**0**	**50**	**201**	**73**	**0**	**17**	**289**	**25**	**0**	**62**	**60**	**15**	**0**	**56**	**85**	**121**	**1,054**	**4,081**
8:30 AM		0	31	173	55	0	15	271	12	0	58	40	13	0	35	70	113	886	3,968
8:45 AM		0	25	164	47	0	17	302	15	0	58	21	11	0	25	64	103	852	3,764
Count Total		1	261	1,264	406	0	115	2,421	118	0	551	317	124	0	291	621	923	7,413	0
Peak Hour	**All**	**1**	**172**	**710**	**234**	**0**	**57**	**1,211**	**71**	**0**	**326**	**205**	**80**	**0**	**182**	**333**	**499**	**4,081**	**0**
	HV	**0**	**7**	**38**	**5**	**0**	**2**	**14**	**2**	**0**	**8**	**7**	**3**	**0**	**4**	**5**	**7**	**102**	**0**
	HV%	**0%**	**4%**	**5%**	**2%**	**-**	**4%**	**1%**	**3%**	**-**	**2%**	**3%**	**4%**	**-**	**2%**	**2%**	**1%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	4	7	1	4	*16*	0	1	0	0	*1*	3	0	2	0	*5*
7:15 AM	9	11	1	4	*25*	0	0	0	0	*0*	5	0	0	3	*8*
7:30 AM	**10**	**4**	**7**	**4**	***25***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**0**	**1**	*4*
7:45 AM	**16**	**5**	**5**	**2**	***28***	**0**	**1**	**0**	**0**	***1***	**5**	**0**	**2**	**3**	*10*
8:00 AM	**14**	**2**	**4**	**4**	***24***	**0**	**0**	**0**	**0**	***0***	**5**	**0**	**3**	**2**	*10*
8:15 AM	**10**	**7**	**2**	**6**	***25***	**0**	**0**	**0**	**0**	***0***	**6**	**0**	**0**	**1**	*7*
8:30 AM	3	4	4	12	*23*	0	0	0	0	*0*	2	0	0	1	*3*
8:45 AM	7	8	2	10	*27*	0	0	0	0	*0*	1	0	0	1	*2*
Count Total	73	48	26	46	*193*	0	2	0	0	*2*	30	0	7	12	*49*
Peak Hour	**50**	**18**	**18**	**16**	***102***	**0**	**1**	**0**	**0**	***1***	**19**	**0**	**5**	**7**	***31***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Winton Ave Eastbound UT	LT	TH	RT	Winton Ave Westbound UT	LT	TH	RT	Santa Clara St Northbound UT	LT	TH	RT	Santa Clara St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	4	0	0	0	7	0	0	0	0	1	0	1	1	2	16	0
7:15 AM	0	0	7	2	0	0	9	2	0	1	0	0	0	2	0	2	25	0
7:30 AM	**0**	**2**	**7**	**1**	**0**	**1**	**2**	**1**	**0**	**5**	**2**	**0**	**0**	**2**	**1**	**1**	**25**	0
7:45 AM	**0**	**3**	**12**	**1**	**0**	**1**	**4**	**0**	**0**	**2**	**1**	**2**	**0**	**2**	**0**	**0**	**28**	94
8:00 AM	**0**	**0**	**12**	**2**	**0**	**0**	**2**	**0**	**0**	**1**	**2**	**1**	**0**	**0**	**3**	**1**	**24**	102
8:15 AM	**0**	**2**	**7**	**1**	**0**	**0**	**6**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**5**	**25**	**102**
8:30 AM	0	0	1	2	0	0	4	0	0	3	1	0	0	4	3	5	23	100
8:45 AM	0	1	6	0	0	0	7	1	0	1	0	1	0	3	3	4	27	99
Count Total	0	8	56	9	0	2	41	5	0	13	8	5	0	14	12	20	193	0
Peak Hour	**0**	**7**	**38**	**5**	**0**	**2**	**14**	**2**	**0**	**8**	**7**	**3**	**0**	**4**	**5**	**7**	**102**	**0**

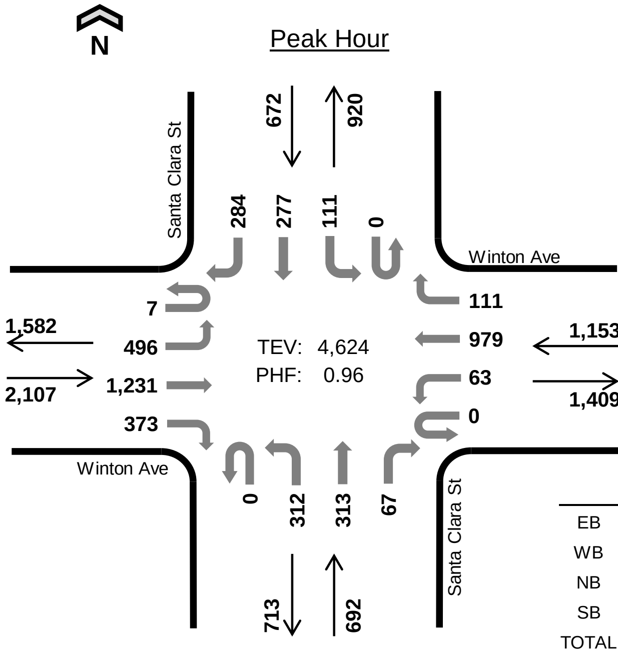
Two-Hour Count Summaries - Bikes

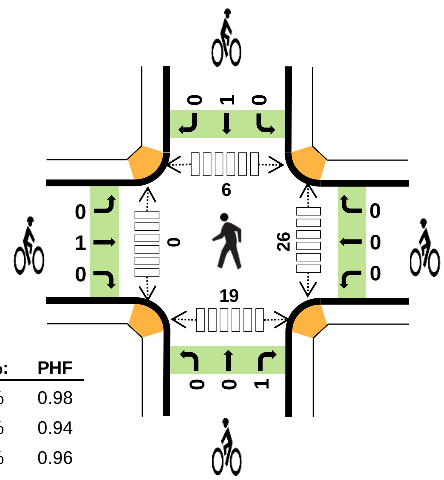
Interval Start	Winton Ave Eastbound LT	TH	RT	Winton Ave Westbound LT	TH	RT	Santa Clara St Northbound LT	TH	RT	Santa Clara St Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	2	0	0	0	0	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Santa Clara St
Winton Ave

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	1.3%	0.98
WB	1.6%	0.94
NB	1.4%	0.96
SB	0.6%	0.87
TOTAL	1.3%	0.96

Two-Hour Count Summaries

Interval Start		Winton Ave Eastbound				Winton Ave Westbound				Santa Clara St Northbound				Santa Clara St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		6	129	321	85	0	15	200	25	0	86	74	15	0	19	56	54	1,085	0
4:15 PM		0	148	317	90	1	22	179	25	0	89	84	24	0	22	66	54	1,121	0
4:30 PM		**2**	**114**	**296**	**97**	**0**	**25**	**261**	**20**	**0**	**78**	**63**	**21**	**0**	**29**	**65**	**68**	**1,139**	0
4:45 PM		**1**	**127**	**299**	**100**	**0**	**19**	**215**	**38**	**0**	**66**	**96**	**19**	**0**	**19**	**69**	**73**	**1,141**	4,486
5:00 PM		**2**	**135**	**326**	**75**	**0**	**9**	**239**	**27**	**0**	**87**	**74**	**15**	**0**	**30**	**55**	**71**	**1,145**	4,546
5:15 PM		**2**	**120**	**310**	**101**	**0**	**10**	**264**	**26**	**0**	**81**	**80**	**12**	**0**	**33**	**88**	**72**	**1,199**	**4,624**
5:30 PM		2	160	305	73	0	16	228	22	0	72	80	18	0	24	51	62	1,113	4,598
5:45 PM		0	136	297	102	0	10	193	34	0	93	84	11	0	13	53	74	1,100	4,557
Count Total		15	1,069	2,471	723	1	126	1,779	217	0	652	635	135	0	189	503	528	9,043	0
Peak Hour	**All**	**7**	**496**	**1,231**	**373**	**0**	**63**	**979**	**111**	**0**	**312**	**313**	**67**	**0**	**111**	**277**	**284**	**4,624**	**0**
	HV	**0**	**4**	**15**	**9**	**0**	**0**	**14**	**4**	**0**	**3**	**7**	**0**	**0**	**2**	**0**	**2**	**60**	**0**
	HV%	**0%**	**1%**	**1%**	**2%**	**-**	**0%**	**1%**	**4%**	**-**	**1%**	**2%**	**0%**	**-**	**2%**	**0%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	7	3	1	0	*11*	0	0	0	1	*1*	7	0	0	3	*10*
4:15 PM	6	7	1	6	*20*	1	0	0	0	*1*	7	0	3	1	*11*
4:30 PM	**7**	**2**	**1**	**2**	***12***	**0**	**0**	**1**	**0**	***1***	**8**	**0**	**4**	**3**	***15***
4:45 PM	**7**	**5**	**4**	**0**	***16***	**1**	**0**	**0**	**0**	***1***	**6**	**0**	**2**	**3**	***11***
5:00 PM	**6**	**7**	**2**	**1**	***16***	**0**	**0**	**0**	**1**	***1***	**9**	**0**	**0**	**5**	***14***
5:15 PM	**8**	**4**	**3**	**1**	***16***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**0**	**8**	***11***
5:30 PM	10	2	1	0	*13*	0	0	0	0	*0*	2	0	0	4	*6*
5:45 PM	2	2	2	1	*7*	0	0	0	0	*0*	2	0	1	3	*6*
Count Total	53	32	15	11	*111*	2	0	1	2	*5*	44	0	10	30	*84*
Peak Hour	**28**	**18**	**10**	**4**	***60***	**1**	**0**	**1**	**1**	***3***	**26**	**0**	**6**	**19**	***51***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Winton Ave Eastbound				Winton Ave Westbound				Santa Clara St Northbound				Santa Clara St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	2	5	0	0	1	2	0	0	1	0	0	0	0	0	0	11	0
4:15 PM	0	2	3	1	0	0	6	1	0	0	1	0	0	0	2	4	20	0
4:30 PM	**0**	**1**	**5**	**1**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**12**	0
4:45 PM	**0**	**2**	**3**	**2**	**0**	**0**	**4**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**16**	59
5:00 PM	**0**	**1**	**4**	**1**	**0**	**0**	**5**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**16**	64
5:15 PM	**0**	**0**	**3**	**5**	**0**	**0**	**3**	**1**	**0**	**1**	**2**	**0**	**0**	**1**	**0**	**0**	**16**	**60**
5:30 PM	0	7	3	0	0	0	2	0	0	0	1	0	0	0	0	0	13	61
5:45 PM	0	0	2	0	0	0	1	1	0	2	0	0	0	1	0	0	7	52
Count Total	0	15	28	10	0	1	25	6	0	6	9	0	0	3	2	6	111	0
Peak Hour	**0**	**4**	**15**	**9**	**0**	**0**	**14**	**4**	**0**	**3**	**7**	**0**	**0**	**2**	**0**	**2**	**60**	**0**

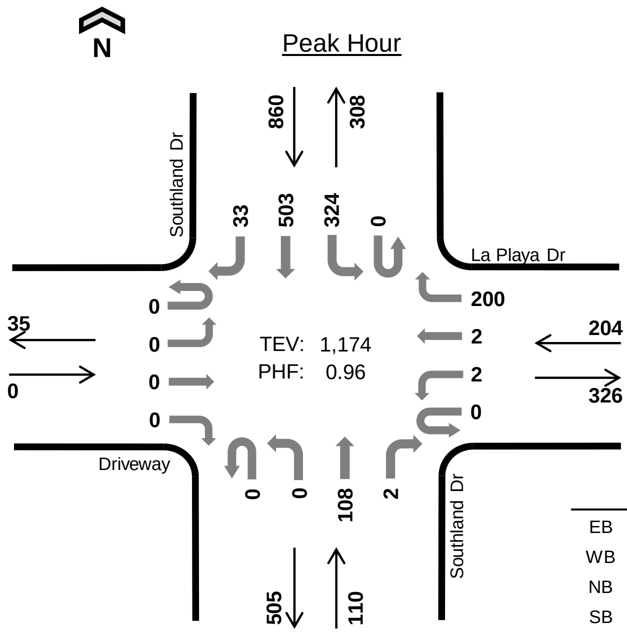
Two-Hour Count Summaries - Bikes

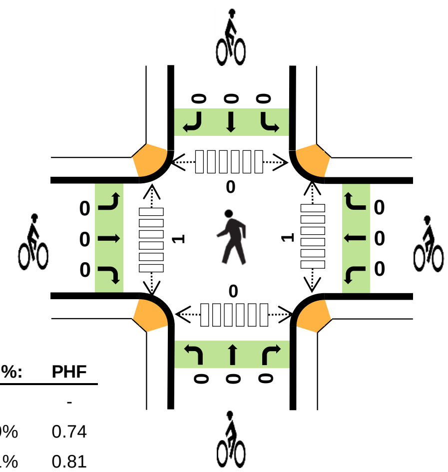
Interval Start	Winton Ave Eastbound			Winton Ave Westbound			Santa Clara St Northbound			Santa Clara St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	4
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	2	0	0	0	0	0	0	1	0	2	0	5	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Southland Dr
La Playa Dr

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	-	-
WB	3.9%	0.74
NB	9.1%	0.81
SB	1.7%	0.93
TOTAL	2.8%	0.96

Two-Hour Count Summaries

Interval Start		Driveway Eastbound UT	LT	TH	RT	La Playa Dr Westbound UT	LT	TH	RT	Southland Dr Northbound UT	LT	TH	RT	Southland Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM		0	0	0	0	0	2	1	40	1	0	24	0	0	49	68	6	191	0
7:15 AM		0	1	0	0	0	0	0	45	0	0	23	0	0	75	84	7	235	0
7:30 AM		0	0	0	0	0	1	0	41	0	0	22	0	0	88	97	7	256	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**1**	**1**	**46**	**0**	**0**	**27**	**0**	**0**	**110**	**117**	**5**	**307**	989
8:00 AM		**0**	**0**	**0**	**0**	**0**	**1**	**0**	**49**	**0**	**0**	**29**	**1**	**0**	**86**	**126**	**12**	**304**	1,102
8:15 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**69**	**0**	**0**	**19**	**0**	**0**	**62**	**127**	**9**	**286**	1,153
8:30 AM		**0**	**0**	**0**	**0**	**0**	**0**	**1**	**36**	**0**	**0**	**33**	**1**	**0**	**66**	**133**	**7**	**277**	**1,174**
8:45 AM		0	0	0	0	0	3	0	40	1	1	27	0	0	58	117	7	254	1,121
Count Total		0	1	0	0	0	8	3	366	2	1	204	2	0	594	869	60	2,110	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**200**	**0**	**0**	**108**	**2**	**0**	**324**	**503**	**33**	**1,174**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**10**	**0**	**0**	**6**	**9**	**0**	**33**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**0%**	**4%**	**-**	**-**	**9%**	**0%**	**-**	**2%**	**2%**	**0%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	0	3	7	*10*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	0	2	4	*6*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	1	1	5	*7*	0	0	0	1	*1*	1	0	0	1	*2*
7:45 AM	**0**	**2**	**4**	**2**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**2**	**2**	**4**	***8***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
8:15 AM	**0**	**3**	**1**	**6**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**0**	**1**	**3**	**3**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
8:45 AM	0	0	2	2	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	9	18	33	*60*	0	0	0	1	*1*	2	1	0	1	*4*
Peak Hour	**0**	**8**	**10**	**15**	***33***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**0**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Driveway Eastbound UT	LT	TH	RT	La Playa Dr Westbound UT	LT	TH	RT	Southland Dr Northbound UT	LT	TH	RT	Southland Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	4	3	0	10	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	3	0	6	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	0	2	3	0	7	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**4**	**0**	**0**	**2**	**0**	**0**	**8**	31
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**2**	**2**	**0**	**8**	29
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**1**	**5**	**0**	**10**	33
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**1**	**2**	**0**	**7**	**33**
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	1	0	4	29
Count Total	0	0	0	0	0	0	0	9	0	0	18	0	0	14	19	0	60	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**10**	**0**	**0**	**6**	**9**	**0**	**33**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Driveway Eastbound LT	TH	RT	La Playa Dr Westbound LT	TH	RT	Southland Dr Northbound LT	TH	RT	Southland Dr Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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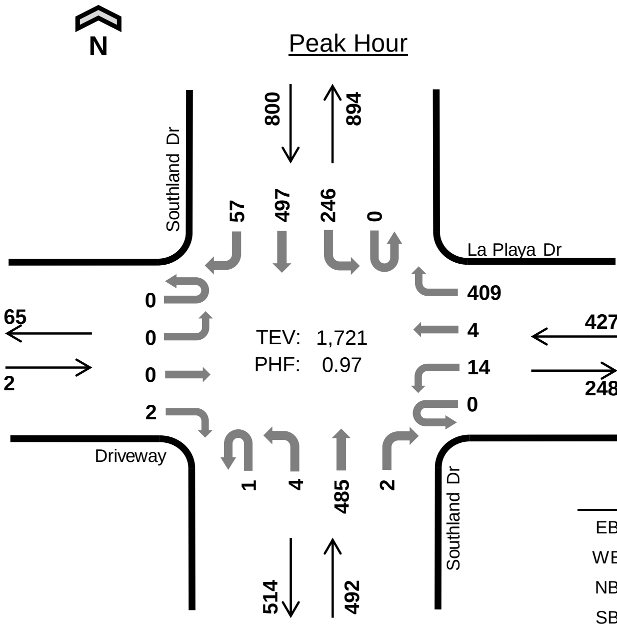
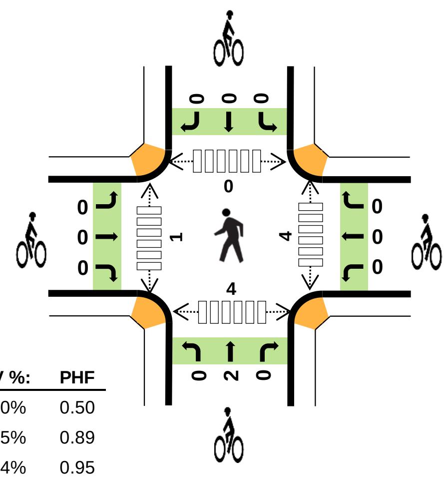
Southland Dr
La Playa Dr

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	0.0%	0.50
WB	0.5%	0.89
NB	1.4%	0.95
SB	0.6%	0.96
TOTAL	0.8%	0.97

Two-Hour Count Summaries

Interval Start		Driveway Eastbound UT	LT	TH	RT	La Playa Dr Westbound UT	LT	TH	RT	Southland Dr Northbound UT	LT	TH	RT	Southland Dr Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	0	0	0	0	4	1	92	0	0	132	2	0	54	103	12	400	0
4:15 PM		0	0	0	0	0	1	0	80	0	0	147	0	0	48	103	10	389	0
4:30 PM		0	2	0	0	0	3	0	89	1	0	107	4	0	61	110	15	392	0
4:45 PM		**0**	**0**	**0**	**0**	**0**	**2**	**1**	**104**	**0**	**2**	**127**	**1**	**0**	**73**	**127**	**8**	**445**	1,626
5:00 PM		**0**	**0**	**0**	**0**	**0**	**6**	**0**	**99**	**1**	**2**	**123**	**0**	**0**	**53**	**115**	**17**	**416**	1,642
5:15 PM		**0**	**0**	**0**	**1**	**0**	**5**	**1**	**114**	**0**	**0**	**111**	**0**	**0**	**69**	**123**	**15**	**439**	1,692
5:30 PM		**0**	**0**	**0**	**1**	**0**	**1**	**2**	**92**	**0**	**0**	**124**	**1**	**0**	**51**	**132**	**17**	**421**	**1,721**
5:45 PM		0	1	0	1	0	0	1	107	0	1	121	1	0	68	113	9	423	1,699
Count Total		0	3	0	3	0	22	6	777	2	5	992	9	0	477	926	103	3,325	0
Peak Hour	**All**	**0**	**0**	**0**	**2**	**0**	**14**	**4**	**409**	**1**	**4**	**485**	**2**	**0**	**246**	**497**	**57**	**1,721**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**7**	**0**	**0**	**2**	**3**	**0**	**14**	**0**
	HV%	**-**	**-**	**-**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0%**	**-**	**1%**	**1%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	0	1	1	2	*4*	0	0	0	0	*0*	1	0	0	2	*3*
4:15 PM	0	0	2	5	*7*	0	0	0	0	*0*	0	2	0	0	*2*
4:30 PM	0	0	1	3	*4*	0	0	0	0	*0*	2	0	0	0	*2*
4:45 PM	**0**	**1**	**3**	**2**	***6***	**0**	**0**	**1**	**0**	***1***	**1**	**1**	**0**	**2**	*4*
5:00 PM	**0**	**1**	**2**	**2**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**1**	**0**	***1***	**1**	**0**	**0**	**0**	*1*
5:30 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**2**	*4*
5:45 PM	0	0	1	4	*5*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	3	12	19	*34*	0	0	2	0	*2*	7	3	0	6	*16*
Peak Hour	**0**	**2**	**7**	**5**	***14***	**0**	**0**	**2**	**0**	***2***	**4**	**1**	**0**	**4**	***9***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Driveway				La Playa Dr				Southland Dr				Southland Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	0	4	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	4	0	7	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0	4	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**1**	**1**	**0**	**6**	21
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	**5**	22
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	17
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**14**
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	0	5	13
Count Total	0	0	0	0	0	0	0	3	0	0	12	0	0	6	13	0	34	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**7**	**0**	**0**	**2**	**3**	**0**	**14**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Driveway			La Playa Dr			Southland Dr			Southland Dr			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	2
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	2	0	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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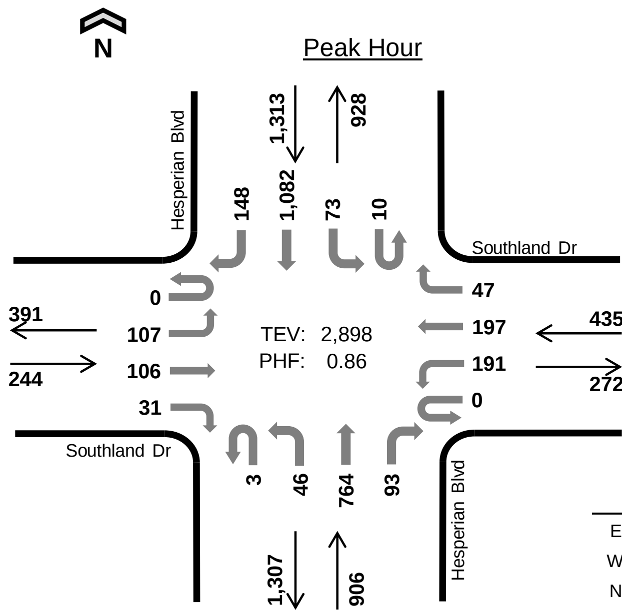
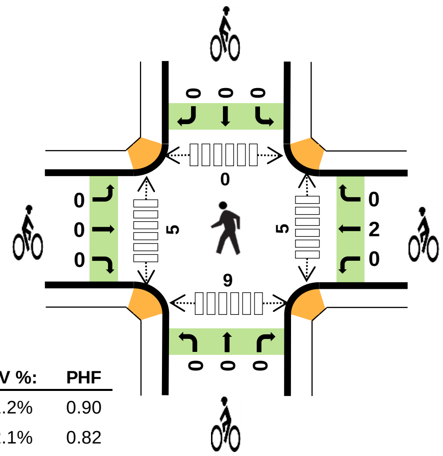
Hesperian Blvd
Southland Dr

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

Peak Hour





	HV %:	PHF
EB	1.2%	0.90
WB	2.1%	0.82
NB	3.1%	0.87
SB	2.4%	0.87
TOTAL	2.5%	0.86

Two-Hour Count Summaries

Interval Start		Southland Dr				Southland Dr				Hesperian Blvd				Hesperian Blvd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	24	22	13	0	39	38	9	1	9	91	5	1	12	309	42	615	0
7:15 AM		0	28	39	17	0	39	68	1	5	6	111	7	5	12	296	40	674	0
7:30 AM		0	23	28	21	0	55	64	5	1	8	135	10	0	11	227	39	627	0
7:45 AM		**0**	**26**	**32**	**10**	**0**	**57**	**69**	**7**	**1**	**10**	**224**	**26**	**2**	**23**	**311**	**43**	**841**	2,757
8:00 AM		**0**	**33**	**27**	**6**	**0**	**49**	**52**	**15**	**2**	**9**	**197**	**25**	**3**	**17**	**253**	**38**	**726**	2,868
8:15 AM		**0**	**21**	**16**	**10**	**0**	**38**	**33**	**12**	**0**	**18**	**202**	**22**	**2**	**24**	**243**	**34**	**675**	2,869
8:30 AM		**0**	**27**	**31**	**5**	**0**	**47**	**43**	**13**	**0**	**9**	**141**	**20**	**3**	**9**	**275**	**33**	**656**	**2,898**
8:45 AM		0	14	16	10	0	34	30	7	0	9	148	15	4	18	346	24	675	2,732
Count Total		0	196	211	92	0	358	397	69	10	78	1,249	130	20	126	2,260	293	5,489	0
Peak Hour	**All**	**0**	**107**	**106**	**31**	**0**	**191**	**197**	**47**	**3**	**46**	**764**	**93**	**10**	**73**	**1,082**	**148**	**2,898**	**0**
	HV	**0**	**1**	**2**	**0**	**0**	**6**	**2**	**1**	**0**	**1**	**21**	**6**	**0**	**4**	**25**	**3**	**72**	**0**
	HV%	**-**	**1%**	**2%**	**0%**	**-**	**3%**	**1%**	**2%**	**0%**	**2%**	**3%**	**6%**	**0%**	**5%**	**2%**	**2%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	3	6	7	*16*	0	1	0	1	*2*	2	1	1	3	*7*
7:15 AM	3	3	3	7	*16*	0	2	0	0	*2*	0	1	1	1	*3*
7:30 AM	1	6	7	5	*19*	0	2	0	0	*2*	3	1	1	4	*9*
7:45 AM	**1**	**3**	**9**	**11**	***24***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**2**	*4*
8:00 AM	**0**	**2**	**4**	**11**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**2**	*3*
8:15 AM	**1**	**2**	**4**	**6**	***13***	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**0**	**4**	*6*
8:30 AM	**1**	**2**	**11**	**4**	***18***	**0**	**2**	**0**	**0**	***2***	**3**	**2**	**0**	**1**	***6***
8:45 AM	2	2	7	8	*19*	0	0	0	1	*1*	4	2	1	3	*10*
Count Total	9	23	51	59	*142*	0	7	0	2	*9*	14	10	4	20	*48*
Peak Hour	**3**	**9**	**28**	**32**	***72***	**0**	**2**	**0**	**0**	***2***	**5**	**5**	**0**	**9**	***19***

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Southland Dr Eastbound UT	LT	TH	RT	Southland Dr Westbound UT	LT	TH	RT	Hesperian Blvd Northbound UT	LT	TH	RT	Hesperian Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	1	1	1	0	0	4	2	0	2	5	0	16	0
7:15 AM	0	0	1	2	0	2	0	1	0	0	2	1	0	2	4	1	16	0
7:30 AM	0	1	0	0	0	2	4	0	0	1	5	1	0	0	5	0	19	0
7:45 AM	**0**	**0**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**7**	**2**	**0**	**1**	**9**	**1**	**24**	75
8:00 AM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**2**	**8**	**1**	**17**	76
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**4**	**0**	**0**	**1**	**5**	**0**	**13**	73
8:30 AM	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**8**	**2**	**0**	**0**	**3**	**1**	**18**	**72**
8:45 AM	0	0	2	0	0	2	0	0	0	1	4	2	0	1	7	0	19	67
Count Total	0	2	5	2	0	13	7	3	0	3	36	12	0	9	46	4	142	0
Peak Hour	**0**	**1**	**2**	**0**	**0**	**6**	**2**	**1**	**0**	**1**	**21**	**6**	**0**	**4**	**25**	**3**	**72**	**0**

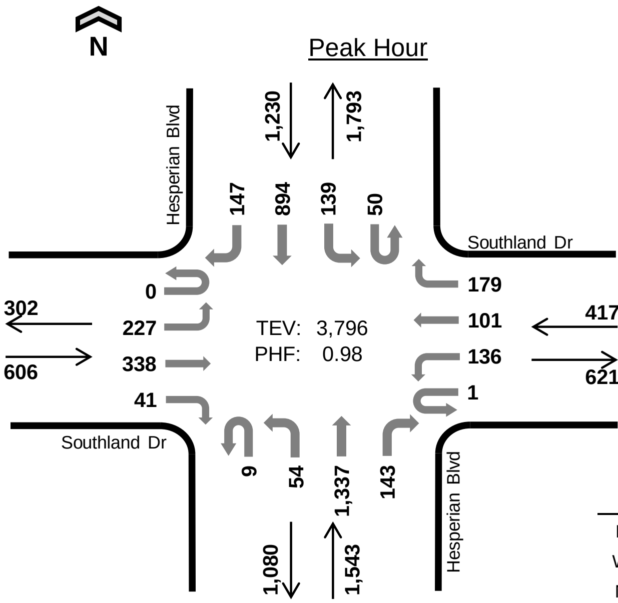
Two-Hour Count Summaries - Bikes

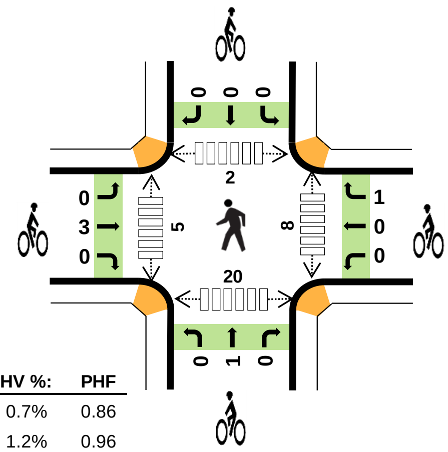
Interval Start	Southland Dr Eastbound LT	TH	RT	Southland Dr Westbound LT	TH	RT	Hesperian Blvd Northbound LT	TH	RT	Hesperian Blvd Southbound LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	1	0	0	0	0	0	1	0	2	0
7:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	2	0
7:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	2	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:30 AM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	3
Count Total	0	0	0	0	6	1	0	0	0	0	2	0	9	0
Peak Hour	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Hesperian Blvd
Southland Dr

Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	0.7%	0.86
WB	1.2%	0.96
NB	1.0%	0.97
SB	1.0%	0.90
TOTAL	1.0%	0.98

Two-Hour Count Summaries

Interval Start	Southland Dr Eastbound UT	LT	TH	RT	Southland Dr Westbound UT	LT	TH	RT	Hesperian Blvd Northbound UT	LT	TH	RT	Hesperian Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	50	86	12	0	25	27	34	0	22	350	19	9	32	178	22	866	0
4:15 PM	0	43	64	12	0	26	25	34	1	15	346	40	9	35	208	34	892	0
4:30 PM	0	45	103	21	0	43	17	39	1	18	362	32	11	23	195	34	944	0
4:45 PM	**0**	**55**	**74**	**15**	**0**	**32**	**28**	**44**	**2**	**20**	**319**	**30**	**15**	**27**	**247**	**30**	**938**	3,640
5:00 PM	**0**	**54**	**111**	**12**	**0**	**26**	**23**	**52**	**3**	**14**	**340**	**35**	**13**	**32**	**188**	**28**	**931**	3,705
5:15 PM	**0**	**56**	**84**	**10**	**1**	**37**	**24**	**47**	**1**	**13**	**345**	**38**	**12**	**40**	**220**	**35**	**963**	3,776
5:30 PM	**0**	**62**	**69**	**4**	**0**	**41**	**26**	**36**	**3**	**7**	**333**	**40**	**10**	**40**	**239**	**54**	**964**	**3,796**
5:45 PM	0	28	61	8	0	18	29	31	1	12	345	34	7	23	229	49	875	3,733
Count Total	0	393	652	94	1	248	199	317	12	121	2,740	268	86	252	1,704	286	7,373	0
Peak Hour All	**0**	**227**	**338**	**41**	**1**	**136**	**101**	**179**	**9**	**54**	**1,337**	**143**	**50**	**139**	**894**	**147**	**3,796**	**0**
Peak Hour HV	**0**	**1**	**3**	**0**	**0**	**4**	**0**	**1**	**0**	**1**	**11**	**4**	**0**	**1**	**11**	**0**	**37**	**0**
Peak Hour HV%	**-**	**0%**	**1%**	**0%**	**0%**	**3%**	**0%**	**1%**	**0%**	**2%**	**1%**	**3%**	**0%**	**1%**	**1%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	3	3	6	7	*19*	1	0	0	0	*1*	6	0	2	9	*17*
4:15 PM	1	1	3	4	*9*	1	0	0	0	*1*	1	1	0	7	*9*
4:30 PM	0	3	4	7	*14*	1	0	0	0	*1*	7	4	1	8	*20*
4:45 PM	**1**	**2**	**3**	**4**	***10***	**1**	**0**	**0**	**0**	***1***	**2**	**2**	**0**	**6**	*10*
5:00 PM	**1**	**0**	**4**	**2**	***7***	**1**	**0**	**0**	**0**	***1***	**4**	**1**	**1**	**4**	*10*
5:15 PM	**2**	**2**	**5**	**2**	***11***	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**0**	**4**	*5*
5:30 PM	**0**	**1**	**4**	**4**	***9***	**0**	**1**	**1**	**0**	***2***	**1**	**2**	**1**	**6**	***10***
5:45 PM	0	1	4	4	*9*	1	0	0	0	*1*	5	1	2	6	*14*
Count Total	8	13	33	34	*88*	7	1	1	0	*9*	27	11	7	50	*95*
Peak Hour	**4**	**5**	**16**	**12**	***37***	**3**	**1**	**1**	**0**	***5***	**8**	**5**	**2**	**20**	***35***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Southland Dr Eastbound				Southland Dr Westbound				Hesperian Blvd Northbound				Hesperian Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	3	0	0	0	1	2	0	0	0	5	1	0	0	5	2	19	0
4:15 PM	0	0	0	1	0	1	0	0	0	0	3	0	0	0	4	0	9	0
4:30 PM	0	0	0	0	0	2	0	1	0	0	3	1	0	1	6	0	14	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**4**	**0**	**10**	52
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**2**	**0**	**7**	40
5:15 PM	**0**	**1**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**3**	**1**	**0**	**0**	**2**	**0**	**11**	42
5:30 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**1**	**3**	**0**	**9**	**37**
5:45 PM	0	0	0	0	0	1	0	0	0	0	2	2	0	1	3	0	9	36
Count Total	0	4	3	1	0	9	2	2	0	1	24	8	0	3	29	2	88	0
Peak Hour	**0**	**1**	**3**	**0**	**0**	**4**	**0**	**1**	**0**	**1**	**11**	**4**	**0**	**1**	**11**	**0**	**37**	**0**

Two-Hour Count Summaries - Bikes

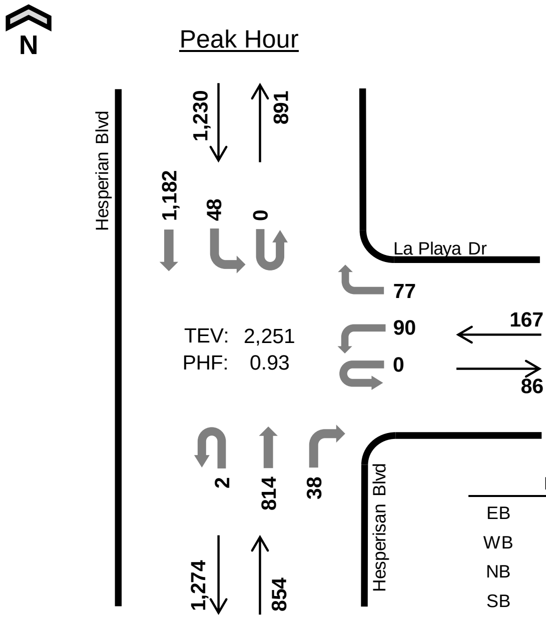
Interval Start	Southland Dr Eastbound			Southland Dr Westbound			Hesperian Blvd Northbound			Hesperian Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:30 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**5**
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	5
Count Total	0	7	0	0	0	1	0	1	0	0	0	0	9	0
Peak Hour	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**5**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

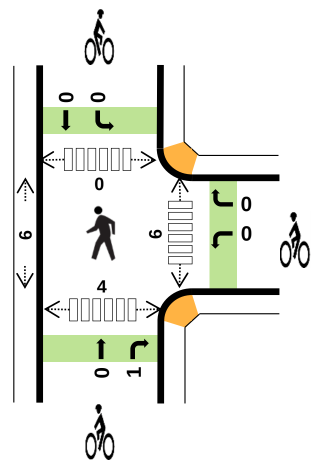
www.idaxdata.com

Hesperisan Blvd
La Playa Dr

Date: 12-06-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	-	-
WB	4.8%	0.93
NB	3.3%	0.85
SB	3.1%	0.91
TOTAL	3.3%	0.93



Two-Hour Count Summaries

Interval Start	0 Eastbound UT	LT	TH	RT	La Playa Dr Westbound UT	LT	TH	RT	Hesperisan Blvd Northbound UT	LT	TH	RT	Hesperian Blvd Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	0	0	0	0	11	0	13	0	0	85	4	0	8	348	0	469	0
7:15 AM	0	0	0	0	1	19	0	13	1	0	107	8	0	7	357	0	513	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**25**	**0**	**14**	**0**	**0**	**156**	**4**	**0**	**11**	**291**	**0**	**501**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**21**	**0**	**24**	**1**	**0**	**206**	**5**	**0**	**12**	**325**	**0**	**594**	2,077
8:00 AM	**0**	**0**	**0**	**0**	**0**	**21**	**0**	**19**	**0**	**0**	**240**	**11**	**0**	**13**	**298**	**0**	**602**	2,210
8:15 AM	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**20**	**1**	**0**	**212**	**18**	**0**	**12**	**268**	**0**	**554**	**2,251**
8:30 AM	0	0	0	0	0	18	0	11	3	0	148	6	0	10	302	0	498	2,248
8:45 AM	0	0	0	0	0	19	0	14	1	0	151	14	0	15	364	0	578	2,232
Count Total	0	0	0	0	1	157	0	128	7	0	1,305	70	0	88	2,553	0	4,309	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**90**	**0**	**77**	**2**	**0**	**814**	**38**	**0**	**48**	**1,182**	**0**	**2,251**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**3**	**0**	**0**	**27**	**1**	**0**	**2**	**36**	**0**	**74**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**6%**	**-**	**4%**	**0%**	**-**	**3%**	**3%**	**-**	**4%**	**3%**	**-**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	2	4	6	*12*	0	0	0	0	*0*	1	2	0	1	*4*
7:15 AM	0	2	5	11	*18*	0	0	0	0	*0*	0	0	0	1	*1*
7:30 AM	**0**	**4**	**8**	**8**	***20***	**0**	**0**	**1**	**0**	***1***	**4**	**1**	**0**	**2**	*7*
7:45 AM	**0**	**2**	**7**	**13**	***22***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**0**	**0**	*3*
8:00 AM	**0**	**1**	**7**	**12**	***20***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**1**	*4*
8:15 AM	**0**	**1**	**6**	**5**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**1**	***2***
8:30 AM	0	0	6	8	*14*	0	0	0	0	*0*	3	6	0	0	*9*
8:45 AM	0	1	7	7	*15*	0	0	0	0	*0*	0	3	0	0	*3*
Count Total	0	13	50	70	*133*	0	0	1	0	*1*	10	17	0	6	*33*
Peak Hr	**0**	**8**	**28**	**38**	***74***	**0**	**0**	**1**	**0**	***1***	**6**	**6**	**0**	**4**	***16***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				La Playa Dr				Hesperisan Blvd				Hesperian Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	1	0	1	0	0	4	0	0	1	5	0	12	0
7:15 AM	0	0	0	0	0	2	0	0	0	0	4	1	0	3	8	0	18	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**7**	**1**	**0**	**0**	**8**	**0**	**20**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**1**	**12**	**0**	**22**	72
8:00 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**1**	**11**	**0**	**20**	80
8:15 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**5**	**0**	**12**	**74**
8:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	8	0	14	68
8:45 AM	0	0	0	0	0	1	0	0	0	0	6	1	0	0	7	0	15	61
Count Total	0	0	0	0	0	9	0	4	0	0	47	3	0	6	64	0	133	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**3**	**0**	**0**	**27**	**1**	**0**	**2**	**36**	**0**	**74**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	0			La Playa Dr			Hesperisan Blvd			Hesperian Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**

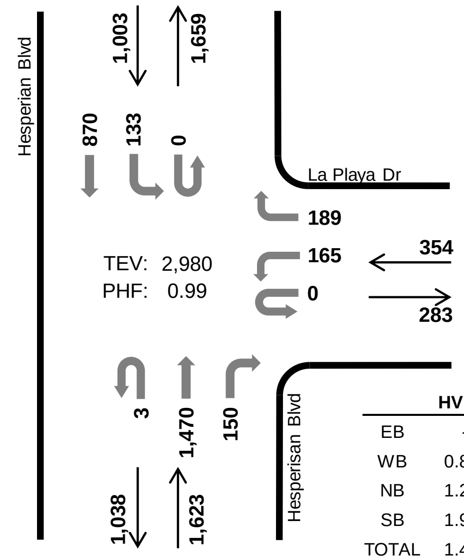
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Hesperisan Blvd
La Playa Dr

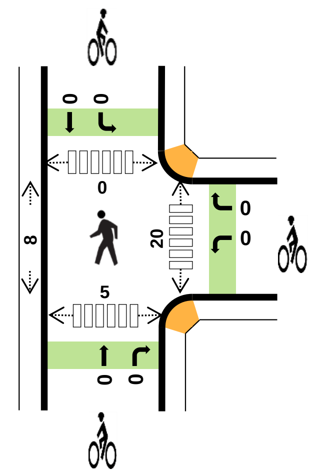
Date: 12-06-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

N

Peak Hour



	HV %:	PHF
EB	-	-
WB	0.8%	0.92
NB	1.2%	0.95
SB	1.9%	0.89
TOTAL	1.4%	0.99



Two-Hour Count Summaries

Interval Start	0				La Playa Dr				Hesperisan Blvd				Hesperian Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	44	0	49	1	0	310	37	0	38	156	0	635	0
4:15 PM	0	0	0	0	0	25	0	43	3	0	365	28	0	42	213	0	719	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**41**	**0**	**52**	**1**	**0**	**348**	**37**	**0**	**43**	**208**	**0**	**730**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**33**	**0**	**37**	**2**	**0**	**355**	**34**	**0**	**39**	**243**	**0**	**743**	2,827
5:00 PM	**0**	**0**	**0**	**0**	**0**	**45**	**0**	**50**	**0**	**0**	**382**	**43**	**0**	**26**	**205**	**0**	**751**	2,943
5:15 PM	**0**	**0**	**0**	**0**	**0**	**46**	**0**	**50**	**0**	**0**	**385**	**36**	**0**	**25**	**214**	**0**	**756**	**2,980**
5:30 PM	0	0	0	0	0	41	0	42	0	0	336	29	0	43	223	0	714	2,964
5:45 PM	0	0	0	0	0	44	0	35	1	0	310	31	0	20	227	0	668	2,889
Count Total	0	0	0	0	0	319	0	358	8	0	2,791	275	0	276	1,689	0	5,716	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**165**	**0**	**189**	**3**	**0**	**1,470**	**150**	**0**	**133**	**870**	**0**	**2,980**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**1**	**0**	**16**	**3**	**0**	**1**	**18**	**0**	**42**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**1%**	**-**	**1%**	**33%**	**-**	**1%**	**2%**	**-**	**1%**	**2%**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	5	6	*11*	0	0	0	0	*0*	4	1	0	1	*6*
4:15 PM	0	0	2	7	*9*	0	0	0	0	*0*	0	2	0	0	*2*
4:30 PM	**0**	**2**	**4**	**8**	***14***	**0**	**0**	**0**	**0**	***0***	**3**	**1**	**0**	**0**	*4*
4:45 PM	**0**	**0**	**5**	**5**	***10***	**0**	**0**	**0**	**0**	***0***	**4**	**1**	**0**	**2**	*7*
5:00 PM	**0**	**0**	**3**	**2**	***5***	**0**	**0**	**0**	**0**	***0***	**8**	**2**	**0**	**1**	*11*
5:15 PM	**0**	**1**	**8**	**4**	***13***	**0**	**0**	**0**	**0**	***0***	**5**	**4**	**0**	**2**	***11***
5:30 PM	0	1	4	5	*10*	0	0	1	0	*1*	7	0	0	0	*7*
5:45 PM	0	1	3	4	*8*	0	0	0	0	*0*	6	0	0	0	*6*
Count Total	0	5	34	41	*80*	0	0	1	0	*1*	37	11	0	6	*54*
Peak Hr	**0**	**3**	**20**	**19**	***42***	**0**	**0**	**0**	**0**	***0***	**20**	**8**	**0**	**5**	***33***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				La Playa Dr				Hesperisan Blvd				Hesperian Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	4	1	0	0	6	0	11	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	7	0	9	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**1**	**7**	**0**	**14**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**1**	**0**	**0**	**5**	**0**	**10**	44
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**2**	**0**	**5**	38
5:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**2**	**0**	**0**	**4**	**0**	**13**	**42**
5:30 PM	0	0	0	0	0	1	0	0	0	0	3	1	0	0	5	0	10	38
5:45 PM	0	0	0	0	0	0	0	1	0	0	2	1	0	0	4	0	8	36
Count Total	0	0	0	0	0	3	0	2	1	0	27	6	0	1	40	0	80	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**1**	**0**	**16**	**3**	**0**	**1**	**18**	**0**	**42**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	0			La Playa Dr			Hesperisan Blvd			Hesperian Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix B – Existing Conditions Intersection Level of Service Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	71	21	539	194	226	149	653	240	269	1205	20
Future Volume (veh/h)	31	71	21	539	194	226	149	653	240	269	1205	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	42	97	29	567	204	0	173	759	279	272	1217	20
Adj No. of Lanes	2	2	1	2	2	1	1	3	0	2	3	0
Peak Hour Factor	0.73	0.73	0.73	0.95	0.95	0.95	0.86	0.86	0.86	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	283	126	666	805	360	201	1713	623	334	2329	38
Arrive On Green	0.05	0.08	0.08	0.19	0.23	0.00	0.11	0.47	0.47	0.10	0.45	0.45
Sat Flow, veh/h	3442	3539	1578	3442	3539	1583	1774	3655	1329	3442	5152	85
Grp Volume(v), veh/h	42	97	29	567	204	0	173	703	335	272	801	436
Grp Sat Flow(s),veh/h/ln	1721	1770	1578	1721	1770	1583	1774	1695	1593	1721	1695	1846
Q Serve(g_s), s	1.3	2.9	1.9	17.5	5.2	0.0	10.5	15.3	15.5	8.5	18.6	18.6
Cycle Q Clear(g_c), s	1.3	2.9	1.9	17.5	5.2	0.0	10.5	15.3	15.5	8.5	18.6	18.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.05
Lane Grp Cap(c), veh/h	158	283	126	666	805	360	201	1589	747	334	1532	835
V/C Ratio(X)	0.27	0.34	0.23	0.85	0.25	0.00	0.86	0.44	0.45	0.82	0.52	0.52
Avail Cap(c_a), veh/h	219	367	163	1001	1168	522	210	1589	747	375	1532	835
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.7	47.9	47.4	42.8	34.8	0.0	47.9	19.6	19.7	48.7	21.6	21.6
Incr Delay (d2), s/veh	0.9	0.7	0.9	4.6	0.2	0.0	27.5	0.9	1.9	11.8	1.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.4	0.9	8.8	2.6	0.0	6.7	7.3	7.2	4.6	8.9	10.0
LnGrp Delay(d),s/veh	51.6	48.6	48.3	47.5	35.0	0.0	75.4	20.5	21.6	60.5	22.9	24.0
LnGrp LOS	D	D	D	D	C		E	C	C	E	C	C
Approach Vol, veh/h		168			771			1211			1509	
Approach Delay, s/veh		49.3			44.2			28.6			30.0	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	54.7	9.1	29.7	14.7	56.5	25.3	13.5
Change Period (Y+Rc), s	4.0	5.0	4.0	* 4.7	4.0	5.0	4.0	* 4.7
Max Green Setting (Gmax), s	13.0	36.0	7.0	* 36	12.0	37.0	32.0	* 11
Max Q Clear Time (g_c+I1), s	12.5	20.6	3.3	7.2	10.5	17.5	19.5	4.9
Green Ext Time (p_c), s	0.0	14.8	0.0	2.1	0.1	18.7	1.8	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	539	35	135	980	102	38	30	96	181	37	50
Future Volume (veh/h)	50	539	35	135	980	102	38	30	96	181	37	50
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	0.99		0.99
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	62	674	44	144	1043	109	42	33	105	206	42	57
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.80	0.80	0.80	0.94	0.94	0.94	0.91	0.91	0.91	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	1414	92	183	1524	159	302	216	455	323	61	68
Arrive On Green	0.05	0.42	0.42	0.10	0.47	0.47	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1774	3365	219	1774	3221	336	763	744	1570	814	209	235
Grp Volume(v), veh/h	62	354	364	144	573	579	75	0	105	305	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1815	1774	1770	1787	1507	0	1570	1258	0	0
Q Serve(g_s), s	2.4	10.1	10.1	5.5	17.5	17.6	0.0	0.0	3.5	14.0	0.0	0.0
Cycle Q Clear(g_c), s	2.4	10.1	10.1	5.5	17.5	17.6	2.2	0.0	3.5	16.2	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.19	0.56		1.00	0.68		0.19
Lane Grp Cap(c), veh/h	89	744	763	183	837	846	517	0	455	451	0	0
V/C Ratio(X)	0.70	0.48	0.48	0.79	0.68	0.68	0.14	0.00	0.23	0.68	0.00	0.00
Avail Cap(c_a), veh/h	510	890	913	510	890	899	749	0	700	662	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.5	14.6	14.6	30.5	14.3	14.3	18.3	0.0	18.8	23.9	0.0	0.0
Incr Delay (d2), s/veh	3.6	0.7	0.7	2.8	2.3	2.3	0.0	0.0	0.1	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.1	5.2	2.8	9.0	9.1	1.1	0.0	1.5	5.6	0.0	0.0
LnGrp Delay(d),s/veh	36.1	15.3	15.3	33.3	16.6	16.6	18.3	0.0	18.9	24.6	0.0	0.0
LnGrp LOS	D	B	B	C	B	B	B		B	C		
Approach Vol, veh/h		780			1296			180			305	
Approach Delay, s/veh		17.0			18.4			18.7			24.6	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.2	34.2		24.2	7.5	37.9		24.2
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	20.0	35.0		31.0	20.0	35.0		31.0
Max Q Clear Time (g_c+I1), s	7.5	12.1		5.5	4.4	19.6		18.2
Green Ext Time (p_c), s	0.1	17.1		2.0	0.0	12.4		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	5	819	14	131	1200	6	66
Future Volume (vph)	5	819	14	131	1200	6	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1770	3528		1770	3539	1598	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	1770	3528		1770	3539	1598	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.69	0.69
Adj. Flow (vph)	5	890	15	138	1263	9	96
RTOR Reduction (vph)	0	1	0	0	0	85	0
Lane Group Flow (vph)	5	904	0	138	1263	20	0
Confl. Peds. (#/hr)			15				10
Confl. Bikes (#/hr)			1				
Turn Type	Prot	NA		Prot	NA	Prot	
Protected Phases	5	2		1	6	8	
Permitted Phases							
Actuated Green, G (s)	0.6	31.8		8.0	39.2	6.6	
Effective Green, g (s)	0.6	31.8		8.0	39.2	6.6	
Actuated g/C Ratio	0.01	0.54		0.14	0.67	0.11	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5	2.0	
Lane Grp Cap (vph)	18	1921		242	2375	180	
v/s Ratio Prot	0.00	0.26		c0.08	c0.36	c0.01	
v/s Ratio Perm							
v/c Ratio	0.28	0.47		0.57	0.53	0.11	
Uniform Delay, d1	28.7	8.1		23.6	4.9	23.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	3.0	0.3		2.0	0.4	0.1	
Delay (s)	31.7	8.5		25.6	5.3	23.4	
Level of Service	C	A		C	A	C	
Approach Delay (s)		8.6			7.3	23.4	
Approach LOS		A			A	C	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	943	2	8	1227	87	0	0	6	0	0	78
Future Vol, veh/h	20	943	2	8	1227	87	0	0	6	0	0	78
Conflicting Peds, #/hr	17	0	29	29	0	17	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	95	95	95	50	50	50	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	1072	2	8	1292	92	0	0	12	0	0	99

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1400	0	0	1103	0	0	-	-	568	-	-	709
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	484	-	-	629	-	-	0	0	466	0	0	377
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	484	-	-	628	-	-	-	-	452	-	-	371
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	13.2	18.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	452	484	-	-	628	-	-	371
HCM Lane V/C Ratio	0.027	0.047	-	-	0.013	-	-	0.266
HCM Control Delay (s)	13.2	12.8	-	-	10.8	-	-	18.2
HCM Lane LOS	B	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1.1

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	960	28	100	1281	12	0	0	174	0	0	18
Future Vol, veh/h	0	960	28	100	1281	12	0	0	174	0	0	18
Conflicting Peds, #/hr	0	0	14	14	0	22	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	90	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	89	89	93	93	25	25	25	84	25	25	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1079	31	108	1377	48	0	0	207	0	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1124	0	0	-	-	569	-	-	735
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	617	-	-	0	0	465	0	0	362
Stage 1	0	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	617	-	-	-	-	459	-	-	354
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	19.1	16
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	459	-	-	617	-	-	354
HCM Lane V/C Ratio	0.451	-	-	0.174	-	-	0.079
HCM Control Delay (s)	19.1	-	-	12.1	-	-	16
HCM Lane LOS	C	-	-	B	-	-	C
HCM 95th %tile Q(veh)	2.3	-	-	0.6	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	744	348	434	997	0	0	0	0	285	16	418
Future Volume (vph)	0	744	348	434	997	0	0	0	0	285	16	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	3.5	4.2					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.98	1.00	1.00					1.00	1.00	0.99
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		3539	1544	1770	3539					1681	1694	1560
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		3539	1544	1770	3539					1681	1694	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.96	0.96	0.96	0.25	0.25	0.25	0.94	0.94	0.94
Adj. Flow (vph)	0	783	366	452	1039	0	0	0	0	303	17	445
RTOR Reduction (vph)	0	0	259	0	0	0	0	0	0	0	0	375
Lane Group Flow (vph)	0	783	107	452	1039	0	0	0	0	161	159	70
Confl. Peds. (#/hr)			11			22						3
Confl. Bikes (#/hr)			1			3						
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	3					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		20.4	20.4	6.5	15.8					11.0	11.0	11.0
Effective Green, g (s)		20.4	20.4	6.5	15.8					11.0	11.0	11.0
Actuated g/C Ratio		0.29	0.29	0.09	0.23					0.16	0.16	0.16
Clearance Time (s)		4.6	4.6	3.5	4.2					4.0	4.0	4.0
Vehicle Extension (s)		3.9	3.9	2.0	2.9					2.0	2.0	2.0
Lane Grp Cap (vph)		1031	449	164	798					264	266	245
v/s Ratio Prot		c0.22		c0.26	c0.29					c0.10	0.09	
v/s Ratio Perm			0.07									0.04
v/c Ratio		0.76	0.24	2.76	1.30					0.61	0.60	0.29
Uniform Delay, d1		22.6	18.9	31.8	27.1					27.5	27.4	26.0
Progression Factor		1.00	1.00	1.49	1.02					1.00	1.00	1.00
Incremental Delay, d2		5.3	1.2	791.8	136.8					2.7	2.4	0.2
Delay (s)		27.8	20.1	839.0	164.4					30.2	29.8	26.3
Level of Service		C	C	F	F					C	C	C
Approach Delay (s)		25.4			368.9			0.0			27.8	
Approach LOS		C			F			A			C	

Intersection Summary			
HCM 2000 Control Delay	176.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	104.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	797	0	0	1082	265	345	4	406	0	0	0
Future Volume (vph)	224	797	0	0	1082	265	345	4	406	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.6			4.2	4.2	4.0	4.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95				
Frpb, ped/bikes	1.00	1.00			1.00	0.96	1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.86				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	1770	3539			3539	1522	1681	1503				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	1770	3539			3539	1522	1681	1503				
Peak-hour factor, PHF	0.87	0.87	0.87	0.95	0.95	0.95	0.78	0.78	0.78	0.25	0.25	0.25
Adj. Flow (vph)	257	916	0	0	1139	279	442	5	521	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	196	0	439	0	0	0	0
Lane Group Flow (vph)	257	916	0	0	1139	83	398	131	0	0	0	0
Confl. Peds. (#/hr)			9			23			1			
Confl. Bikes (#/hr)			1			4						
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	7			6		8	8				
Permitted Phases						6						
Actuated Green, G (s)	6.5	15.4			20.8	20.8	11.0	11.0				
Effective Green, g (s)	6.5	15.4			20.8	20.8	11.0	11.0				
Actuated g/C Ratio	0.09	0.22			0.30	0.30	0.16	0.16				
Clearance Time (s)	3.5	4.6			4.2	4.2	4.0	4.0				
Vehicle Extension (s)	2.0	2.9			3.9	3.9	2.0	2.0				
Lane Grp Cap (vph)	164	778			1051	452	264	236				
v/s Ratio Prot	c0.15	c0.26			c0.32		c0.24	0.09				
v/s Ratio Perm						0.05						
v/c Ratio	1.57	1.18			1.08	0.18	1.51	0.55				
Uniform Delay, d1	31.8	27.3			24.6	18.3	29.5	27.2				
Progression Factor	1.48	1.05			1.00	1.00	1.00	1.00				
Incremental Delay, d2	277.3	90.5			53.3	0.9	247.1	1.6				
Delay (s)	324.4	119.2			77.9	19.2	276.6	28.8				
Level of Service	F	F			E	B	F	C				
Approach Delay (s)		164.2			66.4			130.7			0.0	
Approach LOS		F			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	116.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	104.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1203	1306	41	0	41
Future Vol, veh/h	0	1203	1306	41	0	41
Conflicting Peds, #/hr	17	0	0	17	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	96	96	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1383	1360	43	0	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	698
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	383
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	376
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.1
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	376
HCM Lane V/C Ratio	-	-	-	0.138
HCM Control Delay (s)	-	-	-	16.1
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.5

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1188	13	20	1300	47	4	0	10	0	0	60
Future Vol, veh/h	0	1188	13	20	1300	47	4	0	10	0	0	60
Conflicting Peds, #/hr	0	0	15	15	0	25	6	0	0	0	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	145	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	95	95	95	50	50	50	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1335	15	21	1368	49	8	0	20	0	0	76

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1364	0	0	2089	2793	690	-	-	715
Stage 1	-	-	-	-	-	-	1357	1357	-	-	-	-
Stage 2	-	-	-	-	-	-	732	1436	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	6.99	6.54	7.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	3.67	4.02	3.92	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	260	-	-	41	18	332	0	0	373
Stage 1	0	-	-	-	-	-	114	215	-	0	0	-
Stage 2	0	-	-	-	-	-	368	197	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	260	-	-	30	16	327	-	-	362
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	16	-	-	-	-
Stage 1	-	-	-	-	-	-	114	212	-	-	-	-
Stage 2	-	-	-	-	-	-	266	177	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	66.9	17.6
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	85	-	-	260	-	-	362
HCM Lane V/C Ratio	0.329	-	-	0.081	-	-	0.21
HCM Control Delay (s)	66.9	-	-	20.1	-	-	17.6
HCM Lane LOS	F	-	-	C	-	-	C
HCM 95th %tile Q(veh)	1.3	-	-	0.3	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	282	670	189	483	944	93	121	173	299	80	295	339
Future Volume (veh/h)	282	670	189	483	944	93	121	173	299	80	295	339
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		1.00	0.99		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	332	788	222	525	1026	101	130	186	0	86	317	0
Adj No. of Lanes	1	2	1	2	3	1	1	2	0	1	1	1
Peak Hour Factor	0.85	0.85	0.85	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	358	1606	705	590	2153	652	172	914	0	317	481	409
Arrive On Green	0.20	0.45	0.45	0.17	0.42	0.42	0.26	0.26	0.00	0.26	0.26	0.00
Sat Flow, veh/h	1774	3539	1553	3442	5085	1539	1055	3632	0	1184	1863	1583
Grp Volume(v), veh/h	332	788	222	525	1026	101	130	186	0	86	317	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1553	1721	1695	1539	1055	1770	0	1184	1863	1583
Q Serve(g_s), s	22.1	18.8	10.9	17.9	17.5	4.9	12.7	4.9	0.0	7.4	18.3	0.0
Cycle Q Clear(g_c), s	22.1	18.8	10.9	17.9	17.5	4.9	31.0	4.9	0.0	12.3	18.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	358	1606	705	590	2153	652	172	914	0	317	481	409
V/C Ratio(X)	0.93	0.49	0.32	0.89	0.48	0.15	0.76	0.20	0.00	0.27	0.66	0.00
Avail Cap(c_a), veh/h	384	1606	705	746	2153	652	172	914	0	317	481	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.1	23.0	20.9	48.6	25.0	21.3	54.5	34.8	0.0	39.6	39.8	0.0
Incr Delay (d2), s/veh	26.8	1.1	1.2	9.5	0.8	0.5	17.3	0.1	0.0	0.5	3.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	9.4	4.9	9.3	8.3	2.1	5.1	2.4	0.0	2.5	9.9	0.0
LnGrp Delay(d),s/veh	73.8	24.1	22.1	58.1	25.7	21.8	71.8	34.9	0.0	40.1	43.1	0.0
LnGrp LOS	E	C	C	E	C	C	E	C		D	D	
Approach Vol, veh/h		1342			1652			316			403	
Approach Delay, s/veh		36.1			35.8			50.1			42.4	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.6	59.4		36.0	28.2	55.8		36.0
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0
Max Green Setting (Gmax), s	26.0	49.0		31.0	26.0	49.0		31.0
Max Q Clear Time (g_c+I1), s	19.9	20.8		20.3	24.1	19.5		33.0
Green Ext Time (p_c), s	0.7	21.8		3.2	0.1	22.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	394	29	265	1128	107	41	617	156	96	1052	820
Future Volume (veh/h)	200	394	29	265	1128	107	41	617	156	96	1052	820
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	217	428	32	285	1213	115	54	812	205	101	1107	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	1212	90	202	1121	106	69	2582	787	152	2607	812
Arrive On Green	0.07	0.25	0.25	0.06	0.24	0.24	0.04	0.51	0.51	0.04	0.51	0.00
Sat Flow, veh/h	3442	4828	357	3442	4725	448	1774	5085	1550	3442	5085	1583
Grp Volume(v), veh/h	217	299	161	285	870	458	54	812	205	101	1107	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1795	1721	1695	1782	1774	1695	1550	1721	1695	1583
Q Serve(g_s), s	9.1	10.5	10.7	8.5	34.4	34.4	4.4	13.6	10.9	4.2	19.7	0.0
Cycle Q Clear(g_c), s	9.1	10.5	10.7	8.5	34.4	34.4	4.4	13.6	10.9	4.2	19.7	0.0
Prop In Lane	1.00		0.20	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	851	451	202	804	423	69	2582	787	152	2607	812
V/C Ratio(X)	0.87	0.35	0.36	1.41	1.08	1.08	0.78	0.31	0.26	0.67	0.42	0.00
Avail Cap(c_a), veh/h	249	851	451	202	804	423	80	2582	787	225	2607	812
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90	1.00	1.00	0.00
Uniform Delay (d), s/veh	66.6	44.6	44.7	68.3	55.3	55.3	69.1	20.9	20.3	68.3	22.0	0.0
Incr Delay (d2), s/veh	26.6	0.4	0.7	212.4	56.3	67.7	31.5	0.3	0.7	5.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	5.0	5.4	10.0	22.4	24.9	2.7	6.4	4.8	2.1	9.3	0.0
LnGrp Delay(d),s/veh	93.2	45.0	45.4	280.6	111.6	123.0	100.5	21.2	21.0	73.2	22.5	0.0
LnGrp LOS	F	D	D	F	F	F	F	C	C	E	C	
Approach Vol, veh/h		677			1613			1071			1208	
Approach Delay, s/veh		60.5			144.7			25.2			26.7	
Approach LOS		E			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	79.1	13.0	42.0	10.2	79.8	15.0	40.0
Change Period (Y+Rc), s	4.5	5.5	4.5	5.6	4.5	5.5	4.5	5.6
Max Green Setting (Gmax), s	9.5	70.5	8.5	36.4	6.5	73.5	10.5	34.4
Max Q Clear Time (g_c+I1), s	6.2	15.6	10.5	12.7	6.4	21.7	11.1	36.4
Green Ext Time (p_c), s	0.1	34.5	0.0	16.7	0.0	33.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	648	36	99	1487	112	15	42	84	153	136	18
Future Volume (vph)	10	648	36	99	1487	112	15	42	84	153	136	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.90		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5037		1770	3496		1765	1662		1768	1826	
Flt Permitted	0.95	1.00		0.95	1.00		0.45	1.00		0.54	1.00	
Satd. Flow (perm)	1770	5037		1770	3496		842	1662		1008	1826	
Peak-hour factor, PHF	0.98	0.98	0.98	0.96	0.96	0.96	0.80	0.80	0.80	0.76	0.76	0.76
Adj. Flow (vph)	10	661	37	103	1549	117	19	52	105	201	179	24
RTOR Reduction (vph)	0	4	0	0	3	0	0	72	0	0	5	0
Lane Group Flow (vph)	10	694	0	103	1663	0	19	86	0	201	198	0
Confl. Peds. (#/hr)			4			2	3		1	1		3
Confl. Bikes (#/hr)						2						2
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	1.3	66.5		9.9	75.1		26.0	26.0		26.0	26.0	
Effective Green, g (s)	1.3	66.5		9.9	75.1		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.01	0.58		0.09	0.65		0.23	0.23		0.23	0.23	
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	5.0		1.5	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	20	2912		152	2283		190	375		227	412	
v/s Ratio Prot	0.01	0.14		c0.06	c0.48			0.05			0.11	
v/s Ratio Perm							0.02			c0.20		
v/c Ratio	0.50	0.24		0.68	0.73		0.10	0.23		0.89	0.48	
Uniform Delay, d1	56.5	11.9		51.0	13.2		35.2	36.3		43.1	38.6	
Progression Factor	1.00	1.00		1.15	0.87		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.0	0.2		7.7	1.8		0.1	0.1		30.3	0.3	
Delay (s)	63.5	12.1		66.6	13.3		35.3	36.4		73.3	39.0	
Level of Service	E	B		E	B		D	D		E	D	
Approach Delay (s)		12.8			16.4			36.3			56.1	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	871	17	817	1705	0	279
Future Volume (veh/h)	871	17	817	1705	0	279
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	0	1863
Adj Flow Rate, veh/h	917	18	825	1722	0	303
Adj No. of Lanes	3	0	2	2	0	2
Peak Hour Factor	0.95	0.95	0.99	0.99	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	4929	97	1235	3398	0	0
Arrive On Green	1.00	1.00	0.96	0.96	0.00	0.00
Sat Flow, veh/h	5302	101	1156	3632	0	
Grp Volume(v), veh/h	605	330	825	1722	0.0	
Grp Sat Flow(s),veh/h/ln	1695	1845	578	1770		
Q Serve(g_s), s	0.0	0.0	11.5	4.4		
Cycle Q Clear(g_c), s	0.0	0.0	11.5	4.4		
Prop In Lane		0.05	1.00			
Lane Grp Cap(c), veh/h	3255	1771	1235	3398		
V/C Ratio(X)	0.19	0.19	0.67	0.51		
Avail Cap(c_a), veh/h	3255	1771	1235	3398		
HCM Platoon Ratio	2.00	2.00	1.00	1.00		
Upstream Filter(I)	0.93	0.93	1.00	1.00		
Uniform Delay (d), s/veh	0.0	0.0	0.3	0.2		
Incr Delay (d2), s/veh	0.1	0.2	2.9	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.1	2.0	2.2		
LnGrp Delay(d),s/veh	0.1	0.2	3.2	0.7		
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h	935			2547		
Approach Delay, s/veh	0.2			1.5		
Approach LOS	A			A		

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		
Phs Duration (G+Y+Rc), s		115.0				115.0		
Change Period (Y+Rc), s		4.6				4.6		
Max Green Setting (Gmax), s		76.4				76.4		
Max Q Clear Time (g_c+I1), s		13.5				2.0		
Green Ext Time (p_c), s		61.6				72.6		

Intersection Summary	
HCM 2010 Ctrl Delay	1.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	710	234	57	1211	71	326	205	80	182	333	499
Future Volume (vph)	173	710	234	57	1211	71	326	205	80	182	333	499
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.91	0.91		0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1546	1770	3506		1610	3215		1610	3381	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.99		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1546	1770	3506		1610	3215		1610	3381	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.91	0.91	0.91	0.90	0.90	0.90	0.97	0.97	0.97
Adj. Flow (vph)	201	826	272	63	1331	78	362	228	89	188	343	514
RTOR Reduction (vph)	0	0	146	0	4	0	0	19	0	0	0	159
Lane Group Flow (vph)	201	826	126	63	1405	0	228	432	0	169	362	355
Confl. Peds. (#/hr)			7			5			19			
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			2									3
Actuated Green, G (s)	9.9	51.0	51.0	7.2	48.3		19.3	19.3		16.0	16.0	16.0
Effective Green, g (s)	9.9	51.0	51.0	7.2	48.3		19.3	19.3		16.0	16.0	16.0
Actuated g/C Ratio	0.09	0.46	0.46	0.07	0.44		0.18	0.18		0.15	0.15	0.15
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	308	1640	716	115	1539		282	564		234	491	230
v/s Ratio Prot	c0.06	c0.23		0.04	c0.40		c0.14	0.13		0.10	0.11	
v/s Ratio Perm			0.08									c0.22
v/c Ratio	0.65	0.50	0.18	0.55	0.91		0.81	0.77		0.72	0.74	1.54
Uniform Delay, d1	48.4	20.6	17.2	49.8	28.9		43.6	43.2		44.9	45.0	47.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.8	1.1	0.5	2.8	9.8		15.5	6.2		10.5	5.7	265.2
Delay (s)	52.1	21.8	17.8	52.7	38.7		59.1	49.4		55.4	50.7	312.2
Level of Service	D	C	B	D	D		E	D		E	D	F
Approach Delay (s)		25.6			39.3			52.6			180.1	
Approach LOS		C			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	70.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	106	31	191	197	47	49	764	93	83	1082	148
Future Volume (veh/h)	107	106	31	191	197	47	49	764	93	83	1082	148
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	119	118	34	233	240	57	56	878	107	95	1244	170
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.90	0.90	0.90	0.82	0.82	0.82	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	340	94	194	430	100	73	2492	302	120	2573	352
Arrive On Green	0.08	0.12	0.12	0.11	0.15	0.15	0.01	0.18	0.18	0.07	0.57	0.57
Sat Flow, veh/h	1774	2724	755	1774	2843	661	1774	4595	558	1774	4524	618
Grp Volume(v), veh/h	119	75	77	233	147	150	56	647	338	95	932	482
Grp Sat Flow(s),veh/h/ln	1774	1770	1710	1774	1770	1734	1774	1695	1763	1774	1695	1752
Q Serve(g_s), s	7.3	4.3	4.5	12.0	8.5	8.8	3.5	18.4	18.5	5.8	18.0	18.0
Cycle Q Clear(g_c), s	7.3	4.3	4.5	12.0	8.5	8.8	3.5	18.4	18.5	5.8	18.0	18.0
Prop In Lane	1.00		0.44	1.00		0.38	1.00		0.32	1.00		0.35
Lane Grp Cap(c), veh/h	147	221	214	194	268	262	73	1838	956	120	1928	996
V/C Ratio(X)	0.81	0.34	0.36	1.20	0.55	0.57	0.77	0.35	0.35	0.79	0.48	0.48
Avail Cap(c_a), veh/h	226	602	581	194	569	558	161	1838	956	161	1928	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97	0.75	0.75	0.75
Uniform Delay (d), s/veh	49.6	44.0	44.1	49.0	43.2	43.4	53.7	28.2	28.3	50.5	14.1	14.1
Incr Delay (d2), s/veh	11.8	1.3	1.5	130.4	2.5	2.8	15.3	0.5	1.0	13.5	0.6	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.2	2.2	12.9	4.3	4.4	2.0	8.8	9.3	3.3	8.6	9.0
LnGrp Delay(d),s/veh	61.4	45.3	45.6	179.4	45.7	46.1	69.0	28.7	29.3	64.0	14.8	15.4
LnGrp LOS	E	D	D	F	D	D	E	C	C	E	B	B
Approach Vol, veh/h		271			530			1041			1509	
Approach Delay, s/veh		52.4			104.6			31.1			18.1	
Approach LOS		D			F			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	64.2	16.0	18.3	8.5	67.2	13.1	21.2
Change Period (Y+Rc), s	4.0	4.6	4.0	4.6	4.0	4.6	4.0	4.6
Max Green Setting (Gmax), s	10.0	33.4	12.0	37.4	10.0	33.4	14.0	35.4
Max Q Clear Time (g_c+I1), s	7.8	20.5	14.0	6.5	5.5	20.0	9.3	10.8
Green Ext Time (p_c), s	0.0	12.6	0.0	4.3	0.0	13.1	0.1	4.0

Intersection Summary		
HCM 2010 Ctrl Delay		38.6
HCM 2010 LOS		D

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	90	77	2	814	38	48	1182
Future Volume (vph)	90	77	2	814	38	48	1182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.0	4.6		4.0	4.6
Lane Util. Factor	0.97	0.91	1.00	0.91		0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	0.97	0.85	1.00	0.99		1.00	1.00
Flt Protected	0.96	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	3354	1441	1770	5046		3433	5085
Flt Permitted	0.96	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	3354	1441	1770	5046		3433	5085
Peak-hour factor, PHF	0.93	0.93	0.85	0.85	0.85	0.91	0.91
Adj. Flow (vph)	97	83	2	958	45	53	1299
RTOR Reduction (vph)	24	49	0	3	0	0	0
Lane Group Flow (vph)	100	7	2	1000	0	53	1299
Confl. Peds. (#/hr)	4				6		
Turn Type	Perm	Perm	Prot	NA		Prot	NA
Protected Phases			5	2		1	6
Permitted Phases	4	4					
Actuated Green, G (s)	14.0	14.0	1.2	77.3		5.5	81.6
Effective Green, g (s)	14.0	14.0	1.2	77.3		5.5	81.6
Actuated g/C Ratio	0.13	0.13	0.01	0.70		0.05	0.74
Clearance Time (s)	4.6	4.6	4.0	4.6		4.0	4.6
Vehicle Extension (s)	3.0	3.0	3.0	4.0		3.0	4.0
Lane Grp Cap (vph)	426	183	19	3545		171	3772
v/s Ratio Prot			0.00	0.20		c0.02	c0.26
v/s Ratio Perm	c0.03	0.00					
v/c Ratio	0.24	0.04	0.11	0.28		0.31	0.34
Uniform Delay, d1	43.2	42.1	53.9	6.1		50.4	4.9
Progression Factor	1.00	1.00	1.00	1.00		0.85	1.65
Incremental Delay, d2	0.3	0.1	2.4	0.2		0.8	0.2
Delay (s)	43.5	42.2	56.3	6.3		43.6	8.3
Level of Service	D	D	E	A		D	A
Approach Delay (s)	43.1			6.4			9.7
Approach LOS	D			A			A

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection						
Int Delay, s/veh	0.4					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1131	17	0	1446	0	40
Future Vol, veh/h	1131	17	0	1446	0	40
Conflicting Peds, #/hr	0	16	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	98	98	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1363	20	0	1476	0	63

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	708
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	324
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	319
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	319	-	-	-
HCM Lane V/C Ratio	0.199	-	-	-
HCM Control Delay (s)	19.1	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.7	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	152	44	370	224	297	186	1543	333	375	878	17
Future Volume (veh/h)	95	152	44	370	224	297	186	1543	333	375	878	17
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	116	185	54	374	226	0	207	1714	370	403	944	18
Adj No. of Lanes	2	2	1	2	2	1	1	3	0	2	3	0
Peak Hour Factor	0.82	0.82	0.82	0.99	0.99	0.99	0.90	0.90	0.90	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	374	167	426	610	273	235	2186	465	344	2520	48
Arrive On Green	0.06	0.11	0.11	0.12	0.17	0.00	0.13	0.52	0.52	0.10	0.49	0.49
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	1774	4178	889	3442	5136	98
Grp Volume(v), veh/h	116	185	54	374	226	0	207	1386	698	403	623	339
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1774	1695	1677	1721	1695	1844
Q Serve(g_s), s	3.9	5.9	3.8	12.8	6.8	0.0	13.8	39.6	40.8	12.0	13.8	13.8
Cycle Q Clear(g_c), s	3.9	5.9	3.8	12.8	6.8	0.0	13.8	39.6	40.8	12.0	13.8	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		0.05
Lane Grp Cap(c), veh/h	197	374	167	426	610	273	235	1774	877	344	1663	905
V/C Ratio(X)	0.59	0.49	0.32	0.88	0.37	0.00	0.88	0.78	0.80	1.17	0.37	0.37
Avail Cap(c_a), veh/h	229	808	362	430	1012	453	281	1774	877	344	1663	905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.2	50.6	49.7	51.7	43.9	0.0	51.1	23.1	23.4	54.0	19.1	19.1
Incr Delay (d2), s/veh	2.9	1.0	1.1	18.2	0.4	0.0	23.1	3.5	7.4	103.5	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.0	1.7	7.2	3.4	0.0	8.2	19.3	20.6	10.6	6.6	7.3
LnGrp Delay(d),s/veh	58.1	51.7	50.8	69.9	44.3	0.0	74.2	26.6	30.8	157.5	19.7	20.3
LnGrp LOS	E	D	D	E	D		E	C	C	F	B	C
Approach Vol, veh/h		355			600			2291			1365	
Approach Delay, s/veh		53.6			60.2			32.2			60.5	
Approach LOS		D			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.9	63.9	10.9	25.4	16.0	67.8	18.8	17.4
Change Period (Y+Rc), s	4.0	5.0	4.0	* 4.7	4.0	5.0	4.0	* 4.7
Max Green Setting (Gmax), s	19.0	41.0	8.0	* 34	12.0	48.0	15.0	* 27
Max Q Clear Time (g_c+I1), s	15.8	15.8	5.9	8.8	14.0	42.8	14.8	7.9
Green Ext Time (p_c), s	0.2	25.0	0.1	3.0	0.0	5.2	0.0	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	45.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	856	51	135	945	129	40	38	90	113	22	45
Future Volume (veh/h)	69	856	51	135	945	129	40	38	90	113	22	45
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.97	0.98		0.99
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	72	892	53	142	995	136	49	46	110	151	29	60
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.82	0.82	0.82	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	1557	93	181	1581	216	249	210	384	258	56	76
Arrive On Green	0.05	0.46	0.46	0.10	0.51	0.51	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1774	3388	201	1774	3118	426	680	843	1541	692	225	306
Grp Volume(v), veh/h	72	466	479	142	564	567	95	0	110	240	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1820	1774	1770	1774	1522	0	1541	1223	0	0
Q Serve(g_s), s	2.7	13.2	13.2	5.4	15.8	15.9	0.0	0.0	4.0	10.0	0.0	0.0
Cycle Q Clear(g_c), s	2.7	13.2	13.2	5.4	15.8	15.9	3.0	0.0	4.0	13.1	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.24	0.52		1.00	0.63		0.25
Lane Grp Cap(c), veh/h	97	813	836	181	898	900	458	0	384	390	0	0
V/C Ratio(X)	0.75	0.57	0.57	0.78	0.63	0.63	0.21	0.00	0.29	0.62	0.00	0.00
Avail Cap(c_a), veh/h	517	903	929	517	903	905	767	0	696	661	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.0	13.6	13.6	30.1	12.2	12.2	20.4	0.0	20.8	24.7	0.0	0.0
Incr Delay (d2), s/veh	4.2	1.0	0.9	2.8	1.6	1.6	0.1	0.0	0.2	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.6	6.7	2.7	8.1	8.1	1.4	0.0	1.7	4.3	0.0	0.0
LnGrp Delay(d),s/veh	36.2	14.6	14.5	32.9	13.8	13.9	20.5	0.0	21.0	25.3	0.0	0.0
LnGrp LOS	D	B	B	C	B	B	C		C	C		
Approach Vol, veh/h		1017			1273			205			240	
Approach Delay, s/veh		16.1			16.0			20.8			25.3	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	36.5		21.1	7.7	39.8		21.1
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	20.0	35.0		31.0	20.0	35.0		31.0
Max Q Clear Time (g_c+I1), s	7.4	15.2		6.0	4.7	17.9		15.1
Green Ext Time (p_c), s	0.1	16.3		1.7	0.1	14.4		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	17.2
HCM 2010 LOS	B

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	10	1092	23	163	1171	13	52
Future Volume (vph)	10	1092	23	163	1171	13	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	1770	3523		1770	3539	1620	
Flt Permitted	0.95	1.00		0.95	1.00	0.99	
Satd. Flow (perm)	1770	3523		1770	3539	1620	
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.81	0.81
Adj. Flow (vph)	11	1213	26	166	1195	16	64
RTOR Reduction (vph)	0	2	0	0	0	57	0
Lane Group Flow (vph)	11	1237	0	166	1195	23	0
Confl. Peds. (#/hr)			22				9
Confl. Bikes (#/hr)			3				
Turn Type	Prot	NA		Prot	NA	Prot	
Protected Phases	5	2		1	6	8	
Permitted Phases							
Actuated Green, G (s)	0.7	37.2		10.7	47.2	7.0	
Effective Green, g (s)	0.7	37.2		10.7	47.2	7.0	
Actuated g/C Ratio	0.01	0.56		0.16	0.71	0.10	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	2.0	4.5		2.0	4.5	2.0	
Lane Grp Cap (vph)	18	1958		283	2496	169	
v/s Ratio Prot	0.01	c0.35		c0.09	0.34	c0.01	
v/s Ratio Perm							
v/c Ratio	0.61	0.63		0.59	0.48	0.13	
Uniform Delay, d1	33.0	10.2		26.0	4.4	27.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	36.2	0.8		2.0	0.3	0.1	
Delay (s)	69.2	11.0		28.0	4.6	27.3	
Level of Service	E	B		C	A	C	
Approach Delay (s)		11.5			7.5	27.3	
Approach LOS		B			A	C	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	66.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	1154	5	13	1244	159	0	0	4	0	0	81
Future Vol, veh/h	34	1154	5	13	1244	159	0	0	4	0	0	81
Conflicting Peds, #/hr	10	0	39	39	0	10	0	0	9	9	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	96	96	96	75	75	75	63	63	63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	1190	5	14	1296	166	0	0	5	0	0	129

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1471	0	0	1234	0	0	-	-	645	-	-	741
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	454	-	-	560	-	-	0	0	415	0	0	359
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	454	-	-	555	-	-	-	-	396	-	-	356
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	14.2	20.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	396	454	-	-	555	-	-	356
HCM Lane V/C Ratio	0.013	0.077	-	-	0.024	-	-	0.361
HCM Control Delay (s)	14.2	13.6	-	-	11.6	-	-	20.7
HCM Lane LOS	B	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0	0.2	-	-	0.1	-	-	1.6

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1094	77	121	1457	0	0	0	149	0	0	2
Future Vol, veh/h	0	1094	77	121	1457	0	0	0	149	0	0	2
Conflicting Peds, #/hr	12	0	17	17	0	12	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	90	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	97	97	97	72	72	72	25	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1140	80	125	1502	0	0	0	207	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1237	0	0	-	-	627	-	-	764
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	559	-	-	0	0	426	0	0	346
Stage 1	0	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	559	-	-	-	-	419	-	-	342
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	21.7	15.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	419	-	-	559	-	-	342
HCM Lane V/C Ratio	0.494	-	-	0.223	-	-	0.023
HCM Control Delay (s)	21.7	-	-	13.3	-	-	15.8
HCM Lane LOS	C	-	-	B	-	-	C
HCM 95th %tile Q(veh)	2.7	-	-	0.8	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	982	263	289	1060	0	0	0	0	454	40	510
Future Volume (vph)	0	982	263	289	1060	0	0	0	0	454	40	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	3.5	4.2					4.0	4.0	4.0
Lane Util. Factor		0.95	1.00	1.00	0.95					0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00					1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		3539	1524	1770	3539					1681	1698	1557
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		3539	1524	1770	3539					1681	1698	1557
Peak-hour factor, PHF	0.97	0.97	0.97	0.96	0.96	0.96	0.25	0.25	0.25	0.94	0.94	0.94
Adj. Flow (vph)	0	1012	271	301	1104	0	0	0	0	483	43	543
RTOR Reduction (vph)	0	0	192	0	0	0	0	0	0	0	0	458
Lane Group Flow (vph)	0	1012	79	301	1104	0	0	0	0	261	265	85
Confl. Peds. (#/hr)			23			9						5
Confl. Bikes (#/hr)			1			2						
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases		2		1	3					4	4	
Permitted Phases			2									4
Actuated Green, G (s)		20.4	20.4	6.5	15.8					11.0	11.0	11.0
Effective Green, g (s)		20.4	20.4	6.5	15.8					11.0	11.0	11.0
Actuated g/C Ratio		0.29	0.29	0.09	0.23					0.16	0.16	0.16
Clearance Time (s)		4.6	4.6	3.5	4.2					4.0	4.0	4.0
Vehicle Extension (s)		3.9	3.9	2.0	2.9					2.0	2.0	2.0
Lane Grp Cap (vph)		1031	444	164	798					264	266	244
v/s Ratio Prot		c0.29		c0.17	c0.31					0.16	c0.16	
v/s Ratio Perm			0.05									0.05
v/c Ratio		0.98	0.18	1.84	1.38					0.99	1.00	0.35
Uniform Delay, d1		24.6	18.5	31.8	27.1					29.4	29.5	26.3
Progression Factor		1.00	1.00	1.50	1.03					1.00	1.00	1.00
Incremental Delay, d2		23.9	0.9	383.1	173.3					51.6	53.7	0.3
Delay (s)		48.5	19.4	430.8	201.1					81.0	83.2	26.6
Level of Service		D	B	F	F					F	F	C
Approach Delay (s)		42.4			250.3			0.0			53.9	
Approach LOS		D			F			A			D	

Intersection Summary			
HCM 2000 Control Delay	123.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	344	1062	0	0	928	369	418	2	355	0	0	0
Future Volume (vph)	344	1062	0	0	928	369	418	2	355	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.6			4.2	4.2	4.0	4.0				
Lane Util. Factor	1.00	0.95			0.95	1.00	0.95	0.95				
Frpb, ped/bikes	1.00	1.00			1.00	0.97	1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.87				
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99				
Satd. Flow (prot)	1770	3539			3539	1543	1681	1505				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.99				
Satd. Flow (perm)	1770	3539			3539	1543	1681	1505				
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	0.25	0.25	0.25
Adj. Flow (vph)	362	1118	0	0	1009	401	440	2	374	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	282	0	315	0	0	0	0
Lane Group Flow (vph)	362	1118	0	0	1009	119	396	105	0	0	0	0
Confl. Peds. (#/hr)			15			10			3			2
Confl. Bikes (#/hr)			2			4						
Turn Type	Prot	NA			NA	Perm	Split	NA				
Protected Phases	5	7			6		8	8				
Permitted Phases						6						
Actuated Green, G (s)	6.5	15.4			20.8	20.8	11.0	11.0				
Effective Green, g (s)	6.5	15.4			20.8	20.8	11.0	11.0				
Actuated g/C Ratio	0.09	0.22			0.30	0.30	0.16	0.16				
Clearance Time (s)	3.5	4.6			4.2	4.2	4.0	4.0				
Vehicle Extension (s)	2.0	2.9			3.9	3.9	2.0	2.0				
Lane Grp Cap (vph)	164	778			1051	458	264	236				
v/s Ratio Prot	c0.20	c0.32			c0.29		c0.24	0.07				
v/s Ratio Perm						0.08						
v/c Ratio	2.21	1.44			0.96	0.26	1.50	0.44				
Uniform Delay, d1	31.8	27.3			24.2	18.7	29.5	26.7				
Progression Factor	1.51	1.09			1.00	1.00	1.00	1.00				
Incremental Delay, d2	548.6	198.6			19.7	1.4	243.9	0.5				
Delay (s)	596.4	228.4			43.8	20.1	273.4	27.2				
Level of Service	F	F			D	C	F	C				
Approach Delay (s)		318.4			37.1			146.7			0.0	
Approach LOS		F			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	173.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1545	1193	56	0	34
Future Vol, veh/h	0	1545	1193	56	0	34
Conflicting Peds, #/hr	0	0	0	14	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	93	93	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1698	1283	60	0	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	656
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	408
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	402
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	402
HCM Lane V/C Ratio	-	-	-	0.119
HCM Control Delay (s)	-	-	-	15.2
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.4

Intersection												
Int Delay, s/veh	1.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1513	22	30	1207	45	4	0	21	0	0	44
Future Vol, veh/h	0	1513	22	30	1207	45	4	0	21	0	0	44
Conflicting Peds, #/hr	20	0	16	16	0	20	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	145	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	92	92	92	69	69	69	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1627	24	33	1312	49	6	0	30	0	0	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1667	0	0	2378	3052	841	-	-	678
Stage 1	-	-	-	-	-	-	1655	1655	-	-	-	-
Stage 2	-	-	-	-	-	-	723	1397	-	-	-	-
Critical Hdwy	-	-	-	5.34	-	-	6.99	6.54	7.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	-	-	-	3.12	-	-	3.67	4.02	3.92	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	184	-	-	26	12	264	0	0	395
Stage 1	0	-	-	-	-	-	70	154	-	0	0	-
Stage 2	0	-	-	-	-	-	373	206	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	184	-	-	19	10	260	-	-	387
Mov Cap-2 Maneuver	-	-	-	-	-	-	19	10	-	-	-	-
Stage 1	-	-	-	-	-	-	70	152	-	-	-	-
Stage 2	-	-	-	-	-	-	266	166	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	74.4	15.7
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	86	-	-	184	-	-	387
HCM Lane V/C Ratio	0.421	-	-	0.177	-	-	0.131
HCM Control Delay (s)	74.4	-	-	28.7	-	-	15.7
HCM Lane LOS	F	-	-	D	-	-	C
HCM 95th %tile Q(veh)	1.7	-	-	0.6	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	805	252	213	787	110	201	433	300	99	226	271
Future Volume (veh/h)	358	805	252	213	787	110	201	433	300	99	226	271
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	389	875	274	239	884	124	205	442	0	114	260	0
Adj No. of Lanes	1	2	1	2	3	1	1	2	0	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.98	0.98	0.98	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	384	1901	838	303	2076	635	214	914	0	204	481	409
Arrive On Green	0.22	0.54	0.54	0.09	0.41	0.41	0.26	0.26	0.00	0.26	0.26	0.00
Sat Flow, veh/h	1774	3539	1561	3442	5085	1554	1113	3632	0	943	1863	1583
Grp Volume(v), veh/h	389	875	274	239	884	124	205	442	0	114	260	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1561	1721	1695	1554	1113	1770	0	943	1863	1583
Q Serve(g_s), s	26.0	18.2	11.8	8.2	14.9	6.2	16.6	12.7	0.0	14.0	14.4	0.0
Cycle Q Clear(g_c), s	26.0	18.2	11.8	8.2	14.9	6.2	31.0	12.7	0.0	26.7	14.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	384	1901	838	303	2076	635	214	914	0	204	481	409
V/C Ratio(X)	1.01	0.46	0.33	0.79	0.43	0.20	0.96	0.48	0.00	0.56	0.54	0.00
Avail Cap(c_a), veh/h	384	1901	838	746	2076	635	214	914	0	204	481	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.0	17.1	15.6	53.6	25.4	22.8	53.8	37.7	0.0	49.0	38.4	0.0
Incr Delay (d2), s/veh	49.0	0.8	1.0	1.8	0.6	0.7	50.1	0.4	0.0	3.4	1.2	0.0
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	9.1	5.3	4.0	7.1	2.8	9.7	6.3	0.0	3.8	7.6	0.0
LnGrp Delay(d),s/veh	96.0	17.9	16.6	55.4	26.1	23.5	103.9	38.1	0.0	52.4	39.6	0.0
LnGrp LOS	F	B	B	E	C	C	F	D		D	D	
Approach Vol, veh/h		1538			1247			647			374	
Approach Delay, s/veh		37.4			31.4			59.0			43.5	
Approach LOS		D			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.5	69.5		36.0	30.0	54.0		36.0
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0
Max Green Setting (Gmax), s	26.0	49.0		31.0	26.0	49.0		31.0
Max Q Clear Time (g_c+I1), s	10.2	20.2		28.7	28.0	16.9		33.0
Green Ext Time (p_c), s	0.4	22.1		1.4	0.0	24.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	643	1141	60	310	314	195	58	1366	331	210	821	257
Future Volume (veh/h)	643	1141	60	310	314	195	58	1366	331	210	821	257
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.96	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	677	1201	63	323	327	203	60	1423	345	221	864	0
Adj No. of Lanes	2	3	0	2	3	0	1	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.96	0.96	0.96	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	1251	66	380	823	381	77	1982	592	272	2164	674
Arrive On Green	0.12	0.25	0.25	0.11	0.24	0.24	0.09	0.78	0.78	0.08	0.43	0.00
Sat Flow, veh/h	3442	4938	259	3442	3390	1568	1774	5085	1519	3442	5085	1583
Grp Volume(v), veh/h	677	824	440	323	327	203	60	1423	345	221	864	0
Grp Sat Flow(s),veh/h/ln	1721	1695	1806	1721	1695	1568	1774	1695	1519	1721	1695	1583
Q Serve(g_s), s	14.5	28.8	28.8	11.1	9.7	13.5	4.0	16.8	11.0	7.6	14.1	0.0
Cycle Q Clear(g_c), s	14.5	28.8	28.8	11.1	9.7	13.5	4.0	16.8	11.0	7.6	14.1	0.0
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	859	458	380	823	381	77	1982	592	272	2164	674
V/C Ratio(X)	1.63	0.96	0.96	0.85	0.40	0.53	0.78	0.72	0.58	0.81	0.40	0.00
Avail Cap(c_a), veh/h	416	859	458	416	859	397	126	1982	592	272	2164	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.35	0.35	0.35	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.7	44.2	44.2	52.4	38.1	39.5	54.3	9.9	9.3	54.4	23.8	0.0
Incr Delay (d2), s/veh	293.4	21.6	32.2	14.5	0.4	1.7	6.0	0.8	1.5	16.7	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.8	16.1	18.5	6.0	4.6	6.0	2.1	7.5	4.7	4.3	6.7	0.0
LnGrp Delay(d),s/veh	346.1	65.8	76.4	66.9	38.5	41.3	60.3	10.7	10.8	71.1	24.4	0.0
LnGrp LOS	F	E	E	E	D	D	E	B	B	E	C	
Approach Vol, veh/h		1941			853			1828			1085	
Approach Delay, s/veh		166.0			49.9			12.4			33.9	
Approach LOS		F			D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	52.3	17.7	36.0	9.7	56.6	19.0	34.7
Change Period (Y+Rc), s	4.5	5.5	4.5	5.6	4.5	5.5	4.5	5.6
Max Green Setting (Gmax), s	9.5	45.5	14.5	30.4	8.5	46.5	14.5	30.4
Max Q Clear Time (g_c+I1), s	19.6	18.8	13.1	30.8	6.0	16.1	16.5	15.5
Green Ext Time (p_c), s	0.0	23.5	0.2	0.0	0.0	26.3	0.0	11.6

Intersection Summary	
HCM 2010 Ctrl Delay	74.3
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	1657	45	135	726	115	82	100	383	80	49	22
Future Volume (vph)	17	1657	45	135	726	115	82	100	383	80	49	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.6		4.0	4.6		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.88		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5060		1770	3452		1760	1614		1770	1765	
Flt Permitted	0.95	1.00		0.95	1.00		0.70	1.00		0.09	1.00	
Satd. Flow (perm)	1770	5060		1770	3452		1295	1614		161	1765	
Peak-hour factor, PHF	0.96	0.96	0.96	0.93	0.93	0.93	0.83	0.83	0.83	0.86	0.86	0.86
Adj. Flow (vph)	18	1726	47	145	781	124	99	120	461	93	57	26
RTOR Reduction (vph)	0	2	0	0	6	0	0	98	0	0	14	0
Lane Group Flow (vph)	18	1771	0	145	899	0	99	483	0	93	69	0
Confl. Peds. (#/hr)			5			5	4		5	5		4
Confl. Bikes (#/hr)			1						2			1
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	2.9	58.2		17.9	73.2		46.3	46.3		46.3	46.3	
Effective Green, g (s)	2.9	58.2		17.9	73.2		46.3	46.3		46.3	46.3	
Actuated g/C Ratio	0.02	0.43		0.13	0.54		0.34	0.34		0.34	0.34	
Clearance Time (s)	4.0	4.6		4.0	4.6		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.0	5.0		1.5	5.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	38	2181		234	1871		444	553		55	605	
v/s Ratio Prot	0.01	c0.35		c0.08	0.26			0.30			0.04	
v/s Ratio Perm							0.08			c0.58		
v/c Ratio	0.47	0.81		0.62	0.48		0.22	0.87		1.69	0.11	
Uniform Delay, d1	65.3	33.6		55.3	19.1		31.6	41.6		44.4	30.3	
Progression Factor	1.00	1.00		1.52	0.67		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	3.4		3.1	0.8		0.1	13.9		377.0	0.0	
Delay (s)	68.7	37.0		87.3	13.7		31.6	55.5		421.3	30.3	
Level of Service	E	D		F	B		C	E		F	C	
Approach Delay (s)		37.4			23.9			52.0			236.9	
Approach LOS		D			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	45.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.6
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2051	53	732	982	0	883
Future Volume (veh/h)	2051	53	732	982	0	883
Number	6	16	5	2	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	0	1863
Adj Flow Rate, veh/h	2114	55	779	1045	0	1003
Adj No. of Lanes	3	0	2	2	0	2
Peak Hour Factor	0.97	0.97	0.94	0.94	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	4923	128	447	3419	0	0
Arrive On Green	1.00	1.00	0.97	0.97	0.00	0.00
Sat Flow, veh/h	5265	132	352	3632	0	
Grp Volume(v), veh/h	1405	764	779	1045	0.0	
Grp Sat Flow(s),veh/h/ln	1695	1839	176	1770		
Q Serve(g_s), s	0.0	0.0	130.4	1.9		
Cycle Q Clear(g_c), s	0.0	0.0	130.4	1.9		
Prop In Lane		0.07	1.00			
Lane Grp Cap(c), veh/h	3275	1776	447	3419		
V/C Ratio(X)	0.43	0.43	1.74	0.31		
Avail Cap(c_a), veh/h	3275	1776	447	3419		
HCM Platoon Ratio	2.00	2.00	1.00	1.00		
Upstream Filter(I)	0.40	0.40	1.00	1.00		
Uniform Delay (d), s/veh	0.0	0.0	17.9	0.1		
Incr Delay (d2), s/veh	0.2	0.3	343.6	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.1	29.6	1.0		
LnGrp Delay(d),s/veh	0.2	0.3	361.5	0.3		
LnGrp LOS	A	A	F	A		
Approach Vol, veh/h	2169			1824		
Approach Delay, s/veh	0.2			154.6		
Approach LOS	A			F		

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		
Phs Duration (G+Y+Rc), s		135.0				135.0		
Change Period (Y+Rc), s		4.6				4.6		
Max Green Setting (Gmax), s		90.4				90.4		
Max Q Clear Time (g_c+I1), s		132.4				2.0		
Green Ext Time (p_c), s		0.0				88.0		

Intersection Summary		
HCM 2010 Ctrl Delay		70.7
HCM 2010 LOS		E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	503	1231	373	63	979	111	312	313	67	111	277	284
Future Volume (vph)	503	1231	373	63	979	111	312	313	67	111	277	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.91	0.91		0.91	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	0.99		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.99		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1511	1770	3477		1610	3260		1610	3384	1562
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.99		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1511	1770	3477		1610	3260		1610	3384	1562
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.96	0.96	0.96	0.87	0.87	0.87
Adj. Flow (vph)	513	1256	381	67	1041	118	325	326	70	128	318	326
RTOR Reduction (vph)	0	0	156	0	7	0	0	11	0	0	0	277
Lane Group Flow (vph)	513	1256	225	67	1152	0	237	473	0	115	331	49
Confl. Peds. (#/hr)			19			6			26			
Confl. Bikes (#/hr)			1									1
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		3	3	
Permitted Phases			2									3
Actuated Green, G (s)	21.9	60.3	60.3	7.2	45.6		20.5	20.5		15.5	15.5	15.5
Effective Green, g (s)	21.9	60.3	60.3	7.2	45.6		20.5	20.5		15.5	15.5	15.5
Actuated g/C Ratio	0.18	0.50	0.50	0.06	0.38		0.17	0.17		0.13	0.13	0.13
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	626	1778	759	106	1321		275	556		207	437	201
v/s Ratio Prot	c0.15	0.35		0.04	c0.33		c0.15	0.15		0.07	c0.10	
v/s Ratio Perm			0.15									0.03
v/c Ratio	0.82	0.71	0.30	0.63	0.87		0.86	0.85		0.56	0.76	0.24
Uniform Delay, d1	47.1	23.0	17.4	55.1	34.5		48.4	48.3		49.0	50.4	47.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.8	2.4	1.0	8.7	8.1		23.1	11.9		3.2	7.4	0.6
Delay (s)	55.0	25.4	18.4	63.8	42.6		71.5	60.2		52.2	57.8	47.6
Level of Service	D	C	B	E	D		E	E		D	E	D
Approach Delay (s)		31.2			43.8			63.9			52.7	
Approach LOS		C			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection Sign configuration not allowed in HCM analysis.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	338	41	137	101	179	63	1337	143	189	894	147
Future Volume (veh/h)	227	338	41	137	101	179	63	1337	143	189	894	147
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, 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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	264	393	48	143	105	186	65	1378	147	210	993	163
Adj No. of Lanes	1	2	0	1	2	0	1	3	0	1	3	0
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96	0.97	0.97	0.97	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	710	86	133	324	289	84	2246	240	133	2244	368
Arrive On Green	0.12	0.22	0.22	0.08	0.18	0.18	0.05	0.48	0.48	0.15	1.00	1.00
Sat Flow, veh/h	1774	3162	383	1774	1770	1578	1774	4658	497	1774	4402	721
Grp Volume(v), veh/h	264	219	222	143	105	186	65	1003	522	210	764	392
Grp Sat Flow(s),veh/h/ln	1774	1770	1776	1774	1770	1578	1774	1695	1765	1774	1695	1733
Q Serve(g_s), s	14.0	13.1	13.3	9.0	6.2	13.1	4.3	26.1	26.1	9.0	0.0	0.0
Cycle Q Clear(g_c), s	14.0	13.1	13.3	9.0	6.2	13.1	4.3	26.1	26.1	9.0	0.0	0.0
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.28	1.00		0.42
Lane Grp Cap(c), veh/h	207	397	399	133	324	289	84	1635	851	133	1728	883
V/C Ratio(X)	1.28	0.55	0.56	1.07	0.32	0.64	0.77	0.61	0.61	1.58	0.44	0.44
Avail Cap(c_a), veh/h	207	596	598	133	522	466	251	1635	851	133	1728	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86	0.84	0.84	0.84
Uniform Delay (d), s/veh	53.0	41.2	41.3	55.5	42.6	45.4	56.5	22.8	22.8	51.0	0.0	0.0
Incr Delay (d2), s/veh	156.0	1.7	1.7	99.4	0.8	3.4	12.1	1.5	2.8	288.3	0.7	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.8	6.6	6.7	8.1	3.1	6.0	2.4	12.5	13.3	15.0	0.2	0.3
LnGrp Delay(d),s/veh	209.0	42.9	43.0	154.9	43.4	48.8	68.6	24.3	25.7	339.3	0.7	1.4
LnGrp LOS	F	D	D	F	D	D	E	C	C	F	A	A
Approach Vol, veh/h		705			434			1590			1366	
Approach Delay, s/veh		105.1			82.5			26.6			52.9	
Approach LOS		F			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	62.5	13.0	31.5	9.7	65.8	18.0	26.5
Change Period (Y+Rc), s	4.0	4.6	4.0	4.6	4.0	4.6	4.0	4.6
Max Green Setting (Gmax), s	9.0	44.4	9.0	40.4	17.0	36.4	14.0	35.4
Max Q Clear Time (g_c+I1), s	11.0	28.1	11.0	15.3	6.3	2.0	16.0	15.1
Green Ext Time (p_c), s	0.0	16.1	0.0	7.0	0.1	33.5	0.0	6.5

Intersection Summary	
HCM 2010 Ctrl Delay	54.8
HCM 2010 LOS	D

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	165	189	3	1470	150	133	870
Future Volume (vph)	165	189	3	1470	150	133	870
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.0	4.6		4.0	4.6
Lane Util. Factor	0.97	0.91	1.00	0.91		0.97	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	0.95	0.85	1.00	0.99		1.00	1.00
Flt Protected	0.97	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	3315	1441	1770	4990		3433	5085
Flt Permitted	0.97	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)	3315	1441	1770	4990		3433	5085
Peak-hour factor, PHF	0.92	0.92	0.95	0.95	0.95	0.89	0.89
Adj. Flow (vph)	179	205	3	1547	158	149	978
RTOR Reduction (vph)	59	105	0	7	0	0	0
Lane Group Flow (vph)	204	16	3	1698	0	149	978
Confl. Peds. (#/hr)	5				20		
Turn Type	Perm	Perm	Prot	NA		Prot	NA
Protected Phases			5	2		1	6
Permitted Phases	4	4					
Actuated Green, G (s)	16.1	16.1	1.3	80.8		9.9	89.4
Effective Green, g (s)	16.1	16.1	1.3	80.8		9.9	89.4
Actuated g/C Ratio	0.13	0.13	0.01	0.67		0.08	0.75
Clearance Time (s)	4.6	4.6	4.0	4.6		4.0	4.6
Vehicle Extension (s)	3.0	3.0	3.0	4.0		3.0	4.0
Lane Grp Cap (vph)	444	193	19	3359		283	3788
v/s Ratio Prot			0.00	c0.34		c0.04	0.19
v/s Ratio Perm	c0.06	0.01					
v/c Ratio	0.46	0.08	0.16	0.51		0.53	0.26
Uniform Delay, d1	47.9	45.5	58.8	9.7		52.8	4.8
Progression Factor	1.00	1.00	1.00	1.00		1.26	0.46
Incremental Delay, d2	0.8	0.2	3.9	0.5		1.5	0.1
Delay (s)	48.7	45.7	62.7	10.3		68.0	2.4
Level of Service	D	D	E	B		E	A
Approach Delay (s)	47.7			10.3			11.0
Approach LOS	D			B			B

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.2
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1482	33	0	1315	0	24
Future Vol, veh/h	1482	33	0	1315	0	24
Conflicting Peds, #/hr	0	18	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	91	91	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1647	37	0	1445	0	44

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	860
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	-	-	0	-	0	257
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	253
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	253	-	-	-
HCM Lane V/C Ratio	0.172	-	-	-
HCM Control Delay (s)	22.2	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.6	-	-	-

Appendix C – Caltrans Data

Traffic Volumes Counts - Northbound

24 hour Period Hourly Counts

Dist	Cnty	Rte	Prefi	PM	Leg	Dir	Description	Date	Day	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24hr total
4	ALA	880		13.051	B	N	UNION CITY- ALVARADO/NILES ROA	05/11/2017	THU	1289 A	824 A	772 A	1064 A	3461 A	6627 A	6412 A	5939 A	5207 C	5733 C	6122 C	6163 C	6056 C	6152 C	6704 C	6255 C	6469 C	6572 C	5863 C	5047 C	4175 C	3659 C	3105 C	2455 C	112125
4	ALA	880		13.051	B	N	UNION CITY- ALVARADO/NILES ROA	05/10/2017	WED	1132 A	849 A	740 A	1072 A	3332 A	6649 A	6484 A	5806 A	5167 A	6051 A	6241 A	5700 A	5755 A	6167 A	6511 A	6296 A	6632 A	5670 A	5362 A	5468 A	4117 A	3454 A	2882 A	1749 A	109286
4	ALA	880		13.051	B	N	UNION CITY- ALVARADO/NILES ROA	05/09/2017	TUE	1053 A	714 A	427 A	1035 A	3252 A	6640 A	6573 A	5778 A	5610 A	6238 A	5955 A	5975 A	5967 A	6164 A	6375 A	6254 A	6377 A	6611 A	5681 A	4809 A	4008 A	3589 A	2778 A	1820 A	109683
4	ALA	880		13.051	B	N	UNION CITY- ALVARADO/NILES ROA	05/08/2017	MON	1150 A	742 A	769 A	1055 A	3167 A	6591 A	6332 A	6003 A	5531 A	6299 A	6192 A	5813 A	5906 A	5979 A	6550 A	6082 A	6339 A	6703 A	3982 A	4309 A	3632 A	3287 A	1586 A	1638 A	105637
							MON-THURS AVERAGE			1156	782	677	1057	3303	6627	6450	5882	5379	6080	6128	5913	5921	6116	6535	6222	6454	6389	5222	4908	3983	3497	2588	1916	109183
4	ALA	880		13.11	N	N	NB ON FR ALVARADO-NILES	05/01/2008	THU	135 A	97 A	97 A	92 A	203 A	470 A	922 A	1062 A	960 A	861 A	810 A	810 A	891 A	868 A	901 A	900 A	830 A	819 A	742 A	739 A	683 A	653 A	531 A	393 A	15469
4	ALA	880		13.11	N	N	NB ON FR ALVARADO-NILES	04/30/2008	WED	128 A	75 A	87 A	106 A	217 A	455 A	897 A	1029 A	882 A	756 A	739 A	847 A	828 A	836 A	898 A	882 A	804 A	842 A	830 A	741 A	613 A	605 A	500 A	311 A	14908
4	ALA	880		13.11	N	N	NB ON FR ALVARADO-NILES	04/29/2008	TUE	133 A	79 A	80 A	93 A	196 A	473 A	896 A	1037 A	873 A	785 A	768 A	775 A	750 A	821 A	954 A	781 A	811 A	835 A	760 A	684 A	661 A	612 A	377 A	280 A	14514
4	ALA	880		13.11	N	N	NB ON FR ALVARADO-NILES	04/28/2008	MON	149 A	72 A	62 A	94 A	186 A	460 A	770 A	1015 A	902 A	783 A	712 A	801 A	784 A	849 A	907 A	849 A	823 A	777 A	716 A	599 A	594 A	495 A	420 A	274 A	14093
							MON-THURS AVERAGE			136	81	82	96	201	465	871	1036	904	796	757	808	813	844	915	853	817	818	762	691	638	591	457	315	14746
							ML UNION CITY- ALVARADO			1156	782	677	1057	3303	6627	6450	5882	5379	6080	6128	5913	5921	6116	6535	6222	6454	6389	5222	4908	3983	3497	2588	1916	109183
							ML HAYWARD- INDUSTRIAL			1343	792	692	944	1666	3493	4966	5394	5621	5394	5267	4931	5423	5537	5223	5005	5287	4740	4265	5809	5675	4157	3303	2348	97274
							ML HAYWARD- A STREET			1885	1221	1014	1185	2122	3983	6605	6803	7602	7817	7464	7695	8056	8271	8275	8256	8120	7997	8657	9054	7699	6220	4328	3051	143375
4	ALA	880		13.51	F	N	NB OFF TO WHIPPLE RD	06/23/2011	THU	179 A	103 A	81 A	95 A	199 A	610 A	831 A	1108 A	1180 A	945 A	823 A	992 A	987 A	1090 A	1138 A	1265 A	1102 A	1153 A	1018 A	850 A	751 A	616 A	421 A	267 A	17804
4	ALA	880		13.51	F	N	NB OFF TO WHIPPLE RD	06/22/2011	WED	150 A	105 A	90 A	96 A	228 A	614 A	846 A	1173 A	1149 A	1120 A	852 A	908 A	963 A	1119 A	1241 A	1039 A	1097 A	1053 A	928 A	941 A	673 A	578 A	426 A	245 A	17634
4	ALA	880		13.51	F	N	NB OFF TO WHIPPLE RD	06/21/2011	TUE	177 A	98 A	84 A	108 A	205 A	565 A	879 A	1117 A	1148 A	900 A	898 A	912 A	923 A	1038 A	1071 A	1028 A	1006 A	973 A	981 A	876 A	679 A	629 A	423 A	262 A	16980
4	ALA	880		13.51	F	N	NB OFF TO WHIPPLE RD	06/20/2011	MON	117 A	94 A	76 A	102 A	190 A	568 A	801 A	1101 A	1107 A	886 A	878 A	832 A	919 A	946 A	1086 A	1055 A	1094 A	989 A	931 A	859 A	689 A	537 A	362 A	268 A	16487
							MON-THURS AVERAGE			156	100	83	100	206	589	839	1125	1146	963	863	911	948	1048	1134	1097	1075	1042	965	882	698	590	408	261	17226
							ML UNION CITY- ALVARADO			1000	682	594	956	3098	6038	5611	4757	4233	5118	5265	5002	4973	5067	5401	5125	5380	5347	4258	4027	3285	2907	2180	1655	91957
							ML HAYWARD- INDUSTRIAL			1187	692	609	844	1461	2904	4126	4270	4475	4431	4404	4020	4475	4489	4089	3908	4212	3698	3301	4928	4977	3567	2895	2088	80047
							ML HAYWARD- A STREET			1729	1121	931	1084	1916	3394	5766	5678	6456	6854	6601	6784	7108	7223	7141	7159	7045	6955	7693	8172	7001	5630	3920	2790	126149
4	ALA	880		13.764	N	N	SEG NBON FR EB WHIPPLE	06/23/2011	THU	136 A	86 A	45 A	50 A	50 A	135 A	258 A	224 A	285 A	310 A	332 A	371 A	422 A	425 A	449 A	316 A	204 A	214 A	280 A	327 A	387 A	432 A	290 A	208 A	6236
4	ALA	880		13.764	N	N	SEG NBON FR EB WHIPPLE	06/22/2011	WED	136 A	80 A	52 A	46 A	53 A	120 A	260 A	242 A	224 A	306 A	370 A	376 A	402 A	447 A	465 A	287 A	208 A	210 A	271 A	344 A	375 A	355 A	282 A	185 A	6096
4	ALA	880		13.764	N	N	SEG NBON FR EB WHIPPLE	06/21/2011	TUE	148 A	87 A	47 A	59 A	48 A	123 A	239 A	250 A	240 A	281 A	401 A	400 A	454 A	446 A	419 A	315 A	272 A	237 A	307 A	356 A	363 A	410 A	334 A	202 A	6438
4	ALA	880		13.764	N	N	SEG NBON FR EB WHIPPLE	06/20/2011	MON	142 A	76 A	48 A	47 A	69 A	107 A	234 A	248 A	250 A	295 A	333 A	380 A	430 A	454 A	446 A	274 A	232 A	253 A	316 A	357 A	401 A	401 A	267 A	198 A	6258
							MON-THURS AVERAGE			141	82	48	51	55	121	248	241	250	298	359	382	427	443	445	298	229	229	294	346	382	400	293	198	6257
4	ALA	880		13.765	N	N	SEG NBON FR WB WHIPPLE	06/23/2011	THU	99 A	57 A	75 A	100 A	160 A	331 A	555 A	501 A	397 A	487 A	453 A	480 A	498 A	531 A	579 A	464 A	294 A	275 A	299 A	299 A	293 A	247 A	220 A	170 A	7864
4	ALA	880		13.765	N	N	SEG NBON FR WB WHIPPLE	06/22/2011	WED	94 A	60 A	63 A	80 A	178 A	339 A	534 A	427 A	413 A	436 A	450 A	470 A	487 A	548 A	552 A	411 A	290 A	284 A	254 A	253 A	271 A	301 A	221 A	122 A	7538
4	ALA	880		13.765	N	N	SEG NBON FR WB WHIPPLE	06/21/2011	TUE	82 A	59 A	83 A	77 A	173 A	352 A	519 A	435 A	363 A	475 A	472 A	467 A	490 A	562 A	576 A	398 A	370 A	369 A	295 A	272 A	290 A	273 A	322 A	156 A	7930
4	ALA	880		13.765	N	N	SEG NBON FR WB WHIPPLE	06/20/2011	MON	53 A	53 A	32 A	65 A	127 A	330 A	462 A	422 A	428 A	464 A	441 A	453 A	494 A	497 A	540 A	406 A	314 A	337 A	272 A	271 A	267 A	260 A	193 A	118 A	7299
							MON-THURS AVERAGE			82	57	63	81	160	338	518	446	400	466	454	468	492	535	562	420	317	316	280	274	280	270	239	142	7658
4	ALA	880		13.9	N	N	NB ON FROM WHIPPLE ROAD	06/23/2011	THU	235 A	143 A	120 A	150 A	210 A	466 A	813 A	725 A	682 A	797 A	785 A	851 A	920 A	956 A	1028 A	780 A	498 A	489 A	579 A	626 A	680 A	679 A	510 A	378 A	14100
4	ALA	880		13.9	N	N	NB ON FROM WHIPPLE ROAD	06/22/2011	WED	230 A	140 A	115 A	126 A	231 A	459 A	794 A	669 A	637 A	742 A	820 A	846 A	889 A	995 A	1017 A	698 A	498 A	494 A	525 A	597 A	646 A	656 A	503 A	307 A	13634
4	ALA	880		13.9	N	N	NB ON FROM WHIPPLE ROAD	06/21/2011	TUE	230 A	146 A	130 A	136 A	221 A	475 A	758 A	685 A	603 A	756 A	873 A	867 A	944 A	1008 A	995 A	713 A	642 A	606 A	602 A	628 A	653 A	683 A	656 A	358 A	14368
4	ALA	880		13.9	N	N	NB ON FROM WHIPPLE ROAD	06/20/2011	MON	195 A	129 A	80 A	112 A	196 A	437 A	696 A	670 A	678 A	759 A	774 A	833 A	924 A	951 A	986 A	680 A	546 A	590 A	588 A	628 A	668 A	661 A	460 A	316 A	13557
							MON-THURS AVERAGE			223	140	111	131	215	459	765	687	650	764	813	849	919	978	1007	718	546	545	574	620	662	670	532	340	13915
							ML UNION CITY- ALVARADO			1223	822	706	1087	3312	6497	6376	5444	4883	5881	6078	5851	5892	6045	6408	5843	5926	5892	4831	4647	3947	3577	2712	1995	105871
							ML HAYWARD- INDUSTRIAL			1410	832	720	975	1675	3363	4892	4957	5125	5195	5217	4869	5394	5466	5096	4626	4758	4243	3874	5548	5638	4237	3427	2428	93962
							ML HAYWARD- A STREET			1952	1260	1042	1215	2131	3853	6531	6365	7106	7618	7414	7633	8027	8200	8147	7877	7591	7499	8266	8792	7663	6300	4452	3130	140063
4	ALA	880		14.537	X	N	HAYWARD- INDUSTRIAL PARKWAY	07/26/2018	THU	1514 A	904 A	823 A	1082 A	1826 A	3818 A	5815 A	6060 A	6055 A	5765 A	5963 A	6092 A	6307 A	6003 A	5879 A	5640 A	5292 A	2765 A	A	5076 A	6052 A	3983 A	3522 A	2640 A	98876
4	ALA	880		14.537	X	N	HAYWARD- INDUSTRIAL PARKWAY	07/25/2018	WED	1836 A	1064 A	852 A	1064 A	1814 A	3748 A	5695 A	5902 A	5975 A	5875 A	5896 A	5876 A	6100 A	6203 A	5721 A	5474 A	6070 A	6159 A	6043 A	6446 A	6398 A	4370 A	4135 A	2807 A	111523
4	ALA	880		14.537	X	N	HAYWARD- INDUSTRIAL PARKWAY	07/24/2018	TUE	1501 A	962 A	826 A	1187 A	2073 A	3936 A	5739 A	5176 A	5702 A	5979 A	5839 A	5785 A	6283 A	6496 A	6306 A	6129 A	5883 A	5838 A	6450 A	6504 A	6352 A	5400 A	3828 A	2758 A	112932
4	ALA	880		14.537	X	N	HAYWARD- INDUSTRIAL PARKWAY	07/23/2018	MON	1344 A	722 A	703 A	905 A	1679 A	3483 A	5120 A	5933 A	5839 A	5775 A	5818 A	4678 A	5814 A	6177 A	5678 A	4599 A	5122 A	5475 A	5646 A	6042 A	5223 A	4501 A	3341 A	2344 A	101961
							ML HAYWARD- INDUSTRIAL			1549	913	801	1060	1848	3746	5592	5768	5893	5849	5879	5608	6126	6220	5896	5461	5592	5059	4535	6017	6006	4564	3707	2637	106323
4	ALA	880		14.633	N	N	NB ON FR INDUSTRIAL PKWY	04/17/2008	THU	161 A	102 A	94 A	119 A	174 A	409 A	750 A	848 A	797 A	658 A	707 A	778 A	673 A	789 A	805 A	844 A	857 A	799 A	668 A	480 A	379 A	400 A	285 A	223 A	12799
4	ALA	880		14.633	N	N	NB ON FR INDUSTRIAL PKWY	04/16/2008	WED	239 A	138 A	127 A	118 A	183 A	399 A	706 A	787 A	766 A	651 A	636 A	828 A	861 A	786 A	846 A	826 A	807 A	792 A	671 A	503 A	383 A	371 A	263 A	196 A	12883
4	ALA	880		14.633	N	N	NB ON FR INDUSTRIAL PKWY	04/15/2008	TUE	88 A	46 A	57 A	59 A	186 A	374 A	723 A	844 A	751 A	654 A	671 A	688 A	703 A	774 A	792 A	829 A	840 A	840 A	700 A	473 A	410 A	364 A	406 A	331 A	12603
4	ALA	880		14.633	N	N	NB ON FR INDUSTRIAL PKWY	04/14/2008	MON	68 A	39 A	46 A	44 A	149 A	350 A	624 A	765 A	757 A	652 A	634 A	660 A	691 A	665 A	758 A	841 A	832 A	835 A	604 A	422 A	300 A	171 A	163 A	89 A	11159
							MON-THURS AVERAGE			139	81	81	85	173	383	701	811	768	654	662	739	732	754	800	835	834	817	661	470	368	327	279	210	12361
							ML UNION CITY- ALVARADO			1362	903	787	1172	3485	6880	7077	6255	5651	6535	6740	6590	6624	6798	7208	6678	6760	6708	5492	5116	4315	3904	2991	2205	118232
							ML HAYWARD- INDUSTRIAL			1549	913	801	1060	1848	3746	5592	5768	5893	5849	5879	5608	6126	6220	5896	5461	5592	5059	4535	6017	6006	4564	3707	2637	106323
							ML HAYWARD- A STREET			2091	1342	1123	1300	2304	4236	7232	7176	7874	8271	8076	8372	8759	8954	8947	8712	8425	8316	8927	9261	8031	6626	4732	3340	152424
4	ALA	880		15.446	F	N	NB OFF TO TENNYSON	04/17/2008	THU	186 A	129 A	94 A	66 A	102 A	199 A	439 A	595 A	661 A	910 A	532 A	554 A	659 A	690 A	1012 A	958 A	834 A	862 A	881 A	734 A	553 A	607 A	540 A	353 A	13150
4	ALA	880		15.446	F	N	NB OFF TO TENNYSON	04/16/2008	WED	244 A	166 A	118 A	84 A	93 A	203 A	412 A	599 A	693 A	635 A	526 A	591 A	667 A	699 A	891 A	898 A	845 A	788 A	814 A	778 A	554 A	567 A	442 A	322 A	12629
4	ALA	880		15.446	F	N	NB OFF TO TENNYSON	04/15/2008	TUE	161 A	104 A	86 A	67 A	84 A	206 A	434 A	646 A	656 A	747 A	521 A	576 A	670 A	662 A	957 A	1010 A	896 A	947 A	1018 A	693 A	623 A	587 A	567 A	441 A	13359
4	ALA	880		15.446	F	N	NB OFF TO TENNYSON	04/14/2008	MON	119 A	63 A	52 A	37 A	82 A	173 A	415 A	614 A	722 A	568 A	526 A	570 A	581 A	654 A	858 A	976 A	946 A	910 A	966 A	609 A	529 A	497 A	380 A	256 A	12103
							MON-THURS AVERAGE			178	116	88	64	90	195	425	614	683	715	526	573	644	676	930	961	880	877	920	704	565	565	482	343	12810
							ML UNION CITY- ALVARADO			1184	788	699	1109	3395	6685	6652	5642	4968	5820	6214	6017	5980	6122	6278	5717	5879	5832	4572	4413	3750	3339	2509	1862	105422
							ML HAYWARD- INDUSTRIAL			1371	798	714	996	1758	3551	5167	5154	5210	5134	5353	5035	5482	5544	4967	4500	4712	4183	3615	5314	5442	3999	3224	2294	93513
							ML HAYWARD- A STREET			1913	1226	1036	1237	2214	4041	6807	6563	7191	7556	7550	7799	8115	8277	8018	7752	7545	7439	8007	8558	7466	6062	4249	2997	139614

Traffic Volumes Counts - Northbound

Dist	Cnty	Rte	Prefi	PM	Leg	Dir	Description	Date	Day	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24hr total
										24 hour Period Hourly Counts																								
4	ALA	880		15.515	F	N	SEG NB OFF TO EB TENNYSON RD	04/17/2008	THU	115 A	80 A	53 A	28 A	33 A	62 A	137 A	246 A	229 A	334 A	251 A	303 A	346 A	351 A	539 A	570 A	507 A	526 A	501 A	468 A	336 A	383 A	309 A	207 A	6914
4	ALA	880		15.515	F	N	SEG NB OFF TO EB TENNYSON RD	04/16/2008	WED	150 A	96 A	79 A	37 A	24 A	68 A	128 A	258 A	253 A	259 A	243 A	296 A	345 A	355 A	449 A	533 A	539 A	492 A	488 A	491 A	322 A	320 A	279 A	180 A	6684
4	ALA	880		15.515	F	N	SEG NB OFF TO EB TENNYSON RD	04/15/2008	TUE	102 A	59 A	46 A	32 A	28 A	74 A	132 A	252 A	248 A	315 A	249 A	310 A	351 A	340 A	527 A	610 A	537 A	566 A	642 A	435 A	371 A	351 A	350 A	270 A	7197
4	ALA	880		15.515	F	N	SEG NB OFF TO EB TENNYSON RD	04/14/2008	MON	74 A	38 A	26 A	17 A	26 A	61 A	152 A	260 A	274 A	242 A	241 A	285 A	312 A	334 A	476 A	580 A	580 A	574 A	567 A	377 A	338 A	301 A	227 A	143 A	6505
							MON-THURS AVERAGE			110	68	51	29	28	66	137	254	251	288	246	299	339	345	498	573	541	540	550	443	342	339	291	200	6825
4	ALA	880		15.516	F	N	SEG NB OFF TO WB TENNYSON	08/04/2011	THU	75 A	41 A	28 A	31 A	63 A	113 A	295 A	370 A	374 A	298 A	278 C	269 C	311 C	499 C	525 C	321 C	271 C	268 C	326 C	353 C	263 C	219 C	206 C	124 C	5921
4	ALA	880		15.516	F	N	SEG NB OFF TO WB TENNYSON	08/03/2011	WED	85 A	49 A	31 A	32 A	65 A	114 A	288 A	374 A	362 A	329 A	298 A	309 A	313 A	348 A	456 A	327 A	329 A	291 A	318 A	291 A	256 A	232 A	236 A	133 A	5866
4	ALA	880		15.516	F	N	SEG NB OFF TO WB TENNYSON	08/02/2011	TUE	67 A	40 A	32 A	46 A	53 A	125 A	265 A	356 A	343 A	293 A	306 A	290 A	326 A	363 A	443 A	353 A	301 A	264 A	331 A	301 A	248 A	225 A	212 A	129 A	5712
4	ALA	880		15.516	F	N	SEG NB OFF TO WB TENNYSON	08/01/2011	MON	67 A	32 A	27 A	27 A	51 A	104 A	268 A	352 A	381 A	322 A	271 A	259 A	307 A	325 A	426 A	361 A	290 A	293 A	286 A	286 A	252 A	219 A	213 A	123 A	5542
							MON-THURS AVERAGE			74	41	30	34	58	114	279	363	365	311	288	282	314	384	463	341	298	279	315	308	255	224	217	127	5760
4	ALA	880		15.645	B	N	HAYWARD- TENNYSON ROAD	08/07/2017	MON	1476 A	900 A	719 A	1015 A	1954 A	3799 A	5641 A	6057 A	6148 A	6307 A	6341 A	6341 A	6850 A	7401 A	7526 A	6470 A	6657 A	6912 A	7003 A	7158 A	5846 A	4867 A	3746 A	2413 A	119547
4	ALA	880		15.645	B	N	HAYWARD- TENNYSON ROAD	08/03/2017	THU	1756 A	1076 A	994 A	1183 A	1920 A	4229 A	6164 A	6499 A	6499 A	6610 A	6867 A	6849 A	7504 A	7638 A	7590 A	6396 A	6339 A	6976 A	6762 A	7266 A	6617 A	5953 A	4499 A	2849 A	127035
4	ALA	880		15.645	B	N	HAYWARD- TENNYSON ROAD	08/02/2017	WED	1624 A	973 A	937 A	1151 A	1961 A	4129 A	6140 A	6477 A	6439 A	6559 A	6731 A	6887 A	7370 A	7582 A	7352 A	6560 A	6493 A	6823 A	7026 A	7179 A	6653 A	5794 A	4292 A	2702 A	125834
4	ALA	880		15.645	B	N	HAYWARD- TENNYSON ROAD	08/01/2017	TUE	1592 A	1022 A	949 A	1150 A	1917 A	4177 A	5885 A	6360 A	6423 A	6255 A	6432 A	6717 A	6264 A	6753 A	7023 A	6182 A	6471 A	6750 A	7210 A	7145 A	6538 A	5635 A	4190 A	2535 A	121575
							MON-THURS AVERAGE			1612	993	900	1125	1938	4084	5958	6348	6377	6433	6593	6699	6997	7344	7373	6402	6490	6865	7000	7187	6414	5562	4182	2625	123498
4	ALA	880		15.747	N	N	SEG NB ON FR WB TENNYSON	08/04/2011	THU	78 A	64 A	79 A	108 A	181 A	473 A	748 A	880 A	783 A	556 A	407 C	474 C	480 C	482 C	464 C	520 C	515 C	512 C	441 C	418 C	348 C	419 C	245 C	113 C	9788
4	ALA	880		15.747	N	N	SEG NB ON FR WB TENNYSON	08/03/2011	WED	120 A	76 A	91 A	92 A	160 A	406 A	694 A	828 A	728 A	629 A	584 A	622 A	635 A	679 A	707 A	748 A	766 A	777 A	629 A	656 A	485 A	509 A	328 A	217 A	12166
4	ALA	880		15.747	N	N	SEG NB ON FR WB TENNYSON	08/02/2011	TUE	73 A	75 A	72 A	83 A	205 A	464 A	705 A	847 A	740 A	624 A	526 A	614 A	684 A	616 A	654 A	712 A	713 A	771 A	613 A	543 A	477 A	466 A	303 A	209 A	11789
4	ALA	880		15.747	N	N	SEG NB ON FR WB TENNYSON	08/01/2011	MON	145 A	87 A	58 A	95 A	184 A	463 A	679 A	846 A	722 A	603 A	522 A	608 A	691 A	620 A	660 A	770 A	824 A	756 A	637 A	529 A	496 A	461 A	280 A	205 A	11941
							MON-THURS AVERAGE			104	76	75	95	183	452	707	850	743	603	510	580	623	599	621	688	705	704	580	537	452	464	289	186	11421
4	ALA	880		15.748	N	N	SEG NB ON FR EB TENNYSON RD	08/04/2011	THU	33 A	19 A	16 A	21 A	31 A	72 A	143 A	221 A	196 A	220 A	170 C	216 C	211 C	492 C	528 C	378 C	356 C	316 C	215 C	157 C	121 C	102 C	78 C	75 C	4387
4	ALA	880		15.748	N	N	SEG NB ON FR EB TENNYSON RD	08/03/2011	WED	33 A	20 A	19 A	19 A	26 A	61 A	124 A	178 A	190 A	265 A	325 A	426 A	451 A	434 A	457 A	335 A	309 A	295 A	284 A	271 A	190 A	122 A	74 A	64 A	4972
4	ALA	880		15.748	N	N	SEG NB ON FR EB TENNYSON RD	08/02/2011	TUE	57 A	18 A	14 A	19 A	25 A	68 A	111 A	164 A	204 A	252 A	373 A	392 A	417 A	398 A	440 A	338 A	319 A	313 A	283 A	278 A	197 A	125 A	71 A	72 A	4948
4	ALA	880		15.748	N	N	SEG NB ON FR EB TENNYSON RD	08/01/2011	MON	37 A	17 A	16 A	20 A	33 A	59 A	111 A	140 A	173 A	201 A	347 A	383 A	390 A	369 A	443 A	365 A	332 A	316 A	299 A	264 A	192 A	109 A	93 A	107 A	4816
							MON-THURS AVERAGE			40	19	16	20	29	65	122	176	191	235	304	354	367	423	467	354	329	310	270	243	175	115	79	80	4781
4	ALA	880		15.807	N	N	NB ON FR TENNYSON	05/22/2008	THU	166 A	97 A	82 A	119 A	270 A	603 A	907 A	1214 A	1201 A	917 A	695 A	752 A	808 A	753 A	839 A	855 A	936 A	978 A	873 A	641 A	615 A	594 A	435 A	300 A	15650
4	ALA	880		15.807	N	N	NB ON FR TENNYSON	05/21/2008	WED	129 A	75 A	81 A	95 A	230 A	548 A	874 A	981 A	911 A	805 A	713 A	768 A	817 A	792 A	938 A	865 A	904 A	900 A	826 A	673 A	617 A	586 A	398 A	305 A	14831
4	ALA	880		15.807	N	N	NB ON FR TENNYSON	05/20/2008	TUE	149 A	87 A	93 A	115 A	242 A	553 A	801 A	914 A	833 A	989 A	722 A	727 A	718 A	738 A	781 A	810 A	808 A	820 A	744 A	714 A	608 A	529 A	420 A	218 A	14133
4	ALA	880		15.807	N	N	NB ON FR TENNYSON	05/19/2008	MON	170 A	112 A	82 A	99 A	222 A	531 A	770 A	868 A	762 A	711 A	680 A	718 A	691 A	721 A	880 A	800 A	787 A	802 A	737 A	628 A	547 A	494 A	368 A	230 A	13410
							MON-THURS AVERAGE			154	93	85	107	241	559	838	994	927	856	703	741	759	751	860	833	859	875	795	664	597	551	405	263	14506
							ML UNION CITY- ALVARADO			1338	880	784	1216	3636	7243	7490	6636	5894	6675	6916	6758	6739	6873	7138	6550	6738	6707	5367	5077	4347	3890	2914	2125	119928
							ML HAYWARD- INDUSTRIAL			1525	890	798	1103	1999	4110	6005	6149	6137	5989	6055	5776	6240	6295	5826	5333	5570	5058	4410	5978	6038	4550	3630	2558	108019
							ML HAYWARD- A STREET			2067	1319	1120	1344	2455	4600	7645	7557	8118	8412	8253	8540	8873	9028	8877	8584	8403	8314	8802	9222	8063	6612	4655	3260	154120
4	ALA	880		16.414	F	N	NB OFF TO RTE 92/JACKSON	05/15/2008	THU	202 A	165 A	119 A	149 A	333 A	810 A	1220 A	1394 A	1503 C	1693 C	1310 C	1402 C	1387 C	1393 C	1368 C	1164 C	1104 C	998 C	1128 C	1183 C	1092 C	978 C	606 C	340 C	23041
4	ALA	880		16.414	F	N	NB OFF TO RTE 92/JACKSON	05/14/2008	WED	213 A	176 A	165 A	181 A	378 A	752 A	1272 A	1358 A	1169 A	1509 A	1405 A	1371 A	1395 A	1437 A	1389 A	1212 A	1174 A	1085 A	1213 A	1152 A	971 A	959 A	710 A	412 A	23058
4	ALA	880		16.414	F	N	NB OFF TO RTE 92/JACKSON	05/13/2008	TUE	203 A	167 A	147 A	186 A	341 A	787 A	1239 A	1239 A	1396 A	1567 A	1447 A	1378 A	1374 A	1400 A	1366 A	1255 A	1119 A	1076 A	1201 A	1139 A	995 A	948 A	715 A	441 A	23126
4	ALA	880		16.414	F	N	NB OFF TO RTE 92/JACKSON	05/12/2008	MON	220 A	114 A	83 A	147 A	344 A	709 A	1275 A	1330 A	1480 A	1622 A	1377 A	1347 A	1283 A	1463 A	1277 A	1155 A	1112 A	1120 A	1161 A	1051 A	980 A	830 A	653 A	389 A	22522
							MON-THURS AVERAGE			210	156	129	166	349	765	1252	1330	1387	1598	1385	1375	1360	1423	1350	1197	1127	1070	1176	1131	1010	929	671	396	22937
							ML UNION CITY- ALVARADO			1128	725	655	1050	3287	6479	6239	5306	4507	5078	5531	5384	5379	5450	5788	5353	5611	5637	4191	3945	3337	2961	2243	1729	96991
							ML HAYWARD- INDUSTRIAL			1315	735	670	937	1650	3345	4754	4818	4750	4391	4671	4402	4881	4871	4476	4136	4443	3988	3234	4846	5029	3621	2959	2162	85082
							ML HAYWARD- A STREET			1857	1163	992	1178	2106	3835	6393	6227	6731	6814	6868	7166	7513	7605	7527	7388	7276	7244	7627	8091	7053	5684	3984	2864	131183
4	ALA	880		16.527	F	N	NB OFF TO WB RTE 92	05/15/2008	THU	A	1 A	A	A	132 A	632 A	905 A	933 A	995 C	1025 C	743 C	745 C	734 C	676 C	615 C	454 C	438 C	451 C	522 C	431 C	380 C	357 C	224 C	103 C	11496
4	ALA	880		16.527	F	N	NB OFF TO WB RTE 92	05/14/2008	WED	73 A	69 A	68 A	118 A	301 A	598 A	960 A	946 A	754 A	930 A	818 A	756 A	748 A	700 A	665 A	517 A	465 A	488 A	521 A	401 A	387 A	357 A	32 A	A	11672
4	ALA	880		16.527	F	N	NB OFF TO WB RTE 92	05/13/2008	TUE	75 A	52 A	60 A	122 A	283 A	621 A	924 A	851 A	910 A	990 A	854 A	757 A	718 A	734 A	667 A	500 A	440 A	490 A	508 A	409 A	377 A	364 A	233 A	158 A	12097
4	ALA	880		16.527	F	N	NB OFF TO WB RTE 92	05/12/2008	MON	76 A	37 A	38 A	101 A	286 A	558 A	953 A	927 A	963 A	1059 A	762 A	704 A	629 A	734 A	633 A	507 A	467 A	487 A	444 A	355 A	352 A	295 A	225 A	127 A	11719
							MON-THURS AVERAGE			56	40	42	85	251	602	936	914	906	1001	794	741	707	711	645	495	453	479	499	399	374	343	179	97	11746
4	ALA	880		16.528	F	N	NB OFF TO EB RTE 92	05/15/2008	THU	202 A	164 A	119 A	149 A	201 A	178 A	315 A	461 A	508 C	668 C	567 C	657 C	653 C	717 C	753 C	710 C	666 C	547 C	606 C	752 C	712 C	621 C	382 C	237 C	11545
4	ALA	880		16.528	F	N	NB OFF TO EB RTE 92	05/14/2008	WED	140 A	107 A	97 A	63 A	77 A	154 A	312 A	412 A	415 A	579 A	587 A	615 A	647 A	737 A	724 A	695 A	709 A	597 A	692 A	751 A	584 A	602 A	678 A	412 A	11386
4	ALA	880		16.528	F	N	NB OFF TO EB RTE 92	05/13/2008	TUE	128 A	115 A	87 A	64 A	58 A	166 A	315 A	388 A	486 A	577 A	593 A	621 A	656 A	666 A	699 A	755 A	679 A	586 A	693 A	730 A	618 A	584 A	482 A	283 A	11029
4	ALA	880		16.528	F	N	NB OFF TO EB RTE 92	05/12/2008	MON	144 A	77 A	45 A	46 A	58 A	151 A	322 A	403 A	517 A	563 A	615 A	643 A	654 A	729 A	644 A	648 A	645 A	633 A	717 A	696 A	628 A	535 A	428 A	262 A	10803
							MON-THURS AVERAGE			154	116	87	81	99	162	316	416	482	597	591	634	653	712	705	702	675	591	677	732	636	586	493	299	11191
4	ALA	880		16.846	N	N	NB ON FR WB RTE 92	09/30/2008	TUE	73 A	49 A	54 A	65 A	132 A	336 A	448 A	489 A	456 A	352 A	409 A	410 A	433 C	429 C	481 C	500 C	465 C	479 C	436 C	426 C	300 C	269 C	218 C	137 C	7846
4	ALA	880		16.846	N	N	NB ON FR WB RTE 92	09/29/2008	MON	73 A	42 A	47 A	65 A	134 A	281 A	445 A	461 A	419 A	399 A	436 A	400 A	487 A	490 A	522 A	504 A	499 A	483 A	480 A	449 A	398 A	293 A	239 A	110 A	8156
4	ALA	880		16.846	N	N	NB ON FR WB RTE 92	09/25/2008	THU	89 A	62 A	64 A	75 A	138 A	288 A	466 A	509 A	445 A	350 A	362 A	412 A	537 A	503 A	526 A	546 A	560 A	559 A	549 A	509 A	392 A	356 A	272 A	137 A	8706
4	ALA	880		16.846	N	N	NB ON FR WB RTE 92	09/24/2008	WED	59 A	53 A	34 A	56 A	113 A	295 A	463 A	506 A	444 A	392 A	394 A	422 A	474 A	553 A	493 A	490 A	520 A	531 A	510 A	478 A	407 A	339 A	247 A	156 A	8429
							MON-THURS AVERAGE			74	52	50	65	129	300	456	491	441	373	400	411	483	494	506	510	511	513	494	466	374	314	244	135	8284
							ML UNION CITY- ALVARADO			1202	776	705	1115	3416	6779	6694	5797	4948	5451	5932	5795	5862	5944	6293	5863	6122	6150	4685	4411	3712	3275	2487	1864	105276
							ML HAYWARD- INDUSTRIAL			1389	786	719	1003	1779	3645	5209	5310	5191	4765	5071	4813	5363	5365	4982	4646	4954	4501	3728	5312	5403	3935	3203	2297	93366
							ML HAYWARD- A STREET			1931	1215	1041	1243	2235	4135	6849	6718	7172	7187	7268	7577	7996	8099	8033	7898	7787	7757	8120	8556	7428	5998	4228	2999	139468

Traffic Volumes Counts - Northbound

24 hour Period Hourly Counts

Dist	Cnty	Rte	Prefi	PM	Leg	Dir	Description	Date	Day	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24hr total
4	ALA	880		17.377	F	N	NB OFF TO WINTON AVE	04/17/2008	THU	200 A	69 A	58 A	63 A	127 A	281 A	399 A	433 A	588 A	592 A	615 A	634 A	662 A	682 A	654 A	643 A	485 A	494 A	511 A	476 A	416 A	290 A	300 A	291 A	9963
4	ALA	880		17.377	F	N	NB OFF TO WINTON AVE	04/16/2008	WED	100 A	51 A	51 A	53 A	175 A	272 A	402 A	465 A	617 A	597 A	551 A	629 A	654 A	663 A	624 A	619 A	471 A	432 A	500 A	481 A	366 A	267 A	215 A	290 A	9545
4	ALA	880		17.377	F	N	NB OFF TO WINTON AVE	04/15/2008	TUE	94 A	47 A	64 A	72 A	153 A	310 A	433 A	467 A	568 A	598 A	552 A	587 A	656 A	662 A	646 A	545 A	556 A	574 A	565 A	561 A	366 A	314 A	233 A	130 A	9753
4	ALA	880		17.377	F	N	NB OFF TO WINTON AVE	04/14/2008	MON	60 A	34 A	28 A	47 A	117 A	287 A	409 A	497 A	583 A	605 A	593 A	596 A	687 A	705 A	696 A	614 A	527 A	544 A	618 A	444 A	357 A	280 A	168 A	112 A	9608
							MON-THURS AVERAGE			114	50	50	59	143	288	411	466	589	598	578	612	665	678	655	605	510	511	549	491	376	288	229	206	9717
							ML UNION CITY- ALVARADO			1088	726	655	1057	3273	6491	6283	5331	4359	4853	5354	5183	5197	5266	5638	5258	5612	5639	4137	3920	3335	2988	2258	1659	95558
							ML HAYWARD- INDUSTRIAL			1275	736	669	944	1636	3358	4799	4844	4602	4167	4493	4201	4699	4687	4327	4041	4444	3990	3180	4821	5027	3648	2974	2091	83649
							ML HAYWARD- A STREET			1817	1165	991	1185	2092	3848	6438	6253	6583	6589	6690	6965	7331	7421	7378	7292	7277	7246	7572	8066	7051	5710	3999	2794	129750
4	ALA	880		17.485	F	N	SEG NB OFF TO WB WINTON	05/19/2011	THU	33 A	29 A	34 A	52 A	95 A	221 A	299 A	292 A	350 A	372 A	399 A	408 A	437 A	434 A	382 A	315 A	255 A	246 A	261 A	299 A	264 A	180 A	115 A	75 A	5847
4	ALA	880		17.485	F	N	SEG NB OFF TO WB WINTON	05/18/2011	WED	33 A	28 A	25 A	42 A	97 A	187 A	300 A	290 A	280 A	360 A	412 A	474 A	455 A	470 A	454 A	319 A	280 A	256 A	302 A	291 A	215 A	167 A	96 A	61 A	5894
4	ALA	880		17.485	F	N	SEG NB OFF TO WB WINTON	05/17/2011	TUE	36 A	29 A	37 A	50 A	92 A	208 A	325 A	274 A	307 A	387 A	366 A	449 A	417 A	420 A	412 A	341 A	267 A	164 A	258 A	300 A	194 A	152 A	90 A	53 A	5628
4	ALA	880		17.485	F	N	SEG NB OFF TO WB WINTON	05/16/2011	MON	38 A	15 A	20 A	34 A	78 A	185 A	318 A	293 A	275 A	416 A	377 A	472 A	434 A	432 A	394 A	332 A	245 A	238 A	234 A	254 A	185 A	153 A	84 A	53 A	5559
							MON-THURS AVERAGE			35	25	29	45	91	200	311	287	303	384	389	451	436	439	411	327	262	226	264	286	215	163	96	61	5732
4	ALA	880		17.486	F	N	SEG NB OFF TO EB WINTON	05/19/2011	THU	40 A	23 A	16 A	16 A	28 A	42 A	112 A	187 A	265 A	218 A	229 A	214 A	240 A	285 A	264 A	226 A	206 A	223 A	212 A	208 A	169 A	158 A	106 A	71 A	3758
4	ALA	880		17.486	F	N	SEG NB OFF TO EB WINTON	05/18/2011	WED	47 A	24 A	19 A	15 A	22 A	53 A	107 A	188 A	291 A	226 A	220 A	206 A	256 A	306 A	282 A	218 A	217 A	207 A	211 A	207 A	179 A	142 A	103 A	55 A	3801
4	ALA	880		17.486	F	N	SEG NB OFF TO EB WINTON	05/17/2011	TUE	38 A	23 A	20 A	10 A	22 A	52 A	124 A	194 A	328 A	228 A	227 A	212 A	235 A	269 A	258 A	243 A	251 A	150 A	197 A	216 A	148 A	141 A	85 A	74 A	3745
4	ALA	880		17.486	F	N	SEG NB OFF TO EB WINTON	05/16/2011	MON	38 A	19 A	21 A	12 A	23 A	36 A	113 A	209 A	285 A	223 A	246 A	275 A	268 A	317 A	279 A	289 A	182 A	225 A	185 A	180 A	166 A	134 A	89 A	47 A	3861
							Monday - Thursday Average			41	22	19	13	24	46	114	195	292	224	231	227	250	294	271	244	214	201	201	203	166	144	96	62	3791
4	ALA	880		17.723	N	N	SEG NB ON FR EB WINTON AVE	05/19/2011	THU	113 A	73 A	65 A	76 A	122 A	204 A	404 A	566 A	550 A	630 A	662 A	840 A	885 A	982 A	1167 A	901 A	787 A	804 A	849 A	745 A	736 A	600 A	281 A	202 A	13244
4	ALA	880		17.723	N	N	SEG NB ON FR EB WINTON AVE	05/18/2011	WED	74 A	74 A	66 A	53 A	89 A	198 A	435 A	575 A	547 A	505 A	682 A	875 A	881 A	1004 A	1149 A	835 A	854 A	833 A	926 A	789 A	677 A	569 A	287 A	187 A	13164
4	ALA	880		17.723	N	N	SEG NB ON FR EB WINTON AVE	05/17/2011	TUE	66 A	55 A	80 A	96 A	138 A	243 A	404 A	561 A	543 A	531 A	682 A	771 A	834 A	952 A	1084 A	852 A	781 A	874 A	833 A	732 A	569 A	490 A	247 A	173 A	12591
4	ALA	880		17.723	N	N	SEG NB ON FR EB WINTON AVE	05/16/2011	MON	55 A	44 A	60 A	59 A	99 A	195 A	436 A	546 A	553 A	505 A	674 A	794 A	863 A	1026 A	1125 A	812 A	823 A	591 A	815 A	624 A	535 A	461 A	240 A	160 A	12095
							MON-THURS AVERAGE			77	62	68	71	112	210	420	562	548	543	675	820	866	991	1131	850	811	776	856	723	629	530	264	181	12774
4	ALA	880		17.724	N	N	SEG NB ON FR WB WINTON AVE	05/19/2011	THU	15 A	13 A	18 A	20 A	52 A	81 A	207 A	358 A	314 A	252 A	280 A	339 A	280 A	248 A	301 A	519 A	701 A	751 A	318 A	173 A	119 A	120 A	79 A	48 A	5606
4	ALA	880		17.724	N	N	SEG NB ON FR WB WINTON AVE	05/18/2011	WED	20 A	20 A	24 A	27 A	44 A	84 A	184 A	379 A	281 A	285 A	304 A	350 A	332 A	261 A	349 A	507 A	695 A	692 A	347 A	191 A	134 A	112 A	88 A	46 A	5756
4	ALA	880		17.724	N	N	SEG NB ON FR WB WINTON AVE	05/17/2011	TUE	17 A	14 A	25 A	12 A	45 A	93 A	166 A	357 A	271 A	292 A	320 A	432 A	337 A	308 A	295 A	510 A	847 A	718 A	355 A	171 A	96 A	89 A	72 A	43 A	5885
4	ALA	880		17.724	N	N	SEG NB ON FR WB WINTON AVE	05/16/2011	MON	22 A	19 A	25 A	15 A	42 A	93 A	169 A	376 A	271 A	273 A	294 A	324 A	285 A	259 A	293 A	652 A	616 A	701 A	319 A	156 A	117 A	111 A	65 A	29 A	5526
							MON-THURS AVERAGE			19	17	23	19	46	88	182	368	284	276	300	361	309	269	310	547	715	716	335	173	117	108	76	42	5693
4	ALA	880		17.825	N	N	NB ON FR WINTON AVE	05/12/2011	THU	116 A	74 A	75 A	81 A	158 A	273 A	707 A	961 A	854 A	800 A	1013 A	1218 A	1193 A	1183 A	1473 A	1326 A	1483 A	1611 A	1201 A	814 A	834 A	696 A	403 A	234 A	18781
4	ALA	880		17.825	N	N	NB ON FR WINTON AVE	05/11/2011	WED	93 A	74 A	78 A	97 A	164 A	284 A	641 A	991 A	815 A	833 A	1017 A	1136 A	1276 A	1262 A	1471 A	1402 A	1575 A	1735 A	1214 A	907 A	769 A	599 A	363 A	242 A	19038
4	ALA	880		17.825	N	N	NB ON FR WINTON AVE	05/10/2011	TUE	106 A	57 A	71 A	84 A	180 A	300 A	630 A	965 A	857 A	858 A	980 A	1147 A	1245 A	1282 A	1407 A	1365 A	1618 A	1655 A	1201 A	944 A	842 A	652 A	388 A	233 A	19067
4	ALA	880		17.825	N	N	NB ON FR WINTON AVE	05/09/2011	MON	84 A	57 A	74 A	87 A	144 A	275 A	609 A	938 A	807 A	783 A	921 A	1084 A	1137 A	1315 A	1436 A	1371 A	1439 A	1638 A	1116 A	891 A	714 A	610 A	326 A	215 A	18071
							MON-THURS AVERAGE			100	66	75	87	162	283	647	964	833	819	983	1146	1213	1261	1447	1366	1529	1660	1183	889	790	639	370	231	18739
							ML UNION CITY- ALVARADO			1188	792	729	1144	3435	6774	6930	6295	5193	5671	6337	6329	6410	6526	7085	6624	7141	7299	5320	4809	4125	3627	2628	1890	114298
							ML HAYWARD- INDUSTRIAL			1375	802	744	1031	1798	3641	5445	5808	5435	4985	5476	5348	5911	5948	5773	5407	5973	5650	4363	5710	5817	4287	3344	2322	102388
							ML HAYWARD- A STREET			1917	1230	1066	1272	2253	4131	7085	7216	7416	7408	7673	8112	8544	8681	8825	8658	8806	8906	8755	8955	7841	6349	4369	3025	148490
4	ALA	880		18.228	F	N	NB OFF TO A STREET	05/19/2011	THU	140 A	91 A	74 A	61 A	99 A	190 A	336 A	485 A	618 A	564 A	597 A	696 A	795 A	757 A	851 A	810 A	890 A	864 A	843 A	808 A	723 A	686 A	480 A	307 A	12765
4	ALA	880		18.228	F	N	NB OFF TO A STREET	05/18/2011	WED	121 A	101 A	69 A	52 A	91 A	157 A	327 A	521 A	566 A	590 A	603 A	698 A	810 A	796 A	867 A	875 A	755 A	861 A	830 A	826 A	712 A	675 A	479 A	281 A	12663
4	ALA	880		18.228	F	N	NB OFF TO A STREET	05/17/2011	TUE	126 A	70 A	66 A	50 A	86 A	177 A	317 A	496 A	588 A	531 A	616 A	672 A	771 A	866 A	932 A	897 A	851 A	645 A	828 A	794 A	648 A	527 A	432 A	252 A	12238
4	ALA	880		18.228	F	N	NB OFF TO A STREET	05/16/2011	MON	129 A	83 A	49 A	41 A	83 A	149 A	318 A	472 A	513 A	573 A	603 A	674 A	801 A	797 A	904 A	870 A	848 A	797 A	848 A	806 A	580 A	483 A	361 A	250 A	12032
							MON-THURS AVERAGE			129	86	65	51	90	168	325	494	571	565	605	685	794	804	889	863	836	792	837	809	666	593	438	273	12425
							ML UNION CITY- ALVARADO			1059	705	665	1093	3345	6606	6606	5802	4621	5107	5732	5644	5615	5722	6197	5761	6305	6507	4482	4001	3459	3034	2190	1617	101873
							ML HAYWARD- INDUSTRIAL			1246	715	679	980	1708	3473	5121	5314	4864	4421	4871	4663	5117	5144	4885	4544	5137	4858	3525	4902	5151	3694	2906	2050	89964
							ML HAYWARD- A STREET			1788	1144	1001	1221	2164	3963	6760	6723	6845	6843	7068	7427	7750	7877	7936	7795	7970	8114	7918	8146	7175	5757	3931	2752	136065
4	ALA	880		18.353	A	N	HAYWARD- A STREET	08/07/2017	MON	1740 A	1078 A	847 A	1088 A	2214 A	4233 A	6939 A	7867 A	7224 A	7326 A	7236 A	7447 A	8055 A	8491 A	8643 A	8474 A	8636 A	8673 A	7842 A	8499 A	6716 A	5416 A	3969 A	2765 A	141418
4	ALA	880		18.353	A	N	HAYWARD- A STREET	08/03/2017	THU	2013 A	1260 A	1186 A	1386 A	2356 A	4656 A	7621 A	5300 A	7633 A	7227 A	7882 A	8137 A	8493 A	8780 A	8432 A	8540 A	8788 A	8913 A	8568 A	8712 A	7715 A	6446 A	4479 A	3175 A	147698
4	ALA	880		18.353	A	N	HAYWARD- A STREET	08/02/2017	WED	1860 A	1228 A	1083 A	1348 A	2258 A	4415 A	7592 A	8347 A	7489 A	7503 A	7679 A	8260 A	8642 A	8620 A	8739 A	8641 A	8758 A	8932 A	8866 A	8621 A	8077 A	6409 A	4153 A	2941 A	150461
4	ALA	880		18.353	A	N	HAYWARD- A STREET	08/01/2017	TUE	1842 A	1194 A	1062 A	1292 A	2272 A	3707 A	7177 A	8331 A	7446 A	7265 A	7583 A	8054 A	8166 A	8200 A	8527 A	8464 A	8706 A	8963 A	8814 A	8526 A	7772 A	6279 A	4084 A	2726 A	146452
							MON-THURS AVERAGE			1864	1190	1045	1279	2275	4253	7332	7461	7448	7330	7595	7975	8339	8523	8585	8530	8722	8870	8523	8590	7570	6138	4171	2902	146507
4	ALA	880		18.478	N	N	NB ON FROM A STREET	05/19/2011	THU	86 A	42 A	44 A	65 A	123 A	301 A	600 A	781 A	643 A	508 A	554 A	582 A	617 A	628 A	663 A	764 A	769 A	818 A	666 A	479 A	411 A	405 A	277 A	179 A	11005
4	ALA	880		18.478	N	N	NB ON FROM A STREET	05/18/2011	WED	80 A	39 A	37 A	56 A	116 A	292 A	587 A	718 A	614 A	499 A	520 A	549 A	568 A	664 A	647 A	734 A	734 A	768 A	680 A	462 A	425 A	391 A	287 A	150 A	10617
4	ALA	880		18.478	N	N	NB ON FROM A STREET	05/17/2011	TUE	69 A	42 A	47 A	55 A	102 A	298 A	520 A	725 A	559 A	453 A	489 A	501 A	569 A	646 A	641 A	690 A	786 A	761 A	616 A	414 A	390 A	393 A	221 A	128 A	10115
4	ALA	880		18.478	N	N	NB ON FROM A STREET	05/16/2011	MON	69 A	62 A	46 A	55 A	105 A	270 A	581 A	730 A	598 A	488 A	544 A	560 A	603 A	644 A	646 A	750 A	719 A	677 A	458 A	419 A	353 A	335 A	178 A	142 A	10032
							MON-THURS AVERAGE			76	46	44	58	112	290	572	739	604	487	527	548	589	646	649	735	752	756	605	444	395	381	241	150	10442
							ML UNION CITY- ALVARADO			1135	752	708	1151	3456	6896	7178	6540	5225	5594	6259	6192	6205	6368	6846	6496	7057	7263	5087	4444	3854	3415	2431	1767	112315
							ML HAYWARD- INDUSTRIAL			1322	762	723	1038	1819	3763	5693	6053	5467	4908	5398	5211	5706	5789	5534	5278	5889	5614	4130	5345	5546	4075	3146	2200	100406
							ML HAYWARD- A STREET			1864	1190	1045	1279	2275	4253	7332	7461	7448	7330	7595	7975	8339	8523	8585	8530	8722	8870	8523	8590	7570	6138	4171	2902	146507

Traffic Volumes Counts - Northbound

24 hour Period Hourly Counts

Dist	Cnty	Rte	Prefi	PM	Leg	Dir	Description	Date	Day	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24hr total
4	ALA	880		20.011	F	N	NB OFF TO HESPERIAN BLVD	05/19/2011	THU	127 A	67 A	60 A	56 A	91 A	172 A	317 A	516 A	500 A	480 A	499 A	552 A	595 A	600 A	703 A	725 A	729 A	711 A	698 A	690 A	565 A	560 A	390 A	240 A	10643
4	ALA	880		20.011	F	N	NB OFF TO HESPERIAN BLVD	05/18/2011	WED	136 A	59 A	41 A	66 A	82 A	173 A	305 A	463 A	504 A	493 A	493 A	575 A	636 A	654 A	717 A	678 A	689 A	669 A	712 A	710 A	588 A	480 A	334 A	239 A	10496
4	ALA	880		20.011	F	N	NB OFF TO HESPERIAN BLVD	05/17/2011	TUE	104 A	64 A	60 A	50 A	80 A	185 A	275 A	527 A	493 A	435 A	489 A	506 A	489 A	657 A	713 A	676 A	663 A	572 A	636 A	632 A	499 A	479 A	319 A	207 A	9810
4	ALA	880		20.011	F	N	NB OFF TO HESPERIAN BLVD	05/16/2011	MON	113 A	64 A	48 A	49 A	86 A	155 A	291 A	515 A	444 A	489 A	542 A	539 A	576 A	660 A	719 A	675 A	632 A	590 A	618 A	570 A	435 A	451 A	290 A	185 A	9736
							MON-THURS AVERAGE			120	64	52	55	85	171	297	505	485	474	506	543	574	643	713	689	678	636	666	651	522	493	333	218	10171
							ML UNION CITY- ALVARADO			1015	688	656	1095	3372	6725	6881	6035	4740	5120	5753	5649	5631	5725	6133	5807	6379	6627	4421	3794	3332	2923	2098	1549	102144
							ML HAYWARD- INDUSTRIAL			1202	698	670	983	1735	3592	5396	5548	4982	4433	4892	4668	5132	5146	4821	4590	5211	4978	3464	4695	5024	3583	2813	1982	90235
							ML HAYWARD- A STREET			1744	1127	992	1223	2190	4082	7035	6956	6963	6856	7089	7432	7765	7880	7872	7841	8044	8235	7857	7939	7048	5645	3838	2684	136336
4	ALA	880		20.294	F	N	NB OFF TO SB RTE 238	05/01/2008	THU	494 A	238 A	212 A	193 A	390 A	762 A	1448 A	1626 A	1630 A	1609 A	1441 A	1649 A	1657 A	1625 A	1651 A	1758 A	1745 A	1851 A	1814 A	1790 A	1737 A	1521 A	1227 A	733 A	30801
4	ALA	880		20.294	F	N	NB OFF TO SB RTE 238	04/30/2008	WED	381 A	224 A	218 A	172 A	330 A	782 A	1481 A	1689 A	1313 A	1565 A	1464 A	1657 A	1689 A	1650 A	1694 A	1709 A	1810 A	1815 A	1801 A	1781 A	1586 A	1537 A	1147 A	698 A	30193
4	ALA	880		20.294	F	N	NB OFF TO SB RTE 238	04/29/2008	TUE	442 A	257 A	217 A	215 A	409 A	793 A	1424 A	1689 A	1586 A	1755 A	1589 A	1580 A	1666 A	1581 A	1671 A	1748 A	1756 A	1785 A	1803 A	1746 A	1551 A	1473 A	1157 A	700 A	30593
4	ALA	880		20.294	F	N	NB OFF TO SB RTE 238	04/28/2008	MON	358 A	200 A	136 A	163 A	306 A	778 A	1434 A	1680 A	1714 A	1652 A	1560 A	1566 A	1677 A	1671 A	1674 A	1721 A	1760 A	1735 A	1765 A	1505 A	1676 A	1204 A	1032 A	672 A	29639
							MON-THURS AVERAGE			419	230	196	186	359	779	1447	1671	1561	1645	1514	1613	1672	1632	1673	1734	1768	1797	1796	1706	1638	1434	1141	701	30307
							ML UNION CITY- ALVARADO			596	458	460	910	3013	5946	5434	4364	3179	3474	4239	4036	3958	4093	4460	4073	4611	4831	2626	2088	1695	1489	957	848	71838
							ML HAYWARD- INDUSTRIAL			783	468	475	797	1376	2813	3949	3877	3421	2788	3379	3055	3460	3515	3149	2856	3443	3182	1669	2989	3386	2149	1672	1281	59928
							ML HAYWARD- A STREET			1325	897	797	1038	1832	3303	5589	5285	5402	5211	5576	5819	6093	6248	6200	6107	6276	6438	6061	6234	5411	4211	2697	1983	106030
4	ALA	880		20.42	N	N	NBON FR WB LEWELLING RD	08/04/2011	THU	50 A	28 A	42 A	86 A	204 A	376 A	535 A	561 A	434 A	453 A	434 A	439 A	489 A	587 A	582 A	555 A	550 A	446 A	441 A	399 A	497 A	532 A	551 A	549 A	9820
4	ALA	880		20.42	N	N	NBON FR WB LEWELLING RD	08/03/2011	WED	51 A	33 A	36 A	87 A	185 A	378 A	554 A	554 A	441 A	438 A	394 A	498 A	528 A	548 A	547 A	593 A	617 A	616 A	538 A	445 A	381 A	314 A	148 A	112 A	9036
4	ALA	880		20.42	N	N	NBON FR WB LEWELLING RD	08/02/2011	TUE	57 A	30 A	34 A	95 A	188 A	369 A	559 A	571 A	445 A	438 A	474 A	487 A	513 A	534 A	536 A	594 A	617 A	650 A	514 A	492 A	369 A	318 A	178 A	104 A	9166
4	ALA	880		20.42	N	N	NBON FR WB LEWELLING RD	08/01/2011	MON	67 A	47 A	56 A	99 A	172 A	367 A	531 A	566 A	402 A	404 A	412 A	447 A	517 A	589 A	551 A	585 A	601 A	594 A	487 A	434 A	347 A	225 A	140 A	96 A	8736
							MON-THURS AVERAGE			56	35	42	92	187	373	545	563	431	433	429	468	512	565	554	582	596	577	495	443	399	347	254	215	9190
							ML UNION CITY- ALVARADO			653	493	502	1001	3200	6319	5979	4927	3609	3908	4668	4504	4470	4658	5014	4655	5207	5407	3121	2531	2093	1836	1211	1064	81027
							ML HAYWARD- INDUSTRIAL			840	503	517	889	1563	3185	4494	4440	3852	3221	3807	3522	3972	4079	3703	3438	4039	3758	2164	3432	3785	2496	1927	1496	69118
							ML HAYWARD- A STREET			1381	931	839	1129	2019	3675	6133	5848	5833	5644	6004	6286	6605	6813	6754	6689	6872	7015	6556	6676	5809	4559	2952	2199	115219
4	ALA	880		20.686	F	N	NB OFF TO WASHIGNTON AVE.	08/04/2011	THU	114 A	68 A	49 A	62 A	81 A	149 A	256 A	452 A	717 A	322 A	314 A	465 A	544 A	446 A	587 A	552 A	533 A	678 A	682 A	585 A	491 A	405 A	323 A	195 A	9070
4	ALA	880		20.686	F	N	NB OFF TO WASHIGNTON AVE.	08/03/2011	WED	110 A	62 A	43 A	43 A	85 A	150 A	230 A	375 A	375 A	338 A	355 A	401 A	522 A	491 A	580 A	589 A	648 A	686 A	700 A	567 A	463 A	423 A	290 A	202 A	8728
4	ALA	880		20.686	F	N	NB OFF TO WASHIGNTON AVE.	08/02/2011	TUE	103 A	70 A	41 A	55 A	83 A	139 A	244 A	389 A	362 A	331 A	353 A	431 A	460 A	487 A	561 A	646 A	620 A	752 A	696 A	523 A	429 A	386 A	282 A	181 A	8624
4	ALA	880		20.686	F	N	NB OFF TO WASHIGNTON AVE.	08/01/2011	MON	85 A	64 A	50 A	50 A	74 A	132 A	239 A	341 A	375 A	303 A	361 A	409 A	463 A	482 A	546 A	619 A	645 A	683 A	700 A	480 A	410 A	359 A	280 A	165 A	8315
							MON-THURS AVERAGE			103	66	46	53	81	143	242	389	457	324	346	427	497	477	569	602	612	700	695	539	448	393	294	186	8684
							ML UNION CITY- ALVARADO			550	427	456	949	3119	6176	5736	4538	3152	3584	4322	4078	3973	4181	4446	4053	4596	4708	2426	1992	1645	1443	918	878	72343
							ML HAYWARD- INDUSTRIAL			737	437	471	836	1482	3043	4252	4050	3394	2898	3461	3096	3475	3603	3134	2836	3428	3059	1469	2893	3337	2103	1633	1311	60434
							ML HAYWARD- A STREET			1278	865	793	1077	1938	3533	5891	5459	5375	5321	5659	5860	6107	6336	6185	6088	6261	6315	5861	6137	5361	4165	2658	2013	106535
4	ALA	880		20.82	N	N	ASEG NB ON FROM WASHINGTON	09/25/2008	THU	71 A	40 A	60 A	77 A	162 A	371 A	650 A	996 A	662 A	486 A	476 A	464 A	490 A	491 A	515 A	627 A	603 A	570 A	547 A	458 A	388 A	328 A	244 A	131 A	9907
4	ALA	880		20.82	N	N	ASEG NB ON FROM WASHINGTON	09/24/2008	WED	68 A	40 A	55 A	72 A	169 A	344 A	695 A	934 A	626 A	467 A	425 A	465 A	506 A	502 A	532 A	588 A	485 A	563 A	523 A	426 A	318 A	302 A	205 A	118 A	9428
4	ALA	880		20.82	N	N	ASEG NB ON FROM WASHINGTON	09/23/2008	TUE	54 A	41 A	61 A	69 A	150 A	383 A	629 A	986 A	708 A	442 A	463 A	442 A	469 A	461 A	543 A	580 A	557 A	559 A	490 A	458 A	318 A	246 A	218 A	105 A	9432
4	ALA	880		20.82	N	N	ASEG NB ON FROM WASHINGTON	09/22/2008	MON	62 A	45 A	49 A	73 A	159 A	363 A	594 A	927 A	652 A	530 A	424 A	503 A	493 A	454 A	549 A	622 A	512 A	556 A	471 A	420 A	303 A	258 A	242 A	127 A	9388
							MON-THURS AVERAGE			64	42	56	73	160	365	642	961	662	481	447	469	490	477	535	604	539	562	508	441	332	284	227	120	9539
4	ALA	880		20.841	F	N	SEG NB OFF TO WASHINGTON	05/15/2008	THU	218 A	163 A	124 A	148 A	265 A	521 A	700 A	1263 A	826 C	792 C	886 C	896 C	880 C	960 C	1493 C	1775 C	1922 C	2028 C	1942 C	1674 C	1146 C	1054 C	620 C	367 C	22663
4	ALA	880		20.841	F	N	SEG NB OFF TO WASHINGTON	05/14/2008	WED	347 A	237 A	162 A	113 A	238 A	467 A	683 A	1054 A	1124 A	950 A	712 A	856 A	1080 A	1214 A	1374 A	1352 A	1619 A	1667 A	1523 A	1187 A	965 A	1053 A	683 A	381 A	21041
4	ALA	880		20.841	F	N	SEG NB OFF TO WASHINGTON	05/13/2008	TUE	413 A	270 A	189 A	188 A	262 A	336 A	398 A	731 A	833 A	682 A	727 A	809 A	931 A	945 A	1279 A	1369 A	1395 A	1460 A	1380 A	983 A	881 A	858 A	594 A	409 A	18322
4	ALA	880		20.841	F	N	SEG NB OFF TO WASHINGTON	05/12/2008	MON	144 A	66 A	66 A	101 A	152 A	283 A	429 A	816 A	786 A	644 A	751 A	916 A	955 A	1012 A	1318 A	1411 A	1501 A	1567 A	1392 A	1081 A	965 A	787 A	485 A	415 A	18043
							MON-THURS AVERAGE			281	184	135	138	229	402	553	966	892	767	769	869	962	1033	1366	1477	1609	1681	1559	1231	989	938	596	393	20017
4	ALA	880		20.876	N	N	NBON FR NB 238/WSHNGTON	04/24/2008	THU	397 A	255 A	352 A	535 A	1113 A	1963 A	2272 A	2412 A	2041 A	1609 A	1687 A	1670 A	1504 A	1192 A	1242 A	1401 A	1672 A	1820 A	1855 A	1364 A	1108 A	1044 A	856 A	521 A	31885
4	ALA	880		20.876	N	N	NBON FR NB 238/WSHNGTON	04/23/2008	WED	327 A	278 A	345 A	494 A	1087 A	1821 A	2103 A	2294 A	1950 A	1548 A	1512 A	1765 A	1847 A	1776 A	1783 A	1777 A	1368 A	1647 A	1809 A	1224 A	1100 A	966 A	762 A	557 A	32140
4	ALA	880		20.876	N	N	NBON FR NB 238/WSHNGTON	04/22/2008	TUE	341 A	245 A	330 A	515 A	1184 A	1833 A	2184 A	2400 A	1920 A	1640 A	1686 A	1570 A	1760 A	1864 A	1652 A	1699 A	1608 A	1694 A	1549 A	1107 A	1013 A	880 A	756 A	512 A	31942
4	ALA	880		20.876	N	N	NBON FR NB 238/WSHNGTON	04/21/2008	MON	291 A	241 A	270 A	484 A	1174 A	1811 A	2140 A	2147 A	1859 A	1518 A	1776 A	1841 A	1842 A	1785 A	1773 A	1602 A	1612 A	1667 A	1588 A	1286 A	1052 A	945 A	750 A	496 A	31950
							MON-THURS AVERAGE			339	255	324	507	1140	1857	2175	2313	1943	1579	1665	1712	1738	1654	1613	1620	1565	1707	1700	1245	1068	959	781	522	31979
							ML UNION CITY- ALVARADO			889	682	781	1456	4259	8033	7911	6851	5095	5163	5987	5789	5711	5835	6058	5673	6161	6415	4126	3237	2713	2402	1699	1399	104322
							ML HAYWARD- INDUSTRIAL			1076	692	795	1343	2622	4900	6426	6364	5337	4477	5127	4807	5213	5257	4747	4456	4993	4766	3169	4138	4405	3062	2414	1832	92413
							ML HAYWARD- A STREET			1617	1120	1117	1584	3078	5390	8066	7772	7318	6899	7324	7571	7846	7991	7798	7707	7826	8022	7562	7383	6429	5124	3439	2534	138514

Traffic Volumes Counts - Southbound

24 hour Period Hourly Counts

Dist	Cnty	Rte	Prefi	PM	Leg	Dir	Description	Date	Day	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24hr total
4	ALA	880		13.051	B	S	UNION CITY- ALVARADO/NILES RO	05/11/2017	THU	1346 A	960 A	793 A	1020 A	1714 A	3557 A	5661 A	6159 A	5975 C	5683 C	5538 C	5484 C	6081 C	6730 C	6186 C	5813 C	5399 C	5693 C	5230 C	6267 C	5897 C	4811 C	3830 C	2253 C	108080
4	ALA	880		13.051	B	S	UNION CITY- ALVARADO/NILES RO	05/10/2017	WED	1302 A	875 A	805 A	941 A	1691 A	3541 A	5736 A	6276 A	6048 A	5894 A	5574 A	5801 A	6058 A	6673 A	6698 A	5867 A	5749 A	6178 A	6554 A	6424 A	5696 A	5016 A	3628 A	2260 A	111285
4	ALA	880		13.051	B	S	UNION CITY- ALVARADO/NILES RO	05/09/2017	TUE	1257 A	817 A	578 A	923 A	1702 A	3434 A	5768 A	6328 A	6208 A	5956 A	5350 A	5589 A	5767 A	6404 A	6679 A	6280 A	5768 A	6081 A	6377 A	5832 A	5441 A	4707 A	3396 A	1970 A	108612
4	ALA	880		13.051	B	S	UNION CITY- ALVARADO/NILES RO	05/08/2017	MON	1104 A	729 A	664 A	908 A	1595 A	3311 A	5427 A	6068 A	6020 A	5602 A	5374 A	5379 A	5736 A	6209 A	6929 A	6243 A	6212 A	6111 A	6027 A	5662 A	4995 A	4337 A	1986 A	1882 A	104510
							MON-THURS AVERAGE			1252	845	710	948	1676	3461	5648	6208	6063	5784	5459	5563	5911	6504	6623	6051	5782	6016	6047	6046	5507	4718	3210	2091	108122
4	ALA	880		13.073	N	S	SB ON FROM WB ALVARADO-NILE:	09/21/2011	WED	23 A	13 A	15 A	21 A	49 A	141 A	227 A	342 A	283 A	171 A	202 A	248 C	236 C	260 C	304 C	338 C	336 C	310 C	243 C	168 C	164 C	116 C	96 C	80 C	4386
4	ALA	880		13.073	N	S	SB ON FROM WB ALVARADO-NILE:	09/20/2011	TUE	19 A	11 A	18 A	23 A	40 A	137 A	209 A	322 A	265 A	182 A	228 A	251 A	241 A	251 A	290 A	342 A	280 A	316 A	247 A	183 A	144 A	132 A	78 A	73 A	4282
4	ALA	880		13.073	N	S	SB ON FROM WB ALVARADO-NILE:	09/19/2011	MON	11 A	12 A	16 A	13 A	46 A	132 A	204 A	346 A	291 A	198 A	234 A	250 A	255 A	228 A	315 A	344 A	280 A	334 A	224 A	193 A	114 A	107 A	64 A	59 A	4270
4	ALA	880		13.073	N	S	SB ON FROM WB ALVARADO-NILE:	09/15/2011	THU	17 A	19 A	25 A	27 A	50 A	146 A	212 A	368 A	311 A	224 A	259 A	294 A	251 A	244 A	286 A	367 A	291 A	314 A	237 A	197 A	157 A	124 A	88 A	83 A	4591
							MON-THURS AVERAGE			18	14	19	21	46	139	213	345	288	194	231	261	246	246	299	348	297	319	238	185	145	120	82	74	4382
							ML UNION CITY- ALVARADO			1235	832	692	927	1629	3322	5435	5863	5775	5590	5228	5303	5665	6258	6324	5703	5485	5697	5809	5861	5363	4598	3129	2018	103740
							ML HAYWARD- INDUSTRIAL			822	603	541	854	3231	5332	4897	4457	4589	5392	5563	4833	5431	5113	5354	4001	4929	4449	3321	3580	2830	2365	1668	1393	85545
							ML HAYWARD- TENNYSON			1133	763	702	1055	3083	5646	5167	5059	4933	5124	5392	5309	5332	5062	5178	5198	5738	5873	5314	4119	3354	3117	2510	1986	96146
4	ALA	880		13.235	F	S	SB OFF TO WB ALVARADO	07/02/2008	WED	228 A	118 A	94 A	103 A	165 A	381 A	462 A	537 A	564 A	657 A	665 C	815 C	859 C	894 C	896 C	877 C	1045 C	1165 C	1152 C	893 C	811 C	710 C	526 C	313 C	14930
4	ALA	880		13.235	F	S	SB OFF TO WB ALVARADO	07/01/2008	TUE	200 A	106 A	87 A	110 A	147 A	365 A	477 A	552 A	586 A	598 A	710 A	805 A	869 A	911 A	876 A	914 A	1008 A	1107 A	1141 A	934 A	780 A	702 A	476 A	364 A	14825
4	ALA	880		13.235	F	S	SB OFF TO WB ALVARADO	06/30/2008	MON	197 A	103 A	91 A	84 A	144 A	345 A	406 A	514 A	563 A	611 A	677 A	766 A	851 A	932 A	911 A	918 A	1030 A	1124 A	1030 A	1014 A	796 A	703 A	460 A	349 A	14619
4	ALA	880		13.235	F	S	SB OFF TO WB ALVARADO	06/26/2008	THU	209 A	143 A	82 A	124 A	165 A	342 A	504 A	575 A	545 A	508 A	522 A	718 A	786 A	811 A	820 A	806 A	1085 E	1148 E	1111 E	898 A	807 A	686 A	552 A	431 A	14378
							MON-THURS AVERAGE			209	118	89	105	155	358	462	545	565	594	644	776	841	887	876	879	1042	1136	1109	935	799	700	504	364	14688
							ML UNION CITY- ALVARADO			1443	949	780	1032	1785	3680	5897	6408	6340	6184	5872	6079	6506	7145	7200	6582	6527	6833	6918	6796	6161	5298	3632	2382	118428
							ML HAYWARD- INDUSTRIAL			1030	721	629	959	3386	5690	5359	5002	5153	5986	6207	5609	6272	6000	6230	4880	5971	5585	4430	4514	3629	3065	2171	1757	100233
							ML HAYWARD- A STREET			1341	881	791	1160	3238	6004	5630	5603	5497	5718	6035	6085	6173	5949	6054	6077	6780	7009	6423	5054	4152	3817	3014	2351	110834
4	ALA	880		13.554	N	S	SB ON FR WHIPPLE RD	05/22/2008	THU	174 A	92 A	93 A	75 A	104 A	317 A	557 A	646 A	709 A	651 A	667 A	809 A	876 A	802 A	980 A	983 A	1068 A	1093 A	946 A	623 A	551 A	443 A	343 A	282 A	13884
4	ALA	880		13.554	N	S	SB ON FR WHIPPLE RD	05/21/2008	WED	164 A	95 A	100 A	57 A	122 A	329 A	525 A	716 A	701 A	674 A	753 A	824 A	846 A	918 A	921 A	1024 A	1032 A	1177 A	1061 A	742 A	522 A	470 A	302 A	243 A	14318
4	ALA	880		13.554	N	S	SB ON FR WHIPPLE RD	05/20/2008	TUE	133 A	78 A	70 A	62 A	116 A	307 A	514 A	696 A	636 A	717 A	705 A	804 A	843 A	814 A	953 A	988 A	1104 A	1118 A	1043 A	695 A	556 A	416 A	289 A	223 A	13880
4	ALA	880		13.554	N	S	SB ON FR WHIPPLE RD	05/19/2008	MON	105 A	57 A	37 A	50 A	101 A	303 A	516 A	671 A	672 A	590 A	629 A	776 A	800 A	802 A	899 A	1049 A	1075 A	1085 A	876 A	599 A	537 A	416 A	267 A	182 A	13094
							MON-THURS AVERAGE			144	81	75	61	111	314	528	682	680	658	689	803	841	834	938	1011	1070	1118	982	665	542	436	300	233	13794
							ML UNION CITY- ALVARADO			1299	869	705	971	1674	3366	5369	5726	5660	5526	5183	5275	5665	6311	6262	5571	5458	5715	5936	6131	5620	4862	3332	2149	104634
							ML HAYWARD- INDUSTRIAL			886	640	554	898	3275	5376	4831	4319	4474	5328	5518	4805	5431	5166	5292	3869	4902	4467	3448	3850	3087	2629	1871	1524	86439
							ML HAYWARD- TENNYSON			1197	800	716	1099	3127	5690	5102	4921	4818	5060	5347	5282	5332	5115	5116	5066	5710	5890	5441	4389	3611	3381	2714	2118	97040
4	ALA	880		13.724	F	S	SB OFF TO WHIPPLE RD	05/22/2008	THU	180 A	112 A	107 A	136 A	360 A	692 A	742 A	838 A	846 A	814 A	845 A	932 A	916 A	965 A	939 A	879 A	840 A	835 A	794 A	754 A	714 A	618 A	419 A	298 A	15575
4	ALA	880		13.724	F	S	SB OFF TO WHIPPLE RD	05/21/2008	WED	174 A	118 A	88 A	126 A	358 A	712 A	770 A	876 A	799 A	846 A	906 A	925 A	898 A	1038 A	939 A	747 A	696 A	713 A	738 A	811 A	655 A	538 A	395 A	279 A	15145
4	ALA	880		13.724	F	S	SB OFF TO WHIPPLE RD	05/20/2008	TUE	197 A	110 A	96 A	130 A	348 A	655 A	805 A	794 A	769 A	862 A	870 A	881 A	876 A	916 A	941 A	834 A	841 A	806 A	759 A	762 A	653 A	534 A	372 A	279 A	15090
4	ALA	880		13.724	F	S	SB OFF TO WHIPPLE RD	05/19/2008	MON	158 A	107 A	85 A	113 A	332 A	627 A	756 A	766 A	817 A	776 A	889 A	839 A	654 A	917 A	1001 A	873 A	890 A	780 A	800 A	690 A	582 A	535 A	360 A	245 A	14592
							MON-THURS AVERAGE			177	112	94	126	350	672	768	819	808	825	878	894	836	959	955	833	817	784	773	754	651	556	387	275	15101
							ML UNION CITY- ALVARADO			1477	980	799	1098	2023	4038	6138	6544	6468	6350	6061	6170	6501	7270	7217	6404	6274	6499	6709	6885	6271	5418	3718	2425	119734
							ML HAYWARD- INDUSTRIAL			1064	752	648	1025	3625	6047	5600	5138	5282	6152	6396	5700	6267	6125	6247	4702	5718	5251	4221	4604	3738	3185	2257	1800	101539
							ML HAYWARD- TENNYSON			1375	912	810	1226	3477	6362	5870	5740	5625	5884	6224	6176	6168	6074	6071	5899	6527	6674	6214	5144	4262	3937	3100	2393	112140
4	ALA	880		14.524	N	S	SB ON FR INDUST PKWY	05/22/2008	THU	44 A	31 A	30 A	50 A	88 A	340 A	610 A	649 A	576 A	438 A	419 A	422 A	384 A	476 A	569 A	667 A	599 A	682 A	591 A	350 A	229 A	183 A	139 A	94 A	8660
4	ALA	880		14.524	N	S	SB ON FR INDUST PKWY	05/21/2008	WED	54 A	28 A	22 A	55 A	94 A	366 A	493 A	583 A	473 A	413 A	360 A	425 A	430 A	483 A	496 A	592 A	582 A	800 A	653 A	357 A	208 A	163 A	156 A	95 A	8381
4	ALA	880		14.524	N	S	SB ON FR INDUST PKWY	05/20/2008	TUE	50 A	30 A	31 A	41 A	82 A	337 A	465 A	582 A	500 A	407 A	383 A	377 A	357 A	437 A	492 A	604 A	666 A	666 A	544 A	394 A	216 A	201 A	132 A	80 A	8074
4	ALA	880		14.524	N	S	SB ON FR INDUST PKWY	05/19/2008	MON	41 A	17 A	28 A	36 A	82 A	326 A	435 A	634 A	501 A	391 A	363 A	378 A	424 A	492 A	536 A	627 A	582 A	658 A	513 A	304 A	214 A	184 A	111 A	73 A	7950
							MON-THURS AVERAGE			47	27	28	46	87	342	501	612	513	412	381	401	399	472	523	623	607	702	575	351	217	183	135	86	8266
							ML UNION CITY- ALVARADO			1429	954	771	1052	1937	3695	5637	5932	5956	5938	5680	5769	6102	6798	6694	5782	5667	5797	6134	6534	6054	5236	3584	2339	111468
							ML HAYWARD- INDUSTRIAL			1016	725	620	979	3538	5705	5099	4526	4769	5740	6014	5299	5868	5653	5723	4079	5111	4549	3646	4253	3522	3002	2123	1714	93273
							ML HAYWARD- TENNYSON			1327	886	782	1180	3390	6019	5369	5128	5113	5472	5843	5776	5769	5602	5548	5277	5920	5972	5639	4792	4045	3755	2966	2308	103874
4	ALA	880		14.537	X	S	HAYWARD- INDUSTRIAL PARKWAY	07/26/2018	THU	1060 A	821 A	758 A	1063 A	3659 A	6050 A	5601 A	5338 A	5479 A	6382 A	6596 A	6196 A	6166 A	6264 A	5954 A	5556 A	6135 A	2945 A	A	3817 A	3642 A	3302 A	2308 A	1916 A	97008
4	ALA	880		14.537	X	S	HAYWARD- INDUSTRIAL PARKWAY	07/25/2018	WED	1171 A	773 A	638 A	1039 A	3689 A	6114 A	5657 A	5230 A	5354 A	6122 A	6351 A	6358 A	6503 A	6108 A	6518 A	2678 A	4965 A	6101 A	6127 A	5100 A	3879 A	3209 A	2325 A	1672 A	103681
4	ALA	880		14.537	X	S	HAYWARD- INDUSTRIAL PARKWAY	07/24/2018	TUE	972 A	688 A	643 A	1078 A	3664 A	6164 A	5683 A	4995 A	4988 A	6072 A	6357 A	6122 A	6298 A	6165 A	6207 A	5454 A	6068 A	6033 A	5463 A	4876 A	3855 A	3370 A	2342 A	1846 A	105403
4	ALA	880		14.537	X	S	HAYWARD- INDUSTRIAL PARKWAY	07/23/2018	MON	1051 A	725 A	553 A	918 A	3487 A	5861 A	5457 A	4988 A	5305 A	6032 A	6278 A	4122 A	6101 A	5964 A	6307 A	5119 A	5705 A	5923 A	5294 A	4622 A	3577 A	2858 A	2054 A	1764 A	100065
							MON-THURS AVERAGE			1064	752	648	1025	3625	6047	5600	5138	5282	6152	6396	5700	6267	6125	6247	4702	5718	5251	4221	4604	3738	3185	2257	1800	101539
4	ALA	880		14.722	F	S	SB OFF TO INDUST PKWY	05/26/2008	MON	129 A	87 A	82 A	55 A	51 A	57 A	82 A	122 A	186 A	206 A	282 A	328 A	381 A	379 A	358 A	404 A	362 A	328 A	343 A	310 A	289 A	294 A	253 A	182 A	5550
4	ALA	880		14.722	F	S	SB OFF TO INDUST PKWY	05/22/2008	THU	136 A	95 A	89 A	117 A	292 A	488 A	704 A	667 A	765 A	666 A	647 A	622 A	736 A	753 A	708 A	673 A	622 A	594 A	576 A	466 A	446 A	423 A	316 A	246 A	11847
4	ALA	880		14.722	F	S	SB OFF TO INDUST PKWY	05/21/2008	WED	138 A	109 A	95 A	116 A	306 A	473 A	700 A	792 A	850 A	890 A	678 A	630 A	697 A	734 A	707 A	663 A	740 A	713 A	664 A	585 A	435 A	362 A	316 A	238 A	12631
4	ALA	880		14.722	F	S	SB OFF TO INDUST PKWY	05/20/2008	TUE	149 A	93 A	87 A	123 A	273 A	458 A	680 A	688 A	804 A	724 A	658 A	639 A	662 A	705 A	738 A	741 A	689 A	635 A	576 A	464 A	432 A	420 A	281 A	238 A	11957
4	ALA	880		14.722	F	S	SB OFF TO INDUST PKWY	05/19/2008	MON	95 A	78 A	60 A	80 A	260 A	393 A	639 A	667 A	688 A	624 A	654 A	717 A	586 A	570 A	703 A	735 A	694 A	604 A	573 A	455 A	446 A	356 A	289 A	211 A	11177
							MON-THURS AVERAGE			130	94	83	109	283	453	681	704	777	726	659	652	670	691	714	703	686	637	597	493	440	390	301	233	11903
							ML UNION CITY- ALVARADO			1559	1048	854	1161	2220	4148	6318	6636	6732	6664	6339	6421	6772	7489	7408	6485	6353	6434	6731	7027	6494	5626	3884	2572	123371
							ML HAYWARD- INDUSTRIAL			1146	819	703	1088	3821	6158	5780	5229	5546	6466	6674	5951	6539	6344	6437	4782	5797	5186	4243	4745	3961	3392	2423	1947	105176
							ML HAYWARD- TENNYSON			1457	979	865	1289	3673	6472	6050	5831	5890	6198	6502	6428	6439	6292	6262	5980	6606	6609	6236	5285	4485	4145	3266	2541	115777

Traffic Volumes Counts - Southbound

Dist	Cnty	Rte	Prefi	PM	Leg	Dir	Description	Date	Day	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24hr total
										24 hour Period Hourly Counts																								
4	ALA	880		15.463	N	S	SB ON FR TENNYSON	09/01/2011	THU	122 A	66 A	73 A	103 A	208 A	500 A	374 A	408 A	345 A	675 A	593 A	635 A	701 A	707 A	733 A	401 A	376 A	408 A	418 A	648 A	475 A	468 A	333 A	360 A	10130
4	ALA	880		15.463	N	S	SB ON FR TENNYSON	08/31/2011	WED	96 A	62 A	72 A	100 A	182 A	520 A	441 A	397 A	386 A	633 A	575 A	632 A	696 A	775 A	711 A	431 A	365 A	378 A	383 A	621 A	503 A	422 A	301 A	233 A	9915
4	ALA	880		15.463	N	S	SB ON FR TENNYSON	08/30/2011	TUE	104 A	63 A	67 A	112 A	174 A	505 A	365 A	379 A	421 A	591 A	535 A	607 A	667 A	701 A	697 A	440 A	406 A	379 A	417 A	595 A	503 A	433 A	245 A	210 A	9616
4	ALA	880		15.463	N	S	SB ON FR TENNYSON	08/29/2011	MON	161 A	112 A	78 A	125 A	227 A	492 A	388 A	442 A	408 A	578 A	546 A	638 A	702 A	714 A	665 A	420 A	426 A	366 A	407 A	579 A	442 A	376 A	315 A	215 A	9822
							MON-THURS AVERAGE			121	76	73	110	198	504	392	407	390	619	562	628	692	724	702	423	393	383	406	611	481	425	299	255	9871
							ML UNION CITY- ALVARADO			1438	972	782	1051	2022	3644	5926	6229	6342	6045	5777	5793	6081	6765	6706	6062	5960	6051	6325	6416	6013	5201	3586	2318	113500
							ML HAYWARD- INDUSTRIAL			1025	743	631	978	3623	5654	5388	4823	5156	5847	6111	5323	5847	5620	5736	4359	5404	4803	3837	4134	3481	2968	2125	1693	95305
							ML HAYWARD- TENNYSON			1336	904	792	1179	3475	5968	5658	5425	5500	5579	5940	5800	5748	5568	5560	5557	6213	6226	5830	4674	4004	3720	2968	2287	105906
4	ALA	880		15.548	N	S	SEG SB ON FR EB TENNYSON	09/01/2011	THU	65 A	28 A	40 A	59 A	127 A	342 A	131 A	108 A	126 A	389 A	300 A	303 A	327 A	393 A	344 A	166 A	161 A	157 A	171 A	366 A	273 A	244 A	147 A	108 A	4875
4	ALA	880		15.548	N	S	SEG SB ON FR EB TENNYSON	08/31/2011	WED	48 A	33 A	41 A	62 A	114 A	350 A	204 A	119 A	161 A	358 A	286 A	308 A	317 A	360 A	351 A	196 A	140 A	159 A	151 A	358 A	280 A	233 A	159 A	100 A	4888
4	ALA	880		15.548	N	S	SEG SB ON FR EB TENNYSON	08/30/2011	TUE	50 A	27 A	36 A	66 A	108 A	348 A	140 A	123 A	186 A	319 A	269 A	326 A	346 A	351 A	350 A	191 A	177 A	161 A	148 A	334 A	298 A	231 A	142 A	84 A	4811
4	ALA	880		15.548	N	S	SEG SB ON FR EB TENNYSON	08/29/2011	MON	62 A	30 A	32 A	61 A	103 A	335 A	177 A	158 A	175 A	295 A	277 A	310 A	372 A	365 A	323 A	165 A	168 A	163 A	159 A	323 A	250 A	195 A	182 A	95 A	4775
							MON-THURS AVERAGE			56	30	37	62	113	344	163	127	162	340	283	312	341	367	342	180	162	160	157	345	275	226	158	97	4837
4	ALA	880		15.549	N	S	SEG SB ON FR WB TENNYSON	09/01/2011	THU	57 A	38 A	33 A	44 A	81 A	158 A	243 A	300 A	219 A	286 A	293 A	332 A	374 A	314 A	389 A	235 A	215 A	251 A	247 A	282 A	202 A	224 A	186 A	252 A	5255
4	ALA	880		15.549	N	S	SEG SB ON FR WB TENNYSON	08/31/2011	WED	48 A	29 A	31 A	38 A	68 A	170 A	237 A	278 A	225 A	275 A	289 A	324 A	379 A	415 A	360 A	235 A	225 A	219 A	232 A	263 A	223 A	189 A	142 A	133 A	5027
4	ALA	880		15.549	N	S	SEG SB ON FR WB TENNYSON	08/30/2011	TUE	54 A	36 A	31 A	46 A	66 A	157 A	225 A	256 A	235 A	272 A	266 A	281 A	321 A	350 A	347 A	249 A	229 A	218 A	269 A	261 A	205 A	202 A	103 A	126 A	4805
4	ALA	880		15.549	N	S	SEG SB ON FR WB TENNYSON	08/29/2011	MON	99 A	82 A	46 A	64 A	124 A	157 A	211 A	284 A	233 A	283 A	269 A	328 A	330 A	349 A	342 A	255 A	258 A	203 A	248 A	256 A	192 A	181 A	133 A	120 A	5047
							MON-THURS AVERAGE			65	46	35	48	85	161	229	280	228	279	279	316	351	357	360	244	232	223	249	266	206	199	141	158	5034
4	ALA	880		15.645	B	S	HAYWARD- TENNYSON ROAD	08/07/2017	MON	1479 A	904 A	859 A	1174 A	3572 A	6274 A	5937 A	5954 A	5886 A	6420 A	6031 A	6145 A	6264 A	6251 A	6416 A	5688 A	6467 A	6457 A	6260 A	4902 A	4091 A	3707 A	2732 A	2039 A	111909
4	ALA	880		15.645	B	S	HAYWARD- TENNYSON ROAD	08/03/2017	THU	1650 A	1192 A	1013 A	1469 A	3780 A	6449 A	5949 A	5906 A	5920 A	6612 A	6726 A	6573 A	6609 A	5996 A	5643 A	6229 A	6691 A	6631 A	6415 A	5257 A	4562 A	4030 A	3192 A	2561 A	117055
4	ALA	880		15.645	B	S	HAYWARD- TENNYSON ROAD	08/02/2017	WED	1408 A	973 A	772 A	1270 A	3690 A	6616 A	6190 A	5688 A	5764 A	6514 A	6704 A	6552 A	6428 A	6604 A	6452 A	6201 A	6642 A	6705 A	6281 A	5355 A	4722 A	4192 A	3635 A	3129 A	118487
4	ALA	880		15.645	B	S	HAYWARD- TENNYSON ROAD	08/01/2017	TUE	1290 A	848 A	815 A	1243 A	3650 A	6550 A	6123 A	5776 A	5988 A	5245 A	6547 A	6441 A	6455 A	6318 A	6535 A	5800 A	6623 A	6642 A	5988 A	5625 A	4564 A	4650 A	3505 A	2435 A	115656
							MON-THURS AVERAGE			1457	979	865	1289	3673	6472	6050	5831	5890	6198	6502	6428	6439	6292	6262	5980	6606	6609	6236	5285	4485	4145	3266	2541	115777
4	ALA	880		15.773	F	S	SEG SB OFF TO WB TENNYSON RI	05/22/2008	THU	53 A	43 A	40 A	39 A	63 A	107 A	212 A	343 A	331 A	360 A	361 A	318 A	324 A	361 A	372 A	423 A	321 A	275 A	260 A	254 A	220 A	223 A	158 A	154 A	5615
4	ALA	880		15.773	F	S	SEG SB OFF TO WB TENNYSON RI	05/21/2008	WED	54 A	36 A	32 A	32 A	62 A	109 A	233 A	349 A	394 A	343 A	332 A	281 A	331 A	363 A	372 A	324 A	277 A	243 A	250 A	263 A	185 A	183 A	155 A	136 A	5339
4	ALA	880		15.773	F	S	SEG SB OFF TO WB TENNYSON RI	05/20/2008	TUE	65 A	38 A	25 A	28 A	65 A	121 A	238 A	339 A	289 A	345 A	291 A	319 A	304 A	383 A	366 A	391 A	308 A	311 A	290 A	194 A	191 A	208 A	161 A	132 A	5402
4	ALA	880		15.773	F	S	SEG SB OFF TO WB TENNYSON RI	05/19/2008	MON	59 A	36 A	24 A	28 A	44 A	101 A	210 A	321 A	356 A	371 A	332 A	312 A	180 A	301 A	408 A	417 A	322 A	278 A	278 A	232 A	209 A	183 A	145 A	152 A	5299
							MON-THURS AVERAGE			58	38	30	32	59	110	223	338	343	355	329	308	285	352	380	389	307	277	270	236	201	199	155	144	5414
4	ALA	880		15.774	F	S	SEG SB OFF TO EB TENNYSON	09/01/2011	THU	116 A	82 A	42 A	35 A	49 A	77 A	154 A	279 A	317 A	357 A	338 A	394 A	412 A	450 A	457 A	487 A	530 A	495 A	523 A	543 A	497 A	375 A	272 A	221 A	7502
4	ALA	880		15.774	F	S	SEG SB OFF TO EB TENNYSON	08/31/2011	WED	103 A	211 A	204 A	171 A	184 A	81 A	167 A	286 A	338 A	354 A	330 A	388 A	416 A	422 A	443 A	466 A	449 A	518 A	545 A	520 A	426 A	409 A	266 A	194 A	7891
4	ALA	880		15.774	F	S	SEG SB OFF TO EB TENNYSON	08/30/2011	TUE	120 A	57 A	44 A	36 A	43 A	94 A	152 A	251 A	230 A	310 A	319 A	365 A	382 A	424 A	506 A	479 A	520 A	568 A	505 A	496 A	422 A	375 A	255 A	178 A	7131
4	ALA	880		15.774	F	S	SEG SB OFF TO EB TENNYSON	08/29/2011	MON	160 A	59 A	35 A	36 A	37 A	80 A	148 A	287 A	257 A	234 A	268 A	376 A	406 A	413 A	455 A	476 A	506 A	488 A	521 A	501 A	421 A	340 A	258 A	189 A	6951
							MON-THURS AVERAGE			125	102	81	70	78	83	155	276	286	314	314	381	404	427	465	477	501	517	524	515	442	375	263	196	7369
4	ALA	880		15.846	F	S	SB OFF TO TENNYSON RD	09/01/2011	THU	302 A	210 A	171 A	172 A	108 A	182 A	397 A	585 A	700 A	732 A	723 A	742 A	702 A	828 A	919 A	855 A	736 A	726 A	776 A	772 A	728 A	650 A	609 A	389 A	13714
4	ALA	880		15.846	F	S	SB OFF TO TENNYSON RD	08/31/2011	WED	161 A	248 A	228 A	201 A	223 A	198 A	420 A	591 A	725 A	748 A	733 A	729 A	783 A	818 A	900 A	857 A	742 A	744 A	774 A	838 A	649 A	717 A	676 A	526 A	14229
4	ALA	880		15.846	F	S	SB OFF TO TENNYSON RD	08/30/2011	TUE	159 A	87 A	80 A	63 A	76 A	204 A	390 A	544 A	578 A	658 A	689 A	735 A	722 A	815 A	920 A	878 A	808 A	799 A	772 A	757 A	620 A	523 A	414 A	265 A	12556
4	ALA	880		15.846	F	S	SB OFF TO TENNYSON RD	08/29/2011	MON	237 A	124 A	76 A	71 A	63 A	111 A	249 A	400 A	352 A	385 A	425 A	576 A	653 A	655 A	746 A	761 A	732 A	706 A	747 A	712 A	642 A	514 A	437 A	306 A	10680
							MON-THURS AVERAGE			215	167	139	127	118	174	364	530	589	631	643	696	715	779	871	838	755	744	767	770	660	601	534	372	12795
							ML UNION CITY- ALVARADO			1653	1139	920	1178	2139	3818	6290	6759	6931	6675	6419	6489	6796	7544	7577	6899	6715	6795	7092	7186	6673	5802	4120	2689	126295
							ML HAYWARD- INDUSTRIAL			1240	911	769	1105	3741	5828	5752	5353	5745	6477	6754	6019	6562	6399	6607	5197	6159	5547	4604	4904	4140	3569	2659	2064	108100
							ML HAYWARD- TENNYSON			1551	1071	931	1306	3593	6142	6022	5955	6088	6209	6582	6495	6463	6347	6431	6394	6967	6970	6597	5444	4664	4321	3502	2658	118701
4	ALA	880		16.43	N	S	SB ON FR RTE 92\JACKSON	09/29/2008	MON	201 A	113 A	106 A	99 A	275 A	790 A	1146 A	1143 A	984 A	1130 A	1194 A	1127 A	1233 A	1349 A	1365 A	1179 A	1151 A	1266 A	1184 A	1094 A	939 A	708 A	587 A	361 A	20724
4	ALA	880		16.43	N	S	SB ON FR RTE 92\JACKSON	09/25/2008	THU	260 A	147 A	119 A	112 A	299 A	831 A	1210 A	1272 A	1461 A	1729 A	1287 A	1270 A	1254 A	1398 A	1366 A	1161 A	1027 A	1155 A	1294 A	1195 A	983 A	888 A	739 A	406 A	22863
4	ALA	880		16.43	N	S	SB ON FR RTE 92\JACKSON	09/24/2008	WED	187 A	130 A	110 A	122 A	271 A	814 A	1220 A	1191 A	1114 A	1161 A	1173 A	1269 A	1389 A	1302 A	1338 A	1232 A	1141 A	1142 A	1258 A	1219 A	970 A	874 A	635 A	388 A	21650
4	ALA	880		16.43	N	S	SB ON FR RTE 92\JACKSON	09/23/2008	TUE	175 A	77 A	80 A	92 A	152 A	772 A	1200 A	1200 A	1089 A	1193 A	1229 A	1138 A	1309 A	1390 A	1291 A	1161 A	1078 A	1210 A	1255 A	1138 A	860 A	752 A	584 A	371 A	20796
							MON-THURS AVERAGE			206	117	104	106	249	802	1194	1202	1162	1303	1221	1201	1296	1360	1340	1183	1099	1193	1248	1162	938	806	636	382	21508
							ML UNION CITY- ALVARADO			1447	1022	817	1072	1890	3016	5096	5558	5769	5372	5198	5288	5500	6184	6237	5716	5615	5601	5844	6024	5735	4997	3484	2308	104787
							ML HAYWARD- INDUSTRIAL			1034	794	666	999	3492	5026	4558	4151	4583	5174	5533	4818	5266	5039	5267	4014	5059	4353	3356	3743	3202	2763	2023	1683	86592
							ML HAYWARD- TENNYSON			1345	954	827	1200	3344	5340	4828	4753	4926	4906	5362	5294	5166	4987	5091	5211	5868	5777	5349	4282	3726	3516	2865	2277	97193
4	ALA	880		16.945	F	S	SB OFF TO RTE 92/JACKSON	09/25/2008	THU	314 A	222 A	256 A	338 A	862 A	1813 A	2192 A	2788 A	1835 A	2316 A	2298 A	1980 A	1936 A	1984 A	2034 A	1997 A	2118 A	2199 A	1935 A	1530 A	1227 A	1164 A	790 A	566 A	36694
4	ALA	880		16.945	F	S	SB OFF TO RTE 92/JACKSON	09/24/2008	WED	252 A	181 A	210 A	377 A	857 A	1768 A	2172 A	3204 A	2802 A	2892 A	2059 A	1678 A	1755 A	1982 A	1966 A	1932 A	2059 A	2232 A	1849 A	1471 A	1188 A	1097 A	766 A	503 A	37252
4	ALA	880		16.945	F	S	SB OFF TO RTE 92/JACKSON	09/23/2008	TUE	1145 A	820 A	875 A	781 A	873 A	1810 A	2118 A	2418 A	2017 A	2031 A	1929 A	1898 A	1796 A	1849 A	1967 A	1991 A	2034 A	2033 A	1994 A	1397 A	1190 A	1039 A	662 A	467 A	37134
4	ALA	880		16.945	F	S	SB OFF TO RTE 92/JACKSON	09/22/2008	MON	332 A	213 A	209 A	340 A	912 A	1730 A	2328 A	3463 A	2171 A	3237 A	2113 A	1891 A	1853 A	1852 A	1897 A	1846 A	1988 A	2196 A	1803 A	1310 A	1088 A	1018 A	695 A	595 A	37080
							MON-THURS AVERAGE			511	359	388	459	876	1780	2203	2968	2206	2619	2100	1862	1835	1917	1966	1942	2050	2165	1895	1427	1173	1080	728	533	37040
							ML UNION CITY- ALVARADO			1958	1381	1204	1531	2766	4796	7298	8526	7975	7991	7298	7149	7335	8101	8203	7658	7665	7766	7740	7451	6908	6076	4212	2841	141827
							ML HAYWARD- INDUSTRIAL			1545	1153	1053	1458	4368	6806	6760	7120	6789	7793	7633	6679	7101	6956	7233	5955	7109	6518	5252	5170	4376	3843	2751	2216	123632
							ML HAYWARD- TENNYSON			1856	1313	1215	1659	4220	7120	7030	7721	7133	7525	7461	7156	7001	6904	7057	7153	7918	7942	7245	5709	4899	4595	3594	2809	134233

Traffic Volumes Counts - Southbound

Dist	Cnty	Rte	Prefi	PM	Leg	Dir	Description	Date	Day	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24hr total
										24 hour Period Hourly Counts																								
4	ALA	880		17.349	N	S	SB ON FR WINTON	09/01/2011	THU	76 A	42 A	40 A	30 A	86 A	244 A	404 A	740 A	646 A	533 A	558 A	642 A	686 A	661 A	690 A	723 A	761 A	691 A	541 A	464 A	473 A	417 A	200 A	135 A	10483
4	ALA	880		17.349	N	S	SB ON FR WINTON	08/31/2011	WED	59 A	43 A	25 A	43 A	144 A	268 A	462 A	802 A	720 A	585 A	559 A	637 A	683 A	703 A	722 A	714 A	659 A	637 A	528 A	497 A	426 A	352 A	173 A	136 A	10577
4	ALA	880		17.349	N	S	SB ON FR WINTON	08/30/2011	TUE	105 A	78 A	50 A	57 A	85 A	225 A	437 A	767 A	908 A	853 A	578 A	604 A	715 A	675 A	728 A	756 A	655 A	681 A	561 A	451 A	419 A	339 A	171 A	123 A	11021
4	ALA	880		17.349	N	S	SB ON FR WINTON	08/29/2011	MON	27 A	48 A	63 A	85 A	123 A	211 A	400 A	668 A	652 A	577 A	483 A	585 A	578 A	663 A	713 A	781 A	708 A	622 A	478 A	449 A	414 A	355 A	222 A	137 A	10042
							MON-THURS AVERAGE			67	53	45	54	110	237	426	744	732	637	545	617	666	676	713	744	696	658	527	465	433	366	192	133	10531
							ML UNION CITY- ALVARADO			1891	1329	1160	1477	2657	4559	6872	7782	7244	7354	6754	6532	6669	7425	7490	6914	6969	7109	7213	6986	6475	5710	4020	2708	131296
							ML HAYWARD- INDUSTRIAL			1478	1100	1009	1404	4258	6569	6334	6375	6057	7156	7088	6062	6435	6280	6520	5212	6413	5861	4725	4704	3943	3477	2559	2083	113101
							ML HAYWARD- TENNYSON			1789	1260	1170	1605	4110	6883	6605	6977	6401	6888	6917	6539	6336	6229	6344	6409	7222	7284	6718	5244	4466	4229	3402	2677	123702
4	ALA	880		17.483	N	S	SEG SB ON FR EB WINTON	09/01/2011	THU	53 A	34 A	21 A	19 A	45 A	137 A	182 A	208 A	191 A	196 A	330 A	419 A	449 A	429 A	466 A	476 A	485 A	401 A	374 A	342 A	350 A	274 A	117 A	93 A	6091
4	ALA	880		17.483	N	S	SEG SB ON FR EB WINTON	08/31/2011	WED	38 A	27 A	17 A	28 A	81 A	151 A	228 A	232 A	254 A	250 A	338 A	412 A	464 A	449 A	488 A	480 A	421 A	414 A	329 A	347 A	324 A	265 A	127 A	101 A	6265
4	ALA	880		17.483	N	S	SEG SB ON FR EB WINTON	08/30/2011	TUE	41 A	37 A	25 A	31 A	51 A	123 A	188 A	250 A	354 A	406 A	352 A	380 A	478 A	475 A	494 A	491 A	448 A	452 A	357 A	317 A	315 A	264 A	122 A	86 A	6537
4	ALA	880		17.483	N	S	SEG SB ON FR EB WINTON	08/29/2011	MON	A	7 A	19 A	28 A	43 A	121 A	166 A	202 A	216 A	232 A	284 A	399 A	384 A	464 A	473 A	537 A	467 A	396 A	325 A	313 A	313 A	274 A	128 A	73 A	5864
							MON-THURS AVERAGE			33	26	21	27	55	133	191	223	254	271	326	403	444	454	480	496	455	416	346	330	326	269	124	88	6189
4	ALA	880		17.484	N	S	SEG SB ON FR WB WINTON	09/01/2011	THU	23 A	8 A	19 A	11 A	41 A	107 A	222 A	532 A	455 A	337 A	228 A	223 A	237 A	232 A	224 A	247 A	276 A	290 A	167 A	122 A	123 A	143 A	83 A	42 A	4392
4	ALA	880		17.484	N	S	SEG SB ON FR WB WINTON	08/31/2011	WED	21 A	16 A	8 A	15 A	63 A	117 A	234 A	570 A	466 A	335 A	221 A	225 A	219 A	254 A	234 A	234 A	238 A	223 A	199 A	150 A	102 A	87 A	46 A	35 A	4312
4	ALA	880		17.484	N	S	SEG SB ON FR WB WINTON	08/30/2011	TUE	64 A	41 A	25 A	26 A	34 A	102 A	249 A	517 A	554 A	447 A	226 A	224 A	237 A	200 A	234 A	265 A	207 A	229 A	204 A	134 A	104 A	75 A	49 A	37 A	4484
4	ALA	880		17.484	N	S	SEG SB ON FR WB WINTON	08/29/2011	MON	27 A	41 A	44 A	57 A	80 A	90 A	234 A	466 A	436 A	345 A	199 A	186 A	194 A	199 A	240 A	244 A	241 A	226 A	153 A	136 A	101 A	81 A	94 A	64 A	4178
							MON-THURS AVERAGE			34	27	24	27	55	104	235	521	478	366	219	215	222	221	233	248	241	242	181	136	108	97	68	45	4342
4	ALA	880		17.727	F	S	SEG SB OFF TO WB WINTON	09/29/2011	THU	148 A	101 A	144 A	192 A	271 A	666 A	613 A	542 A	796 A	946 A	956 A	939 A	988 A	895 A	829 A	749 A	598 A	633 A	653 A	539 A	346 A	285 A	205 A	127 A	13161
4	ALA	880		17.727	F	S	SEG SB OFF TO WB WINTON	09/28/2011	WED	126 A	104 A	126 A	147 A	295 A	628 A	582 A	508 A	793 A	733 A	915 A	981 A	889 A	907 A	807 A	771 A	633 A	590 A	651 A	542 A	424 A	298 A	204 A	156 A	12810
4	ALA	880		17.727	F	S	SEG SB OFF TO WB WINTON	09/27/2011	TUE	104 A	69 A	81 A	112 A	261 A	615 A	562 A	393 A	612 A	811 A	820 A	882 A	912 A	862 A	750 A	743 A	701 A	631 A	711 A	507 A	347 A	279 A	215 A	116 A	12096
4	ALA	880		17.727	F	S	SEG SB OFF TO WB WINTON	09/26/2011	MON	98 A	87 A	88 A	114 A	216 A	486 A	590 A	522 A	846 A	826 A	883 A	903 A	935 A	933 A	831 A	792 A	597 A	495 A	662 A	501 A	319 A	224 A	202 A	131 A	12281
							MON-THURS AVERAGE			119	90	110	141	261	599	587	491	762	829	894	926	931	899	804	764	632	587	669	522	359	272	207	133	12587
4	ALA	880		17.728	F	S	SEG SB OFF TO EB WINTON	09/01/2011	THU	45 A	27 A	27 A	29 A	46 A	94 A	170 A	260 A	368 A	334 A	262 A	242 A	263 A	289 A	270 A	284 A	229 A	231 A	206 A	190 A	209 A	250 A	178 A	107 A	4610
4	ALA	880		17.728	F	S	SEG SB OFF TO EB WINTON	08/31/2011	WED	55 A	29 A	28 A	32 A	43 A	89 A	153 A	290 A	359 A	346 A	240 A	249 A	274 A	329 A	288 A	269 A	230 A	209 A	197 A	205 A	177 A	160 A	118 A	90 A	4459
4	ALA	880		17.728	F	S	SEG SB OFF TO EB WINTON	08/30/2011	TUE	53 A	29 A	42 A	38 A	45 A	109 A	161 A	279 A	335 A	383 A	243 A	255 A	288 A	298 A	296 A	254 A	262 A	246 A	217 A	179 A	160 A	146 A	119 A	89 A	4526
4	ALA	880		17.728	F	S	SEG SB OFF TO EB WINTON	08/29/2011	MON	43 A	33 A	24 A	29 A	46 A	91 A	174 A	263 A	381 A	334 A	219 A	214 A	370 A	327 A	312 A	265 A	259 A	238 A	200 A	182 A	176 A	132 A	120 A	85 A	4517
							MON-THURS AVERAGE			49	30	30	32	45	96	165	273	361	349	241	240	299	311	292	268	245	231	205	189	181	172	134	93	4528
4	ALA	880		17.815	F	S	SB OFF TO WINTON	09/01/2011	THU	142 A	92 A	100 A	144 A	334 A	720 A	782 A	745 A	1161 A	1276 A	1167 A	1181 A	1237 A	1171 A	1148 A	1012 A	876 A	807 A	872 A	743 A	559 A	528 A	526 A	247 A	17570
4	ALA	880		17.815	F	S	SB OFF TO WINTON	08/31/2011	WED	150 A	108 A	102 A	151 A	302 A	678 A	713 A	738 A	1236 A	1288 A	1257 A	1138 A	1183 A	1278 A	1103 A	1083 A	909 A	844 A	902 A	740 A	561 A	463 A	325 A	216 A	17468
4	ALA	880		17.815	F	S	SB OFF TO WINTON	08/30/2011	TUE	154 A	97 A	129 A	147 A	335 A	750 A	788 A	734 A	846 A	977 A	1088 A	1169 A	1178 A	1087 A	1158 A	847 A	848 A	807 A	883 A	680 A	499 A	438 A	320 A	193 A	16152
4	ALA	880		17.815	F	S	SB OFF TO WINTON	08/29/2011	MON	125 A	104 A	87 A	140 A	318 A	664 A	766 A	761 A	1190 A	1272 A	1133 A	1110 A	1269 A	1169 A	1107 A	1000 A	850 A	843 A	883 A	691 A	532 A	347 A	301 A	191 A	16853
							MON-THURS AVERAGE			143	100	105	146	322	703	762	745	1108	1203	1161	1150	1217	1176	1129	986	871	825	885	714	538	444	368	212	17011
							ML UNION CITY- ALVARADO			2034	1429	1264	1622	2979	5262	7635	8526	8352	8557	7915	7682	7886	8601	8619	7900	7840	7934	8098	7699	7013	6154	4388	2920	148307
							ML HAYWARD- INDUSTRIAL			1621	1200	1113	1549	4580	7272	7097	7120	7166	8359	8250	7212	7652	7456	7649	6197	7284	6686	5610	5418	4480	3921	2927	2295	130112
							ML HAYWARD- TENNYSON			1932	1361	1275	1750	4432	7586	7367	7722	7509	8091	8078	7689	7553	7405	7473	7395	8093	8109	7603	5958	5004	4673	3770	2888	140713
4	ALA	880		18.246	N	S	SB ON FR A STREET	09/01/2011	THU	84 A	54 A	60 A	77 A	230 A	496 A	677 A	815 A	712 A	561 A	563 A	554 A	637 A	646 A	657 A	625 A	554 A	535 A	521 A	604 A	554 A	453 A	252 A	159 A	11080
4	ALA	880		18.246	N	S	SB ON FR A STREET	08/31/2011	WED	70 A	50 A	53 A	101 A	215 A	479 A	701 A	820 A	619 A	556 A	521 A	586 A	589 A	688 A	692 A	572 A	544 A	541 A	548 A	516 A	542 A	368 A	245 A	180 A	10796
4	ALA	880		18.246	N	S	SB ON FR A STREET	08/30/2011	TUE	75 A	38 A	38 A	62 A	220 A	520 A	699 A	434 A	641 E	573 E	510 A	605 A	582 A	617 A	630 A	622 A	565 A	531 A	490 A	552 A	452 A	377 A	271 A	139 A	10243
4	ALA	880		18.246	N	S	SB ON FR A STREET	08/29/2011	MON	89 A	59 A	58 A	69 A	201 A	477 A	644 A	720 A	659 A	541 A	526 A	628 A	607 A	576 A	638 A	574 A	512 A	529 A	547 A	510 A	443 A	337 A	251 A	164 A	10359
							MON-THURS AVERAGE			80	50	52	77	217	493	680	697	658	558	530	593	604	632	654	598	544	534	527	546	498	384	255	161	10620
							ML UNION CITY- ALVARADO			1954	1379	1212	1545	2762	4769	6954	7829	7694	8000	7385	7089	7282	7970	7965	7301	7296	7400	7571	7154	6515	5771	4134	2759	137687
							ML HAYWARD- INDUSTRIAL			1541	1150	1061	1472	4364	6779	6416	6423	6508	7802	7720	6619	7048	6825	6995	5599	6740	6152	5083	4872	3983	3537	2673	2134	119492
							ML HAYWARD- TENNYSON			1852	1310	1223	1673	4216	7093	6687	7024	6852	7534	7548	7095	6949	6773	6819	6796	7549	7575	7076	5412	4506	4290	3515	2728	130093
4	ALA	880		18.353	A	S	HAYWARD- A STREET	05/25/2017	THU	1684 A	1167 A	1119 A	1830 A	4472 A	8582 A	7355 A	6909 A	7893 A	7719 A	8491 A	8068 A	8274 A	8559 A	8852 A	8610 A	7231 A	8971 A	8424 A	7060 A	5407 A	4718 A	4207 A	2660 A	148262
4	ALA	880		18.353	A	S	HAYWARD- A STREET	05/24/2017	WED	1696 A	1126 A	1038 A	1700 A	4592 A	8560 A	7808 A	7880 A	8395 A	8223 A	8204 A	7982 A	8151 A	8317 A	8708 A	8817 A	9214 A	9170 A	7984 A	6093 A	4557 A	5745 A	4174 A	2575 A	150709
4	ALA	880		18.353	A	S	HAYWARD- A STREET	05/23/2017	TUE	1596 A	1021 A	1030 A	1813 A	4546 A	8685 A	7934 A	7550 A	8090 A	8186 A	8023 A	8152 A	8040 A	8248 A	8464 A	8119 A	8584 A	8503 A	4902 A	5188 A	5194 A	4671 A	4197 A	2511 A	143247
4	ALA	880		18.353	A	S	HAYWARD- A STREET	05/22/2017	MON	1863 A	1164 A	1086 A	1698 A	4530 A	8719 A	6809 A	5596 A	5731 A	6097 A	7359 A	7933 A	8099 A	7856 A	8301 A	8448 A	8737 A	8667 A	7822 A	6316 A	5069 A	4263 A	3935 A	2346 A	138444
							MON-THURS AVERAGE			1710	1120	1068	1760	4535	8637	7477	6984	7527	7556	8019	8034	8141	8245	8581	8499	8442	8828	7283	6164	5057	4849	4128	2523	145166
4	ALA	880		18.482	F	S	SB OFF TO A STREET	09/01/2011	THU	114 A	78 A	72 A	65 A	142 A	225 A	805 A	1002 A	1053 A	1032 A	681 A	716 A	748 A	719 A	734 A	732 A	805 A	942 A	705 A	609 A	577 A	452 A	334 A	232 A	13574
4	ALA	880		18.482	F	S	SB OFF TO A STREET	08/31/2011	WED	112 A	72 A	66 A	57 A	131 A	248 A	783 A	1032 A	988 A	1000 A	564 A	623 A	729 A	706 A	724 A	843 A	1081 A	1129 A	851 A	571 A	468 A	413 A	308 A	194 A	13693
4	ALA	880		18.482	F	S	SB OFF TO A STREET	08/30/2011	TUE	111 A	69 A	72 A	60 A	144 A	244 A	779 A	921 A	547 A	613 A	543 A	657 A	698 A	681 A	776 A	761 A	794 A	782 A	681 A	565 A	488 A	344 A	260 A	180 A	11770
4	ALA	880		18.482	F	S	SB OFF TO A STREET	08/29/2011	MON	113 A	57 A	59 A	61 A	144 A	272 A	642 A	1057 A	997 A	981 A	642 A	685 A	613 A	657 A	721 A	816 A	745 A	1057 A	688 A	541 A	431 A	354 A	296 A	153 A	12782
							MON-THURS AVERAGE			113	69	67	61	140	247	752	1003	896	907	608	670	697	691	739	788	856	978	731	572	491	391	300	190	12955
							ML UNION CITY- ALVARADO			2067	1448	1279	1606	2903	5017	7707	8832	8591	8906	7992	7759	7979	8660	8704	8089	8153	8377	8302	7725	7006	6161	4433	2949	150642
							ML HAYWARD- INDUSTRIAL			1654	1219	1128	1533	4504	7026	7169	7426	7404	8708	8327	7289	7745	7515	7733	6387	7597	7129	5814	5444	4474	3928	2972	2324	132447
							ML HAYWARD- TENNYSON			1965	1379	1290	1734	4356	7341	7439	8027	7748	8440	8156	7766	7646	7464	7558	7584	8405	8553	7807	5984	4997	4680	3815	2918	143048

Traffic Volumes Counts - Southbound

24 hour Period Hourly Counts

Dist	Cnty	Rte	Prefi	PM	Leg	Dir	Description	Date	Day	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	24hr total
4	ALA	880		19.961	N	S	SB ON FR HESPERIAN BLVD	09/25/2008	THU	100 A	41 A	41 A	76 A	168 A	450 A	733 A	859 A	598 A	552 A	584 A	565 A	578 A	586 A	599 A	685 A	700 A	711 A	681 A	549 A	387 A	336 A	284 A	176 A	11039
4	ALA	880		19.961	N	S	SB ON FR HESPERIAN BLVD	09/24/2008	WED	67 A	48 A	40 A	63 A	171 A	456 A	668 A	859 A	729 A	567 A	576 A	599 A	689 A	622 A	641 A	658 A	633 A	640 A	645 A	533 A	398 A	330 A	244 A	176 A	11052
4	ALA	880		19.961	N	S	SB ON FR HESPERIAN BLVD	09/23/2008	TUE	84 A	48 A	43 A	58 A	170 A	445 A	706 A	839 A	718 A	612 A	612 A	547 A	565 A	579 A	622 A	659 A	634 A	737 A	645 A	530 A	378 A	340 A	225 A	142 A	10938
4	ALA	880		19.961	N	S	SB ON FR HESPERIAN BLVD	09/22/2008	MON	66 A	44 A	28 A	58 A	187 A	432 A	683 A	856 A	693 A	543 A	555 A	532 A	569 A	663 A	652 A	679 A	671 A	669 A	655 A	509 A	370 A	301 A	210 A	162 A	10787
							MON-THURS AVERAGE			79	45	38	64	174	446	698	853	685	569	582	561	600	613	629	670	660	689	657	530	383	327	241	164	10954
							ML UNION CITY- ALVARADO			1988	1402	1241	1542	2729	4571	7009	7979	7906	8338	7411	7198	7379	8048	8075	7419	7493	7688	7646	7195	6623	5835	4192	2785	139688
							ML HAYWARD- INDUSTRIAL			1575	1174	1090	1469	4330	6581	6471	6572	6720	8140	7745	6728	7145	6903	7105	5717	6937	6440	5158	4914	4090	3601	2731	2160	121493
							ML HAYWARD- TENNYSON			1886	1334	1252	1670	4182	6895	6741	7174	7063	7872	7574	7205	7046	6851	6929	6914	7746	7863	7151	5453	4614	4354	3574	2754	132094
4	ALA	880		20.17	F	S	FRONTAGE RD (EMBERS RD)	09/20/2011	TUE	72 A	33 A	29 A	36 A	63 A	131 A	409 A	885 A	898 A	923 A	695 A	391 A	427 A	383 A	456 A	725 A	792 A	800 A	573 A	426 A	341 A	275 A	203 A	113 A	10079
4	ALA	880		20.17	F	S	FRONTAGE RD (EMBERS RD)	09/19/2011	MON	65 A	34 A	22 A	34 A	68 A	129 A	329 A	845 A	701 A	360 A	411 A	393 A	431 A	413 A	429 A	626 A	675 A	668 A	508 A	403 A	303 A	230 A	170 A	114 A	8361
4	ALA	880		20.17	F	S	FRONTAGE RD (EMBERS RD)	09/15/2011	THU	74 A	50 A	36 A	41 A	71 A	127 A	491 A	834 A	757 A	564 A	367 A	396 A	459 A	430 A	550 A	677 A	639 A	738 A	760 A	487 A	302 A	235 A	194 A	138 A	9417
4	ALA	880		20.17	F	S	FRONTAGE RD (EMBERS RD)	09/14/2011	WED	67 A	48 A	37 A	54 A	66 A	107 A	422 A	906 A	756 A	425 A	370 A	406 A	426 A	418 A	517 A	603 A	605 A	662 A	583 A	436 A	340 A	261 A	156 A	110 A	8781
							MON-THURS AVERAGE			70	41	31	41	67	124	413	868	778	568	461	397	436	411	488	658	678	717	606	438	322	250	181	119	9160
4	ALA	880		20.253	N	S	DUMMY SB ON FR NB 238	09/25/2008	THU	356 A	260 A	276 A	421 A	1078 A	1820 A	1902 A	1932 A	2081 A	1985 A	1829 A	1788 A	1778 A	1801 A	1812 A	1865 A	1925 A	1929 A	1801 A	1533 A	1221 A	1051 A	803 A	524 A	33771
4	ALA	880		20.253	N	S	DUMMY SB ON FR NB 238	09/24/2008	WED	285 A	218 A	277 A	478 A	1074 A	1840 A	1890 A	1898 A	1978 A	2007 A	1907 A	1063 A	984 A	1880 A	1794 A	1854 A	1959 A	1815 A	1715 A	1512 A	1206 A	1091 A	768 A	598 A	32091
4	ALA	880		20.253	N	S	DUMMY SB ON FR NB 238	09/23/2008	TUE	311 A	277 A	296 A	508 A	1139 A	1863 A	1978 A	1779 A	990 A	1843 A	1837 A	1758 A	1633 A	1615 A	1749 A	1938 A	1891 A	1937 A	1719 A	1450 A	1196 A	1044 A	720 A	558 A	32029
4	ALA	880		20.253	N	S	DUMMY SB ON FR NB 238	09/22/2008	MON	316 A	242 A	256 A	428 A	1158 A	1845 A	1975 A	1835 A	1895 A	1858 A	1725 A	1764 A	1655 A	1593 A	1684 A	1858 A	1892 A	1774 A	1682 A	1293 A	1102 A	992 A	738 A	550 A	32110
							MON-THURS AVERAGE			317	249	276	459	1112	1842	1936	1861	1736	1923	1825	1593	1513	1722	1760	1879	1917	1864	1729	1447	1181	1045	757	558	32500
							ML UNION CITY- ALVARADO			1671	1153	965	1083	1616	2729	5073	6118	6170	6414	5586	5605	5866	6326	6315	5540	5576	5824	5917	5748	5441	4790	3435	2227	107188
							ML HAYWARD- INDUSTRIAL			1258	925	814	1010	3218	4739	4535	4711	4984	6216	5921	5135	5633	5181	5345	3838	5020	4576	3429	3467	2909	2557	1974	1602	88993
							ML HAYWARD- TENNYSON			1569	1085	976	1211	3070	5053	4805	5313	5327	5948	5749	5612	5533	5129	5169	5035	5829	6000	5422	4006	3433	3309	2817	2196	99594
4	ALA	880		20.424	F	S	SB OFF TO LEWELLING BLVD.	09/21/2011	WED	82 A	62 A	51 A	36 A	77 A	104 A	445 A	780 A	542 A	349 A	411 C	426 C	466 C	464 C	614 C	630 C	590 C	709 C	724 C	537 C	419 C	340 C	254 C	168 C	9280
4	ALA	880		20.424	F	S	SB OFF TO LEWELLING BLVD.	09/20/2011	TUE	103 A	46 A	50 A	38 A	72 A	131 A	375 A	776 A	619 A	742 A	691 A	417 A	467 A	367 A	453 A	624 A	707 A	798 A	662 A	588 A	440 A	328 A	296 A	167 A	9957
4	ALA	880		20.424	F	S	SB OFF TO LEWELLING BLVD.	09/19/2011	MON	100 A	52 A	36 A	32 A	67 A	119 A	268 A	671 A	544 A	300 A	408 A	440 A	480 A	466 A	504 A	623 A	703 A	734 A	607 A	515 A	391 A	292 A	219 A	159 A	8730
4	ALA	880		20.424	F	S	SB OFF TO LEWELLING BLVD.	09/15/2011	THU	97 A	58 A	56 A	52 A	77 A	124 A	434 A	885 A	616 A	492 A	389 A	454 A	483 A	489 A	595 A	640 A	670 A	821 A	938 A	587 A	426 A	356 A	263 A	176 A	10178
							MON-THURS AVERAGE			96	55	48	40	73	120	381	778	580	471	475	434	474	447	542	629	668	766	733	557	419	329	258	168	9536
							ML UNION CITY- ALVARADO			1766	1208	1013	1123	1690	2848	5453	6896	6750	6885	6061	6039	6340	6772	6857	6170	6244	6590	6649	6305	5860	5119	3693	2395	116724
							ML HAYWARD- INDUSTRIAL			1353	979	862	1050	3291	4858	4915	5489	5564	6687	6396	5569	6107	5627	5887	4467	5688	5342	4161	4023	3328	2886	2232	1770	98529
							ML HAYWARD- TENNYSON			1664	1139	1024	1251	3143	5172	5186	6091	5908	6419	6224	6046	6007	5576	5711	5665	6496	6765	6154	4563	3852	3638	3075	2364	109130
4	ALA	880		20.651	N	S	SB ON FR WASHINGTON AVE.	09/21/2011	WED	51 A	42 A	42 A	59 A	113 A	249 A	777 A	981 A	860 A	480 A	494 C	439 C	475 C	475 C	516 C	603 C	623 C	658 C	773 C	399 C	287 C	244 C	177 C	94 C	9911
4	ALA	880		20.651	N	S	SB ON FR WASHINGTON AVE.	09/20/2011	TUE	56 A	44 A	34 A	48 A	96 A	288 A	784 A	941 A	888 A	582 A	485 A	453 A	474 A	495 A	493 A	550 A	587 A	573 A	568 A	384 A	299 A	201 A	171 A	100 A	9594
4	ALA	880		20.651	N	S	SB ON FR WASHINGTON AVE.	09/19/2011	MON	60 A	37 A	33 A	53 A	88 A	260 A	696 A	992 A	785 A	423 A	440 A	445 A	437 A	486 A	474 A	561 A	522 A	622 A	488 A	355 A	266 A	221 A	163 A	99 A	9006
4	ALA	880		20.651	N	S	SB ON FR WASHINGTON AVE.	09/15/2011	THU	63 A	42 A	47 A	57 A	89 A	291 A	823 A	1106 A	922 A	519 A	478 A	426 A	488 A	506 A	596 A	658 A	717 A	754 A	721 A	399 A	290 A	226 A	196 A	120 A	10534
							MON-THURS AVERAGE			58	41	39	54	97	272	770	1005	864	501	474	441	469	491	520	593	612	652	638	384	286	223	177	103	9761
4	ALA	880		20.821	N	S	SB ON 880/238 FR WSHGTN	07/02/2008	WED	136 A	90 A	84 A	103 A	236 A	593 A	965 A	1100 A	1003 A	842 A	750 C	718 C	776 C	857 C	899 C	851 C	866 C	912 C	779 C	700 C	663 C	513 C	364 C	244 C	15044
4	ALA	880		20.821	N	S	SB ON 880/238 FR WSHGTN	07/01/2008	TUE	128 A	78 A	85 A	100 A	232 A	594 A	874 A	1119 A	1033 A	851 A	863 A	709 A	827 A	770 A	859 A	896 A	862 A	953 A	795 A	700 A	624 A	509 A	351 A	202 A	15014
4	ALA	880		20.821	N	S	SB ON 880/238 FR WSHGTN	06/30/2008	MON	90 A	87 A	69 A	69 A	200 A	555 A	831 A	1059 A	1017 A	821 A	687 A	792 A	804 A	764 A	849 A	867 A	812 A	910 A	768 A	727 A	601 A	549 A	311 A	213 A	14452
4	ALA	880		20.821	N	S	SB ON 880/238 FR WSHGTN	06/26/2008	THU	119 A	74 A	94 A	95 A	237 A	597 A	894 A	1206 A	1065 A	894 E	794 E	763 E	726 E	823 E	839 E	823 E	917 E	946 A	838 A	720 A	596 A	522 A	396 A	271 A	15249
							MON-THURS AVERAGE			118	82	83	92	226	585	891	1121	1030	852	774	746	783	804	862	859	864	930	795	712	621	523	356	233	14940
							ML UNION CITY- ALVARADO			1648	1125	930	1031	1463	2264	4562	5775	5721	6033	5287	5294	5557	5969	5995	5310	5380	5660	5854	5593	5239	4596	3338	2162	101784
							ML HAYWARD- INDUSTRIAL			1235	897	779	958	3065	4273	4024	4368	4534	5835	5622	4824	5323	4824	5025	3608	4824	4412	3366	3312	2707	2362	1877	1537	83589
							ML HAYWARD- TENNYSON			1546	1057	941	1159	2917	4588	4295	4970	4878	5567	5451	5300	5224	4772	4849	4805	5632	5835	5359	3851	3231	3115	2719	2131	94190
4	ALA	880		20.901	F	S	SEG SB OFF TO WASHINGTON	07/01/2008	TUE	98 A	66 A	71 A	38 A	70 A	121 A	152 A	268 A	266 A	288 A	322 A	386 A	372 A	411 A	522 A	619 A	631 A	762 A	819 A	617 A	463 A	375 A	273 A	175 A	8185
4	ALA	880		20.901	F	S	SEG SB OFF TO WASHINGTON	06/30/2008	MON	134 A	58 A	46 A	49 A	84 A	120 A	189 A	242 A	230 A	291 A	355 A	374 A	420 A	503 A	542 A	530 A	733 A	1001 A	781 A	533 A	367 A	308 A	251 A	173 A	8314
4	ALA	880		20.901	F	S	SEG SB OFF TO WASHINGTON	06/26/2008	THU	122 A	76 A	67 A	53 A	86 A	143 A	182 A	292 A	265 A	291 A	289 A	381 A	438 A	473 A	505 A	481 A	525 A	838 A	976 A	618 A	488 A	387 A	302 A	181 A	8459
4	ALA	880		20.901	F	S	SEG SB OFF TO WASHINGTON	06/25/2008	WED	112 A	64 A	55 A	43 A	72 A	143 A	144 A	242 A	314 A	311 A	310 A	369 A	458 A	468 A	541 A	572 A	707 A	881 A	965 A	689 A	435 A	461 A	302 A	160 A	8818
							MON-THURS AVERAGE			117	66	60	46	78	132	167	261	269	295	319	378	422	464	528	551	649	871	885	614	438	383	282	172	8444
4	ALA	880		20.902	F	S	SEG SB OFF TO SB RTE 238	07/01/2008	TUE	283 A	233 A	221 A	231 A	400 A	565 A	872 A	1116 A	1227 A	1319 A	1334 A	1445 A	1399 A	1405 A	1606 A	1618 A	1592 A	1662 A	1407 A	1149 A	908 A	847 A	798 A	474 A	24111
4	ALA	880		20.902	F	S	SEG SB OFF TO SB RTE 238	06/30/2008	MON	243 A	169 A	142 A	205 A	325 A	564 A	814 A	1096 A	1215 A	1415 A	1259 A	1374 A	1315 A	1426 A	1673 A	1629 A	1734 A	1626 A	1301 A	1084 A	925 A	812 A	722 A	517 A	23585
4	ALA	880		20.902	F	S	SEG SB OFF TO SB RTE 238	06/26/2008	THU	297 A	228 A	238 A	252 A	392 A	612 A	883 A	1070 A	1292 A	1360 E	1304 E	1428 E	1481 E	1495 E	1613 E	1651 E	1579 E	1503 E	1436 E	1084 A	1013 A	834 A	761 A	541 A	24347
4	ALA	880		20.902	F	S	SEG SB OFF TO SB RTE 238	06/25/2008	WED	311 A	248 A	229 A	225 A	401 A	564 A	918 A	1021 A	1279 A	1313 A	1317 A	1414 A	1483 A	1473 A	1668 A	1620 A	1520 A	1599 A	1406 A	1136 A	1055 A	1165 A	1045 A	552 A	24962
							MON-THURS AVERAGE			284	220	208	228	380	576	872	1076	1253	1352	1304	1415	1420	1450	1640	1630	1606	1598	1388	1113	975	915	832	521	24251

Attachment G

Risk Register

LEVEL 3 - RISK REGISTER	Project Name:	I-880 Winton Ave/A Street Interchange Improvements	DIST- EA	04-2670	Project Manager	Parag Mehta

						Risk Assessment														
Risk Identification						Probability		Cost Impact ($)				Time Impact (days)				Rationale	Risk Response			
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable		Strategy	Response Actions	Risk Owner	Updated
Active	1	Design	Design Exceptions Approval	If design exceptions are not approved, the project scope may need to be changed, resulting in increased costs and schedule delays	Design exceptions will be approved	20	30	$ 500,000		$ 2,000,000	$ 313,000	30		60	11	All design decisions will follow Caltrans process	Mitigate	PDT to work closely with Caltrans design decision liaison to resolve all design exception issues.	Project Engineer	6/26/2019
Active	2	DES	Additional Aesthetic Requirements	As a result of feedback from stakeholders, unforeseen additional aesthetic requirement may add additional scope, cost and time to the project.	It is assumed that the project will include aesthetic treatments per requirements. More details on the aesthetic treatment requirements will be coordinated with the agencies as the project progresses through project delivery.	0	20	$ 100,000		$ 500,000	$ 30,000	20		40	3	Aesthetic treatment is included in preliminary cost estimates. Cost and schedule impact for the risk is based on need/requirement for additional aesthetic treatment.	Avoid	Stakeholder involvement is planned as project progresses and aesthetic requirements will be monitored and incorporated as early as possible.	Alameda CTC Project Manager	6/26/2019
Active	3	Environmental	Public Comments on ED	As a result of the need to address unexpected public and local agency comments, changes to the environmental document may occur, which may result in schedule delays.	The project currently assumes public circulation for a period of 30 days and 60 days to prepare responses to Draft Environmental Document comments and that the schedule will note be delayed in responding to comments.	20	30	$ 500,000		$ 2,000,000	$ 313,000	40		120	20	Cost impacts are based on the overall project cost. Public outreach is being undertaken as part of the project to gather early input on proposed alternatives.	Accept	Continue public outreach during the project delivery process.	Alameda CTC Project Manager	6/26/2019
Active	4	PM	Funding	As a result of inadequate funding, project development may not advance, which would lead to a delay in Project implementation schedule.	The project is currently funded through the PA&ED phase. Agency will seek funding opportunities as the project progresses into subsequent phases.	40	60					120		520	160	Alameda CTC is the implementing agency for the project and will be seeking funding for the project.	Accept	Seek funding sources early in the project development phase.	Alameda CTC Project Manager	5/15/2019
Active	5	Construction	Unanticipated Utility Conflicts	As a the project progresses into construction, unknown underground conflicting utilities may be discovered, which would lead to additional construction costs, a delay in project schedule.	All existing utilities are identified during project delivery.	20	40	$ 200,000		$ 500,000	$ 105,000	120		180	45	Utility relocation cost and schedule impacts are based on existing utility information that is already gathered for the project.	Accept	Construction RE to work with utility companies and Right of Way to resolve new utility conflicts.	Project Engineer.	6/26/2019
Active	6	PM	Scope changes	Due to stakeholder engagement, additional alternatives or significant scope changes may occur, which may lead to delays in project delivery.	The project currently assumes no scope changes or additional alternatives	15	30	$ 1,000,000		$ 5,000,000	$ 675,000					Cost impacts are based on stakeholder coordination that has occurred to date, as well as possible scope changes that could arise from stakeholder expectation on improving traffic operations and access on Winton Ave and A street.	Avoid	Project Manager and PDT to engage stakeholders early in the project and build consensus on project scope and alternatives.	Alameda CTC Project Manager	6/26/2019
Active	7	Construction	Unknown Cultural/Paleontological Resources	Due to excavations along the project and excavations for the bridge foundation, unknown paleontological and archaeological resources could potentially be encountered during construction, resulting in construction monitoring by a qualified paleontologist/archaeologist and a curation program and resulting in increased project costs and schedule impacts during construction.	Project currently assumes that no significant cultural/paleontological resources will be encountered.	10	40	$ 50,000		$ 250,000	$ 38,000	40		120	20	Risk assessment is based on preliminary environmental analysis as presented in PEAR.	Mitigate	Construction RE to contact cultural resources monitor to determine how to address newly discovered resources.	Construction RE	6/26/2019
Active	8	Organizational	Lack of Stakeholder Support	With the proposed alternatives at Winton Avenue, local owners such as southland mall oppose the project due to right of way/access change, which would lead to schedule delays.	Project is currently in early alternative development phase and considers all unconstrained alternatives. Alternatives will be refined as project progresses through PID and public outreach process.	40	60	-		-	-	40		120	40	Risk assessment is based on PID level outreach efforts with the City and other stakeholders.	Accept	Early Public Outreach and engagement will help understand key issues and help provide input to refine alternatives.	Alameda CTC/ City of Hayward	10/25/2018
Active	9	Construction	Interference With Other Projects	As the project progresses through the next phases, interference with other projects in the vicinity might cause conflicts and/or construction schedule delays.	Project stakeholders will be reached out and engaged throughout the project to be cognizant of and coordinate with other projects in the vicinity.	10	20				-	20		60	6	Assessment is based on input gathered from project stakeholders on other projects that are planned/progressing within the project limits.	Avoid	Continuously engage City, Caltrans and other stakeholders to be aware and adjust projects for interference with other projects.	Alameda CTC Project Manager	5/15/2019

LEVEL 3 - RISK REGISTER	Project Name:	I-880 Winton Ave/A Street Interchange Improvements	DIST- EA	04-2670	Project Manager	Parag Mehta

						Risk Assessment														
Risk Identification						Probability		Cost Impact ($)				Time Impact (days)				Rationale	Risk Response			
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable		Strategy	Response Actions	Risk Owner	Updated
Active	10	ROW	Additional ROW Acquisition/Easements	As a project moves through project delivery, additional ROW acquisition needs may be identified, resulting in increase in cost, and schedule delays.	ROW costs are based on PSR-PDS design of the alternatives and available ROW data.	10	25	$ 1,500,000		$ 6,000,000	$ 656,000	20		80	9	Cost impacts are based on 5% to 20% increase in average ROW costs and schedule impacts are based on estimated support delays.	Avoid	Identify ROW requirements early in the delivery process.	Alameda CTC Project Manager	6/26/2019
Active	11	Construction	Weather Impacts to Construction Schedule	As a result of extended periods of high humidity, rain and/or cold temperatures, several construction operations that are temperature and weather dependent might be stalled, resulting in delay to project's construction schedule.	Project construction schedule is currently based on average weather impacts.	10	40					20		100	15	Schedule delays are estimated to be between one month to three months of construction activity stalling, which might lead to a month to 5 months of total project completion delay.	Accept	Construction RE to Monitor and update schedule and dependent tasks as the project progresses through construction.	Construction RE	6/3/2019
Active	12	Environmental	Environmental Document Type Change to EIR	As a result of new VMT guidelines, project may no longer qualify for an IS under CEQA, but rather an EIR may be required. This would lead to schedule delay and scope change for environmental document.	Initial assessment of the environmental document type is based on Caltrans guidance and initial screening of potential environmental issues through the PEAR process	10	40					80		120	25	Schedule delays are estimated to be between four months to six months of delay in preparing additional studies and documentation for an EIR	Accept	Work with Caltrans Environmental team early in the PA&ED phase to determine the appropriate environmental document for the project.	Alameda CTC Project Manager	7/16/2019

Attachment H

Right-of-Way Conceptual Cost Estimate Component

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Kristin L. Schober
District Branch Chief
R/W Local Public Agency Services
From: Prasanna Muthireddy
Kimley Horn and Associates
925-398-4855

Date 05/17/2019
04-ALA-880
17.2/18.6
Project ID 0418000068
EA 04-0Q290
I-880/Winton Ave & A St IC Improvements Project
- Alternative W1

A Field Review was conducted ____Yes _X___No

Scope of the Right of Way

This alternative requires a sliver of acquisition along eastbound Winton Avenue between Southland Drive and the I-880 southbound ramps intersection, due to proposed widening.

Right of Way Required __X____Yes____No
Number of Parcels __X__ 1-10 ____ 11-25 ____26-50 ____51-100 ____>100
__X__Urban ____Rural
Land Area: Fee__6,800 S.F.____________ Easement_______________
Displaced Persons/Businesses ____Yes __X__No
Demolition/Clearance ____Yes __X__No
Railroad Involvement ____Yes ____X_____No
Utility Involvements __X____Yes ____No __3__Number of Utilities in area

Cost Estimates

Support Costs	____$0-$25,000	____$500,001-$1,000,000
	____$25,001-$100,000	____$1,000,001-$5,000,000
	____$100,001-$250,000	____$5,000,001-$10,000,000
	_X_ $250,001-$500,000	____>$10,000,000
Capital Costs	____$0-$100,000	____$5,000,001-$15,000,000
	____$100,001-$500,000	____$15,000,001-$50,000,000
	____$500,001-$1,000,000	____$50,000,001-$100,000,000
	_X_ $1,000,001-$5,000,000	____>$100,000,000

Schedule

Right of Way will require _ 24_ months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of ____04/01/2024___.

Areas of Concern

None.

Assumptions and Limiting Conditions

Refer to the PSR-PDS for alternative layout.

Approximate Area of Impact at Winton Avenue and Southland Drive = 6,800 S.F.
Total Area of Impact = 6,800 S.F.
Cost of ROW Acquisition = $100 per square foot x 6,800 S.F. = $680,000

Cost of Title and Escrow = $100,000

Cost of Utility Relocation (Local Agency Share) = $367,500

Cost of Utility Relocation (Construction Cost) = $367,500

Total ROW Estimate (Escalated) = $1,590,750

Project scope and limits could change as the project development process moves along. Further certainty would be obtained during the next PA&ED phase when the preferred alternative is identified and a right of way data sheet is prepared.

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Kristin L. Schober District Branch Chief R/W Local Public Agency Services From: Prasanna Muthireddy Kimley Horn and Associates 925-398-4855	Date 05/17/2019 04-ALA-880 17.2/18.6 Project ID 0418000068 EA 04-0Q290 I-880/Winton Ave & A St IC Improvements Project - Alternative W2

A Field Review was conducted ____Yes _X___No

Scope of the Right of Way

This alternative requires a sliver of acquisition along eastbound Winton Avenue between Southland Drive and the I-880 southbound ramps intersection, due to proposed widening.

Right of Way Required ___X____Yes ____No
Number of Parcels __X__ 1-10 ____ 11-25 ____26-50 ____51-100 ____>100
__X__Urban ____Rural
Land Area: Fee___16,300 S.F._______ Easement_______________
Displaced Persons/Businesses ____Yes __X__No
Demolition/Clearance ____Yes __X__No
Railroad Involvement ____Yes ____X_____No
Utility Involvements __X__Yes ____No __3__Number of Utilities in area

Cost Estimates

Support Costs	____$0-$25,000	_X_ $500,001-$1,000,000
	____$25,001-$100,000	____$1,000,001-$5,000,000
	____$100,001-$250,000	____$5,000,001-$10,000,000
	____$250,001-$500,000	____>$10,000,000
Capital Costs	____$0-$100,000	____$5,000,001-$15,000,000
	____$100,001-$500,000	____$15,000,001-$50,000,000
	____$500,001-$1,000,000	____$50,000,001-$100,000,000
	_X_ $1,000,001-$5,000,000	____>$100,000,000

Schedule

Right of Way will require _ 24_ months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of ____04/01/2024___.

Areas of Concern

None.

Assumptions and Limiting Conditions

Refer to the PSR-PDS for alternative layout.

Approximate Area of Impact at Winton Avenue and Southland Drive = 16,300 S.F.
Total Area of Impact = 16,300 S.F.
Cost of ROW Acquisition = $100 per square foot x 16,300 S.F. = $1,630,000

Cost of Title and Escrow = $100,000

Cost of Utility Relocation (Local Agency Share) = $372,000

Cost of Utility Relocation (Construction Cost) = $372,000

Total ROW Estimate (Escalated) = $2,597,700

Project scope and limits could change as the project development process moves along. Further certainty would be obtained during the next PA&ED phase when the preferred alternative is identified and a right of way data sheet is prepared.

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Kristin L. Schober	Date 05/17/2019
District Branch Chief	04-ALA-880
R/W Local Public Agency Services	17.2/18.6
From: Prasanna Muthireddy	Project ID 0418000068
Kimley Horn and Associates	EA 04-0Q290
925-398-4855	I-880/Winton Ave & A St IC Improvements Project - Alternative A1

A Field Review was conducted ____Yes _X___No

Scope of the Right of Way

This alternative requires a significant acquisition at the SE corner of the A Street/S Garden Avenue due to proposed widening. This acquisition requires the demolition of two existing commercial buildings. Additional right-of-way acquisition is required at the SW corner of the A Street/Happyland Avenue intersection.

Right of Way Required _X___Yes ____No
Number of Parcels __X__ 1-10 ____ 11-25 ____26-50 ____51-100 ____>100
__X__Urban ____Rural
Land Area: Fee___10,700 S.F._______ Easement______________
Displaced Persons/Businesses ___X_Yes _____No
Demolition/Clearance __X_Yes ____No
Railroad Involvement ____Yes __X__No
Utility Involvements __X__Yes ____No __4__Number of Utilities in area

Cost Estimates

Support Costs	____$0-$25,000	____$500,001-$1,000,000
	____$25,001-$100,000	_X_ $1,000,001-$5,000,000
	____$100,001-$250,000	____$5,000,001-$10,000,000
	____$250,001-$500,000	____>$10,000,000
Capital Costs	____$0-$100,000	_X_ $5,000,001-$15,000,000
	____$100,001-$500,000	____$15,000,001-$50,000,000
	____$500,001-$1,000,000	____$50,000,001-$100,000,000
	____$1,000,001-$5,000,000	____>$100,000,000

Schedule

Right of Way will require _24_ months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of __04/01/2024.

Areas of Concern

None.

Assumptions and Limiting Conditions

Refer to the PSR-PDS for alternative layout.

Approximate Area of Impact at SE corner of the A Street/S Garden Avenue = 9,100 S.F.
Approximate Area of Impact at SW corner of the A Street/Happyland Avenue = 1,600 S.F.
Total Area of Impact = 10,700 S.F.
Cost of ROW Acquisition = $100 per square foot x 10,700 S.F. = $1,070,000 + $4,000,000
Cost of ROW = $5,070,000

Cost of Title and Escrow = $100,000

Cost of Utility Relocation (Local Agency Share) = $123,000

Cost of Utility Relocation (Construction Cost) = $123,000

Total ROW Estimate (Escalated) = $5,686,800

Project scope and limits could change as the project development process moves along. Further certainty would be obtained during the next PA&ED phase when the preferred alternative is identified, and a right of way data sheet is prepared.

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Kristin L. Schober
District Branch Chief
R/W Local Public Agency Services
From: Prasanna Muthireddy
Kimley Horn and Associates
925-398-4855

Date 05/17/2019
04-ALA-880
17.2/18.6
Project ID 0418000068
EA 04-0Q290
I-880/Winton Ave & A St IC Improvements Project
- Alternative A2

A Field Review was conducted ____Yes _X___No

Scope of the Right of Way

This alternative requires sliver right-of-way acquisition at four locations along A Street. The specific locations are listed below:

- NW corner of interchange;
- SW corner of interchange;
- SE corner of interchange; and
- NE corner of interchange.

Right of Way Required _X___Yes ____No
Number of Parcels __X__ 1-10 ____ 11-25 ____26-50 ____51-100 ____>100
__X__Urban ____Rural
Land Area: Fee___8,700 S.F._______ Easement______________
Displaced Persons/Businesses ___Yes __X__No
Demolition/Clearance ____Yes __X__No
Railroad Involvement ____Yes __X__No
Utility Involvements __X__Yes ____No __4__Number of Utilities in area

Cost Estimates

Support Costs	____$0-$25,000	____$500,001-$1,000,000
	____$25,001-$100,000	____$1,000,001-$5,000,000
	____$100,001-$250,000	____$5,000,001-$10,000,000
	_X_ $250,001-$500,000	____>$10,000,000
Capital Costs	____$0-$100,000	____$5,000,001-$15,000,000
	____$100,001-$500,000	____$15,000,001-$50,000,000
	____$500,001-$1,000,000	____$50,000,001-$100,000,000
	_X_ $1,000,001-$5,000,000	____>$100,000,000

Schedule

Right of Way will require _24_ months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of ____04/01/2024___.

Areas of Concern

None.

Assumptions and Limiting Conditions

Refer to the PSR-PDS for alternative layout.

Approximate Area of Impact at NW corner of interchange = 2,400 S.F.
Approximate Area of Impact at SW corner of interchange = 400 S.F.
Approximate Area of Impact at SE corner of interchange = 3,700 S.F.
Approximate Area of Impact at NE corner of interchange = 2,200 S.F.

Total Area of Impact = 8,700 S.F.
Cost of ROW Acquisition = $100 per square foot x 8,700 S.F. = $870,000

Cost of Title and Escrow = $100,000

Cost of Utility Relocation (Local Agency Share) = $116,000

Cost of Utility Relocation (Construction Cost) = $116,000

Total ROW Estimate (Escalated) = $1,262,100

Project scope and limits could change as the project development process moves along. Further certainty would be obtained during the next PA&ED phase when the preferred alternative is identified, and a right of way data sheet is prepared.

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Kristin L. Schober
District Branch Chief
R/W Local Public Agency Services
From: Prasanna Muthireddy
Kimley Horn and Associates
925-398-4855

Date 05/17/2019
04-ALA-880
17.2/18.6
Project ID 0418000068
EA 04-0Q290
I-880/Winton Ave & A St IC Improvements Project - Alternative A3

A Field Review was conducted ____Yes _X___No

Scope of the Right of Way

This alternative requires a significant acquisition at the NE corner of the A Street/Garden Avenue due to proposed widening. This acquisition requires the demolition of one existing commercial building. Additional sliver right-of-way acquisition is required along A Street at multiple locations. The specific locations are listed below:

- NW corner of interchange;
- SW corner of interchange;
- SE corner of interchange; and
- North side of A Street between northbound on-ramp and Happyland Avenue.

Right of Way Required _X___Yes ____No
Number of Parcels __X__ 1-10 ____ 11-25 ____26-50 ____51-100 ____>100
__X__Urban ____Rural
Land Area: Fee___22,600 S.F._______ Easement_______________
Displaced Persons/Businesses __X _Yes ___No
Demolition/Clearance _X__Yes ____No
Railroad Involvement ____Yes __X__No
Utility Involvements __X__Yes ____No __4__Number of Utilities in area

Cost Estimates

Support Costs	____$0-$25,000	____$500,001-$1,000,000
	____$25,001-$100,000	_X_ $1,000,001-$5,000,000
	____$100,001-$250,000	____$5,000,001-$10,000,000
	____$250,001-$500,000	____>$10,000,000
Capital Costs	____$0-$100,000	_X_ $5,000,001-$15,000,000
	____$100,001-$500,000	____$15,000,001-$50,000,000
	____$500,001-$1,000,000	____$50,000,001-$100,000,000
	____$1,000,001-$5,000,000	____>$100,000,000

Schedule

Right of Way will require _ 24_ months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of ____04/01/2024___.

Areas of Concern

None.

Assumptions and Limiting Conditions

Refer to the PSR-PDS for alternative layout.

Approximate Area of Impact at NE corner of the A Street/Garden Avenue = 2,700 S.F.
Approximate Area of Impact at NW corner of interchange = 8,700 S.F.
Approximate Area of Impact at SW corner of interchange = 400 S.F.
Approximate Area of Impact at SE corner of interchange = 4,800 S.F.
Approximate Area of Impact at NE corner of interchange = 6,000 S.F.

Total Area of Impact = 22,600 S.F.
Cost of ROW Acquisition = $100 per square foot x 22,600 S.F. = $2,260,000 + $5,000,000

Cost of Title and Escrow = $100,000

Cost of Utility Relocation (Local Agency Share) = $226,000

Cost of Utility Relocation (Construction Cost) = $226,000

Total ROW Estimate (Escalated) = $8,202,600

Project scope and limits could change as the project development process moves along. Further certainty would be obtained during the next PA&ED phase when the preferred alternative is identified and a right of way data sheet is prepared.

Attachment I

Transportation Planning Scoping Information Sheet

Transportation Planning Scoping Information Sheet

Proposed Project Summary

EA	04-0Q290
EFIS	041000068
County-Route-PM	ALA-880-PM 17.2/18.6
Project Description	

The project proposes to provide interchange improvements at the Winton Avenue and A Street interchanges in the City of Hayward along the I-880 corridor, to improve traffic operations and multimodal safety and connectivity. The main components of the project would include:

- Reconfiguring the I-880 interchange at Winton Avenue and A Street to enhance access to the surrounding residential, retail and commercial land uses
- Implementing complete streets features at both interchanges
- Providing northbound and southbound auxiliary lanes along the main line between the A Street interchange and the Winton Avenue interchange
- Modifying signals and reconfiguring intersections to improve traffic flow, reduce congestion, and make intersections accessible and safer for pedestrians and cyclists

Section 1–System Planning

Section 2–LD-IGR

Section 3–Smart Mobility, Complete Streets, and Regional Planning

Section 4–Climate Change and Environmental Considerations

Section 5–Tribal Government Coordination

Project Nomination Scoping Team Information		
Title	Name	Phone Number
District Information Sheet Point of Contact	Kan Wong	(510) 286 5549
Project Nomination Coordinator	Mimy Hew	(510) 286-5578
Transportation Planning Project Nomination Scoping Team Representative		

Transportation Planning Stakeholder Information		
Title	Name	Phone Number
Regional Planner	Ariam Asmerom	(510) 286-5572
System Planner	Zhongping Xu	(510) 286-5577
Local Development Intergovernmental Review (LD-IGR) Planner	Patricia Maurice	(510) 286-5528
Sustainable Planning Grant Coordinator	Becky Frank	(510) 286-5536
Freight Planner	Cameron Oakes	(510) 622-5758
Transit Planner	Wingate Lew	(510) 622-5432
Bicycle and Pedestrian Coordinator	Sergio Ruiz	(510) 286-7227
Park and Ride Coordinator	Adrian Levy	(510) 622-0109
Native American Liaison	Blesilda Gebreyesus	(510) 286-5575
Climate Change Coordinator/Liaison	Dick Fahey	(510) 286-5761
Other Coordinators		

Reviewed by:

____
District Planning Representative (Date)

____
Project Nomination Coordinator (Date)

Section 1: System Planning

ROUTE SEGMENT AND PROJECT INFORMATION			
EA: 04-0Q290	**Optional**	**EFIS:** 041000068	**Optional**

	Co/Route/P.M.	**Project Description**
Choose Anchor Asset	ALA/I-880/15.6-26.5	In Hayward, San Leandro, and Oakland, at Tennyson Road Overcrossing (OC) No. 33-0236 (PM 15.65), Washington Avenue OC No. 33-0166 (PM 20.82), and Damon Slough Southbound onramp No. 33-0142K (PM 26.53); also on Route 77 in Oakland, at San Leandro OC No. 33-0284 (PM 0.29). Upgrade bridge rails, replace joint seals.
Local or Regional Planned/Programmed Project (if applicable)	ALA/I-880/R.09-24.8	In Oakland, Union City, and Fremont at various locations. Construct permanent Best Management Practices (BMPs) to achieve Statewide National Pollutant Discharge Eliminating System (NPDES) permit compliance units (CUs) for trash capture.

ROUTE DESIGNATIONS			
Freeway and Expressway	Yes	Scenic Highway	No
National Highway System	Yes	Truck Network Designation	Yes
Strategic Highway Network	Yes	Interregional Road System	No
Federal Functional Classification	Interstate	Strategic Interregional Corridor	Bay Area corridor with North Coast and with Central Valley/Los Angeles
Other		Priority Interregional Facility	No

ADT		**V/C**				**Speeds**			
Base Year 2017	Horizon Year 2045	Base Year 2018		Horizon Year 2045		Base Year 2018		Horizon Year 2045	
24,800		NB		NB		NB		NB	
		SB		SB		SB		SB	

Truck Volumes: 1,736

Truck Percentages: 7%

Please describe how the project will impact modal and intermodal facilities (if applicable):

Please identify if the project need has been identified within the following documents:

- ☐ Transportation Concept Report (TCR)
- ☒ District System Management Plan (DSMP)
- ☒ Corridor System Management Plan (CSMP)
- ☐ Interregional Transportation Strategic Plan (ITSP)
- ☐ California Freight Mobility Plan (CFMP)
- ☐ State Highway System Management Plan/10 Year SHOPP
- ☐ Other (Feasibility Study, District Bike and Ped Plan, Regional Concept of Transportation Operations etc):

Section 2: Local Development – Intergovernmental Review

LD-IGR	
Please provide the below LD-IGR information, as applicable, for current and/or future local development projects that may impact, the proposed Caltrans project. Describe the land uses along the segment. Identify major sites, destinations and trip generators within or adjacent to the corridor. These can include: residential parks, recreation centers, religious institutions, schools, town centers, shopping centers, large employment centers and so forth. *The questions proposed here serve as a sample of considerations for the project. Please use sound planning and engineering judgement to determine which questions are relevant to the development of the proposed Caltrans project.*	
Local Agency Name/Project Sponsor: I-880 Express Lanes Project: BAIFA	Phone Number: N/A Email: N/A
Project Distance to Development(s)	Within the Project Limits
California Environmental Quality Act (CEQA) Status and Implementation Date	
National Environmental Policy Act Status (required for projects with Federal Funding)	
All vehicular and non-vehicular unmitigated impacts and planned mitigation measures include Transportation Demand Management (TDM) and Transportation System Management (TSM) that may affect Caltrans Facilities	
Approved mitigation measures and implementing party.	
Value of constructed mitigation and/or amount of funds provided.	
Encroachment Permit, Transportation Permit, Traffic Management Plan, or California Transportation Commission (CTC) Access approvals needed	
Describe relationship to Regional Blueprint, General Plans, or County Congestion Management Plans.	
Inclusion in a Regional Transportation Plan, Sustainable Community Strategy, or Alternative Planning Strategy?	
What type of regional or local mitigation/transportation impact fee program is in place?	
Traffic Mitigation Agreement with an agency or developer to collect a "Fair Share" to offset "nexus and proportionality" traffic impacts to the SHS.	

Section 3: Smart Mobility, Complete Streets, and Regional Planning

• SMART MOBILITY FRAMEWORK PLACE TYPES

Identify the SMF Place Type(s):

☐ Urban Center	☐ Close-In Center	☒ Suburban Center	☐ Rural Settlement/Ag Land
☐ Urban Core	☐ Close-In Corridor	☒ Suburban Corridor	☐ Rural Towns
	☐ Close-In Neighborhood	☐ Suburban Dedicated Use Area	☐ Protected Lands
	☐ Compact Community	☐ Neighborhood	☐ Special Use Areas

3.1 Bicycle and Pedestrian Conditions

BICYCLE AND PEDESTRIAN CONDITIONS	Caltrans and Local/Regional Partner Needs/Opportunities with Project
Describe the existing bicycle and pedestrian facilities within the project limits: Winton Avenue is a Minor Arterial designated as a Class III bike route, 6' landscape area, and 4' sidewalks. The Winton Avenue interchange has a four-quadrant cloverleaf configuration with freeway ramps running freely onto Winton without stopping. A Street is a Major Arterial with existing class II bike lanes that drop at the I-880 undercrossing, where bicyclists must share the lane with traffic. There are also five-foot-wide sidewalks. The A Street interchange is a Tight Urban Diamond Interchange configuration with two closely spaced signalized intersections at the crossing of the I-880 ramp terminals.	I-880 acts as a major barrier to walking and bicycling within the project area, bisecting neighborhoods and cutting them off from commercial areas. The nearest dedicated bicycle facility crossing I-880 is the Hacienda Ave overcrossing, .85 miles north of A St. The nearest separated pedestrian crossing is the Eldridge Ave pedestrian overcrossing, 1.5 miles south of Winton Ave. The reconstruction of the two interchanges provides an opportunity to improve bicycle and pedestrian network connectivity, by installing Class IV separated bikeways, wider sidewalks, and/or a Class I pedestrian and bicycle crossing. Squaring up and adding traffic control to the ramps, lowering vehicle speeds at pedestrian and bicycle conflict points, increasing crossing visibility, and decreasing crossing distance can also improve pedestrian and bicycle access and mobility, and should be strongly considered in any interchange reconstruction.
Describe the physical and/or perceived impediments for bicyclists and pedestrians: The Winton Avenue Overcrossing has no shoulders to provide separation for bicycles. The on and off-ramps are free-flow with pedestrian crosswalks. The A Street Undercrossing has no shoulders to provide separation for bicycles. The Bridge columns are an obstacle for a road diet.	
Does the highway segment function as a "Main Street: or a "Safe Route to School"? No	
Describe the bicycle and pedestrian needs as identified in an existing Bicycle/Pedestrian Plan or comprehensive planning study for the corridor, if any. The City of Hayward is currently developing a Bike and Pedestrian Master Plan update. The 2009 Bicycle Master Plan did not propose new bicycle facilities on these roadways. The Caltrans District 4 Bike Plan proposes connecting the existing Class II bike lanes on A St under I-880 and striping new Class II bike lanes on Winton Avenue. However, the reconstruction of these interchanges is an opportunity to provide lower stress, more separated facilities.	
If applicable, is the Pedestrian Plan or comprehensive planning study included in the ADA Transition Plan? Please consult with the Office of Traffic Safety, which is responsible for the ADA Transition Plan.	
Is the proposed project located on a corridor that accommodates or bisect recreational trails: No	
Contact information for bicycle, pedestrian or disabled advisory advocates. Contact information will be provided at a later date, if applicable.	

3.2 Transit Conditions

TRANSIT CONDITIONS	Caltrans and Local/Regional Partner Needs/Opportunities with Project
What are the existing transit accommodations, if any? (e.g., such as transit stops or active transit line) AC Transit provides transit service in the project area. Route SB is a transbay commuter route along I-880 to the SFOBB. Route M is another	

TRANSIT CONDITIONS	Caltrans and Local/Regional Partner Needs/Opportunities with Project
transbay route connecting Hayward BART Station to Hillsdale Shopping Center and travels along Winton Ave to Hesperian Blvd to San Mateo Bridge. The Hayward BART Station is approximately 1 mile east of the project area and provides regional rail service. This station is also a major transit hub with the multiple routes. Routes 83 and 93 travel along A Street and Route 86, 97, and M travel along Winton. The Hayward Amtrak station is approximately .5 mile east of the project area and provides regional rail service.	
Are there existing transit or proposed accommodations on intersecting local roadways? Yes, Hesperian Boulevard has existing Transit lines. The Amtrak Capitol Corridor has a train station near A Street.	
Where is the nearest Park and Ride Lot? Who owns/maintains? Castro Valley, John Drive Park and Ride Lot. Caltrans maintains the Lot.	
Describe transit facility needs identified in short-and long-range transit plans and RTP. Describe how these future plans relate to the corridor. There are no known short- or long-range transit plans involving or directly affecting the project area.	
Contact information for local transit provider. Contact information will be provided at a later date, if applicable.	

3.3 Local and Regional Planning

LOCAL AND REGIONAL PLANNING	
MPO/RTPA and Contact Name: MTC, Therese McMillan	
Local County/City and Contact Name: Alameda CTC- Gary Sidhu and City of Hayward- Fred Kelley	
Title and web-link to most current Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS)	http://projects.planbayarea.org/
Is the proposed Caltrans project consistent with local and regional plans (General Plan, RTP)? If not, please explain. Yes	
Provide nexus between the RTP objectives and the proposed project to establish the basis for the project purpose and need.	

Section 4: Climate Change and Environmental Considerations

Districts that have not yet received this data are advised to use Cal-Adapt and local and regional governments' vulnerability assessments and/or adaptation studies of transportation infrastructure, where available, to identify potential impacts to Caltrans' assets.

CLIMATE CHANGE AND ENVIRONMENTAL CONSIDERATIONS		
Is there an adopted Climate Action Plan for the City or County in which the proposed project is located?	☒ Yes ☐ No	
Is the corridor susceptibility to climate change factors such as increased flooding or sea level rise? If yes, please indicate which factors to the right. ☐ Yes ☒ No	☐ Sea Level Rise/Storm Surge ☒ Precipitation	☒ Temperature Changes ☐ Wildfire

Is there a local and/or regional climate vulnerability assessment or adaptation plan? If yes, please provide link and/or further information.	☒ Yes ☐ No http://www.adaptingtorisingtides.org/wp-content/uploads/2014/12/HaywardShorelineResilienceStudyReport_sm.pdf
Describe assets vulnerable to changes in climate conditions, such as landscape planting, irrigation systems.	Highway segments near creek crossings are vulnerable to flooding from extreme storm events, as well as to impacts from extreme heat and wildfire events. Landscaping, irrigation systems, drainage/culvert systems, surface and sub-surface electronic systems, pavement, bridges, etc. are all vulnerable to climate change impacts.
Does the proposed project include GHG measures from the Regional RTP/SCS's Environmental Impact Report (EIR)?	Consult with LD-IGR Planner.
Is the proposed project located on or near and of the following: sensitive habitat areas such as wetlands, native or sensitive species habitats, wildlife corridors, identified fish passage barrier, agricultural land?	

AIR QUALITY MANAGEMENT	
Name of Air Quality Management District (AQMD) Bay Area Air Quality Management District	
Is the proposed project located in a Federal non-attainment or attainment maintenance area?	☒ Yes ☐ No

Section 5: Tribal Government Coordination

Please refer to Section 5 of the Transportation Planning Scoping Information Sheet for further guidance on AB 52 and the Tribal Employment Rights Ordinance (TERO) questions.

TRIBAL GOVERNMENT COORDINATION	
Is the proposed project within or near an Indian Reservation Rancheria, or Tribal Trust Land?	☐ Yes (Please provide name/names) ☒ No
Does the proposed project involve trust lands (including tribal and individual allotted lands) outside of a reservation or Rancheria?	☐ Yes (Please provide name/names) ☒ No
• *Has the Tribe or individual allotment holders been notified?*	☐ Yes (Describe concerns/topics discussed) ☐ No (Why not?)
• *Has the Bureau of Indian Affairs (BIA) been notified (if trust lands and/or a Reservation/Rancheria is involved)?*	☐ Yes (Describe concerns/topics discussed) ☐ No (Why not?)
• *Have all applicable tribal laws and regulations been reviewed for required coordination?*	☐ Yes ☐ No
Is there an AB 52 letter on file from a Native American Tribe that would affect this project?	☐ Yes (Please provide Tribal name(s) and letter details). ☐ No
Has the Tribal Government been contacted?	☐ Yes (Describe concerns/topics discussed) ☐ No (Why not)
Does the Tribe have a Tribal Employment Rights Office/Ordinance (TERO)?	☐ Yes ☐ No
• *Has the TERO been reviewed for required coordination?*	☐ Yes ☐ No
• *Is there a related Memorandum of Understanding (MOU) between the District and the Tribe?*	☐ Yes ☐ No
Does Caltrans have other MOUs with the Tribe?	☐ Yes (Provide title and description or content) ☐ No

Place Holder to Insert Graphic of Map

Attachment J

Stormwater Documentation

Caltrans

Dist-County-Route: 04-ALA-880
Post Mile Limits: 17.2/18.5
Type of Work: Interchange Improvements
Project ID (EA): 0418000068 (04-00290K)
Program Identification: N/A
Phase: ☒ PID ☐ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): San Francisco Bay
Total Disturbed Soil Area: 26.14 ac to 37.46 ac PCTA: Maximum up to 20.95 ac
Alternative Compliance (acres): TBD at PA/ED ATA 2 (50% Rule)? Yes ☐ No ☒
Estimated Const. Start Date: 4/3/2024 Estimated Const. Completion Date: 12/31/2026
Risk Level: RL 1 ☐ RL 2 ☒ RL 3 ☐ WPCP ☐ Other: ______
Is MWELO applicable? Yes ☐ No ☐
TBD at PA/ED
Is the Project within a TMDL watershed? Yes ☒ No ☐
TMDL Compliance Units (acres): TBD at PA/ED
Notification of ADL reuse (if yes, provide date): Yes ☒ Date: TBD at PS&E No ☐

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E only.

Joyce Cheng 05/29/19
Joyce Cheng, Registered Project Engineer Date

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

Parag Mehta 9/4/19
Parag Mehta, Project Manager Date

03SEP19
For *Markus Lansdowne (Acting for Amrinder Jhajj), Designated Maintenance Representative* Date

For 8/29/19
Alex McDonald, Designated Landscape Architect Representative Date

Aug 27 2019
Wilfung Martono, District/Regional Design SW Coordinator or Designee Date

STORMWATER DATA INFORMATION

1. Project Description

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), in cooperation with the Alameda County Transportation Commission (Alameda CTC) proposes to provide interchange improvements at the Winton Avenue and A Street interchanges in the City of Hayward along the Interstate 880 (I-880) corridor (Figure 1). The I-880 Interchange Improvements (Winton Avenue and A Street) Project (Project) would include:

- Reconfiguring the I-880 interchange at Winton Avenue to enhance access to the Southland Mall and other retail and commercial land uses
- Implementing complete streets features at both interchanges
- Reconstructing the I-880/A Street interchange to widen A Street
- Providing northbound and southbound auxiliary lanes along the main line between the A Street interchange and the Winton Avenue interchange
- Modifying signals and reconfiguring intersections to improve traffic flow, reduce congestion, and make intersections safely accessible for pedestrians and cyclists.

Purpose and Need

This section summarizes the transportation purpose and need for the Project. During the Project Approval/Environmental Document (PA/ED) phase, the Purpose and Need Statement may be refined to provide additional details and analyses regarding the existing and future needs, in accordance with Caltrans' Standard Environmental Reference (SER) guidelines.

Purpose
The purpose of the Project is to:

- Improve merge and weave operations along segment of I-880 between Winton Avenue and A Street interchanges;
- Improve traffic operations, safety, and accessibility to the Southland Mall and other retail and commercial land uses at Winton Avenue;
- Improve traffic operations and safety at A Street interchange; and
- Prioritize multimodal transportation infrastructure at the Winton Avenue and A Street interchanges, including complete street features such as a Class IV bike lanes and pedestrian friendly design to enhance mobility and safety.

Need

<u>Capacity and Transportation Demand</u>

The I-880/Winton Avenue interchange currently operates at or over capacity. The following are several key existing issues identified at the I-880/Winton Avenue Interchange:

- The interchange has an inadequate four-quadrant cloverleaf configuration with ramps running freely onto Winton Avenue without intersection control such as a traffic light or roundabout.
- The existing Winton Avenue and A Street interchanges are less than 1 mile apart with no auxiliary lanes between the interchanges in either direction. This results in merge-weave issues between the interchanges on the mainline in both northbound and southbound directions.

- The current interchange does not provide comfortable environments for bicyclists and pedestrians because of the free-running ramps at uncontrolled intersections from the freeway onto Winton Avenue. Pedestrians and bicyclists must cautiously look for fast-moving vehicles when crossing the uncontrolled ramps along Winton Avenue.
- The queue of vehicles heading to Southland Mall via westbound Winton Avenue at the Southland Drive left-turn lane creates congestion and queues along Winton Avenue, Southland Drive, and the I-880 southbound off-ramp.
- Growing congestion at the I-880/Winton Avenue interchange has constrained accessibility to the Southland Mall, forcing vehicles to divert to the surrounding street network. Diversion of Winton Avenue traffic onto the local street network may result in the following quality of life impacts to the local community:
- Increased delay experienced by local travelers and commuters;
- Economic loss for local businesses, trucking, and delivery companies as a result of increased recurring congestion; and
- Reduced air quality as a result of traffic congestion.

Similarly, the I-880/A Street interchange experiences congestion and several other key traffic operational issues:

- Congestion during peak periods affects both directions of I-880, generating additional trips on the local roadway network from vehicles diverting around the freeway traffic.
- Vehicle queues in left-turn lanes along A Street under the mainline cause operational and safety issues.
- The existing underpass lacks bicycle and pedestrian infrastructure, resulting in inadequate access for bicyclists and pedestrians.

<u>Interchange Deficiencies</u>

The I-880/Winton and I-880/A Street Interchanges lack intersection signalization (at Winton Avenue), optimized intersection signalization (at A Street), and optimized intersection configurations to accommodate safe multimodal access and truck turning maneuvers.

<u>Accessibility to Local Destinations</u>

The I-880/Winton Avenue and A Street Interchanges both provide access to important destinations adjacent to the I-880 freeway including the Hayward Executive Airport and the Southland Mall. Southland Mall is a highly-frequented shopping mall bordered by I-880 to the east and Winton Avenue to the north.

Under the current configuration, vehicles traveling north and southbound on I-880 towards Southland Mall exit at Winton Avenue and are impeded by high levels of congestion.
The current I-880/Winton Avenue and I-880/A Street interchanges create long traffic queues of vehicles waiting to enter or exit the freeway. Congestion and delay in the study area adversely affects connectivity to the Southland Mall and local residential streets.

Description of work

The proposed Project would include construction of freeway improvements along the I-880 corridor at the Winton Avenue and I-880/A Street interchanges. The six build alternatives considered in this report are: Alternatives W1 and W2, at the I-880/ Winton Avenue interchange, Alternatives A1, A2, and A3 at the I-880/A Street interchange, and mainline improvements. It is intended that one of the build alternatives at the I-880/Winton Avenue interchange will be combined with one of the build alternatives for the I-880/A Street interchange and the mainline improvements. Should any build alternatives be deemed infeasible and/or pose a significant environmental impact during the PSR-PDS phase, they will be eliminated from further consideration. Improvements at the two interchanges in addition to mainline improvements along I-880 and extension of the Winton Avenue sound wall constitute the “Project”. The selected build alternatives at each interchange would collectively be considered a single Build Alternative for evaluation in the environmental documentation. However, should it be determined through further study that the I-880/Winton Avenue interchange improvements and the I-880/A Street interchange improvements, or the auxiliary lanes, have independent utility, the interchanges or auxiliary lanes may be separated into independent, standalone projects during the PA&ED phase.

Alternatives

This PSR-PDS/PEAR considers a No-Build Alternative along with three build alternatives at the I-880/Winton Avenue interchange and three build alternatives for the I-880/A Street interchange. The selected build alternatives at each interchange along with an alternative to provide one auxiliary lane in each direction on I-880 would collectively be considered a single Build Alternative for evaluation in the environmental documentation.

No Build Alternative

Under the No-Build Alternative, the existing transportation facilities within the Project area would remain unchanged, except for planned and programmed improvements to convert the northbound and southbound high occupancy vehicle (HOV) lanes to express lanes. No other transportation projects are planned within the Project limits.

Build Alternatives

The range of build alternatives (ALTs) outlined below satisfy the purpose and need of the Project. The build alternatives have been developed for the purpose of establishing Project factors which will be studied and evaluated in the PA&ED phase. All build alternatives include the conversion of shoulders to auxiliary lane on I-880 southbound and northbound direction between Winton Avenue and A Street, and the extension of the Winton Avenue sound wall.

No approval, either implied or expressly granted, has been tendered regarding these build alternatives. As noted in the risk registry, there is considerable risk within this range of build alternatives. These risks will be further evaluated and resolved in the PA&ED phase. Plans and typical sections for each build alternative are provided in Attachments B and C of the PSR-PDS.

Mainline Improvements: Auxiliary Lanes

The existing outside shoulder of I-880 along the main line between A Street and Winton Avenue would be restriped to provide auxiliary lanes, one in each direction of travel. This would not require widening the mainline or right-of-way acquisitions.

I-880/Winton Avenue Interchange

ALT W1 would include converting the existing I-880/Winton Avenue intersection from a clover leaf to a partial clover leaf, improving improvements to the interchange and local roads, converting La Playa Drive to a public street, and the addition of bicycle and pedestrian facilities. ALT W2 would include converting the existing I-880/Winton Avenue intersection from a clover leaf to a partial clover leaf, improvements to the interchange and local roads, and the addition of bicycle and pedestrian facilities.

I-880/A Street Interchange

ALT A1 would retain the existing I-880 bridge structure over A Street and would modify the interchange configuration from an uncontrolled tight diamond to a tight diamond with roundabouts. This alternative would maintain existing access to all local streets near the interchange. ALT A2 would retain the existing I-880/A Street tight diamond configuration. The I-880 bridge over A Street would be demolished and reconstructed to allow for A Street to be widened underneath. ALT A3 would require full reconstruction of the interchange and construction on the main line to convert from a tight diamond to a single-point urban interchange. Additionally, a new bridge over A Street would be constructed.

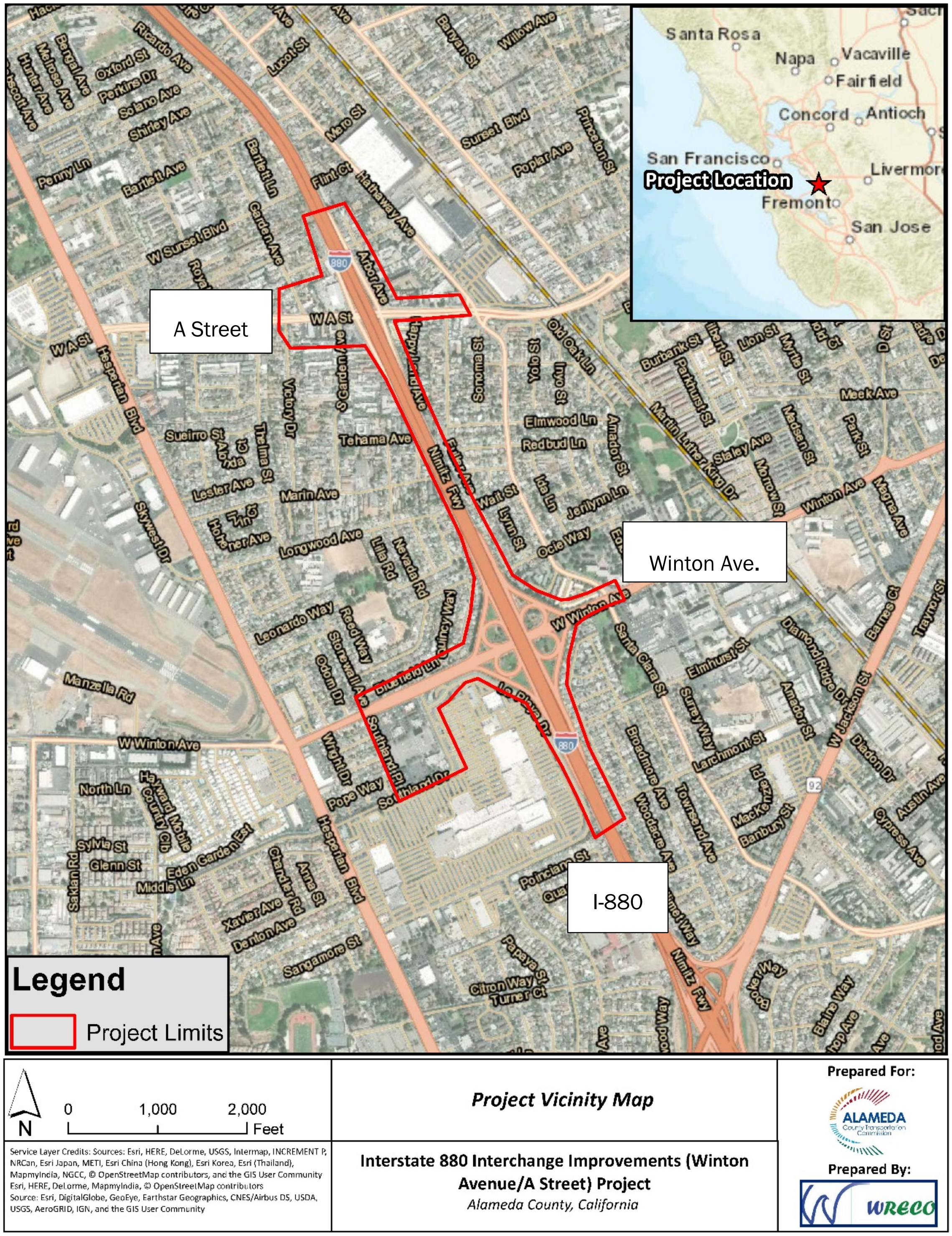


Figure 1. Project Vicinity Map

Source: WRECO

Disturbed Soil Areas (DSA) and Impervious Areas

The DSA was estimated from the added impervious areas, removed impervious areas, and replaced impervious areas. These values are separated by the Project maximum and minimum estimates in Table 1. The net new impervious area (NNI) consists of the added impervious area minus the removed impervious area. The Project will result in a minimum of 4.53 acres (ac) and a maximum of 9.04 ac of added impervious area and a minimum of 1.35 ac and a maximum of 1.73 ac of removed Impervious. Therefore, the NNI is estimated to range from 2.80 ac to 7.69 ac. The NNI is less than 50% of the post-Project impervious area; therefore, the PCTA will equal the new impervious surface (NIS), which ranges from 12.71 ac to 20.95 ac.

Table 1. Project Disturbed Soil Area and Added Impervious Areas

Area (ac)	Build Alternative					
	W1	W2	A1	A2	A3	Mainline Improvement
DSA	17.50	18.19	6.15	10.88	16.78	2.49
Existing Impervious Area	27.06	27.06	27.06	27.06	27.06	27.06
Added Impervious Surface Area	3.11	4.16	0.38	3.46	3.84	1.04
Removed Impervious Surface Area	1.73	1.35	0.00	0.00	0.00	0.00
NNI	1.38	2.81	0.38	3.46	3.84	1.04
Replaced Impervious Surface	6.98	7.00	2.39	2.07	5.72	0.54
NIS	8.36	9.81	2.77	5.53	9.56	1.58

2. Site Data and Stormwater Quality Design Issues

The Project is within the jurisdiction of Caltrans District 4 and the San Francisco Bay Regional Water Quality Control Board (RWQCB).

The Project runs through the City of Hayward, which is part of the Phase I National Pollutant Discharge Elimination System (NPDES) General Municipal Separate Storm Sewer System (MS4) Permit with the San Francisco Bay RWQCB.

Hydrological Units

The Project is within the East Bay Cities Hydrologic Region and the South Bay Hydrologic Unit (See Table 2). The hydrologic units were determined using the Caltrans Water Quality Planning Tool.

Table 2. Hydrologic Units Within the Project Limits

Post Miles	Hydrologic Unit	Hydrologic Area	Hydrologic Sub-Area	Hydrologic Sub-Area Number
17.2/18.5	South Bay	East Bay Cities	Undefined	204.20

Source: Caltrans 2018

Receiving Water Bodies and Outfall

Online maps provided by the Caltrans Water Quality Planning Tool and the Oakland Museum of California Geographic Information System Map shows that Sulphur Creek intersects with the Project site about 0.21 miles south of A Street via an underground storm drain. Sulphur Creek is a concrete-lined, engineered channel, connected to network of underground culverts or storm drains within the Hayward City limits. This system of culverts, storm drains, and lined channels directs Sulphur Creek westward where it eventually reaches a fallout in the San Francisco Bay.

Biological assessments of the site found that there are two small areas that could be delineated as waters of the U.S. (wetlands). One potential wetland is located on the east side of the northbound Winton Avenue off-ramp. There is a drainage ditch that appears to be blocked and is ponding water for sufficient periods of time allowing emergent water vegetation to grow.

Beneficial Uses of Surface Waters

Sulphur Creek has the following existing beneficial uses listed in the San Francisco Bay RWQCB's Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) (2017): warm freshwater habitat, wildlife habitat, contact recreation, and non-contact recreation.

Clean Water Act 303[d] List

Sulphur Creek is not listed as an impaired water body under the 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) (State Water Resources Control Board, 2017).

Municipal or Domestic Water Supply Reservoirs

The RWQCB Basin Plan (2017) did not list any surface waters with Municipal or domestic water supply as a beneficial use. The RWQCB Basin plan does list the Santa Clara East Bay Plain Ground Basin as having Municipal or Domestic Water Supply uses.

Local Agency Special Requirements

Work done within the City of Hayward will be subject to the Phase I NPDES Municipal General Stormwater MS4 Permit (Order No. R2-2015-0049, NPDES Permit No. CAS612008).

401 Water Quality Certification/404 Permit

A 401 and 404 permit are anticipated to address the work being done on the northbound Winton Avenue off-ramp, because there is a small wetland located on the east side of the ramp.

RWQCB Special Requirements

The Project is required to assess and implement trash-control measures per the State Water Resource Control Board's *Water Code Section 13383 Order to Submit Method to Comply with Statewide Trash Provisions; California Department of Transportation* (2017). The San Francisco Bay RWQCB also states that Caltrans District 4 projects must assess and, if necessary, implement trash control measures for all hotspot locations with water bodies that discharge to the San Francisco Bay. Per Caltrans District 4's 2018 STGAs Map (2018) and STGA summary spreadsheet, I-880 within the Project area are areas delineated as moderate to very high-high trash density. The Project is required to implement trash control devices within Caltrans' right-of-way. The map and excerpt of the spreadsheet showing the trash hotspot locations in relation to the Project is included in the Supplemental Attachments.

A SF-RWQCB Cease and Desist Order (CDO) (No. R2-2019-0007) is also required for this project. The Order requires that the project must refrain from discharging partially-treated wastewater from wet weather facilities to Waters of the State. Due to the anticipated need for a 401 permit, trash-control measures will also be necessary, as required by Alameda County.

Topography

The Project area is located in a relatively flat area, with the foothills to the east gradually sloping down to the Hayward shoreline and San Francisco Bay in the west. Elevations vary throughout the Project area from 55 to 70 feet (ft) above mean sea level.

Climate

The closest Western Regional Climate Center data collection is located in San Leandro. The data shows an average high of 67.4° F and a low of 47.1° F. Total precipitation averages around 25.16 inches with most of the rain fall occurring between October and April.

Soil Classification

The Project is comprised entirely of Hydrologic Soil Group (HSG) C, with 83.4% of the area classified as Botella loam and 16.6% of the area classified as Danville silty clay loam. The Botella loam extends from the southern end of the project to approximately just south of A Street. The soils in the remaining northern end of the project are comprised of Danville silty clay loam. Soils with a C rating have a moderately fine to fine texture and a slow rate of water transmission.

Slope Stability

The District 4 Work Plan (Caltrans 2017) does not identify any areas prone to erosion within the Project limits.

Groundwater

The Project is located in the East Bay Plain sub-basin of the Santa Clara Valley (Figure 2). According to the USGS Web Soil Survey, the depth to water table is greater than 200 centimeters (6.56 ft). The California Water Boards Groundwater Ambient Monitoring and Assessment (GAMA) Groundwater Information System shows four wells within 200 ft of the Project site. These wells had a depth to water tables that ranged from 15.28 ft to 24.80 ft.

Hazardous Waste

Based on a preliminary study using the California Water Board's GAMA Groundwater Information System, there is a potential for contaminated soil and groundwater within the Project area. Treatment best management practices (BMPs) must not be constructed on areas with hazardous waste, unless all the hazardous waste is removed from the soil beneath the BMPs. Hazardous waste studies and the potential to dispose of hazardous waste onsite, such as at areas where fill is being proposed, will be discussed in the PA/ED- and PS&E-phase Stormwater Data Reports. Aerially-deposited lead (ADL), hazardous waste materials, and potentially-contaminated groundwater will be assessed during the PA/ED phase, and the feasibility for ADL reuse within the Project limits will be determined during the PS&E phase.

Figure 2-10D Groundwater Basins: East and South Bay

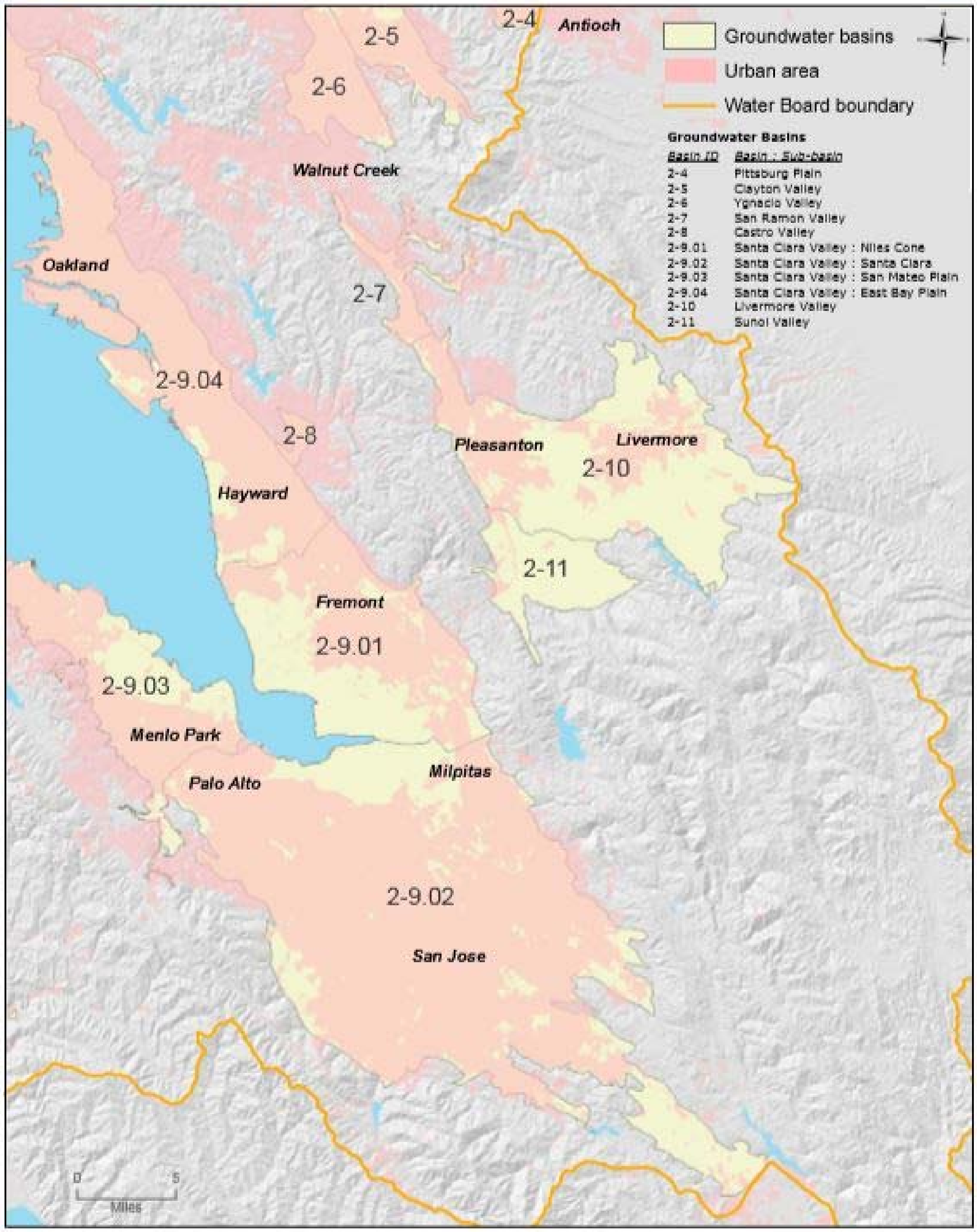


Figure 2. East Bay Plain sub-basin of the Santa Clara Valley

Source: RWQCB (R2), 2017

Right-of-Way

According to the preliminary designs, the vast majority of the Project is comprised of I-880, intersections, on-ramps, and off-ramps. However, some of the repairs, occurring around A Street and Winton Avenue, are in the City of Hayward's right of way.

Land Use

The land use in the vicinity of the Project is primarily residential and commercial with some park and public spaces nearby. I-880 is a heavily-used road that connects Oakland and San Jose. See Figure 3 for the Land Use map.

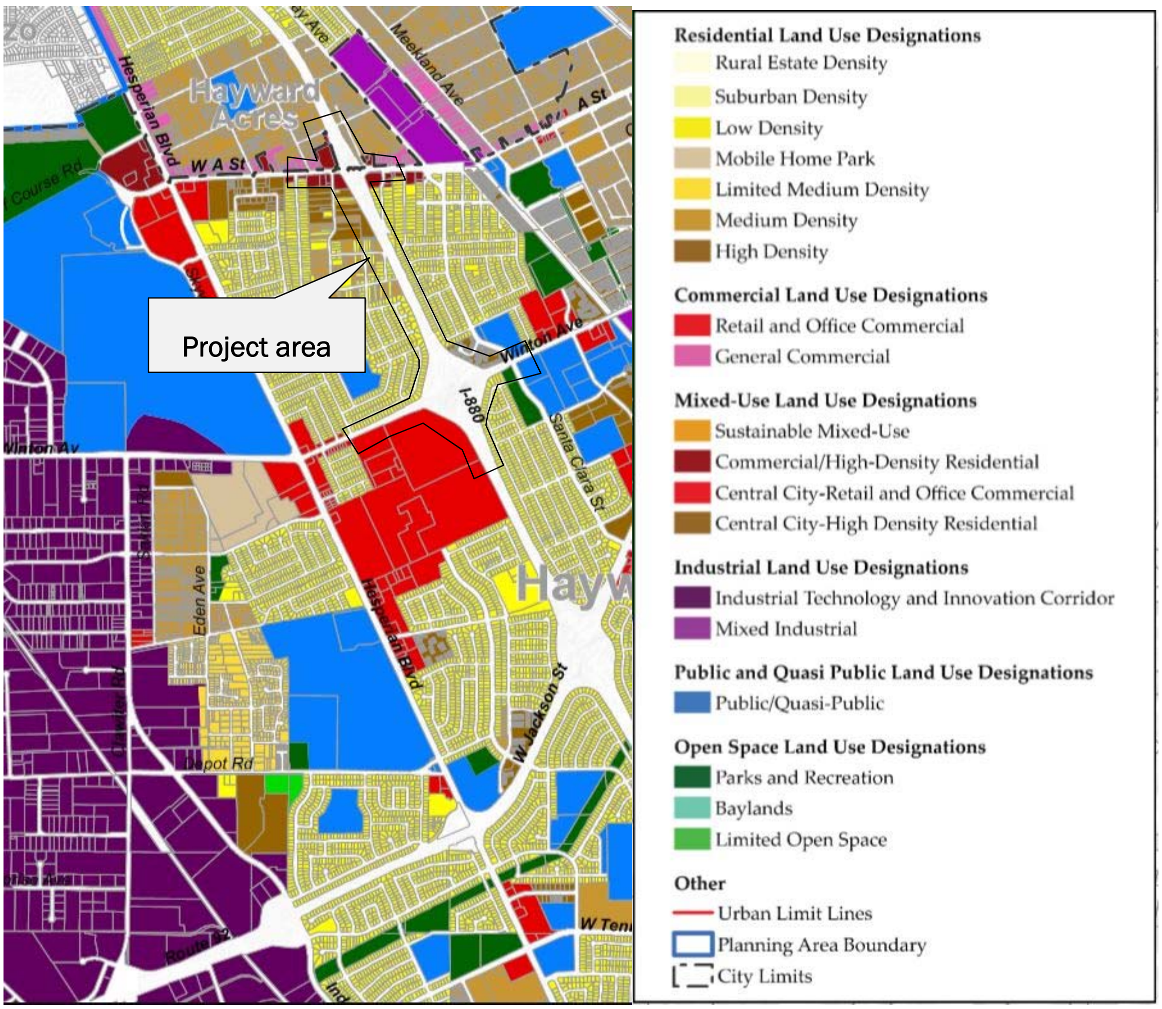


Figure 3. Land Use Map

Source: City of Hayward, 2013

Measures for Avoiding or Reducing Potential Stormwater Impacts

Since this Project is proposing work along existing I-880, the Project cannot be relocated or realigned. Work will be designed to avoid or reduce environmental impacts.

Slopes are planned to be no greater than 2:1 (Horizontal:Vertical (H:V)), compacted as specified in the Caltrans Standards Specifications, and stabilized using the permanent erosion control measures to be specified during the PS&E phase. For locations with existing slopes greater than 2:1 (H:V), the existing slopes will be maintained where feasible; proposed slopes will be graded to match the existing condition.

Temporary construction site BMPs will be employed to prevent any construction material from entering the receiving water bodies and are discussed in Section 3 of this *Stormwater Data Report*. The permanent erosion control strategy for this Project is discussed further in Section 6 of this *Stormwater Data Report*.

Existing Treatment BMP(s)

There are no known existing treatment BMPs within the Project limits; if any are present, they will be avoided during construction, if possible, and will be identified on the plans to be developed during the PS&E phase.

3. Construction Site BMPs to be used on Project

Construction site BMPs are temporary project features that minimize and avoid water quality impacts during the construction phase. All alternatives are anticipated to result in more than 1 acre of DSA and is expected to be required to comply with the CGP. This assessment will be confirmed by the Caltrans District 4 Stormwater Coordinator.

Risk Level Assessment

This Project is anticipated to disturb more than 1 acre of soil and will need to comply with the NPDES CGP. The risk-level assessment includes the combined receiving water risk and sediment risk; projects are rated as risk levels 1, 2, or 3, with monitoring requirements varying by risk level.

No 303(d)-listed waterbodies listed for sediment are potential receiving water bodies, meaning that no high-risk receiving waterbodies are associated with the Project.

The sediment risk factor is determined from the product of the rainfall runoff erosivity factor (R), the K factor, and the length-slope (LS) factor. The sediment risk is classified as low when the product of the R, K, and LS factors is less than 15; medium when the product is between 14 and 75; and high when the value is greater than 75. Due to the size and location of the Project, there are multiple R factor, K factors, and LS factors applicable to the site. The most conservative values were used in order to provide the most conservative value.

Per Caltrans Water Quality Planning Tool, the LS was determined to be 0.49, the K factor is 0.32, and the R factor is 130. Therefore, the Project has a watershed erosion estimate of 20.38, which is classified as having a medium sediment risk.

Storm Water Pollution Prevention Plan

All of the alternatives are anticipated to result in over 1 acre of DSA, thus a Storm Water Pollution Prevention Plan (SWPPP) must be prepared by the Contractor and approved by the Caltrans Resident Engineer prior to the start of construction. The SWPPP will include the development of a Construction Site Monitoring Program that presents procedures and methods related to the visual monitoring, sampling and analysis plans for non-visible pollutants, sediment, turbidity, and pH. Based on the information we have during this phase, the Project is a Risk Level 2 project, which requires a SWPPP.

Construction Site BMP Strategy

Temporary project features that prevent any construction material from getting into receiving water bodies or drainage facilities that discharge to surface waters will be employed. When possible, the scheduling of earth-disturbing construction activities should not be made during anticipated rain events. To minimize potential runoff or run-on within the Project area, construction site BMPs should be installed prior to the start of construction or as early as feasibly possible during construction.

Parts of the Project occur within portions of I-880 that are elevated. On these elevated portions, the existing drainage will be maintained and captured at low points for treatment.

Measures that are to be considered for this project will be detailed during the design phase. The general construction site BMP strategy for all alternatives of this project consists of the following:

- Soil Stabilization Measures
- Sediment Control Measures
- Tracking Control
- Non-Stormwater Management
- General Construction Site Management

Soil stabilization and sediment control measures include placing linear sediment barriers – such as silt fencing – along embankment slopes to prevent erosion from runoff and run-on sources. At locations where permanent erosion control BMPs cannot be immediately placed, slope interruption devices such as fiber rolls should be installed and a soil stabilizer hydraulically applied. These BMP efforts will also address wind erosion concerns.

Temporary drainage inlet protection will be deployed throughout the Project at locations where work is proposed. Off-site tracking of sediment will be limited by placing temporary construction site entrances in combination with regular street sweeping.

Various waste-management, materials-handling, and other housekeeping BMPs will be used throughout the duration of the Project. Any stockpiles will be maintained with the appropriate BMPs. These efforts will be covered under the job site management lump sum for the Project, which will be included in the cost estimate prepared during the design phase.

If any work occurs within the wetlands or if ground water levels are high; dewatering may be necessary. If dewatering occurs, some additional BMPs may be required, including complying with Caltrans dewatering procedures and monitoring turbidity. Construction Site BMP strategies will be determined during the PA/ED and PS&E phase.

4. Maintenance BMPs

It is anticipated that there may be drain inlets needing stenciling. Drain inlets within Caltrans Right-of-Way will be done in accordance with Caltrans Standard Plans. Drain inlets within the City's right of way will be done in accordance with City of Hayward's Standard Details. Special provisions, plans, and costs associated with stenciling drainage inlets will be provided in the Contract Documents during the PS&E phase.

5. Other Water Quality Requirements and Agreements

A U.S. Army Corps of Engineers (USACE) Section 404 nationwide permit and a San Francisco Bay RWQCB Section 401 Water Quality Certification re anticipated to be required due to a small wetland located on the east side of the northbound Winton Avenue off-ramp. There are currently no negotiated understandings and/or agreements with the San Francisco Bay RWQCB or the U.S. Army Corps of Engineers at this time. Communication with the San Francisco Bay RWQCB and the USACE will be coordinated through the Caltrans District 4 Office of Water Quality.

6. Permanent BMPs

Permanent BMPs are project features that minimize and avoid water quality impacts in the post-construction condition. Permanent BMPs include Design Pollution Prevention and Treatment BMP strategies.

Design Pollution Prevention (DPP) BMP Strategy

Downstream Effects Related to Potentially Increased Flow, Checklist DPP-1, Parts 1 and 2

The increase of impervious surface from the pre-Project condition could result in an increase to velocity, volume, or potential sediment load of downstream flows. Any increases will be minimized through the implementation of DPP BMPs — such as a mixture of compost and hydroseed — to promote the infiltration and dispersion of runoff. The implementation of erosion control measures along slopes and disturbed soils will also achieve permanent stabilization and vegetation establishment.

All the Project Alternatives create and replace more than 1 acre of impervious surface, increase the impervious surface over pre-project conditions, and may require work within Waters of the US (wetlands). Per the Section 401 Water Quality Certification criteria, the Project within Caltrans' right-of-way is required to assess for hydromodification impacts using the Alameda County hydromodification criteria. The City of Hayward would also adhere to this hydromodification assessment criteria.

Although the Project would increase the impervious area from the pre-Project condition, hydromodification impacts are minimal or not anticipated. Mapping from the Alameda County Clean Water Program's (ACCWP's) Hydromodification Susceptibility Map Application (2010) that identifies areas susceptible and not susceptible to hydromodification is included in the Supplemental Attachments. The Project area is within a white area that discharges to engineered channels. Therefore, the Project is exempt from implementing hydromodification management requirements. The hydromodification assessment will be verified during the PA/ED and/or PS&E phases.

Slope/Surface Protection Systems, Checklist DPP-1, Parts 1 and 3

The Project will be constructed to minimize erosion by disturbing slopes only when necessary, by minimizing cut and fill areas to reduce slope lengths, and by providing concentrated flow conveyance systems consisting of storm drains, ditches, and gutters. Slopes will be constructed at 4:1 (H:V) or flatter or match existing slope steepness. The areas of cut and fill will be developed during the design phase.

Slopes, where feasible, will be constructed at 4:1 (H:V) or flatter, with a maximum allowable steepness of 2:1 (H:V). The grading design and details will be developed during the PS&E phase.

Replacement landscaping and vegetation for slope stabilization will be placed wherever existing landscaping is disturbed. These efforts could include the use of a mixture of hydroseed, hydromulch, compost, and straw. Rolled erosion control products will be considered for steeper slopes, unlined ditches and swales, and other areas where there is the potential for increased erosion. Further information on vegetated surfaces will be provided during the design phase.

According to the *District 4 Work Plan* (Caltrans 2017), no areas prone to erosion have been identified within the Project limits. The need for hard-surface erosion control measures will be determined during the design phase and will likely include rock slope protection, energy dissipation devices at culvert outlets, and possible vegetation-control lining.

Concentrated Flow Conveyance System, Checklist DPP-1, Parts 1 and 4

Sheet flow will be promoted to the extent practicable to minimize concentrated flows and promote flow over vegetated surfaces. Since the roadway geometry is constrained by the existing right-of-way and the need for retaining walls, runoff from the proposed improvements may also be routed through onsite drainage facilities consisting of inlet and culvert systems or roadside gutters and ditches, as needed. Every effort will be made to minimize and prevent channelizing, gullying, or scouring of the surrounding slopes. Velocity dissipation devices and flared end sections or headwalls at culvert inlets and outlets will be considered where necessary to prevent erosion. Types and details of the proposed drainage facilities will be developed during the PS&E phase. Risks due to erosion, overtopping, flow backups, or washout will also be further evaluated during the design phase of the Project.

Preservation of Existing Vegetation, Checklist DPP-1, Parts 1 and 5

Existing mature vegetation and landscaping will be protected in place where possible. Areas of clearing and grubbing will be limited to those areas impacted by new construction. Studies to determine environmentally sensitive areas will be developed during the environmental phase. Details of the areas to be preserved will be shown in the Project plans to be developed during the design phase.

Treatment BMP Strategy

Treatment BMPs are considered for this Project because the proposed improvements involved the creation and/or replacement of more than 1 acre of impervious area for all alternatives. The treatment BMP strategy for this Project would comply with the Caltrans NPDES Permit and the San Francisco Bay RWQCB criteria.

The permit states that treatment must be designed according to the following priorities, in the following order of preference.

I. Infiltration, harvest, and re-use, and/or evapotranspiration of the stormwater runoff;
II. Capture and treatment of the stormwater runoff

Additional treatment BMPs to be considered per the San Francisco Bay RWQCB criteria include bioretention and full-trash-capture devices. The anticipated goal of the Project is to provide full treatment for the whole project area of the chosen alternative. The Project will follow the Alameda County Clean Water Program *C3 Technical Guidance Manual* (2017) for treatment sizing and design criteria. Treatment BMPs must not be constructed on areas with hazardous waste, unless all the hazardous waste is removed from the soil beneath the BMP.

Based on current value estimates, the NNI makes up less than 50% of the post project impervious area for all project alternatives, and so treatment will be required for the whole Project area. This means that treatment will be required for the added impervious area, with no additional impervious area is required to be treated. Stormwater treatment requirements will be met onsite to the maximum extent possible. However, due to the limited site data available, locations for these features have not yet been determined. It is assumed that at least half of the area required for stormwater treatment facilities will be onsite. This will be adjusted in subsequent phases of the project when potential onsite treatment locations are identified.

Treatment BMP strategies to be considered for this Project to meet the Caltrans and City of Hayward criteria and the requirements presented in the Section 401 Water Quality Certification will be determined during the PA/ED and PS&E phases. Conceptual BMP locations will be presented in the PA/ED-phase Stormwater Data Report.

Infiltration Devices, Checklist T-1, Parts 1 and 2

Infiltration devices may not be feasible for the Project area, because the majority of soils are within HSG C or D. The existing soils can be amended or engineered soil media can be used to increase the infiltration potential of proposed treatment BMPs. The design feasibility of infiltration devices will be further evaluated during the PA/ED and PS&E phase once detailed infiltration studies have been conducted and appropriate soil amendments or engineered soil mixes are developed.

Biofiltration Swales/Strips, Checklist T-1, Parts 1 and 3

Biofiltration devices are feasible for this Project due to the site conditions allowing for the establishment of vegetation and the adequate area existing within the right-of-way to place biofiltration devices. Biofiltration devices promote vegetation growth which contributes to the evapotranspiration of water. Because the Project is anticipated to obtain a Section 401 Water Quality Certification, the San Francisco Bay RWQCB requires biofiltration swales to be designed for bioretention and does not consider biofiltration strips as feasible treatment BMPs. Retention can be achieved through the use an engineered soil mix and an underdrain system. The design of biofiltration devices will be investigated during the PA/ED and PS&E phases.

Detention Devices, Checklist T-1, Parts 1 and 4

Detention devices are feasible for this Project and could be placed in the ramp loop areas for achieving both stormwater treatment and hydromodification management. However, detention devices may not meet the top priorities mentioned in the Caltrans NPDES permit for providing stormwater treatment, particularly in promoting infiltration or noticeable evapotranspiration. Detention devices can possibly be used for harvesting and re-use purposes; this design effort will be further investigated during the PA/ED and PS&E phases.

Gross Solids Removal Devices (GSRDs), Checklist T-1, Parts 1 and 7

This Project is subject to Provision E.6 "Region Specific Requirements" of the Caltrans NPDES Permit. Under this provision, projects within the San Francisco Bay RWQCB jurisdiction must meet trash-load-reduction requirements. GSRDs or trash inlets can be used to achieve this permit requirement, but it will need to be designed in tandem with other treatment BMPs that achieve stormwater treatment through infiltration, harvest, and re-use or evapotranspiration methods as required under the permit. Since the Project has moderate to very high-high trash density and is anticipated to obtain a Section 401 Water Quality Certification, the Project is required to implement full trash capture where feasible at downstream drainage systems along I-880. The locations and design feasibility of GSRDs and other trash capture devices will be further evaluated during the PA/ED and PS&E phases.

Media Filters, Checklist T-1, Parts 1 and 8

Austin sand filters are feasible for this Project and may be placed in the ramp loop areas where there is adequate space to place the device with a volume equal to at least the water quality volume with the minimum 2-foot hydraulic head. Similar to detention devices, Austin sand filters do not promote infiltration or evapotranspiration, and so Austin sand filters are not a preferred treatment device to provide stormwater treatment. The design feasibility of Austin sand filters will be further investigated during the PA/ED and PS&E phases.

DPP Infiltration Areas, Checklist T-1, Parts 1 and 11

DPP infiltration areas are not considered, because typical biofiltration devices or other approved treatment BMPs will be implemented and considered over the use of DPP infiltration areas. The Project is also not expected to generate alternative compliance or Total Maximum Daily Load (TMDL) compliance units.

Required Attachments

- Evaluation Documentation Form (EDF)
- Risk Level Determination Documentation

Supplemental Attachments

- Checklist SW-1, Site Data Sources
- Checklist T-1, Part 1 (Treatment BMPs)
- Estimate Support Information for Construction Site, DPP, and/or Treatment BMPs, electronic copies accepted (Costs are for Caltrans internal use only)
- Checklist SW-2, Stormwater Quality Issues Summary
- Checklist SW-3, Measures for Avoiding or Reducing Potential Stormwater Impacts
- Checklist DPP-1, Parts 1–5 (Design Pollution Prevention BMPs)
- Checklist T-1, Part 2–4, 7, 8, 11 (Treatment BMPs)
- Construction Site BMP Consideration Form
- Checklist CS-1, Parts 1–6 (Construction Site BMPs)
- Alameda Countywide Clean Water Program Hydromodification Applicability Map
- Caltrans District 4 STGAs Map and Excerpt

DATE: _May 2019_________

Project ID (EA): _0418000068 (04-0Q290K)__

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation
1.	Begin Project evaluation regarding requirement for implementation of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Treatment BMPs. Continue to 2.
2.	Is the scope of the Project to install Treatment BMPs (e.g., Alternative Compliance or TMDL Compliance Units)?		✓	If **Yes**, go to 8. If **No**, continue to 3.
3.	Is there a direct or indirect discharge to surface waters?	✓		If **Yes**, continue to 4. If **No**, go to 9.
4.	As defined in the WQAR or ED, does the project: a. discharge to Areas of Special Biological Significance (ASBS), or		✓	If **Yes to any**, contact the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to discuss the Department's obligations, go to 8 or 5. ________*(Dist./Reg. Coordinator initials*)
	b. discharge to a TMDL watershed where Caltrans is named stakeholder, or		✓	
	c. have other pollution control requirements for surface waters within the project limits?		✓	If **No** to all, continue to 5.
5.	Are any existing Treatment BMPs partially or completely removed? (ATA Condition 1, Section 4.4.1)		✓	If **Yes**, go to 8 **AND** continue to 6. If **No**, continue to 6.
6.	Is this a Routine Maintenance Project?		✓	If **Yes**, go to 9. If **No**, continue to 7.
7.	Does the project result in an increase of <u>one acre or more</u> of new impervious surface (NIS)?	✓		If **Yes**, go to 8. If **No**, go to 9.
8.	Project is required to implement Treatment BMPs.	Complete Checklist T-1, Part 1.		
9.	Project is not required to implement Treatment BMPs. _______ *(Dist./Reg. Design SW Coord. Initials)* _______ *(Project Engineer Initials)* ______________ *(Date)*	Document for Project Files by completing this form and attaching it to the SWDR.		

	A	B	C
1	**Sediment Risk Factor Worksheet**		**Entry**
2	**A) R Factor**		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm		
5	**R Factor Value**		130
6	**B) K Factor (weighted average, by area, for all site soils)**		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	Site-specific K factor guidance		
9	**K Factor Value**		0.32
10	**C) LS Factor (weighted average, by area, for all slopes)**		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13	**LS Factor Value**		0.49
14			
15	**Watershed Erosion Estimate (=RxKxLS) in tons/acre**	20.384	
16	**Site Sediment Risk Factor**	**Medium**	
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		
19	High Sediment Risk: >= 75 tons/acre		
20			

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment** (For help with impaired waterbodies please visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml **OR** A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan) http://www.waterboards.ca.gov/waterboards_map.shtml	**no**	**Low**

Region 1 Basin Plan

Region 2 Basin Plan

Region 3 Basin Plan

Region 4 Basin Plan

Region 5 Basin Plan

Region 6 Basin Plan

Region 7 Basin Plan

Region 8 Basin Plan

Region 9 Basin Plan

Combined Risk Level Matrix

<table>
<tr><td rowspan="2" colspan="2">Receiving Water Risk</td><td colspan="3">Sediment Risk</td></tr>
<tr><td>Low</td><td>Medium</td><td>High</td></tr>
<tr><td></td><td>Low</td><td>Level 1</td><td colspan="2">Level 2</td></tr>
<tr><td></td><td>High</td><td colspan="2">Level 2</td><td>Level 3</td></tr>
</table>

Project Sediment Risk: **Medium**

Project RW Risk: **Low**

Project Combined Risk: **Level 2**

Checklist SW-1, Site Data Sources

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID (or EA): 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

Information for the following data categories should be obtained, reviewed and referenced as necessary throughout the project planning phase. Collect available project reports and any available documents pertaining to the category and list them and reference your data source. For specific examples of documents within these categories, refer to Section 6.4.3.2. Example categories have been listed below; add additional categories, as needed. Summarize pertinent information in Section 2 of the SWDR.

DATA CATEGORY/SOURCES	Date
Water Quality	
• Caltrans. Water Quality Planning Tool. <httP://svctenvims.dot.ca.gov/wqpt./wqpt.aspx>	Last accessed: January 15, 2019
• California Water Board. GAMA Groundwater Information System. <https://geotracker.waterboards.ca.gov/gama/gamamap/public/>	Last accessed: January 15, 2019
• Rainfall Erosivity Factor Calculator for Small Construction Sites <https://www.epa.gov/npdes/rainfall-erosivity-factor-calculator-small-construction-sites#getTool>	Last accessed: February 15, 2019
Geotechnical	
• United States Department of Agriculture. Natural Resources Conservation Science. Web Soil Survey. <https://websoilsurvey.sc.egove.usda.gov/App/WebSoilSurvey	Last accessed: January 18, 2019
Topographic	
• United States Geological Survey. Earth Point Topo Map. KMZ File. <http://www.earthpoint.us/TopoMap.aspax>	Last accessed: February 1, 2019
Hydraulic	
• Caltrans. Water Quality Planning Tool. <htt://svctenvims.dot.ca.gov/wqpt/wqpt.aspt>	Last accessed: January 15, 2019
• Caltrans. Hydromodification Requirements Guidance.	February 2015
• Oakland Museum of California. Creek & Watershed Map of Western Alameda County. 2010. <https://explore.museumca.org/creeks/>	Last accessed: January 15, 2019
Climatic	
• Western Regional Climate Center. Period of Record Monthly Climate Summary. Upper San Leandro FLTRS, California <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9185>	Last accessed: January 10, 2019
Other Data Categories	
• Caltrans. Storm Water Quality Handbook, Construction Site Best Management Practices (BMPs) Manual.	May 2017

• Caltrans. Storm Water Quality Handbooks, Project Planning and design Guide.	July 2017
• Caltrans. 2018 District 4 STGAs.	2018
• Clean Water Program. C. 3 Stormwater Technical Guidance. Version 6.	October 31, 2017
• Hayward 2040 General Plan. Land Use Diagram and Land Use Designations. < https://www.hayward2040generalplan.com/land-use/intro>	September, 2013

Treatment BMPs
Checklist T-1, Part 1

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-Q290K) RWQCB: San Francisco Bay

Consideration of Treatment BMPs

This checklist is used for projects that require the consideration of Approved Treatment BMPs, as determined from the process described in Section 4 (Treatment Consideration) and the Evaluation Documentation Form (EDF). This checklist will be used to determine which Treatment BMPs should be considered for each BMP contributing drainage area within the project. Supplemental data will be needed to verify siting and design applicability for final incorporation into a project.

Complete this checklist for each phase of the project. This will help to determine if any changes to the BMP strategy are necessary, based on site specific information gathered during later phases. Use the responses to the questions as the basis of developing the narrative in Section 6 of the Stormwater Data Report to document that Treatment BMPs have been appropriately considered and/or incorporated.

Before evaluating an area for treatment capabilities or to incorporate a Treatment BMP, calculate the numeric sizing requirement for each contributing drainage area (WQV from the 85th percentile 24-hour storm event or WQF rate). Soil and geometric information for the project area will be necessary to use this Checklist.

Identify the overall project PCTA

Refer to Section 4.4 Treatment Areas for more information on defining these areas.

PCTA = NNI + RIS + ATA (1 Impervious) + ATA (2)

NNI = Net New Impervious Area

RIS = Replaced Impervious Surface

ATA (1 Impervious) = Additional Treatment Area required for existing Treatment BMPs that were removed or modified as part of the project

ATA (2) = Additional Treatment Area required when NNI is 50 percent or greater than total project impervious

What is the PCTA for the project? TBD **Acres** (A in Table E-1)

The PCTA is the impervious area required to be treated by the project. The PE is to incorporate BMPs until the summation of the treated impervious area of all the BMPs is equivalent to the PCTA for the Project.

Once this area and any ATA 1 (Pervious) has been treated, the project is in compliance with the post construction treatment requirement.

Total Maximum Daily Load (TMDL) Retrofit Projects

If the project is installing Treatment BMPs to only address TMDL requirements, then there is no required PCTA. The Treatment BMPs for a TMDL retrofit project should be designed to treat the impervious and pervious contributing drainage areas, as they are both eligible for compliance unit (CU) credits.

Overall Project Evaluation

Answer all questions, unless otherwise directed.

A. Overall Project Consideration

1. Is the project in a watershed with prescriptive Treatment BMP requirements in an adopted TMDL implementation plan or are there any other requirements for project area (e.g., District, Regional Board, Lawsuit)? ☐ Yes ☒ No

   If Yes, consult the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to determine if there are written agreements related to specific Treatment BMPs. In this case, determine if the rest of this checklist needs to be followed to address other post construction requirements. If not, document BMP(s) in the Individual Treatment BMP Summary Table, provide information on the basis of the BMP requirement and any regulatory coordination in the SWDR narrative, and complete Table E-2. Otherwise, continue.

   If No, continue.

2. Does the receiving water have a TMDL for litter/trash, or is there a region specific requirement related to trash? ☐ Yes ☒ No

   If Yes, first evaluate BMPs that can treat other pollutants and are considered to be full capture devices (GSRDs or other) for litter/trash. If other BMPs cannot be sited, consult with the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to determine if standalone full capture devices (GSRDs or other) are required to be incorporated. If standalone devices are required and no other Treatment BMPs are being considered, go to question 6 of "Individual BMP Evaluation".

   If No, continue.

3. Is the project located in an area that uses traction sand more than twice a year? ☐ Yes ☒ No

   If Yes, first consider BMPs that can treat other pollutants and can capture traction sand. If other BMPs cannot be sited, consult the District/Regional Design Stormwater Coordinator to determine if standalone traction sand trap devices should be incorporated.

   If standalone devices are required and no other Treatment BMPs are being considered, go to question 6 of "Individual BMP Evaluation". Otherwise, continue with this checklist to identify Treatment BMPs that provide traction sand and other pollutant removal, or to design Treatment BMPs in series.

   If No, continue.

B. Dual Purpose Facilities

Does the project have (or propose to include) any dual purpose facilities that could meet treatment requirements (e.g., Dry Weather Flow Diversion, flood control basins, etc.)? ☐ Yes ☒ No

If Yes and 100 percent of the PCTA and ATA 1 (Pervious) will be treated by the dual purpose facility, go to question 6 of "Individual BMP Evaluation".

If Yes, but 100 percent of the PCTA and ATA 1 (Pervious) has not been addressed, continue.

If No, continue.

C. Evaluate overall project area for infiltration opportunities using existing and proposed roadside surfaces (DPP Infiltration Areas). Assure the DPP Infiltration Area is stabilized to handle highway drainage design flows, for both sheet and concentrated flows (See HDM Section 800).

Document DPP Infiltration Areas on the "Individual Treatment BMP Summary Table" located at the end of this checklist.

1. Based on site conditions, do the DPP Infiltration Areas infiltrate 100 percent of the WQV generated by the PCTA and ATA 1 (Pervious) for the project? ☐ Yes ☒ No

   Yes, go to question 6 of "Individual BMP Evaluation".

   If No, account for area infiltrated and continue.

2. Can infiltration for these areas be increased by using soil amendments or other means? ☒ Yes ☐ No

   If Yes, and 100 percent of the WQV generated by the PCTA and ATA 1 (Pervious) is infiltrated, go to question 6 of "Individual BMP Evaluation".

   If Yes, but 100 percent of the WQV generated by the PCTA and ATA 1 (Pervious) is not infiltrated, continue with this checklist to identify Treatment BMPs that will treat the remaining PCTA and ATA 1 (Pervious).

   If No, continue.

Individual BMP Evaluation

Answer the following questions for each Treatment BMP location being considered. The following process must be followed until the PCTA and ATA 1 (Pervious) or desired treatment area (Alternative Compliance or TMDL CUs) has been achieved; for TMDL CUs, consider both impervious and pervious contributing drainage areas. Use the Individual Treatment BMP Summary Table at the end of the checklist to summarize the selected BMP(s) based on the findings of the following questions for each BMP contributing drainage area.

1. Infiltration Devices (Infiltration Basin, Trench, or other device)

   a. Can 100 percent of the BMP contributing drainage area WQV (or remaining WQV, if in series with a DPP Infiltration Area or other BMP) be infiltrated? ☐ Yes ☒ No

      If Yes, go to question 6.

      If No, continue.

2. Biofiltration Devices (Biofiltration Strips and Swales)

   a. Is this a TMDL retrofit project or is the project within a TMDL watershed or 303(d) impaired receiving water body area? ☒ Yes ☐ No

      If Yes, when designing the biofiltration device, determine the percent WQV infiltrated from both the impervious and pervious BMP contributing drainage areas. Consider using existing or amended soils:

      i. If infiltration is >50 percent, continue to b.

      ii. If infiltration is ≤50 percent, go to question 3.

      If No, continue to b.

   b. Can biofiltration devices be designed to: ☒ Yes ☐ No

      i. Treat 100 percent of the WQF/WQV (or remainder, if in series with a DPP Infiltration Area or other BMP) from the BMP contributing drainage area, and

      ii. Meet the siting and design criteria of the Caltrans biofiltration device design guidance.

      If Yes, continue to c.

      If No, go to question 3.

   c. Biofiltration devices are considered to be an effective method of treatment, go to question 6.

3. Earthen type BMPs (Detention Devices, Media Filters, or other devices)

   a. Is this a TMDL retrofit project or is the project within a TMDL watershed or 303(d) impaired receiving water body area? ☐ Yes ☒ No

   If Yes, when designing the earthen type BMP, determine the percent WQV infiltrated from both the impervious and pervious BMP contributing drainage area. Consider using existing or amended soils:

   i. If infiltration is >50 percent, continue to b.

   ii. If infiltration is ≤50 percent, go to question 4.

   If No, continue to b.

   b. Can earthen type BMPs (standalone or in series with other approved Treatment BMPs) be designed to: ☒ Yes ☐ No

   iii. Treat 100 percent of the WQV (or remainder, if in series with a DPP Infiltration Area or other BMP) from the BMP contributing drainage area, and

   iv. Meet the criteria of the Caltrans design guidance for the treatment device being considered.

   If Yes, continue to c.

   If No, go to question 4.

   c. Earthen type BMPs are considered to be an effective method of treatment, go to question 6.

4. Targeted Design Constituent (TDC)

This approach will compare the effectiveness of individual BMPs and allow the PE to use judgment when evaluating BMP feasibility (site constraints, safety, maintenance requirements, life-cycle costs, etc.).

a. Does the project discharge to a 303(d) impaired receiving water or a receiving water in a TMDL watershed where Caltrans is a named stakeholder? ☐ Yes ☒ No

If Yes, is the identified pollutant(s) considered to be a TDC (check all that apply below)? Continue to b. ☐ Yes ☒ No

☐ sediments
☐ phosphorus
☐ nitrogen
☐ copper (dissolved or total)
☐ lead (dissolved or total)
☐ zinc (dissolved or total)
☐ general metals (dissolved or total)[1]

If No or if no TDC is identified, use Matrix A to select BMPs and go to question 5.

b. Treating Only Sediment. Is sediment a TDC? ☐ Yes ☐ No

If Yes, use Matrix A to select BMPs and go to question 5.

If No, continue to c.

c. Treating Only Metals. Are copper, lead, zinc, or general metals listed TDCs? ☐ Yes ☐ No

If Yes, use Matrix B to select BMPs, and go to question 5.

If No, continue to d.

d. Treating Only Nutrients. Are nitrogen and/or phosphorus listed TDCs? ☐ Yes ☐ No

If Yes, use Matrix C to select BMPs, and go to question 5.

If No, continue e.

e. Treating both Metals and Nutrients. Is copper, lead, zinc, or general metals AND nitrogen or phosphorous a TDC? ☐ Yes ☐ No

If yes, use Matrix D to select BMPs, and go to question 5.

If No, continue.

[1] General metals is a designation used by Regional Water Boards when specific metals have not yet been identified as causing the impairment.

BMP Selection Matrix A: General Purpose Pollutant Removal			
Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Strip: HRT > 5 Austin filter (concrete) Austin filter (earthen) Delaware filter	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Strip: HRT < 5 Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Swale	Austin filter (concrete) Delaware filter
HRT = hydraulic residence time (min) All BMPs shown are considered to be effective, but some more than others. The PE should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.			

BMP Selection Matrix B: Any metal is the TDC, but not nitrogen or phosphorous			
Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Austin filter (earthen) Austin filter (concrete) Delaware filter	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Strip: HRT > 5 Strip: HRT < 5 Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter
HRT = hydraulic residence time (min) All BMPs shown are considered to be effective, but some more than others. The PE should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.			

BMP Selection Matrix C: Phosphorous and / or nitrogen is the TDC, but no metals are the TDC

Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Austin filter (earthen) Austin filter (concrete) Delaware filter*	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Biofiltration Strip Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter
All BMPs shown are considered to be effective, but some more than others. The PE should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.			
*Delaware filters would be ranked in Tier 2 if the TDC is nitrogen only, as opposed to phosphorous only or both nitrogen and phosphorous.			

BMP Selection Matrix D: Any metal, plus phosphorous and / or nitrogen are the TDCs			
Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Austin filter (earthen) Austin filter (concrete) Delaware filter*	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Biofiltration Strip Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter
All BMPs shown are considered to be effective, but some more than others. The PE should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.			
*In cases where earthen BMPs also infiltrate, Delaware filters are ranked in Tier 2 if the TDC is nitrogen only, but they are Tier 1 for phosphorous only or both nitrogen and phosphorous.			

5. Does the project discharge to a 303(d) receiving water that is listed for mercury or low dissolved oxygen? ☐ Yes ☒ No

   If Yes, contact the District/Regional NPDES Coordinator to determine if standing water in a Delaware Media Filter or Wet Basin would be a risk to downstream water quality. Continue to question 6.

   If No, continue to question 6.

6. Identify the Treatment BMPs being considered and complete the Individual Treatment BMP Summary Table and Overall Project Treatment Summary Table on the following pages. Refer to Appendix B of the PPDG and review the checklists identified below for every Treatment BMP under consideration. ☐ Complete

   Document the basis of design in the SWDR narrative and complete Table E-2.

   ____ DPP Infiltration Areas: Checklist T-1, Part 11

   ____ Infiltration Devices: Checklist T-1, Part 2

   ____ Biofiltration Strips and Biofiltration Swales: Checklist T-1, Part 3

   ____ Detention Devices: Checklist T-1, Part 4

   ____ Traction Sand Traps: Checklist T-1, Part 5

   ____ Dry Weather Diversion: Checklist T-1, Part 6

   ____ GSRDs: Checklist T-1, Part 7

   ____ Media Filter [Austin Sand Filter and Delaware Filter]: Checklist T-1, Part 8

   Note:

   Multi-Chamber Treatment Train (MCTT) is not listed here because Caltrans has found that other approved BMPs are equally effective and more sustainable due to lower life cycle costs.

   Wet Basins are not listed here due to feasibility issues due to site feasibility and issues with long term operation and maintenance.

   MCTT and Wet Basins may be considered or implemented upon the recommendation of the District/Regional Design Stormwater Coordinator.

7. Prepare cost estimate, including right-of-way, and identify any pertinent site specific determination of feasibility for selected Treatment BMPs and include in the SWDR for approval. ☐ Complete

Individual Treatment BMP Summary Table

☐ Complete

List the selected BMPs based on the findings of this checklist and the treated areas associated with each BMP in Table E-2. For projects with multiple BMPs, add rows (if needed), or attach a separate sheet displaying the following information.

Each BMP must be tracked in Table E-2. Districts may use a modified table based upon their needs. See Section 6.6 for additional information.

Table E-2. Individual Treatment BMP Summary Table[1]

BMP Identifier-Number	BMP Type	Treated Impervious Area (CT RW) (ac)	Treated Impervious Area (Outside CT RW) (ac)	Treated Pervious Area (CT RW) (ac)	Treated Pervious Area (Outside CT RW) (ac)	Treated WQV/WQF (%)
Total Area to be Treated (acre)		(B in Table E-1)	(C in Table E-1)			

1 The treated areas identified in this table are a product of the BMP CDA and Treated WQV/WQF (%).

ESTIMATE SUPPORT INFORMATION

ALTERNATIVE W1

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Environmental Mitigation	LS	1	x	100,000.00	=	$	100,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-
					Subtotal Environmental Mitigation		*$*	*100,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
200001	Highway Planting	LS	1	x	1,500,000.00	=	$	1,500,000
20XXXX	Irrigation System	LS		x		=	$	-
204099	Plant Establishment Work	LS		x		=	$	-
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	SQFT/SQYD		x		=	$	-
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA		x		=	$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-overs)	LF		x		=	$	-
					Subtotal Landscape and Irrigation		*$*	*1,500,000*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-
210350	Fiber Rolls	LS		x		=	$	-
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	QFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT		x		=	$	-
210600	Compost	SQFT		x		=	$	-
210011A	Erosion Control	LS	1	x	500000	=	$	500,000
					Subtotal Erosion Control		*$*	*500,000*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS		x		=	$	-
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	100,000.00	=	$	100,000
130330	Storm Water Annual Report	EA		x		=	$	-
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-
130301A	On-Site Stormwater Treatment BMP	ACRE	4	x	200,000.00	=	$	800,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	4	x	250,000.00	=	$	1,000,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-
130640	Temporary Fiber Roll	LF		x		=	$	-
130900	Temporary Concrete Washout	LS		x		=	$	-
130710	Temporary Construction Entrance	EA		x		=	$	-
130610	Temporary Check Dam	LF		x		=	$	-
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	748,000.00	=	$	748,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	306,387.00	=	$	306,387
					Subtotal NPDES		*$*	*2,954,387*

TOTAL ENVIRONMENTAL	**$**	**5,054,400**

Supplemental Work for NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$	50,000
					Subtotal Supplemental Work for NDPS		*$*	*50,000*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

 6/4/2019

ALTERNATIVE W2

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Environmental Mitigation	LS	1	x	100,000.00	=	$	100,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-

Subtotal Environmental Mitigation $ 100,000

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
20001	Highway Planting	LS	1	x	1,500,000.00	=	$	1,500,000
20XXXX	Irrigation System	LS		x		=	$	-
204099	Plant Establishment Work	LS		x		=	$	-
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	;QFT/SQYD		x		=	$	-
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA		x		=	$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-	LF		x		=	$	-

Subtotal Landscape and Irrigation $ 1,500,000

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-
210350	Fiber Rolls	LF		x		=	$	-
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	;QFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT		x		=	$	-
210600	Compost	SQFT		x		=	$	-
210011A	Erosion Control	LS	1	x	500000	=	$	500,000

Subtotal Erosion Control $ 500,000

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS		x		=	$	-
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	100,000.00	=	$	100,000
130330	Storm Water Annual Report	EA		x		=	$	-
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-
130301A	On-Site Stormwater Treatment BMP	ACRE	5	x	200,000.00	=	$	1,000,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	5	x	250,000.00	=	$	1,250,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-
130640	Temporary Fiber Roll	LF		x		=	$	-
130900	Temporary Concrete Washout	LS		x		=	$	-
130710	Temporary Construction Entrance	EA		x		=	$	-
130610	Temporary Check Dam	LF		x		=	$	-
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	640,000.00	=	$	640,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	229,479.00	=	$	229,479

Subtotal NPDES $ 3,219,479

TOTAL ENVIRONMENTAL $ 5,319,500

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$	50,000

Subtotal Supplemental Work for NDPS $ 50,000

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

ALTERNATIVE A1

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Environmental Mitigation	LS	1	x	50,000.00	=	$	50,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-

Subtotal Environmental Mitigation *$* *50,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
20001	Highway Planting	LS	1	x	300,000.00	=	$	300,000
20XXXX	Irrigation System	LS		x		=	$	-
204099	Plant Establishment Work	LS		x		=	$	-
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	;QFT/SQYD		x		=	$	-
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA		x		=	$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-	LF		x		=	$	-

Subtotal Landscape and Irrigation *$* *300,000*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-
210350	Fiber Rolls	LS		x		=	$	-
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	;QFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT		x		=	$	-
210600	Compost	SQFT		x		=	$	-
210011A	Erosion Control	LS	1	x	200000	=	$	200,000

Subtotal Erosion Control *$* *200,000*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS		x		=	$	-
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	100,000.00	=	$	100,000
130330	Storm Water Annual Report	EA		x		=	$	-
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-
130301A	On-Site Stormwater Treatment BMP	ACRE	1	x	200,000.00	=	$	200,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	1	x	250,000.00	=	$	250,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-
130640	Temporary Fiber Roll	LF		x		=	$	-
130900	Temporary Concrete Washout	LS		x		=	$	-
130710	Temporary Construction Entrance	EA		x		=	$	-
130610	Temporary Check Dam	LF		x		=	$	-
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	316,000.00	=	$	316,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	144,471.00	=	$	144,471

Subtotal NPDES *$* *1,010,471*

TOTAL ENVIRONMENTAL $ 1,560,500

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$	50,000

Subtotal Supplemental Work for NDPS *$* *50,000*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

ALTERNATIVE A2

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Environmental Mitigation	LS	1	x	100,000.00	=	$	100,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-

Subtotal Environmental Mitigation $ *100,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
200001	Highway Planting	LS	1	x	300,000.00	=	$	300,000
20XXXX	Irrigation System	LS		x		=	$	-
204099	Plant Establishment Work	LS		x		=	$	-
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	;QFT/SQYD		x		=	$	-
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA		x		=	$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-	LF		x		=	$	-

Subtotal Landscape and Irrigation $ *300,000*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-
210350	Fiber Rolls	LS		x		=	$	-
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	;QFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT		x		=	$	-
210600	Compost	SQFT		x		=	$	-
210011A	Erosion Control	LS	1	x	200000	=	$	200,000

Subtotal Erosion Control $ *200,000*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS		x		=	$	-
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	100,000.00	=	$	100,000
130330	Storm Water Annual Report	EA		x		=	$	-
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-
130301A	On-Site Stormwater Treatment BMP	ACRE	3	x	200,000.00	=	$	600,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	3	x	250,000.00	=	$	750,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-
130640	Temporary Fiber Roll	LF		x		=	$	-
130900	Temporary Concrete Washout	LS		x		=	$	-
130710	Temporary Construction Entrance	EA		x		=	$	-
130610	Temporary Check Dam	LF		x		=	$	-
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	920,000.00	=	$	920,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	236,865.00	=	$	236,865

Subtotal NPDES $ *2,606,865*

TOTAL ENVIRONMENTAL $ 3,206,900

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$	50,000

Subtotal Supplemental Work for NDPS $ *50,000*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

ALTERNATIVE A3

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Environmental Mitigation	LS	1	x	100,000.00	=	$	100,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF		x		=	$	-

Subtotal Environmental Mitigation $ 100,000

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
20001	Highway Planting	LS	1	x	300,000.00	=	$	300,000
20XXXX	Irrigation System	LS		x		=	$	-
204099	Plant Establishment Work	LS		x		=	$	-
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	;QFT/SQYD		x		=	$	-
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA		x		=	$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-overs)	LF		x		=	$	-

Subtotal Landscape and Irrigation $ 300,000

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$	-
210350	Fiber Rolls	LF		x		=	$	-
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	QFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT		x		=	$	-
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT		x		=	$	-
210600	Compost	SQFT		x		=	$	-
210011A	Erosion Control	LS	1	x	200000	=	$	200,000

Subtotal Erosion Control $ 200,000

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS		x		=	$	-
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	100,000.00	=	$	100,000
130330	Storm Water Annual Report	EA		x		=	$	-
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-
130301A	On-Site Stormwater Treatment BMP	ACRE	5	x	200,000.00	=	$	1,000,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	5	x	250,000.00	=	$	1,250,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$	-
130640	Temporary Fiber Roll	LF		x		=	$	-
130900	Temporary Concrete Washout	LS		x		=	$	-
130710	Temporary Construction Entrance	EA		x		=	$	-
130610	Temporary Check Dam	LF		x		=	$	-
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	1,748,000.00	=	$	1,748,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	508,314.00	=	$	508,314

Subtotal NPDES $ 4,606,314

TOTAL ENVIRONMENTAL $ 5,206,400

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$	-
066596	Additional Water Pollution Control**	LS		x		=	$	-
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$	50,000

Subtotal Supplemental Work for NDPS $ 50,000

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

MAINLINE IMPROVEMENTS - AUX LANES

EA: 04-0Q290 PID: 0418000068

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)		Cost
	Biological Mitigation	LS		x		=	$ -
130670	Temporary Reinforced Silt Fence	LF		x		=	$ -
141000	Temporary Fence (Type ESA)	LF		x		=	$ -
					Subtotal Environmental Mitigation		$ -

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)		Cost
200001	Highway Planting	LS	1	x	50,000.00	=	$ 50,000
20XXXX	Irrigation System	LS		x		=	$ -
204099	Plant Establishment Work	LS		x		=	$ -
204101	Extend Plant Establishment Work	LS		x		=	$ -
20XXXX	Follow-up Landscape Project	LS		x		=	$ -
150685	Remove Irrigation Facility	LS		x		=	$ -
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$ -
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$ -
21011X	Imported Topsoil (X)	CY/TON		x		=	$ -
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	SQFT/SQYD		x		=	$ -
200122	Weed Germination	SQYD		x		=	$ -
208304	Water Meter	EA		x		=	$ -
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$ -
20890X	Extend X" Conduit (Use for Extension of Irrigation x-	LF		x		=	$ -
					Subtotal Landscape and Irrigation		$ 50,000

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)		Cost
210010	Move In/Move Out (Erosion Control)	EA		x		=	$ -
210350	Fiber Rolls	LF		x		=	$ -
210360	Compost Sock	LF		x		=	$ -
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$ -
21025X	Bonded Fiber Matrix	SQFT/ACRE		x		=	$ -
210300	Hydromulch	SQFT		x		=	$ -
210420	Straw	SQFT		x		=	$ -
210430	Hydroseed	SQFT		x		=	$ -
210600	Compost	SQFT		x		=	$ -
210630	Incorporate Materials	SQFT		x		=	$ -
					Subtotal Erosion Control		$ -

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)		Cost
130300	Prepare SWPPP	LS		x		=	$ -
130200	Prepare WPCP	LS		x		=	$ -
130100	Job Site Management	LS	1	x	100,000.00	=	$ 100,000
130330	Storm Water Annual Report	EA		x		=	$ -
130310	Rain Event Action Plan (REAP)	EA		x		=	$ -
130320	Storm Water Sampling and Analysis Day	EA		x		=	$ -
130301A	On-Site Stormwater Treatment BMP	ACRE	1	x	200,000.00	=	$ 200,000
130302A	Off-Site Stormwater Treatment BMP	ACRE	1	x	250,000.00	=	$ 250,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA		x		=	$ -
130640	Temporary Fiber Roll	LF		x		=	$ -
130900	Temporary Concrete Washout	LS		x		=	$ -
130710	Temporary Construction Entrance	EA		x		=	$ -
130610	Temporary Check Dam	LF		x		=	$ -
130303A	Trash Removal Measures (2% of Construction Cost)	LS	1	x	122,000.00	=	$ 122,000
130620	Temporary Drainage Inlet Protection	EA		x		=	$ -
130730	Construction BMP's (3% of Roadway Items)	LS	1	x	43,212.00	=	$ 43,212
					Subtotal NPDES		$ 715,212

TOTAL ENVIRONMENTAL	**$ 765,300**

Supplemental Work for NPDES

Item code		Unit	Quantity		Unit Price ($)		Cost
066595	Water Pollution Control Maintenance Sharing*	LS		x		=	$ -
066596	Additional Water Pollution Control**	LS		x		=	$ -
066597	Storm Water Sampling and Analysis***	LS		x		=	$ -
XXXXXX	Supplemental for Environmental Items	LS	1	x	50,000.00	=	$ 50,000
					Subtotal Supplemental Work for NDPS		$ 50,000

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

Checklist SW-2, Stormwater Quality Issues Summary

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

The following questions provide a guide to collecting critical information relevant to project stormwater quality issues. Consult other Caltrans functional units (Environmental, Landscape Architecture, Maintenance, etc.) and the District/Regional Design Stormwater Coordinator as necessary. Summarize pertinent responses in Section 2 of the SWDR; do not discuss items identified as not applicable.

1.	Determine the receiving waters for the project	☒Complete	☐NA
2.	For the project limits, list the 303(d) impaired receiving water bodies and their constituents of concern.	☒Complete	☐NA
3.	Determine if there are any municipal or domestic water supply reservoirs or groundwater percolation facilities within the project limits, as shown by DWP.	☒Complete	☐NA
4.	Determine the RWQCB special requirements, including TMDLs, effluent limits, etc.	☒Complete	☐NA
5.	Determine regulatory agencies seasonal construction and construction exclusion dates or restrictions required by federal, state, or local agencies.	☒Complete	☐NA
6.	Determine if a 401 certification will be required.	☒Complete	☐NA
7.	Identify rainy season.	☒Complete	☐NA
8.	If applicable, determine the general climate of the project area. Identify annual rainfall and rainfall intensity curves.	☒Complete	☐NA
9.	If considering Treatment BMPs, determine the soil classification, permeability, erodibility and depth to groundwater.	☒Complete	☐NA
10.	Determine contaminated soils within the project area.	☒Complete	☐NA
11.	Determine the total disturbed soil area of the project.	☒Complete	☐NA
12.	Describe the topography of the project site.	☒Complete	☐NA
13.	List any areas outside of the Caltrans right-of-way that will be included in the project (e.g., contractor's staging yard, work from barges, easements for staging).	☒Complete	☐NA
14.	Determine if additional right-of-way acquisition or easements and right-of-entry will be required for design, construction and maintenance of BMPs. If so, how much?	☒Complete	☐NA
15.	Determine the estimated unit costs for right-of-way should it be needed for Treatment BMPs, stabilized conveyance systems, lay-back slopes, or interception ditches.	☐Complete	☒NA
16.	Determine if project area has any slope stabilization concerns.	☒Complete	☐NA
17.	Describe the local land use within the project area and adjacent areas.	☒Complete	☐NA
18.	Evaluate the presence of dry weather flow.	☐Complete	☒NA

Checklist SW-3, Measures for Avoiding or Reducing Potential Stormwater Impacts

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

The PE should confer with other functional units, such as Landscape Architecture, Hydraulics, Environmental, Materials, Construction and Maintenance, as needed to assess these issues. Summarize pertinent responses in Section 2 of the SWDR; do not discuss items identified as not applicable.

To be completed in PA/ED and PS&E

Options for avoiding or reducing potential impacts during project planning include the following:

1. Can the project be relocated or realigned to avoid/reduce impacts to receiving waters or to increase the preservation of critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions? ☐Yes ☒No ☐NA
2. Can structures and bridges be designed or located to reduce work in live streams and minimize construction impacts? ☐Yes ☐No ☒NA
3. Can any of the following methods be utilized to minimize erosion from slopes:
   a. Disturbing existing slopes only when necessary? ☒Yes ☐No ☐NA
   b. Minimizing cut and fill areas to reduce slope lengths? ☒Yes ☐No ☐NA
   c. Incorporating retaining walls to reduce steepness of slopes or to shorten slopes? ☒Yes ☐No ☐NA
   d. Acquiring right-of-way easements (such as grading easements) to reduce steepness of slopes? ☒Yes ☐No ☐NA
   e. Avoiding soils or formations that will be particularly difficult to re-stabilize? ☒Yes ☐No ☐NA
   f. Providing cut and fill slopes flat enough to allow re-vegetation and limit erosion to pre-construction rates? ☒Yes ☐No ☐NA
   g. Providing benches or terraces on high cut and fill slopes to reduce concentration of flows? ☒Yes ☐No ☐NA
   h. Rounding and shaping slopes to reduce concentrated flow? ☒Yes ☐No ☐NA
   i. Collecting concentrated flows in stabilized drains and channels? ☒Yes ☐No ☐NA
4. Does the project design allow for the ease of maintaining all BMPs? ☒Yes ☐No
5. Can the project be scheduled or phased to minimize soil-disturbing work during the rainy season? ☒Yes ☐No
6. Can permanent stormwater pollution controls such as paved slopes, vegetated slopes, basins, and conveyance systems be installed early in the construction process to provide additional protection and to possibly utilize them in addressing construction stormwater impacts? ☒Yes ☐No ☐NA

Design Pollution Prevention BMPs

Checklist DPP-1, Part 1

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

Consideration of Design Pollution Prevention BMPs

Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]

Will the project increase velocity or volume of downstream flow?	☒Yes	☐No	☐NA
Will the project discharge to unlined channels?	☐Yes	☒No	☐NA
Will the project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?	☐Yes	☒No	☐NA

If Yes was answered to any of the above questions, consider ***Downstream Effects Related to Potentially Increased Flow***, complete the Checklist DPP-1, Part 2.

Slope/Surface Protection Systems

Will the project create new slopes or modify existing slopes?	☐Yes	☒No	☐NA

If Yes was answered to the above question, consider ***Slope/Surface Protection Systems***, complete the Checklist DPP-1, Part 3.

Concentrated Flow Conveyance Systems

Will the project create or modify ditches, dikes, berms, or swales?	☒Yes	☐No	☐NA
Will project create new slopes or modify existing slopes?	☒Yes	☐No	☐NA
Will it be necessary to direct or intercept surface runoff?	☒Yes	☐No	☐NA
Will cross drains be modified?	☒Yes	☐No	☐NA

If Yes was answered to any of the above questions, consider ***Concentrated Flow Conveyance Systems***; complete the Checklist DPP-1, Part 4.

Preservation of Existing Vegetation, Soils, and Stream Buffer Areas

It is the goal of the Stormwater Program to maximize the protection of desirable existing vegetation, soils, and stream buffer areas to provide erosion and sediment control benefits on all projects. ☒Complete

Consider ***Preservation of Existing Vegetation, soils, and stream buffer areas***, complete the Checklist DPP-1, Part 5.

Design Pollution Prevention BMPs

Checklist DPP-1, Part 2

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED DURING PA/ED AND PS&E

Downstream Effects Related to Potentially Increased Flow

1. Review total paved area and reduce to the maximum extent practicable. ☒Complete
2. Review channel lining materials and design for stream bank erosion control. ☐Complete
   (a) See Chapters 860 and 870 of the HDM. ☐Complete
   (b) Consider channel erosion control measures within the construction limits as well as downstream. Consider scour velocity. If erosion control measures are required downstream of construction limits obtain the appropriate permits and right of way documents to include work within the construction limits. ☐Complete
3. Include, where appropriate, energy dissipation devices at culvert outlets. ☐Complete
4. Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour. ☐Complete
5. Include, if appropriate, peak flow attenuation basins or devices to reduce peak discharges. ☐Complete
6. Calculate the water quality volume infiltrated within the project limits. These calculations will be used in the Checklist T-1, Part 1. ☐Complete

Design Pollution Prevention BMPs

Checklist DPP-1, Part 3

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED DURING PA/ED AND PS&E

Slope / Surface Protection Systems

1. What are the proposed areas of cut and fill? (attach plan or map) ☐Complete
2. Were benches or terraces provided on high cut and fill slopes to shorten slope length? ☐Yes ☐No
3. Were concentrated flows collected in stabilized drains or channels? ☐Yes ☐No
4. Are new or disturbed slopes > 4:1 horizontal:vertical (h:v)? ☐Yes ☐No

   If Yes, District Landscape Architect is responsible for an erosion control strategy and may prepare an erosion control plan.
5. Are new or disturbed slopes > 2:1 (h:v)? ☐Yes ☐No

   If Yes, DES Geotechnical Design unit must prepare a Geotechnical Design Report, and the District Landscape Architect should prepare or approve an erosion control plan. Concurrence must be obtained from the District Maintenance Stormwater Coordinator for slopes steeper than 2:1 (h:v).

VEGETATED SURFACES

1. Identify existing vegetation. ☐Complete
2. Evaluate site to determine soil types, appropriate vegetation and planting strategies. ☐Complete
3. How long will it take for permanent vegetation to establish? ☐Complete
4. Plan transition BMPs from construction to permanent establishment. ☐Complete
5. Have vegetated areas and supporting permanent irrigation systems been designed to comply with the Model Water Efficient Landscape Ordinance (MWELO)? ☐Yes ☐No
6. Minimize overland and concentrated flow depths and velocities. ☐Complete

HARD SURFACES

1. Are hard surfaces minimized? ☐Yes ☐No

   Review appropriate SSPs for Vegetated Surface and Hard Surface Protection Systems. ☐Complete

Design Pollution Prevention BMPs
Checklist DPP-1, Part 4

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED DURING PA/ED AND PS&E

Concentrated Flow Conveyance Systems

Ditches, Berms, Dikes and Swales

1. Consider Ditches, Berms, Dikes, and Swales as per Topics 813, 834.3, 835, and Chapter 860 of the HDM. ☒Complete
2. Review existing and proposed conditions to remove any dike not required for slope stability, erosion control, and water conveyance. ☐Complete
3. Evaluate risks due to erosion, overtopping, flow backups or washout. ☐Complete
4. Consider outlet protection where localized scour is anticipated. ☐Complete
5. Examine the site for run-on from off-site sources. ☐Complete
6. Consider permissible shear and velocity when selecting lining material (See Table 865.2 in the HDM). ☐Complete

Overside Drains

1. Consider downdrains, as per Index 834.4 of the HDM. ☐Complete
2. Consider paved spillways for side slopes flatter than 4:1 h:v. ☐Complete

Flared Culvert End Sections

1. Consider flared end sections on culvert inlets and outlets as per Chapter 827 of the HDM. ☐Complete

Outlet Protection/Velocity Dissipation Devices

1. Consider outlet protection/velocity dissipation devices at outlets, including cross drains, as per Chapters 827 and 870 of the HDM. ☐Complete

Review appropriate SSPs for Concentrated Flow Conveyance Systems. ☐Complete

Design Pollution Prevention BMPs
Checklist DPP-1, Part 5

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED DURING PA/ED AND PS&E

Preservation of Existing Vegetation, Soils, and Stream Buffer Areas

1. Review Preservation of Property, (Clearing and Grubbing) to reduce clearing and grubbing and maximize preservation of existing vegetation, soils, and stream buffer areas. ☐Complete
2. Has all vegetation, soils, and stream buffer areas to be retained been coordinated with Environmental, and identified and defined in the contract plans? ☐Yes ☐No
3. Have steps been taken to minimize disturbed areas, such as locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling? ☐Complete
4. Have impacts to preserved vegetation, soils, and stream buffer areas been considered while work is occurring in disturbed areas? ☐Yes ☐No
5. Are all areas to be preserved delineated on the plans? ☐Yes ☐No

Treatment BMPs

Checklist T-1, Part 2

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED IN PA/ED AND PS&E

Infiltration Devices

Feasibility

1. Does local Basin Plan or other local ordinance provide influent limits on quality of water that can be infiltrated, and would infiltration pose a threat to groundwater quality? ☐Yes ☒No
2. Does infiltration at the site compromise the integrity of any slopes in the area? ☒Yes ☐No
3. Is site located over a previously identified contaminated groundwater plume? ☐Yes ☒No

   If "Yes" to any question above, Infiltration Devices are not feasible; stop here and consider other approved Treatment BMPs.

4. At the invert, does the soil type classify as NRCS Hydrologic Soil Group (HSG) D, or does the soil have an infiltration rate < 0.5 inches/hr? ☐Yes ☒No

   If "Yes", the location can only be considered if vector control has been addressed (e.g., underground).

5. (a) Does site have groundwater within 5 ft of basin invert? ☐Yes ☒No

   (b) Does site investigation indicate that the infiltration rate is significantly greater than 2.5 inches/hr? ☐Yes ☒No

   If "Yes" to either part of Question 5, adequate groundwater information must be available or contact RWQCB for concurrence before approving the site for infiltration.

6. Does adequate area exist within the RW to place Infiltration Device(s)? ☐Yes ☐No
   If "Yes", continue to Design Elements sections. If "No", continue to Question 7.

   TBD

7. If adequate area does not exist within RW, can suitable, additional RW be acquired to site Infiltration Devices and how much RW would be needed to treat WQV, or a portion thereof? _________ acres ☐Yes ☐No

   If Yes, continue to Design Elements section.

   If No, continue to Question 8.

8. If adequate area cannot be obtained, document in Section 6 of the SWDR that the inability to obtain adequate area prevents the incorporation of this Treatment BMP into the project. ☐Complete

Design Elements – Infiltration Basin

* **Required** Design Element – A "Yes" response to these questions is required to further the consideration of this BMP into the project design. Document a "No" response in Section 6 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended** Design Element – A "Yes" response is preferred for these questions, but not required for incorporation into a project design.

1. Has an investigation been conducted, including subsurface soil investigation, in-hole conductivity testing and groundwater elevation determination? (This report must be completed for PS&E level design.) *	☐Yes	☐No
2. Has an upstream bypass or overflow spillway with scour protection been provided? *	☐Yes	☐No
3. Is the Infiltration Basin size sufficient to capture the WQV, or portion thereof, with a maximum 96-hour drawdown time? Longer drawdown times may be allowable if vector controls have been implemented (e.g., underground chamber with flap gates) and coordinated with the District/Regional Design Stormwater Coordinator.*	☐Yes	☐No
4. Can access be provided to the invert of the Infiltration Basin? *	☐Yes	☐No
5. Can the Infiltration Basin accommodate the freeboard above the overflow event elevation (reference Appendix B.1.5.1)? *	☐Yes	☐No
6. Can the Infiltration Basin be designed with interior side slopes no steeper than 4:1 (h:v) (may be 3:1 [h:v] with approval by District Maintenance)? *	☐Yes	☐No
7. Can vegetation be established in an earthen basin at the invert and on the side slopes for erosion control and to minimize re-suspension? If No, consider rock or similar protective system. Note: Infiltration Basins may be lined, in which case no vegetation would be required for lined areas.**	☐Yes	☐No
8. Can diversion be designed, constructed, and maintained to bypass flows exceeding the WQV? **	☐Yes	☐No
9. Can a gravity-fed maintenance drain be placed? **	☐Yes	☐No

Design Elements – Infiltration Trench

1. Has an investigation been conducted, including subsurface soil investigation, in-hole conductivity testing and groundwater elevation determination? (This report must be completed for PS&E level design.) *	☐Yes	☐No
2. Is the surrounding soil within Hydrologic Soil Groups (HSG) Types A, B, and C while preserving an acceptable infiltration rate? *	☐Yes	☐No
3. Is the Infiltration Trench size sufficient to capture the WQV, or portion thereof, with a maximum 96-hour drawdown time? Longer drawdown times may be allowable, coordinate with the District/Regional Design Stormwater Coordinator.*	☐Yes	☐No
4. Is the depth of the Infiltration Trench ≤ 13 ft? *	☐Yes	☐No
5. Can an observation well be placed in the trench? **	☐Yes	☐No
6. Can access be provided to the Infiltration Trench? *	☐Yes	☐No
7. Can pretreatment be provided to capture sediment in the runoff (such as using vegetation or a flow splitter with a sump)? **	☐Yes	☐No
8. Can flow diversion be designed, constructed, and maintained to bypass flows exceeding the Water Quality event? **	☐Yes	☐No
9. Does a perimeter curb or similar device need to be provided (to limit wheel loads upon the trench)? **	☐Yes	☐No

Treatment BMPs

Checklist T-1, Part 3

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

Biofiltration Swales / Biofiltration Strips

Feasibility

1. Do the climate and site conditions allow vegetation to be established? ☒Yes ☐No

   If "No", evaluate other BMPs.

2. Can biofiltration swale be designed with a slope between 0.25 and 6 percent (with 1 to 2 percent preferred)? ☒Yes ☐No

   If "No", Biofiltration Swales are not feasible.

3. Can biofiltration strips be designed with a maximum slope of 2H:1V (with 4H:1V or flatter preferred)? ☒Yes ☐No

   If "No", Biofiltration Strips are not feasible.

4. Are Biofiltration device(s) proposed at sites where known contaminated soils exist? ☐Yes ☐No

   If "Yes", consult with District/Regional NPDES Coordinator about how to proceed.

5. Does adequate area exist within the RW to place Biofiltration device(s)? ☒Yes ☐No

   If "Yes", continue to Design Elements section. If "No", continue to Question 6.

6. If adequate area does not exist within RW, can suitable, additional RW be acquired to site Biofiltration devices and how much RW would be needed to treat WQF? ☐Yes ☐No
   __________ acres

   TBD

   If "Yes", continue to Design Elements section. If "No", continue to Question 7.

7. If adequate area cannot be obtained, document in Section 6 of the SWDR that the inability to obtain adequate area prevents the incorporation of these Treatment BMPs into the project. ☐Complete

Design Elements

* **Required** Design Element – A "Yes" response to these questions is required to further the consideration of this BMP into the project design. Document a "No" response in Section 6 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended** Design Element – A "Yes" response is preferred for these questions, but not required for incorporation into a project design.

1. Has the District Landscape Architect provided vegetation mixes appropriate for climate and location? * ☐Yes ☐No
2. Can the biofiltration swale be designed as a conveyance system under any expected flows > the WQF event, as per HDM Chapter 800? * (e.g., freeboard, minimum slope) ☐Yes ☐No
3. Can the biofiltration swale be designed as a water quality treatment device under the WQF while meeting the required HRT, depth, and velocity criteria? (Reference Appendix B, Section B.4.3)* ☐Yes ☐No
4. Is the maximum length of a biofiltration strip ≤ 100 ft? Strips > 100 ft. may still be considered as long as potential erosion issues have been addressed. ** ☐Yes ☐No
5. Has the minimum width (perpendicular to flow) of the invert of the biofiltration swale received the concurrence of District Maintenance? * ☐Yes ☐No
6. Can biofiltration swales be located in natural or low cut sections to reduce maintenance problems caused by animals burrowing through the berm of the swale? * ☐Yes ☐No
7. Has the infiltration rate of the bio-filtration device been calculated and maximized through amendments where appropriate?** ☐Yes ☐No
8. Have Biofiltration Systems been considered for locations upstream of other Treatment BMPs, as part of a treatment train or pretreatment? ** ☐Yes ☐No

   If "Yes", document the amount of runoff treated (WQV/WQF).
9. Has the lining material been selected based on the permissible shear and velocity (refer to HDM Chapter 860 and Table 865.2)?* ☐Yes ☐No

Treatment BMPs

Checklist T-1, Part 4

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED IN PA/ED AND PS&E

Detention Devices

Feasibility

1.	Is there sufficient head to prevent objectionable backwater conditions in the upstream drainage systems?	☐Yes	☐No
2.	Is basin invert ≥ 5 ft above seasonally high groundwater or can it be designed with an impermeable liner? (Note: If an impermeable liner is used, the seasonally high groundwater elevation must not encroach within 12 inches of the invert.)	☒Yes	☐No
	If No to any question above, then Detention Devices are not feasible.		
3.	If the Detention Device is being used to capture traction sand, is the total volume of the device at least equal to the WQV designed to be treated plus the anticipated volume of traction sand, while maintaining a minimum 12-inch freeboard (1 ft)?	☐Yes	☐No
	If No, then Detention Devices are not feasible.		
4.	Does adequate area exist within the RW to place Detention Device?	☐Yes	☐No
	If Yes, continue to the Design Elements section. If No, continue to Question 5. TBD		
5.	If adequate area does not exist within RW, can suitable, additional RW be acquired to site Detention Device and how much RW would be needed to treat WQV? _________ acres	☐Yes	☐No
	If Yes, continue to the Design Elements section. If No, continue to Question 6.		
6.	If adequate area cannot be obtained, document in Section 6 of the SWDR that the inability to obtain adequate area prevents the incorporation of this Treatment BMP into the project.	☐Complete	

Design Elements

* **Required** Design Element – A "Yes" response to these questions is required to further the consideration of this BMP into the project design. Document a "No" response in Section 6 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended** Design Element – A "Yes" response is preferred for these questions, but not required for incorporation into a project design.

1. Has the location of the Detention Device been evaluated for any effects to the adjacent roadway and subgrade? * ☐Yes ☐No
2. Can a minimum freeboard of 12 inches be provided above the overflow event elevation? * ☐Yes ☐No
3. Is an upstream bypass or overflow outlet provided? * ☐Yes ☐No
4. Is the drawdown time of the Detention Device a maximum of 96 hours? * ☐Yes ☐No
5. Is the basin outlet designed to minimize clogging (minimum outlet orifice diameter of 0.5 inches)? * ☐Yes ☐No
6. Are the inlet and outlet structures designed to prevent scour and re-suspension of settled materials, and to enhance quiescent conditions? * ☐Yes ☐No
7. Can vegetation be established in an earthen basin at the invert and on the side slopes for erosion control and to minimize re-suspension? Otherwise include rock or similar protective system. Note: Detention Basins may be lined, in which case no vegetation would be required for lined areas.* ☐Yes ☐No
8. Has sufficient access for maintenance been provided? * ☐Yes ☐No
9. Is the side slope 4:1 (h:v) or flatter for interior slopes? ** ☐Yes ☐No
   (Note: Side slopes up to 3:1 (h:v) allowed with approval by District Maintenance.)
10. If significant sediment is expected from nearby slopes, can the Detention Device be designed with additional volume equal to the expected annual loading? ** ☐Yes ☐No
11. Is flow path as long as possible (> 2:1 length to width ratio at WQV elevation is recommended)? ** ☐Yes ☐No

Treatment BMPs

Checklist T-1, Part 7

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

Gross Solids Removal Devices (GSRDs)

TO BE COMPLETED IN PA/ED AND PS&E

Feasibility

1. Is the receiving water body downstream of the tributary area to the proposed GSRD on a 303(d) list or has a TMDL for litter been established? ☒Yes ☐No

2. Are the devices sized for flows generated by the peak drainage facility design event (1-year, 1-hour) or can peak flow be diverted? ☐Yes ☐No

3. Are the devices sized to contain gross solids (litter and vegetation) for a period of one year? ☐Yes ☐No

4. Is there sufficient access for maintenance and large equipment (vacuum truck)? ☐Yes ☐No

   If "No" to any question above, then Gross Solids Removal Devices are not feasible. Note that Biofiltration Systems, Infiltration Devices, Detention Devices, Dry Weather Flow Diversion, and Media Filters may be considered for litter capture, but consult with District/Regional NPDES Coordinator if proposed to meet a TMDL for litter.

5. Does adequate area exist within the RW to place Gross Solids Removal Devices? ☒Yes ☐No
   If "Yes", continue to Design Elements section. If "No", continue to Question 6.

6. If adequate area does not exist within RW, can suitable, additional RW be acquired to site Gross Solids Removal Devices and how much RW would be needed? _________ acres ☐Yes ☐No
   If "Yes", continue to Design Elements section. If "No", continue to Question 7.

7. If adequate area cannot be obtained, document in Section 6 of the SWDR that the inability to obtain adequate area prevents the incorporation of this Treatment BMP into the project. ☐Complete

<u>Design Elements – Linear Radial Device</u>

* **Required** Design Element – A "Yes" response to these questions is required to further the consideration of this BMP into the project design. Document a "No" response in Section 6 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended** Design Element – A "Yes" response is preferred for these questions, but not required for incorporation into a project design.

1.	Does sufficient hydraulic head exist to place the Linear Radial GSRD? *	☐Yes	☐No
2.	Is a fiberglass reinforced plastic frame and grate being considered for high vandalism areas? Consult District Maintenance. **	☐Yes	☐No
3.	Was the litter accumulation rate of 10 ft^3/ac/yr (or a different rate recommended by District Maintenance) used to size the device? *	☐Yes	☐No
4.	Was the overflow release device sized for the design storm event?*	☐Yes	☐No
5.	Were the standard detail sheets used for the layout of the devices? ** If No, consult with OHSD and District/Regional Design Stormwater Coordinator.	☐Yes	☐No
6.	Is the maximum depth of the storage within 10 ft of the ground surface, or another depth as required by District Maintenance? *	☐Yes	☐No

<u>Design Elements – Inclined Screen</u>

* **Required** Design Element – A "Yes" response to these questions is required to further the consideration of this BMP into the project design. Document a "No" response in Section 6 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended** Design Element – A "Yes" response is preferred for these questions, but not required for incorporation into a project design.

1.	Does sufficient hydraulic head exist to place the Inclined Screen GSRD? *	☐Yes	☐No
2.	Was the litter accumulation rate of 10 ft^3/ac/yr (or a different rate recommended by District Maintenance) used to size the device? *	☐Yes	☐No
3.	Is a fiberglass reinforced plastic frame and grate being considered for high vandalism areas? Consult District Maintenance. **	☐Yes	☐No
4.	Was the overflow release device sized for the design storm event?*	☐Yes	☐No
5.	Were the standard details sheets used for the layout of the devices? ** If No, consult with OHSD and District/Regional Design Stormwater Coordinator.	☐Yes	☐No
6.	Is the maximum depth of the storage within 10 ft of the ground surface, or another depth as required by District Maintenance? *	☐Yes	☐No

Treatment BMPs

Checklist T-1, Part 8

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED IN PA/ED AND PS&E

Media Filters

Caltrans has approved two types of Media Filters: Austin Sand Filter and Delaware Filter. An Austin Sand filter is typically designed for a larger contributing drainage area, while a Delaware Filter is typically designed for a smaller contributing drainage area. The Austin Sand Filter is constructed with an open top and may have a concrete or earthen invert, while the Delaware is always constructed as a vault.

Feasibility – Austin Sand Filter

1. Is the volume of the Austin Sand Filter equal to the WQV, or portion thereof, using a 24-hour drawdown? [1] ☐Yes ☐No
2. Is there sufficient hydraulic head to operate the device (minimum 2 ft between the inflow and outflow chambers)? ☐Yes ☐No
3. If device has an earthen bottom, is the invert ≥ 5 ft above seasonally high groundwater? ☐Yes ☒No
4. If a vault is used for either chamber, is the level of the concrete base of the vault above seasonally high groundwater or is a special design provided? ☒Yes ☐No

   If No to any question above, then an Austin Sand Filter is not feasible.
5. Does adequate area exist within the RW to place an Austin Sand Filter? ☒Yes ☐No
   If Yes, continue to Design Elements sections. If No, continue to Question 6.
6. If adequate area does not exist within RW, can suitable, additional RW be acquired to site the device and how much RW would be needed to treat WQV, or portion thereof? _________ acres ☐Yes ☐No
   If Yes, continue to the Design Elements section.
   If No, continue to Question 7.
7. If adequate area cannot be obtained, document in Section 6 of the SWDR that the inability to obtain adequate area prevents the incorporation of this Treatment BMP into the project. ☐Complete

   If an Austin Sand Filter meets these feasibility requirements, continue to the Design Elements – Austin Sand Filter below.

[1]Longer drawdown times being considered. Refer to the Austin Media Filter Design Guidance.

Feasibility- Delaware Filter

1. Is the volume of the Delaware Filter equal to the WQV, or portion thereof, using a 40 to 48-hour drawdown? [1] ☐Yes ☐No

2. Is there sufficient hydraulic head to operate the device (minimum 2 ft between the inflow and outflow chambers)? ☐Yes ☐No

3. Would a permanent pool of water be allowed by the local vector control agency? Confirm that check valves and vector proof lid as shown on standard detail sheets will be allowed, and used. ☐Yes ☐No

4. Does the project discharge to a water body that has been placed on the 303(d) or has had a TMDL adopted for bacteria, mercury, sulfides, or low dissolved oxygen? ☐Yes ☐No

   If Yes, contact the District/Regional NPDES Coordinator to determine if standing water in this Treatment BMP would be a risk to downstream water quality. If standing water is a potential issue, consider use of another Treatment BMP.

   If No to any question, then a Delaware Filter is not feasible

5. Does adequate area exist within the RW to place a Delaware Filter? If Yes, continue to Design Elements section. If No, continue to Question 6. ☐Yes ☐No

6. If adequate area does not exist within RW, can suitable, additional RW be acquired to site the device and how much RW would be needed to treat WQV, or portion thereof? _________ acres
   If Yes, continue to the Design Elements section. If No, continue to Question 7. ☐Yes ☐No

7. If adequate area cannot be obtained, document in Section 6 of the SWDR that the inability to obtain adequate area prevents the incorporation of this Treatment BMP into the project. ☐Complete

[1] *Longer drawdown times being considered. Refer to the Delaware Media Filter Design Guidance.*

Design Elements – Austin Sand Filter

* **Required** Design Element – A "Yes" response to these questions is required to further the consideration of this BMP into the project design. Document a "No" response in Section 6 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended** Design Element – A "Yes" response is preferred for these questions, but not required for incorporation into a project design.

1. Is the drawdown time of the device 24 hours? (Longer drawdown times being considered, refer to the *Austin Media Filter Design Guidance*)*	☐Yes	☐No
2. Is access for maintenance vehicles provided to the Austin Sand Filter? *	☐Yes	☐No
3. Is a bypass/overflow provided for storms > WQV? *	☐Yes	☐No
4. Is the flow path length to width ratio for the sedimentation chamber of the "full" Austin Sand Filter ≥ 2:1? **	☐Yes	☐No
5. Can pretreatment be provided to capture sediment and litter in the runoff (such as using vegetation)? **	☐Yes	☐No
6. Can the Austin Sand Filter be placed using an earthen configuration? ** If No, go to Question 10.	☐Yes	☐No
7. Is the Austin Sand Filter invert separated from the seasonally high groundwater table by ≥ 5 ft)? * (If AVSF, see Table B-8 3rd bullet in Application/Siting column.) If No, design with an impermeable liner.	☐Yes	☐No
8. Are side slopes of the earthen chamber 3:1 (h:v) or flatter? *	☐Yes	☐No
9. Can vegetation be established at the invert and on the side slopes for erosion control and to minimize re-suspension? If No, include rock or similar protective system. Note: Austin Sand Filters may be lined, in which case no vegetation would be required for lined areas.*	☐Yes	☐No
10. Is maximum depth of sedimentation chamber ≤ 13 ft below ground surface? * If greater than 13 feet, a special design is required.	☐Yes	☐No
11. Can the Austin Sand Filter be placed in an offline configuration? ** If No, go to Question 12.	☐Yes	☐No
12. Is the flow line elevation of the over flow pipe set at the same elevation as the top of gabion wall elevation? **	☐Yes	☐No

Typically, the flow line should match the top of gabion wall elevation. However, the pipe may require adjustment to fit site condition requirements such as grading and pipe cover conflicts and utility conflicts. Additional overflow designs may be considered (see the *Partial Sedimentation Austin Vault Sand Filter Design Guidance*).

<u>Design Elements – Delaware Filter</u>

* **Required** Design Element – A "Yes" response to these questions is required to further the consideration of this BMP into the project design. Document a "No" response in Section 6 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended** Design Element – A "Yes" response is preferred for these questions, but not required for incorporation into a project design.

1. Is the drawdown time of the device between 40 and 48 hours, typically 40-hrs? (Longer drawdown times being considered, refer to the *Delaware Media Filter Design Guidance)* * ☐Yes ☐No
2. Is access for maintenance vehicles provided to the Delaware Filter? * ☐Yes ☐No
3. Is a bypass/overflow provided for storms > WQV? * ☐Yes ☐No
4. Can pretreatment be provided to capture sediment and litter in the runoff (such as using vegetation)? ** ☐Yes ☐No
5. Is maximum depth of sedimentation chamber ≤ 13 ft below ground surface? * ☐Yes ☐No

Treatment BMPs

Checklist T-1, Part 11

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED IN PA/ED AND PS&E

DPP Infiltration Areas

Feasibility[1]

1. Does local Basin Plan or other local ordinance provide influent limits on quality of water that can be infiltrated, and would infiltration pose a threat to groundwater quality? ☐Yes ☒No

2. Does infiltration at the site compromise the integrity of any slopes in the area? ☐Yes ☒No

   If "Yes" to any question above, DPP Infiltration Areas are not feasible; stop here and consider other approved Treatment BMPs.

3. Are DPP Infiltration Areas proposed at sites where known contaminated soils or groundwater plumes exist? ☐Yes ☒No
   If "Yes", consult with District/Regional NPDES Coordinator about how to proceed.

4. If adequate area cannot be obtained, document in Section 6 of the SWDR that the inability to obtain adequate area prevents the incorporation of these Treatment BMPs into the project. ☒Complete

Design Elements

* **Required** Design Element – A "Yes" response to these questions is required to further the consideration of this BMP into the project design. Document a "No" response in Section 6 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended** Design Element – A "Yes" response is preferred for these questions, but not required for incorporation into a project design.

1. Has native soil gradation and infiltration rate been determined (see Design Guidance for more detail)? (Must be completed for PS&E level design.) * ☐Yes ☐No

2. Has the infiltration rate of the DPP Infiltration Area been calculated and maximized through amendments where appropriate? ** ☐Yes ☐No

3. Is the DPP Infiltration Area capacity sufficient to capture the WQV, or portion thereof? ** ☐Yes ☐No

   If "No", document the percentage and amount of the WQV captured. ☐ Complete

4. Is a surface reinforcing material required? ☐Yes ☐No

If "Yes", select material based on the permissible shear and velocity (refer to HDM Chapter 860 and Table 865.2).* ☐ Complete

[1] *This feasibility evaluation is applicable to areas that are being modified for infiltration as part of the project treatment strategy. For existing areas within the project limits that are being delineated as DPP Infiltration Areas, proceed to the Design Elements section.*

DATE: _May 2019________

Project ID / EA: _0418000068/04-0Q290K__

Project Evaluation Process for the Consideration of Construction Site BMPs

No.	Criteria	Yes ✓	No ✓	Supplemental Information
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	✓		If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Review CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the RW, etc.?	✓		If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Review CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	✓		If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Review CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	✓		If Yes, Construction Site BMPs for Wind Erosion Control (WE) will be required. Review CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?	✓		If Yes, Construction Site BMPs for Non-Stormwater Management (NS) will be required. Review CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	✓		If Yes, Construction Site BMPs for Non-Stormwater Management (NS) will be required. Review CS-1, Parts 5 & 6. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Review CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with stormwater; be dispersed by wind; be dumped and/or spilled into storm drain systems?	✓		If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Review CS-1, Part 6.

Construction Site BMPs

Checklist CS-1, Part 1

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED IN PA/ED and PS&E

Temporary Soil Stabilization

General Parameters

1. How many rainy seasons are anticipated between begin and end of construction? ___TBD___
2. What is the total disturbed soil area for the project? (ac)

   Minimum 26.14

   Maximum 37.46
3. Consult your District/Regional Design Stormwater Coordinator for the minimum required combination of temporary soil stabilization and temporary sediment controls and barriers for area, slope inclinations, rainy and non-rainy season, and active and non-active disturbed soil areas. ☐Complete

Scheduling

4. Does the project have a duration of more than one rainy season and have disturbed soil area in excess of 25 acres? ☐Yes ☐No

   TBD

   (a) Include multiple mobilizations (Move-in/Move-out) as a separate contract bid line item to implement permanent erosion control or revegetation work on slopes that are substantially complete. (Estimate at least 6 mobilizations for each additional rainy season. Designated Construction Representative may suggest an alternate number of mobilizations.) ☐Complete

   (b) Edit specifications for permanent erosion control or revegetation work to be implemented on slopes that are substantially complete. ☐Complete

   (c) Edit permanent erosion control or revegetation specifications to require seeding and planting work to be performed when optimal. ☐Complete

Preservation of Existing Vegetation

5. Do Environmentally Sensitive Areas (ESAs) exist within or adjacent to the construction limits? (Verify the completion of DPP-1, Part 5) ☐Yes ☒No

(a) Verify the protection of ESAs through delineation on all project plans. ☐Complete

(b) Protect from clearing and grubbing and other construction disturbance by enclosing the ESA perimeter with high visibility plastic fence or other BMP. ☐Complete

6. Are there areas of existing vegetation (mature trees, native vegetation, landscape planting, etc.) that need not be disturbed by project construction? Will areas designated for proposed or existing Treatment BMPs need protection (infiltration characteristics, vegetative cover, etc.)? (Coordinate with District Environmental and Construction to determine limits of work necessary to preserve existing vegetation to the maximum extent practicable.) ☒Yes ☐No

(a) Designate as outside of limits of work (or designate as ESAs) and show on all project plans. ☐Complete

(b) Protect with high visibility plastic fence or other BMP. ☐Complete

7. If yes for 5, 6, or both, then designate ESA fencing as a separate contract bid line item, *if not already incorporated as part of design pollution prevention work (See DPP-1, Part 5).* ☐Complete

Slope Protection

8. Provide a temporary soil stabilization BMP(s) appropriate for the DSA, slope steepness, slope length, and soil erodibility. (Consult with District Landscape Architect.)

(a) Select Hydraulic Mulch, Hydroseeding, Soil Binders, Straw Mulch, Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets, Wood Mulching, other BMPs or a combination to cover the DSA throughout the project's rainy season. ☒Complete

(b) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) ☐Complete

(c) Designate as a separate contract bid line item. ☐Complete

Slope Interrupter Devices

9. For projects with temporary erosion control requirements, provide slope interrupter devices for all slopes with slope lengths equal to or greater than of 20 ft in length, in accordance with CGP requirements.

(a) Select Fiber Rolls or other BMPs to protect slopes throughout the project's rainy season. ☒Complete

(b) For slope inclination of 4:1 (h:v) and flatter, Fiber Rolls or other BMPs shall be placed along the contour and spaced 20 ft on center. ☐Complete

(c) For slope inclination between 4:1 (h:v) and 2:1 (h:v), Fiber Rolls or other BMPs shall be placed along the contour and spaced 15 ft on center. ☐Complete

(d) For slope inclination of 2:1 (h:v) and greater, Fiber Rolls or other BMPs shall be placed along the contour and spaced 10 ft on center. ☐Complete

(e) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest alternate increase.) ☐Complete

(f) Designate as a separate contract bid line item. ☐Complete

Channelized Flow

10. Identify locations within the project site where concentrated flow from stormwater runoff can erode areas of soil disturbance. Identify locations of concentrated flow that enters the site from outside of the RW (off-site run-on). ☐Complete

(a) Utilize Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets, Earth Dikes/Swales, Ditches, Outlet Protection/Velocity Dissipation, Slope Drains, Check Dams, or other BMPs to convey concentrated flows in a non-erosive manner. ☐Complete

(b) Designate as a separate contract bid line item, as appropriate. ☐Complete

Construction Site BMPs

Checklist CS-1, Part 2

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED IN PA/ED and PS&E

Sediment Control

Perimeter Controls - Run-off Control

1. Is there a potential for sediment laden sheet and concentrated flows to discharge offsite from runoff cleared and grubbed areas, below cut slopes, embankment slopes, etc.? ☒Yes ☐No

   (a) Select linear sediment barrier such as Silt Fence, Fiber Rolls, Gravel Bag Berm, Sand Bag Barrier, Straw Bale Barrier, or a combination to protect wetlands, water courses, roads (paved and unpaved), construction activities, and adjacent properties. (Coordinate with District Construction for selection and preference of linear sediment barrier BMPs.) ☒Complete

   (b) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) ☐Complete

   (c) Designate as a separate contract bid line item. ☐Complete

Perimeter Controls - Run-on Control

2. Do locations exist where sheet flow upslope of the project site and where concentrated flow upstream of the project site may contact DSA and construction activities? ☒Yes ☐No

   (a) Utilize linear sediment barriers such as Earth Dike/Drainage Swales and Lined Ditches, Fiber Rolls, Gravel Bag Berm, Sand Bag Barrier, Straw Bale Barrier, or other BMPs to convey flows through and/or around the project site. (Coordinate with District Construction for selection and preference of perimeter control BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item, as appropriate. ☐Complete

Storm Drain Inlets

3. Do existing or proposed drainage inlets exist within the construction limits? ☒Yes ☐No

   (a) Select Drainage Inlet Protection to protect municipal storm drain systems or receiving waters wetlands at each drainage inlet. (Coordinate with District Construction for selection and preference of inlet protection BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item. ☐Complete

4. Can existing or proposed drainage inlets utilize an excavated sediment trap as described in Drainage Inlet Protection - Type 2? ☐Yes ☐No

   (a) Include with other types of Drainage Inlet Protection. ☐Complete

Sediment/Desilting Basin

5. Does the project lie within a Rainfall Area where the required combination of temporary soil stabilization and sediment control BMPs includes desilting basins? ☐Yes ☐No

   (a) Consider feasibility for desilting basin allowing for available right-of-way within the construction limits, topography, soil type, disturbed soil area within the watershed, and climate conditions. Document if the inclusion of sediment/desilting basins is infeasible. ☐Complete

   (b) If feasible, design desilting basin(s) per the guidance in the *CASQA Construction BMP Guidance Handbook* to maximize capture of sediment-laden runoff. ☐Complete

   (c) Designate as a separate contract bid item ☐Complete

6. Is ATS to be used for controlling sediment? ☐Yes ☐No

   (a) If yes, then will desilting basin or other means of natural storage be used? ☐Yes ☐No

   (b) If no, then plan for storage tanks sufficient to hold treatment volume. ☐Complete

7. Will the project benefit from the early implementation of proposed permanent Treatment BMPs? (Coordinate with District Construction.) ☐Yes ☐No

   (a) Edit specifications for permanent Treatment BMP work to be implemented in a manner that will allow its use as a Construction Site BMP. ☐Complete

Sediment Trap

8. Can sediment traps be located to collect channelized runoff from disturbed soil areas prior to discharge? ☐Yes ☐No

   (a) Design sediment traps in accordance with the *CASQA Construction BMP Guidance Handbook*. ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs
Checklist CS-1, Part 3

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED IN PA/ED and PS&E

Tracking Controls

Stabilized Construction Entrance/Exit

1. Are there points of entrance and exit from the project site to paved roads where mud and dirt could be transported offsite by construction equipment? (Coordinate with District Construction for selection and preference of tracking control BMPs.) ☒Yes ☐No
   (a) Identify and designate these entrance/exit points as stabilized construction entrances. ☐Complete
   (b) Designate as a separate contract bid line item. ☐Complete

Tire/Wheel Wash

2. Are site conditions anticipated that would require additional or modified tracking controls such as entrance/outlet tire wash? (Coordinate with District Construction.) ☒Yes ☐No
   (a) Designate as a separate contract bid line item. ☐Complete

Stabilized Construction Roadway

3. Are temporary access roads necessary to access remote construction activity locations or to transport materials and equipment? (In addition to controlling dust and sediment tracking, access roads limit impact to sensitive areas by limiting ingress, and provide enhanced bearing capacity.) (Coordinate with District Construction.) ☐Yes ☒No
   (a) Designate these temporary access roads as stabilized construction roadways. ☐Complete
   (b) Designate as a separate contract bid line item. ☐Complete

Street Sweeping and Vacuuming

1. Is there a potential for tracked sediment or construction related residues to be transported offsite and deposited on public or private roads? (Coordinate with District Construction for preference of including street sweeping and vacuuming with tracking control BMPs.) ☒Yes ☐No
   (a) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs

Checklist CS-1, Part 4

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

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TO BE COMPLETED IN PA/ED and PS&E

Wind Erosion Controls

Wind Erosion Control

1. Is the project located in an area where standard dust control practices in accordance with *Standard Specifications*, Section 14-903: Dust Control, are anticipated to be inadequate during construction to prevent the transport of dust offsite by wind? *(Note: Dust control by water truck application is paid for through the various items of work. Dust palliative, if it is included, is paid for as a separate item.)* ☒Yes ☐No

   (a) Select Hydraulic Mulch, Hydroseeding, Soil Binders, Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets, Wood Mulching or a combination to cover the DSA subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs

Checklist CS-1, Part 5

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED IN PA/ED and PS&E

Non-Stormwater Management

Temporary Stream Crossing & Clear Water Diversion

1. Will construction activities occur within a water body or watercourse such as a lake, wetland, or stream? (Coordinate with District Construction for selection and preference for stream crossing and clear water diversion BMPs.) ☐Yes ☐No

   (a) Select from types offered in Temporary Stream Crossing to provide access through watercourses consistent with permits and agreements.[1] ☐Complete

   (b) Select from types offered in Clear Water Diversion to divert watercourse consistent with permits and agreements.[1] ☐Complete

   (c) Designate as a separate contract bid line item(s). ☐Complete

Other Non-Stormwater Management BMPs

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? ☒Yes ☐No

   (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as Water Conservation Practices, Dewatering Operations, Paving and Grinding Operations, Potable Water/Irrigation, Vehicle and Equipment Cleaning, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Pile Driving Operations, Concrete Curing, Material and Equipment Use Over Water, Concrete Finishing, and Structure Demolition/Removal Over or Adjacent to Water.[1] ☒Complete

   (b) Verify that costs for non-stormwater management BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☐Complete

[1] *Coordinate with District Environmental for consistency with US Army Corps of Engineers 404 and 401 permits and Dept. of Fish and Game 1601 Streambed alteration Agreements.*

Construction Site BMPs

Checklist CS-1, Part 6

Prepared by: WRECO Date: May 2019 District-Co-Route: 04-ALA-880

PM: 17.2/18.5 Project ID/EA: 0418000068 (04-0Q290K) RWQCB: San Francisco Bay

TO BE COMPLETED IN PA/ED and PS&E

Waste Management & Materials Pollution Control

Concrete Waste Management

1. Does the project include concrete placement or mortar mixing? ☒Yes ☐No

   (a) Select from types offered in Concrete Waste Management to provide concrete washout facilities. In addition, consider portable concrete washouts and vendor supplied concrete waste management services. (Coordinate with District Construction for selection and preference of waste management and materials pollution control BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item if the quantity of concrete waste and washout are anticipated to exceed 5.2 yd^3 or if requested by Construction. ☐Complete

Other Waste Management and Materials Pollution Controls

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? ☒Yes ☐No

   (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as Material Delivery and Storage, Material Use, Spill Prevention and Control, Solid Waste Management, Hazardous Waste Management, Contaminated Soil Management, Sanitary/Septic Waste Management, and Liquid Waste Management ☒Complete

   (b) Verify that costs for waste management and materials pollution control BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☐Complete

Temporary Stockpiles (Soil, Materials, and Wastes)

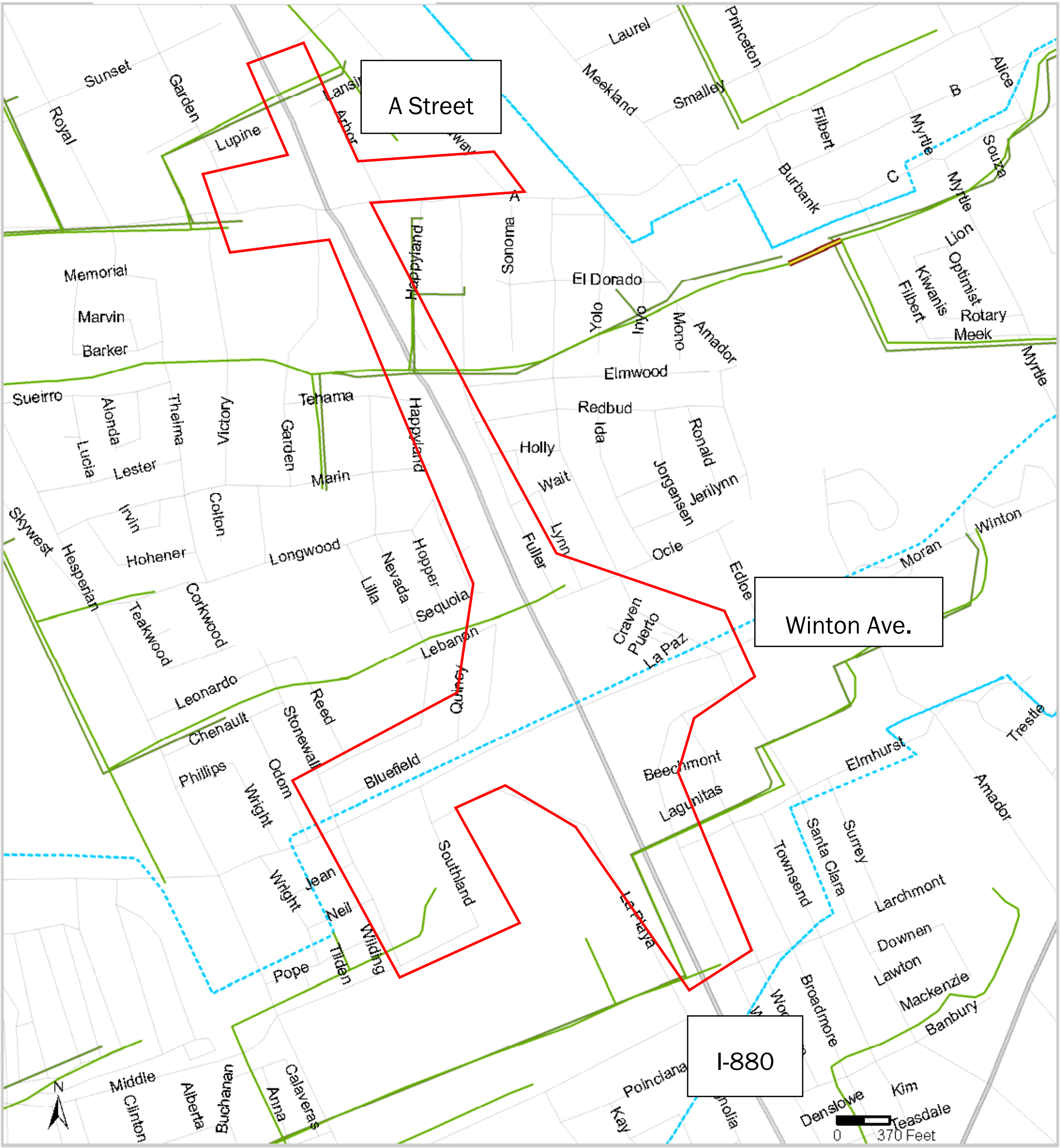
3. Are stockpiles of soil, etc. anticipated during construction? ☒Yes ☐No

   (a) Verify that costs for stockpile management and associated sediment control and temporary soil stabilization BMPs for temporary stockpiles are identified in the contract documents. Designate as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☐Complete

Alameda Countywide
Clean Water Program
A Consortium of Local Agencies

HYDROMODIFICATION SUSCEPTIBILITY MAP

Version: 1.0 Print date: ________



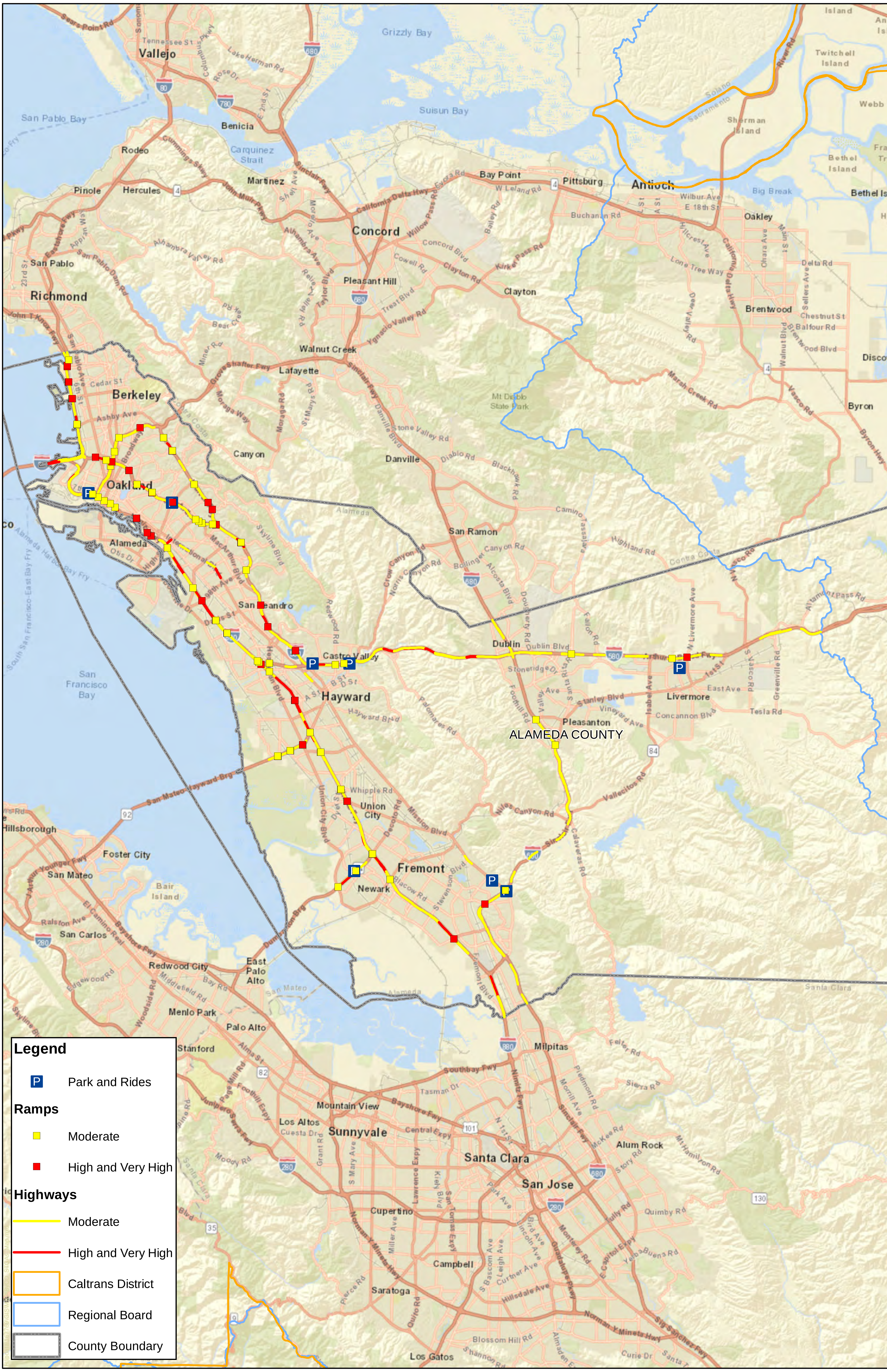
This map is intended for for preliminary determination of hydromodification requirements and is not intended for legal description. All drainage conditions should be verified in the field or from appropriate authorities.

LEGEND

- Hill or high slope region (susceptible)
- Tidally Influenced / depositional - exempt
- Not included in HMP
- Watersheds

Special Consideration Area

- San Lorenzo & Alameda Creeks
- Codornices Creek
- Natural creek or stream (susceptible)
- Earthen channel or connector
- Engineered channel - materials unknown
- Engineered channel - concrete
- Enclosed pipe or culvert
- Parcels - Unincorporated



2018 District 4 STGAs

Alameda County

OBJECTID *	CO	RTE	DIR	BPM	EPM
280	ALA	880	S	3.77	4.26
282	ALA	880	S	12.20	12.74
283	ALA	880	S	11.67	12.20
284	ALA	880	S	11.21	11.67
285	ALA	880	S	10.77	11.21
286	ALA	880	S	9.76	10.27
287	ALA	880	S	9.26	9.76
288	ALA	880	S	17.27	17.76
289	ALA	880	S	16.77	17.27
291	ALA	880	S	15.26	15.76
296	ALA	880	S	22.27	22.76
297	ALA	880	S	21.77	22.27
298	ALA	880	S	21.27	21.77
299	ALA	880	S	20.77	21.27
305	ALA	880	S	17.76	18.25
306	ALA	880	S	26.77	27.26
307	ALA	880	S	26.27	26.77
308	ALA	880	S	25.78	26.27
309	ALA	880	S	25.28	25.78
310	ALA	880	S	24.77	25.28
311	ALA	880	S	24.27	24.77
312	ALA	880	S	23.76	24.27
313	ALA	880	S	22.76	23.27
314	ALA	880	S	33.28	33.73
315	ALA	880	S	32.79	33.28
317	ALA	880	S	31.76	32.27
318	ALA	880	S	31.27	31.76
319	ALA	880	S	30.79	31.27
325	ALA	880	S	27.61	28.15
326	ALA	880	S	27.26	27.61
327	ALA	880	S	33.73	34.25
328	ALA	880	S	0.00	0.43
340	ALA	92	W	5.52	6.04
341	ALA	92	W	5.03	5.52
343	ALA	92	W	4.02	4.53
347	ALA	980	W	0.99	1.48
349	ALA	980	W	2.00	2.04
350	ALA	980	W	1.48	2.00
362	ALA	13	N	39.04	39.90
364	ALA	13	N	5.78	6.27
365	ALA	13	N	5.28	5.78
374	ALA	13	N	8.28	8.78
376	ALA	13	N	7.28	7.78
385	ALA	185	N	8.06	8.57
386	ALA	185	N	7.53	8.06
426	ALA	238	N	15.01	15.51
427	ALA	24	E	1.85	2.35
430	ALA	24	E	4.35	4.86

Attachment K

Transportation Management Plan Data Sheet

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

For Consultant TMP Projects

PROJECT MANAGER Parag Mehta	(Phone #) 925-965-7703
PROJECT ENGINEER Prasanna Muthireddy	(Phone #) 925-398-4855
DIST-EA/PROJ ID: 04-0Q290 PROGRAM (HB1, HE11, etc.):	
PROJECT COMMON NAME : I-880 Winton Ave/ A Street Interchange Improvements	
CO-RTE-PM (KP): ALA-880-PM 17.2/18.6	
LEGAL DESCRIPTION: On Route 880 between 0.4 mile south of Winton Avenue overcrossing and 0.1 mile north of A Street undercrossing.	
DETAILED WORK DESCRIPTION: Alternative W1 • Reconfiguring the I-880 interchange at Winton Avenue to enhance access to the surrounding residential, retail and commercial land uses • Implementing complete streets features • Constructing new signals and reconfiguring intersections to improve traffic flow, reduce congestion, and make intersections accessible and safer for pedestrians and cyclists	
CONSTRUCTION COST ESTIMATE: ALT A1 COST = $65,900,000	
PROJECT PHASE: PSR-PDS ☒ PR ☐ PS&E ☐ ________%	

Traffic Impact Descriptions

A) Does the proposed project includes long term closures (> 24 hours) Yes____ No_X_
[If "No", Continue to Item D (PreliminaryTMP Elements and Costs.). If "Yes", Check Applicable Facilities.]

- ☐ Freeway Lanes
- ☐ Freeway Shoulder
- ☐ Freeway Connectors
- ☐ Freeway Off-ramps
- ☐ Freeway On-ramps
- ☐ Local Streets
- ☐ Full Freeway Closures

B) Are there any construction strategies that can restore existing number of lanes?
(Check Applicable Strategies)

- ☐ Temporary Roadway Widening Structure Involvement? Yes____ No____
  (If yes, notify Project Manager)
- ☐ Lane Restriping (Temporary Narrow Lane Widths) Yes____ No____
- ☐ Roadway Realignment (Detour Around Work Area)
- ☐ Median and/or Right Shoulder Utilization
- ☐ Use of an HOV lane as a Temporary Mixed Flow Lane
- ☐ Staging Alternatives (Explain Below)

Notes:

____

C) Calculated Delays (To be performed if construction strategies in Item B do not mitigate congestion resulting from Item A)

1. Estimated Maximum Individual Vehicle Delay ____________Minutes
2. Existing or Acceptable Individual Vehicle Delay ____________Minutes
3. Estimated Individual Vehicle Delay Requiring Mitigation [(l) - (2)] ____________Minutes
4. Estimated Delay Cost (Most Applicable)
   - ☐ Extended Weekend Closure $_______________________
   - ☐ Weekly (7 days) $_______________________
5. Estimated Duration of Project Related Delays _______________________
6. Cost of Construction Related Delays [(4 x 5)] $_______________________

D) Preliminary TMP Elements and Cost

1. Public Information
   - ☒ a. Brochures and Mailers $ 10,000
   - ☐ b. Press Release $_______________________
   - ☐ c. Paid Advertising $_______________________
   - ☐ d. Public Information Center/Kiosk $_______________________
   - ☐ e. Public Meeting/Speakers Bureau $_______________________
   - ☐ f. Telephone Hotline $_______________________
   - ☐ g. Internet $_______________________
   - ☒ h. Notification to impacted groups (Bicycle users, Pedestrians with disability, others.) $ 20,000
   - ☐ i. Others ______________________________ $_______________________

   SUB TOTAL **$** 30,000

2. Motorists Information strategies
   - ☐ a Changeable Message Signs (Fixed) $
   - ☒ b. Changeable Message Signs (Portable) $ 1,123,200
   - ☒ c. Ground Mounted Signs $ 50,000
   - ☐ d. Highway Advisory Radio $_______________________
   - ☐ e. Caltrans Highway Information Network (CHIN) $_______________________
   - ☐ f. Revised Transit Schedules/Maps $_______________________
   - ☐ g. Others ______________________________ $_______________________

   SUB TOTAL **$** 1,173,200

3. Incident Management
   - ☒ a. Construction or Maintenance Zone Enhanced Enforcement Program (COZEEP or MAZEEP) $ 250,000
   - ☒ b. Freeway Service Patrol $ 50,000
   - ☒ c. Traffic Management Team $_______________________
   - ☐ d. New CCTVs and Detectors $_______________________

- [ ] e. Others ______________________________ $______________________

SUB TOTAL **$** 300,000

4. Construction Strategies (In Addition to Elements Identified on Item B)
   - [x] a.. Off Peak/Night/Weekend Work (Lane Closure Charts) $______________________
   - [ ] b. Reversible Lanes $______________________
   - [ ] c. Total Facility Closure $______________________
   - [ ] d. Extended Weekend Closure $______________________
   - [ ] e. Truck Traffic Restrictions $______________________
   - [ ] f. Reduced Speed Zone $______________________
   - [x] g. Connector and Ramp Closures $______________________
   - [ ] h. Incentive and Disincentive $______________________
   - [ ] i. Moveable Barrier $______________________
   - [ ] j. Others ______________________________ $______________________

SUB TOTAL **$**______________________

5. Demand Management
   - [ ] a. HOV Lanes/Ramps (New or Convert) $______________________
   - [ ] b. Park and Ride Lots $______________________
   - [ ] c. Rideshare Incentives $______________________
   - [ ] d. Variable Work Hours $______________________
   - [ ] e. Telecommute $______________________
   - [ ] f. Ramp Metering (New Installation) $______________________
   - [ ] g. Ramp Metering (Maintain Existing) $______________________
   - [ ] h. Others ______________________________ $______________________

SUB TOTAL **$**______________________

6. Alternate Route Strategies
   - [ ] a. Add Capacity to Freeway Connector $______________________
   - [ ] b. Street Improvement (widening, traffic signal, etc) $______________________
   - [ ] c. Traffic Control Officers $______________________
   - [ ] d.. Parking Restrictions
   - [ ] e. Others ______________________________ $______________________

SUB TOTAL **$**______________________

7. Other Strategies
   - [ ] a. Application of New Technology $______________________
   - [ ] b. Others ______________________________ $______________________

SUB TOTAL **$**______________________

8. The Project includes the following: (Check applicable type of facility closures)
   - [x] a. Highway or Freeway Lanes
   - [x] b. Highway or Freeway Shoulders
   - [ ] c. Full Freeway Closure
   - [x] d. Freeway On/Off-Ramps

- ☐ e. Freeway Connectors
- ☒ f. Local Streets
- ☐ g. Prolonged Ramp Closures

9. Major operations requiring traffic control and working days for each

Operation	**# of Working Days**	**# of Traffic Control Days**
☐ a. Clearing and Grubbing	21	4
☐ b. Existing Feature Removal	41	4
☐ c. Excavation of Embankments Construction	41	29
☐ d. Structural Section Construction	124	111
☐ e. Drainage Feature Construction	21	10
☐ f. Structures Construction	0	0
☐ g. MBGR/Barrier Construction	41	29
☐ h. Striping	21	10
☐ i. Electrical Component Construction	62	43
☐ j. Other	41	21
Total days	412	261

TOTAL ESTIMATED COST OF TMP ELEMENTS = **$ 1,503,200**

Notes : Extensive TMP may be required for the significant impacts.

PREPARED BY (Consultant PE)

________________________________ DATE 06/27/19

Prasanna Muthireddy

APPROVAL RECOMMENDED BY (Caltrans Oversight Engineer)

________________________________ DATE 07/12/19

Kan Wong

APPROVED BY (TMP Office)

________________________________ DATE 07/12/19

Lenka Pleskotova

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

For Consultant TMP Projects

PROJECT MANAGER Parag Mehta	(Phone #) 925-965-7703
PROJECT ENGINEER Prasanna Muthireddy	(Phone #) 925-398-4855
DIST-EA/PROJ ID: 04-0Q290 PROGRAM (HB1, HE11, etc.):	
PROJECT COMMON NAME : I-880 Winton Ave/ A Street Interchange Improvements	
CO-RTE-PM (KP): ALA-880-PM 17.2/18.6	
LEGAL DESCRIPTION: On Route 880 between 0.4 mile south of Winton Avenue overcrossing and 0.1 mile north of A Street undercrossing.	
DETAILED WORK DESCRIPTION: Alternative W2 • Reconfiguring the I-880 interchange at Winton Avenue from full cloverleaf to partial cloverleaf type, to enhance access to the surrounding residential, retail and commercial land uses • Implementing complete streets features • Constructing new signals and reconfiguring intersections to improve traffic flow, reduce congestion, and make intersections accessible and safer for pedestrians and cyclists	
CONSTRUCTION COST ESTIMATE: ALT W2 COST = $60,700,000	
PROJECT PHASE: PSR ☒ PR ☐ PS&E ☐ _________%	

Traffic Impact Descriptions

A) Does the proposed project includes long term closures (> 24 hours) Yes____ No_X_
[If "No", Continue to Item D (Preliminary TMP Elements and Costs.). If "Yes", Check Applicable Facilities.]

- ☐ Freeway Lanes
- ☐ Freeway Shoulder
- ☐ Freeway Connectors
- ☐ Freeway Off-ramps
- ☐ Freeway On-ramps
- ☐ Local Streets
- ☐ Full Freeway Closures

B) Are there any construction strategies that can restore existing number of lanes?
(Check Applicable Strategies)

- ☐ Temporary Roadway Widening Structure Involvement? Yes____ No____
  (If yes, notify Project Manager)
- ☐ Lane Restriping (Temporary Narrow Lane Widths) Yes____ No____
- ☐ Roadway Realignment (Detour Around Work Area)
- ☐ Median and/or Right Shoulder Utilization
- ☐ Use of an HOV lane as a Temporary Mixed Flow Lane
- ☐ Staging Alternatives (Explain Below)

Notes:

____
____
____

C) Calculated Delays (To be performed if construction strategies in Item B do not mitigate congestion resulting from Item A)

1. Estimated Maximum Individual Vehicle Delay ____________Minutes
2. Existing or Acceptable Individual Vehicle Delay ____________Minutes
3. Estimated Individual Vehicle Delay Requiring Mitigation [(l) - (2)] ____________Minutes
4. Estimated Delay Cost (Most Applicable)
   - ☐ Extended Weekend Closure $______________________
   - ☐ Weekly (7 days) $______________________
5. Estimated Duration of Project Related Delays ______________________
6. Cost of Construction Related Delays [(4 x 5)] $______________________

D) Preliminary TMP Elements and Cost

1. Public Information
   - ☒ a. Brochures and Mailers $ 10,000
   - ☐ b. Press Release $______________________
   - ☐ c. Paid Advertising $______________________
   - ☐ d. Public Information Center/Kiosk $______________________
   - ☐ e. Public Meeting/Speakers Bureau $______________________
   - ☐ f. Telephone Hotline $______________________
   - ☐ g. Internet $______________________
   - ☒ h. Notification to impacted groups (Bicycle users, Pedestrians with disability, others.) $ 20,000
   - ☐ i. Others ______________________ $______________________

   SUB TOTAL **$** 30,000

2. Motorists Information strategies
   - ☐ a Changeable Message Signs (Fixed) $______________________
   - ☒ b. Changeable Message Signs (Portable) $ 1,123,200
   - ☒ c. Ground Mounted Signs $ 50,000
   - ☐ d. Highway Advisory Radio $______________________
   - ☐ e. Caltrans Highway Information Network (CHIN) $______________________
   - ☐ f. Revised Transit Schedules/Maps $______________________
   - ☐ g. Others ______________________ $______________________

   SUB TOTAL **$** 1,173,200

3. Incident Management
   - ☒ a. Construction or Maintenance Zone Enhanced Enforcement Program (COZEEP or MAZEEP) $ 200,000
   - ☒ b. Freeway Service Patrol $ 50,000
   - ☒ c. Traffic Management Team $______________________
   - ☐ d. New CCTVs and Detectors $______________________

☐ e. Others ______________________________ $______________________

SUB TOTAL **$ 250,000**

4. Construction Strategies (In Addition to Elements Identified on Item B)
   - ☒ a.. Off Peak/Night/Weekend Work (Lane Closure Charts) $______________________
   - ☐ b. Reversible Lanes $______________________
   - ☐ c. Total Facility Closure $______________________
   - ☐ d. Extended Weekend Closure $______________________
   - ☐ e. Truck Traffic Restrictions $______________________
   - ☐ f. Reduced Speed Zone $______________________
   - ☒ g. Connector and Ramp Closures $______________________
   - ☐ h. Incentive and Disincentive $______________________
   - ☐ i. Moveable Barrier $______________________
   - ☐ j. Others ______________________________ $______________________

SUB TOTAL **$**______________________

5. Demand Management
   - ☐ a. HOV Lanes/Ramps (New or Convert) $______________________
   - ☐ b. Park and Ride Lots $______________________
   - ☐ c. Rideshare Incentives $______________________
   - ☐ d. Variable Work Hours $______________________
   - ☐ e. Telecommute $______________________
   - ☐ f. Ramp Metering (New Installation) $______________________
   - ☐ g. Ramp Metering (Maintain Existing) $______________________
   - ☐ h. Others ______________________________ $______________________

SUB TOTAL **$**______________________

6. Alternate Route Strategies
   - ☐ a. Add Capacity to Freeway Connector $______________________
   - ☐ b. Street Improvement (widening, traffic signal, etc) $______________________
   - ☐ c. Traffic Control Officers $______________________
   - ☐ d.. Parking Restrictions
   - ☐ e. Others ______________________________ $______________________

SUB TOTAL **$**______________________

7. Other Strategies
   - ☐ a. Application of New Technology $______________________
   - ☐ b. Others ______________________________ $______________________

SUB TOTAL **$**______________________

8. The Project includes the following: (Check applicable type of facility closures)
   - ☒ a. Highway or Freeway Lanes
   - ☒ b. Highway or Freeway Shoulders
   - ☐ c. Full Freeway Closure
   - ☒ d. Freeway On/Off-Ramps

- [ ] e. Freeway Connectors
- [x] f. Local Streets
- [ ] g. Prolonged Ramp Closures

9. Major operations requiring traffic control and working days for each

Operation	**# of Working Days**	**# of Traffic Control Days**
☐ a. Clearing and Grubbing	21	4
☐ b. Existing Feature Removal	41	4
☐ c. Excavation of Embankments Construction	41	29
☐ d. Structural Section Construction	124	111
☐ e. Drainage Feature Construction	21	10
☐ f. Structures Construction	0	0
☐ g. MBGR/Barrier Construction	41	29
☐ h. Striping	21	10
☐ i. Electrical Component Construction	62	43
☐ j. Other	41	21
Total days	412	261

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 1,453,200

Notes : Extensive TMP may be required for the significant impacts.

PREPARED BY (Consultant PE)

_______________ DATE 06/27/19
Prasanna Muthireddy

APPROVAL RECOMMENDED BY (Caltrans Oversight Engineer)

Ken Wong _______________ DATE 07/12/19
Kan Wong

APPROVED BY (TMP Office)

Lenka Pleskotova _______________ DATE 07/12/19
Lenka Pleskotova

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

For Consultant TMP Projects

PROJECT MANAGER Parag Mehta	(Phone #) 925-965-7703
PROJECT ENGINEER Prasanna Muthireddy	(Phone #) 925-398-4855
DIST-EA/PROJ ID: 04-0Q290 PROGRAM (HB1, HE11, etc.):	
PROJECT COMMON NAME : I-880 Winton Ave/ A Street Interchange Improvements	
CO-RTE-PM (KP): ALA-880-PM 17.2/18.6	
LEGAL DESCRIPTION: On Route 880 between 0.4 mile south of Winton Avenue overcrossing and 0.1 mile north of A Street undercrossing.	
DETAILED WORK DESCRIPTION: Alternative A1 • Reconfiguring the I-880 interchange at A Street to enhance access to the surrounding residential, retail and commercial land uses • Implementing complete streets features • Reconfiguring ramp intersections to roundabouts to improve traffic flow, reduce congestion, and make intersections accessible and safer for pedestrians and cyclists	
CONSTRUCTION COST ESTIMATE: ALT A1 COST = $35,300,000	
PROJECT PHASE: PSR ☒ PR ☐ PS&E ☐ _________%	

Traffic Impact Descriptions

A) Does the proposed project includes long term closures (> 24 hours) Yes____ No_X_
[If "No", Continue to Item D (Preliminary TMP Elements and Costs.). If "Yes", Check Applicable Facilities.]

- ☐ Freeway Lanes
- ☐ Freeway Shoulder
- ☐ Freeway Connectors
- ☐ Freeway Off-ramps
- ☐ Freeway On-ramps
- ☐ Local Streets
- ☐ Full Freeway Closures

B) Are there any construction strategies that can restore existing number of lanes?
(Check Applicable Strategies)

- ☐ Temporary Roadway Widening Structure Involvement? Yes____ No____
  (If yes, notify Project Manager)
- ☐ Lane Restriping (Temporary Narrow Lane Widths) Yes____ No____
- ☐ Roadway Realignment (Detour Around Work Area)
- ☐ Median and/or Right Shoulder Utilization
- ☐ Use of an HOV lane as a Temporary Mixed Flow Lane
- ☐ Staging Alternatives (Explain Below)

Notes:

____
____
____

C) Calculated Delays (To be performed if construction strategies in Item B do not mitigate congestion resulting from Item A)

1. Estimated Maximum Individual Vehicle Delay ____________ Minutes
2. Existing or Acceptable Individual Vehicle Delay ____________ Minutes
3. Estimated Individual Vehicle Delay Requiring Mitigation [(l) - (2)] ____________ Minutes
4. Estimated Delay Cost (Most Applicable)
   - ☐ Extended Weekend Closure $____________
   - ☐ Weekly (7 days) $____________
5. Estimated Duration of Project Related Delays ____________
6. Cost of Construction Related Delays [(4 x 5)] $____________

D) Preliminary TMP Elements and Cost

1. Public Information
   - ☒ a. Brochures and Mailers $ 10,000
   - ☐ b. Press Release $____________
   - ☐ c. Paid Advertising $____________
   - ☐ d. Public Information Center/Kiosk $____________
   - ☐ e. Public Meeting/Speakers Bureau $____________
   - ☐ f. Telephone Hotline $____________
   - ☐ g. Internet $____________
   - ☒ h. Notification to impacted groups (Bicycle users, Pedestrians with disability, others.) $ 20,000
   - ☐ i. Others ____________ $____________

   SUB TOTAL **$** 30,000

2. Motorists Information strategies
   - ☐ a Changeable Message Signs (Fixed) $____________
   - ☒ b. Changeable Message Signs (Portable) $ 1,123,200
   - ☒ c. Ground Mounted Signs $ 50,000
   - ☐ d. Highway Advisory Radio $____________
   - ☐ e. Caltrans Highway Information Network (CHIN) $____________
   - ☐ f. Revised Transit Schedules/Maps $____________
   - ☐ g. Others ____________ $____________

   SUB TOTAL **$** 1,173,200

3. Incident Management
   - ☒ a. Construction or Maintenance Zone Enhanced Enforcement Program (COZEEP or MAZEEP) $ 300,000
   - ☒ b. Freeway Service Patrol $ 50,000
   - ☒ c. Traffic Management Team $____________
   - ☐ d. New CCTVs and Detectors $____________

- ☐ e. Others ________________________________ $________________________

SUB TOTAL **$** 350,000

4. Construction Strategies (In Addition to Elements Identified on Item B)
   - ☒ a.. Off Peak/Night/Weekend Work (Lane Closure Charts) $________________________
   - ☐ b. Reversible Lanes $________________________
   - ☐ c. Total Facility Closure $________________________
   - ☐ d. Extended Weekend Closure $________________________
   - ☐ e. Truck Traffic Restrictions $________________________
   - ☐ f. Reduced Speed Zone $________________________
   - ☒ g. Connector and Ramp Closures $________________________
   - ☐ h. Incentive and Disincentive $________________________
   - ☐ i. Moveable Barrier $________________________
   - ☐ j. Others ________________________________ $________________________

SUB TOTAL **$**________________________

5. Demand Management
   - ☐ a. HOV Lanes/Ramps (New or Convert) $________________________
   - ☐ b. Park and Ride Lots $________________________
   - ☐ c. Rideshare Incentives $________________________
   - ☐ d. Variable Work Hours $________________________
   - ☐ e. Telecommute $________________________
   - ☐ f. Ramp Metering (New Installation) $________________________
   - ☐ g. Ramp Metering (Maintain Existing) $________________________
   - ☐ h. Others ________________________________ $________________________

SUB TOTAL **$**________________________

6. Alternate Route Strategies
   - ☐ a. Add Capacity to Freeway Connector $________________________
   - ☐ b. Street Improvement (widening, traffic signal, etc) $________________________
   - ☐ c. Traffic Control Officers $________________________
   - ☐ d.. Parking Restrictions
   - ☐ e. Others ________________________________ $________________________

SUB TOTAL **$**________________________

7. Other Strategies
   - ☐ a. Application of New Technology $________________________
   - ☐ b. Others ________________________________ $________________________

SUB TOTAL **$**________________________

8. The Project includes the following: (Check applicable type of facility closures)
   - ☒ a. Highway or Freeway Lanes
   - ☒ b. Highway or Freeway Shoulders
   - ☐ c. Full Freeway Closure
   - ☒ d. Freeway On/Off-Ramps

- ☐ e. Freeway Connectors
- ☒ f. Local Streets
- ☐ g. Prolonged Ramp Closures

9. Major operations requiring traffic control and working days for each

Operation	**# of Working Days**	**# of Traffic Control Days**
☐ a. Clearing and Grubbing	41	8
☐ b. Existing Feature Removal	41	4
☐ c. Excavation of Embankments Construction	62	43
☐ d. Structural Section Construction	124	111
☐ e. Drainage Feature Construction	21	10
☐ f. Structures Construction	0	0
☐ g. MBGR/Barrier Construction	21	14
☐ h. Striping	21	10
☐ i. Electrical Component Construction	62	43
☐ j. Other	21	10
Total days	412	255

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 1,553,200

Notes : Extensive TMP may be required for the significant impacts.

PREPARED BY (Consultant PE)

______________________ DATE 06/27/19
Prasanna Muthireddy

APPROVAL RECOMMENDED BY (Caltrans Oversight Engineer)

______________________ DATE 07/12/19
Kan Wong

APPROVED BY (TMP Office)

______________________ DATE 07/12/19
Lenka Pleskotova

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

For Consultant TMP Projects

PROJECT MANAGER Parag Mehta	(Phone #) 925-965-7703
PROJECT ENGINEER Prasanna Muthireddy	(Phone #) 925-398-4855
DIST-EA/PROJ ID: 04-0Q290 PROGRAM (HB1, HE11, etc.):	
PROJECT COMMON NAME : I-880 Winton Ave/ A Street Interchange Improvements	
CO-RTE-PM (KP): ALA-880-PM 17.2/18.6	
LEGAL DESCRIPTION: On Route 880 between 0.4 mile south of Winton Avenue overcrossing and 0.1 mile north of A Street undercrossing.	
DETAILED WORK DESCRIPTION: Alternative A2 • Reconfiguring the I-880 interchange at A Street to enhance access to the surrounding residential, retail and commercial land uses • Implementing complete streets features • Modifying signals and reconfiguring intersections to improve traffic flow, reduce congestion, and make intersections accessible and safer for pedestrians and cyclists	
CONSTRUCTION COST ESTIMATE: ALT A2 COST = $83,600,000	
PROJECT PHASE: PSR ☒ PR ☐ PS&E ☐ _________%	

Traffic Impact Descriptions

A) Does the proposed project includes long term closures (> 24 hours) Yes____ No_X_
[If "No", Continue to Item D (PreliminaryTMP Elements and Costs.). If "Yes", Check Applicable Facilities.]

- ☐ Freeway Lanes
- ☐ Freeway Shoulder
- ☐ Freeway Connectors
- ☐ Freeway Off-ramps
- ☐ Freeway On-ramps
- ☐ Local Streets
- ☐ Full Freeway Closures

B) Are there any construction strategies that can restore existing number of lanes?
(Check Applicable Strategies)

- ☐ Temporary Roadway Widening Structure Involvement? Yes____ No____
  (If yes, notify Project Manager)
- ☐ Lane Restriping (Temporary Narrow Lane Widths) Yes____ No____
- ☐ Roadway Realignment (Detour Around Work Area)
- ☐ Median and/or Right Shoulder Utilization
- ☐ Use of an HOV lane as a Temporary Mixed Flow Lane
- ☐ Staging Alternatives (Explain Below)

Notes:

C) Calculated Delays (To be performed if construction strategies in Item B do not mitigate congestion resulting from Item A)

1. Estimated Maximum Individual Vehicle Delay ____________Minutes
2. Existing or Acceptable Individual Vehicle Delay ____________Minutes
3. Estimated Individual Vehicle Delay Requiring Mitigation [(l) - (2)] ____________Minutes
4. Estimated Delay Cost (Most Applicable)
   - ☐ Extended Weekend Closure $______________________
   - ☐ Weekly (7 days) $______________________
5. Estimated Duration of Project Related Delays ______________________
6. Cost of Construction Related Delays [(4 x 5)] $______________________

D) Preliminary TMP Elements and Cost

1. Public Information
   - ☒ a. Brochures and Mailers $ 20,000
   - ☐ b. Press Release $______________________
   - ☐ c. Paid Advertising $______________________
   - ☒ d. Public Information Center/Kiosk $ 40,000
   - ☐ e. Public Meeting/Speakers Bureau $______________________
   - ☐ f. Telephone Hotline $______________________
   - ☐ g. Internet $______________________
   - ☒ h. Notification to impacted groups (Bicycle users, Pedestrians with disability, others.) $ 20,000
   - ☐ i. Others ____________________________ $______________________

   SUB TOTAL **$** 80,000

2. Motorists Information strategies
   - ☐ a Changeable Message Signs (Fixed) $______________________
   - ☒ b. Changeable Message Signs (Portable) $ 1,497,600
   - ☒ c. Ground Mounted Signs $ 50,000
   - ☐ d. Highway Advisory Radio $______________________
   - ☐ e. Caltrans Highway Information Network (CHIN) $______________________
   - ☐ f. Revised Transit Schedules/Maps $______________________
   - ☐ g. Others ____________________________ $______________________

   SUB TOTAL **$** 1,547,600

3. Incident Management
   - ☒ a. Construction or Maintenance Zone Enhanced Enforcement Program (COZEEP or MAZEEP) $ 250,000
   - ☒ b. Freeway Service Patrol $ 200,000
   - ☒ c. Traffic Management Team $______________________
   - ☐ d. New CCTVs and Detectors $______________________

☐ e. Others ______________________________ $______________________

SUB TOTAL **$** 450,000

4. Construction Strategies (In Addition to Elements Identified on Item B)
   - ☒ a.. Off Peak/Night/Weekend Work (Lane Closure Charts) $______________________
   - ☐ b. Reversible Lanes $______________________
   - ☐ c. Total Facility Closure $______________________
   - ☐ d. Extended Weekend Closure $______________________
   - ☐ e. Truck Traffic Restrictions $______________________
   - ☐ f. Reduced Speed Zone $______________________
   - ☒ g. Connector and Ramp Closures $______________________
   - ☐ h. Incentive and Disincentive $______________________
   - ☐ i. Moveable Barrier $______________________
   - ☐ j. Others ______________________________ $______________________

SUB TOTAL **$**______________________

5. Demand Management
   - ☐ a. HOV Lanes/Ramps (New or Convert) $______________________
   - ☐ b. Park and Ride Lots $______________________
   - ☐ c. Rideshare Incentives $______________________
   - ☐ d. Variable Work Hours $______________________
   - ☐ e. Telecommute $______________________
   - ☐ f. Ramp Metering (New Installation) $______________________
   - ☐ g. Ramp Metering (Maintain Existing) $______________________
   - ☐ h. Others ______________________________ $______________________

SUB TOTAL **$**______________________

6. Alternate Route Strategies
   - ☐ a. Add Capacity to Freeway Connector $______________________
   - ☐ b. Street Improvement (widening, traffic signal, etc) $______________________
   - ☐ c. Traffic Control Officers $______________________
   - ☐ d.. Parking Restrictions
   - ☐ e. Others ______________________________ $______________________

SUB TOTAL **$**______________________

7. Other Strategies
   - ☐ a. Application of New Technology $______________________
   - ☐ b. Others ______________________________ $______________________

SUB TOTAL **$**______________________

8. The Project includes the following: (Check applicable type of facility closures)
   - ☒ a. Highway or Freeway Lanes
   - ☒ b. Highway or Freeway Shoulders
   - ☐ c. Full Freeway Closure
   - ☒ d. Freeway On/Off-Ramps

- [ ] e. Freeway Connectors
- [x] f. Local Streets
- [ ] g. Prolonged Ramp Closures

9. Major operations requiring traffic control and working days for each

Operation	# of Working Days	# of Traffic Control Days
☐ a. Clearing and Grubbing	26	13
☐ b. Existing Feature Removal	52	47
☐ c. Excavation of Embankments Construction	104	73
☐ d. Structural Section Construction	104	94
☐ e. Drainage Feature Construction	26	13
☐ f. Structures Construction	78	70
☐ g. MBGR/Barrier Construction	26	18
☐ h. Striping	26	13
☐ i. Electrical Component Construction	52	36
☐ j. Other	26	13
Total days	520	390

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 2,077,600

Notes : Extensive TMP may be required for the significant impacts.

PREPARED BY (Consultant PE)

______________________ DATE 06/27/19

Prasanna Muthireddy

APPROVAL RECOMMENDED BY (Caltrans Oversight Engineer)

Kan Wong

______________________ DATE 07/12/19

Kan Wong

APPROVED BY (TMP Office)

Lenka Pleskotova

______________________ DATE 07/12/19

Lenka Pleskotova

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

For Consultant TMP Projects

PROJECT MANAGER Parag Mehta	(Phone #) 925-965-7703
PROJECT ENGINEER Prasanna Muthireddy	(Phone #) 925-398-4855
DIST-EA/PROJ ID: 04-0Q290 PROGRAM (HB1, HE11, etc.):	
PROJECT COMMON NAME : I-880 Winton Ave/ A Street Interchange Improvements	
CO-RTE-PM (KP): ALA-880-PM 17.2/18.6	
LEGAL DESCRIPTION: On Route 880 between 0.4 mile south of Winton Avenue overcrossing and 0.1 mile north of A Street undercrossing.	
DETAILED WORK DESCRIPTION: Alternative A3 • Reconfiguring the I-880 interchange at A Street to enhance access to the surrounding residential, retail and commercial land uses • Implementing complete streets features • Modifying signals and reconfiguring intersections to improve traffic flow, reduce congestion, and make intersections accessible and safer for pedestrians and cyclists	
CONSTRUCTION COST ESTIMATE: ALT A3 COST = $168,000,000	
PROJECT PHASE: PSR ☒ PR ☐ PS&E ☐ _________%	

Traffic Impact Descriptions

A) Does the proposed project includes long term closures (> 24 hours) Yes____ No_X_
[If "No", Continue to Item D (PreliminaryTMP Elements and Costs.). If "Yes", Check Applicable Facilities.]

- ☐ Freeway Lanes
- ☐ Freeway Shoulder
- ☐ Freeway Connectors
- ☐ Freeway Off-ramps
- ☐ Freeway On-ramps
- ☐ Local Streets
- ☐ Full Freeway Closures

B) Are there any construction strategies that can restore existing number of lanes?
(Check Applicable Strategies)

- ☐ Temporary Roadway Widening Structure Involvement? Yes____ No____
  (If yes, notify Project Manager)
- ☐ Lane Restriping (Temporary Narrow Lane Widths) Yes____ No____
- ☐ Roadway Realignment (Detour Around Work Area)
- ☐ Median and/or Right Shoulder Utilization
- ☐ Use of an HOV lane as a Temporary Mixed Flow Lane
- ☐ Staging Alternatives (Explain Below)

Notes:

C) Calculated Delays (To be performed if construction strategies in Item B do not mitigate congestion resulting from Item A)

1. Estimated Maximum Individual Vehicle Delay ____________Minutes
2. Existing or Acceptable Individual Vehicle Delay ____________Minutes
3. Estimated Individual Vehicle Delay Requiring Mitigation [(l) - (2)] ____________Minutes
4. Estimated Delay Cost (Most Applicable)
   - ☐ Extended Weekend Closure $______________________
   - ☐ Weekly (7 days) $______________________
5. Estimated Duration of Project Related Delays ______________________
6. Cost of Construction Related Delays [(4 x 5)] $______________________

D) Preliminary TMP Elements and Cost

1. Public Information
   - ☒ a. Brochures and Mailers $ 20,000
   - ☐ b. Press Release $______________________
   - ☐ c. Paid Advertising $______________________
   - ☒ d. Public Information Center/Kiosk $ 40,000
   - ☐ e. Public Meeting/Speakers Bureau $______________________
   - ☐ f. Telephone Hotline $______________________
   - ☐ g. Internet $______________________
   - ☒ h. Notification to impacted groups (Bicycle users, Pedestrians with disability, others.) $ 20,000
   - ☐ i. Others ____________________________ $______________________

   SUB TOTAL **$** 80,000

2. Motorists Information strategies
   - ☐ a Changeable Message Signs (Fixed) $______________________
   - ☒ b. Changeable Message Signs (Portable) $ 1,497,600
   - ☒ c. Ground Mounted Signs $ 50,000
   - ☐ d. Highway Advisory Radio $______________________
   - ☐ e. Caltrans Highway Information Network (CHIN) $______________________
   - ☐ f. Revised Transit Schedules/Maps $______________________
   - ☐ g. Others ____________________________ $______________________

   SUB TOTAL **$** 1,547,600

3. Incident Management
   - ☒ a. Construction or Maintenance Zone Enhanced Enforcement Program (COZEEP or MAZEEP) $ 250,000
   - ☒ b. Freeway Service Patrol $ 250,000
   - ☒ c. Traffic Management Team $______________________
   - ☐ d. New CCTVs and Detectors $______________________

- ☐ e. Others ______________________________ $______________________

SUB TOTAL **$**_500,000______________

4. Construction Strategies (In Addition to Elements Identified on Item B)
   - ☒ a.. Off Peak/Night/Weekend Work (Lane Closure Charts) $______________________
   - ☐ b. Reversible Lanes $______________________
   - ☐ c. Total Facility Closure $______________________
   - ☐ d. Extended Weekend Closure $______________________
   - ☐ e. Truck Traffic Restrictions $______________________
   - ☐ f. Reduced Speed Zone $______________________
   - ☒ g. Connector and Ramp Closures $______________________
   - ☐ h. Incentive and Disincentive $______________________
   - ☐ i. Moveable Barrier $______________________
   - ☐ j. Others ______________________________ $______________________

SUB TOTAL **$**______________________

5. Demand Management
   - ☐ a. HOV Lanes/Ramps (New or Convert) $______________________
   - ☐ b. Park and Ride Lots $______________________
   - ☐ c. Rideshare Incentives $______________________
   - ☐ d. Variable Work Hours $______________________
   - ☐ e. Telecommute $______________________
   - ☐ f. Ramp Metering (New Installation) $______________________
   - ☐ g. Ramp Metering (Maintain Existing) $______________________
   - ☐ h. Others ______________________________ $______________________

SUB TOTAL **$**______________________

6. Alternate Route Strategies
   - ☐ a. Add Capacity to Freeway Connector $______________________
   - ☐ b. Street Improvement (widening, traffic signal, etc) $______________________
   - ☐ c. Traffic Control Officers $______________________
   - ☐ d.. Parking Restrictions
   - ☐ e. Others ______________________________ $______________________

SUB TOTAL **$**______________________

7. Other Strategies
   - ☐ a. Application of New Technology $______________________
   - ☐ b. Others ______________________________ $______________________

SUB TOTAL **$**______________________

8. The Project includes the following: (Check applicable type of facility closures)
   - ☒ a. Highway or Freeway Lanes
   - ☒ b. Highway or Freeway Shoulders
   - ☐ c. Full Freeway Closure
   - ☒ d. Freeway On/Off-Ramps

- [ ] e. Freeway Connectors
- [x] f. Local Streets
- [ ] g. Prolonged Ramp Closures

9. Major operations requiring traffic control and working days for each

Operation	# of Working Days	# of Traffic Control Days
☐ a. Clearing and Grubbing	26	13
☐ b. Existing Feature Removal	52	47
☐ c. Excavation of Embankments Construction	104	73
☐ d. Structural Section Construction	104	94
☐ e. Drainage Feature Construction	26	13
☐ f. Structures Construction	78	70
☐ g. MBGR/Barrier Construction	26	18
☐ h. Striping	26	13
☐ i. Electrical Component Construction	52	36
☐ j. Other	26	13
Total days	520	390

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 2,127,600

Notes : Extensive TMP may be required for the significant impacts.

PREPARED BY (Consultant PE)

______________________________ DATE 06/27/19

Prasanna Muthireddy

APPROVAL RECOMMENDED BY (Caltrans Oversight Engineer)

______________________________ DATE 07/12/19

Kan Wong

APPROVED BY (TMP Office)

______________________________ DATE 07/12/19

Lenka Pleskotova

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

For Consultant TMP Projects

PROJECT MANAGER Parag Mehta	(Phone #) 925-965-7703
PROJECT ENGINEER Prasanna Muthireddy	(Phone #) 925-398-4855
DIST-EA/PROJ ID: 04-0Q290 PROGRAM (HB1, HE11, etc.):	
PROJECT COMMON NAME: I-880 Winton Ave/ A Street Interchange Improvements	
CO-RTE-PM (KP): ALA-880-PM 17.2/18.6	
LEGAL DESCRIPTION: On Route 880 between 0.4 mile south of Winton Avenue overcrossing and 0.1 mile north of A Street undercrossing.	
DETAILED WORK DESCRIPTION: Auxiliary Lanes on I-880 Repaving existing shoulder to provide northbound and southbound auxiliary lanes along the main line between the A Street interchange and the Winton Avenue interchange.	
CONSTRUCTION COST ESTIMATE: AUX LANES COST = $11,100,000	
PROJECT PHASE: PSR-PDS ☒ PR ☐ PS&E ☐ _________%	

Traffic Impact Descriptions

A) Does the proposed project includes long term closures (> 24 hours) Yes____ No_X_
[If "No", Continue to Item D (PreliminaryTMP Elements and Costs.). If "Yes", Check Applicable Facilities.]

- ☐ Freeway Lanes
- ☐ Freeway Shoulder
- ☐ Freeway Connectors
- ☐ Freeway Off-ramps
- ☐ Freeway On-ramps
- ☐ Local Streets
- ☐ Full Freeway Closures

B) Are there any construction strategies that can restore existing number of lanes?
(Check Applicable Strategies)

- ☐ Temporary Roadway Widening Structure Involvement? Yes____ No____
  (If yes, notify Project Manager)
- ☐ Lane Restriping (Temporary Narrow Lane Widths) Yes____ No____
- ☐ Roadway Realignment (Detour Around Work Area)
- ☐ Median and/or Right Shoulder Utilization
- ☐ Use of an HOV lane as a Temporary Mixed Flow Lane
- ☐ Staging Alternatives (Explain Below)

Notes:

____

____

____

C) Calculated Delays (To be performed if construction strategies in Item B do not mitigate congestion resulting from Item A)

1. Estimated Maximum Individual Vehicle Delay ____________Minutes
2. Existing or Acceptable Individual Vehicle Delay ____________Minutes
3. Estimated Individual Vehicle Delay Requiring Mitigation [(l) - (2)] ____________Minutes
4. Estimated Delay Cost (Most Applicable)
   - ☐ Extended Weekend Closure $______________________
   - ☐ Weekly (7 days) $______________________

5. Estimated Duration of Project Related Delays ______________________
6. Cost of Construction Related Delays [(4 x 5)] $______________________

D) Preliminary TMP Elements and Cost

1. Public Information
   - ☒ a. Brochures and Mailers $ 20,000
   - ☐ b. Press Release $______________________
   - ☐ c. Paid Advertising $______________________
   - ☐ d. Public Information Center/Kiosk $______________________
   - ☐ e. Public Meeting/Speakers Bureau $______________________
   - ☐ f. Telephone Hotline $______________________
   - ☐ g. Internet $______________________
   - ☒ h. Notification to impacted groups (Bicycle users, Pedestrians with disability, others.) $ 50,000
   - ☐ i. Others ____________________________ $______________________

   SUB TOTAL **$** 70,000

2. Motorists Information strategies
   - ☐ a Changeable Message Signs (Fixed) $______________________
   - ☒ b. Changeable Message Signs (Portable) $ 187,200
   - ☒ c. Ground Mounted Signs $ 50,000
   - ☐ d. Highway Advisory Radio $______________________
   - ☐ e. Caltrans Highway Information Network (CHIN) $______________________
   - ☐ f. Revised Transit Schedules/Maps $______________________
   - ☐ g. Others ____________________________ $______________________

   SUB TOTAL **$** 237,200

3. Incident Management
   - ☒ a. Construction or Maintenance Zone Enhanced Enforcement Program (COZEEP or MAZEEP) $ 250,000
   - ☒ b. Freeway Service Patrol $ 100,000
   - ☒ c. Traffic Management Team $______________________
   - ☐ d. New CCTVs and Detectors $______________________
   - ☐ e. Others ____________________________ $______________________

   SUB TOTAL **$** 350,000

4. Construction Strategies (In Addition to Elements Identified on Item B)

- ☒ a.. Off Peak/Night/Weekend Work (Lane Closure Charts) $__________
- ☐ b. Reversible Lanes $__________
- ☐ c. Total Facility Closure $__________
- ☐ d. Extended Weekend Closure $__________
- ☐ e. Truck Traffic Restrictions $__________
- ☐ f. Reduced Speed Zone $__________
- ☒ g. Connector and Ramp Closures $__________
- ☐ h. Incentive and Disincentive $__________
- ☐ i. Moveable Barrier $__________
- ☐ j. Others __________ $__________

SUB TOTAL **$__________**

5. Demand Management

- ☐ a. HOV Lanes/Ramps (New or Convert) $__________
- ☐ b. Park and Ride Lots $__________
- ☐ c. Rideshare Incentives $__________
- ☐ d. Variable Work Hours $__________
- ☐ e. Telecommute $__________
- ☐ f. Ramp Metering (New Installation) $__________
- ☒ g. Ramp Metering (Maintain Existing) $__________
- ☐ h. Others __________ $__________

SUB TOTAL **$__________**

6. Alternate Route Strategies

- ☐ a. Add Capacity to Freeway Connector $__________
- ☐ b. Street Improvement (widening, traffic signal, etc) $__________
- ☐ c. Traffic Control Officers $__________
- ☐ d.. Parking Restrictions
- ☐ e. Others __________ $__________

SUB TOTAL **$__________**

7. Other Strategies

- ☐ a. Application of New Technology $__________
- ☐ b. Others __________ $__________

SUB TOTAL **$__________**

8. The Project includes the following: (Check applicable type of facility closures)

- ☒ a. Highway or Freeway Lanes
- ☒ b. Highway or Freeway Shoulders
- ☐ c. Full Freeway Closure
- ☒ d. Freeway On/Off-Ramps
- ☐ e. Freeway Connectors
- ☒ f. Local Streets
- ☐ g. Prolonged Ramp Closures

9. Major operations requiring traffic control and working days for each

Operation	# of Working Days	# of Traffic Control Days
☐ a. Clearing and Grubbing	15	14
☐ b. Existing Feature Removal	15	15
☐ c. Excavation of Embankments Construction	8	8
☐ d. Structural Section Construction	46	46
☐ e. Drainage Feature Construction	8	8
☐ f. Structures Construction	0	0
☐ g. MBGR/Barrier Construction	8	8
☐ h. Striping	15	8
☐ i. Electrical Component Construction	0	0
☐ j. Other	38	19
Total days	152	124

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 657,200

Notes : Extensive TMP may be required for the significant impacts.

PREPARED BY (Consultant PE)

DATE 06/27/19

Prasanna Muthireddy

APPROVAL RECOMMENDED BY (Caltrans Oversight Engineer)

DATE 07/12/19

Kan Wong

APPROVED BY (TMP Office)

DATE 07/12/19

Lenka Pleskotova